ENCLOSURE (1)

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ANNUAL OPERATING REPORT
OF
SAN ONOFRE NUCLEAR GENERATING STATION UNIT 1
FOR 1978

SOUTHERN CALIFORNIA EDISON COMPANY
SAN DIEGO GAS & ELECTRIC COMPANY

DOCKET NO. 50-206

LICENSE NO. DPR-13

7904120276

# TABLE OF CONTENTS


| | | PAGE |
|---|---|---|
| 1. | Environmental Surveillance | 1-34 |
| 2. | Corrective Maintenance | 35 |
| 3. | Design Change Environmental Evaluation | 36-46 |

ATTACHMENT 1

## RADIOLOGICAL ENVIRONMENTAL MONITORING

### Air Sampling

a. Four locations were sampled.

b. Two hundred weekly air particulate and weekly iodine samples were analyzed during this reporting period. Sixteen air particulate quarterly composite samples were analyzed for alpha, gamma and strontium-90 activities.

c. No locations were above local background levels.

d. The Visitor Center showed the highest airborne radioactivity levels (based on gross beta) of the locations measured. This area is located 0.1 mile from the plant at 015° magnetic north.

| Beta $pCi/m^3$ | | I-131 $pCi/m^3$ |
|---|---|---|
| Highest | $0.41 \pm 0.003$ | <LLD |
| Mean | $0.10 \pm 0.0004$ | |
| Lowest | $0.047 \pm 0.003$ | |

| Alpha $pCi/m^3$ | |
|---|---|
| Highest | $0.0024 \pm 0.0001$ |
| Mean | $0.0013 \pm 0.00005$ |
| Lowest | $0.0007 \pm 0.0001$ |

e. The Sr-90 value was highest for Huntington Beach Generating Station. This area is located 37 miles from the plant at 300° magnetic north.

| Sr-90 $pCi/m^3$ | |
|---|---|
| Highest | $0.003 \pm 0.001$ |
| Mean | $0.00075 \pm 0.0005$ |
| Lowest | $0 \pm 0.001$ |

### Direct Radiation

a. Sixteen locations were sampled. Two of these being added in the second quarter as part of the Environmental Program for Units 2 and 3.

b. Seventy-one TLD sets were analyzed during this reporting period. Fifty-eight were quarterly samples and thirteen were yearly.

RADIOLOGICAL ENVIRONMENTAL MONITORING

Direct Radiation (continued)

c. No locations were found to be above normal local background levels.

d. Huntington Beach Generating Station showed the highest quarterly mean radiation level of the locations measured. This area is located 37 miles from the plant at 300° magnetic north.

mR/year ( $CaSO_4$:Dy)

| | |
|---|---|
| Highest | 40.9 ± 10 |
| Mean | 37.5 ± 5 |
| Lowest | 31.8 ± 10 |

e. The highest yearly value was recorded at the Basilone Road off-ramp.

mR/yr (LiF)

| | |
|---|---|
| Highest | 119 ± 10 |
| Mean | 99.9 ± 2.77 |
| Lowest | 74 ± 10 |

Drinking Water

a. Three locations were sampled.

b. Thirty-six monthly and twelve quarterly composite samples were analyzed during this reporting period.

c. No locations were found to be above normal background levels. Gross β data were within the preoperational range. Other data were within the previously observed ranges.

d. Water from Tri-Cities Water District showed the highest gross beta and tritium radioactivity levels in the filtrate for the quarterly composite samples analyzed. The highest gross alpha was in the monthly drinking water solid from San Clemente Well No. 6.

| Beta (pCi/l) | | Alpha (pCi/l) | | H-3 (pCi/l) | |
|---|---|---|---|---|---|
| Highest | 21.0 ± 0.5 | Highest | 0.3 ± 0.3 | Highest | 200 ± 100 |
| Mean | 15.5 ± 0.144 | Mean | 0.08 ± 0.09 | Mean | 50 ± 50 |
| Lowest | 10.0 ± 0.5 | Lowest | 0 ± 0.3 | Lowest | 0 ± 100 |

RADIOLOGICAL ENVIRONMENTAL MONITORING

Ocean Water

a. Four locations were sampled with addition of two locations for SONGS Units 2 and 3.

b. Twenty bimonthly and six semiannual composite samples were analyzed during this reporting period.

c. No locations were found to be above normal local background levels. All values were within previously observed ranges.

d. The station discharge showed the highest mean tritium level measured. Gamma radioactivity levels were below LLD for both sampling locations. The station discharge is 0.5 miles from the station at 215° magnetic north. The highest beta value was measured at the Unit III outfall.

| Beta pCi/l | | H-3 (pCi/l) | |
|---|---|---|---|
| Highest | 1330 ± 0.5 | Highest | 3330 ± 200 |
| Mean | 1049 ± 0.25 | Mean | 1665 ± 141.4 |
| Lowest | 880 ± 0.5 | Lowest | 0 ± 200 |

Beach Sand

a. Four locations were sampled.

b. Eight samples were analyzed during this reporting period.

c. No locations were found to be above normal local backgrounds.

d. Huntington Beach located 37 miles from the plant at 300° magnetic north showed the highest radioactivity level measured.

| Cs-137 nCi/kg | |
|---|---|
| Highest | 0.04 ± 0.07 |
| Mean | 0.034 ± 0.05 |
| Lowest | 0.028 ± 0.07 |

Local Crops

a. Two locations were sampled.

b. Vegetable samples were analyzed during this reporting period.

c. No locations were found to be above normal local background levels.

RADIOLOGICAL ENVIRONMENTAL MONITORING

Local Crops (continued)

d. Yamasaki Farm located 23 miles from the plant at 135° magnetic north showed the highest Sr-90 and tritium values. Iodine-131 was below LLD at both locations.

| H-3 nCi/kg | | Sr-90 nCi/kg | |
|---|---|---|---|
| Highest | 145 ± 200 | Highest | 0.06 ± 0.04 |
| Mean | 79.5 ± 141.4 | Mean | 0.025 ± 0.05 |
| Lowest | 14 ± 200 | Lowest | 0 ± 0.04 |

Non-Migratory Marine Animals

a. Three locations were sampled.

b. Forty-eight marine animals were analyzed during this reporting period.

c. No samples approached reporting level values for any isotope. All values were within previously observed ranges.

d. Samples collected near the Station discharge generally showed higher radioactivity levels than samples collected from Newport Beach. This observation is based on the detection of any given isotope in some of the sixteen samples collected near the station discharge. The discharge is 0.5 miles at 215° magnetic north from the Station. Total gama data shown below represent a summation of highest quarterly data for samples found to contain isotopes potentially attributable to plant performance.

Gamma Isotope results for dry weight analysis in units of nCi/kg.

| | | |
|---|---|---|
| Cs-137 | Highest | 0.099 ± 0.03 |
| | Mean | 0.033 ± 0.008 |
| | Lowest | <LLD ± 0.03 |
| Co-58 | Highest | 2.5 ± 0.1 |
| | Mean | 0.475 ± 0.025 |
| | Lowest | <LLD ± 0.1 |
| Co-60 | Highest | 0.95 ± 0.2 |
| | Mean | 0.168 ± 0.05 |
| | Lowest | <LLD ± 0.2 |
| Cs-134 | Highest | 0.06 ± 0.005 |
| | Mean | 0.008 ± 0.001 |
| | Lowest | <LLD ± 0.005 |
| Tritium | Highest | 60 ± 200 |
| | Mean | 28.2 ± 50 |
| | Lowest | 9 ± 200 |

RADIOLOGICAL ENVIRONMENTAL MONITORING

| | | |
|---|---|---|
| Ag-110m | Highest | 6.8 ± 0.4 |
| | Mean | 1.17 ± 0.1 |
| | Lowest | <LLD ± 0.4 |

Kelp

a. Four locations were sampled.

b. Eight samples were analyzed during this reporting period.

c. All isotopes possibly attributable to plant operation were within the previously observed range.

d. A sample collected from the San Onofre Kelp Bed showed the highest tritium activity level of the samples analyzed. The San Mateo Kelp Bed is 6 miles at 145° magnetic north from the station and showed the highest Cs-137 level. The Newport Beach Kelp Bed showed the highest I-131.

e. The I-131 value was from Ge(Li) spectrum and not verified by radiochemical analysis.

| Cs-137 | Dry Weight pCi/g |
|---|---|
| Highest | 0.061 ± 0.06 |
| Mean | 0.055 ± 0.004 |
| Lowest | 0.049 ± 0.06 |

| Tritium | Dry Weight pCi/g |
|---|---|
| Highest | 69 ± 10 |
| Mean | 48 ± 7.07 |
| Lowest | 27 ± 10 |

| I-131 | Dry Weight pCi/g |
|---|---|
| Highest | 0.44 ± 0.2 |
| Mean | 0.29 ± 0.14 |
| Lowest | 0.14 ± 0.2 |

RADIOLOGICAL ENVIRONMENTAL MONITORING

Ocean Bottom Sediment

a. Five locations were sampled with the addition of two locations for SONGS 2 and 3.

b. Ten samples were analyzed during this reporting period.

c. No locations were above normal local background levels. All values measured were within previously observed levels.

d. A sample collected 0.5 miles north of the station discharge showed the highest radioactivity level. Total gamma data shown below represent a summation of isotopic data for all isotopes potentially attributable to plant operation.

| Cs-137 | Dry Weight pCi/g |
|---|---|
| Highest | 0.23 ± 0.07 |
| Mean | 0.135 ± 0.05 |
| Lowest | 0.04 ± 0.07 |

| Co-58 | Dry Weight pCi/g |
|---|---|
| Highest | 0.18 ± 0.07 |
| Mean | 0.09 ± 0.05 |
| Lowest | 0 ± 0.07 |

| Co-60 | Dry Weight pCi/g |
|---|---|
| Highest | 0.12 ± 0.11 |
| Mean | 0.06 ± 0.08 |
| Lowest | 0 ± 0.11 |

| Ag-110m | Dry Weight pCi/g |
|---|---|
| Highest | 0.03 ± 0.01 |
| Mean | 0.015 ± 0.007 |
| Lowest | 0 ± 0.01 |

RADIOLOGICAL ENVIRONMENTAL MONITORING

Soil

a. Five locations were sampled.

b. Five samples were analyzed during this reporting period.

c. No gamma activity was recorded at any location.

d. The highest Sr-90 was measured at the Basilone Road off ramp.

Sr-90 0.09 ± 0.01 nCi/Kg Dry Weight

Rabbits

a. One location was sampled.

b. Two samples were analyzed during this reporting period.

c. No sample was found to be above local background levels.

d. Iodine-131 in the thyroid and gamma emitters in the flesh were all below LLD. Strontium-90 was detected in bone structure and was within the previously observed range.

Sr-90 (pCi/g calcium)

| | |
|---|---|
| Highest | 1.9 ± 2.0 |
| Mean | 1.4 ± 1.4 |
| Lowest | 0.9 ± 2.0 |

(1) Levels of radioactive material in environmental media reported here do not indicate a likelihood of public intakes in excess of 1% of those that could result from continuous exposure to the concentration values listed in Appendix B, Table II, 10 CFR 20.

(2) Environmental data are too scattered to permit correlation with isotopic release data at this time.

A general observation indicates that bottom feeding organisms which live in localized areas consistently show low levels of cobalt-58, cobalt-60 and silver-110m. Each of these isotopes is attributable to plant operation.

(3) No direct radiation levels greater than 25% above the control station at Huntington Beach were observed.

RADIOLOGICAL ENVIRONMENTAL MONITORING

Noted below are locations and collection times for samples with radionuclide contents greater than twice background levels. Background levels are taken to be those values determined from samples collected from control or background points during January through December 1978. Background locations are defined within the ETS.

| Sample Type | Location | Collection Date |
|---|---|---|
| Air particulate-quarterly | San Clemente | April-June |
| Air particulate-quarterly | Visitor Center | April-June |
| Air particulate-quarterly | Visitor Center | July-September |
| Air particulate-quarterly | Visitor Center | October-December |
| Drinking water-monthly | Tri-Cities Water District | March |
| Drinking water-quarterly | Tri-Cities Water District | January-March |
| Drinking water-monthly | Tri-Cities Water District | April |
| Drinking water-monthly | Tri-Cities Water District | May |
| Drinking water-monthly | Tri-Cities Water District | June |
| Drinking water-monthly | San Clemente Well | June |
| Drinking water-quarterly | Tri-Cities Water District | April-June |
| Drinking water-monthly | Tri-Cities Water District | July |
| Drinking water-monthly | Tri-Cities Water District | August |
| Drinking water-quarterly | San Clemente Well | July-September |
| Drinking water-monthly | Tri Cities Water District | October |
| Drinking water-monthly | Tri Cities Water District | December |
| Drinking water-monthly | San Clemente Well | December |
| Ocean water-semiannual | Station Discharge | January-June |
| Vegetation-semiannual | San Clemente Farms | July-December |
| Kelp-semiannual | San Mateo Kelp Bed | July-December |
| Kelp-semiannual | Barn Kelp Bed | July-December |
| Kelp-semiannual | San Onofre Kelp Bed | July-December |
| Ocean bottom sediment | 0.5 mi. north of SONGS 1 | January-June |
| Ocean bottom sediment | 0.5 mi. south of SONGS 1 | January-June |
| Ocean bottom sediment | 0.5 mi. north of SONGS 2/3 | January-June |
| Ocean bottom sediment | 0.5 mi. south of SONGS 2/3 | January-June |
| Ocean bottom sediment | 0.5 mi. north of SONGS 1 | July-December |
| Ocean bottom sediment | 0.5 mi. south of SONGS 1 | July-December |
| Ocean bottom sediment | 0.5 mi. north of SONGS 2/3 | July-December |
| Soil | Basilone Road Off Ramp | December 28, 1978 |

TABLE

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period January-March 1978

| Medium or Pathway Sampled (Unit of Measurement) | Type and Total Number of Analyses Performed | Lower Limit of Detection (LLD) | All Indicator Locations Mean(f) Range | Location with Highest Annual Mean: Name, Distance and Direction | Location with Highest Annual Mean: Mean(f) Range | Control Locations Mean(f) Range | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|
| Air Particulate pCi/M$^3$ | β,51 | 0.003 | 0.111 (51/51) (0.005-0.42) | Camp San Onofre 2.3mi, 043°MAG | 0.127 (13/13) (0.043-0.42) | Huntington Beach 0.118 (13/13) (0.047-0.32) | 0 |
| | I-131, 51 | 0.04 | <LLD | - | - | - | |
| Air Particulate Quarterly Composite pCi/M$^3$ | α, 4 | 0.0001 | 0.00045(4/4) (0.0003-0.0007) | Visitor Center 0.1 mi,015° MAG | 0.0007(1/1) | Huntington Beach 0.0004 (1/1) | 0 |
| | Sr-90, 4 | 0.001 | < LLD | - | - | - | |
| | γ Isotopic, 4 | 0.04 γ/min/m$^3$ | | | | | |
| | Be-7, 4 | | 0.097 (4/4) (0.076-0.12) | Camp San Onofre 2.3 mi, 043°MAG | 0.120 (1/1) | Huntington Beach 0.098 (1/1) | |
| | Zr-Nb, 4 | | 0.0075 (4/4) (0.006-0.009) | Camp San Onofre 2.3 mi,043°MAG | 0.009 (1/1) | Huntington Beach 0.008 (1/1) | |
| | Ru-103, 4 | | 0.0093(4/4) (0.005-0.013) | Camp San Onofre 2.3 mi,043°Mag. | 0.013 (1/1) | Huntington Beach 0.005 (1/1) | |
| | Ru-106, 4 | | 0.0675 (4/4) (0.05-0.09) | Camp San Onofre 23 mi, 043°Mag | 0.09 (1/1) | Huntington Beach 0.05 (1/1) | |

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Docket No. 50-206
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|---|---|---|---|---|---|---|---|
| | Cs-137, 4 | | 0.0022 (4/4) (0.02-0.03 ) | Visitor Center 0.1 mi, 015°MAG | 0.03 (1/1) | Huntington Beach 0.02 (1/1) | |
| | Ce-140, 4 | | 0.08 (3/4) (0.05-0.10) | Visitor Center 0.1 mi, 015°MAG | 0.10 (1/1) | Huntington Beach < LLD | |
| | Ce-141, 4 | | 0.007 (4/4) (0.004-0.009) | Camp San Onofre 2.3mi,043°MAG | 0.009 (1/1) | Huntington Beach 0.004 (1/1) | |
| | Ce-144, 4 | | 0.026 (4/4) (0.021-0.028) | Camp San Onofre 2.3 mi, 043°MAG | 0.028 (1/1 | Huntington Beach 0.026 (1/1) | |
| Direct Radiation mR/qtr | mR ,14 | 10 | 30.3 (14/14) (25.7-368) | Camp San Mateo | 36.8 (1/1) | Huntington Beach 31.8 (1/1) | 0 |
| Drinking Water Filtrate ( pCi/l ) | β , 9 | 0.5 | 11.4 (9/9) (4-21) | Tri Cities Wtr. District,8.7 mi 320° MAG | 20.3 (3/3) (19-21) | Huntington Beach 9.3 (3/3) (9-10) | 0 |
| | α, 9 | 5.0 | < LLD | - | - | - | |
| Drinking water solids ( pCi/l ) | β, 9 | 0.1 | 1.24 (9/9) (0.8-2.0) | Tri-Cities Wtr. Dist., 8.7mi 320°MAG | 1.53 (3/3) (1.1-1.8) | Huntington Beach 1.30 (3/3) (0.9 - 2.0) | 0 |

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|---|---|---|---|---|---|---|---|
| | α, 9 | 0.3 | < LLD | - | - | - | |
| Drinking Water Quarterly Filtrate Composite (pCi/l) | β, 3 | 0.5 | 11.3 (3/3) (5-19) | Tri-Cities Wtr District, 8.7mi 320° MAG | 19 (1/1) | Huntington Beach 10 (1/1) | 0 |
| | α, 3 | 0.5 | < LLD | - | - | - | |
| | H, 3 | 100 | 66.7 (1/3) (0-200) | TriCities Wtr. District, 8.7mi 320° MAG | 200 (1/1) | Huntington Beach < LLD | |
| Drinking Water Quarterly Solids Composite (pCi/l) | β, 3 | 0.1 | 1.13 (3/3) (1.0-1.2) | Tri-Cities Wtr Dist., 8.7 mi. 320° MAG and Huntington Beach | 1.2 (1.1) | Huntington Beach 1.2 (1/1) | 0 |
| | α, 3 | 0.3 | < LLD | - | - | - | |
| Ocean Water pCi/l | β, 4 | 0.5 | 1007.5 (4/4) (980-1070) | Newport Beach | 1025 (2/2) (980-1070) | Newport Beach 1025 (2/2) (980-1070) | 0 |
| | Cs-137, 4 | 6 | < LLD | - | - | - | |
| Beach Sand (nCi/bg.dry wt.) | Cs-137, 4 | 0.07 | 0.0195 (3/4) (0-0.028) | Huntington Bch | 0.028 (1/1) | Huntington Beach 0.028 (1/1) | 0 |
| | Ra-226, 4 | 0.07 | 0.258 (4/4) (0.21-0.29) | Surfing Beach NW of SONGS 1 and Huntington Beach | 0.29 (1/1) | Huntington Beach 0.29 (1/1) | |

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|---|---|---|---|---|---|---|---|
| | Th-232, 4 | 0.07 | 0.31 (4/4) (0.16-0.59) | Huntington Bch | 0.59 (1/1) | Huntington Beach 0.59 (1/1) | |
| Marine Animal Flesh (nCi/kg,dry wt.) | H-3, 12 | 11.0 | 21.2 (12/12) (8-35) | SONGS 2&3 | 27.75 (4/4) (19-35) | Newport Beach 16.5 (4/4) (8-28) | 0 |
| | Cs-137, 12 | 0.03 | 0.023 (7/12) 0-0.065 | Newport Beach | 0.033 (3/4) (0-0.065) | Newport Beach 0.033 (3/4) (0-0.065) | |
| | Co-58, 12 | 0.1 | 0.051 (1/12) (0.-0.61) | Sta.Discharge 0.5mi, 215°MAG | 0.153 (1/4) 0.0.61) | Newport Beach < LLD | |
| | Co-60, 12 | 0.2 | 0.085 (2/12) | Sta. Discharge 0.5mi, 215° MAG | 0.255 (2/4) (0-0.95) | Newport Beach < LLD | |
| | Ag-110m, 12 | 0.4 | 0.198 (5/12) | Sta. Discharge 0.5mi, 215° MAG | 0.538 (2/4) (0.1.54) | Newport Beach 0.014 (1/4) (0-0.054) | |
| | Ce-144, 12 | 0.01 | 0.027 (2/12) (0-0.21) | Sta. Discharge 0.5 mi, 215°MAG | 0.053 (1/4) (0-0.21) | Newport Beach < LLD | |
| | Ra-226,12 | 0.004 | 0.007 (1/12) (0.084) | Sta. Discharge 0.5 mi. 215°MAG | 0.021(1/4) (0-0.084) | Newport Beach < LLD | |

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|---|---|---|---|---|---|---|---|
| Rabbit | | | | | | | 0 |
| Thyroid (ρ Ci/g Thyroid) | I-131, 1 | 5.0 | < LLD | - | - | None | |
| Flesh (ρ Ci/g dry wt.) | Cs-137, 1 | 0.06 | < LLD | - | - | None | |
| | I-131, 1 | 0.05 | < LLD | - | - | None | |
| | γ isotopic | - | < LLD | - | - | None | |
| Femur (ρ Ci/g Ca) | Sr-89, 1 | 3.0 | < LLD | - | - | None | |
| | Sr-90, 1 | 2.0 | 1.9 (1/1) | <2 mi East of Station, 45°MAG | 1.9 (1/1) | None | |
| | Ca, 1 | 0.02 | 0.35 (1/1) | <2 mi East of Station, 45°MAG | 0.35 (1/1) | None | |

TABLE 2

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
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|---|---|---|---|---|---|---|---|
| Air particulates ( $\rho Ci/m^3$ | β, 50 | 0.003 | 0.151 (50/50) 0.041-0.45) | Visitor Center 0.1mi, 043°MAG | 0.145 (26/26) (0.047-0.41) | Huntington Beach 0.155 (12/12) (0.041-0.45) | 0 |
| | I-131, 50 | 0.04 | < LLD | - | - | - | |
| Air particulate Quarterly Composite ( $\rho Ci/m^3$ ) | α, 4 | 0.0001 | 0.0008 (4/4) (0.0004-0.0012) | San Clemente 5mi, 320°MAG | 0.00075(2/2) (0.0003-0.0012) | Huntington Beach 0.0004 (1/1) | 0 |
| | Sr-90, 4 | 0.001 | 0.002 (4/4) (0.002-0.003) | Huntington Bch | 0.0015 (1/2) (0-0.003) | Huntington Beach 0.003 (1/1) | |
| | γ Isotopic, 4 | 0.04 $\gamma/min/m^3$ | | | | | |
| | Be-7, 4 | | 0.131(4/4) (0.11-0.140) | Camp San Onofre 2.3mi, 043°MAG | 0.13(2/2) (0.120-0.140) | Huntington Beach 0.132 (1/1) | |
| | Zr-Nb, 4 | | 0.006 (4/4) (0.0024 -0.011) | Huntington Bch | 0.0072 (2/2) (0.0063-0.008) | Huntington Beach 0.0063 (1/1) | |
| | Ru-103, 4 | | 0.00085 (1/4) (0-0.0034) | Camp San Onofre 2.3mi, 043°MAG | 0.0065 (1/2) (0-0.013) | Huntington Beach 0.0034 (1/1) | |
| | Ru-106, 4 | | 0.0125 (3/4) (0-0.017) | Camp San Onofre 23mi, 043°MAG | 0.053 (2/2) (0.016-0.09) | Huntington Beach 0.0017 (1/1) | |
| | Cs-137, 4 | | 0.00395 (4/4) (0.0037-0.0044) | Visitor Center 0.1mi.,015°MAG | 0.0034 (2/2) (0.003-0.0037) | Huntington Beach 0.0044 (1/1) | |

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|---|---|---|---|---|---|---|---|
| | Ba-140, 4 | | < LLD<br>- | Visitor Center 0.1mi.015°MAG | 0.05 (1/2)<br>(0-0.10) | Huntington Beach<br>< LLD | |
| | Ce-141, 4 | | < LLD | Camp San Onofre 2.3 mi, 043°MAG and Visitor Ctr. 0.1mi,015°MAG | 0.0045 (1/2)<br>(0-0.009) | Huntington Beach<br>< LLD | |
| | Ce-144, 4 | | 0.0398 (4/4)<br>(0.035-0.043) | Visitor Center 0.1mi, 015°MAG | 0.035 (2/2)<br>(0.027-0.043) | Huntington Beach<br>0.035 (2/2)<br>(0.026-0.041) | |
| | Sb-125, 4 | | 0.0027(3/4)<br>(0-0.005) | San Clemente 5mi,320°MAG | 0.0025 (1/2)<br>(0-0.005) | Huntington Beach<br>0.0029 (1/1) | |
| Direct Radiation (mR/qtr) | mR, 14 | 10 | 37.36 (14/14)<br>(32.6-42.6) | Camp San Onofre 2.3 mi,043° MAG | 38.1 (2/2)<br>(35.0-41.1) | Huntington Beach<br>40.9 (1/1) | 0 |
| Drinking Water Filtrate ($\rho$ Ci/l) | $\beta$ ,9 | 0.5 | 9.6 (9/9)<br>(5-19) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 17.8 (6/6)<br>(10-21) | Huntington Beach<br>7.3 (3/3)<br>(5-9) | 0 |
| | $\alpha$ ,9 | 5.0 | < LLD | - | - | - | |
| Drinking Water Solid ($\rho$ Ci/l) | $\beta$ , 9 | 0.1 | 0.93 (9/9)<br>(0.3-1.3) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 1.20 (6/6)<br>(0.3-1.3) | Huntington Beach<br>0.90 (3/3)<br>(0.7-1.1) | 0 |

TABLE 2

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period APRIL-JUNE, 1978

| Medium or Pathway Sampled (Unit of Measurement) | Type and Total Number of Analyses Performed | Lower Limit of Detection (LLD) | All Indicator Locations Mean(f) Range | Location with Highest Annual Mean: Name, Distance and Direction | Location with Highest Annual Mean: Mean(f) Range | Control Locations Mean(f) Range | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|
| | α, 9 | 0.3 | 0.04 (2/9) (0-0.2) | Tri-Cities Wtr. District, 8.7mi 320° MAG and San Clmente Farms | 0.033 (6/6) (0-0.2) | Huntington Beach < LLD | |
| Drinking Water Quarterly Filtrate (pCi/l) | β, 3 | 0.5 | 10.3 (3/3) (6-17) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 18 (1/2) (17-19) | Huntington Beach 8 (1/1) | 0 |
| | α, 3 | 0.5 | < LLD | - | - | - | |
| | H-3 | 100 | < LLD | Tri Cities Wtr. district, 8.7mi 320° MAG | 100 (2/2) (0-200) | Huntington Beach < LLD | |
| Drinking Water Quarterly Solids Composite pCi/l | β, 3 | 0.1 | 1.50 (3/3) (1.30-1.50) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 1.45 (2/2) (1.2-1.7) | Huntington Beach 0.8 (1/1) | 0 |
| | α, 3 | 0.3 | < LLD | - | - | - | |
| Ocean Water (pCi/l) | β, 4 | 0.5 | 1002.5 (4/4) (870-1110) | SONGS III Outfall | 1110 (1/1) | Newport Beach 1000 (1/1) | 0 |
| | Cs-137, 4 | 6 | < LLD | - | - | - | |
| | H-3, 2 | 100 | < LLD | - | - | - | |

TABLE

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period APRIL-JUNE, 1978

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|---|---|---|---|---|---|---|---|
| Ocean Water Composite ( pCi/l) | H-3, 2 | 200 | 1650 (1/2) 0-3330 | Sta.Discharge 0.5mi,215°MAG | 3330 (1/1) | Newport Beach < LLD | 0 |
| Local Crops | H-3, 4 | 200 | 83.75 (4/4) (10-280) | Yamasaki Farm 23mi, 135°MAG | 145 (2/2) (10-280) | Yamasaki Farm 145 (2/2) 10-280 | 0 |
| | γ isotopic, 4 | | | | | | |
| | I-131 | 0.03 | < LLD | - | - | - | |
| | Cs-137 | 0.03 | 0.0265 (2/4) (0-0.065) | Yamasaki Farm 23mi, 135°MAG | 0-0325 (1/2) (0-0.065) | Yamasaki Farm 0.0325 (1/2) (0-0.065) | |
| | Co-58 | 0.02 | 0.0175 (1/4) (0-0.07) | Yamasaki Farm 23mi, 135°MAG | 0.035(1/2) (0-0.07) | Yamasaki Farm 0.035 (1/2) (0-0.07) | |
| | Co-60 | 0.01 | 0.015 (1/4) (0-0.06) | Yamasaki Farm 23mi,135°MAG | 0.03 (1/2) (0-0.06) | Yamasaki Farm 0.03 (1/2) (0-0.06) | |

TABLE 2

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
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Docket No. 50-206
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|---|---|---|---|---|---|---|---|
| | Sr-90 | 0.04 | 0.025 (2/4) (0-0.06) | Yamasaki Farm 23mi, 135°MAG | 0.05 (2/2) (0.04-0.06) | Yamasaki Farm 0.05 (2/2) (0.04-0.06) | |
| | Ce-144 | 0.02 | 0.16 (1/4) (0-0.32) | Sn Clemente Farm 2.1mi, 320°MAG | 0.16 (1/2) (0-0.32) | Yamasaki Farm < LLD | |
| | Ce-141 | 0.01 | 0.005 (1/4) (0-0.02) | Sn Clemente Farm 2.1mi,320° MAG | 0.01 (1/2) (0-0.02) | Yamasaki Farm < LLD | |
| | Zr-Nb | 0.004 | 0.009 (1/4) (0-0.036) | Sn Clemente Farm 2.1mi, 320°MAG | 0.018 (1/2) (0-0.036) | Yamasaki Farm < LLD | |
| Marine Animal Flesh (nCi/kg.dry wt.) | H-3, 12 | 11.0 | 23.3 (12/12) (4-56) | Sta. Discharge 0.5 mi, 215°MAG | 24.5 (8/8) (9-56) | Newport Beach 19.5 (4/4) (13-24) | 0 |
| | Cs-137, 12 | 0.03 | 0.019 (7/12) (0-0.04) | Newport Beach | 0.023(6/8) (0-0.065) | Newport Beach 0.023 (3/4) (0-0.04) | |
| | Co-58, 12 | 0.1 | 0.34 (2/12) (0-3.9) | Sta. Discharge 0.5mi, 215°MAG | 0.587 (3/8) (0-3.9) | Newport Beach < LLD | |

TABLE

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
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|---|---|---|---|---|---|---|---|
| | Co-60, 12 | 0.2 | 0.06 (2/12) (0-0.68) | Sta. Discharge 0.5mi, 215°MAG | 0.218 (4/8) 0-0.95 | Newport Beach <LLD | |
| | Ag-110m,12 | 0.4 | 0.665 (6/12) (0-6.3) | Sta. Discharge 0.5mi, 215°MAG | 1.14 (5/8) (0-6.3) | Newport Beach 0.03 (1/4) (0-0.12) | |
| | Ce-144, 12 | 0.001 | 0.0003 (1/12) 0-0.004 | Sta. Discharge 0.5mi, 215°MAG | 0.027 (2/8) (0-0.21) | Newport Beach <LLD | |
| | Ra-226, 12 | 0.004 | <LLD | Sta. Discharge 0.5 mi,215°MAG | 0.011 (1/8) 0-0.084 | Newport Beach <LLD | |
| Kelp (nCi/kg dry wt.) | H-3,4 | 10 | 44.5 (4/4) (35-69) | San Onofre Kelp Bed | 69 (1/1) | Newport Beach 35 (1/1) | 0 |
| | Cs-137, 4 | 0.06 | 0.05 (4/4) (0.042-0.061) | San Mateo Kelp Bed | 0.061 (1/1) | Newport Beach 0.045 (1/1) | |
| | Co-58,4 | 0.13 | < LLD | - | - | - | |
| | Co-60, 4 | 0.20 | <LLD | - | - | - | |
| | Ag-110, 4 | 0.07 | <LLD | - | - | - | |
| | I-131, 4 | 0.2 | 0.098 (4/4) (0.07-0.14) | Newport Beach | 0.14 (1/1) | Newport Beach 0.14 (1/1) | |

TABLE 2

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Docket No. 50-206
San Diego County, California

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|---|---|---|---|---|---|---|---|
| Ocean Bottom Sediment (pCi/g dry wt.) | Cs-137,5 | 0.07 | 0.027 (4/5) (0.014-0.05) | 0.5 mi. South of SONGS I | 0.05 (1/1) | Newport Beach < LLD | 0 |
| | Co-58,5 | 0.07 | < LLD | - | - | - | |
| | Co-60,5 | 0.11 | < LLD | - | - | - | |
| | Ag-110m, 5 | 0.07 | < LLD | - | - | - | |
| | Ce-141, 5 | 0.008 | 0.009 (2/5) 0-0.023 | 0.5mi N. of SONGS 2&3 | 0.0023 (1/1) | Newport Beach < LLD | |
| | Ce-144, 5 | 0.02 | 0.01 (1/5) (0-0.05) | 0.5mi N. of SONGS 2&3 | 0.05 (1/1) | Newport Beach < LLD | |
| | Ru-226, 5 | 0.04 | 0.542 (5/5) (0.25-0.83) | 0.5mi N. of SONGS I | 0.83 (1/1) | Newport Beach 0.25 (1/1) | |
| | Th-232, 5 | 0.05 | 0.58 (5/5) (0.25-1.01) | 0.5 mi. N. of SONGS I | 1.01 (1/1) | Newport Beach 0.25 (1/1) | |

TABLE 3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period JULY-SEPTEMBER, 1978

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|---|---|---|---|---|---|---|---|
| Air Particulates ($pCi/m^3$) | β, 50 | 0.003 | 0.045 (50/50) (0.009-0.085) | Visitor Center 0.1 mi, 043°MAG | 0.053 (39/39) (0.047-0.41) | Huntington Beach 0.045 (12/12) (0.053-0.081) | 0 |
| | I-131, 50 | 0.04 | < LLD | - | - | - | |
| Air Particulate Quarterly Composite $pCi/m^3$ | α, 4 | 0.0001 | 0.00145(4/4) (0.0005-0.0024) | Visitor Center 0.1mi,043°MAG | 0.0013(3/3) (0.0007-0.0024) | Huntington Beach 0.0011 (1/1) | 0 |
| | Sr-90,4 | 0.001 | <LLD | Huntington Beach | 0.001 (1/3) (0-0.003) | Huntington Beach < LLD | |
| | γ Isotopic, 4 | $0.04\gamma/min/m^3$ | | | | | |
| | Be-7, 4 | | 0.085 (4/4) (0.08-0.094) | Camp San Onofre 2.3mi, 043°MAG | 0.115(3/3) (0.084-0.14) | Huntington Beach 0.08 (1/1) | |
| | Zr-Nb, 4 | | <LLD | Huntington Bch | 0.0048 (2/3) 0-0.008 | Huntington Beach <LLD | |
| | Ru-103, 4 | | <LLD | Camp San Onofre 2.3 mi, 043°MAG | 0.004 (1/3) 0-0.013 | Huntington Beach < LLD | |

TABLE 3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period JULY-SEPTEMBER 1978

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|---|---|---|---|---|---|---|---|
| | Ru-106, 4 | | <LLD | Camp San Onofre 2.3 mi, 043°MAG | 0.035 (2/3) (0-0.09) | Huntington Beach < LLD | |
| | Cs-137, 4 | | 0.0017(4/4) (0.0011-0.002) | Visitor Center 0.1 mi, 015°MAG | 0.0029 (3/3) (0.002-0.0037) | Huntington Beach 0.002 (1/1) | |
| | Ce-141, 4 | | <LLD | Camp San Onofre 2.3mi, 043° MAG and Visitor Center 0.1 mi,015°MAG | 0.003(1/3) (0-0.009) | Huntington Beach <LLD | |
| | Ba-140, 4 | | < LLD | Visitor Center 0.1mi, 015°MAG | 0.03 (1/3) (0-0.10) | Huntington Beach < LLD | |
| | Ce-144, 4 | | 0.008 (4/4) (0.006-0.0011) | Visitor Center 0.1mi,015°MAG | 0.027 (3/3) (0.011-0.043) | Huntington Beach 0.009 (1/1) | |
| | Sb-125 , 4 | | <LLD | San Clemente 5 mi,320°MAG | 0.0017 (1/3) (0-0.005) | Huntington Beach < LLD | |
| Direct Radiation mR/qtr | mR, 14 | 10 | 36.2 (14/14) (30.9-41.1) | Camp San Mateo | 38.95 (2/2) 36.8-41.1) | Huntington Beach 39.8 (1/1) | 0 |
| Drinking Water Filtrate pCi/l | β , 9 | 0.5 | 9.4 (9/9) (5-15) | Tri Cities Wtr. Dist. 8.7 mi. 320°MAG | 16.0 (9/9) (10-21) | Huntington Beach 6.0 (3/3) (5-8) | 0 |

TABLE 3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period JULY-SEPTEMBER 1978

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|---|---|---|---|---|---|---|---|
| | α , 9 | 5.0 | < LLD | — | — | — | |
| Drinking Water Solid (ρCi/ℓ) | β , 9 | 0.1 | 1.02 (9/9) (0.8-1.4) | Tri-Cities Wtr. Dist., 8.7 mi. 320° Mag | 1.14 (9/9) (0.3-1.3) | Huntington Beach 1.13 (3/3) (0.9-0.14) | 0 |
| | α, 9 | 0.3 | 0.03 (1/9) (0-0.3) | San Clemente Farm 2.1 mi. 320° MAG | 0.057 (4/9) (0-0.3) | Huntington Beach < LLD | |
| Drinking Water Quarterly Filtrate Composite (ρCi/ℓ) | β, 3 | 0.5 | 1.13 (3/3) (0.8-1.6 ) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 12.5 (3/3) (1.6-19) | Huntington Beach 0.8 (1/1) | 0 |
| | α, 3 | 0.5 | <LLD | - | - | - | |
| | H, 3 | 100 | <LLD | Tri-Cities Wtr. District, 8.7 mi 320° MAG | 67 (1/3) (0-200) | Huntington Beach < LLD | |

TABLE 3

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SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

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|---|---|---|---|---|---|---|---|
| Drinking Water Quarterly Solids Composite (pCi/l) | β, 3 | 0.1 | 1.13 (3/3) (0.8-1.6) | Tri-Cities Wtr. District, 8.7mi 320° MAG | 1.5 (3/3) (1.2-1.7) | Huntington Beach 0.8 (1/1) | 0 |
| | α 3 | 0.3 | 0.067 (1/3) (0-0.20) | Sn Clemente Well 3.5mi, 320° MAG | 0.067 (1/3) (0-0.20) | Huntington Beach < LLD | |
| Ocean Water (pCi/l) | β 4 | 0.5 | 949 (4/4) (865-1040) | Newport Beach 30 mi, 300° MAG | 1022 (3/3) (1000-1040) | Newport Beach 1040 (1/1) | 0 |
| | CS-137, 4 | 6 | <LLD | — | — | — | |
| Beach Sand (nCi/Kg dry wt.) | Cs-137, 4 | 0.07 | 0.017 (3/4) (0-0.04) | Huntington Beach | 0.034 (2/2) (0.028-0.04) | Huntington Beach 0.04 (1/1) | 0 |
| | Ra-226, 4 | 0.07 | 0.029 (4/4) (0.25-0.35) | Huntington Beach | (0.030 (2/2) (0.029-0.031) | Huntington Beach 0.31 (1/1) | |
| | Th-232, 4 | 0.07 | 0.323 (4/4) (0.20-0.63) | Huntington Beach | 0.61 (2/2) (0.59-0.63) | Huntington Beach 0.63 (1/1) | |

TABLE 3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
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Reporting Period JULY-SEPTEMBER 1978

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|---|---|---|---|---|---|---|---|
| Local Crops | H-3,4 | 200 | 28.75 (4/4) (14-59) | Yamasaki Farm 23mi,135° MAG | 79.5 (4/4) (14-145) | Yamasaki Farm 14 (2/2) (14-14) | 0 |
| | γ Isotopic, 4 | | | | | | |
| | I-131 | 0.03 | <LLD | - | - | - | |
| | Cs-137 | 0.03 | <LLD | Yamasaki Farm 23mi 135° MAG | 0.0163 (1/4) (0-0.065) | Yamasaki Farm <LLD | |
| | Co-58 | 0.02 | <LLD | Yamasaki Farm 23mi,135°MAG | 0.0175 (1/4) (0-0.07) | Yamasaki Farm <LLD | |
| | Co-60 | 0.01 | <LLD | Yamasaki Farm 23mi, 135°MAG | 0.015 (1/4) 0-0.06 | Yamasaki Farm <LLD | |
| | Sr-90 | 0.04 | <LLD | Yamasaki Farm 23mi.,135°MAG | 0.025 (2/4) (0-0.06) | Yamasaki Farm <LLD | |
| | Ce-144 | 0.02 | <LLD | Sn Clemente Farm 2.1 mi,320°MAG | 0.08 (1/4) (0-0.32) | Yamasaki Farm <LLD | |
| | Ce-141 | 0.01 | <LLD | Sn Clemente Farm 2.1mi, 320°MAG | 0.005 (1/4) (0-0.02) | Yamasaki Farm < LLD | |
| | Zr-Nb | 0.004 | <LLD | Sn Clemente Farm 2.1 mi,320°MAG | 0.009 (1/4) (0-0.036) | Yamasaki Farm < LLD | |

TABLE 3

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
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Reporting Period JULY-SEPTEMBER, 1978

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|---|---|---|---|---|---|---|---|
| Marine Animal Flesh (nCi/Kg.dry wt.) | H-3, 12 | 11.0 | 19.9 (12/12) (0-60) | Sta. Discharge 0.5 mi,215°MAG | 25.7 (12/12) (9-60) | Newport Beach 15.5 (3/4) (0-26) | |
| | Cs-137, 12 | 0.03 | 0.024 (6/12) (0-0.07) | Newport Beach 30 mi,300°MAG | 0.026 (8/12) (0-0.065) | Newport Beach 0.021 (2/4) (0-0.046) | |
| | Co-58, 12 | 0.1 | 0.028 (1/12) (0-0.34) | Sta Discharge 0.5 mi, 215°MAG | 0.419 (4/12) (0-3.9) | Newport Beach < LLD | |
| | Co-60, 12 | 0.2 | 0.016 (1/12) (0-0.19) | Sta Discharge 0.5mi,215°MAG | 0.161 (5/12) (0-0.95) | Newport Beach <LLD | |
| | Ag-110m, 12 | 0.4 | 0.153 (4/12) (0-0.99) | Sta. Discharge 0.5mi.215°MAG | 0.842 (6/12) (0-6.3) | Newport Beach 0.03 (1/4) (0-0.121) | |
| | Ce-144, 12 | 0.001 | < LLD | Sta.Discharge 0.5mi,215°MAG | 0.018 (5/12) (0-0.21) | Newport Beach < LLD | |
| | Ra-226, 12 | 0.004 | < LLD | Sta Discharge 0.5mi,215°MAG | 0.007 (1/12) (0-0.084) | Newport Beach < LLD | |

TABLE 4

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period OCTOBER-DECEMBER, 1978

| Medium or Pathway Sampled (Unit of Measurement) | Type and Total Number of Analyses Performed | Lower Limit of Detection (LLD) | All Indicator Locations Mean(f) Range | Location with Highest Annual Mean: Name, Distance and Direction | Location with Highest Annual Mean: Mean(f) Range | Control Locations Mean(f) Range | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|
| Air particulates ($pCi/m^3$) | β ,49 | 0.003 | 0.045 (49/49) (0.057-0.104) | Visitor Center 0.1mi,043°MAG | 0.10 (52/52) (0.047-0.41) | Huntington Beach 0.0427 (12/21) (0.011 - 0.059) | 0 |
| | I-131, 49 | 0.04 | <LLD | - | - | - | |
| Air particulate Quarterly Composite ($pCi/m^3$) | α ,4 | 0.0001 | 0.001(4/4) 0.0006-0.0013 | Visitor Center 0.1mi, 043°MAG | 0.0013 (4/4) (0.0007-0.0024) | Huntington Beach 0.0006 (1/1) | 0 |
| | Sr-90, | 0.001 | <LLD | Huntington Bch | 0.00075 (1/4) (0-0.003) | Huntington Beach <LLD | |
| | γ Isotopic, 4 | 0.04 γ/min/$m^3$ | | | | | |
| | Be-7, 4 | | 0.110 (4/4) (0.07-0.13) | Visitor Center 0.1 mi,043°MAG | 0.114 (4/4) (0.093-0.14) | Huntington Beach 0.107 (1/1) | |
| | Zr-Nb, 4 | | <LLD | Huntington Bch | 0.0036 (2/4) (0-0.008) | Huntington Beach <LLD | |
| | Ru-103, 4 | | <LLD | Camp San Onofre 2.3 mi,043°MAG | 0.003 (1/4) (0-0.013) | Huntington Beach < LLD | |

TABLE 4

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period OCTOBER-DECEMBER, 1978

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|---|---|---|---|---|---|---|---|
| | Ru-106, 4 | | <LLD | Camp San Onofre 2.3 mi, 043°MAG | 0.026 (2/4) (0-0.09) | Huntington Beach < LLD | |
| | Cs-137, 4 | | 0.0053 (3/4) (0-0.018) | Visitor Center 0.1mi., 015°MAG | 0.0067 (4/4) (0.002-0.018) | Huntington Beach < LLD | |
| | Ba-140,4 | | <LLD | Visitor Center 0.1 mi,015°MAG | 0.025 (1/4) (0-0.1) | Huntington Beach <LLD | |
| | Ce-141, 4 | | <LLD | Camp San Onofre 2.3 mi, 043°MAG And Visitor Ctr 0.1 mi,015° MAG | 0.002 (1/4) (0-0.009) | Huntington Beach <LLD | |
| | Cs-134, 4 | | 0.0021 (1/4) 0-0.0082 | Visitor Center 0.1 mi, 015°MAG | 0.0021 (1/4) 0-0.0082 | Huntington Beach < LLD | |
| | Ce-144, 4 | | <LLD | Visitor Center 0.1 mi, 015°MAG | 0.02 (3/4) (0.0-0.043) | Huntington Beach <LLD | |
| | Sb-125, 4 | | <LLD | San Clemente 5 mi, 320°MAG | 0.0013 (1/4) (0-0.005) | Huntington Beach <LLD | |

TABLE

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION - UNIT 1

Docket No. 50-206
San Diego County, California

Reporting Period OCTOBER-DECEMBER, 1978

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|---|---|---|---|---|---|---|---|
| Direct Radiation mR/qtr. | mR, 16 | 10 | 30.6 (16/16) (26.6-37.4) | Huntington Bch | 37.5 (4/4) (31.8-40.9) | Huntington Beach 37.4 (1/1) | |
| Direct Radiation mR/yearly | mR, 13 | 10 | 99.9 (13/13) (74-119) | Basilone Rd. Off Ramp | 119 (1/1) | Huntington Beach 112 (1/1) | 0 |
| Drinking Water Filtrate (pCi/l) | β , 9 | 0.5 | 10.1 (9/9) (4.7-15) | Tri Cities Wtr Dist.,8.7mi 320° MAG | 15.5 (12/12) (10-21) | Huntington Beach 6.2 (3/3) (4.7-8) | |
| | α , 9 | 5.0 | < LLD | - | - | - | |
| Drinking Water Solid (pCi/l) | β, 9 | 0.1 | 1.29 (9/9) (0.7-2.0) | Tri-Cities Wtr. Dist., 8.7 mi. 320° MAG | 1.26(12/12) (0.3-2.0) | Huntington Beach 1.03 (3/3) (0.8-1.4) | 0 |
| | α , 9 | 0.3 | 0.03 (1/9) (0-0.3) | San Clemente Farm 2.1 mi 320° MAG | 0.08 (5/12) (0-0.3) | Huntington Beach < LLD | |
| Drinking Water Quarterly Filtrate Composite (pCi/l) | β , 3 | 0.5 | 9.87 (3/3) (6.6-13) | Tri-Cities Wtr. Dist., 8.7 mi. 320° MAG | 12.6 (4/4) (1.6-19) | Huntington Beach 6.6 (1/1) | 0 |

TABLE 4

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|---|---|---|---|---|---|---|---|
| | α , 3 | 0.5 | <LLD | - | - | - | |
| | H-3, 3 | 100 | <LLD | Tri-Cities Wtr. Dist. 8.7 mi. 320° MAG | 50 (1/4) (0-200) | Huntington Beach <LLD | |
| Drinking Water Quarterly Solids Composite (ρCi/l) | β , 3 | 0.1 | 0.7 (3/3) (0.6-0.8) | Tri Cities Wtr. District, 8.7mi 320° MAG | 1.28 (4/4) (0.6-0.17) | Huntington Beach 0.8 (1/1) | |
| | α , 3 | 0.3 | <LLD | Sn Clemente Well | (0-0.20) | <LLD | |
| Ocean Water (ρCi/l) | β ,8 | 0.5 | 1080 (8/8) (830-1380) | SONGS 2&3 Outfall | 1049 (4/4) (880-1380) | Newport Beach 1080 (2/2) (1080-1080) | |
| | Cs-137, 8 | 6 | <LLD | - | - | - | |
| Ocean Water Composite (ρCi/l) | H-3, 4 | 200 | <LLD | Sta. Discharge 0.5mi,215°MAG | 1665 (1/2) (0-3330) | Newport Beach <LLD | 0 |
| Marine Animal Flesh (nCi/kg. dry wt.) | H-3, 12 | 11.0 | 34.8 (12/12) (22-51) | Sta. Discharge 0.5mi,215°MAG | 28.2 (16/16) (9-60) | Newport Beach 27.0 (4/4) (22-34) | 0 |
| | Cs-137, 12 | 0.03 | 0.049 (10/12) (0.01-0.10) | Sta. Discharge 0.5 mi,215°MAG | 0.033 (12/16) (0-0.099) | Newport Beach 0.024 (3/4) (0-0.029) | |

TABL

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|---|---|---|---|---|---|---|---|
| | Co-58, 12 | 0.1 | 0.23 (4/12) (0-2.5) | Sta. Discharge 0.5 mi,215°MAG | 0.475 (6/16) (0-2.5) | Newport Beach < LLD | |
| | Co-60, 12 | 0.2 | 0.067 (3/12) (0-0.71) | Sta. Discharge 0.5 mi,215°MAG | 0.168 (7/16) (0-0.95) | Newport Beach <LLD | |
| | Ag-110m, 12 | 0.4 | 0.91 (8/12) (0-6.8) | Sta. Discharge 0.5 mi,215°MAG | 1.17 (9/16) (0-6.8) | Newport Beach 0.056 (2/4) (0-0.16) | |
| | Cs-134 | 0.005 | 0.0147 (3/12) (0-0.06) | Sta. Discharge 0.5 mi.215°MAG | 0.008 (2/16) (0-0.06) | Newport Beach < LLD | |
| | Ce-144, 12 | 0.001 | < LLD | Sta. Discharge 0.5 mi,215°MAG | 0.014 (5/16) 0-0.21 | Newport Beach < LLD | |
| | Ra-226, 12 | 0.004 | 0.025 (1/12) (0.0.04) | Sta Discharge 0.5 mi, 215°MAG | 0.005 (1/16) (0-0.084) | Newport Beach < LLD | |
| Kelp (pCi/kg dry wt.) | H-3, 4 | 10 | 37.0 (4/4) (27-51) | San Onofre Kelp Bed | 48 (2/2) (27-69) | Newport Beach 51 (1/1) | |
| | Cs-137, 4 | 0.06 | 0.033 (3/4) (0-0.049 | San Mateo Kelp Bed | 0.055 (2/2) (0.049-0.061) | Newport Beach < LLD | |

TABLE 4

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|---|---|---|---|---|---|---|---|
| Ocean Bottom Sediment (pCi/kg dry wt.) | Co-58, 4 | 0.13 | < LLD | - | - | - | |
| | Co-60, 4 | 0.20 | < LLD | - | - | - | |
| | Ag-110m, 4 | 0.07 | <LLD | - | - | - | |
| | I-131, 4 | 0.2 | 0.218 (4/4) (0.10-0.44) | Newport Beach Kelp Bed | 0.29 (2/2) (0.14-0.44) | Newport Beach 0.44 (1/1) | |
| | Cs-137, 5 | 0.07 | 0.078 (3/5) (0-0.23) | 0.5 mi North of SONGS I | 0.135 (2/2) (0.04-0.23) | Newport Beach < LLD | |

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|---|---|---|---|---|---|---|---|
| | Cs-134, 5 | 0.01 | 0.008 (1/5) ( 0-0.04 ) | 0.5 mi South of SONGS I | 0.02 (1/2) (0-0.04) | Newport Beach < LLD | |
| | Co-58, 5 | 0.07 | 0.068 (2/5) (0-0.18) | 0.5 mi North of SONGS I | 0.09 (1/2) (0-0.18) | Newport Beach < LLD | |
| | Co-60, 5 | 0.11 | 0.04 (2/5) (0-0.12) | o.5 mi North of SONGS I | 0.06 (1/2) (0-0.12) | Newport Beach < LLD | |
| | Ag-110m, 5 | 0.01 | 0.006 (1/5) (0-0.03) | 0.5 mi South of SONGS I | 0.015 (1/2) (0-0.03) | Newport Beach < LLD | |
| | Ce-141, 5 | 0.008 | < LLD | 0.5 mi North of SONGS 2 & 3 | 0.0016 (1/2) (0-0.0023) | Newport Beach < LLD | |
| | Ce-144, 5 | 0.02 | < LLD | 0.5 mi North of SONGS 2 & 3 | 0.025 (1/2) (0-0.05) | Newport Beach < LLD | |
| | Ra-226, 5 | 0.04 | 0.476 (5/5) (0.15 -0.80) | 0.5 mi North of SONGS 2 & 3 | 0.80 (1/1) | Newport Beach 0.15 (1/1) | |
| | Th-232, 5 | 0.05 | 0.44 (5/5) (0.14-0.78) | 0.5 mi. North of SONGS 2 &3 | 0.78 (1/1) | Newport Beach 0.14 (1/1) | |
| Soil Sample (nCi/kg. dry wt.) | Cs-137, 5 | 0.02 | <LLD | - | -- | - | 0 |
| | Ra-226, 5 | 0.04 | <LLD | - | - | - | |
| | Th-232, 5 | 0.05 | <LLD | - | - | - | |

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|---|---|---|---|---|---|---|---|
| | Sr-90, 5 | 0.01 | 0.04 (4/5) (0-0.09) | Basilone Road Off-Ramp | 0.09 (1/1) | Huntington Beach 0.04 (1/1) | |
| Rabbit | | | | | | | 0 |
| Thyroid (ρCi/g thyroid) | I-131, 1 | 5.0 | < LLD | - | - | - | |
| Flesh (ρCi/g dry wt.) | Cs-137, 1 | 0.06 | < LLD | - | - | - | |
| | I-131, 1 | 0.05 | < LLD | - | - | - | |
| Femur (ρCi/g Ca) | Sr-89, 1 | 3.0 | < LLD | - | - | - | |
| | Sr-90, 1 | 2.0 | 0.9 (1/1) | < 2 mi East of Station 45° MAG | 1.4 (2/2) (0.9-1.9) | None | |
| | Ca, 1 | 0.2 | 0.36 (1/1) | < 2 mi East of Station 45° MAG | 0.355 (2/2) (0.35-0.36) | None | |

TABLE 5

CORRECTIVE MAINTENANCE OF COMPONENTS DESIGNED TO MINIMIZE THE RELEASE OF TOXIC OR RADIOACTIVE MATERIALS TO THE ENVIRONMENT

| COMPONENT | MALFUNCTION | | EFFECT ON SAFE OPERATION | CORRECTIVE ACTION | PRECAUTION TAKEN TO PROVIDE FOR ENVIRONMENT'S PROTECTION |
|---|---|---|---|---|---|
| | CAUSE | EFFECT | | | |
| Stack Monitor Iodine Pump | Broken Belt | Pump Inoperative | None | Replaced belt. | Observed other ORMS Channels. |
| Stack Monitor Part. Pump | Slipping Pulley | Pump Inoperative | None | Fastened Pump Pulley. | Observed other ORMS Channels. |
| Radwaste Discharge Filter | Fouling | Hi $\Delta P$ | None | Replaced elements 40 times. | Stop discharges. |
| Iodine Monitor | Worn Bearing | Motor tripped | None | Replaced vacuum pump bearings. | Observed other ORMS Channels. |
| ORMS Channel Monitor 1211-1212 | Worn Pump | Motor tripped | None | Replaced pump bearings and valves 4 times. | Observed ORMS Channel 1214 on vent stack. |
| Huntington Beach Air Sampler | Loss of cooling fan | Burned motor and windings | None | Replaced air sampler with new unit. | Observed other ORMS Channels. |
| Radwaste Process Filter | Fouling | Hi $\Delta P$ | None | Replaced elements 124 times. | Stop processing. |
| Area Radiation Monitor in San Clemente | Failed Pump | Inoperative | None | Replaced pump. | Observed other ORMS Channels. |

## DESIGN CHANGES

The following design changes were approved for implementation by the On-Site Review Committee in 1978. Except as noted, the design changes were fully implemented as of the end of calendar 1978. This listing fulfills the reporting requirements of 10 CFR 50.59(b) and Environmental Technical Specification 5.6.1.b. With respect to the latter requirement, none of the 1978 changes resulted in a condition which significantly altered the impact of the Station on the environment as described in the NRC Final Environmental Statement and did not involve a change in the Environmental Technical Specifications incorporated in the San Onofre Unit 1 Provisional Operating License DPR-13.

- - - -

### DESIGN CHANGE 76-14 (Revision 1): RELOCATION OF THE COMPONENT COOLING WATER RADIATION DETECTOR. (In Progress)

The component cooling water system radiation detector is to be moved from its original location in the suction header of the component cooling water pumps to a newly installed liquid-radioactive sample pig due to high background radiation. The new sample pig obtains a representative sample from the component cooling pump minimum recirculation line.

The installation of the channel sample pig and detector in the pump minimum recirculation line provides a continuous survey of component cooling water radioactive material content without disrupting the minimum recirculation function. The pressure boundary associated with this change is safety-related and is to be installed accordingly. The additional delay time associated with the piping run to the new detector location was evaluated to be about four seconds which is considered to be insignificant.

- - - -

### DESIGN CHANGE 77-07 (Amendment No. 1): MODIFICATION OF STANDBY POWER ADDITION SYSTEM PIPING SUPPORTS

This design change added piping supports to the auxiliary skid piping of the standby power addition 4160 volt/6000 KW diesel driven generators. The addition of the supports to the auxiliary skid piping was accomplished to bring the piping systems into conformance with ANSI B 31.1, "Power Piping".

- - - -

DESIGN CHANGE 77-08 (Revision 1 and Amendment No. 1):
REPLACE A CONTROL VALVE IN THE COMPRESSED AIR SYSTEM WITH A MANUALLY OPERATED NORMALLY CLOSED ISOLATION VALVE.

This design change replaced a 1(one) inch control valve which was installed in a 3 inch line between the compressed air system and the portable diesel-powered air compressor, with a manually operated normally closed 3 inch isolation valve. The 3 inch valve was installed to enable the portable air compressor to provide greater back-up capability to the plant compressed air system. No safety related equipment was involved in this design change and postulated failure of the 3 inch valve would not adversely affect plant safety.

- - - -

DESIGN CHANGE 77-10: MANUAL ALIGNMENT SWITCHES IN THE CHARGING PUMP STOP CONTROL CIRCUITS

This change was previously reported as having been approved for implementation in 1977. Subsequently, it was determined that the issues addressed by this change would be considered within the Systematic Evaluation Program. Accordingly, Design Change 77-10 was cancelled in 1978.

- - - -

DESIGN CHANGE 77-16: SITE SECURITY MODIFICATION

This design change describes site security project modifications. In accordance with 10 CFR 2.790 its contents are withheld from public disclosure. For further information refer to letter dated December 19, 1978, entitled "Physical Security Plan for San Onofre Nuclear Generating Station" from Southern California Edison Company to the Nuclear Regulatory Commission, Director of Nuclear Reactor Regulation, Attention R. A. Clark.

- - - -

DESIGN CHANGE 77-17 (Addendum No. 1): THE OVERPRESSURIZATION MITIGATING SYSTEM (OMS)

Design Change 77-17 established the overpressurization mitigating system (OMS) to prevent 10 CFR 50 Appendix G limits from being exceeded and protect the RCS from postulated overpressurization events. Addendum No. 1 completed the OMS installations by replacing the pressure switches used in the actuation of pressurizer power operated relief valves with two pressure transmitters and associated logic. Replacement of the pressure switches with the pressure transmitters provides for reactor coolant system pressure sensing while protecting against postulated single failure of sensing equipment. In addition to this change, Addendum 1 included modifications to the OMS control room annunciators to improve annunciation effectiveness.

These modifications resulted in overall improvement of the OMS and did not adversely affect plant safety.

- - - -

DESIGN CHANGE 77-20: ADDITION OF STRAINERS IN THE FLASH EVAPORATOR DISTILLATE LINES

This design change provided for the following:

1. A wye-strainer in both flash evaporator distillate lines;

2. A valve for blowdown to existing drain for each strainer;

3. Necessary valves and piping for each strainer.

This change was made to preclude carry-over from the flash evaporators, in the form of products, from entering the condensate system.
No safety related equipment was involved in the modification. Failure of the proposed strainers would not adversely affect the safety of the plant.

- - - -

DESIGN CHANGE 77-21: INSTALLATION OF AIR CONDITIONING IN DC SWITCHGEAR ROOM.

A five ton air conditioner was installed in the D/C Switchgear Room to lengthen the service life of inverter components.

The complete failure of this air conditioner would not degrade performance of the inverters or chargers. There are no direct connections between the air conditioner and structures of safety related components in the DC Switchgear Room.

- - -

DESIGN CHANGE 78-02: CONTROL ROOM EMERGENCY AIR TREATMENT SYSTEM

The normal air intake damper to the Control Room was modified to allow manual closure from the Watch Engineer's office. The change was accomplished by circuit revisions in the control room emergency air treatment system. Failure of the electrical contacts utilized for this modification would cause the dampers to go to or remain in the safety related position. Also, in the event of a radiological emergency requiring the control room emergency air treatment system, manual control of the normal dampers would be overridden and the dampers would close automatically to their safety related positions.

- - - -

DESIGN CHANGE 78-04: MODIFICATIONS TO THE REGION 9 FUEL ASSEMBLIES

The modifications of this design change consist of 29 Engineering Change Notices (ECN's) processed by Westinghouse concerning Region 9 fuel assemblies loaded into the reactor for Cycle 7. The ECN's were implemented to facilitate the design and manufacture of Region 9 fuel assemblies by Westinghouse. They included changes associated with drawing notations, manufacturing specifications, engineering tolerances and material specifications. The ECN's did not result in any changes to thermal-hydraulic, nuclear design characteristics or reactor structural integrity.

- - - -

DESIGN CHANGE 78-06: RE-DESIGN OF THE UPPER INTERNALS LIFTING RIG SLING ASSEMBLY

The original upper internals lifting rig sling assembly which used cables for the lifting members was replaced by a new assembly made of solid rods and thick walled pipes. The new assembly is less likely to experience unequal elongation of the lifting members which was suspected of causing binding during telescoping of the upper internal components following refueling operations. The new assembly was designed and fabricated to meet or exceed the lifting capabilities of the original assembly without adversely affecting the safety functions of the lifting rig.

- - - -

DESIGN CHANGE 78-07: MANIPULATOR CRANE MODIFICATIONS

The manipulator crane was upgraded by the performance of the following modifications:

1. Modified fuel assembly gripper to provide pressurized air supply to gripper mechanism in addition to the existing spring latch mechanism. This modification enables more expeditious handling of fuel assemblies while providing more positive engagement by the gripper. As the existing latch mechanism is unchanged, loss of the air supply would not result in loss of gripper engagement.

2. Installed new circuitry to prevent hoist up-travel with gripper disengaged and load cell weight over 1200 pounds. This change reduces the likelihood of fuel handling problems arising from personnel error and thereby enhances plant safety.

3. Installed a re-designed gripper which relocated the finger locking plate to avoid possible interferences.

These modifications result in improved performance of the manipulator crane, and have no adverse impact on plant safety.

- - - -

DESIGN CHANGE 78-08: WATER TRAP ADDITION TO HYDRAULIC VALVE AIR SYSTEM

This design change added a drain trap to the station service air supply to four safety injection valve actuators to prevent water from entering the actuator pneumatic devices. The valves utilize self-contained accumulators to actuate to the safety related position. Service air is used to move the valves to their normal operating (non-safety related) position. Loss of service air due to a drain trap failure would only result in the loss of ability to move the valves from their safety related to their normal operating positions.

- - - -

DESIGN CHANGE 78-09: IN-CORE INSTRUMENTATION PORT COLUMN MODIFICATION

To confine a small reactor coolant system leak through an in-core instrumentation seal, a stainless steel cap was welded to the in-core instrumentation port flange. This modification was temporary until a permanent repair was made during the October 1978 refueling outage. The piping installation was designed to meet or exceed the design rating for the reactor pressure vessel. ASME Code approved materials were used. Non-destructive testing was performed on all materials and welds.

Installation of the cap on the instrumentation port resulted in the unavailability of certain non-safety related in-core instrumentation. This condition was determined to be acceptable based on the number and geometry of the remaining similar instrumentation.

- - - -

DESIGN CHANGE 78-10: MODIFICATION TO CONTROL CIRCUITS OF MOTOR OPERATED VALVES IN THE SAFETY INJECTION LINES

To prevent possible valve stem distortion due to excessive applied torque, limit switch contacts were connected in series with a closing circuit torque switch for three motor operated valves in safety injection lines. The valves are required to open upon receipt of a safety injection signal. This modification does not affect the opening circuitry of these valves and cannot result in the inadvertent closure of the valves during a postulated accident.

- - - -

DESIGN CHANGE 78-11 (Revision 1): CONTINUOUS AXIAL OFFSET MONITORING SYSTEM (CAOMS) MODIFICATION

This design change installed a new axial offset calculating circuit to display true axial offset rather than delta flux. This modification simplified calibration procedures and resulted in the direct display of the parameter which must be monitored in accordance with Technical Specification requirements. The CAOMS does not perform a safety related function nor is it employed in systems required for safe shutdown of the plant.

- - - -

DESIGN CHANGE 78-12: YARD DRAIN AND REHEATER SUMP PUMP CONTROL MODIFICATIONS (In progress)

In order to control and contain oil spills, this design change will add oil detection devices to the yard drain system sump and reheater pit sump. The sumps and associated equipment are not safety related.

- - - -

DESIGN CHANGE 78-14: SUBSTITUTE STEM PACKING FOR FEEDWATER PUMP HYDRAULIC ACTUATED VALVES.

This design change allowed substitution of Grafoil ribbon packing for Crane 177A1 preformed split ring packing in the feedwater pump hydraulic actuated valves. This change was accomplished to facilitate valve maintenance. The valve manufacturer provided written concurrence for use of the substitute packing material. Following valve maintenance involving packing installation, the valves will be tested and the packing adjusted as necessary to maintain proper operating characteristics.

- - - -

DESIGN CHANGE 78-15: MODIFICATION TO THE UPPER INTERNALS TELESCOPING INSTRUMENTATION SUPPORT COLUMNS.

This design change consisted of the removal of twenty radial support balls in each of the four telescoping instrumentation support columns on the reactor upper internals assembly. This modification was accomplished to eliminate the possibility of binding when re-installing the instrument plate in the reactor pressure vessel. A study was performed which verified that the stability of the columns and the fatigue life of critical areas without the balls was acceptable.

- - - -

DESIGN CHANGE 78-16: MODIFICATIONS RESULTING FROM SINGLE FAILURE ANALYSIS - REDUNDANT SIS BLOCK SWITCHES.

This design change proposed the installation of train-independent SIS override/block switches to prevent the unacceptable potential consequences of certain single failures. This modification provided redundancy such that one block switch could sustain an electrical or mechanical failure or operator error and not prevent SIAS from responding to an emergency signal. Plant safety was enhanced as a result of this modification.

- - - -

DESIGN CHANGE 78-17: MODIFICATIONS RESULTING FROM SINGLE FAILURE ANALYSIS - "LOSS OF OFFSITE POWER" UV RELAYS.

To prevent the unacceptable potential consequences of certain single failures, this design change provided independent and redundant "loss of offsite power" input signals by the addition of a second undervoltage relay in each 4160V bus. Plant safety was enjanced as a result of this modification.

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DESIGN CHANGE 78-18: ADDITION OF THE TEMPORARY SHOO-FLY LINE.

This design change proposed the temporary installation of a shoo-fly line and its associated equipment between the Unit 1 switchyard and the Unit 2 reserve auxiliary transformer to provide power for startup and testing of the San Onofre Nuclear Generating Station Units 2 & 3. All components required for this design change are classified non-safety related and there is no adverse impact on plant safety as a result of this modification.

- - - -

DESIGN CHANGE 78-19: CONTROL ROOM EMERGENCY AIR TREATMENT SYSTEM CARBON CELL MODIFICATION.

In order to eliminate a potential leakage problem this design change replaced a neoprene rubber gasket on the front face of the carbon cell in the Control Room Emergency Air Treatment System with a new knife edge seal. Following installation of the new seal the system was tested and certified satisfactory as required by Technical Specification 4.11.

- - - -

DESIGN CHANGE 78-20: UNITS 2 & 3 STARTUP WASTE WATER DISCHARGE SYSTEM (TEMPORARY) INTO UNIT 1 CIRCULATING WATER OUTFALL SYSTEM.

This design change consisted of coring a penetration in the Unit 1 circulating water outfall tsunami structure along with piping installation to allow discharging Units 2 & 3 startup waste water. Except for the concrete coring effects on structural integrity of the existing structure, all aspects of the proposed temporary waste discharge system were non-safety related. A structural analysis showed all effects on structural integrity to be acceptable. In addition, the environmental effects associated with this change were found to be acceptable.

- - - -

DESIGN CHANGE 78-21: INSTALLATION OF TEST PLATE-RACKS IN REACTOR CAVITY.

Two test-plate racks were temporarily installed in the lower reactor cavity during the October refueling outage in connection with an effort to develop a new cavity cleaning/decontamination process/system to reduce cavity decontamination time subsequent to refueling. The structural design of the racks and attachments was found to be acceptable. Adequate clearance was found to exist between all fuel transport equipment and the racks. The racks and test plates were removed for analysis at the conclusion of the refueling outage.

- - - -

DESIGN CHANGE 78-23: MODIFICATION OF CONTAINMENT SPRAY ACTUATION SYSTEM (CSAS) INVERTER STATIC BYPASS SWITCH.

This design change deleted the function of the Silicon Controlled Rectifiers which provided uninterrupted power transfer upon sensing undervoltage at the primary inverter. This modification provides a momentary (less than 100 millisecond) power interruption to prevent the temporary loss of both inverters due to an internal fault in the primary inverter which would have been exposed to the secondary inverter via the original make-before-break transfer operation. The unavailability of one of the two redundant logic units for a period of less than 100 milliseconds during the revised break-before-make transfer was determined to be insignificant. This modification increases the reliability of the CSAS by reducing the probability of a loss of power to the system.

- - - -

DESIGN CHANGE 78-25: FLASH EVAPORATOR SERVICE WATER SUPPLY.

This design change connected the service water supply line to the inlet side of the flash evaporator feed pumps to allow the flexibility of using service water as well as sea water. All components required for this design change are classified non-safety related and there was no adverse input on plant safety resulting from this change.

- - - -

DESIGN CHANGE 78-26: ADDITION OF STRUCTURAL SUPPORTS TO CONTROL ROOM BOARDS.

This design change provided additional structural support to the control room board panels by welding angles at the base of the structural face plate (front side) of the panels. This modification will enable the control boards to withstand the effects of a 0.67g Housner horizontal ground acceleration spectra. The work for this modification was performed in accordance with quality assurance requirements for safety related installations.

- - - -

DESIGN CHANGE 78-28 (Revision 1): FIRE PROTECTION PLANT MODIFICATIONS.

The following changes were instituted by this design change in order to maintain the plant in a safe shutdown condition under postulated fire conditions.

1) Alternate source of power to the 480V switchgear No. 2.
2) D.C. Thermal Barrier Cooling Pump wiring modifications.
3) Additional power provisions for the pressurizer heaters.
4) Addition of local level instrumentation for the Volume Control Tank.
5) Concrete curb installation around the perimeter of the lube oil reservoir and conditioner area.
6) Fire door installation.
7) Drainage modifications under the turbine deck.

An interfacing design criteria was used such that failure of any structure, system or component required for this modification would not a) degrade the operation of the existing safety-related systems, b) adversely affect plant safety, and c) introduce potential common mode failures.

- - - -

DESIGN CHANGE 78-29: ADDITION OF CIRCULATING WATER INTAKE SAMPLING SYSTEM.

This design change provided for a circulating water intake sampling system in order to comply with Environmental Technical Specification 4.3. That Technical Specification requires that circulating water conduit sampling studies be performed to establish levels of plankton entrainment within the SONGS-1 circulating water intake conduit. The change consisted of an access port installed in an intake tunnel manhole cover about 500 feet from the intake structure. This access port allows periodic installation of a sample nozzle with the circulating water pumps operating. This change was found to have no adverse impact on plant safety.

- - - -

DESIGN CHANGE 78-31: INSTALLATION OF REACTOR CAVITY FILTRATION SYSTEM.

A skid mounted reactor cavity filtration system was installed to improve reactor cavity water clarity and underwater visibility during refuelings. The system was located and installed in such a manner as to have no adverse impact on plant safety.

- - - -

DESIGN CHANGE 78-32 (Revision 3): MODIFICATION TO THE OPERATORS ON TWO CONTAINMENT SPRAY ACTUATION SYSTEM VALVES.

Modifications were made to tubing, clamps, supports, and retaining devices on two hydraulic valve actuators installed in the containment spray actuation system (CSAS). Potential failure modes and operability problems were identified during seismic testing of a similar actuator by a testing laboratory for another utility. It was concluded that the test conditions resulted in excessive loads being imposed on the actuators which are not representative of loads expected at San Onofre Unit 1 in response to a design basis seismic event (DBE). However, despite this conclusion, the same modifications which were successfully employed to resolve the problems identified by the testing laboratory were incorporated in the two similar actuators which are required to function to perform their safety related function following a DBE.

- - - -

DESIGN CHANGE 78-33: FIRE PROTECTION MODIFICATION TO THE INSTRUMENT AIR HEADER

The following modifications were implemented:

1) Installed a local air supply (accumulator) to the south salt water cooling pump discharge valve.
2) Installed new tubing connection for steam supply valve for the Auxiliary Feed Water Pump.
3) Installed a new tubing connection for the air supply to the Auxiliary Control Panel.
4) Rerouted air tubing from the Auxiliary Panel to the Steam Dump Valves.
5) Installed a new source of air for the Steam Dump Valves.

These changes provide an alternate supply of compressed air to equipment required to maintain the plant in safe hot and cold shutdown conditions. These modifications were found to have no adverse impact on plant safety.

- - - -

79-RD-9

JANUARY–DECEMBER 1978

RETURN TO REACTOR DOCKET FILES

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SOUTHERN CALIFORNIA EDISON COMPANY

# ANNUAL OPERATING REPORT

# SAN ONOFRE NUCLEAR GENERATING STATION

## VOLUME I

## OCEANOGRAPHIC DATA – 1978

ENVIRONMENTAL TECHNICAL SPECIFICATIONS-UNIT 1

PREOPERATIONAL MONITORING PROGRAM-UNITS 2 AND 3

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ENVIRONMENTAL TECHNICAL SPECIFICATIONS-UNIT 1

PREOPERATIONAL MONITORING PROGRAM-UNITS 2 AND 3

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CONTENTS

PROJECT STAFF ..... i

TABLE OF CONTENTS..... iii

LIST OF FIGURES..... ix

LIST OF TABLES..... xi

LIST OF APPENDICES ..... xii

CHAPTER 1. INTRODUCTION ..... 1-1

A. PURPOSE OF THE STUDY..... 1-1
B. LOCATION OF THE STUDY ..... 1-1
C. BACKGROUND INFORMATION ..... 1-4
D. SCOPE AND ORGANIZATION OF THE ANNUAL OPERATING REPORT ..... 1-4
E. GENERATING STATION OPERATION ..... 1-6

CHAPTER 2. METHODS ..... 2-1

A. INTRODUCTION ..... 2-1
B. WATER QUALITY PROFILES ..... 2-1
Instrumentation ..... 2-1
Survey Procedures ..... 2-1
Data Reduction ..... 2-2
C. TEMPERATURE MEASUREMENTS ..... 2-2
Temperature Profiles ..... 2-2
Instrumentation ..... 2-3
Data Reduction ..... 2-3
Aerial Infrared Measurements ..... 2-3
Instrumentation ..... 2-3
Survey Procedures ..... 2-4
Data Reduction ..... 2-4
Thermal Dispersion ..... 2-4
Instrumentation ..... 2-4
Survey Procedures ..... 2-5
Data Reduction ..... 2-5
Shoreline Temperature Measurements ..... 2-5
Instrumentation ..... 2-5
Survey Procedures ..... 2-5
Data Reduction ..... 2-5
Continuous Temperature Monitoring ..... 2-6
Instrumentation ..... 2-6

Survey Procedures ..... 2-7
Data Reduction ..... 2-7
Temperature Comparison ..... 2-8
D. TURBIDITY MEASUREMENTS ..... 2-8
Transmittance Profiles ..... 2-9
Instrumentation ..... 2-9
Data Reduction ..... 2-9
Secchi Disc Monitoring ..... 2-9
Instrumentation ..... 2-9
Survey Procedures ..... 2-10
Data Reduction ..... 2-10
Aerial Photography ..... 2-10
Instrumentation ..... 2-10
Survey Procedures ..... 2-10
Data Reduction ..... 2-10
Settleable and Suspended Solids ..... 2-10
Sample Collection and Laboratory Analyses ..... 2-10
Data Reduction ..... 2-11
E. DISSOLVED OXYGEN AND HYDROGEN ION CONCENTRATION .... 2-11
Instrumentation ..... 2-11
Survey Procedures ..... 2-11
Data Reduction ..... 2-11
F. HEAVY METALS ..... 2-12
Sample Collection and Laboratory Analyses ..... 2-12
Data Reduction ..... 2-12

CHAPTER 3. TEMPERATURE ..... 3-1

A. INTRODUCTION ..... 3-1
B. BACKGROUND INFORMATION ..... 3-2
C. RESULTS ..... 3-5
JANUARY SURVEY ..... 3-7
Profile Measurements ..... 3-7
Vertical Cross-Sections Based on Profile Measurements ..... 3-7
Horizontal Contours Based on Profile Measurements .. 3-8
Surface ..... 3-8
Mid-Depth (4m) ..... 3-8
Bottom ..... 3-8
Aerial Inrared Thermal Mapping ..... 3-8
MARCH SURVEY ..... 3-9
Profile Measurements ..... 3-9
Vertical Cross-Sections Based on Profile Measurements ..... 3-9
Horizontal Contours Based on Profile Measurements .. 3-10
Surface ..... 3-10
Mid-depth (4m) ..... 3-10
Bottom ..... 3-10
Aerial Intrared Thermal Mapping ..... 3-10
MAY SURVEY ..... 3-11
Profile Measurements - SONGS 1 ..... 3-11
Vertical Sections Based on Profile Measurements .... 3-12

Horizontal Contours Based on Profile Measurements ... 3-12
Surface ..... 3-12
Mid-depth (4m) ..... 3-12
Bottom ..... 3-13
Aerial Infrared Thermal Mapping ..... 3-13
Profile Measurements - SONGS 2 and 3 ..... 3-13
Vertical Cross-Sections Based on Profile Measurements..... 3-14
Horizontal Contours Based on Profile Measurements ... 3-14
Surface ..... 3-14
Mid-depth (4m) ..... 3-15
Bottom ..... 3-15
JULY SURVEY ..... 3-15
Profile Measurements - SONGS 1 ..... 3-15
Vertical Cross-Sections Based on Profile Measurements ..... 3-16
Horizontal Contours Based on Profile Measurements ... 3-16
Surface ..... 3-17
Mid-depth (4m)..... 3-17
Bottom ..... 3-17
Aerial Infrared Thermal Mapping ..... 3-18
Profile Measurements - SONGS 2 and 3 ..... 3-18
Vertical Cross-Sections Based on Profile Measurements ..... 3-18
Horizontal Contours Based on Profile Measurements ... 3-19
Surface ..... 3-19
Mid-depth (4m) ..... 3-19
Bottom ..... 3-19
SEPTEMBER SURVEY ..... 3-20
Profile Measurements - SONGS 1 ..... 3-20
Vertical Cross-Sections Based on Profile Measurements ..... 3-21
Horizontal Contours Based on Profile Measurements ... 3-21
Surface ..... 3-21
Mid-depth (4m) ..... 3-21
Bottom ..... 3-22
Aerial Infrared Thermal Mapping ..... 3-22
Profile Measurements - SONGS 2 and 3 ..... 3-23
Vertical Cross-Sections Based on Profile Measurements ..... 3-23
Horizontal Contours Based on Profile Measurements ... 3-23
Surface ..... 3-23
Mid-depth (4m) ..... 3-24
Bottom ..... 3-24
NOVEMBER SURVEY ..... 3-24
Profile Measurements - SONGS 1 ..... 3-24
Vertical Cross-Sections Based on Profile Measurements ..... 3-25
Horizontal Contours Based on Profile Measurements ... 3-25
Surface ..... 3-26
Mid-depth (4m) ..... 3-26
Bottom ..... 3-26
Aerial Infrared Thermal Mapping ..... 3-26
Profile Measurements - SONGS 2 and 3 ..... 3-27
Vertical Cross-Sections Based on Profile Measurements ..... 3-27

Horizontal Contours Based on Profile Measurements ... 3-28
Surface ..... 3-28
Mid-depth (4m) ..... 3-28
Bottom ..... 3-28

CHAPTER 4. CONTINUOUS TEMPERATURE ..... 4-1

A. INTRODUCTION ..... 4-1
B. BACKGROUND INFORMATION ..... 4-1
C. RESULTS ..... 4-2
Unit 1 Operational Stations (C2S and C22S) ..... 4-3
Units 2 and 3 Preoperational Stations (F2S) ..... 4-5

CHAPTER 5. COMPARISON OF INTAKE AND DISCHARGE TEMPERATURES WITH REFERENCE AMBIENT TEMPERATURE ... 5-1

A. INTRODUCTION ..... 5-1
B. BACKGROUND INFORMATION ..... 5-1
C. RESULTS ..... 5-3
Intake, Discharge, and Ocean Ambient Temperatures ..... 5-3
Discharge and Ocean Surface Ambient Temperature Comparisons ..... 5-5
Intake and Ocean Ambient Temperature Comparisons ..... 5-5

CHAPTER 6. TURBIDITY ..... 6-1

A. INTRODUCTION ..... 6-1
B. BACKGROUND INFORMATION ..... 6-1
C. RESULTS ..... 6-2
JANUARY SURVEY ..... 6-2
Profile Measurements ..... 6-2
Vertical Cross-Section Based on Profile Measurements ..... 6-3
Horizontal Contours Based on Profile Measurements . 6-3
Secchi Disc Measurements ..... 6-3
MARCH SURVEY ..... 6-3
Profile Measurements ..... 6-3
Vertical Cross-Section Based on Profile Measurements ..... 6-3
Horizontal Contours Based on Profile Measurements . 6-3
Secchi Disc Measurements ..... 6-4
Aerial Photographs ..... 6-4
MAY SURVEY ..... 6-4
Profile Measurements ..... 6-4
Vertical Cross-Section Based on Profile Measurements ..... 6-5
Horizontal Contours Based on Profile Measurements . 6-6
Secchi Disc Measurements ..... 6-6
Aerial Photographs ..... 6-7
JULY SURVEY ..... 6-7
Profile Measurements ..... 6-7
Vertical Cross-Section Based on Profile Measurements ..... 6-8
Horizontal Contours Based on Profile Measurements . 6-8
Secchi Disc Measurements ..... 6-9

Settleable and Suspended Solids ..... 6-10
Aerial Photographs ..... 6-11
SEPTEMBER SURVEY ..... 6-12
Profile Measurements ..... 6-12
Vertical Cross-Section Based on Profile Measurements ..... 6-13
Horizontal Contours Based on Profile Measurements . 6-13
Secchi Disc Measurements ..... 6-14
Settleable and Suspended Solids ..... 6-15
Aerial Photography ..... 6-16
NOVEMBER SURVEY ..... 6-16
Profile Measurements ..... 6-16
Vertical Cross-Section Based on Profile Measurements ..... 6-17
Horizontal Contours Based on Profile Measurements . 6-18
Secchi Disc Measurements ..... 6-18
Settleable and Suspended Solids ..... 6-19
Aerial Photography ..... 6-19

CHAPTER 7. HEAVY METALS ..... 7-1

A. INTRODUCTION ..... 7-1
B. BACKGROUND INFORMATION ..... 7-1
C. RESULTS ..... 7-2
Copper ..... 7-2
Chromium ..... 7-2
Nickel ..... 7-5
Iron ..... 7-5
Titanium ..... 7-6

CHAPTER 8. DISSOLVED OXYGEN AND HYDROGEN ION CONCENTRATION ..... 8-1

A. INTRODUCTION ..... 8-1
B. BACKGROUND INFORMATION ..... 8-1
C. RESULTS ..... 8-1
Dissolved Oxygen ..... 8-1
Hydrogen Ion Concentration (pH) ..... 8-3

## LIST OF FIGURES


| Figure | | Page number |
|---|---|---|
| Figure 1-1 | SONGS Study Area ..... | 1-2 |
| Figure 1-2 | Environmental Surveillance Zones and Physical and Chemical Station Locations ..... | 1-3 |
| Figure 1-3 | Location and Identification of Sampling Stations ..... | 1-5 |
| Figure 1-4 | SONGS 1 Operating Characteristics During 1978 ..... | 1-7 |
| Figure 4-1 | Daily Variation in Surface, Mid-depth, and Bottom Temperatures at Station C22S in January and July, 1978 ..... | 4-6 |

LIST OF TABLES


| Table number | | Page number |
|---|---|---|
| Table 1-1 | Schedule of Work (Survey Date) for ETS Physical-Chemical Oceanographic Monitoring Conducted in 1978..... | 1-6 |
| Table 3-1 | Shoreline Temperatures ($^{o}C$) During 1978 ..... | |
| Table 4-1 | Monthly Mean and Standard Deviation of Surface, Mid-depth, and Bottom Temperatures at Station C2S, C22S and F2S ($^{o}C$)..... | 4-2 |
| Table 5-1 | Comparison of Monthly Mean and Standard Deviation of Intake, Discharge, and Surface and Mid-depth Ambient Temperatures($^{o}C$) ..... | 5-3 |
| Table 5-2 | Percent of Time During Each Month That Intake and Surface and Mid-depth Ambient Temperatures Differed by More or Less Than 1$^{o}C$..... | 5-6 |
| Table 6-1 | Settleable and Suspended Solids Data from Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations During 1978 ..... | |
| Table 7-1 | Heavy Metal Concentrations in the Water Column During 1978 ..... | 7-3 |
| Table 7-2 | Heavy Metal Concentrations in the Sediments During 1978 ..... | 7-4 |
| Table 8-1 | Surface Dissolved Oxygen, from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations During 1978 ..... | 8-2 |
| Table 8-2 | Surface Dissolved Oxygen Percent Saturation, from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations During 1978 ..... | 8-2 |
| Table 8-3 | Surface Hydrogen Ion Concentrations (pH) from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations During 1978 ..... | 8-3 |

## APPENDICES


Page number

APPENDIX A LITERATURE CITED
Literature Cited ..... A-1

APPENDIX B TEMPERATURE DATA
Temperature Profiles ..... B-1
Vertical Isometric Cross-sections of Temperature. B-27
Horizontal Contour Charts of Surface, 4m, and Bottom Temperatures from Profile Measurements.. B-35
Surface Temperature Contours and Extents of 1 and 4 F Elevated Temperature Fields ..... B-55
Surface Temperatures and Times from Profile Measurements ..... B-67
Surface Temperature from Infrared Radiometer Measurements ..... B-75

APPENDIX C CONTINUOUS TEMPERATURE GRAPHS
Continuous Temperature Graphs ..... C-1

APPENDIX D INTAKE, DISCHARGE, AND OCEAN AMBIENT TEMPERATURE COMPARISONS
Comparison Graphs of Intake, Discharge, and Ambient Surface Temperatures ..... D-1

APPENDIX E TURBIDITY DATA
Light Transmittance Profiles ..... E-1
Vertical Isometric Cross-sections of Light Transmittance ..... E-27
Horizontal Contour Charts of Surface and 4m Percent Light Transmittance ..... E-35
Horizontal Contour Charts of Secchi Disc Values.. E-49
Surface and Mid-depth Suspended Solids Concentration Contours ..... E-57
Aerial Photographs ..... E-65

# CHAPTER 1

# INTRODUCTION

## A. PURPOSE OF THE STUDY

This volume of the Annual Operating Report presents the results of physical-chemical oceanographic studies conducted during 1978 in the vicinity of San Onofre Nuclear Generating Station (SONGS). The purpose of the 1978 oceanographic study is two-fold. The basic study is a portion of a comprehensive environmental surveillance program established by the Nuclear Regulatory Commission (NRC) for Unit 1 (SONGS 1) in the Environmental Technical Specifications (ETS), Docket No. 50-206. This part of the ongoing physical-chemical oceanographic study for SONGS 1 is being conducted in compliance with Section 3.1.1. and 4.1. of ETS, which pertains to environmental surveillance of nonradiological, abiotic receiving water characteristics. The scope of work for this study includes monitoring receiv-inv water temperature, turbidity, heavy metals (water column and sediment), dissolved oxygen, and pH to determine to what extent SONGS 1 may affect these receiving water characteristics.

The purpose of the second portion of the 1978 oceanographic study is to begin compiling a preoperational data base prior to the discharge of cooling waters from SONGS Units 2 and 3. The pre-operational Monitoring Program for SONGS 2 and 3 was submitted to the Nuclear Regulatory Commission by Southern California Edison Company and approved by the NRC on July 6, 1978. The scope of work for this portion of the study includes monitoring water temperature, turbidity, heavy metals, dissolved oxygen, and pH in the predicted zone of influence of Units 2 and 3 and in control zones.

This study also satisfies the California Regional Water Quality Control Board, San Diego Region (CRWQCB, SDR) oceanographic monitoring requirements for SONGS 1 as established on June 14, 1976 in Order No. 76-11 (NPDES Permit No. CA0001228).

## B. LOCATION OF THE STUDY AREA

San Onofre Nuclear Generating Station is located on the California coastline at 33°22.5'N and 117°32.5'W between the cities of San Clemente and Oceanside (Figure 1-1). The generating station site is adjacent to the United States Marine Corps Base at Camp Pendleton, and is bounded by San Onofre State Beach to the north and south. The study area extends approximately 6.4 km (4 miles) up-coast, 11.5 km (7 miles) downcoast and 4 km (2 miles) offshore of the generating station site. The study area has been divided into 15 environmental surveillance zones (Figure 1-2). The location of physical and chemical oceanographic sampling stations located within these zones is shown on Figure 1-2.

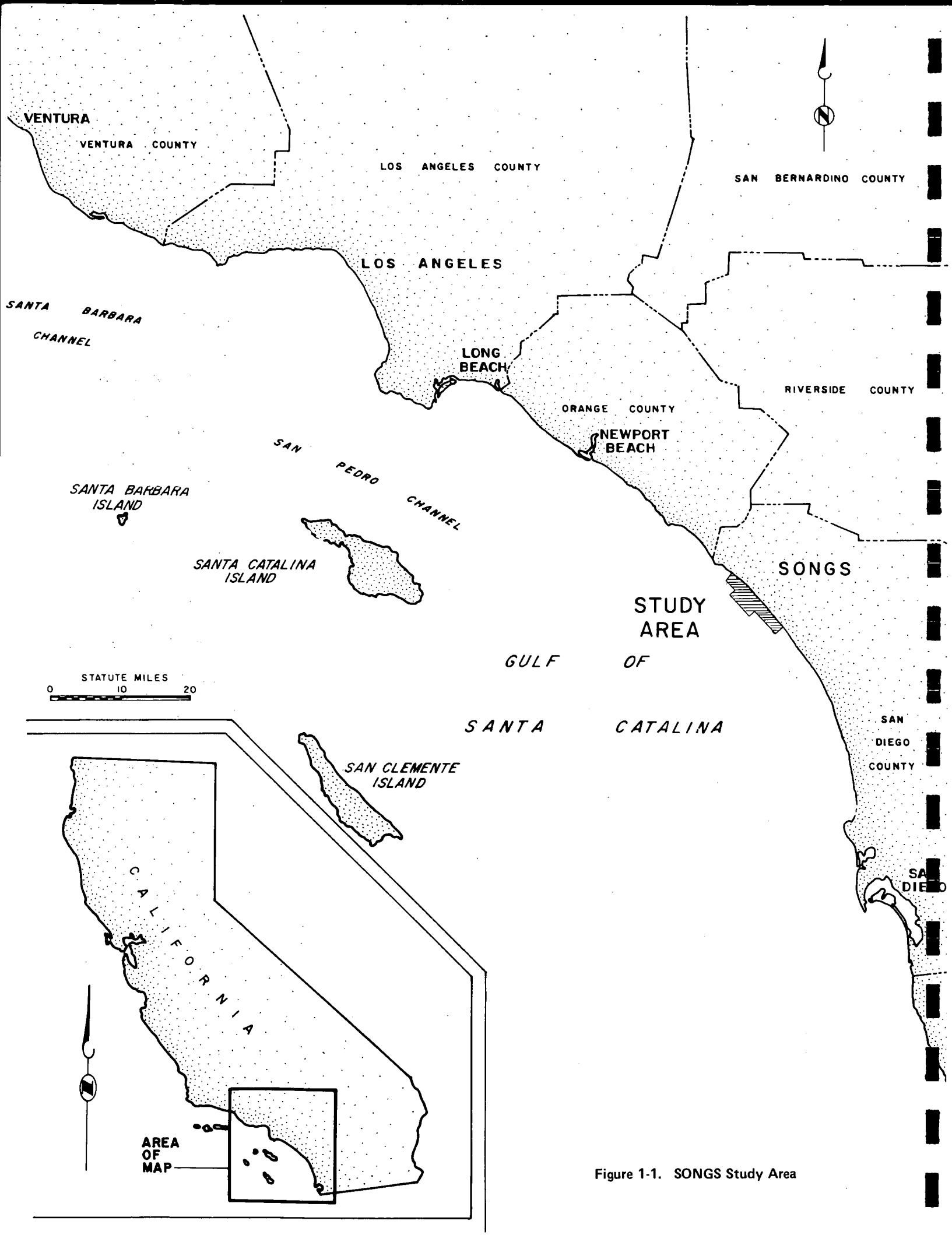



Figure 1-1. SONGS Study Area

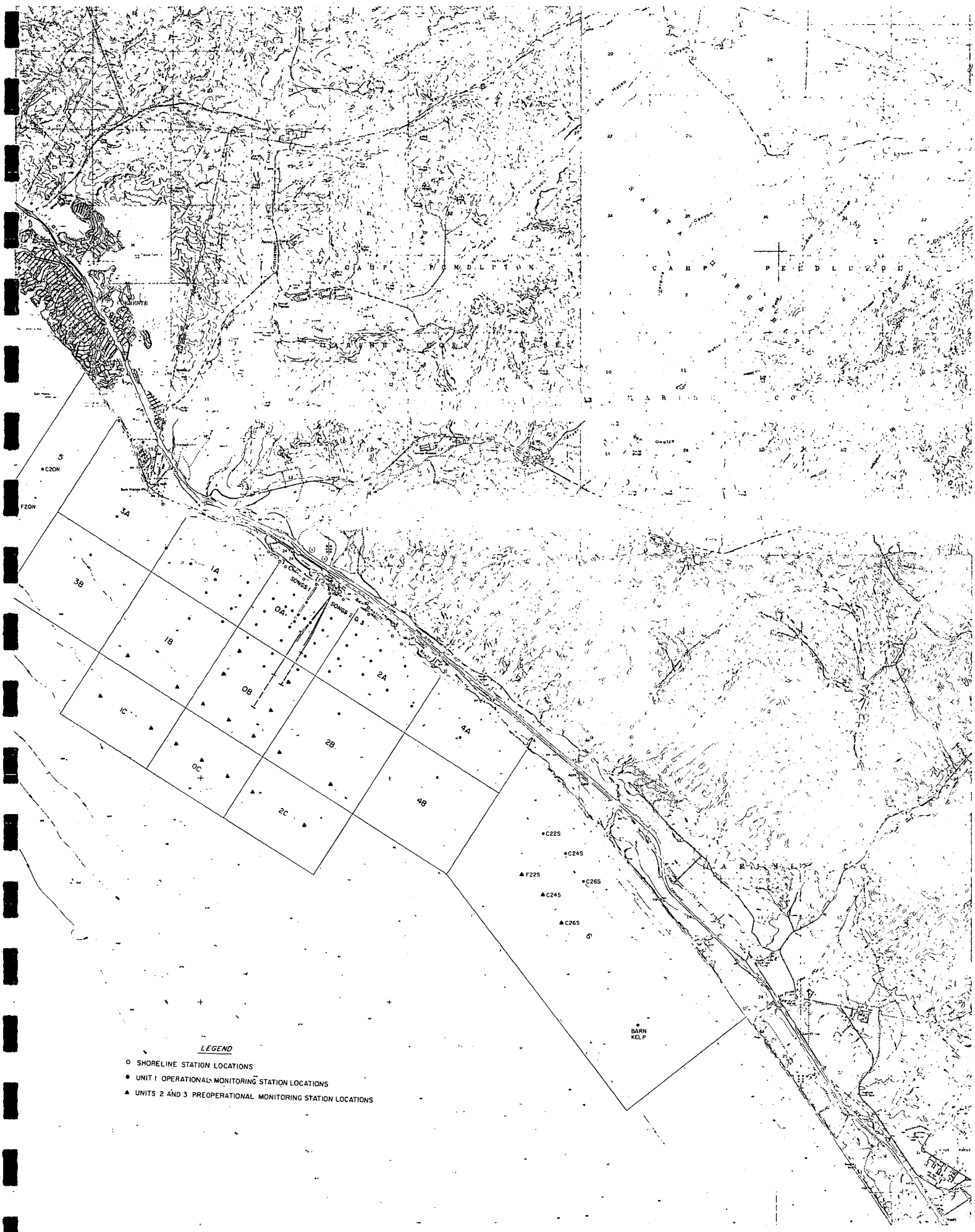



**Figure 1-2. Environmental Surveillance Zones and Physical and Chemical Station Locations**

Figure 1-3 presents the location and identification of sampling stations used in this study. Many of these stations have been used for physical and chemical oceanographic measurements at San Onofre for the past fourteen years as part of the monitoring program for SONGS 1. Additional stations have been included as part of the expanded monitoring program for surveillance of SONGS 2 and 3.

Sampling stations are located on a grid pattern which has the Unit 1 intake structure as an origin. Station lines which are approximately parallel to shore are 1000 ft (305 m) apart and are labeled with letters A through M in an offshore direction. The station line passing over the intake structure is known as the C-line. Station lines perpendicular to shore are at 2000 ft (610 m) intervals upcoast and downcoast of the 0-line of stations. The 0-line extends offshore of the generating station along the Unit 1 intake and discharge lines. Most station designations are a three or four digit alphanumeric code, such as C14N. The first letter of the code indicates which station line parallel to shore the statin is on, and the number and last letter indicate the distance in thousands of feet north or south of the intake/discharge lines. Therefore, Station C14N is located along the C-line of stations 14,000 feet upcoast of the discharge. This type of station designation gives an indication of station location without having to constantly look at the station location map. The location of two stations from one another is also indicated by this type of station designation. For example, Station F6S is located 4000 feet downcoast and 3000 feet offshore of Station C2S. A good understanding of the station designation system will assist the reader in understanding results of this study.

## C. BACKGROUND INFORMATION

Physical oceanographic and marine biological monitoring studies have been conducted for the CRWQCB, SDR in the San Onofre vicinity since 1963. The present ETS physical-chemical oceanographic monotoring program for SONGS 1 began in 1975. Methods and results of the oceanographic and biological monitoring program during 1975 have been presented to NRC in two Semiannual Operating Reports (LAS 1975 and LAS 1976a) and one Annual Analysis Report (LAS 1976b). Reports are now submitted annually, rather than semiannually. The 1976 Environmental Technical Specifications Annual Operating Report was submitted in 4 volumes. Volume I contains oceanographic data summary (BC, 1977a), Volume II contains biological data summary (LCMR, 1977a), Volume III contains analysis of the oceanographic data (BC, 1977b), and Volume IV contains the biological data analysis (LCMR, 1977b). The 1977 Annual Operating Report was submitted in 3 volumes. Volume I contains oceanographic data summary and analysis (BC, 1978), and Volumes II and III contain biological data summary and analysis, respectively (LCMR, 1978a,b).

## D. SCOPE AND ORGANIZATION OF THE ANNUAL OPERATING REPORT

This volume of the Annual Operating Report for 1978 presents results of physical-chemical oceanographic portions of the ETS monitoring at San Onofre. Volume II presents data from the biological

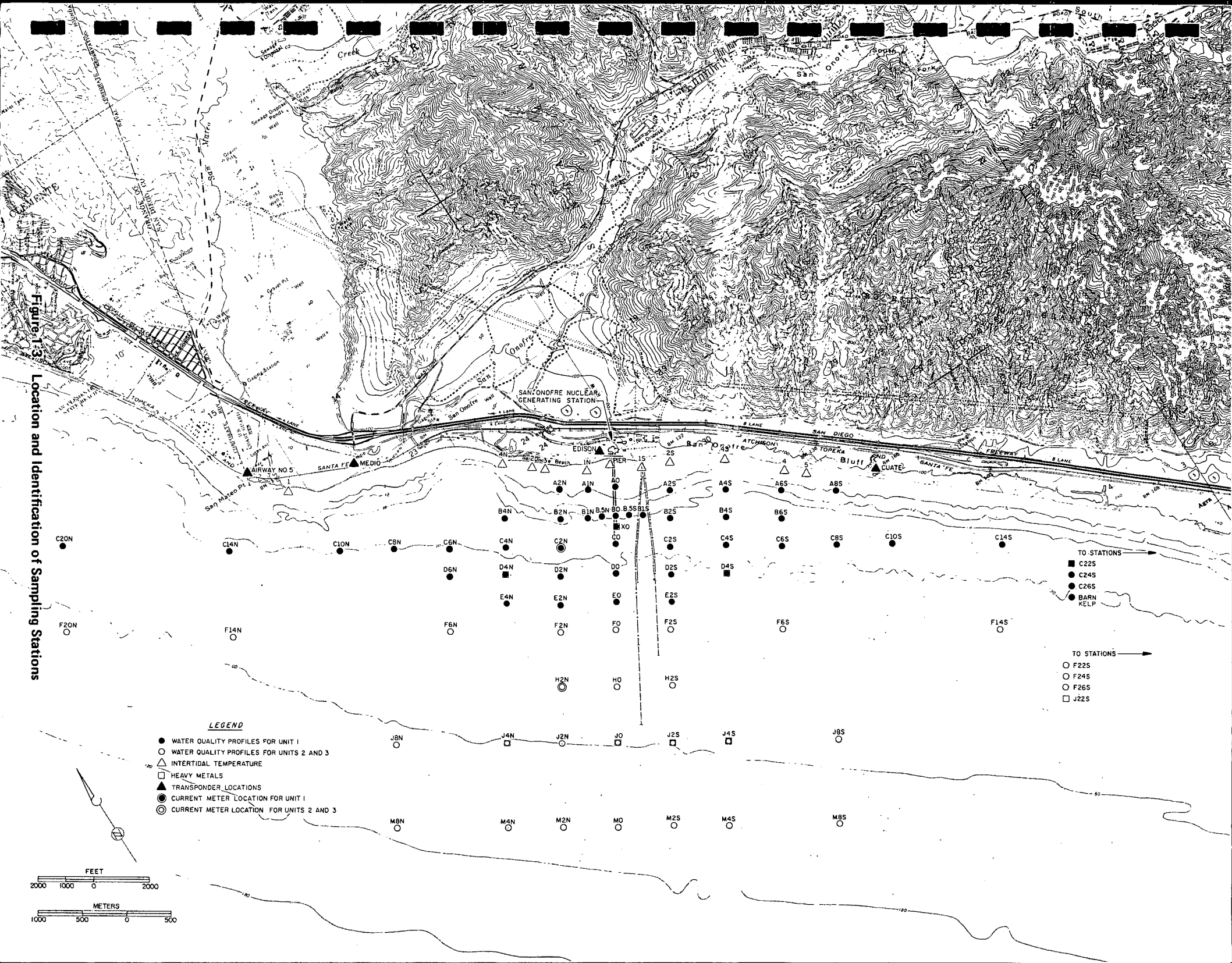



Figure 1-3 Location and Identification of Sampling Stations

portion of the 1978 ETS and Preoperational studies, Volume III presents data from the San Onofre Units 2 and 3 1978 Construction Monitoring Program-Biological and Sedimentological Data. A detailed analysis and interpretation of all 1978 oceanographic biological data from these programs will be presented in a subsequent volume to be published July 1, 1979. This volume (Volume I) of the Annual Operating Report is separated into eight chapters. This chapter is the introduction of this report and describes the overall nature of the physical-chemical portion of the monitoring program, including the location and times of measurements of physical and chemical characteristics in the study area. Chapter 2 presents the methods and equipment used during the study. The remaining chapters deal with each of the major areas of interest for the San Onofre study. Each chapter contains an introduction which outlines the scope of work in that area, discusses background information pertinent to the study, and presents results of the 1978 study.

## E. GENERATING STATION OPERATION

The generating station is a base load station, and thus operates at a relatively constant load (450 MW) during normal operation. The station was offline from April 5 to April 26, 1978, and again from September 15 to November 5, 1978. The station was operating at reduced capacity (250 MW) from May 6 to July 9, 1978. The station was in normal operation during the remainder of 1978. Short term fluctuations in plant operation occurred during the periods of normal operation. Plots of daily mean megawatt output (station load), inplant $\Delta T_C$ (discharge temperature minus intake temperature), and circulating water flow at SONGS 1 during 1978 are shown in Figure 1-4. Physical oceanographic survey dates presented in Table 1-1 are also shown in Figure 1-4 to illustrate that survey dates were representative of station operating conditions. The generating station was online and operating at full load during each of the surveys.

**Table 1-1. Schedule of Work (Survey Dates) for ETS Physical-Chemical Oceanographic Monitoring Conducted in 1978**

| Tasks | Jan. | Feb. | Mar.[a] | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Temperature Vertical Profiles | 18 | | 7 | | 4 | | 10 | | 13 | | 16 | |
| Aerial Infrared Radiometry | | | 7 | | 4,11[b] | | 10 | | 13 | | 16 | |
| Surface Temperature Mapping | 18 | | 7 | | 4,11[b] | | 10 | | 13 | | 16 | |
| Shoreline Temperature | 18 | | 7 | | 4,11[b] | | 10 | | 13 | | 16 | |
| Continuous Temperature Maintenance | 9 | 7,28 | | 4,13 | 2 | 1 | 6 | 10 | 12 | 10,20 | 15 | 14 |
| Turbidity Vertical Profiles | 18 | | 7 | | 4 | | 10 | | 13 | | 16 | |
| Secchi disc Visibility | 18 | | 7 | | 4 | | 10 | | 13 | | 16 | |
| Suspended and Settleable Solids | | | | | | | 10 | | 13 | | 16 | |
| Aerial Photographs of Turbidity | | | 7 | | 4,6[c] | | 10 | | 13 | | 16 | |
| Currents | | | | | | | 9-10 | | 12-13 | | 15-16 | |
| Heavy Metals | | | 23 | | 2 | | 12 | | 12 | | 15 | |
| Dissolved Oxygen | 18 | | 7 | | 4 | | 10 | | 13 | | 16 | |
| Hydrogen Ion Concentration (pH) | 18 | | 7 | | 4 | | 10 | | 13 | | 16 | |

[a] Program expanded to include Units 2 and 3 preoperational studies.
[b] Survey attempted on May 4, but not completed due to inclement weather.
[c] Aerial photos taken on two days which show natural variation in turbidity.

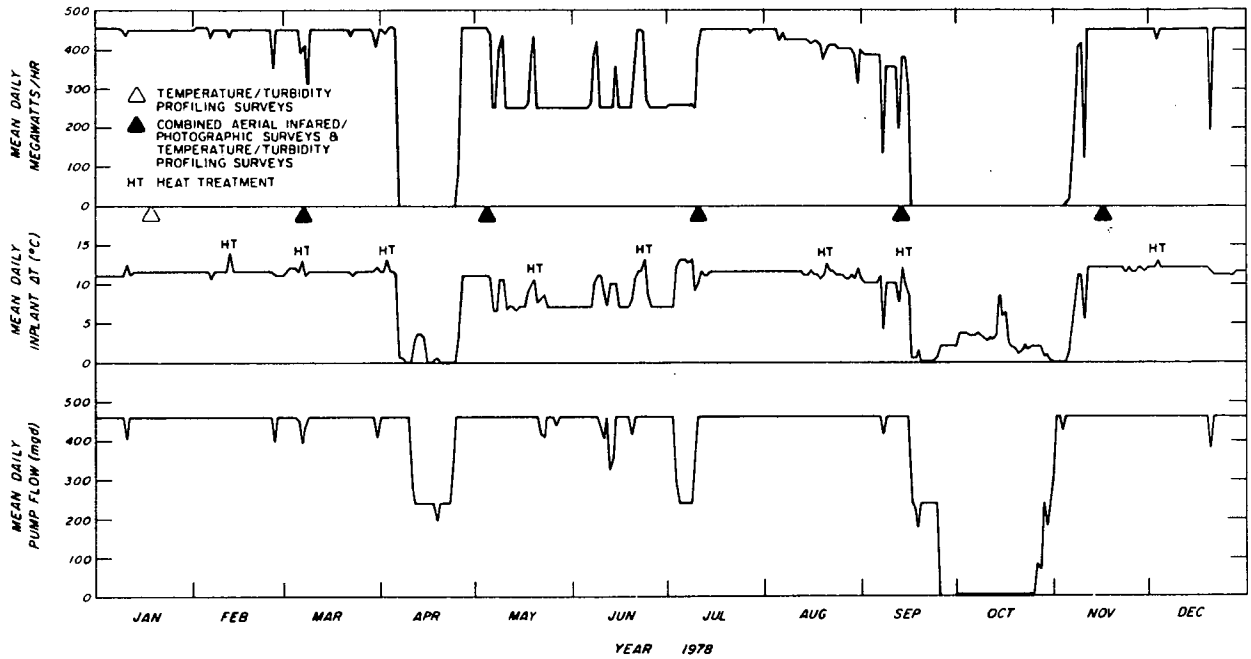



**Figure 1-4. SONGS 1 Operating Characteristics during 1978**

# CHAPTER 2

# METHODS

## A. INTRODUCTION

This chapter describes the instrumentation, survey procedures, and data reduction techniques for each of the parameters measured during this study. Vertical profile measurements of temperature, turbidity, dissolved oxygen, and pH were measured and processed simultaneously; therefore, a discussion of the instrumentation, survey procedures and data reduction techniques for vertical profile measurements is presented first, followed by a description of the other types of measurements.

## B. WATER QUALITY PROFILES

Vertical profile measurements of water quality parameters were measured during bimonthly surveys at 51 Unit 1 operational monitoring stations, and at 23 additional Units 2 and 3 preoperational monitoring stations (Figure 1-3). The stations for Units 2 and 3 were added after the March survey.

Instrumentation. Vertical profile measurements were obtained using two oceanographic water quality data acquisition systems. The water quality acquisition system consists of a Martek Mark III water quality analyzer, transmissometer, and Brown and Caldwell's digital data processor (Figure 2-1). This system provides simultaneous measurements of depth, temperature, specific conductivity, pH, dissolved oxygen, and light transmittance. Analog measurements of each water quality parameter were converted to digital measurements, displayed, and recorded by the digital data processor at one-second intervals. Water quality profile information was printed on a paper tape and punched in ASCII format on polyester tape. The printed paper tape was used as a hard copy for field check of the accuracy of parameters measured. The punch tape was used for computer data reduction. Each sensor was calibrated before and after each survey using temperature equipment traceable to the National Bureau of Standards and accepted laboratory procedures.

Survey Procedures. Positioning of the survey vessel over a profiling station was determined by a Motorola Miniranger electronic positioning system. This positioning system consists of an interrogator/readout onboard the survey vessel and transponders at known positions onshore. The readout presents the distance in meters from the interrogator antenna to each transponder. Position of the survey vessel was determined by triangulation of these distances from each of the transponders. Miniranger accuracy is $\pm$ 10 ft (3 m) in 20 miles, with a resolution of 3 ft (1 m). Calibration of miniranger system was performed prior to each survey.

Positioning of the survey vessel at each profile station location was accomplished using predetermined ranges from transponders onshore. Four positioning system transponders were used for the San Onofre Project: two existing transponders, one at Airway #5 and one on the meteorological tower at the generating station, and two transponders placed at U. S. Coast Guard and Geodetic Survey horizontal control stations known as Medio and Cuate. Location of transponders is shown on Figure 1-3.

After the survey vessel had been accurately positioned at each station, the underwater sensors of the water quality data acquisition system were lowered over the side and held at the water's surface. A label containing the job number, date, station code, and the time of the profile was recorded on polyester tape by the digital data processor, and the station number was written on the printed copy. After the sensors had equilibrated at the water's surface, the profile was started. The underwater sensors were lowered by the electronic cable connecting the sensors to their readouts at approximately one-half foot per second as the digital data processor recorded all parameters simultaneously at one second intervals. Each sensor was calibrated before and after each survey, and calibration checks were performed several times during each survey.

After the addition of Units 2 and 3 preoperational monitoring stations to the study, a second survey vessel and water quality data acquisition system was utilized in order to monitor the survey area over a shorter period of time than would have been required had only one vessel been used. In addition to calibration with laboratory standards, the two systems were calibrated with each other in the field by simultaneously profiling at the same station.

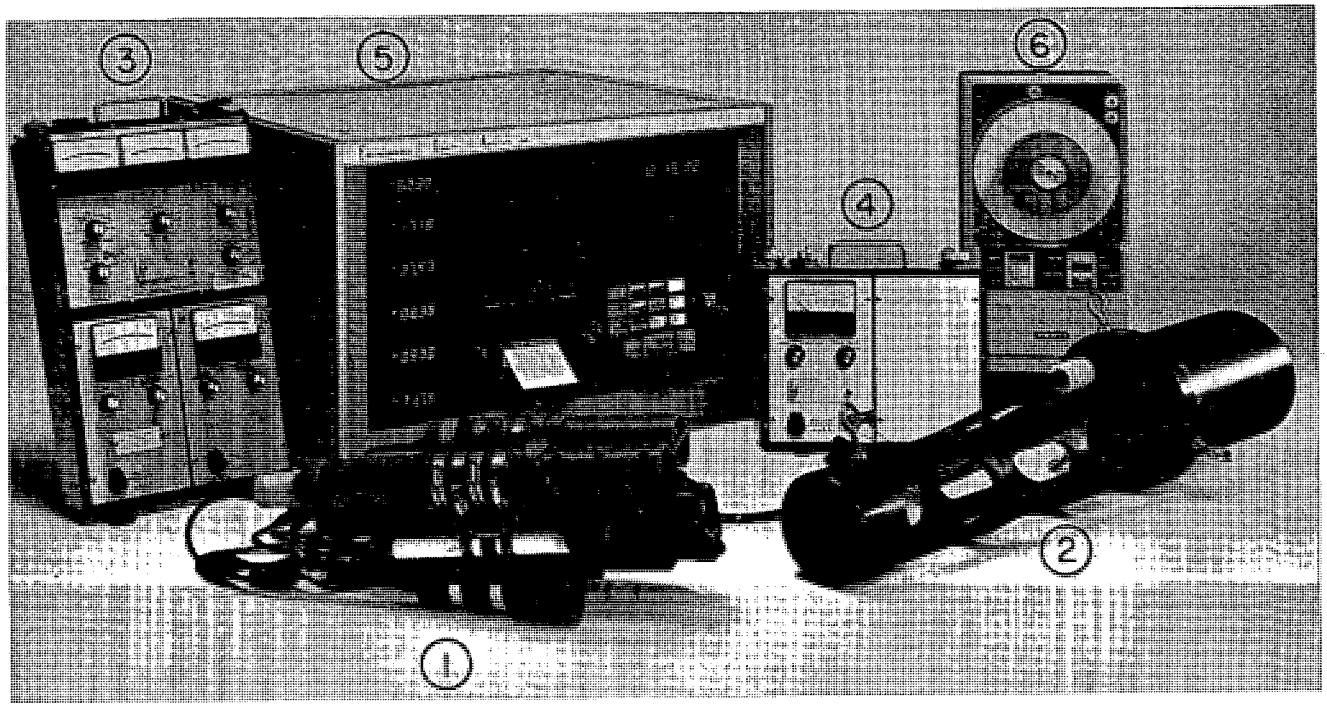
Data Reduction. The punched computer tape containing water quality profile data was read by a paper tape reader and data was transferred to diskette by a minicomputer. Water quality profile data were edited, and temperature and turbidity profiles for each station were plotted. A printout of interpolated values of temperature and percent light transmittance at one meter increments was produced by the computer analysis as well as interpolated depths of temperature at 0.2 C increments and light transmittance at 5% increments.

## C. TEMPERATURE MEASUREMENTS

Temperature of receiving waters was monitored by: 1) vertical temperature profiles; 2) aerial infrared radiometer thermal mapping; 3) survey vessel thermal dispersion runs; 4) intertidal temperature measurements; and 5) continuous temperature measurements.

### Temperature Profiles

Vertical temperature profiles versus depth were measured bimonthly at 74 stations (51 operational Unit 1 stations and 23 preoperational Units 2 and 3 stations) shown on Figure 1-3 using the water quality data acquisition system. Vertical temperature profiles




OCEANOGRAPHIC WATER QUALITY DATA ACQUISITION SYSTEM

1. Martek Mark III Underwater Sensors
2. Martek XMS Transmissometer
3. Martek Mark III Water Quality Analyzer
4. Martek Transmissometer Deck Unit
5. Digital Data Processor
6. Facit Paper Tape Punch

| Parameter | Method of Measurement | Accuracy | Indicating and Recording Methods[c] |
|---|---|---|---|
| Depth | Pressure transducer | ± 1% full scale, ± 1 foot | Digital, printed paper tape, ASCII format mylar tape. |
| Temperature[a] | Transistor probe | ± 0.1C 0.01 C resolution | Digital, printed paper tape ASCII format mylar tape. |
| Specific electrical conductivity | Five-electrode guarded Kelvin cell | ± 0.02 Millimho/cm | Digital, printed paper tape, ASCII format mylar tape. |
| pH | Glass and silver/ silver chloride | ± 0.1 pH unit, ± 0.01 unit resolution | Digital, printed paper tape, ASCII format mylar tape. |
| Dissolved oxygen[b] | Auto-temperature compensated polarographic gold/silver electrode | ± 1% full scale, ± 0.2 part per million | Digital, printed paper tape ASCII format mylar tape. |
| Turbidity, light transmittance | Transmissometer, feedback-balanced photodiode detector | ± 1% full scale | Digital, printed paper tape, ASCII format mylar tape. |

[a] Temperature measuring systems are checked for accuracy with N.B.S. calibrated thermometers.
[b] Calibrated during the survey using the Winkler titration procedure.
[c] Accuracies listed are manufacturers specifications and are based on using analog meter outputs. Laboratory and field calibration indicates, however, that greater accuracy is achieved using digital recording outputs instead.

at these 74 stations were used to document changes in water temperature over the study area, to determine the vertical extent of the thermal plume, and to compile a preoperational data base prior to the operation of Units 2 and 3.

Instrumentation. A Martek transistor probe was used to measure water temperature. The accuracy of the instrument is ± 0.1 C with a resolution of 0.01 C. Calibration was performed prior to each survey with temperature equipment traceable to the National Bureau of Standards.

Data Reduction. Vertical temperature profiles versus depth were plotted for each station on a grid which allows visual comparison of temperature structure at each station. Temperature profiles from operational Unit 1 monitoring stations in the vicinity of the Unit 1 discharge were compared with temperature profiles from four Unit 1 control stations to show which stations were affected by the thermal discharge of Unit 1.

Isometric vertical cross-sections of temperature structure of receiving waters were drawn from temperature profile data. Vertical cross-sections along the B, C, and 0 line of stations were constructed to illustrate the vertical extent of the elevated temperature field. Vertical cross-sections were constructed by plotting temperatures at their corresponding depths for each station along the cross-section and then contouring temperatures to show the changes in depth of a uniform temperature (isotherm).

Horizontal contour maps of surface, 4 m, and bottom temperatures were constructed to depict the horizontal extent of the thermal field at each of these depths. Surface temperature at each station was plotted on survey area charts at the corresponding station location. Contours of uniform temperature were then drawn to show extent of the surface elevated temperature field. Similarly, horizontal contour charts were prepared for 4 m and bottom temperatures.

## Aerial Infrared Measurements

Infrared radiometer measurements, taken from an aircraft, were used to map surface extent of the thermal field. Aerial infrared mapping surveys were conducted bimonthly beginning in March in conjunction with the bimonthly temperature profiling surveys. During each of the bimonthly surveys, one to three surface temperature mapping flights were conducted during different tidal phases.

Instrumentation. Radiating thermal energy from the sea surface was measured in the 9.5 to 11.5 micron range by a Barnes PRT-5 radiometer installed in an aircraft. The intensity of radiating thermal energy was continuously recorded as millivolts of output on a strip chart recorder. The output was converted to temperature from sea surface temperature measurements taken by a survey vessel as the aircraft flew directly overhead. Since the aircraft was flown at an elevation of approximately 500 feet and the radiometer beam is approximately 2° wide, the path width of radiometer

measurements was approximately 5 meters. The accuracy of the Barnes PRT-5 is 0.5 C and sensitivity is approximately 0.1 C. A Bendix 9-channel Multi-spectral Scanner was used during the aerial surveys of March, May, and July. The Scanner uses thermal imagery in the 8 to 14 micron range to determine a temperature differential of 0.5 C.

Survey Procedures. Each of the aerial infrared radiometer (IR) surveys consisted of two or three flights timed to correspond to various phases of the tide. Each flight consisted of IR measurements along several predetermined flight paths which form a grid over the study area. Five foot diameter weather balloons on the sea surface were used as reference markers. These balloons were anchored at predetermined positions by the survey vessels. Precise position of these aerial markers was determined by the Motorola Miniranger electronic positioning system. The strip chart record of infrared measurements was marked to identify events such as calibration temperatures, buoys, and start and end time of each run. Calibration temperatures were transmitted to the aircraft from the survey vessels taking surface temperature measurements as the aircraft flew overhead.

Data Reduction. Data reduction for each flight of the IR survey consisted of converting recorder output to temperatures from calibration temperature measurements, and transferring these temperatures to the corresponding position along flight tracks plotted on survey area charts. Temperatures were then contoured to show the distribution of surface temperature within the survey area. The infrared thermal scanner imagery is converted to temperatures from ground truth temperature measurements. Temperature contours are developed from the density gradient of the thermal image.

Surface temperature contours which encircle the discharge show the surface extent of the elevated temperature field. A natural surface temperature was determined from IR measurements outside the influence of the thermal field, continuous temperature measurements at the control Station C22S, and other temperature measurements during the survey. Horizontal extent and surface area of the 1 and 4 F elevated temperature fields was determined from results of infrared radiometer measurements.

## Thermal Dispersion

The distribution of surface temperature was also determined during bimonthly surveys from temperature measurements by a survey vessel during a thermal dispersion run. A thermal dispersion run consisted of a survey vessel moving through the study area and continuously recording surface temperature along a course radiating out from the discharge. The position of the survey vessel was continually monitored by the Motorola Miniranger System during the thermal dispersion run.

Instrumentation. A digital inhull thermistor was used to measure surface temperature during the thermal dispersion run. The thermistor was located within one foot of the water's surface when

the survey vessel was under way. The temperature sensor is accurate to ± 0.1 F, and was calibrated to the Martek Mark III transistor temperature probe and calibrated thermometers in the field before and after each thermal dispersion run.

Survey Procedures. Temperature, time of measurement, and distances from transponders of the Motorola Miniranger positioning system were recorded by BC's digital data processor at five second intervals as the survey vessel moved through the study area. The survey vessel followed a course radiating out from the discharge until natural surface temperature was reached. Thermal dispersion runs were timed to coincide with aerial infrared radiometer flights.

Data Reduction. Data reduction involved plotting temperatures at the appropriate distances from transponders on a survey area chart. Contours of uniform surface temperature were then determined and drawn on the charts. Natural surface temperature was determined from thermal dispersion measurements outside the influence of the thermal field, continuous temperature measurements at downcoast control Station C22S, and other surface temperature measurements during the study. Contours of isotherms which were 1 and 4 F above natural water temperature were drawn on these charts and the horizontal extent and surface area enclosed by these isotherms was determined.

## Shoreline Temperature Measurements

Shoreline temperatures were measured during bimonthly surveys. Measurements were taken at five shoreline stations as outlined in ETS Section 3.1.1.a.(5), plus an additional six stations in order to aid in determining whether or not the elevated temperature field of Unit 1 came in contact with the shoreline.

Instrumentation. A bucket thermometer was used for shoreline temperature measurements. The thermometer was housed in a plastic cylinder which provided for ease in handling and protection from damage. The slots in the cylinder allowed for the passage of water and visual readings, while the base of the cylinder acted as a bucket, retaining a portion of the water while readings were taken.

Survey Procedures. Shoreline temperatures were measured in the surf zone at 11 stations shown on Figure 1-3 using a calibrated bucket thermometer. Triplicate readings were taken at each station to insure consistency. All temperature data was recorded in a log book along with other observations such as surf conditions, tidal height, and general weather conditions.

Thermometer calibration was performed before each bimonthly survey using a water bath equipped with an NBS traceable glass/mercury thermometer. Accuracy of the thermometer was ± 0.1 F.

Data Reduction. Shoreline temperature data were plotted on survey area charts along with results of IR measurements to determine the shoreward extent of the thermal field. Shoreline temperatures at the various stations were compared with one another.

Differences between stations were analyzed to determine if shoreline temperatures were influenced by the discharge. Shoreline temperatures were used in conjunction with infrared measurements to determine shoreline contact of the thermal field.

Continuous Temperature Monitoring

Continuous temperature data was recorded hourly at three depths at Stations C2S and C22S, as outlined for SONGS 1 in ETS Section 3.1.1.a.(5). Station C2S was located on Surveillance Zone 0A, 610 m (2000 ft) downcoast of the discharge in 9 m (30 ft) of water and Station C22S was located in Zone 6, 6710 m (22,000 ft) downcoast of the discharge in 9 m (30 ft) of water. Beginning on August 22, 1978, continuous temperature sensors were installed at four depths at Station F2S. Station F2S is located in Surveillance Zone 0B, 610 m (2,000 ft) downcoast and 915 m (3,000 ft) offshore of SONGS Unit 1 discharge in 12 m (40 ft) of water. These stations provide continuous temperature readings for documentation of daily variation for near surface, mid-depth, and near bottom waters in the vicinity of the existing Unit 1 discharge (C2S) and at a location outside the influence of the existing thermal discharge (C22S), and provide baseline data in the vicinity of Units 2 and 3 discharges (F2S) prior to operation of those units.

Instrumentation. Type 109 ENDECO recording temperature sensors were used at each sampling station. Sensors were attached to the anchor chain of buoys at Stations C2S, F2S, and C22S. Sensors at Stations C2S and C22S were located near the surface (0.6 m), at mid-depth (4.6 m), and near the bottom (9.1 m). Sensors at Station F2S were located near the surface(0.6 m), at two mid-depth locations (4.6 m and 9.1 m) and near the bottom (12.2 m). Placement of sensors at these depths provides ready comparison of data between all three stations, even though depth of bottom is different.

The ENDECO Type 109 recording temperature sensor measured temperature using a precision glass/mercury thermometer. A conductive heat path provided thermal responses between the thermometer and external environment. The thermometer was back illuminated by a radioluminous light source, and the mercury column position was recorded on film by a shutterless 16 mm camera with an f 2.7 achromatic lens. Incorporated into the instrument was the ENDECO Type 124 Crystal Timer for accurate time sequencing. Temperature data was recorded hourly by position of the mercury column as represented on film as an analog-bar graph. The zero and full scale calibration markings on the thermometer were recorded on the film as well as the serial number and temperature range for later data processing reference.

Each instrument was factory calibrated at three temperatures; 20, 50, and 80 percent of full scale, using regulated temperature bath equipped with an NBS traceable glass/mercury thermometer. Standard temperature accuracy of each instrument was $\pm$ 0.2 C with time accuracy of $\pm$ 1.5 sec/day.

Survey Procedures. Maintenance of the continuous temperature monitoring system was conducted at approximate one month intervals (weather permitting) to insure proper operation. Every month, technicians and divers serviced temperature sensors at each of the buoys making visual observations, general thermograph maintenance, and repairs as needed. The diver also recorded in-situ calibration temperature measurements at each sensor depth using a calibrated thermometer. A field log book was used to record pertinent information. The log book contained information on dates, times, personnel, weather conditions, calibration equipment, calibration temperatures, and all other observations which would affect the dependability of the data.

Observations were made of the buoy mooring system to insure against structural damage to the buoy or its anchorage. Any damage noted was either repaired at the time or provisions were made to schedule future maintenance. In case of any major alterations, SCE was immediately notified for consultation and approval.

ENDECO sensors and their mounting brackets were visually inspected each month by a diver. Once each month, ENDECO sensors were brought to the surface and serviced. The unit was visually inspected to insure the proper advancement of film and operation of the light source. Film cartridges were removed and the date, time, depth, cartridge number, and calibration temperature were recorded in the log book.

Film packs from the ENDECO system were sent directly to ENDECO for processing. The temperature calibrations were included in this processing. ENDECO provided BC with a 9-track magnetic tape and a computer printout of hourly data.

Data Reduction. Once the data from ENDECO system was in a computer compatible format, plotting was performed. The preliminary analysis included: 1) monthly temperature versus time graphs for Stations C2S, C22S, and F2S at near surface, mid-depth, and near bottom; 2) tables for calculated daily, weekly, and monthly mean and standard deviation values for each sensor at each station; 3) comparisons of daily, weekly, and monthly means for Station C2S versus Station C22S at near surface, mid-depth, and near bottom; 4) comparisons of daily, weekly, and monthly standard deviations for Station C2S versus Station C22S at near surface, mid-depth, and near bottom; 5) calculation of percentage of the time there is a significant difference between Station C2S and Station C22S; and 6) the coefficient of variation of the monthly mean was calculated for each month, as an indicator of the relative variability of each monthly sample about its mean. The coefficient of variation is used in lieu of the standard deviation so that variation is expressed in relative terms, and not as a function of the sample mean. The coefficient of variation is calculated as:

$$CV = \frac{S_{\bar{y}} \times 100}{\bar{y}}$$

where $S_{\bar{y}}$ = sample standard deviation

$\bar{y}$ = sample mean

The coefficient of variation is independent of the unit of measurement and is expressed as a percentage. High percentages indicate high variability.

Temperature Comparison

A comparison of Unit 1 intake and discharge temperature data with ocean ambient temperature data was made monthly as outlined in ETS Section 3.1.1.a.(6). Reference ambient ocean temperature was measured by ENDECO thermographs (Type 109) mounted 0.6 m (2 ft) and 4.6 m (15 ft) below the surface at control Station C22S, located 6700 m (22,000 ft) downcoast from the SONGS 1 discharge in Environmental Surveillance Zone 6. The manufacturers stated accuracy of the ENDECO thermograph is ± 0.2 C and ± 2 minutes per month. Intake and discharge temperatures were measured at the tsunami wall by thermocouples located within the intake and discharge conduits. Temperatures were recorded inplant on paper tape at 5 minute intervals. The accuracy of measurements recorded by each thermocouple is ± 0.5 C and ± 0.2 hours. Intake, discharge, and ocean ambient temperature data was compared at one hour intervals from January through December 1978.

The purpose of this study was to determine whether heated water is recirculated back into the intake of the circulating water system and to determine the increase in discharge temperature due to recirculation as compared to a reference ocean ambient temperature.

Comparison of intake and discharge temperatures with ocean ambient temperature was performed by a computer analysis developed by BC. Continuous plots of intake, discharge, ocean ambient, and the difference between intake and ocean ambient temperatures were created by this computer analysis on a monthly basis. Hourly listings of these data were also provided. Daily and monthly means and standard deviations of each of these temperature measurements were calculated. The percent of time during each month that intake and ocean ambient temperatures differed by more than 1.0 C was also calculated. The data were analyzed and interpreted to determine the occurrences of recirculation and to determine whether this recirculation increased the difference between discharge and ocean ambient temperatures.

D. TURBIDITY MEASUREMENTS

Turbidity was extensively measured throughout the study area to assist in determining if SONGS 1 has a significant impact on the marine environment. The turbidity study objective, as outlined in ETS Section 3.1.1.a.(4), was to monitor suspended solids in the receiving waters of SONGS 1 in order to determine any effects of the discharge upon local water clarity. Turbidity measurements were expanded to include Units 2 and 3 preoperational monitoring stations after March.

Turbidity of the receiving waters was monitored by: 1) vertical profiles of light transmittance along a horizontal one-meter path length; 2) Secchi disc depth of visibility; 3) aerial photographs; and 4) suspended solids analyses.

Transmittance Profiles

Vertical profile measurements of light transmittance were measured at 74 stations during bimonthly surveys using the water quality data acquisition system.

Instrumentation. A Martek XMS Transmissometer was used to measure light transmittance along a horizontal one-meter path length. The transmissometer uses its own light source and measures the amount of light received after traveling through one meter of water as the percentage of light emitted. The accuracy of this instrument is ± 1%, with a resolution of 0.01%. Calibration was performed prior to each survey and was rechecked in the field.

Data Reduction. Transmissivity profile data reduction was similar to that used for temperature profiles. Vertical light transmittance profiles versus depth were plotted for each station on a grid which allowed visual comparison of water clarity at each station. Transmittance profiles from stations in the vicinity of the Unit 1 discharge were compared with transmittance profiles from four Unit 1 control stations to show which stations were affected by the discharge.

Plan-view, horizontal contour maps of surface and mid-depth (4 meters of depth) percent light transmittance were constructed to show distribution of turbidity throughout the study area. Surface values of light transmittance at each station were plotted on survey area charts at the corresponding station location. Contours of uniform percent light transmittance were then drawn to show distribution of turbidity in the study area. Similarly, horizontal contour charts were prepared for mid-depth (4 m) values.

Secchi Disc Monitoring

Turbidity monitoring using a Secchi disc was performed on a bimonthly basis as outlined for SONGS 1 in ETS Section 3.1.1.a.(4). Secchi disc readings were taken once every survey at 51 Unit 1 operational stations, and also at the additional 23 Units 2 and 3 preoperational stations as shown on Figure 1-3.

Secchi disc measurements provide values of extinction of downward penetrating natural light in the water column. Secchi disc data was used to aid in determining the distribution of suspended solids in terms of turbidity in the receiving waters; however, Secchi disc readings cannot be directly related to light transmittance values.

Instrumentation. A standard 30 cm diameter white Secchi disc was used at each of the profiling stations during the bimonthly surveys for determination of water clarity. The accuracy of measurement is ± 25 cm.

Survey Procedures. At each profiling station, a measurement of the greatest depth of visibility of the Secchi disc was made by lowering the Secchi disc over the side until it was no longer visible. This depth was then recorded in the survey log book.

Data Reduction. Secchi disc data was tabulated and compared to show variations in turbidity throughout the study area. Control station Secchi disc measurements were compared with stations in the discharge to determine the effect of the discharge on water clarity. Horizontal contour maps of Secchi disc depth of visibility values were prepared by plotting Secchi disc readings at their appropriate station and then contouring with lines of constant Secchi disc readings.

Aerial Photography

Color photographs which show the distribution of surface turbidity in the study area were obtained in compliance with ETS Section 3.1.1.a.(4) for Unit 1. Photographs of the area of the discharge were taken from an aircraft with a 35 mm camera during infrared radiometer surveys.

Instrumentation. Color photographs were taken with a 35 mm camera using a 50 mm, 1.7 focal length lens from an aircraft at an approximate altitude of 1000 ft.

Survey Procedures. Aerial photographs of regional turbidity in the vicinity of the discharge and at other locations in the study area were taken during aerial infrared surveys when sun glare off the water's surface was minimal. A log book was used to record pertinent information such as area covered by photograph, altitude, time and frame number.

Data Reduction. Aerial photographs were examined to determine the extent of turbidity in the vicinity of the discharge. Land marks, buoys, survey vessels, and other physical objects were used to estimate the scale of the photographs. The areas of localized turbidity were compared with transmissivity and Secchi disc data.

Settleable and Suspended Solids

Monitoring of settleable and suspended solids began in July 1978. Settleable and suspended solids were measured at 42 stations (28 Unit 1 operational and 14 Units 2 and 3 preoperational) in order to supplement the other turbidity data.

Sample Collection and Laboratory Analyses. Surface and mid-depth (4 m) water samples were collected using a submersible pump and hose. The submersible pump was lowered from a survey vessel to the desired depth and a sample was pumped through the hose to a 4 l sample container. Samples were analyzed using accepted laboratory procedures (Standard Methods, 14th Edition, 1975). During November the procedure for the determination of settleable solids was modified to measure settleable solids by weight rather than volume. This

modification increased the detectable limits of the test. Detectable limits of settleable solids by volume is 0.1 ml/l/hr, and by weight is 0.1 mg/l/hr. Detectable limits of susended solids is 0.2 mg/l.

Data Reduction. Results of settleable and suspended solids were tabulated and compared to show variations in turbidity throughout the study area. Horizontal contour maps of surface and 4 m suspended solid concentrations were prepared. Suspended solids concentrations were also compared to Secchi disc and light transmittance data obtained during surveys.

E. DISSOLVED OXYGEN AND HYDROGEN ION CONCENTRATION

Vertical profiles of dissolved oxygen (DO) and hydrogen ion concentration (pH) in the recieving waters were measured at 51 Unit 1 operational monitoring stations and 23 Units 2 and 3 preoperational monitoring stations during bimonthly surveys. Measurements of surface DO and surface pH at Unit 1 monitoring Station C0, X0, and C22S were required bimonthly by ETS Section 3.1.1.a.(3) and ETS Section 3.1.1.a.(7).

The purpose of this study was to assure that natural DO and pH levels were maintained during the operation of Unit 1 and to compile a preoperational data base prior to the operation of Units 2 and 3.

Instrumentation. Vertical profiles of DO and pH were measured and recorded simultaneously with temperature and turbidity profiles using the water quality data acquisition system. Measurements of DO were made by a polarographic gold/silver electrode which automatically compensates for changes in temperature. Accuracy of the DO sensor is $\pm$ 0.2 ppm. The pH sensor is a glass and silver/silver chloride electrode which determines pH to an accuracy of $\pm$ 0.02 with a resolution of 0.01.

Survey Procedures. Vertical profiles of DO and pH were measured and recorded simultaneously with temperature and light transmittance profiles. Calibration of the DO sensor was performed in the field by comparison with a Winkler titration analysis of DO. Winkler titrations were also performed at the Unit 1 intake, discharge, and control stations. Calibration of the pH sensor was performed prior to each survey. Standardized buffer solutions of a known pH were used in the calibration procedure, and all information was retained in the calibration log book. Calibration was also checked in the field with pH buffer solutions.

Data Reduction. Surface DO concentrations at the Unit 1 intake (C0) and discharge (X0) stations were compared with values from Unit 1 control Station C22S to determine if these values were within the limits established in ETS Section 3.1.1.a.(3). ETS states that surface DO at these stations should not be depressed more than 10% from that measured at the Unit 1 control station. Percent saturation of surface DO was calculated as a function of temperature and salinity for all required stations.

Surface pH data from Station X0, C0, and C22S were analyzed to determine if the data were within the 7.1 to 8.5 range specified by ETS Section 3.1.1.a.(7), and to determine the effect, if any, of the Unit 1 generating station operation on pH of receiving waters.

DO and pH profiles obtained from the remaining monitoring stations were used to depict vertical and horizontal spatial trends and to compile a preoperational data base for Units 2 and 3.

F. HEAVY METALS

Monitoring of heavy metal concentrations in the SONGS 1 receiving waters and ocean bottom sediments was conducted in compliance with ETS Section 3.1.1.a.(2) and NPDES Permit No. CA0001228 (CRWQCB, SDR Order No. 76-11). During years prior to 1978, water column mid-depth samples and sediment samples were collected quarterly. Beginning in March 1978, samples were collected bimonthly in conjunction with water quality profiling. Unit 1 operational monitoring stations included Station X0, C22S, D4N, and D4S (Figure 1-3). Samples were analyzed for chromium, copper, nickel, and iron. During May 1978 monitoring of heavy metal concentrations in the receiving waters and ocean bottom sediments was expanded to compile a preoperational data base for Units 2 and 3 in compliance with the Preoperational Monitoring Program approved by the Nuclear Regulatory Commission. This data base will be used to assess the effects of Units 2 anc 3 during their operation in the future. Additional heavy metal monitoring stations for Units 2 and 3 include Stations J0 (this station replaced Station J2N in July and thereafter), J2S, J4N, J4S, and J22S. Titanium analysis was added as part of the SONGS 2 and 3 heavy metal monitoring program due to its use in the condensers in Units 2 and 3.

Sample Collection and Laboratory Analyses. Mid-depth water and sediment samples were collected by SCUBA divers and analyzed by atomic absorption spectrometry to determine the concentrations of chromium, copper, nickel, iron, and titanium. Sample analyses were conducted in compliance with guidelines established by the U. S. Environmental Protection Agency (EPA, 1969). Accuracy of analysis for water column samples was $\pm$ 0.0005 mg/l for chromium, copper, nickel, and iron, and $\pm$ 0.005 mg/l for titanium. Accuracy for sediment samples was $\pm$ 0.05 mg/kg for copper, chromium, and nickel, and $\pm$ 0.5 mg/kg for iron and titanium. All values are reported to two significant figures.

Data Reduction. Results of heavy metal analyses of water and sediment samples were tabulated so that determination of any spatial patterns of distribution or any significant increase in heavy metal concentrations with time could be assessed.

# CHAPTER 3

# TEMPERATURE

## A. INTRODUCTION

Monitoring of temperature in the SONGS 1 receiving waters was conducted at 51 sampling stations in compliance with ETS Section 3.1.1.a.(5) and NPDES Permit No. CA0001228 (CRWQCB, SDR Order No. 76-11). In May 1978, 23 additional sampling stations were added offshore as part of the SONGS 2 and 3 Preoperational Monitoring Program. Receiving water temperature is the physical oceanographic characteristic most influenced by the SONGS 1 cooling water discharge and has been extensively measured throughout the SONGS 1, 2, and 3 study area to assist in determining whether SONGS 1 has a significant impact on the marine environment. Measurements of water temperature were also performed to establish a preoperational baseline for SONGS 2 and 3 from which to evaluate future environmental monitoring.

Results of receiving water temperature monitoring is separated into three chapters. Chapter 3 presents the results of temperature data collected during bimonthly surveys. Chapter 4 presents the results of continuous temperature measurements at three stations offshore of San Onofre. Chapter 5 presents a comparison of generating station intake and discharge temperatures with ambient temperature continuously measured offshore. As presented in this chapter, the specific temperature study objectives were to: 1) document changes in water temperature over the survey area due to the SONGS Unit 1 cooling water discharge; 2) determine the horizontal and vertical extent of the thermal plume; 3) determine the area of Unit 1 influence by surface temperature mapping of the thermal plume; and 4) establish preoperational baseline conditions in the vicinity of SONGS Units 2 and 3 diffusers.

Vertical temperature profiles were measured bimonthly at 74 stations (Figure 1-3) to document changes in water temperature in the study area and to establish the vertical extent of the Unit 1 elevated temperature field. Aerial infrared radiometer measurements and survey vessel thermal dispersion runs were conducted bimonthly beginning in March 1978 to determine the surface extent of Unit 1 thermal fields. Shoreline temperatures were measured bimonthly at 11 stations to aid in determination of shoreline contact of elevated temperature fields.

This chapter includes background information on oceanographic conditions which affect natural temperature offshore of SONGS 1, 2, and 3, a review of previous ETS monitoring results, and a presentation of results for 1978.

## B. BACKGROUND INFORMATION

As with most oceanographic processes, the annual natural temperature cycle is a function of several interactive variables. In the case of the coastal waters off SONGS 1, 2, and 3, five factors must be considered: 1) incoming solar radiation (insolation); 2) major surface water circulation; 3) upwelling; 4) regional current patterns; and 5) major meteorological disturbances (storms).
depth. In the spring, increased insolation warms the atmosphere and
The natural temperature cycle is primarily due to changes in insolation. The natural temperature cycle begins in winter when coastal water temperatures are at a minimum and isothermal with

surface waters. This results in temperature stratification with depth called a thermocline. As insolation increases during the summer, surface waters are warmed and the depth and intensity of the thermocline increases. During the fall, insolation decreases and surface waters are cooled by radiation of heat to the cooler atmosphere, and the thermocline decreases in intensity. By winter, continued cooling of surface waters has returned the water column to isothermal condition.

Influence of the California and Davidson Currents, upwelling, local currents, and storms cause relatively short term variations in the natural temperature cycle. Ocean temperatures in the southern California coastal area are well correlated when considered by weekly averages. There are strong local high frequency (shorter than weekly) fluctuations which are uncorrelated over distances of about 20 miles. Fluctuations of as much as 9 F in a few minutes near the bottom, and areal variations of 2.5 F over distances of a few thousand feet on the surface do occur. Over a period of a day or so, the surface temperatures often vary as much as 3 F and occasionally as much as 5.5 F (Koh and List, 1974).

Preoperational oceanographic monitoring in the San Onofre area began in July 1963. In 1964, regular bimonthly oceanographic surveys were initiated at 32 stations. Twenty-eight field surveys were conducted between May 1964 and December 1968. SONGS 1 was intermittently online and discharging warm water between July 1967 and December 1968, and was operating at full load by the last week of 1968 (Marine Advisors, Inc. 1969). For the purposes of this study, the period between May 1964 and December 1968 is considered to constitute the SONGS 1 preoperational phase of the oceanographic monitoring activities. Bimonthly oceanographic surveys continued at the 32 stations from 1968 through 1974. These bimonthly surveys were expanded to include 51 stations, and continued through 1975, 1976, and 1977 as required by NRC's Environmental Technical Specifications monitoring program. The following summary provides an analysis of the most significant temperature measurement findings for 1975 through 1977.

### 1975

1. The coldest temperature profiles were measured in February when relatively isothermal conditions were

encountered. July and September profiles exhibited seasonally warmer temperature conditions with more marked stratification. The mean surface temperature in February was 13.5 C and increased to approximately 18 C in July and September.

2. Comparison of 1975 surface temperatures with historical measurements both at San Onofre and along the southern California coast suggest that water temperatures in 1975 were generally lower throughout the year than in previous years, especially in late July and August.

3. Maximum surface temperatures were observed at the discharge and at shallow inshore stations. Maximum bottom temperatures were observed at the shallow inshore stations.

4. The horizontal extent of the thermal plume was greater along shore than offshore. Comparable inshore/offshore influences were generally confined to within 150 m of the discharge. The surface extent of the 1 F elevated field determined by aerial infrared surveys ranged from 22 to 1087 acres. The surface area of the 4 F elevated field ranged from less than 1 acre to 19 acres.

5. In comparing the area of the elevated temperature field from 1975 to those reported for 1969 to 1972, the 1 F areas in 1975 were substantially smaller and the 4 F areas were slightly smaller than the 1969-1972 values.

1976

1. Monthly mean surface, mid-depth, and bottom temperatures for the study area followed a seasonal pattern with cooler mean temperatures occurring in January and warmer mean temperatures occurring during July and September. Natural surface temperature generally increased from approximately 13 C in January to 21 C in September and then decreased to 17 C in December.

2. Natural surface temperatures during 1976 were similar to preoperational mean temperatures during January through March, and September, November, and December, but differed during April through August, and October. In May, July, and October, natural surface temperature for 1976 was generally 2 to 3 C higher than the preoperational mean temperature. In April, June, and August, intrusions of cooler water decreased natural surface temperature as much as 5 C below the preoperational means for these months.

3. Maximum surface and mid-depth temperatures for the study area were observed at stations in the vicinity of the discharge or shallow inshore stations. Maximum bottom temperatures were consistently observed at the shallow inshore stations.

4. The surface extent of the 1 F elevated temperature field ranged from 710 to 1800 acres during the IR flights in January and June when the generating station was at full load. The approximate surface area of the 4 F elevated temperature field ranged from 4 to 230 acres during these flights. The maximum observed composite extent of the 1 F elevated temperature field during all IR flights was 3200 m upcoast, 3300 m downcoast, and 2600 m offshore of the discharge. The maximum extent of the 4 F elevated temperature field was observed during January of 1976 when the elevated temperature field was observed 1100 m upcoast, 900 m downcoast, and 550 m offshore of the discharge.

5. The average area of the 1 F field during 1976 was approximately 1200 acres compared to 400 acres during 1975 and 800 acres during 1969-1972. However, several 1 F elevated temperature fields in 1969 were between 2000 and 3300 acres. The size of the 4 F elevated temperature field varied greatly between surveys in 1976.

6. The influence of the thermal discharge on the surface water temperature was most apparent during January because waters at the depth of the intake were about the same as surface waters. The discharge had little effect on mid-depth temperatures, with the exception of six shallow stations just inshore of the discharge. Bottom water temperatures were affected by the discharge only at three shallow stations (4 m depth) inshore of the discharge.

1977

1. Mean surface, mid-depth, and bottom temperatures in the study area followed a seasonal pattern with coolest mean temperatures occurring during the March survey and warmest mean temperatures occurring during the September survey.

2. Natural water temperature offshore of SONGS 1 exhibited normal seasonal fluctuations. Natural surface temperatures during 1977 were similar to preoperational mean temperatures during October through December, but differed during the rest of the year. Surface temperature means were 1 to 2 C higher during January and February and 1 to 4 C lower during March through September compared to the preoperational monthly means.

3. Maximum surface and 4 m temperatures were observed at stations in the vicinity of the discharge and at shallow inshore stations. Maximum bottom temperatures were

consistently observed along the shallow inshore line of stations (A-line) during the summer.

4. The surface extent of the 1 F elevated temperature field ranged from 400 to 1400 acres during aerial infrared radiometer flights during periods of normal plant operation, while the approximate surface area of the 4 F elevated temperature field ranged from less than 1 to 5 acres during these flights. The maximum observed extent of the 1 F elevated temperature field during all IR flights was measured on September 2 when the field extended 400 m upcoast, 3100 m downcoast, and 950 m offshore of the discharge, while the 4 F elevated temperature field was never observed to extend beyond Zone 0A. The maximum observed extent of the 4 F elevated temperature field was measured on May 4 when the field extended 100 m upcoast, 30 m downcoast, 150 m inshore, and 350 m offshore.

5. Plant load and natural vertical temperature structure of receiving waters are the most important factors affecting size and extent of surface thermal fields. When the waters at the depth of the intake are cooler than surface waters, the heated discharge will have less apparent effect than when the surface and depth of intake waters have the same temperature.

## C. RESULTS

Water temperature was measured throughout the study area during bimonthly surveys on January 18, March 7, May 4, July 10, September 13, and November 16, 1978. During these surveys, vertical profiles of water temperature were measured at 51 stations in January and March, and at 74 stations in May through November (Figure 1-3).

Vertical profiles of temperature at each station during the 1978 bimonthly surveys are presented in Figures B-1 through B-6 of Appendix B. The presentation of the results depicted in the temperature profiles is intended to identify the natural surface and bottom water temperature and the vertical thermal stratification as measured at the control stations and at stations within the influence of the Unit 1 thermal discharge. Stations C20N and F20N are referred to as the upcoast control stations for SONGS 1 and SONGS 2 and 3, respectively. Stations C22S, C24S, and C26S; and Stations F22S, F24S, and F26S are referred to as the downcoast control stations for SONGS 1 and SONGS 2 and 3, respectively. The vertical thermal stratification is defined as the rate of decrease in temperature with depth, expressed as a temperature gradient, determined by dividing the change in water temperature from surface to bottom by the station depth. For example a temperature gradient of 0.01 C/m to 0.05 C/m would indicate very weak thermal stratification, typical of natural winter conditions, whereas a temperature gradient of 0.10 to 0.30 or greater would indicate a stronger thermal stratification, typical of natural summer conditions.

Vertical cross-sections were constructed from temperature profile data to graphically illustrate vertical structure of temperature with emphasis on the depth of influence of the thermal plume. These isometric vertical cross-sections of temperature are presented in Figures B-7 through B-12 of Appendix B. Vertical cross-sections parallel to shore extend along the B-line of stations from B4N to B6S, and along the C-line of stations from C20N to C26S. The vertical cross-section perpendicular to shore is along the 0-line of stations and extends from A0 to M0. The water surface line indicates the tidal height above or below mean lower low water (MLLW) at the time the station was sampled. Depth, as indicated on the figure, is related to MLLW. The sediment contour lines indicate an average depth per station over the survey year and, therefore, do not represent seasonal fluctuations in the bottom topography.

Horizontal isotherm contours were determined from temperature profile measurements to emphasize the extent and area influenced by the thermal plume at the surface, 4 m, and the bottom. The time required to obtain vertical profiles at 74 stations (6 to 8 hours), prohibits an accurate delineation of the instantaneous extent of the thermal field. These isotherm contours are shown in Figures B-13 through B-30 of Appendix B.

The horizontal extent of the surface thermal field is best defined using results of the aerial infrared thermal mapping surveys conducted during the March, May, July, September, and November surveys. Figures B-31 through B-39 of Appendix B illustrate the results of these aerial flights. Shoreline temperature data, presented in Table 3-1 was utilized in assessing the shoreward extent of the surface thermal field.

Results of water temperature monitoring for SONGS 2 and 3, beginning with the May survey, will be presented at the end of each section.

**Table 3-1. Shoreline Temperatures (°C) during 1978**

| Date | Run | Time | Station | | | | | | | | | | | Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 4000' N | 2 | 3 | 1000' N | Pier | 1000' S | 2000' S | 4000' S | 4 | 5 | |
| Jan. 18 | 1 | 0840-1025 | 15.6 | 15.9 | 16.0 | 16.1 | 16.0 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.1 | 16.0 |
| | 2 | 1235-1410 | 17.6 | 16.3 | 18.0 | 17.0 | 17.2 | 16.8 | 16.8 | 16.9 | 17.0 | 17.0 | 17.1 | 17.1 |
| Mar. 7 | 1 | 0735-0920 | - | 15.4 | 15.6 | 15.6 | 15.7 | 15.7 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.7 |
| | 2 | 1045-1205 | - | 15.3 | 15.6 | 15.6 | 16.4 | 16.7 | 17.0 | 16.7 | 16.4 | 16.6 | 16.6 | 16.3 |
| | 3 | 1345-1520 | - | 16.9 | 18.9 | 17.9 | 18.3 | 17.1 | 17.2 | 17.3 | 17.4 | 17.8 | 17.5 | 17.6 |
| May 4 | 1 | 0827-0955 | 16.6 | 17.2 | 17.2 | 17.3 | 17.4 | 17.0 | 16.4 | 16.4 | 16.4 | 16.4 | 16.3 | 16.9 |
| | 2 | 1125-1245 | 17.2 | 17.2 | 17.4 | 17.5 | 17.6 | 17.1 | 16.5 | 16.5 | 16.5 | 16.4 | 16.4 | 16.9 |
| | 3 | 1345-1515 | 17.2 | 17.3 | 17.9 | 18.0 | 18.1 | 17.4 | 16.9 | 16.9 | 16.9 | 16.9 | 16.8 | 17.3 |
| May 11 | 1 | 0805-0930 | 16.6 | 16.7 | 16.6 | 16.6 | 17.4 | 17.4 | 17.4 | 17.5 | 17.4 | 17.3 | 17.2 | 17.1 |
| | 2 | 1000-1130 | 18.6 | 17.1 | 18.1 | 18.9 | 18.6 | 18.1 | 18.3 | 18.2 | 18.1 | 18.0 | 18.0 | 18.2 |
| | 3 | 1340-1500 | 19.2 | 19.2 | 19.3 | 19.7 | 20.0 | 19.0 | 19.5 | 19.4 | 19.1 | 19.2 | 19.2 | 19.3 |
| Jul. 10 | 1 | 0825-0937 | 20.5 | 19.8 | 19.4 | 19.2 | 18.4 | 18.7 | 18.4 | 18.3 | 18.1 | 17.9 | 17.7 | 18.8 |
| | 2 | 1025-1133 | 20.5 | 19.4 | 19.7 | 20.0 | 19.9 | 18.9 | 19.4 | 19.4 | 18.8 | 18.8 | 19.1 | 19.4 |
| | 3 | 1330-1452 | 20.5 | 20.6 | 20.8 | 21.2 | 21.4 | 20.8 | 20.4 | 20.4 | 20.2 | 20.4 | 20.5 | 20.7 |
| Sep. 13 | 1 | 0743-0857 | 21.0 | 21.0 | 21.5 | 21.8 | 21.8 | 21.8 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.3 |
| | 2 | 1030-1130 | 21.5 | 21.8 | 21.9 | 21.8 | 21.8 | 21.8 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.4 |
| | 3 | 1335-1500 | 21.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 21.5 | 21.2 | 21.1 | 21.1 | 21.7 | 21.7 |
| Nov. 16 | 1 | 0825-0950 | 16.7 | 16.9 | 17.4 | 17.0 | 17.4 | 17.4 | 17.7 | 17.6 | 17.5 | 17.5 | 17.5 | 17.3 |
| | 2 | 1015-1128 | 17.0 | 17.2 | 17.0 | 17.0 | 17.6 | 18.0 | 17.7 | 17.8 | 18.8 | 17.8 | 17.7 | 17.6 |
| | 3 | 1340-1506 | 18.5 | 19.1 | 19.0 | 18.7 | 18.6 | 18.7 | 18.5 | 18.7 | 18.5 | 18.4 | 18.5 | 18.7 |

JANUARY SURVEY

The January 18, 1979 survey was conducted in accordance with the Environmental Technical Specifications program for SONGS 1 as specified by the Nuclear Regulatory Commission. The preoperational monitoring program for SONGS 2 and 3 was not implemented until May.

Profile Measurements

Vertical profiles of water temperature, depicted in Figure B-1, show that temperature at control stations for SONGS 1 was relatively uniform with depth. Temperature profiles show that surface temperature at downcoast control stations (C22S, C24S, and C26S) ranged from 15.8 to 15.9 C, and bottom temperature was slightly warmer at 16.1 C (Figures B-13 and B-15). Surface temperature at the upcoast control station (C20N) was 16.3 C, and bottom temperature was 16.0 C (Figures B-13 and B-15).

Surface water temperatures greater than or equal to 17.0 C were considered to be influenced by the SONGS 1 surface elevated temperature field. Sampling stations within the surface elevated temperature field included Stations A2N, A1N, A0, B2N downcoast through B.5S, X0, C0, and D0.

Vertical profiles show that temperature was relatively uniform with depth at all stations except those within the elevated temperature field (Figure B-1). Within the elevated temperature field, temperature decreased from surface to bottom at a gradient of 0.1 C/m along the A-line, 0.3 C/m along the B-line, and 0.03 C/m along the 0-line. Ambient bottom water temperature was 16.0 C. The surface to bottom temperature gradient was 0.1 C/m at the perimeter of the elevated temperature field, and 0.5 C/m at the center.

The elevated temperature field was observed near the bottom at Stations B2N and B1S only. At Station B2N, water temperature was 16.4 C at a bottom depth of 5.5 m. At Station B1S, water temperature was 16.5 C at a bottom depth of 6.7 m. Bottom temperatures at Stations B2N and B1S were 0.4 C greater than ambient bottom temperature at comparable depths.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure of the water offshore of the generating station during January is further illustrated in an isometric vertical cross-section (Figure B-7).

The elevated temperature field, delineated by the 17.0 C isotherm, extended upcoast and offshore. The elevated temperature field extended along the B-line from Station B1S to 1000 ft upcoast of Station B2N, with an average depth of 3 m, and a maximum depth of 5 m at Station B2N. The elevated temperature field extended along the C-line 1000 ft downcoast and 1000 ft upcoast of Station C0, where it reached a depth of 4 m. The elevated temperature field along the 0-line contacted the bottom 500 ft offshore of Station A0, and extended offshore to Station D0 at a depth of 3 to 4 m.

## Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-13, B-14, and B-15. Surface temperature and time of each profile are presented in Figure B-40.

Surface. Surface water temperatures ranged from 15.5 C (Stations A6S, A8S, B6S, C10S, and F6S) to 20.0 C (Station X0) (Figure B-40). Minimum temperatures occurred at stations downcoast of the 0-line. Mean surface water temperature outside of the elevated temperature field was 16.1 C upcoast of the 0-line and 15.8 C downcoast of the 0-line.

The surface elevated temperature field was located predominantly upcoast and onshore of the thermal discharge (B-13). The thermal plume was observed along the 0-line from 300 ft offshore (1700 ft inshore of the discharge) to 4500 ft offshore, along the A-line from 2500 ft upcoast to 300 ft downcoast of the 0-line, and along the B-line from 3000 ft upcoast to 700 ft downcoast of the 0-line. Offshore of the discharge, the field was located along the C-line 1000 ft upcoast and downcoast of the 0-line and along the D-line at Station D0 only. The surface elevated temperature field made contact with the shore between shoreline Stations 1N and 3, located approximately 1000 and 2500 ft upcoast from the 0-line, respectively.

Mid-depth (4 m). Water temperatures at 4 m ranged from 15.4 C to 17.9 C (Figure B-14). Minimum temperature at 4 m occurred downcoast of the 0-line. Temperatures at 4 m at control stations were slightly warmer than the minimum temperature at 4 m depth (15.4 C). Control station temperatures at 4 m were 16.0 $\pm$ 0.1 C.

The elevated temperature field at 4 m was outlined by the 16.5 C isotherm and was located along the 0-line from 500 ft offshore to 3600 ft offshore, along the A-line 1500 ft upcoast and downcoast of Station A0, and along the B-line from 2500 ft upcoast to 1800 ft downcoast of Station B0. The field was also located along the C-line 1000 ft upcoast and downcoast of Station C0.

Bottom. Bottom water temperatures ranged from 15.6 C to 17.9 C (Figure B-15). Dynamic bottom water temperatures occurred along the A-line due to mixing from surf and swells in relatively shallow depths. Minimum bottom water temperature occurred downcoast of the 0-line, as it did at the surface and at 4 m. Control station temperatures at the bottom were 16.0 to 16.1 C, the same as had been observed at 4 m. The elevated temperature field was observed in contact with the bottom only at Station A0, where bottom depth was 3 m.

## Aerial Infrared Thermal Mapping

The aerial infrared radiometer survey of the horizontal extent of the surface elevated temperature field was not required in January. The first measurements of the horizontal extent of the surface elevated temperature field in 1978 using aerial infrared radiometry were conducted in March.

MARCH SURVEY

The March 7, 1978 survey was conducted in accordance with the Environmental Technical Specifications program for SONGS 1 as specified by the Nuclear Regulatory Commission. The Preoperational Monitoring Program for SONGS 2 and 3 was not implemented until May.

Profile Measurements

Vertical profiles of water temperature, depicted in Figure B-2, show that temperature at control stations decreased less than 1 C between surface and bottom. Surface temperature at the downcoast control stations (C22S, C24S, and C26S) ranged from 16.2 to 16.3 C, and bottom temperature ranged from 15.8 to 16.0 C (Figures B-16 and B-18). Surface temperature at the upcoast control station (C20N) was 17.0 C, and bottom temperature was 16.3 C.

Surface water temperatures greater than 17.0 C were considered to be influenced by the SONGS 1 surface elevated temperature field. Sampling stations within the surface elevated temperature field were Stations A0, A2S, B0 downcoast through B2S, X0, and C0.

Vertical profiles show that no distinct thermocline was present, but water temperature decreased slightly with depth at all stations except Station A0 (Figure B-2). Natural temperature gradient was 0.01 C/m. The temperature at stations within the elevated temperature field decreased from surface to bottom at a gradient of 0.6 C/m along the 0-line and 0.3 C/m along the A-line and B-line. Ambient bottom water temperature was 16 C. Temperature increased with depth 0.1 C/m at Station A0. The temperature gradient was 0.3 C/m at the perimeter of the elevated temperature field and 1.0 C/m at the center.

The elevated temperature field was in contact with the bottom at Station A0, where temperature was 17.3 C and bottom depth was 3.3 m. Bottom temperature at Station A0 was 1 C greater than ambient temperature at comparable depths.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure offshore of the generating station during March is illustrated in an isometric vertical cross-section (Figure B-8). The elevated temperature field, delineated by the 17.0 C isotherm, extended onshore and downcoast. The elevated temperature field extended along the B-line from 500 ft upcoast of Station B0 to 1000 ft upcoast of Station B4S, and reached a maximum depth of 5 m at Station B1S. The elevated temperature field was observed along the C-line only within 500 ft of Station C0 at a maximum depth of 1 m. The elevated temperature field along the 0-line was most concentrated between Stations B0 and C0, reached a maximum depth of 7 m at Station X0, and extended onshore to Station A0 at a depth of 1 to 2 m.

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-16, B-17, and B-18. Surface temperature and time of each profile are presented in Figure B-41.

Surface. Surface water temperatures ranged from 16.2 C (Stations A1N, A4S, B1N, C22S) to 23.1 C (Station X0) (Figure B-41). Mean surface water temperature outside of the elevated temperature field was 16.7 C upcoast of the 0-line and 16.5 C downcoast of the 0-line. Surface water temperatures at the downcoast control stations were 0.1 C warmer than the minimum surface temperature measured among all SONGS 1 stations, and temperature at the upcoast control station was 0.8 C warmer than the minimum observed. Control station temperatures at the surface averaged 16.3 C downcoast and 17.0 C upcoast.

The surface elevated temperature field was located predominantly downcoast and onshore of the thermal discharge (Figure B-16). The thermal plume, defined by the 17.0 C isotherm, was observed along the 0-line between 1000 ft offshore (1000 ft inshore of the discharge) to 3000 ft offshore, along the A-line between 1000 ft and 3000 ft downcoast of the 0-line, along the B-line between 500 ft upcoast and 3000 ft downcoast of the 0-line, and along the C-line from C0 to 1500 ft downcoast. The elevated temperature field extended shoreward of Station A2S to within 500 feet of the shoreline.

Mid-depth (4 m). Water temperatures at 4 m ranged from 15.9 C to 22.0 C (Figure B-17). Cooler temperatures at 4 m occurred upcoast of the 0-line in the vicinity of the cooling water discharge. Water temperatures at downcoast control stations were 16.1 $\pm$ 0.1 C. Water temperature at 4 m at the upcoast control station was 17.1 C, 1.2 C greater than the minimum temperature measured.

The elevated temperature field at 4 m was located 1500 ft downcoast, and 500 ft upcoast, inshore, and offshore of the discharge. The border of the elevated temperature field, delineated by the 17.0 C isotherm, extended toward shore.

Bottom. Bottom water temperature ranged from 15.7 C to 17.3 C (Figure B-18). Bottom water temperature at the downcoast control stations was 15.9 $\pm$ 0.1 C, about the same as the minimum bottom temperature measured among all SONGS 1 stations. Bottom water temperature at the upcoast control station was 16.3 C, 0.4 C greater than the minimum temperature measured. The bottom elevated temperature field was located within 500 ft of Station A0 where bottom depth was 3 m.

Aerial Infrared Thermal Mapping

Contours of surface temperature are presented in Figure B-31. Surface temperatures from which the contours were derived are presented in Figure B-46. The horizontal extent of the 1 F and 4 F

elevated temperatute fields in March were determined from one aerial infrared radiometer flight on March 7. Natural background temperature was 16.8 ± 0.2 C (Figure B-31). The thermal field extended directly downcoast in a relatively thin ribbon due to strong downcoast currents. The 1 F elevated temperature field covered 430 acres and was located mainly in Zone 2A. The 4 F elevated temperature field covered less than one acre and was located over the discharge in Zone 0A. No shoreline contact was made by either the 1 F or 4 F elevated temperature fields.

MAY SURVEY

The Preoperational Monitoring Program for SONGS 2 and 3 was implemented in May, thus increasing the number of sampling stations to 74. Results from SONGS 1 monitoring stations are presented first, followed by results from SONGS 2 and 3 monitoring stations.

Profile Measurements - SONGS 1

Vertical profiles of water temperature for May show that temperature at control stations decreased about 1 C from surface to bottom (9 m) at the downcoast control stations (C22S, C24S, and C26S) and 0.2 C from surface to bottom at the upcoast control station (C20N) (Figure B-3). Surface temperature at downcoast control stations ranged from 16.1 to 16.5 C, and bottom temperature ranged from 14.8 to 15.5 C. Surface temperature at the upcoast control station was 16.7 C, and bottom temperature was 16.5 C.

Based on the average control station surface water temperature of 16.4 C, the surface elevated temperature field is depicted by the 17.0 C isotherm (Figure B-19). Sampling stations within the surface elevated temperature field were Stations A2N, A1N, A0, B4N downcoast through B.5S, X0, and C0 upcoast through C10N.

Vertical profiles show that temperature decreased slightly in the upper 10 m of the water column at some of the stations along the C-line and D-line and at all stations along the E-line (Figure B-3). Temperature was relatively uniform with depth in the upper 10 m of water column at all other stations except those within the elevated temperature field. Natural temperatures decreased rapidly below 10 m. Temperature decreased with depth within the elevated temperature field 0.1 C/m at Station A0 and along the B-line and C-line, and 0.2 C/m along the 0-line. Temperature was uniform with depth, but 1 C greater than ambient at Stations A2N and A1N within the elevated temperature field. No stratification occurred at Stations A2N and A1N because the elevated temperature field, as delineated by the 17.0 C isotherm, occupied the entire water column at these shallow stations.

Bottom temperatures influenced by the thermal plume ranged from 16.7 C to 17.8 C. Depth of the bottom at stations within the surface elevated temperature field ranged from 4.1 m to 9.2 m. Maximum temperature at control stations between 4.2 and 9.2 m was 16.5 C. Bottom temperatures greater than or equal to 16.7 C were influenced

by the thermal plume. The field contacted the bottom at Stations A2N, A1N, A0, B2N downcoast through B0, X0, and C4N.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure of the water offshore of the generating station during May is further illustrated in an isometric vertical cross-section (Figure B-9). The elevated temperature field, delineated by the 17.0 C isotherm, extended mainly upcoast and onshore. The elevated temperature field was at or near the bottom along the B-line from Station B1S upcoast past Station B4N at an average depth of 4 to 5 m, and contacted the bottom from 300 ft downcoast of Station B0 to 500 ft upcoast of Station B1N. The elevated temperature field extended along the C-line from 500 ft downcoast of Station C0 to 1000 ft downcoast of Station C14N at an average depth of 4 to 5 m, and a maximum depth of 6 m at Station C4N. The elevated temperature field extended along the 0-line from Station D0 onshore, and contacted the bottom near Station B0 at a depth of 6 m.

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figure B-19, B-20, and B-21. Surface temperature and time of each profile are presented in Figure B-42.

Surface. Surface water temperature ranged from 16.0 C (Stations D2S and E2S) to 20.0 C (Station X0) (Figure B-42). A mean surface temperature of 16.2 C at downcoast control stations was 0.3 C greater than the minimum surface temperature observed among all stations. Mean surface water temperature outside of the elevated temperature field was 16.6 C upcoast and 16.1 C downcoast of the 0-line.

Surface isotherms indicate that the elevated temperature field was located predominantly upcoast and onshore of the thermal discharge (Figure B-19). The plume was observed along the 0-line from 300 ft offshore (700 ft inshore of Station A0) to 1000 ft offshore of the discharge (500 ft offshore of Station C0), along the A-line from 300 ft south of Station A0 upcoast beyond Station C10N, along the B-line from 600 ft south of Station B0 upcoast beyond Station B4N, and along the C-line from 800 ft south of Station C0 to 700 ft north of Station C10N. The perimeter of the plume extended toward shore 700 ft north of Station C10N and made continuous contact with the shoreline from Station 1 (12,000 ft upcoast of the 0-line) to the construction pier.

Mid-depth (4 m). Water temperature at 4 m ranged from 16.0 C to 18.9 C (Figure B-20). Mean temperature at 4 m at the downcoast control stations was 16.2 C, 0.2 C greater than the minimum temperature observed among all stations. Temperature at 4 m at the upcoast control station was 16.6 C, 0.6 C greater than the minimum temperature observed among all stations. Outside of the elevated temperature field, mean water temperature at 4 m was 16.5 C upcoast and 16.1 C downcoast of the 0-line.

The elevated temperature field at 4 m was located predominantly upcoast and onshore, and covered nearly the same area as the surface elevated temperature field.

Bottom. Bottom water temperature ranged from 14.6 C (depth of 10.6 m) to 17.8 C (depth of 4.5 m) (Figure B-21). Mean bottom water temperature at control stations was 16.5 C (10.2 m depth) and 15.1 C (10.7 m mean depth). Bottom water temperatures at control stations were 0.5 to 1.9 C greater than the minimum bottom temperature measured among all SONGS 1 stations.

The bottom elevated temperature field was located along the A-line between 200 ft and 4000 ft upcoast of Station A0, and along the B-line between 700 ft and 2000 ft upcoast of Station B0 (Figure B-27). The field did not extend offshore beyond the B-line.

Aerial Infrared Thermal Mapping

Contours of surface temperature are presented in Figures B-32 and B-33. Surface temperatures from which the contours were derived are presented in Figures B-47 and B-48. The horizontal extent of the 1 F and 4 F surface elevated temperature fields in May were determined from two surface contact thermal dispersion and aerial infrared scanner runs on May 11, 1978 because heavy overcast and haze made radiometer measurements on May 4, 1978 unreliable. The first run was conducted between 1031 and 1218 hrs (Figure B-32) and the second run was conducted between 1323 and 1510 hrs (Figure B-33).

Natural background temperature during the first run, as measured in the vicinity of the control stations, was 17.9 $\pm$ 0.2 C. The 1 F surface elevated temperature field covered 200 acres in Zone 0A, and extended slightly into Zone 1A. The 1 F surface elevated temperature field was in contact with the shoreline in Zone 0A between shoreline Stations 1N and 3. The 4 F elevated temperature field covered less than one acre over the discharge in Zone 0A and did not come in contact with the shoreline.

Natural background temperature during the second run was 18.3 $\pm$ 0.1 C. The 1 F surface elevated temperature field had spread downcoast about 2000 ft since the first run one hour earlier. It covered 380 acres in Zones 0A and 1A. The 1 F field was in contact with the shoreline in Zones 0A and 1A between shoreline Station 2S and 1500 ft upcoast from shoreline Station 4N. The 4 F elevated temperature field covered 2.1 acres at the discharge in Zone 0A and did not come in contact with the shoreline.

Profile Measurements - SONGS 2 and 3

The thermal plume from SONGS 1 did not influence water temperature offshore at the stations designed for the SONGS 2 and 3 preoperational monitoring program. The stations designated for the Preoperational Monitoring Program were all stations along the F-line, H-line, J-line, and M-line (Figure 1-3).

Vertical profiles of water temperature show that temperatures at control stations along the F-line monitored for SONGS 2 and 3 decreased about 0.2 C/m (Figure B-3). Surface temperature at the downcoast control stations (F22S, F24S, and F26S) ranged from 16.4 to 16.5 C, and bottom temperature ranged from 14.1 to 15.4 C (Figures B-19 and B-21). Surface temperature at the upcoast control station (F20N) was 16.5 C, and bottom temperature was 13.1 C.

Temperature stratification, typical of late spring conditions, occurred at all stations monitored for SONGS 2 and 3. There were two basic patterns in rate of decrease in temperature with depth. The first pattern occurred at all stations along the F-line and at Stations H2S and Barn Kelp. Temperature decreased very little (0.01 C/m) between the surface and 10 m, then decreased at a rate of 0.9 C/m between 10 m and the bottom. Mean bottom depth was 13 m.

The second pattern of temperature gradients occurred at deeper stations, where a thermocline was present in the water column. This second pattern showed three separate rates of decrease in temperature with depth at Stations H2N and H0, and all stations along the J-line and M-line. Temperature decreased very little (0.03 C/m) between the surface and 9 m, decreased at a rate of 0.7 C/m between 9m and 13 m, then decreased 0.2 C/m between 13 m and the bottom. Mean bottom depths were 14 m at Stations H2N and H0, 18 m at stations along the J-line, and 26 m at stations along the M-line. These two patterns were due to the depth of the thermocline and varying depth of stations.

Vertical Cross-Sections Based on Profile Measurements

The vertical temperature structure of the waters at stations along the 0-line monitored for SONGS 2 and 3 during May is further illustrated in an isometric vertical cross-section (Figure B-9). The elevated temperature field from the SONGS 1 discharge did not affect water temperature at Stations F0 through M0 monitored for SONGS 2 and 3. Bottom water temperature decreased as bottom depth increased. Surface water temperature was 16.1 to 16.4 C at Stations F0 through M0, and bottom water temperature was 15.4 C at Station F0 (12.0 m), 13.5 C at Station H0 (14.0 m), 12.8 C at Station J0 (17.9 m), and 12.4 C at Station M0 (22.0 m).

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperatures are presented in Figures B-19, B-20, and B-21. Surface temperature and time of each profile are presented in Figure B-42.

Surface. Temperatures at monitoring stations for SONGS 2 and 3 ranged from 15.9 C (Station F6N) to 16.6 C (Station F24S) (Figure B-42). There were no horizontal temperature gradients in either the upcoast/downcoast or onshore/offshore directions. Mean surface water temperature was 16.2 C for all SONGS 2 and 3 stations.

Surface water temperature at all SONGS 2 and 3 control stations ranged from 16.4 to 16.5 C, 0.2 to 0.3 C warmer than the mean surface

water temperature of 16.2 C. Mean surface temperature was 16.5 C at SONGS 2 and 3 downcoast control station, 0.3 C greater than at SONGS 1 downcoast control stations. Surface temperature was 16.5 C at the upcoast control station, 0.2 C less than at the SONGS 1 upcoast control station.

Mid-depth (4 m). As depicted by horizontal isotherms at 4 m (Figure B-20), temperatures ranged from 16.0 C (Station J4N) to 16.6 C (Station F24S). There were no horizontal temperature gradients at 4 m in either the upcoast/downcoast or onshore/offshore directions. Mean temperature at 4 m was 16.2 ± 0.1 C for all SONGS 2 and 3 monitoring stations.

At the downcoast control stations, mean water temperature at 4 m was 16.5 C, 0.3 C greater than at SONGS 1 downcoast control stations. Temperature at 4 m was 16.4 C at the upcoast control station, 0.2 C less than at the SONGS 1 upcoast control station (16.6 C).

Bottom. As depicted by bottom isotherms (Figure B-21), bottom temperature ranged from 11.0 C (Station M8N) to 15.5 C (Station F14S). Bottom temperature at each station was depth dependent because of temperature stratification (Figure B-3). Mean bottom temperature upcoast of the 0-line was 12.6 C with a mean depth of 20.5 m. Mean bottom temperature downcoast of the 0-line was 13.6 C with a mean depth of 16.0 m. Bottom temperatures decreased with increasing depth offshore. Mean temperatures and bottom depths were: 14.4 C at 12.9 m along the F-line, 13.6 C at 14.0 m along the H-line, 12.9 C at 17.8 m along the J-line, and 12.0 at 25.7 m along the M-line. Mean bottom water temperature for all stations monitored for SONGS 2 and 3 was 13.3 C.

Bottom temperature was 13.1 C at the upcoast control station (14.3 m deep), 0.1 C less than mean bottom water temperature for all SONGS 2 and 3 stations, and 3.4 C less than bottom water temperature at the SONGS 1 upcoast control station (10.2 m deep).

Mean bottom temperature was 14.8 C at the downcoast control stations (12.8 m mean depth), 1.5 C greater than mean bottom water temperature at all SONGS 2 and 3 stations, and 0.3 C less than mean bottom water temperature at SONGS 1 downcoast control stations (10.7 m mean depth).

JULY SURVEY

Results from SONGS 1 monitoring stations are presented first, followed by results from SONGS 2 and 3 monitoring stations.

Profile Measurements - SONGS 1

Vertical profiles of water temperatures show that temperature at control stations along the C-line decreased an average of 3.4 C from surface to bottom at downcoast control stations, and 5.5 C from surface to bottom at the upcoast control station. Surface temperatures at downcoast control stations ranged from 19.4 to 19.6 C,

and bottom temperatures ranged from 15.4 to 16.6 C (Figures B-22 and B-24). Surface temperature at the upcoast control station was 19.8 C, and bottom temperature was 14.3 C.

Based on the maximum control station surface water temperature of 19.8 C, the perimeter of the surface elevated temperature field was determined to be the 20.0 C isotherm (Figure B-22). The field extended upcoast from 700 ft south of the discharge (Station X0) to Station C14N. The surface elevated temperature field made contact along the shoreline from 400 ft north of shoreline Station 1N upcoast to shoreline Station 1. Sampling stations within the surface elevated temperature field were Stations A2N, A1N, B4N, B1N downcoast through B.5S, X0, C8N, C4N, and C0.

Vertical profiles show that temperature stratification typical of summer conditions occurred outside of the elevated temperature field at Stations A0, A6S, A8S, B4S, B6S, and all stations along the C-line, D-line, and E-line (Figure B-4). Within the elevated temperature field, temperature increased 0.1 C/m at Station A2N and decreased 0.2 to 0.3 C/m at Stations A1N and B4N downcoast through B.5S. Temperature also decreased 0.9 C/m at Station X0 and 0.3, 0.4, and 0.5 C/m at Stations C8N, C4N, and C0, respectively.

Depth of the bottom at stations within the surface elevated temperature field ranged from 4.0 m (Stations A1N and A2N) to 9.9 m (Station C4N). Maximum temperature at the control stations between 4.0 and 9.9 m was 19.6 C. Assuming some variability, bottom temperatures greater than or equal to 19.8 C were determined to be influenced by the elevated temperature field. The field contacted the bottom at Stations A2N and A1N, where bottom water temperatures were 20.4 C and 19.8 C.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure of the waters offshore of the generating station during July is further illustrated in an isometric vertical cross-section (Figure B-10). The elevated temperature field, delineated by the 20 C isotherm, extended upcoast and onshore. The elevated temperature field extended along the B-line from Station B1S upcoast past Station B4N at an average depth of 3 m, and a maximum depth of 4 m at Station B0. The elevated temperature field extended along the C-line as several shallow pockets of warmer water from 1000 ft downcoast of Station C0 upcoast to Station C10N at an average depth of less than 1 m, and a maximum depth of 3 m at Station C0. The elevated temperature field along the 0-line was most concentrated near Station X0, and extended from 500 ft offshore of Station C0 to 300 ft onshore of Station B0. Maximum depth along the 0-line was 6 m at Station X0.

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-22, B-23, and B-24. Surface temperature and time of each profile are presented in Figure B-43.

Surface. Surface water temperatures ranged from 19.2 C (Station D0) to 24.5 C (Station X0) (Figure B-43). The mean surface temperature at downcoast control stations was 19.5 C, 0.3 C greater than the minimum surface temperature observed among all stations. Mean surface water temperature outside of the elevated temperature field was 19.8 C upcoast and 19.6 C downcoast of the 0-line.

Surface isotherms show that the elevated temperature field was located predominantly upcoast and onshore (Figure B-22). The field was located along the 0-line from 300 ft offshore of Station A0 to Station C0, along the A-line from 300 ft south of Station A1N upcoast through Station A2N, along the B-line from Station B.5S upcoast to 500 ft north of Station B1N, and from 600 ft south of Station B4S upcoast through Station B4N. The 20.0 C isotherm, marking the edge of the surface elevated temperature field, weaved back and forth across the C-line. The field crossed the C-line 600 ft south and 1000 ft north of Station C0, 500 ft south and 1500 ft north of Station C4N, and at Station C8N. The 20.0 C isotherm continued upcoast from Station C8N to 500 ft inshore of Station C14N. The surface elevated temperature field made shoreline contact from 500 ft north of shoreline Station 1N upcoast to shoreline Station 1. Water temperatures at shoreline stations in the zone of shoreline contact were 20.5 C (Station 1) to 20.8 C (Station 2).

Mid-depth (4 m). Water temperatures at 4 m ranged from 18.8 C (Station D0) to 21.9 C (Station X0). The mean temperature at 4 m at the downcoast control stations was 19.5 C, 0.7 C greater than the minimum temperature observed among all stations. Temperature at 4 m at the upcoast control station was 19.4 C, 0.6 C greater than the minimum temperature observed among all stations. Outside of the elevated temperature field, mean water temperature at 4 m was 19.6 C upcoast and 19.2 C downcoast of the 0-line.

The mean water temperature at 4 m at the control stations was 19.5 C. The elevated temperature field at 4 m was located at Stations X0 and A2N, where water temperatures were 21.9 C and 20.4 C, respectively.

Bottom. Bottom water temperature ranged from 13.3 C (Station E2N) to 20.4 C (Station A2N). Bottom water temperature decreased as station depth increased due to temperature stratification at the deeper stations. Bottom water temperature at the upcoast control station was 14.3 C (10.7 m deep). Bottom water temperatures averaged 16.1 C at downcoast control stations (11.0 m mean depth). Bottom water temperatures at control stations were 1.0 to 2.8 higher than the minimum bottom temperature measured among all SONGS 1 stations.

The bottom elevated temperature field was located only at Station A2N, where water temperature was 20.4 C. Bottom depth at Station A2N was 4.0 m, therefore, the bottom elevated temperature field at Station A2N was the same body of water as the 4 m elevated temperature field.

## Aerial Infrared Thermal Mapping

Contours of surface temperature are presented in Figure B-34. Surface temperatures from which the contours were derived are presented in Figure B-49. The horizontal extent of the 1 F and 4 F surface elevated temperature fields in July were determined from one aerial infrared radiometer flight. The flight was conducted between 1000 and 1100 hr (Figure B-34). Neither the 1 F nor the 4 F elevated temperature fields contacted the shoreline during the flight.

Natural background temperature during the flight was 19.6 ± 0.2 C. The 1 F surface elevated temperature field covered 220 acres, and was confined to Zone 0A and a small portion of Zone 1A. The 4 F elevated temperature field covered approximately 1.5 acres, and was confined to Zone 0A.

## Profile Measurements - SONGS 2 and 3

The elevated temperature field did not influence water temperatures offshore at the stations designated for the SONGS 2 and 3 preoperational monitoring program.

Vertical profiles of water temperature show that temperatures at control stations along the F-line decreased about 0.4 C/m from surface to bottom (Figure B-4). Surface temperature at the downcoast control stations ranged from 20.1 to 20.2 C, and bottom temperature ranged from 13.8 to 14.2 C (Figures B-22 and B-24). Surface temperature at the upcoast control station was 19.8 C, and bottom temperature was 12.7 C.

Temperature stratification typical of summer conditions occurred at all stations monitored for SONGS 2 and 3. There were two basic patterns of rate of decrease in temperature with depth. These two patterns are due to the depth of the thermocline and varying depths of stations. The first pattern occurred at all stations along the F-line and at Station H2S and J4S. Temperature decreased 0.1 C/m between the surface and 4 m, then decreased 0.6 C/m between 4 m and the bottom. Mean bottom depth was 14 m.

The second pattern of temperature gradients occurred at deeper stations, where a thermocline was present. This second pattern showed three separate rates of decrease in temperature with depth at Stations H2N, H0, and stations along the J-line and M-line excluding J4S. Temperature decreased 0.1 C/m between the surface and 5 m, 0.9 C/m between 5 m and 13 m, then decreased 0.2 C/m between 13 m and the bottom. Mean bottom depths were 14 m at Stations H2N and H0, 18 m at stations along the J-line, and 28 m at stations along the M-line.

## Vertical Cross-Sections Based on Profile Measurements

The vertical temperature structure of the waters at stations along the 0-line monitored for SONGS 2 and 3 during July is further illustrated in an isometric vertical cross-section (Figure B-10).

The elevated temperature field from the SONGS 1 discharge did not affect water temperature at stations along the F-line through the M-line. Bottom water temperature decreased as bottom depth increased. Surface water temperatures were 19.6 to 19.7 C at Stations F0 through M0, and bottom water temperature was 13.6 C at Station F0 (12.2 m), 12.4 C at Station H0 (14.2 m), 11.8 C at Station J0 (17.0 m), and 11.0 C at Station M0 (27.0 m).

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperatures are presented in Figures B-22, B23, and B-24. Surface temperature and time of each profile are presented in Figure B-43.

Surface. Surface temperature ranged from 19.0 C (Station M8N) to 20.2 C (Stations F14S, F22S, and F24S) (Figure B-43). Downcoast control stations were warmer than those in the vicinity of the proposed Units 2 and 3 diffusers. Surface temperature at downcoast control stations averaged 20.2 C while surface temperatures in the vicinity of Units 2 and 3 diffusers average 19.8 C. Mean surface water temperature was 19.6 C upcoast and 19.8 C downcoast of the 0-line. Temperature decreased with distance offshore. Mean surface temperatures were 19.9 C along the F-line, 19.7 C along the H-line, 19.6 C along the J-line, and 19.4 C along the M-line. Overall mean surface water temperature was 19.7 C for all SONGS 2 and 3 stations.

Mean surface water temperature at downcoast control stations was 20.2 C, 0.7 C greater than at SONGS 1 downcoast control stations. Surface temperature at the upcoast control station was 19.8 C for SONGS 2 and 3 and for SONGS 1.

Mid-depth (4 m). Temperatures at 4 m depth ranged from 18.8 C (Station M8N) to 20.0 C (Station F26S) (Figure B-23). Mean surface water temperature was 19.3 C upcoast and 19.5 C downcoast of the 0-line. There were no horizontal temperature gradients at 4 m in the onshore/offshore direction. Mean temperatures were 19.2 C along the H-line, and 19.4 C along the F-line, J-line, and M-line. The mean temperature at 4 m for all stations monitored for SONGS 2 and 3 was 19.4 C.

Mean control station water temperature at 4 m was 19.7 C, 0.3 C greater than mean water temperature at 4 m. The mean water temperature at 4 m at the downcoast control stations was 19.7 C, 0.2 C greater than at SONGS 1 downcoast control stations. The temperature at 4 m at the upcoast control station was 19.5 C, 0.1 C greater than at the SONGS 1 upcoast control station (19.4 C).

Bottom. Bottom temperature ranged from 10.8 C (Station M8N) to 15.0 C (Station F14S) (Figure B-24). Bottom temperature at each station was depth dependent due to temperature stratification (Figure B-4). Mean bottom temperature upcoast of the 0-line was 12.0 C with a mean depth of 20.0 m, and was 13.1 C downcoast of the 0-line, with a mean depth of 16.5 m. Bottom temperatures also decreased with increasing depth offshore. Mean temperatures and

bottom depths were: 13.8 C at 13.4 m along the F-line, 12.6 C at 14.1 m along the H-line, 11.9 C at 17.5 m along the J-line, and 11.1 C at 27.5 m along the M-line. Mean bottom water temperature for all stations monitored for SONGS 2 and 3 was 12.5 C.

Bottom temperature was 12.7 C at the upcoast control station (15.7 m deep), 0.2 C greater than mean bottom water temperature for all SONGS 2 and 3 stations, and 1.6 C less than bottom water temperature at the SONGS 1 upcoast control station (10.7 m deep). Mean bottom water temperature was 14.1 C at the downcoast control stations (14.0 m mean depth), 1.6 C greater than mean bottom water temperature at all SONGS 2 and 3 stations, and 2 C less than mean bottom water temperature at SONGS 1 downcoast control stations (11.0 m mean depth).

SEPTEMBER SURVEY

Results at SONGS 1 monitoring stations are presented first, followed by results at SONGS 2 and 3 monitoring stations.

Profile Measurements - SONGS 1

Vertical profiles of water temperatures show that temperature at downcoast control stations decreased an average of 0.3 C from surface to bottom, and 0.6 C from surface to bottom at the upcoast control station. Surface temperatures at downcoast control stations ranged from 20.4 to 20.5 C, and bottom temperatures ranged from 19.9 to 20.3 C (Figures B-25 and B-27). Surface temperature at the upcoast control station was 20.6 C, and bottom temperature was 20.0 C.

Based on the maximum control station surface water temperature of 20.6 C, the perimeter of the surface elevated temperature field was determined to be the 21.0 C isotherm (Figure B-25). The field extended upcoast and offshore from Stations D0 and E2N. Sampling stations within the elevated temperature field were Stations A2N, A1N, A0, B4N downcoast through B1S, X0, C4N downcoast through C0, D4N, and E2N.

Vertical profiles show that vertical temperature stratification typical of fall conditions occurred at stations outside of the elevated temperature field. Higher surface water temperatures at stations located close to the discharge caused the surface to bottom temperature gradients to be greater than at stations farther away from the discharge. Temperatures decreased 0.06 to 0.1 C/m between surface and bottom at Stations B4N, B1S, C4N, C2N, C0, D4N, and E4N. Temperatures decreased 0.2 C/m between surface and bottom at Stations A0, B2N, B1N, and B.5S, and 0.4 to 0.5 C/m at Stations B0 and X0.

Depth of the bottom at stations within the surface elevated temperature field ranged from 4.6 m (Station A0) to 12.5 m (Station E2N). The maximum temperature at control stations between 4.6 m and 12.5 m was 20.5 C. Assuming some variability, bottom temperatures greater than or equal to 20.7 C were determined to be influenced by the elevated temperature field. The field contacted the bottom at Station A0 where bottom water temperature was 21.0 C.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure of the water offshore of the generating station during September is further illustrated in an isometric vertical cross-section (Figure B-11). The elevated temperature field, delineated by the 21 C isotherm, extended upcoast and offshore of the discharge.

The elevated temperature field extended along the B-line from 500 ft downcoast of Station B1S to Station B4S at an average depth of 2 to 3 m, and a maximum depth of nearly 4 m at Stations B0 and B2N. The elevated temperature field extended along the C-line from 1000 ft upcoast of Station C2S to 500 ft downcoast of Station C6N at an average depth of 2 m, and a maximum depth of 3 m at Station C0. The elevated temperature field extended along the 0-line from 500 ft offshore of Station C0, inshore to Station A0 at an average depth of 4 m, and a maximum depth of nearly 6 m. The elevated temperature field contacted the bottom at Station A0.

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-25, B-26, and B-27. Surface temperature and time of each profile are presented in Figure B-44.

Surface. Surface water temperatures ranged from 20.3 C (Stations D6N and E4N) to 23.9 C (Station X0) (Figure B-44). The mean surface temperature at downcoast control stations was 20.4 C, 0.1 C greater than the minimum surface temperature observed among all stations. Mean surface water temperature outside of the elevated temperature field was 20.5 C upcoast and 20.6 C downcoast of the 0-line.

Surface isotherms show that the elevated temperature field was located predominantly upcoast and offshore (Figure B-25). The field was located along the 0-line from 300 ft inshore of Station A0 to 600 ft offshore of Station C0, along the B-line from Station B1A upcoast to Station B4N, along the C-line from 700 ft south of Station C0 upcoast to 500 ft north of Station C4N, along the D-line from 300 ft north of Station D2N upcoast to 400 ft north of Station D4N, and along the E-line from 600 ft south to 1000 ft north of Station E2N. The surface elevated temperature field extended upcoast from Station A2N through Station A0 and appeared to continue upcoast through Stations A1N and A2N, although Stations A1N and A2N were not monitored because of dangerous surf conditions. Shoreline station temperatures ranged from 21.1 C to 22.0 C. It could not be determined from the data whether shoreline temperatures greater than 21.0 C were caused from insolation or the elevated temperature field.

Mid-depth (4 m). Water temperatures at 4 m ranged from 20.3 C (Stations C8N, D6N, D0, and E4N) to 21.5 C (Station X0) (Figure B-26). The mean temperature at 4 m at both the downcoast and upcoast control

stations was 20.5 C, 0.2 C greater than the minimum temperature observed among all stations. Outside of the elevated temperature field, mean water temperature at 4 m was 20.4 C upcoast and 20.5 C downcoast of the 0-line.

The elevated temperature field at 4 m was located along the 0-line from Station A0 offshore to 400 ft beyond Station X0, along the A-line 600 ft upcoast and 900 ft downcoast of Station A0, along the B-line 600 ft upcoast and 800 ft downcoast of Station B0, and 600 ft upcoast and downcoast of Station X0.

Bottom. Bottom water temperature ranged from 19.4 C (Station E2N) to 21.0 C (Station A0) (Figure B-27). Bottom water temperatures decreased as station depth increased due to temperature stratification at the deeper stations. Control station bottom water temperatures were 20.0 C upcoast (13.6 m deep), and averaged 20.1 C downcoast (11.0 m mean depth). Bottom water temperatures at control stations were 0.6 to 0.7 C greater than the minimum bottom temperature measured among all SONGS 1 stations.

The bottom elevated temperature field was located 1000 ft upcoast and downcoast, and 400 ft offshore of Station A0. Bottom depth at Station A0 was 4.6 m; therefore, the bottom elevated temperature field at Station A0 represented the same body of water as the 4 m elevated temperature field.

Aerial Infrared Thermal Mapping

Contours at surface temperature are presented in Figures B-35 and B-36. Surface temperature from which the contours were derived are presented in Figures B-50 and B-51. The horizontal extent of the 1 F and 4 F surface elevated temperature fields in September were determined from two aerial infrared radiometer flights. The first flight was conducted between 1017 and 1112 hr (Figure B-35) and the second flight was conducted between 1305 and 1405 hr (Figure B-36). Natural background temperature during the first flight was 20.5 $\pm$ 0.2 C. The 1 F surface elevated temperature field covered 400 acres in Zones 0A and 1A. Natural background temperature plus 1 F was equal to 21.1 C. Shoreline temperatures were greater than 21.1 C upcoast of the construction trestle, but infrared radiometer data did not show the 1 F field making shoreline contact. The 4 F elevated temperature field covered 46 acres in Zone 0A and did not come in contact with the shoreline.

Natural background temperature during the second flight was 20.5 $\pm$ 0.2 C. The 1 F surface elevated temperature field covered 300 acres in Zone 0A and Zone 1A. Shoreline natural temperatures were greater than the 1 F field upcoast of the 0-line of stations, although infrared radiometer data did not show the 1 F field making shoreline contact. The 4 F elevated temperature field covered 3.4 acres in Zone 0A and did not come in contact with the shoreline.

Profile Measurements - SONGS 2 and 3

The elevated temperature field did not influence water temperature offshore at the stations designated for the SONGS 2 and 3 preoperational monitoring program.

Vertical profiles of water temperatures show that temperatures at control stations along the F-line decreased between the surface and bottom an average of 0.06 C/m at downcoast control stations and 0.1 C/m at upcoast control station (Figure B-5). Surface temperatures at the downcoast control stations ranged from 20.4 to 20.5 C, and bottom temperatures ranged from 19.4 to 19.7 C (Figures B-25 and B-27). Surface temperature at the upcoast control station was 20.7 C, and bottom temperature was 18.1 C. Surface temperature in the vicinity of the proposed SONGS 2 and 3 diffusers ranged from 20.4 to 21.0 C.

Temperature stratification, typical of fall conditions, with a gradient of temperature decrease with depth, but no thermocline, occurred at all stations monitored for SONGS 2 and 3. The gradient of decrease in temperature with depth was greater at deeper stations. Temperature decreased 0.09 C/m at stations along the F-line, 0.12 C/m at stations along the H-line, 0.14 C/m at stations along the J-line. Temperatures decreased 0.16 C/m upcoast of the discharge (20.0 m mean depth) and 0.13 C/m downcoast of the discharge (17.6 m mean depth). Along the M-line, temperatures decreased 0.20 C/m upcoast of the discharge (31.3 m mean depth) and 0.12 C/m downcoast of the discharge (25.1 m mean depth).

Vertical Cross-Sections based on Profile Measurements

The vertical temperature structure of the waters at stations along the 0-line monitored for SONGS 2 and 3 during September is further illustrated in an isometric vertical cross-section (Figure B-11). The elevated temperature field from the SONGS 1 discharge did not affect water temperature at Stations F0 through M0. Bottom water temperature decreased as bottom depth increased. Surface water temperature ranged from 20.4 to 20.6 C at Stations F0 through M0. Bottom water temperature was 19.4 C at Station F0 (12.2 m), 20.4 C at Station H0 (15.1 m), 18.7 C at Station J0 (18.7 m), and 14.9 C at Station M0 (28.1 m).

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-25, B-26, and B-27. Surface temperature and time of each profile are presented in Figure B-44.

Surface. As depicted by surface horizontal isotherms, temperature ranged from 20.3 C (Stations F6N and H2N) to 20.7 C (Stations F2S, F20N, and M2N) (Figure B-44). Mean surface water temperature for all SONGS 2 and 3 monitoring stations was 20.5 $\pm$ 0.1 C.

Surface water temperature at the upcoast control station was 20.7 C. Surface water temperatures at the downcoast control stations averaged 20.5 C. Temperature at the upcoast control station was 0.2 C greater than the mean surface water temperature of 20.5 C.

Surface water temperatures at the downcoast and upcoast control stations were 0.1 C greater than the corresponding downcoast (20.4 C mean temperature) and upcoast (20.6 C) control stations monitored for SONGS 1.

Mid-depth (4 m). As depicted by horizontal isotherms at 4 m, temperature ranged from 20.3 C (Stations F6N, F2N, H2N, and H0) to 20.6 C (Stations J8S, M4N, M2N, M4S, and M8S) (Figure B-26). Mean water temperature at 4 m was 20.4 C upcoast and 20.5 C downcoast of the 0-line. There was a slight increase in 4 m water temperature with increased distance offshore. Mean temperatures were 20.4 C along the F-line and H-line, 20.5 C along the J-line, and 20.6 C along the M-line.

Water temperatures at all control stations at 4 m were 20.5 C. Mean water temperatures for all SONGS 2 and 3 stations and for SONGS 1 control stations were also 20.5 C.

Bottom. As depicted by bottom horizontal isotherms, temperature ranged from 14.0 C (Station M8N) to 19.7 C (Station F26S) (Figure B-27). Bottom temperature at each station was depth dependent due to temperature stratification (Figure B-5). Mean bottom temperature upcoast of the 0-line was 17.2 C with a mean depth of 21.1 m, and was 18.7 C downcoast of the 0-line with a mean depth of 17.2 m. Bottom temperatures also decreased with increasing depth offshore. Mean temperatures and bottom depths were: 19.2 C at 14.1 m along the F-line, 18.6 C at 15.3 m along the H-line, 17.9 C at 18.8 m along the J-line, and 15.9 C at 28.2 m along the M-line. The overall mean bottom water temperature was 18.0 C for all stations monitored for SONGS 2 and 3.

Bottom temperature at the upcoast control station (19.3 m deep) was 18.1 C, 0.1 C greater than mean bottom water temperature for all SONGS 2 and 3 stations, and 1.9 C less than bottom water temperature at the SONGS 1 upcoast control station (13.6 m deep). Mean bottom water temperature at the downcoast control stations (14.7 m mean depth) was 19.5 C, 1.5 C greater than mean bottom water temperature at all SONGS 2 and 3 stations, and 0.6 C less than mean bottom water temperature at SONGS 1 downcoast control stations (11.0 m mean depth).

NOVEMBER SURVEY

Results at SONGS 1 monitoring stations are presented first, followed by results at SONGS 2 and 3 monitoring stations.

Profile Measurements - SONGS 1

Vertical profiles of water temperatures show that temperature at control stations along the C-line decreased an average of 0.3 C from surface to bottom at downcoast control stations and 0.7 C from surface to bottom at the upcoast control station (Figure B-6). Surface temperatures at downcoast control stations ranged from 17.4 to 17.6 C, and bottom temperatures ranged from 17.1 to 17.3 C. Surface temperature at the upcoast control station was 17.7 C and bottom temperature was 17.0 C (Figures B-28 and B-30).

Based on the maximum control station surface water temperature of 17.7 C, the perimeter of the surface elevated temperature field was determined to be the 18.0 C isotherm (Figure B-28). The field extended upcoast from Station C2S to 1000 ft north of Station C2N and offshore from Station A0 to Station E0. Sampling stations within the elevated temperature field were Stations A2N, A1N, A0, B2N downcoast through B1S, X0, C2N, C0, C2S, D2N, D0, and E0.

Vertical profiles show that vertical temperature stratification typical of late fall conditions, with little or no stratification present but warmer temperatures throughout the water column than observed in winter, occurred at stations outside of the elevated temperature field. Temperatures decreased 0.04 to 0.1 C/m between surface and bottom at Stations A1N, B1S, B2S, C0, C2S, D2N, and E0. Temperatures decreased 0.2 to 0.4 C/m between surface and bottom at Stations A2N, A0, B2N downcoast through B.5S, C2N, and X0. Higher surface water temperatures at stations close to the discharge caused the surface to bottom temperature gradients to be greater than at stations farther away from the discharge.

Depth of the bottom at stations within the surface elevated temperature field ranged from 2.1 m (Station A0) to 10.9 m (Station E0). Maximum temperature at control stations between 2 m and 11 m was 17.6 C. Assuming some variability, bottom temperatures greater than or equal to 17.8 C were determined to be influenced by the elevated temperature field. The field contacted the bottom at Stations A1N and A0, where bottom water temperatures were 18.7 C and 18.0 C, respectively. Depth of the bottom was about 2 m at Stations A1N and A0.

Vertical Cross-Sections Based on Profile Measurements

The influence of the SONGS 1 thermal discharge on the vertical temperature structure of the water offshore of the generating station during November is further illustrated in an isometric vertical cross-section presented in Figure B-12. The elevated temperature field, delineated by the 18 C isotherm, extended upcoast and offshore of the discharge.

The elevated temperature field extended along the B-line from Station B4S to 500 ft upcoast of Station B2N at an average depth of 2 to 3 m, and a maximum depth of 4 m at Station B1N. The elevated temperature field extended along the C-line from Station C4S upcoast to within 500 ft of Station C4N at an average depth of 2 m, and a maximum depth of nearly 3 m at Stations C2S and C2N. The elevated temperature field extended along the 0-line from Station E0 inshore to Station A0 at an average depth of 2 to 3 m. The maximum depth of the elevated temperature field along the 0-line was at Station A0 (depth of 2 m).

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-28, B-29, and B-30. Surface temperature and time of each profile are presented in Figure B-45.

Surface. Surface water temperatures ranged from 17.1 C (Station C6N) to 19.2 C (Station B0) (Figure B-45). The mean surface temperature at downcoast control stations was 17.5 C, 0.1 C greater than the minimum surface temperature observed among all stations. Mean surface water temperature outside of the elevated temperature field was 17.6 C upcoast and 17.7 C downcoast of the 0-line.

Surface isotherms show that the elevated temperature field encircled the discharge (Figure B-28). The field was located along the 0-line from 300 ft inshore of Station A0 offshore to Station E0, along the A-line from 1000 ft south of Station A0 upcoast to 1000 ft north of Station A2N, along the B-line from Station B2S upcoast to 800 ft north of Station B2N, along the C-line from 600 ft south of Station C2S to 800 ft north of Station C2N, along the D-line from 500 ft north of Station D2S upcoast to 400 ft north of Station D2N, and along the E-line at Station E0. Shoreline contact station temperatures ranged from 18.4 C to 19.1 C. It could not be determined from the data whether shoreline temperatures were natural or affected by the elevated temperature field.

Mid-depth (4 m). Water temperatures at 4 m ranged from 17.4 C (Stations C14N and C6N) to 17.8 C (Stations B1N and C6N) (Figure B-29). Mean temperatures at 4 m at the downcoast and upcoast control stations were 17.5 to 17.6 C, 0.1 to 0.2 C greater than the minimum temperature observed among all stations. Outside of the elevated temperature field, mean water temperature at 4 m was 20.4 C upcoast and 20.5 C downcoast of the 0-line.

The elevated temperature field at 4 m was located at Station B1N only, where water temperature was 17.8 C.

Bottom. Bottom water temperature ranged from 16.9 C (Station C14N) to 18.7 C (Station A1N) (Figure B-30). Bottom water temperatures decreased as station depth increased due to temperature stratification at the deeper stations. Control station bottom water temperatures were 17.0 C upcoast (11.9 m deep) and a mean of 17.2 C downcoast (9.3 m mean depth). Bottom water temperatures at control stations were 1.0 to 0.3 C greater than the minimum bottom temperature measured among all SONGS 1 stations.

The bottom elevated temperature field was located within 500 ft of Stations A1N and A0. Depth of bottom at these stations was 2 m, and therefore was not representative of bottom temperature conditions.

## Aerial Infrared Thermal Mapping

Contours of surface temperature are presented in Figures B-37, B-38, and B-39. Surface temperature from which the contours were derived are presented in Figures B-52, B-53, and B-54. The horizontal extent of the 1 F and 4 F surface elevated temperature fields in November were determined from three aerial infrared radiometer flights. The first flight was conducted between 0841 and 0926 hr

(Figure B-37), the second flight was conducted between 1157 and 1241 hr (Figure B-38), and the third flight was conducted between 1519 and 1554 hr (Figure B-39). Natural background temperature during the first flight was 17.3 ± 0.2 C. The 1 F surface elevated temperature field covered 800 acres in Zones 0A, 1A, 2A, and 0B. The 1 F surface elevated temperature field did not come in contact with the shoreline. The 4 F elevated temperature field covered 30 acres in Zone 0A and did not come in contact with the shoreline.

Natural background temperature during the second flight was 17.6 ± 0.1 C. The 1 F surface elevated temperature field covered 890 acres in Zones 0A, 1A, 2A, 0B, and 1B. Shoreline contact was made in Zones 0A and 1A. The 4 F elevated temperature field covered 4 acres in Zone 0A and did not contact the shoreline.

Natural background temperature during the third flight was 17.6 ± 0.2 C. The 1 F surface elevated temperature field covered more than 1300 acres in Zones 0A, 1A, 2A, 0B, and 2B. The 1 F surface elevated temperature field made shoreline contact in Zones 0A, 1A, and 2A. The 4 F surface elevated temperature field covered 90 acres and was confined to Zone 0A. The 4 F surface elevated temperature field did not contact the shoreline.

Profile Measurements - SONGS 2 and 3

The elevated temperature field did not extend far enough offshore to influence water temperature at the stations designated for the SONGS 2 and 3 preoperational monitoring program.

Vertical profiles of water temperatures depicted on Figure B-6 show that temperatures at control stations along the F-line decreased between the surface and bottom an average of 0.02 C/m downcoast and 0.05 C/m upcoast. Surface temperature at all the downcoast control stations was 17.6 C, and bottom temperature ranged from 17.4 to 17.5 C (Figures B-28 and B-30). Surface temperature at the upcoast control station was 17.7 C, and bottom temperature was 17.0 C.

Slight temperature stratification with no thermocline, typical of late fall conditions, occurred at all stations monitored for SONGS 2 and 3. Temperatures decreased 0.03 C/m at stations along the F-line, 0.02 C/m at stations along the H-line and the J-line, and 0.04 C/m at stations along the M-line.

Vertical Cross-Sections Based on Profile Measurements

The vertical temperature structure of the waters at stations along the 0-line monitored for SONGS 2 and 3 during November is further illustrated in an isometric vertical cross-section (Figure B-12). The elevated temperature field from the SONGS 1 discharge did not affect water temperature at Stations F0 through M0. Bottom water temperature decreased as bottom depth increased. Surface water temperature ranged from 17.5 to 17.6 C at Stations F0 through M0, and bottom water temperature was 17.4 C at Station F0 (12.4 m), 17.2 C at Station H0 (14.3 m), 12.2 C at Station J0 (18.3 m), and 16.4 C at Station M0 (28.3 m).

Horizontal Contours Based on Profile Measurements

Contours of surface, 4 m, and bottom temperature are presented in Figures B-28, B-29, and B-30. Surface temperature and time of each profile are presented in Figure B-45.

Surface. As depicted by surface horizontal isotherms, temperatures ranged from 17.4 C (Stations J8N and M4N) to 17.8 C (Stations F6S and H2S) (Figure B-45). Mean surface water temperature for all SONGS 2 and 3 monitoring stations was 17.6 C.

Surface water temperatures at control stations were 17.7 C upcoast and 17.6 C downcoast. Surface water temperature at the upcoast control station was 0.1 C greater than the mean surface water temperature of 17.6 C. Surface water temperatures at the downcoast control stations averaged 0.1 C greater than the corresponding mean temperature at downcoast control stations (17.5 C) monitored for SONGS 1. Surface water temperatures were 17.7 C at the upcoast control stations monitored for both SONGS 1 and for SONGS 2 and 3.

Mid-depth (4 m). As depicted by horizontal isotherms at 4 m (Figure B-29), temperature ranged from 17.3 C (Station J8N) to 17.6 C (Stations F20N, F2S, F14S, F22S, F24S, and F26S). The overall mean water temperature at 4 m was 17.5 C for all SONGS 2 and 3 monitoring stations.

Water temperatures at 4 m were 17.6 C at all control stations. Mean water temperature for all SONGS 2 and 3 stations and for SONGS 1 control stations was 17.6 C.

Bottom. As depicted by bottom horizontal isotherms (Figure B-30), temperature ranged from 16.2 C (Station M8S) to 17.5 C (Stations F6S and F24S). Bottom temperature at each station was depth dependent due to slight temperature stratification (Figure B-6). Mean bottom temperature was 16.9 C upcoast of the 0-line with a mean depth of 20.5 m, and was 17.1 C downcoast of the 0-line with a mean depth of 16.2 m. Bottom temperatures also decreased with increasing depth offshore. Mean temperatures and bottom depths were: 17.3 C at 11.8 m along the F-line, 17.2 C at 14.4 m along the H-line, 17.1 C at 18.7 m along the J-line, and 16.3 C at 29.2 m along the M-line. Mean bottom water temperature was 17.0 C at all stations monitored for SONGS 2 and 3.

Bottom temperature at the upcoast control station (13.8 m deep) was 17.0 C, the same as mean bottom water temperature for all SONGS 2 and 3 stations and bottom water temperature at the SONGS 1 upcoast control station (11.9 m deep). Mean bottom water temperature at the downcoast control stations (11.4 m mean depth) was 17.4 C, 0.4 C greater than mean bottom water temperature at all SONGS 2 and 3 stations, and 0.2 C greater than mean bottom water temperature at SONGS 1 downcoast control stations (9.3 m mean depth).

# CHAPTER 4

# CONTINUOUS TEMPERATURE

## A. INTRODUCTION

Continuous measurements of surface (2 ft, 0.6 m), mid-depth (15 ft, 4.6 m) and bottom (30 ft, 9.1 m) temperatures were recorded at Stations C2S and C22S in compliance with ETS Section 3.1.1.a.(5) and NPDES Permit No. CA0001228 (CRWQCB), (SDR No. 76-11). Station C2S is located 610 m (2000 ft) downcoast from SONGS 1 cooling water discharge and control Station C22S is located 6700 m (22,000 ft) downcoast from the discharge. Both stations are at a depth of 9.2 m (30 ft) below MLLW.

Continuous measurements of temperature at surface (2 ft, 0.6 m), 15 feet (4.6 m) and 30 feet (9.1 m) of depth, and bottom (40 ft, 12.2 m) were recorded at Station F2S in compliance with the preoperational monitoring program for SONGS Units 2 and 3. Station F2S is located 610 m (2000 ft) downcoast and 915 m (3000 ft) offshore from the SONGS 1 cooling water discharge at an approximate depth of 12.2 m (40 ft) below MLLW. This additional continuous temperature monitoring station was added in August 1978, to aid in defining the temperature field farther offshore of the existing SONGS 1 cooling water discharge and to establish preoperational baseline data prior to operation of SONGS Units 2 and 3 cooling water discharges.

## B. BACKGROUND INFORMATION

Koh and List (1974) analyzed five years of temperature data (1966-1971) collected from piers in Balboa, San Clemente, Oceanside, and La Jolla. Results of their study showed that temperature fluctuations with periods of a week or longer are caused by large scale phenomena, probably meteorological, that affect water temperatures over a distance greater than that between Balboa and La Jolla (118 km; 74 mi). Temperature fluctuations with periods of two days to a week are apparently due to small scale local oceanographic and meteorological conditions.

Results of continuous temperature measurements at San Onofre from 1975 through 1977 revealed the following: 1) several short period (less than one day to two week duration) cooling and warming trends occurred during the normal seasonal warming and cooling periods: 2) Semidiurnal and diurnal temperature variations were largest during the summer and were related to tide and insolation; and 3) qualitative comparisons between control Station C22S and near-discharge Station C2S revealed generally similar temperature records at similar depths.

## C. RESULTS

Graphs of continuous temperature data collected at the surface, mid-depth, and bottom of Stations C2S, C22S, and F2S are shown for monthly intervals in Appendix C, Figures C-1 through C-17. These data are summarized in Table 4-1 as monthly means and standard deviations of hourly measurements at each of the sampling locations.

**Table 4-1. Monthly Mean and Standard Deviation of Surface, Mid-depth, and Bottom Temperatures at Stations C2S, C22S and F2S (°C)**

Station C2S

| Month | Surface | | Mid-depth | | Bottom | |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| January | 16.0 | 0.5 | 16.4 | 0.3 | 15.8 | 0.3 |
| February | 16.4 | 0.6 | 15.9 | 0.4 | 15.3 | 0.3 |
| March | 16.8 | 0.8 | 16.1 | 0.5 | 15.7 | 0.5 |
| April | 17.6[a] | 0.6 | 15.6 | 1.3 | 15.0 | 1.5 |
| May | 18.1 | 1.1 | 15.1[a] | 0.9 | 16.0 | 1.4 |
| June | 18.2 | 1.8 | -[a] | - | 15.5 | 1.8 |
| July | 18.6 | 1.5 | 16.8[a] | 1.2 | 14.8 | 1.4 |
| August | 20.1 | 1.9 | 17.8[a] | 2.1 | 16.9 | 2.4 |
| September | 20.9 | 1.1 | 20.0 | 1.7 | 19.5 | 1.8 |
| October | 18.8[a] | 0.6 | 19.3 | 1.9 | 18.3 | 2.1 |
| November | 17.7 | 0.9 | 17.7 | 0.9 | 17.4 | 0.6 |
| December | 14.3 | 0.9 | 14.1 | 0.9 | 14.2 | 1.0 |

Station C22S

| Month | Surface | | Mid-depth | | Bottom | |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| January | 16.0 | 0.5 | 16.1 | 0.4 | 15.9 | 0.4 |
| February | 15.7 | 0.3 | 15.7 | 0.3 | 15.3 | 0.4 |
| March | 16.6 | 0.7 | 16.1 | 0.6 | 15.6 | 0.5 |
| April | 16.7 | 0.8 | 16.0 | 1.3 | 14.7 | 1.7 |
| May | 18.1 | 1.1 | 17.0 | 1.4 | 15.5 | 1.4 |
| June | 18.2 | 1.5 | 16.4 | 1.8 | 14.2 | 1.7 |
| July | 19.2 | 1.3 | 16.0 | 1.7 | 15.9 | 2.0 |
| August | 20.7 | 1.7 | 16.9[a] | 2.4 | 16.6 | 2.1 |
| September | 21.2 | 0.9 | 20.3[a] | 1.0 | 18.4[a] | 2.3 |
| October | 19.5 | 1.9 | 18.7 | 1.6 | 16.6[a] | 1.3 |
| November | 17.4 | 0.7 | 17.4 | 0.8 | 17.3 | 0.6 |
| December | 14.2 | 0.9 | 14.3 | 0.8 | 14.4 | 0.8 |

Station F2S[b]

| Month | Surface | | 15 feet | | 30 feet | | Bottom | |
|---|---|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D |
| January | | | | | | | | |
| February | | | | | | | | |
| March | | | | | | | | |
| April | | | | | | | | |
| May | | | | | | | | |
| June | | | | | | | | |
| July | | | | | | | | |
| August | 20.3 | 1.1 | 19.0 | 1.2 | -[a] | - | 15.8 | 0.9 |
| September | 20.5 | 0.9 | 19.7 | 1.5 | -[a] | - | 17.1 | 1.9 |
| October | 20.3 | 1.1 | 19.5 | 1.5 | 16.3 | 1.4 | 16.6 | 1.5 |
| November | 18.5 | 1.6 | 17.8 | 0.6 | 17.7 | 1.2 | 17.3 | 0.7 |
| December | 14.4 | 0.8 | 14.3 | 0.9 | 14.2 | 0.9 | 14.3 | 0.8 |

[a] Continuous temperature data not available for entire month.
[b] Station F2S was installed on August 22, 1978.

Monthly mean temperatures were generally low from January through March, then increased to a maximum in September, and decreased for the remainder of the year to a minimum in December.

Unit 1 Operational Stations (C2S and C22S)

Monthly mean surface temperatures at Stations C2S and C22S were 16.0 C at both stations in January, and increased slightly to 16.8 C and 16.6 C, respectively, in March. Temperatures increased to a maximum of 20.9 C and 21.2 C in September, then decreased to a minimum of 14.3 C and 14.2 C in December.

Monthly mean mid-depth temperatures at Stations C2S and C22S were approximately 16 C at both stations in January. Monthly mean temperatures remained within ± 1.0 C of 16.0 C through July at both stations. Temperatures increased to a maximum near 20.0 C at both Stations C2S and C22S in September, then decreased to December minima of 14.1 and 14.3 C, respectively.

Monthly mean bottom temperatures at Stations C2S and C22S were nearly equal in January (15.8 and 15.9 C), and remained within ± 0.5 C of each other and 15.5 C through May. In June, the monthly mean bottom temperature at Station C2S was 15.5 C, while at Station C22S the monthly mean temperature was 14.2 C. In July, the monthly mean bottom temperature at Station C2S was 14.8 C, while at Station C22S the monthly mean temperature was 15.9 C. Temperatures increased from August to September with a maximum of 19.5 C recorded at Station C2S. Overall trends observed at C22S were similar. Temperatures decreased through December to minima of 14.2 C and 14.4 C, respectively.

The difference between surface and bottom monthly mean temperature was greatest in the summer (June-August), and least in early winter (January-February) and late fall (November-December) at both stations C2S and C22S. From June through August, the difference between surface and bottom temperatures at Station C2S ranged from 2.7 C in June to an annual maximum of 3.8 C in July; while the difference at Station C22S ranged from 3.3 C in July to an annual maximum of 4.1 C in August.

From January through March, and November and December, the difference between surface and bottom temperatures at Station C2S was slightly greater than at Station C22S. The difference between surface and bottom temperatures at Station C2S ranged from 0.1 to 1.1 C during this period, while the difference at Station C22S ranged from -0.2 to 1.0 C during the same period.

During the spring and fall months, the difference between surface and bottom temperatures ranged from 1.4 to 2.1 C at Station C2S, and from 2.0 to 2.6 C at Station C22S.

A temperature inversion of 0.1 to 0.4 C occurred between surface and mid-depth (mid-depth temperature warmer than surface temperature) in January at Station C2S, and in January and December at Station C22S.

Monthly mean temperatures at the surface, mid-depth, and bottom were similar for Stations C2S and C22S. The difference in monthly mean surface temperature between Stations C2S and C22S (C2S minus C22S) ranged from -0.6 C to 0.9 C during the year. Monthly

mean surface temperatures were generally warmer at Station C2S than at C22S during winter (February and March) and late fall (November and December), and cooler during late summer and early fall months (July - October). Surface temperatures were equal at both stations in January, May, and June. The difference in monthly mean mid-depth temperature between Stations C2S and C22S ranged from -0.4 C to 0.6 C. No distinct seasonal trends were observed in temperatures at mid-depth. Mid-depth temperatures were equal at both stations in March.

The difference in monthly mean bottom temperature between Stations C2S and C22S ranged from -1.1 to 1.3 C, although most values varied within ± 0.5 C. The maximum difference (+1.3 C) occurred in June, resulting from unseasonably cool bottom temperatures (mean of 14.2 C) at Station C22S. The maximum negative difference (-1.1 C) occurred in July, resulting from unseasonably cool bottom water temperatures (mean of 14.8 C) at Station C2S. Differences tended to be least during winter and late fall months, and greatest during late spring and summer months. Bottom mean temperatures were equal during February.

Seasonal trends in variability were observed at both Stations C2S and C22S. Surface, mid-depth, and bottom variability was least during winter months and greatest during summer and early fall months. During winter months, variability was greatest at the surface, least at mid-depth, and intermediate at the bottom. Values of the coefficient of variation (defined in Chapter 2) at both Stations C2S and C22S during this period ranged from 2.1 to 4.8 at the surface, from 1.6 to 3.5 at mid-depth, and from 2.1 to 3.1 at the bottom.

During summer and early fall months, temperature variability was greatest at the bottom, intermediate at mid-depth, and least at the surface. Values of the coefficient of variation at both Stations C2S and C22S during this period ranged from 4.3 to 9.7 at the survace, from 4.9 to 14.3 at mid-depth, and from 7.8 to 13.9 at the bottom.

Several short period natural cooling and warming trends were observed within the normal seasonal warming and cooling periods. Duration of these short period trends ranged from less than a day to approximately two weeks. Natural temperature varied as much as 8 C in two days during some of these periods. These short period cooling and warming trends were most apparent during April through October (Figures C-1 through C-17).

The standard deviation of the monthly mean was higher during months in which short period cooling and warming trends were observed, although diurnal variability may have been similar. These trends were apparent at both Stations C2S and C22S, and at all depths. For example, diurnal variability was similar during the months of July and August (Figures C-7 and C-8). However, short period cooling trends occurred during one period in July, beginning on July 20. During August, there were two obvious short period cooling trends, one beginning on August 2, and another beginning

on August 12. Standard deviation from the monthly mean was higher during August at all depths and at both Stations C2S and C22S than during July.

Daily variations in surface, mid-depth, and bottom temperatures occurred at Stations C2S and C22S. The magnitude of these daily variations was small in winter and large in summer. Figure 4-1 shows the variation in natural surface, mid-depth, and bottom temperatures at Stations C22S during January and July. In January, the largest daily variations in temperature were observed at the surface. The magnitude of these variations ranged from 0.1 to 1.0 C. Daily temperature variations at mid-depth and bottom were generally less than 0.5 C during January. In July, the daily variations in temperatures at all depths were significantly larger than observed in January. Mid-depth temperatures showed the largest semidiurnal and diurnal variations. Diurnal variations at mid-depth ranged from 1.0 to 6.0 C, with an average diurnal variation near 4.0 C. Bottom temperatures also showed large diurnal fluctuations, ranging from less than 0.5 C to nearly 6.0 C: Surface temperature variations averaged 1.0 to 2.0 C during July.

Units 2 and 3 Preoperational Station (F2S)

Monthly mean surface temperature at Station F2S reached a maximum in September (20.5 C), and decreased to a minimum in December (14.4 C). Monthly mean mid-depth temperatures followed a similar pattern. At 15 feet (4.6 m), temperatures reached a maximum of 19.7 C in September, decreasing to 14.3 C in December. At 30 feet (9.1 m), monthly mean temperatures records were complete only in November and December. The depth of this sensor is similar to the depth of bottom sensors at Stations C2S and C22S. Monthly mean temperatures recorded at 30 feet (9.1 m) were 17.7 C in November and 14.2 C in December. The monthly mean bottom temperature, measured at approximately 45 feet (13.7 m) was 17.1 C in September, reached a maximum of 17.3 C in November, and decreased to 14.3 C in December.

The difference between surface and bottom monthly mean temperatures at Station F2S ranged from 4.5 C in August to 0.1 C in December.

Monthly mean temperatures recorded at Station F2S were similar to those recorded at Stations C2S and C22S. The difference in monthly mean temperature between Stations F2S and C22S (F2S minus C22S) ranged from -0.7 to 0.9 C at the surface, from -0.6 to 0.8 C at the 15 feet stations, and from 0.2 to 0.4 at the 30 feet stations.

Variability of temperatures about the monthly mean, measured by the coefficient of variation, was similar at Stations F2S and C22S. Values of the coefficient of variation ranged from 4.4 to 8.4 at the surface, from 3.6 to 7.8 at 15 feet stations, from 6.2 to 8.8 at 30 feet stations, and from 4.3 to 10.8 at the bottom.

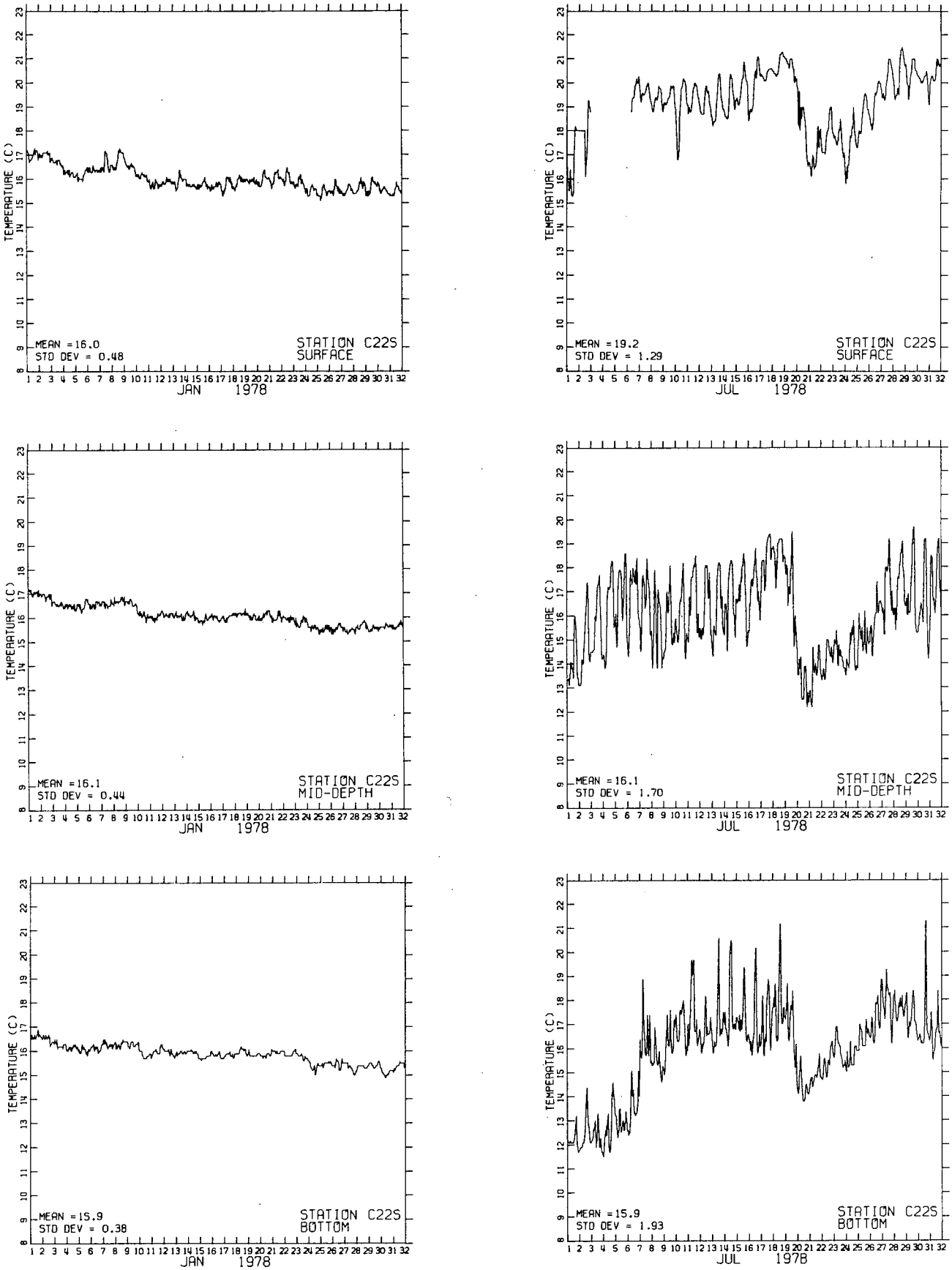



**Figure 4-1. Daily Variation in Surface, Mid-depth, and Bottom Temperatures at Station C22S in January and July**

# CHAPTER 5

# COMPARISON OF INTAKE AND DISCHARGE TEMPERATURES WITH REFERENCE AMBIENT TEMPERATURE

## A. INTRODUCTION

Intake and discharge temperatures at SONGS 1 were compared with ambient ocean temperature as specified in ETS Section 3.1.1.a.(6) and NPDES Permit No. CA0001228 (CRWQCB, SDR Order No. 76-11). Objectives of these comparisons were to : 1) determine the increase in discharge temperature compared to a reference ocean ambient temperature; and 2) estimate the extent to which heated water is recirculated back into the intake of the circulating water system. Ocean ambient temperature is defined in ETS Section 1.14 as "the surface temperature in the upper two feet of the water column as measured by a continuous temperature monitoring station in Zone 6 located not less than 22,000 feet from the cooling water discharge port and a distance offshore equivalent to a 30 foot depth of water (referenced to MLLW)." Ocean ambient temperature, as defined in ETS, however, may not be the same as natural temperature in the vicinity of the discharge, due to spatial variations in temperature.

This chapter presents a brief discussion of background information, a history of pertinent previous studies in the area, a synopsis of measuring techniques, a discussion and interpretation of results, and a summary of significant findings.

## B. BACKGROUND INFORMATION

Koh and List (1974) analyzed five years of temperature data (1966-1971) collected at the offshore ends of southern California piers in Balboa, San Clemente, Oceanside, and La Jolla. Results of their study showed natural temperature exhibited fluctuations of 2.0 C (3.6 F) over a period of a few minutes and areal fluctuations of 1.4 C (2.5 F) over distances of a few thousand feet.

Results of comparison of intake and discharge temperatures with ambient ocean temperature from the initiation of the study in June 1975 through December 1977 show that:

1. Normal seasonal warming and cooling was observed in intake, discharge, and ocean ambient temperatures during periods of normal generating station operation.

2. Several short periods of cooling and warming trends were observed in intake, discharge, and ocean ambient temperatures within the normal seasonal warming and cooling periods.

3. Diurnal variations were observed in intake, discharge, and ocean ambient temperatures. These diurnal variations were small in winter and large in summer.

4. Discharge temperatures were approximately 12.0 C warmer than intake temperatures during periods of normal generating station operation. Short term fluctuations in plant operation resulted in inplant $\Delta T_C$ (difference between intake and discharge temperature) deviating from the usual 12.0 C. These short term fluctuations were for heat treatment and maintenance of the once through circulating water system.

5. Differences in monthly mean discharge and ocean surface ambient temperatures during periods of continuous plant operation were less than inplant $\Delta T_C$, and ranged from 8.0 C in September 1976 to 12.5 C in November 1977. These differences were usually smallest during summer months when there existed a natural temperature stratification between the depth of the intake and discharge, and the surface.

6. There was no increase in discharge temperature (relative to ocean surface ambient temperatures) due to recirculation of heated discharge water back into the intake of the cooling water system during 1976.

7. Beginning in 1977, discharge temperature was compared to ocean mid-depth ambient temperature, as measured at Station C22S. This comparison is a more sensitive one, as mid-depth water temperatures from the same depth as plant intake are not influenced by diurnal heating and cooling as much as the surface waters. Results showed that monthly mean intake temperature ranged from 0.1 to 1.5 C higher than ambient mid-depth temperatures during 1977. These results suggest recirculation may have occurred, although results were inconclusive because these temperature differences were within the limits of natural variability and limits of accuracy of the sensors.

8. Intake temperature was found to exceed mid-depth ambient temperature in 1977 by greater than 1.0 C from 5 to 72% of the time, with a mean value of 41%. Mid-depth ambient exceeded intake by greater than 1 C less than 10% of the time. Intake exceeded mid-depth ambient more than would be expected due to natural spatial variations in temperature.

## C. RESULTS

Intake and discharge temperatures at SONGS 1 and ocean ambient surface (0.6 m) and mid-depth (4.6 m) temperatures at Station C22S were compared at one hour intervals from January through December 1978. Plots comparing ambient, intake, and discharge temperatures at monthly intervals are shown in Figure D-1 through D-12 of Appendix D.

### Intake, Discharge, and Ocean Ambient Temperatures

Monthly means and standard deviations of ambient, intake, and discharge temperatures are presented in Table 5-1. Surface ambient

**Table 5-1. Comparison of Monthly Mean and Standard Deviation of Intake, Discharge, and Surface and Mid-depth Ambient Temperatures (°C)**

| Month | Surface Ambient | Intake | Mid-depth Ambient | Discharge | Discharge Minus Surface Ambient | Discharge Minus Intake | Discharge Minus Mid-depth Ambient | Intake Minus Surface Ambient | Intake Minus Mid-depth Ambient |
|---|---|---|---|---|---|---|---|---|---|
| January | 16.0 ± 0.5 | 17.1 ± 0.3 | 16.1 ± 0.4 | 28.5 ± 0.6 | 12.5 | 11.4 | 12.4 | 1.1 | 1.0 |
| February | 15.7 ± 0.3 | 16.8 ± 0.3 | 15.7 ± 0.3 | 28.3 ± 0.8 | 12.6 | 11.5 | 12.6 | 1.1 | 1.1 |
| March | 16.7 ± 0.7 | 17.4 ± 0.6 | 16.1 ± 0.6 | 28.9 ± 0.9 | 12.3 | 11.6 | 12.8 | 0.7 | 1.3 |
| April | 16.7 ± 0.8 | 16.9 ± 1.3 | 16.0 ± 1.3 | 21.5 ± 5.6 | 4.4 | 4.3 | 5.5 | 0.1 | 0.9 |
| May | 18.1 ± 1.1 | 18.0 ± 1.3 | 17.0 ± 1.4 | 26.1 ± 2.1 | 8.0 | 8.2 | 9.1 | -0.1 | 1.0 |
| June | 18.2 ± 1.5 | 17.8 ± 1.9 | 16.4 ± 1.8 | 26.1 ± 2.9 | 7.9 | 8.3 | 9.7 | -0.5 | 1.4 |
| July | 19.2 ± 1.3 | 17.7 ± 1.6 | 16.0 ± 1.7 | 28.9 ± 2.4 | 9.7 | 11.2 | 12.9 | -1.4 | 1.7 |
| August[a] | 20.7 ± 1.7 | 18.9 ± 2.3 | 16.9 ± 2.4 | 30.1 ± 2.3 | 9.3 | 11.2 | 13.2 | -1.8 | 2.0 |
| September[b] | 21.2 ± 0.9 | 20.4 ± 1.5 | 20.3 ± 1.0 | 25.6 ± 4.7 | 4.5 | 5.3 | 5.3 | -0.7 | 0.1 |
| October | 19.5 ± 1.9 | 21.0 ± 1.6 | 18.7 ± 1.6 | 22.0 ± 2.1 | 2.5 | 1.1 | 3.3 | 1.4 | 2.3 |
| November | 17.4 ± 0.7 | 18.6 ± 0.7 | 17.4 ± 0.8 | 28.2 ± 3.8 | 10.7 | 9.5 | 10.8 | 1.2 | 1.2 |
| December | 14.2 ± 0.9 | 15.4 ± 1.0 | 14.3 ± 0.8 | 27.1 ± 1.3 | 12.9 | 11.7 | 12.8 | 1.2 | 1.1 |

temperature decreased from a mean of 16.0 C in January to 15.7 C in February, then increased to a maximum of 21.2 C in September, and then decreased to a minimum of 14.2 C in December. Intake temperatures followed a similar seasonal trend. Monthly mean intake temperatures were warmer than surface ambient from January through April, and from October through December, the difference ranging from +0.1 to +1.4 C. Intake temperatures were cooler than surface ambient from May through September, with the difference ranging from -0.1 to -0.8 C. As reported in the previous chapter on continuous temperature, the difference between surface and bottom temperatures during winter and late fall months ranged from 0.1 to 1.1 C at Station C2S, and from -0.2 to 1.0 C at Station C22S. Intake temperatures averaged 1.0 C higher than mid-depth ambient during these same periods, a difference greater than can be accounted for by natural thermal stratification between these two depths. These results suggest that recirculation was occurring between the discharge and intake at SONGS 1. Winter and late fall months present the worst case in these comparisons as the heated cooling water discharge causes elevated surface temperatures, and ambient

temperatures have only small fluctuations in the natural environment during winter. Natural temperature fluctuations of greater than 1.0 C do occur during winter and late fall months (Figures C-1 through C-3, and C-14 through C-17), although these fluctuations are less common at mid-depth and near bottom than at the surface. Cooling waters exhibited some recirculation during summer months. Thermal stratification, which is strongest during summer months, presents a wide range of temperatures from surface to bottom. The temperature differential between surface and the depth of the intake (5 m) was as great as 3.8 C during summer. The difference between intake and mid-depth ambient temperature ranged from 1.4 to 2.0 C during summer months. This temperature difference may be due to localized conditions at both the intake and ambient (C22S) stations, such as differences in depth of thermocline, currents, and tidal influences, as well as recirculation.

Monthly variations in intake temperature were similar to monthly variations in ambient temperature. These variations were relatively small during late fall and winter months. Monthly mean standard deviations of temperature ranged from 0.3 to 0.9 C at the surface ambient station, from 0.3 to 1.0 C at the intake, and from 0.3 to 0.8 C at the mid-depth ambient station during this period (Table 5-1). Temperature variations were highest during summer months, and ranged from 1.3 to 1.7 C at the surface ambient station, from 1.6 to 2.3 C at the intake, and from 1.7 to 2.4 at the mid-depth ambient station during this period. Discharge temperatures exhibited the highest monthly standard deviations, ranging from 0.6 C in January to 5.6 C in April. This higher variation is related to operation of the generating station. The generating station was online at a constant plant load the entire month of January producing a constant heat rise in the condensers, and thus the low (similar to ambient) variation. In April, however, the generating station was offline from April 5 to April 26, and the large difference between online and offline discharge temperatures is reflected in the high standard deviation. Other periods of intermittent operation are also reflected in higher standard deviations. During periods of normal plant operation (approximately 450 megawatts/hour) inplant $\Delta T_c$ (discharge minus intake temperature) was approximately 12.0 C. The generating station was in normal operation from January 1 through April 5, offline from April 5 through April 26, online at reduced load (approximately 250 megawatts/hour) from April 26 through July 10, at normal capacity through September 15, offline from September 15 through November 5, and in normal operation through December.

Short term fluctuations in plant operation occurred during periods of normal operation. These fluctuations are shown by spikes in discharge temperatures in Figures D-1 through D-12.

The large spikes in discharge temperature on February 12, March 6, April 12, May 17, June 23, August 20, September 13, and December 3 were due to heat treatment of the cooling water conduit. Both intake and discharge conduits are heat treated periodically to limit fouling by marine organisms. During heat treatment,

station load is reduced and a portion of the water leaving the steam condensers is recirculated through the condensers to increase inplant $\Delta T$ to a range of 20.0 C to 35.0 C. The warmer water is then discharged to the ocean through either the intake or discharge conduits, whichever is being heat treated. Other smaller spikes in discharge temperature records were generally due to condenser repairs, which necessitated a reduction in cooling water flow and station load. Large decreases in discharge temperatures were generally due to maintenance and testing of various equipment.

Discharge and Ocean Surface Ambient Temperature Comparisons

Discharge and ambient temperatures were compared at one-hour intervals to determine increases in discharge temperature relative to ocean ambient temperature.

The temperature difference between surface ambient and discharge temperature provides an indication of the temperature change actually experienced by the environment. During periods of normal station operation, differences in mean discharge and ambient surface temperatures ranged from 12.3 C in March to 12.9 C in December. During May through August, when the generating station was operating at reduced megawatt output, the difference between discharge and surface ambient ranged from 7.9 to 9.7 C. The difference between inplant $\Delta T$ (discharge minus intake) and discharge minus surface ambient temperature was least in summer months when a natural temperature stratification was present in the water column. The difference in discharge and surface ambient temperatures was greater than the inplant $\Delta T$ by 0.7 to 1.2 C during late fall and winter months, when there was little or no natural temperature stratification present. These data suggest some possible recirculation of heated discharge water back into the intake. The calculated mean temperature differences are often less than the combined uncertainty of instrument accuracy in some cases, however.

Intake and Ocean Ambient Temperature Comparisons

Intake and ocean ambient surface temperatures were compared at hourly intervals to determine the extent of recirculation of heated discharge water, which would increase the difference between discharge and ambient temperature more than the inplant $\Delta T$. Table 5-2 presents the percent of time during each month that intake and ocean ambient temperature measurements at one hour intervals differed by more than $\pm$ 1.0 C. The lower-most graph on Figures D-1 through D-12 present the difference between intake and ocean surface ambient temperature. Intake temperatures exceeded surface ambient by more than 1.0 C from 0 to 80% of the hourly measurements for each month. Intake temperature exceeded surface ambient by more than 1.0 C approximately 63% of the time during the winter and late fall months, when little thermal stratification was present. Intake temperatures exceeded surface

**Table 5-2. Percent of Time During Each Month That Intake and Surface and Mid-depth Ambient Temperatures Differed by More or Less than 1°C**

| Month | Surface ambient is warmer than intake by more than 1.0C | Intake is warmer than surface ambient by more than 1.0C | Intake and surface ambient are within 1.0C of each other | Mid-depth ambient is warmer than intake by more than 1.0C | Intake is warmer than mid-depth ambient by more than 1.0C | Intake and mid-depth ambient are within 1.0C of each other |
|---|---|---|---|---|---|---|
| January | 0 | 80 | 20 | 0 | 58 | 42 |
| February | 0 | 66 | 34 | 0 | 68 | 32 |
| March | 0 | 26 | 74 | 0 | 69 | 31 |
| April | 11 | 6 | 83 | 0 | 36 | 64 |
| May | 19 | 14 | 67 | 3 | 55 | 42 |
| June | 32 | 8 | 60 | 1 | 67 | 32 |
| July | 65 | 3 | 32 | 3 | 73 | 24 |
| August | 71 | 1 | 28 | | | |
| September | 31 | 0 | 69 | 4 | 16 | 80 |
| October | 8 | 53 | 39 | 1 | 68 | 31 |
| November | 0 | 73 | 27 | 0 | 85 | 15 |
| December | 0 | 79 | 21 | 0 | 72 | 28 |

ambient by more than 2.0 C approximately 4% of the time during summer months when thermal stratification was most intense. During the remaining time for each month, ocean ambient surface temperature was warmer than intake temperature by more than 1.0 C, or within 1.0 C of intake temperature. Surface ambient temperature was rarely warmer than intake during winter and late fall months, and was warmer most frequently during summer months, with a maximum of 71% in August.

Mid-depth ambient temperatures were also compared to intake temperatures to further identify the extent of possible recirculation of heated discharge waters. Measurements taken at mid-depth (4.6 m) at Station C22S were compared hourly with intake temperatures for each month. By comparing temperatures recorded at similar depths, effects of thermal stratification of the water column are reduced. Results of this comparison are also shown in Table 5-2. The most apparent difference between the surface and mid-depth comparisons with intake temperatures occurred during summer months, when natural thermal stratification was strongest. Mid-depth ambient temperatures were warmer than intake temperatures by more than 1.0 C from 0% to 4% of the time. Intake temperatures were warmer than mid-depth ambient by more than 1.0 C from 16% to 85% of the time, with an annual mean of 61%. Intake and mid-depth ambient temperatures were within 1.0 C of each other from 15% to 80% of the time. During April and September, when the generating station was offline during most of the month, intake and mid-depth ambient temperatures were more frequently within 1.0 C of each other than during months of continuous operation. During October, the generating station was offline, with circulation pumps operating at minimum maintenance level. Inplant $\Delta T$ (discharge minus intake) during the first two weeks of October was approximately 2.0 C. Beginning at 1700 hours on October 13, inplant $\Delta T$ began to rise, and reached an average value of 5.0 by 1500 hrs on October 14. This temperature was maintained through 1200 hrs on October 15, at which time inplant flow was reversed, and inplant $\Delta T$ began a negative trend, indicating that intake temperatures were warmer than discharge temperatures. The maximum

reverse $\Delta T$ (4.8 C) was achieved at 0800 hrs on October 16. The $\Delta T$ values increased (intake minus discharge temperatures increased toward zero), and were essentially equal on October 20. During the remainder of October, $\Delta T$ was mostly positive and averaged 1.0 C. This event can be seen graphically in Figure D-10, where the difference between surface ambient and intake temperature is plotted in the lower portion of the graph.

# CHAPTER 6

# TURBIDITY

## A. INTRODUCTION

Turbidity was measured in the SONGS 1 receiving waters in compliance with ETS Section 3.1.1.a.(4) and NPDES Permit No. CA0001228 (CRWQCB, SDR Order No. 76-11). Turbidity study objectives, as outlined in ETS Section 3.1.1.a.(4), are to monitor suspended solids in the receiving waters near SONGS 1 in order to determine any effect of the discharge upon water clarity. During May 1978, turbidity studies were expanded to include 23 additional sampling stations (Figure 1-3), to compile a data base as part of the Preoperational Monitoring Program for SONGS 2 and 3 which was approved by the NRC on July 6, 1978. This data base will be used to assess the effects of SONGS 2 and 3 during their operation. Turbidity of the receiving waters was monitored by: 1) profiles of light transmittance along a one-meter path length; 2) Secchi disc depth of visibility; 3) concentration of suspended and settleable solids; and 4) aerial photographs.

## B. BACKGROUND INFORMATION

The generating station draws seawater through an intake conduit which extends offshore approximately 1000 m, where it terminates in an intake structure located in 9 m of water (MLLW). The intake structure is oriented vertically and extends approximately 3 m above the ocean bottom. The structure is fitted with a velocity cap to produce a horizontal flow of water entering the intake structure. Therefore, the generating station intakes water from the area approximately 3 m above the ocean floor (and somewhat from waters above and below this depth), which is often more turbid than surface waters. After passing through steam condensers, this water is discharged vertically through a discharge structure located approximately 800 m offshore in 7 m of water (MLLW). Under normal operating conditions, this vertically discharged seawater is initially about 11 C to 12 C warmer than the intake water. In the vicinity of the discharge, this warmer, vertically discharged water entrains surrounding ambient waters as it rises and then spreads horizontally at the surface of the receiving water.

Measurements of light transmittance and visual observations of the depth of Secchi disc visibility in the SONGS 1 study area began in April, 1964 as a part of the bimonthly oceanographic monitoring program. In addition to these routine SONGS 1 preoperational and operational turbidity monitoring surveys, special investigations have been conducted to ascertain the cause of surface turbidity present in the SONGS 1 thermal effluent field (SCE, 1972, IRC, 1972). These investigations included diver observations, aerial photographs and observations, as well as additional light transmittance measurements.

The ETS monitoring program began in 1975 and included bimonthly measurements of light transmittance and Secchi disc depth of visibility at 34 stations and quarterly aerial photographs. The program was expanded in 1976 to include 51 sampling stations. The number of sampling stations remained the same during 1977. Results from these studies showed: 1) water clarity generally increased with distance offshore; 2) water clarity generally decreased with depth throughout the survey area; 3) there was a large variation in water clarity between surveys, however, water clarity was generally greatest in fall (November 1977 survey) and least in spring (March 1977 survey); 4) there was relatively large variability between stations within individual surveys; and 5) surface water clarity in the vicinity of the discharge was, at times, less than surrounding waters because of the redistribution of turbid bottom water from the area of the intake to the area of the discharge.

## C. RESULTS

Bimonthly surveys of water quality were performed on January 18, March 7, May 4, July 10, September 13, and November 16, 1978. Water clarity was measured by percent light transmittance and Secchi disc observations at each station during bimonthly surveys. Suspended solids and settleable solids concentrations were determined for the July 10, September 13, and November 16 surveys. Color aerial photographs of the survey area were taken during each bimonthly survey except January 18.

Two general trends were evident for all of the surveys: 1) turbidity decreased with distance offshore; and 2) turbidity increased with distance below the surface.

### JANUARY SURVEY

Rainfall during January was 20.2 cm, of which 8.8 cm had fallen during the seven days prior to the survey. During the survey, wind speed and direction were 5 to 6 kn from southeast, tidal height ranged from +4.5 ft to +0.7 ft; and swells ranging from 1 to 6 ft came from southwest.

#### Profile Measurements

Vertical profiles of light transmittance measured along a one-meter path length during the January survey are presented in Figure E-1. Light transmittance at downcoast control Stations C22S, C24S, and C26S was less than 2% from the surface to the bottom. Light transmittance at all other stations was within 5% of that which was measured at the control stations. No apparent influence of the SONGS 1 cooling water discharge on water clarity was discernable during the January survey.

#### Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of light transmittance measured during the January survey is presented in Figure E-7. Light transmittance at these stations was less than 5%, therefore, no 5% isopleths were distinguishable.

Horizontal Contours Based on Profile Measurements

Horizontal contours of light transmittance measured at the surface and at the 4 m depth are presented in Figures E-13 and E-14 for the January survey. Transmittance never exceeded 3% at the surface, and reached a maximum of 4% at 4 m (C14S). Data indicated a slight increase in transmittance with distance offshore. Mean light transmittance was less than 1% with a standard deviation of 1.0% at the surface and less than 1% with a standard deviation of 1.0% at 4 m. Mean light transmittance at near bottom (1 m above the bottom) was less than 1% with a standard deviation of 0.5%.

Secchi Disc Measurements

Secchi disc depth of visibility contours for the January survey are presented in Figure E-25. Depth of visibility at control stations was 1.0 m and at all other stations was less than 1.5 m except at offshore stations (F-line) where depth of visibility reached 2.0 m. As was noted with transmittance data, the general trend was that of decreasing turbidity with distance offshore. Mean Secchi disc depth of visibility was 1.0 m with a standard deviation of 0.5 m.

MARCH SURVEY

Rainfall during March was 17.1 cm, of which 11.0 cm had fallen during the seven days prior to the survey. During the survey, wind speed and direction were 3 to 4 kn from the east, tidal height ranged from a +6 ft high tide to a -1 ft low tide, and 5 to 6 ft swells came from the west.

Profile Measurements

Vertical profiles of light transmittance measured during the March survey are presented in Figure E-2. Light transmittance at control stations was less than 1% throughout the water column, as was the case at all other stations inshore of the C-line. An increase in transmittance, to 7%, was noted at the 4 m depth between Stations D0 and F0. Surface transmittance at offshore Stations D4N, D6N, E4N, F6N, and F14N was approximately 6%. No apparent influence of the SONGS 1 cooling water discharge on water clarity was discernable during the survey.

Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of light transmittance measured during the March survey is presented in Figure E-8. As was noted in the vertical profiles, light transmittance at most stations was less than 5%, therefore, there is only one 5% isopleth in the figure. Between Stations D0 and F0, light transmittance increased to 7% at 4 m, as was noted in the vertical profiles.

Horizontal Contours Based on Profile Measurements

Horizontal contours of light transmittance measured at the surface and at 4 m are presented in Figures E-15 and E-16 for the March survey. Transmittance at the control stations, along the

C-line, and inshore of the C-line, was less than 2%. Transmittance at 4 m increased with distance offshore, from less than 1% (D0) to greater than 5% (F0). Upcoast and offshore surface light transmittance exceeded 10% (F14N) while at 4 m it remained about 5%. At both the surface and 4 m depth, mean light transmittance was 1% with standard deviations of 2.0%. Mean transmittance at near bottom (1 m above bottom) was less than 1% with a standard deviation of less than 1.0%.

Secchi Disc Measurements

Secchi disc depth of visibility contours for the March survey are presented in Figure E-26. Depth of visibility at control stations was between 1.0 and 1.5 m. At all stations, Secchi disc depth of visibility was 2 m or less. The general trend was that of increasing depth of visibility with distance offshore, as was the case with light transmittance. Along the A-line, depth of visibility was 0.5 m or less whereas along the F-line it was 2 m or less. Data also indicated an increase in depth of visibility with distance upcoast and downcoast of the 0-line stations (Figure E-26). Mean Secchi disc depth of visibility for the March survey was 1.0 m with a standard deviation of 0.5 m.

Aerial Photographs

Aerial photographs taken during the March survey are presented in Figures E-37 and E-38. These photographs reveal extensive turbidity throughout the study area and a discernable area of natural turbidity extending offshore from 1000 ft (300 m) and 3000 ft (900 m) upcoast. The upcoast side of this boundary appeared appreciably more turbid than downcoast, though there is no evidence of a sharp boundary in any of the other data. Figure E-37 shows breakers in the vicinity of Station A1N, the Unit 1 discharge bubble (X0), and dredging turbulence beside the SONGS 2 construction trestle (A1S).

MAY SURVEY

Rainfall during May was 0.1 cm, all of which fell during the seven days prior to the survey. During the survey, wind speed and direction were 4 to 7 kn from south southeast, tidal height ranged from a +4.5 ft high tide to a -0.5 ft low tide, and swells ranging from 1 to 6 ft came from south southeast. A strong rip tide was noticed during the survey. Beginning with the May survey, turbidity studies were expanded to compile a preoperational data base for SONGS 2 and 3. All stations offshore of the F-line are considered SONGS 2 and 3 preoperational stations.

Profile Measurements

Vertical profiles of light transmittance measured during the May survey are presented in Figure E-3. Surface transmittance at control stations was 11% (C20N), 40% (C22S), 40% (C24S), and 27% (C26S). Upcoast, at Station C20N, transmittance decreased uniformly with depth to less than 1% at a depth of 8 m. At downcoast control

Stations C22S and C24S, transmittance between the surface and 5 m was about 40%, then decreased abruptly to 5% (C22S) and 2% (C24S) at a depth of 8 m, and gradually decreased to less than 1% at the bottom (10 m). At downcoast control Station C26S transmittance decreased and increased erratically between 27% at the surface, 48% at 2 m and 19% at the bottom (10 m). Profiles of light transmittance at control stations were representative of those along the C-line (Figure E-3). Light transmittance at stations inshore of the C-line, ranged from less than 1% (A-line) to between 1% and 10% (B-line). Unlike other B-line stations, transmittance at Station B4S ranged from 33% at the surface to less than 1% at the bottom (7 m). Data was not collected at A-line stations A2S through A8S due to heavy surf conditions. Light transmittance at the discharge (X0) was less than 1% throughout the water column while at the intake (C0), transmittance varied from 7% at the surface to 12% at 4 m and to less than 1% at the bottom (8 m). Examination light transmittance profiles at stations upcoast and inshore of Station C0 shows the discharge decreased light transmittance from 10 to 30% in surface waters to a depth of about 5 m. The discharge also increased turbidity at Stations D2N and D4N, and decreased light transmittance in the upper 2 m of the water column at Stations D6N and E4N.

At SONGS 2 and 3 preoperational control stations, light transmittance at the surface was 46% at upcoast control Station F20N and 55 to 60% at downcoast control stations F22S, F24S, and F26S. Light transmittance remained constant to a depth of 6 m, and decreased gradually to less than 5% at 13 m. Transmittance increased with distance from shore. At Station F0, transmittance was approximately 55% from the surface to a depth of 7 m and then rapidly decreased to less than 1% between 8 and 12 m. At Station M0, transmittance was approximately 70% from the surface to a depth of 7 m, decreased to 10% at a depth of 12 m, and then increased with depth to approximately 40% at 16 m. Below 16 m at Station M0, light transmittance decreased gradully with depth until approximately 2 m off the bottom where light transmittance was less than 1%.

Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of light transmittance measured during the May survey is presented in Figure E-9. As was noted in the vertical profiles, stratification at the downcoast control stations was gradual with depth in the upper 5 m of the water column and then decreased from 40% to 15% at the bottom (9 m). As can be seen in Figure E-9, transmittance along the B-line was less than 10% from surface to bottom upcoast of the discharge (Stations B0 through B4N). The discharge also decreased light transmittance at C-line stations from C0 upcoast to Station C10N. Offshore along the 0-line surface waters, transmittance increased from approximately 10% at Station C0 to 50% at Station E0 and was greater than 70% at offshore Stations H0, J0, and M0. Between SONGS 2 and 3 preoperational Stations F0 and M0, surface transmittance increased from approximately 55 to 70%, and remained nearly constant to 6 m, and then decreased with depth.

Horizontal Contours Based on Profile Measurements

Horizontal contours of light transmittance measured at the surface and at 4 m are presented in Figures E-17 and E-18. Light transmittance at control Station C20N was 10% at the surface and 9% at 4 m, while at downcoast control stations, transmittance varied from 44% at the surface and 43% at 4 m (C22S) to 27% at the surface and 47% at 4 m (C26S).

At the surface and 4 m, isopleths of transmittance were displaced offshore from 2000 ft (600 m) south of the discharge to approximately 10,000 ft (3000 m) north of the discharge. Inshore of the C-line, transmittance was generally less than 10% except near Stations B4S and C4S, where transmittance exceeded 40%. Surface light transmittance increased with distance offshore from 18% (D0) to 47% (E0), and at 4 m, light transmittance increased from 10% (D0) to 44% (E0). Transmittance increased uniformly with distance offshore (except near Stations B4S and C4S) and with distance downcoast (Figures E-17 and E-18). Mean SONGS 1 survey area light transmittance was 17% at the surface with a standard deviation of 17%, and 17% at the 4 m depth with a standard deviation of 18%.

At SONGS 2 and 3 preoperational control stations, surface light transmittance increased from 46% at Station F20N to 57% at Station F26S. All other F-line stations were similar. At 4 m, transmittance along the F-line was about 3% less than at the surface. Farther offshore, transmittance increased from 54% (F0) to 69% (M0). Transmittance increased uniformly with distance offshore (Figures E-17 and E-18). Mean light transmittance in the SONGS 2 and 3 preoperational survey area, during the May survey, was 61% with a standard deviation of 8.0% at both the surface and 4 m. Mean overall light transmittance for SONGS 1 and SONGS 2 and 3 survey areas was 37% at the surface, with a standard deviation of 26%, and 35% at 4 m, with a standard deviation of 26%.

Secchi Disc Measurements

Horizontal contours of Secchi disc depth of visibility during the May survey are presented in Figure E-27. At SONGS 1 survey area control stations, Secchi disc measurements ranged from 4.0 m at Station C20N to 6.8 m at Station C26S. Secchi disc contours showed similarity to surface percent transmittance contour lines. Depths of visibility ranged from 1.5 m at Station A0 to 7.0 m at Station E0. Depths of Secchi disc visibility coincide with decreases in percent transmittance seen in the vertical profiles. Mean Secchi disc depth of visibility for the SONGS 1 survey area was 3.0 m with a standard deviation of 2.0 m.

SONGS 2 and 3 preoperational control stations had Secchi disc depths of visibility ranging from 7.0 m at Station F20N to 8.0 m at Station F26S. Along the F-line, depths of visibility varied from 6.0 m at Station F6N to 11.0 m at Station F0. Along the 0-line stations, depth of visibility varied from 11.0 m at Station F0 to 12.0 at Station M0. As seen in Figure E-27, an offshore extension

of the 9 m and 10 m contour lines was observed between Stations H2N and M2N, which was not apparent in the previous profiles. Mean Secchi disc depth of visibility for the SONGS 2 and 3 preoperational survey area was 9.0 m with a standard deviation of 1.2 m. Mean overall Secchi disc depth of visibility for the SONGS 1 and SONGS 2 and 3 survey areas was 5.8 m with a standard deviation of 3.4 m.

Aerial Photographs

Aerial photographs taken during the May 4, 1978 survey and two days after the survey are presented in Figures E-39 and E-40, respectively. The photograph taken on the day of the survey reveals extensive turbidity inshore of the E-line stations, around the discharge, and around the SONGS 2 dredging site (D1S). An area of decreased turbidity can be seen extending inshore to Station B2S, encompassing the same area noted for increased transmittance. Unlike the previous photograph, the photograph taken on May 6 shows no observable turbidity patterns. The other noticeable differences between the two photographs are that in the May 6 photograph the tide is higher and there is no noticeable turbidity resulting from dredging. These photographs illustrate the variability of turbidity in the survey area within 2 days.

JULY SURVEY

No rain fell during the month of July. During the survey, wind speed and direction were 3 to 9 kn from southwest and tidal height ranged from a low tide of -0.5 ft to a high tide of +4.5 ft. Wind waves were 1 to 2 ft and swells were 3 to 4 ft. Beginning with the July survey, surface and 4 m water samples were collected for suspended and settleable solids. Samples were analyzed in accordance with Standard Methods, 1975.

Profile Measurements

Vertical profiles of percent light transmittance, measured at each station during the July survey, are presented in Figure E-4. At the upcoast control Station C20N light transmittance steadily decreased from 52% at the surface to less than 1% at the bottom. Surface transmittance was about 48% at downcoast control stations and decreased with depth. At Station C22S transmittance abruptly dropped to less than 5% between 4 and 6 m, while at Stations C24S and C26S, transmittance steadily decreased to 5% at 6 m then increased to 10% at 7 m and finally dropped to less than 1% at 8.5 m. Control station transmittance profiles were representative of other C-line profiles. Transmittance ranged from approximately 1% from surface to bottom at Station A0, increased with distance offshore to where surface transmittance was 60%, and generally decreased with depth. Transmittance at Station X0 ranged from 3% at the surface to a maximum of 30% at 4 m, to less than 1% at 6 m. Transmittance was reduced at stations upcoast and onshore of the discharge. Along the B-line, transmittance in surface waters to a depth of 5 m were depressed by 30 to 40% at Stations B0 through B2N. Transmittance at Stations A0, A1N, and A2N were also depressed approximately 25%.

Offshore, SONGS 2 and 3 preoperational control stations exhibited surface transmittances of 60% (F20N) to 61% (F26S). At upcoast control Station F20N, transmittance was nearly constant at 60% from surface to 2 m, decreased rapidly to 20% at 4 m, increased gradully to 30% at 11 m and finally decreased to less than 1% at 14 m. Downcoast control Stations F22S and F26S exhibited trends similar to those of Station F20N though decreases in transmittance with depth were more gradual than at Station F20N. All other F-line stations exhibited trends similar to the control stations. Farther offshore along the H-line and J-line, transmittance profiles resembled those of the F-line though transmittance increased with distance offshore. Along the H, J, and M-lines, transmittance decreased gradually with depth to about 6 m, decreased rapidly between 6 and 8 m, increased rapidly between 8 and 10 m, and finally decreased gradually through the remainder of the water column. The general trend in the SONGS 2 and 3 preoperational survey area was that of increased light transmittance with distance offshore and of gradual decreases in transmittance with depth.

Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of percent light transmittance during the July survey is presented in Figure E-10. At SONGS 1 survey area control stations, transmittance decreased relatively uniformly with depth, decreasing from 50% or 60% at the surface to less than 10% below 7 m. Transmittance at control stations were representative of all those of the C-line. Inshore, along the B-line, light transmittances were decreased at Stations B0 upcoast through B2N. All B-line bottom transmittances were less than 10% at 5 m. Offshore of Station C0, transmittance decreased uniformly with depth. As was seen in the vertical profiles, percent light transmittance increased with distance offshore. At offshore Station E0, light transmittance was 62% at the surface, 21% at 4 m, and 1% at the bottom (10 m).

At SONGS 2 and 3 preoperational stations, light transmittance increased with distance offshore. At Station F0, light transmittance was 66% at the surface, 57% at 4 m, and 5% at the bottom (12 m). Offshore of Station H0, bottom transmittance increased from 30% to 60%. At the farthest offshore station (M0), light transmittance varied from 76% at the surface down to 52% at 11 m, up to 83% at 19 m, and down to 60% at the bottom (28 m), indicating a less turbid body of water at 19 m. This natural occurrence was also noted at other offshore stations in the vertical profiles of SONGS 2 and 3 preoperational survey area.

Horizontal Contours Based on Profile Measurements

Horizontal contours of light transmittance at the surface and at 4 m for the July survey are presented in Figures E-19 and E-20. Light transmittance during July was generally the highest of the six bimonthly surveys conducted during the year. Light transmittance levels of the SONGS 1 control stations were representative of those at other C-line stations near Station C0. Surface transmittance at

upcoast control Station C20N (52%) was greater than at downcoast control Stations C22S to C26S (48%) though at 4 m, transmittance was less at upcoast control Station C20N (27%) than at downcoast control Stations C22S to C26S (43% to 44%). Along the C-line, surface transmittance was higher upcoast than downcoast. At Station C8N surface transmittance was 63%, while downcoast at C8S, surface transmittance was 48%. Surface transmittance was 45% at Station C0. Along the C-line, at 4 m, transmittance varied considerably between stations, 43% (C8N), 33% (C6N), 23% (C0), 39% (C6S), and 26% (C8S). This variability was due to light transmittance rapidly decreasing around 4 m of depth. Inshore of the C-line, oight transmittance ranged from 7% at the surface of Station A0 and less than 1% at 4 m, to 29% at the surface of Station B0 and 1% at 4 m. Offshore of the C-line, transmittance ranged from 58% at the surface and 37% at 4 m (D0) to 62% at the surface and 21% at 4 m (E0). The general trend of the SONGS 1 survey area was increasing surface light transmittance with distance offshore, upcoast, and away from the discharge (X0), while at 4 m, the trend was increasing light transmittance with distance offshore , downcoast, and away from the discharge. As the horizontal contours illustrate, surface turbidity appeared to be centered around the discharge (Station X0) and to extend from 1500 ft (450 m) downcoast to 2000 ft (600 m) upcoast of the discharge, while at 4 m, turbidity appeared to be localized near shallow A-line stations and slightly offshore and downcoast of the discharge. During the July survey, mean light transmittance for the SONGS 1 survey area was 48% with a standard deviation of 16% at the surface and 31% with a standard deviation of 15% at 4 m.

Farther offshore, at SONGS 2 and 3 preoperational control stations, light transmittance varied from 60% at the surface and 24% at 4 m at Station F20N, to approximately 65% at the surface and 52% at 4 m, at Stations F22S to F26S. Transmittance at Station F0 was 66% at the surface and 57% at 4 m. Horizontal contours indicated that transmittance increased only slightly with distance offshore, from 70% at the surface and 67% at 4 m (Station H0) to 76% at the surface and 75% at 4 m (Station M0). The general trends of the SONGS 2 and 3 preoperational survey area were increased surface transmittance with distance offshore and increased 4 m transmittance with distance offshore and downcoast. Mean light transmittance for the SONGS 2 and 3 preoperational survey area, during the July survey was 67% with a standard deviation of 7.0% at the surface and 56% with a standard deviation of 18% at 4 m. Mean light transmittance for the SONGS 1 and SONGS 2 and 3 survey areas was 55% with a standard deviation of 16% at the surface, and 40% with a standard deviation of 20% at 4 m.

Secchi Disc Measurements

Horizontal contours of Secchi disc depths of visibility for the July survey are presented in Figure E-28. Secchi disc contours show features similar to horizontal contours of light transmittance at 4 m inshore of C-line stations. At control stations, depths of visibility were 5 m (C20N), 7 m (C22S), and 8 m (C26S). Secchi disc

depth of visibility increased from 2.0 m at Station A0 to 5.5 m at Station C0 and 7.0 m at Station E0. The minimum depth of visibility (2.0 m) was at Station X0. Secchi disc contours extended offshore and downcoast of Station A1N, resulting in visibility increasing, decreasing and increasing again with distance offshore of Station A2S. As with transmittance, visibility increased with distance offshore and downcoast. Mean depth of Secchi disc visibility for the SONGS 1 survey area during July was 6.0 m with a standard deviation of 1.5 m.

Offshore, SONGS 2 and 3 preoperational survey area control stations exhibited depths of visibility which were 7.0 m (F20N), 8.0 m (F22S), and 10.0 m (F26S). F-line depths of visibility were the same as those of the control stations. Offshore of the F-line, depths of Secchi disc visibility increased uniformly from 10.0 m at Station F0 to 12.0 m at Station M0. As was also seen in the vertical isometric cross-sectional profiles of transmittance, a relatively clearer body of water extended inshore to Station F0 at 10 m to 12 m. Mean Secchi disc depth of visibility for the SONGS 2 and 3 survey area during July was 10.0 m with a standard deviation of 2.0 m. Mean Secchi disc depth of visibility for the SONGS 1 and SONGS 2 and 3 survey areas was 7.5 m with a standard deviation of 2.5 m.

Settleable and Suspended Solids Measurements

During the July survey, settleable solids rates were all less than 0.1 ml/l/hr (Table 6-1).

Horizontal contours of suspended solids concentrations at the surface and 4 m, for the July survey, are presented in Figures E-31 and E-32, respectively. Surface concentrations at SONGS 1 survey area control stations were 4.8 mg/l (Station C20N) and 15.0 mg/l (Station C22S) while at 4 m, concentrations were 11 mg/l (C20N) and 2.4 mg/l (C22S). Concentrations of suspended solids along the surface of the C-line, varied from 58 mg/l at Station C4N to 17 mg/l at Station C0 and to a minimum of 0.4 mg/l at Station C2S. Inshore Station A2N had maximum concentrations of 120 mg/l suspended solids at the surface and 110 mg/l at 4 m. Offshore suspended solids concentrations increased from 2.8 mg/l at the surface and 7.6 mg/l at 4 m at Station A0 to 17 mg/l at surface and 3.4 mg/l at 4 m at Station C0 and then decreased to 0.8 mg/l at surface and 5.8 mg/l at 4 m at Station E0. Mean concentrations of suspended solids for the SONGS 1 survey area in July were 11.4 mg/l at the surface with a standard deviation of 22.5 mg/l and 12.2 mg/l at 4 m with a standard deviation of 20.1 mg/l.

SONGS 2 and 3 preoperational control stations had suspended solids concentrations ranging from 7.0 mg/l at the surface and 5.8 mg/l at 4 m at Station F20N to 1.4 mg/l at the surface and 1.8 mg/l at 4 m at Station F22S. Concentrations of suspended solids along the F-line were similar to those of the control stations, and were not affected by the SONGS 1 discharge. Offshore, suspended solids ranged from 5.6 mg/l at the surface and 4.2 mg/l at 4 m at Station F0 to 1.2 mg/l at the surface and 0.4 mg/l at 4 m at Station M0. This indicated a further decrease in turbidity with distance

**Table 6-1. Settleable and Suspended Solids Data from Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations during 1978**

SETTLEABLE AND SUSPENDED SOLIDS
1978

| Station Designation | July 10 | | | | September 13 | | | | November 16 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Settleable Solids (ml/l/hr) | | Suspended Solids (mg/l) | | Settleable Solids (ml/l/hr) | | Suspended Solids (mg/l) | | Settleable Solids (mg/l/hr)[a] | | Suspended Solids (mg/l) | |
| | surface | 4 meters | surface | 4 meters | surface | 4 meters | surface | 4 meters | surface | 4 meters | surface | 4 meters |
| A0 | <0.1 | <0.1 | 2.8 | 7.6 | <0.1 | <0.1 | 40 | 39 | <0.1 | <0.1 | 1.4 | 0.4 |
| B0 | <0.1 | <0.1 | 2.2 | 7.0 | <0.1 | <0.1 | 11 | 17 | <0.1 | <0.1 | 2.2 | 0.4 |
| C0 | <0.1 | <0.1 | 17 | 3.4 | <0.1 | <0.1 | 6.8 | 6.6 | 0.4 | <0.1 | 2.2 | 0.4 |
| D0 | <0.1 | <0.1 | 7.6 | 1.0 | <0.1 | <0.1 | 7.2 | 2.0 | <0.1 | <0.1 | 0.2 | <0.2 |
| E0 | <0.1 | <0.1 | 0.8 | 5.8 | <0.1 | <0.1 | 9.8 | 12 | <0.1 | <0.1 | 1.4 | 1.0 |
| F0 | <0.1 | <0.1 | 5.6 | 4.2 | <0.1 | <0.1 | 8.0 | 2.0 | <0.1 | <0.1 | 1.2 | <0.2 |
| H0 | <0.1 | <0.1 | 6.8 | 0.8 | <0.1 | <0.1 | 2.0 | <0.2 | <0.1 | 0.4 | 0.4 | 2.0 |
| J0 | <0.1 | <0.1 | 3.4 | 3.2 | <0.1 | <0.1 | 7.2 | 1.6 | <0.1 | <0.1 | 0.2 | 0.6 |
| M0 | <0.1 | <0.1 | 1.2 | 0.4 | <0.1 | <0.1 | 1.2 | 0.5 | <0.1 | <0.1 | <0.2 | <0.2 |
| X0 | <0.1 | <0.1 | 10 | 4.2 | <0.1 | <0.1 | 43 | <0.2 | 1.6 | 0.9 | 2.4 | 2.6 |
| A2N | <0.1 | <0.1 | 120 | 110 | <0.1 | <0.1 | 2.5 | 6.9 | <0.1 | - | 1.6 | - |
| A2S | <0.1 | <0.1 | 2.4 | 6.2 | <0.1 | <0.1 | 45 | 43 | <0.1 | <0.1 | 0.6 | 0.4 |
| B2N | <0.1 | <0.1 | 9.0 | 46 | <0.1 | <0.1 | 3.6 | 9.4 | <0.1 | <0.1 | <0.2 | 1.8 |
| B2S | <0.1 | <0.1 | 3.4 | 16 | <0.1 | <0.1 | 9.0 | 19 | <0.1 | <0.1 | 1.4 | 1.2 |
| B4N | <0.1 | <0.1 | 1.6 | 6.4 | <0.1 | <0.1 | 13 | 11 | <0.1 | <0.1 | 1.8 | 2.4 |
| B4S | <0.1 | <0.1 | 5.2 | 10 | <0.1 | <0.1 | 12 | 6.6 | 1.1 | - | 3.6 | - |
| C2N | <0.1 | <0.1 | 7.0 | 13 | <0.1 | <0.1 | 5.8 | 5.4 | 1.6 | <0.1 | 6.8 | 0.4 |
| C2S | <0.1 | <0.1 | 0.4 | 1.2 | <0.1 | <0.1 | 0.6 | 20 | <0.1 | 0.2 | 0.4 | 2.2 |
| C4N | <0.1 | <0.1 | 58 | 4.2 | <0.1 | <0.1 | 3.6 | 10 | <0.1 | <0.1 | 1.2 | 1.2 |
| C4S | <0.1 | <0.1 | 0.8 | 14 | <0.1 | <0.1 | 3.8 | 1.8 | <0.1 | 1.3 | <0.2 | 3.0 |
| C6N | <0.1 | <0.1 | 1.2 | 14 | <0.1 | <0.1 | 13 | 13 | <0.1 | <0.1 | <0.2 | 1.4 |
| C6S | <0.1 | <0.1 | 1.2 | 3.6 | <0.1 | <0.1 | 0.6 | 17 | <0.1 | <0.1 | 0.8 | 0.2 |
| C8N | <0.1 | <0.1 | 6.2 | 1.1 | <0.1 | <0.1 | 1.6 | 3.0 | <0.1 | 1.0 | 1.2 | 3.2 |
| C8S | <0.1 | <0.1 | 1.1 | 1.4 | <0.1 | <0.1 | 1.0 | 1.6 | <0.1 | <0.1 | 1.6 | 1.6 |
| C20N | <0.1 | <0.1 | 4.8 | 11 | <0.1 | <0.1 | 7.6 | 2.6 | <0.1 | <0.1 | 0.6 | 2.2 |
| C22S | <0.1 | <0.1 | 15 | 2.4 | <0.1 | <0.1 | 2.4 | 4.6 | <0.1 | <0.1 | 0.4 | 2.0 |
| D2N | <0.1 | <0.1 | 8.6 | 13 | <0.1 | <0.1 | 4.2 | 4.6 | 0.3 | <0.1 | 2.6 | 2.4 |
| D2S | <0.1 | <0.1 | 6.8 | 13 | <0.1 | <0.1 | 2.6 | 8.2 | <0.1 | <0.1 | 1.6 | 1.8 |
| D4N | <0.1 | <0.1 | 10 | 26 | <0.1 | <0.1 | 9.2 | 3.8 | <0.1 | 0.3 | 1.2 | 1.6 |
| D4S | <0.1 | <0.1 | 4.2 | 4.8 | <0.1 | <0.1 | 1.2 | 5.6 | <0.1 | <0.1 | 0.6 | 0.4 |
| E2N | <0.1 | <0.1 | 21 | 19 | <0.1 | <0.1 | 4.1 | 4.0 | <0.1 | 0.6 | 3.0 | 2.8 |
| E2S | <0.1 | <0.1 | 18 | 17 | <0.1 | <0.1 | 1.0 | 6.4 | <0.1 | <0.1 | 0.2 | 2.0 |
| F6N | <0.1 | <0.1 | 14 | 9.4 | <0.1 | <0.1 | 5.8 | 1.6 | <0.1 | <0.1 | 0.2 | 0.4 |
| F6S | <0.1 | <0.1 | 9.4 | 8.2 | <0.1 | <0.1 | 12 | 0.8 | <0.1 | <0.1 | <0.2 | 1.8 |
| F20N | <0.1 | <0.1 | 7.0 | 5.8 | <0.1 | <0.1 | 1.0 | 0.2 | <0.1 | <0.1 | <0.2 | 0.2 |
| F22S | <0.1 | <0.1 | 1.4 | 1.8 | <0.1 | <0.1 | 3.6 | 2.2 | <0.1 | 0.1 | 2.0 | 2.2 |
| H2N | <0.1 | <0.1 | 1.4 | 1.2 | <0.1 | <0.1 | 1.8 | 1.6 | <0.1 | <0.1 | 0.2 | <0.2 |
| H2S | <0.1 | <0.1 | 1.6 | 1.4 | <0.1 | <0.1 | 1.0 | 1.0 | <0.1 | <0.1 | <0.2 | <0.2 |
| J8N | <0.1 | <0.1 | 1.6 | 1.6 | <0.1 | <0.1 | 1.4 | 1.4 | <0.1 | <0.1 | 1.0 | 1.0 |
| J8S | <0.1 | <0.1 | 1.4 | 1.8 | <0.1 | <0.1 | 0.8 | 0.6 | <0.1 | <0.1 | 0.6 | 0.8 |
| M8N | <0.1 | <0.1 | 3.0 | 1.6 | <0.1 | <0.1 | 1.6 | 0.4 | <0.1 | <0.1 | 2.4 | 2.0 |
| M8S | <0.1 | <0.1 | 1.6 | 8.2 | <0.1 | <0.1 | 1.8 | 1.6 | <0.1 | <0.1 | 1.0 | 1.0 |

[a] Laboratory analysis was modified to measure settleable solids by weight rather than volume.

offshore. Mean concentrations of suspended solids for the SONGS 2 and 3 preoperational survey area in July were 4.0 mg/l at the surface with a standard deviation of 4.4 mg/l, and 4.1 mg/l at 4 m with a standard deviation of 3.4 mg/l. Mean concentrations of suspended solids for the SONGS 1 survey area and SONGS 2 and 3 preoperational survey area were 9.7 mg/l at the surface with a standard deviation of 19.9 mg/l, and 10.3 mg/l at 4 m with a standard deviation of 17.9 mg/l.

## Aerial Photographs

Aerial photographs taken during the July survey are presented in Figures E-41 and E-42. The photograph on Figure E-42 shows no turbidity upcoast in the survey area. Breakers extended offshore, near Station A2N where high turbidity was found, but shading from a cloud cover made it difficult to see any turbidity in that area. In Figure E-41, the discharge (X0) is visible only as a discontinuity in wave pattern and no turbidity was visible. Figure E-41 shows what appeared to be a turbidity plume extending offshore of

Station A1S and toward Station A2S. This correlates with the previously noted lower percent transmittance at Station A2S (4 m). In the same figure, an area of almost no turbidity was visible just inshore and below the shadows of the cloud, at Station A4S.

SEPTEMBER SURVEY

For the purpose of heat treating the cooling water system of the generating system, direction of seawater circulation was reversed for 4 hours, then returned to normal. This reversal of direction occurred during the first half of the survey. During the first half of the survey, winds were calm. During the last half of the survey, wind speed and direction were 5 kn from south southwest. Tidal height ranged from a high tide of +5 ft to a low tide of +1.5 ft, and 2 to 3 ft swells came from south southeast.

Profile Measurements

Vertical profiles of percent light transmittance, measured at each station during the September survey, are presented in Figure E-5. At the downcoast SONGS 1 control Stations, C22S to C26S, surface light transmittance was 58% to 62%. At each station, transmittance decreased with depth at somewhat different rates. At Station C22S, a 10% decrease in transmittance occurred in the first 4 m of depth, and the remaining 40% decreased gradually in the following 6 m to a bottom value of 2% transmittance (10 m). At Station C24S, transmittance was constant between the surface and 3 m (63%), while between 3 m and 4.5 m transmittance decreased to 43%, and finally between 4.5 m and 7 m transmittance decreased to less than 5%. At Station C26S transmittance decreased from 64% at the surface to 54% at 6 m, then decreased to 2% at 9 m. As seen in Figure E-5, transmittance at upcoast SONGS 1 control Station C20N was similar to Station C22S, in that it decreased from 73% at the surface to 60% at 6 m, then decreased to 2% at the bottom (12 m). Light transmittance at stations along the C-line which were downcoast of Station C2S were similar to that of control Station C22S; however, C-line stations from C2S to C10N were as much as 40% lower than control stations. C-line stations upcoast of Station C0 exhibited transmittance unlike the control stations; transmittance was less than 20% throughout the water column. At Station C6N transmittance was 10% above 5 m, and 5% below 5 m. Transmittance at upcoast Station C10N was similar to Station C6N. At Station C14N, transmittance was much like that of control Station C20N.

At most stations inshore of the C-line, transmittance was constant with depth and less than 5%. At Stations B6S, B4S, and B1S, transmittance decreased gradually from 20% and 30% at the surface to less than 1% at 5 m. SONGS 1 stations offshore of the C-line exhibited gradual increases in transmittance with distance offshore and downcoast; most surface transmittances were less than 50%.

Surface transmittance at SONGS 2 and 3 preoperational control Stations F20N, F22S, F24S, and F26S was nearly 70%. Downcoast control station transmittance was nearly constant from the surface to

10 m but decreased to less than 1% at 12 m. At Station F20N, transmittance followed the same trend though with a lower surface transmittance. F-line transmittances indicated a general trend of increased transmittance with distance offshore and downcoast. As seen in Figure E-5, offshore transmittance profiles along the H, J, and M-lines exhibited trends of uniform decrease in transmittance with depth and increase in transmittance with distance offshore. Along the M-line, surface transmittance ranged from 64% (M8S and M0) to 70% (M8N). Vertical profiles illustrated that there was little change in percent transmittance with depth at far offshore stations.

Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of percent light transmittance during the September survey is presented in Figure E-11. As was seen in the vertical profiles, transmittance at SONGS 1 control stations was relatively constant in the upper few meters of the water column and then decreased uniformly with depth. Surface transmittance in excess of 50% predominated downcoast of Station C6S and upcoast of Station C10N while stations inshore of the C-line rarely exhibited transmittances in excess of 10%. The discharge decreased water clarity along the C-line from Station C2S upcoast to Station C10N, and along the B-line from B4S upcoast past B4N. Stations C6N and B2N exhibited pockets of increased transmittance (10% to 20%) at depths of 3 m to 4 m.

Offshore along the 0-line, surface transmittance ranged from 48% (F0) to 64% (M0). As seen in Figure E-11, between Stations F0 and H0, the 30% and 40% contour lines dipped sharply from 3 m and 4 m to 12 m. Farther offshore (H0 to M0) these contour lines gradually dropped to 14 m and 18 m. There was no evidence of influence on turbidity in the SONGS 2 and 3 preoperational survey area by the SONGS 1 discharge.

Horizontal Contours Based on Profile Measurements

Horizontal contours of percent light transmittance at the surface and at 4 m below the surface for the September survey, are presented in Figures E-21 and E-22. At upcoast SONGS 1 control Station C20N, light transmittance varied from 69% at the surface to 67% at 4 m. Downcoast control station light transmittance varied from 58% (C22S to C26S) at 4 m. At the surface and at 4 m, C-line light transmittance was less than 20% between Stations C10N and C2S. The turbid plume produced by the discharge significantly displaced surface isopleths of transmittance offshore. At 4 m, isopleths were also displaced offshore, but not as much as at the surface. Downcoast of Station C2S, along the C-line, light transmittance increased from 39% to 53% at the surface and from 6% to 50% at 4 m. Inshore of C-line stations, transmittance was less than 10%. Due to heavy surf conditions, only three A-line stations were monitored (A0, A2S, and A4S). Offshore along the 0-line, surface transmittance increased from 2% at Station A0 to 37% at Station E0, while 4 m transmittance increased from less than 1% at Station A0 to 25% at

Station D0. As seen in Figures E-21 and E-22, transmittance contours were not uniform offshore of Station D0 and between Stations E4N and E2S. This trend of patchy turbidity extended offshore to SONGS 2 and 3 preoperational Station J0. This trend was also noticed in the vertical profiles of light transmittance.

SONGS 1 mean percent light transmittance during the September survey was 26% at the surface with a standard deviation of 22%, and 16% at 4 m with a standard deviation of 18%. Mean near bottom (1 m above bottom) light transmittance was less than 1% with a standard deviation of 2.5%.

Light transmittance at SONGS 2 and 3 preoperational upcoast control Station F20N was 64% at the surface and 71% at 4 m. Downcoast control stations exhibited surface transmittances of 64% (F22S) to 66% (F26S) while at 4 m, transmittances were 67% (C22S) to 68% (C26S). Along the F-line, surface transmittance ranged from 42% upcoast (F14N) to 48% at F0 then to 60% downcoast (F14S), while at 4 m, transmittance varied between 70% upcoast (F14N) and 35% downcoast (F14S). Numerous offshore stations exhibited transmittances which were greater at 4 m than at the surface. As was noted with SONGS 1 data, non-uniform contours existed offshore of Station F0. This pattern of increased transmittance extended offshore to Station H0, where transmittance was 39% at the surface and 36% at 4 m. Farther offshore at Station M0, transmittance was 64% at the surface and 59% at 4 m.

As was noted in the SONGS 1 survey area, light transmittance generally increased with distance offshore and downcoast, and decreased with depth. It was also noted that percent transmittance was higher at control stations than along the C-line. Mean surface light transmittance for the SONGS 2 and 3 preoperational survey area was 52% with a standard deviation of 15%, and at 4 m, 53% with a standard deviation of 15%. Mean near bottom light transmittance was less than 1%. Mean light transmittance for the SONGS 1 and SONGS 2 and 3 survey areas during the September survey was 37% at the surface, with a standard deviation of 24%, and 31% at 4 m with a standard deviation of 24%. Mean near bottom light transmittance for the SONGS 1 and SONGS 2 and 3 survey areas was less than 1% with a standard deviation of 2.0%.

Secchi Disc Measurements

Horizontal contours of Secchi disc depth of visibility for the September survey are presented in Figure E-29. Secchi disc contours were similar to the horizontal contours of percent light transmittance at the surface. SONGS 1 control station Secchi disc depths ranged from 10.0 m at Station C20N to 8.0 m and 7.0 m at Stations C22S and C26S. Secchi disc data indicate a decrease in visibility at stations upcoast of the discharge. Along the C-line stations, Secchi disc depths of visibility were as low as 2.0 m (C6N). Depth of visibility increased with distance offshore from 1.0 m at Station A0 to 5.0 m at Station E0. The general trend in Secchi disc depth of visibility was increased depth with distance

downcoast and offshore. Mean SONGS 1 survey area Secchi disc depth of visibility during the September survey was 4.0 m with a standard deviation of 2.0 m.

Farther offshore, at SONGS 2 and 3 control stations, Secchi disc depths of visibility were 10.0 m (F20N), 7.0 m (F22S), and 9.0 m (F26S). Between the control stations, along the F-line, Secchi disc depths decreased to a minimum of 5.0 m at Station F6N. Station F0 had a Secchi disc depth of visibility of 6.0 m. Offshore of Station F0, depths of visibility decreased to 5.0 m at Station H0, and then increased to 9.0 m at Station M0. As was noted on horizontal contours (Figure E-29), depths of visibility decreased between Stations J2S and E4N as though a turbidity plume was extending offshore and downcoast in that area. The general trend indicated by the contours was increased depth of Secchi disc depth of visibility with distance downcoast and offshore. Mean Secchi disc depth of visibility for SONGS 2 and 3 preoperational survey area during the September survey was 7.5 m with a standard deviation of 2.0 m. Mean Secchi disc depth of visibility for the SONGS 1 and SONGS 2 and 3 survey areas during the September survey was 5.5 m with a standard deviation of 3.0 m.

Settleable and Suspended Solids

During the September survey, settleable solids rates were all less than 0.1 ml/l/hr (Table 6-1).

Horizontal contours of suspended solids concentrations at the surface and 4 m for the September survey are presented in Figures E-33 and E-34. SONGS 1 control Station C20N had concentrations of 7.6 mg/l at the surface and 2.6 mg/l at 4 m, whereas Station C22S had concentrations of 2.4 mg/l at the surface and 4.6 mg/l at 4 m. Surface C-line concentrations varied between 0.6 mg/l at Station C6S to 6.8 mg/l at Station C0 and to 13 mg/l at Station C6N. Concentrations along the C-line at 4 m varied between 1.8 mg/l at C4S and 20.0 mg/l at C2S. Inshore of the C-line, concentrations of suspended solids generally increased. Maximum concentrations were observed at Station A2S, with 45 mg/l at the surface and 43 mg/l at 4 m. Concentrations decreased with distance offshore from 40 mg/l at the surface and 39 mg/l at 4 m at Station A0, to 9.8 mg/l at the surface and 12 mg/l at 4 m at Station E0. The mean concentration of suspended solids at the surface in the SONGS 1 survey area during September was 8.9 mg/l with a standard deviation of 10.0 mg/l. At 4 m, the mean concentration of suspeded solids was 9.0 mg/l with a standard deviation of 10.0 mg/l.

Farther offshore, at SONGS 2 and 3 preoperational control stations, concentrations of suspended solids ranged from 1.0 mg/l (F20N) to 3.6 mg/l (F22S) at the surface and from 0.2 mg/l (F20N) to 2.2 mg/l (F22S) at 4 m. At Station F0, suspended solids were 8.0 mg/l at the surface and 2.0 mg/l at 4 m. Offshore of Station F0, concentrations of suspended solids decreased to 1.2 mg/l at the surface at Station M0 and 0.5 mg/l at 4 m. Suspended solids concentration generally decreased with depth and distance offshore. All

SONGS 2 and 3 preoperational station suspended solids concentrations were comparable to those of the control stations except Stations F6N and F6S. Suspended solids ranged from 1.6 mg/l at the surface and 0.8 mg/l at 4 m (F6S) to 5.8 mg/l at the surface and 2.0 mg/l at 4 m (F6N).

Mean concentrations of suspended solids in the SONGS 2 and 3 preoperational survey area during the September survey were 3.0 mg/l with a standard deviation of 3.5 mg/l at the surface, and 1.1 mg/l with a standard deviation of 0.6 mg/l at the 4 m depth. Mean concentration of suspended solids for the SONGS 1 and SONGS 2 and 3 survey areas during the month of September, was 7.1 mg/l with a standard deviation of 9.4 mg/l.

Aerial Photographs

Aerial photographs taken during the September survey are presented in Figures E-43 and E-44. These photographs show trends of decreased turbidity with distance offshore and downcoast. Heavy surf was seen between Stations A4N and A1N. In Figure E-43, dredging activity can be seen at the SONGS 2 construction trestle near Station A1S. As was seen in transmittance horizontal contours and Secchi disc depth of visibility contours, a turbidity plume extended offshore and downcoast between Stations C0 and C2S.

NOVEMBER SURVEY

The amount of rainfall during the month of November was 2.9 cm, of which 1.9 cm had fallen during the seven days prior to the survey. During the survey, wind speed and direction were 8 to 10 kn from north northeast in the early morning, and 3 to 6 kn from west southwest in the afternoon. The survey began at a peak high tide of +6 ft and terminated at a low tide of -0.5 ft. Swells were 1 to 2 ft and the sea surface was calm.

Profile Measurements

Vertical profiles of percent light transmittance during the November survey are presented in Figure E-6. Transmittance at upcoast SONGS 1 control Station C20N was 61% at the surface, 40% at 9 m, then decreased sharply to 20% at 10 m, and increased slightly to 22% at the bottom. Downcoast control Stations C22S and C24S exhibited trends similar to those of control Station C20N except that the depth of sharp decrease in percent transmittance was between 4 and 6 m. Transmittance at control Station C26S decreased sharply from 69% at the surface to 47% at 1 m, increased to 50% at 2 m and then decreased steadily to 11% at the bottom.

Along the C-line, transmittance profiles were relatively uniform with depth except at Stations C10S and C14S where light transmittance decreased from 55% to 10% between 3 and 6 m. Surface transmittance at all stations was approximately 50%, decreasing slightly with depth to between 30 and 50% at the bottom. Along the 0-line transmittance was relatively constant with depth, approximately

60%, with the exception of shallow water Stations A0 and B0 where light transmittance decreased rapidly with depth, from 40% at the surface to about 10% at the bottom. At most stations inshore of the C-line, surface transmittance was between 40% and 60%, then decreased rapidly with depth at stations upcoast of B0, and decreased less rapidly with depth at stations downcoast of Station B0. Transmittance at stations offshore of the C-line was approximately 60% at the surface and 40% at the bottom. Several of these stations exhibited slight increases in transmittance just below the surface.

Light transmittance profiles indicate that the discharge only influenced a small area in the immediate vicinity of the discharge. At Station C0, transmittance at the depth of the intake (6 m) was 53% and surface transmittance was 50%, while at Station X0, transmittance was 33% at the depth of the discharge (9 m) and 43% at the surface.

Offshore, at SONGS 2 and 3 preoperational control stations, light transmittance decreased slightly, or not at all, with depth. Surface transmittance for preoperational stations were 63% (F20N), 67% (F22S), 63% (F24S), and 55% (F26S). At upcoast control Station F20N, light transmittance decreased sharply near the bottom, while at downcoast F-line control stations, transmittance did not. Upcoast F-line Stations F6N and F14N also exhibited a turbid bottom layer. Transmittance remained nearly constant throughout the water column between Stations F6N and F14S. Light transmittance increased with distance offshore. Surface transmittance increased from approximately 65% along the F-line to 73% or 83% along the M-line. Offshore transmittance changed less than 10% from surface to near-bottom throughout the survey area.

Vertical Cross-Section Based on Profile Measurements

A vertical isometric cross-section of light transmittance during the November survey is presented in Figure E-12. As illustrated in the vertical profiles, Figure E-12 shows that surface transmittance increased with distance from Station X0. Control Stations C20N and C26S exhibited similar magnitudes of transmittance with depth, though bottom transmittance at C20N was 11% higher than at C26S. As seen in Figure E-12, 50% transmittance contours downcoast of Station C10S exhibited a sharp decline from 3 m to bottom (8 m). These contours then remained uniformly stratified with distance downcoast. Inshore of the C-line, transmittance contours were less uniformly stratified, and turbidity increased with depth and with distance from Station A0. Transmittance at Station B2N varied from 50% at the surface to 10% at the bottom (8 m) whereas at surrounding stations transmittance was higher. Transmittance increased with distance offshore of the C-line. Transmittance increased with depth from 57% (D0) and 51% (E0) at the surface to 61% (D0) and 62% (E0) at the 4 m depth and back down to 54% (D0) and 58% (E0) at the bottom.

Farther offshore, at SONGS 2 and 3 preoperational survey area stations, light transmittance increased with distance offshore. Transmittance increased along the 0-line from 67% at the surface and 65% at 4 m at Station F0 to 73% at the surface and 67% at 4 m at Station M0.

Horizontal Contours Based on Profile Measurements

Horizontal contours of percent light transmittance at the surface for the November survey are presented in Figures E-23 and E-24. At the surface, along the C-line, light transmittance varied from 61% upcoast to 69% downcoast while corresponding 4 m transmittances ranged from 57% to 40%. Inshore of the C-line, transmittances ranged from 43% at the surface and 38% at 4 m, at Station X0, to a minimum value of 29% at the surface at Station A8S. Water depth at Station A8S was less than 4 m. As was observed in the vertical isometric cross-section, a surface turbidity plume of 40% to 50% transmittance extended offshore of Station B5N, causing an increase in turbidity in surface waters at Station C0 and D0. Data indicated a general trend of turbid waters extending offshore and away from the 0-line. The 50% and 60% transmittance contours also extended offshore at the shoreline perturbation of San Mateo Point. SONGS 1 survey area mean light transmittance during the November survey was 53% at the surface with a standard deviation of 7.5% and 50% at 4 m with a standard deviation of 12%. Mean near bottom light transmittance (1 m above bottom) was 36% with a standard deviation of 18.0%.

Light transmittance at SONGS 2 and 3 preoperational survey area upcoast control Station F20N was 61% at the surface and 57% at 4 m. At downcoast control Station F26S transmittance decreased only slightly with depth from 55% at the surface to 50% at the bottom (10 m). Offshore transmittance was generally 1% to 5% less at 4 m than at the surface. Within SONGS 2 and 3 preoperational survey area, data indicated an increase in light transmittance of 6% with distance offshore. Mean light transmittance for the SONGS 2 and 3 survey area during the November survey was 70% at the surface with a standard deviation of 7.0%, and 68% at 4 m with a standard deviation of 8.0%. Near bottom mean light transmittance was 60% with a standard deviation of 10.0%. Mean light transmittances of SONGS 1 and SONGS 2 and 3 survey areas during the November survey, were 59% (surface), 47% (4 m), and 45% (near bottom) with standard deviations of 11.0%, 14.0%, and 19.0%, respectively.

Secchi Disc Measurements

Horizontal contours of Secchi disc depth of visibility are presented in Figure E-30. Secchi disc contours showed features similar to light transmittance contours. SONGS 1 control stations exhibited depths of visibility of 12.0 m at Station C20N, and 7.5 m to 10.0 m at Stations C22S through C26S. Offshore, visibility ranged from 2.0 m (bottom) at Station A0 to 10.0 m at Station E0. Secchi disc depth of visibility was to the bottom at all A-line and B-line stations. Mean Secchi disc depth of visibility for November SONGS 1 survey area was 7.0 m with a standard deviation of 2.0 m.

Offshore, in the SONGS 2 and 3 preoperational survey area, control station Secchi disc depth of visibility was 11.0 m (F20N), 12.0 m (F22S), 8.0 m (F24S), and 7.0 m (F26S). Offshore visibility increased from 12.0 m at Station F0 to 20.0 m at Station M0. Mean Secchi disc depth of visibility in the SONGS 2 and 3 survey area during the November survey, was 14.0 m with a standard deviation of 3.0 m. For the combined SONGS 1 and SONGS 2 and 3 survey areas,

mean Secchi disc depth of visibility was 10.0 m with a standard deviation of 4.0 m.

Settleable and Suspended Solids Measurements

Since settleable solids were always less than 0.1 ml/l/hr in July and September, the laboratory analytical method was altered in November to report settleable solids on a weight basis rather than on a volume basis. At SONGS 1 control stations, all rates were less than 0.1 mg/l/hr. Settleable solids rates were 0.4 mg/l/hr at the surface and less than 0.1 mg/l/hr at 4 m at Station C0 (intake). A maximum rate of 1.6 mg/l/hr was found at the surface of Stations X0 (discharge) and C2N. At 4 m, these same stations had rates of 0.9 mg/l/hr and less than 0.1 mg/l/hr. Settleable solids rates were 1.3 mg/l/hr at 4 m at Station C4S and 1.0 mg/l/hr at 4 m at Station C8N. Rates at all other SONGS 1 survey area stations were 0.6 mg/l/hr or less.

Suspended solids concentration contours at the surface and at 4 m for the November survey are presented in Figures E-35 and E-36. Contours are vague because isopleths were plotted in increments of 5.0 mg/l and concentrations were below 5.0 mg/l at all but a few stations. SONGS 1 control stations had concentrations of suspended solids ranging from 0.6 mg/l at the surface and 2.2 mg/l at 4 m (Station C20N) to 0.4 mg/l at the surface and 2.0 mg/l at 4 m (C22S). A maximum concentration of 6.8 mg/l was found at the surface at Station C2N. Inshore of the C-line, concentrations decreased to 1.4 mg/l at the surface and 0.4 mg/l at 4 m at Station A0. The minimun concentration inshore of the C-line was less than 0.2 mg/l at both the surface and 4 m at Station B2N. The mean concentration of suspended solids at the surface in the SONGS 1 survey area for November was 1.4 mg/l with a standard deviation of 1.3 mg/l.

Settleable solids rates were all 0.1 mg/l/hr or less in the SONGS 2 and 3 preoperational survey area.

Suspended solids concentrations at SONGS 2 and 3 preoperational control Stations F20N and F22S ranged from less than 0.2 mg/l at the surface and 1.8 mg/l at 4 m (F20N) to 2.0 mg/l at the surface and 2.2 mg/l at 4 m (F22S). At Station F0, suspended solids concentrations were 1.2 mg/l at the surface and less than 0.2 mg/l at 4 m. Farther offshore, suspended solids varied from 2.4 mg/l to less than 0.2 mg/l. Mean suspended solids concentrations for the SONGS 2 and 3 survey area were 0.8 mg/l at the surface with a standard deviation of 0.8 mg/l, and 1.0 mg/l at 4 m with a standard deviation of 1.0 mg/l. Mean concentrations of suspended solids for SONGS 1 and SONGS 2 and 3 survey areas were 1.2 mg/l at the surface with a standard deviation of 1.3 mg/l, and 1.3 mg/l at 4 m with a standard deviation of 0.9 mg/l.

Aerial Photographs

Representative aerial photographs taken during the November survey are presented in Figures E-45 and E- 46. Both photographs showed low turbidity in the survey area. Turbidity is seen in

Figure E-45 downcoast of Station A0 and near shore. Heavy surf conditions are apparent in Figure E-46 near Station A2N, though there appears to be no resultant increased turbidity.

# CHAPTER 7

# HEAVY METALS

## A. INTRODUCTION

Monitoring of heavy metal concentrations in the SONGS 1 receiving waters and ocean bottom sediments was conducted in compliance with ETS Section 3.1.1.a.(2) and NPDES Permit No.CA0001228 (CRWQCB, SDR Order No. 76-11). The purpose of this study is to determine whether there is a measurable increase in heavy metal concentrations in the vicinity of the SONGS 1 discharge. After five years of monitoring, if no increase in heavy metal concentrations is detected, the study will be discontinued. The study has been conducted for four years as of the end of 1978.

During previous years water column mid-depth (4m) and sediment samples were collected quarterly. After March 1978, samples were collected bimonthly in conjunction with water quality profiling. Mid-depth (4m) water samples and sediment samples were collected by divers at Unit 1 discharge (Station XO), a control station (C22S) and at Stations D4N and D4S (Figure 1-3). Mid-depth water samples and sediment samples from each of these stations were analyzed for chromium, copper, nickel, and iron.

During May 1978 monitoring of heavy metal concentrations in the receiving waters and ocean bottom sediments was expanded to compile a preoperational data base for SONGS 2 and 3. This data base will be used to assess the combined effects of SONGS 1, 2, and 3 during their operation. Additional heavy metal monitoring stations for SONGS 2 and 3 include JO (this station replaced Station J2N in July and thereafter), J2S, J4N, J4S, and J22S. Water samples from mid-depth (4m) and sediment samples were collected bimonthly by divers from each of these stations and were analyzed for chromium, copper, nickel, iron, and titanium. Titanium analysis was added as part of the SONGS 2 and 3 heavy metal monitoring program due to its planned use in the condensers in Units 2 and 3.

## B. BACKGROUND INFORMATION

ETS monitoring of heavy metals was initiated in 1975. Mid-water heavy metal concentrations for copper, chromium, nickel, and iron were similar among stations and survey periods in 1975. In 1976, these concentrations varied somewhat, but were still within previously recorded ranges for seawater analyses conducted by other investigators (Dorband, 1967; Williams, 1969; SCCWRP, 1973 and 1976). Concentrations of copper, chromium, nickel, and iron in the water column varied among surveys and stations during 1977 with no apparent patterns of distribution. In the sediments, concentrations of copper, nickel, chromium, and iron did not vary appreciably between stations in 1975. During 1976, sediment

concentrations for chromium, nickel, and iron near the discharge (Station XO) were consistently lower than those measured at the downcoast station (C22S). Sediment concentrations at the discharge in 1977 were within one standard deviation of the three year mean measured at control Station C22S. No clear trends with time could be established for water column or sediment heavy metal concentrations during 1975, 1976, and 1977.

## C. RESULTS

Results of the 1978 ETS monitoring of copper, chromium, nickel, and iron concentrations at mid-depth in the water column at four Unit 1 stations (XO, C22S, D4N, D4S) along with five Units 2 and 3 stations (JO/J2N, J2S, J4N, J4S, J22S) are presented in Table 7-1. Heavy metal concentrations in the sediment at four Unit 1 and five Units 2 and 3 stations are presented in Table 7-2. Specific results of heavy metals monitoring in 1978 are presented in this section.

### Copper

Copper concentrations at mid-depth in the water column at Unit 1 stations ranged from 0.00024 to 0.0035 mg/l with a mean of 0.0018 mg/l. Values of copper concentrations in the water column at control Station C22S were higher than at the Unit 1 discharge (XO) except during the July survey where Station XO copper concentrations were 0.00076 mg/l higher than Station C22S. There were no seasonal or spatial trends observed among Unit 1 stations during 1978. Copper concentrations at mid-depth in the water column at Units 2 and 3 preoperational monitoring stations ranged from 0.00077 to 0.013 mg/l with a sample mean of 0.0029 mg/l. Water column copper concentrations at Units 2 and 3 stations varied, and no seasonal or spatial trends were observed during 1978.

Copper concentrations in the sediment at Unit 1 operational monitoring stations ranged from 3.1 to 6.1 mg/kg, with a mean of 4.2 mg/kg. Sediment copper concentrations at the Unit 1 discharge (X0) were higher than concentrations at control Station C22S in January, March, May, and November and were lower in July and September. The largest difference in sediment copper concentrations occurred during the March survey, where concentrations were 2.5 mg/kg higher at Station X0 (Unit 1 discharge) than at control Station C22S. Copper concentrations in the sediment at Units 2 and 3 preoperational monitoring stations ranged from 2.3 to 8.9 mg/kg, with a mean of 4.1 mg/kg. No temporal or spatial trends were observed among Unit 1 stations or Units 2 and 3 stations in sediment copper concentrations during 1978.

### Chromium

Chromium concentrations at mid-depth in the water column at Unit 1 monitoring stations ranged from 0.00011 to 0.0052 mg/l, with a mean of 0.0016 mg/l. Concentrations at Unit 1 control Station C22S were consistently higher than at the discharge (X0) except during the November survey, when the chromium concentration was

**Table 7-1. Heavy Metal Concentrations in the Water Column during 1978**

| Station | Water Column (mg/l) 1978 | | | | |
|---|---|---|---|---|---|
| | March 23 | May 2 | July 12 | September 13 | November 16 |
| | | | Copper | | |
| X0 | 0.00076 | 0.0011 | 0.0010 | 0.0017 | 0.0018 |
| C22S | 0.0018 | 0.0025 | 0.00024 | 0.0028 | 0.0020 |
| D4N | 0.0014 | 0.00048 | 0.0017 | 0.0030 | 0.0033 |
| D4S | 0.0015 | 0.00084 | 0.0022 | 0.0035 | 0.0025 |
| J0 | | | 0.0013 | 0.0011 | 0.0016 |
| J2N | | 0.0075 | | | |
| J2S | | 0.00077 | 0.013 | 0.0012 | 0.0020 |
| J4N | | 0.0015 | 0.0016 | 0.0030 | 0.0022 |
| J4S | | 0.0014 | 0.0014 | 0.0016 | 0.0039 |
| J22S | | 0.0011 | 0.0080 | 0.0016 | 0.0022 |
| | | | Chromium | | |
| X0 | 0.0020 | 0.0017 | 0.00069 | 0.00037 | 0.0014 |
| C22S | 0.0021 | 0.0017 | 0.0014 | 0.0019 | 0.0010 |
| D4N | 0.0014 | 0.00048 | 0.0023 | 0.00046 | 0.0017 |
| D4S | 0.0021 | 0.00011 | 0.0024 | 0.0052 | 0.0016 |
| J0 | | | 0.00033 | 0.0022 | 0.00068 |
| J2N | | 0.00060 | | | |
| J2S | | 0.00046 | 0.0023 | 0.0015 | 0.0016 |
| J4N | | 0.00093 | 0.0025 | 0.0012 | 0.00070 |
| J4S | | 0.00083 | 0.0019 | 0.0019 | 0.0011 |
| J22S | | 0.0011 | 0.00085 | 0.00077 | 0.0025 |
| | | | Nickel | | |
| X0 | 0.015 | 0.00081 | 0.0042 | 0.012 | 0.0017 |
| C22S | 0.0064 | 0.0012 | 0.0094 | 0.036 | 0.0013 |
| D4N | 0.0049 | 0.00055 | 0.033 | 0.070 | 0.0016 |
| D4S | 0.0064 | 0.00028 | 0.019 | 0.0012 | 0.0016 |
| J0 | | | 0.0053 | 0.013 | 0.0022 |
| J2N | | 0.00054 | | | |
| J2S | | 0.00039 | 0.056 | 0.077 | 0.0014 |
| J4N | | 0.00054 | 0.021 | 0.0040 | 0.00063 |
| J4S | | 0.0011 | 0.014 | 0.015 | 0.00068 |
| J22S | | 0.0026 | 0.0088 | 0.057 | 0.0012 |
| | | | Iron | | |
| X0 | 0.067 | 0.049 | 0.030 | 0.61 | 0.0051 |
| C22S | 0.057 | 0.078 | 0.038 | 0.015 | 0.0089 |
| D4N | 0.056 | 0.018 | 0.042 | 0.10 | 0.0047 |
| D4S | 0.053 | 0.036 | 0.044 | 0.072 | 0.018 |
| J0 | | | 0.032 | 0.0039 | 0.0088 |
| J2N | | 0.028 | | | |
| J2S | | 0.038 | 0.13 | 0.027 | 0.011 |
| J4N | | 0.044 | 0.046 | 0.012 | 0.0052 |
| J4S | | 0.034 | 0.047 | 0.10 | 0.018 |
| J22S | | 0.070 | 0.037 | 0.0078 | 0.0052 |
| | | | Titanium | | |
| X0 | | <0.1 | <0.1 | <0.1 | <0.1 |
| C22S | | <0.1 | <0.1 | <0.1 | <0.1 |
| D4N | | <0.1 | <0.1 | <0.1 | <0.1 |
| D4S | | | <0.1 | <0.1 | <0.1 |
| J0 | | <0.1 | <0.1 | <0.1 | <0.1 |
| J2N | | <0.1 | | | |
| J2S | | <0.1 | <0.1 | <0.1 | <0.1 |
| J4N | | <0.1 | <0.1 | <0.1 | <0.1 |
| J4S | | <0.1 | <0.1 | <0.1 | <0.1 |
| J22S | | <0.1 | <0.1 | <0.1 | <0.1 |

**Table 7-2. Heavy Metal Concentrations in the Sediments during 1978**

| Station | Sediment (mg/kg) 1978 | | | | |
|---|---|---|---|---|---|
| | March 23 | May 2 | July 12 | September 13 | November 16 |
| | | | Copper | | |
| X0 | 6.1 | 4.1 | 5.4 | 3.4 | 4.6 |
| C22S | 3.6 | 3.5 | 5.9 | 3.9 | 4.0 |
| D4N | 4.1 | 3.8 | 3.7 | 3.3 | 4.6 |
| D4S | 3.4 | 3.1 | 5.4 | 3.7 | 3.7 |
| J0 | | | 4.1 | 4.5 | 4.7 |
| J2N | | 3.5 | | | |
| J2S | | 3.0 | 4.7 | 4.6 | 4.6 |
| J4N | | 8.9 | 3.4 | 4.8 | 4.2 |
| J4S | | 2.3 | 3.2 | 4.0 | 4.2 |
| J22S | | 4.2 | 3.2 | 3.2 | 3.5 |
| | | | Chromium | | |
| X0 | 13 | 10 | 13 | 8.0 | 13 |
| C22S | 11 | 12 | 13 | 12 | 13 |
| D4N | 9.2 | 11 | 11 | 9.4 | 12 |
| D4S | 8.5 | 8.2 | 13 | 11 | 12 |
| J0 | | | 13 | 12 | 18 |
| J3N | | 12 | | | |
| J2S | | 10 | 12 | 12 | 15 |
| J4N | | 23 | 11 | 12 | 12 |
| J4S | | 7.6 | 12 | 8.1 | 15 |
| J22S | | 15 | 10 | 8.3 | 11 |
| | | | Nickel | | |
| X0 | 10 | 4.4 | 8.0 | 8.0 | 5.8 |
| C22S | 5.8 | 2.9 | 11 | 4.2 | 5.0 |
| D4N | 9.0 | 5.2 | 6.4 | 5.3 | 5.2 |
| D4S | 8.5 | 3.9 | 9.9 | 4.8 | 5.1 |
| J0 | | | 8.3 | 5.8 | 6.7 |
| J2N | | 5.3 | | | |
| J2S | | 3.9 | 7.3 | 6.4 | 6.5 |
| J4N | | 12 | 7.0 | 5.8 | 5.3 |
| J4S | | 2.9 | 6.8 | 5.0 | 5.3 |
| J22S | | 7.0 | 7.3 | 5.5 | 3.5 |
| | | | Iron | | |
| X0 | 8,900 | 7,300 | 9,100 | 6,400 | 6,700 |
| C22S | 5,000 | 4,800 | 9,000 | 5,600 | 4,900 |
| D4N | 6,200 | 6,800 | 6,000 | 5,700 | 6,200 |
| D4S | 4,100 | 4,300 | 7,400 | 5,800 | 4,500 |
| J0 | | | 6,900 | 7,200 | 6,600 |
| J2N | | 5,800 | | | |
| J2S | | 4,000 | 7,300 | 6,900 | 6,400 |
| J4N | | 13,000 | 5,700 | 7,500 | 5,600 |
| J4S | | 2,600 | 5,400 | 6,200 | 5,600 |
| J22S | | 7,300 | 5,000 | 5,000 | 4,300 |
| | | | Titanium | | |
| X0 | | 570 | 300 | 270 | 470 |
| C22S | | 540 | 320 | 320 | 260 |
| D4N | | 500 | 210 | 330 | 270 |
| D4S | | 520 | 230 | 360 | 210 |
| J0 | | | 240 | 380 | 520 |
| J2N | | 540 | | | |
| J2S | | 420 | 240 | 430 | 310 |
| J4N | | 850 | 210 | 350 | 270 |
| J4S | | 280 | 190 | 310 | 290 |
| J22S | | 690 | 180 | 280 | 230 |

0.0004 mg/l higher at Station X0 than control Station C22S, a 29% increase. Values of chromium concentrations in the water column for Unit 1 stations varied with time and space, but no consistent seasonal or spatial trends were evident. Chromium concentrations in the water column measured at Units 2 and 3 preoperational monitoring stations ranged from 0.00033 to 0.0025 mg/l, with a mean of 0.0013 mg/l. No spatial or seasonal trends were observed during 1978.

Chromium concentrations in the sediment at Unit 1 stations ranged from 8 to 13 mg/kg, with a mean of 11 mg/kg. Sediment chromium concentrations at Unit 1 control Station C22S were higher or equal to concentrations at the discharge (Station X0) during all 1978 surveys except March. During this survey, the concentration of chromium was 2 mg/kg higher at Station X0 than the control station. Values of chromium concentration in sediment samples of Units 2 and 3 monitoring stations ranged from 7.6 to 23 mg/kg, with a mean of 12 mg/kg. No seasonal or spatial trends for chromium in sediment samples were observed at either Unit 1 or Units 2 and 3 stations during 1978.

Nickel

Nickel concentrations at mid-depth in the water column at Unit 1 monitoring stations ranged from 0.00028 to a maximum of 0.070 mg/l, with a mean of 0.011 mg/l. Nickel concentrations in the water column at Unit 1 stations were higher at control Station C22S than at the discharge during three out of five surveys. Nickel concentrations during the March survey were 0.0086 mg/l higher at Station C22S than at Station X0. Also, during the November survey, nickel concentrations were 0.0004 mg/l higher at Station C22S than at Station X0. Water column nickel concentrations measured at Units 2 and 3 preoperational monitoring stations ranged from 0.00039 to 0.077 mg/l, with a mean of 0.014 mg/l. Nickel concentrations at mid-depth in the water column varied with time and among stations at both Unit 1 and Units 2 and 3 stations, but no distinct trends were observed.

In sediment samples collected from Unit 1 monitoring stations, nickel concentrations ranged from 2.9 to 11 mg/kg, with a mean of 6.4 mg/kg. Sediment nickel concentrations were higher at the Unit 1 discharge (X0) during all surveys except July. The greatest difference in concentrations between Stations C22S and X0 (4.2 mg/kg) occurred during March. Nickel concentrations in sediment samples of Units 2 and 3 monitoring stations ranged from 2.9 to 12 mg/kg, with a mean of 6.2 mg/kg. No spatial or temporal trends were observed for nickel concentration among any sediment stations during 1978.

Iron

Iron concentration at mid-depth in the water column in samples collected from Unit 1 stations ranged from 0.0047 to 0.61 mg/l, with a mean of 0.070 mg/l. Values of iron concentrations in the water column at Unit 1 control Station C22S were higher than at the

discharge station (X0) except during the March and September surveys; iron concentration was 0.01 mg/l higher in March and 0.59 mg/l higher in September. Water column samples collected at Units 2 and 3 preoperational monitoring stations ranged in iron concentration from 0.0039 mg/l to a maximum of 0.13 mg/l, with a mean of 0.070 mg/l. No spatial and temporal trends were observed in water column iron concentrations during 1978.

Sediment samples from Unit 1 stations ranged in iron concentration from 4100 to 9100 mg/kg with a mean of 6200 mg/kg. Iron concentrations at Unit 1 discharge Station X0 were consistently higher than at control Station C22S. Differences in sediment iron concentrations ranged from 100 mg/kg in July to 3900 mg/kg in March. Sediment iron concentrations at Units 2 and 3 preoperational monitoring stations ranged from 2600 to 13,000 mg/kg, with a mean of 6200 mg/kg. No seasonal or spatial trends were observed in either Unit 1 or Units 2 and 3 sediment iron concentrations during 1978.

Titanium

Water column and sediment samples were analyzed for titanium after the March survey. Titanium concentrations in all water column samples were <0.1 mg/kg. Sediment titanium concentrations ranged from 180 mg/kg to a maximum of 850 mg/kg, with a mean of 360 mg/kg. No seasonal or spatial trends were observed in water column or sediment titanium concentrations during 1978.

# CHAPTER 8

# DISSOLVED OXYGEN AND HYDROGEN ION CONCENTRATION (pH)

## A. INTRODUCTION

In compliance with ETS Sections 3.1.1.(3) and 3.1.1.(7) and NPDES Permit No. CA0001228 (CRWQCB, SDR Order No. 76-11) surface water dissolved oxygen and hydrogen ion concentrations were monitored bimonthly to assess the effect of SONGS 1 on receiving waters. Specifications require surface DO and pH monitoring at the cooling water intake (Station CO), near the discharge (Station XO), and at one control station (Station C22S) for SONGS 1.

In order to compile a preoperational data base to assess the combined effects of SONGS 1, 2, and 3 on surface DO and pH in the receiving waters, additional stations were sampled. These additional stations for Units 2 and 3 included J2S, J2N, J4S, and F22S (Figure 1-3).

## B. BACKGROUND INFORMATION

Dissolved oxygen and pH monitoring began on a regular basis at San Onofre in the spring of 1967 as a portion of studies which monitored the warm water effluent from SONGS 1. Historically, surface dissolved oxygen concentrations ranged from 4.3 to 12.6 mg/l in the coastal waters near San Onofre (Allan Hancock, 1965). Results from previous monitoring studies showed that there was essentially no difference between concentrations measured at the Unit 1 downcoast control station and the discharge. DO concentrations varied among surveys but usually differed less than 0.5 mg/l among stations during each survey (BC, 1977). Surface pH in coastal waters near San Onofre have been reported to range from 7.5 to a maximum of 8.6, with an average pH of 8.1 (Allan Hancock, 1965). Results from previous monitoring studies showed that there was essentially no difference between values measured at the Unit 1 downcoast control station and the discharge.

## C. RESULTS

Vertical profiles of dissolved oxygen and pH were taken bimonthly at all monitoring stations in conjunction with temperature and turbidity profiling. Although these data are not presented in this volume, they are available in computer compatible format on file at Brown and Caldwell.

### Dissolved Oxygen

Surface dissolved oxygen concentrations at Stations C0, X0, and C22S are presented in Table 8-1 for each of the bimonthly

**Table 8-1. Surface Dissolved Oxygen, from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations during 1978**

| Survey Date | Unit 1 (Operational) | | | | Units 2 and 3 (Pre-operational) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CO (Intake) | X0 (Discharge) | C22S (Control) | Mean (Unit 1) | J2S | J2N | J4S | F22S | Mean (Units 2 & 3) |
| 1/18/78 | 7.4 | 7.3 | 7.9 | 7.5 | | | | | |
| 3/7/78 | 8.0 | 8.0 | 7.6 | 7.9 | | | | | |
| 5/4/78 | 8.0 | 8.0 | 8.5 | 8.2 | 8.3 | 8.3 | 8.5 | 8.4 | 8.4 |
| 7/10/78 | 8.1 | 8.0 | 7.9 | 8.0 | 7.7 | 7.6 | 7.6 | 7.7 | 7.7 |
| 9/13/78 | 7.5 | 7.2 | 7.5 | 7.4 | 7.5 | 7.3 | 7.6 | 7.3 | 7.4 |
| 11/16/78 | 7.5 | 7.0 | 7.7 | 7.4 | 7.1 | 7.1 | 7.2 | 7.4 | 7.2 |

surveys of 1978. Table 8-2 presents percent saturation of surface dissolved oxygen at Stations C0, X0, and C22S. Included in both tables are surface DO concentrations for Stations J2S, J2N, J4S, and F22S. These Units 2 and 3 stations were added after the March survey.

Surface DO concentrations at the required Unit 1 stations ranged from 7.0 mg/l at Station C22S during the November survey to 8.5 mg/l at Station C22S during the May survey. Mean DO for each survey ranged from 7.4 to 8.2 mg/l. Differences in surface DO among Unit 1 monitoring stations for each survey of 1978 ranged from 0.0 to 0.7 mg/l. The largest difference in DO (0.7 mg/l) occurred between the SONGS 1 discharge (X0) and control Station C22S during the November survey, a difference of less than 10%. Surface DO concentrations at the required Units 2 and 3 stations ranged from 7.1 mg/l at Stations J2S and J2N during the November survey to 8.5 mg/l at Station J4S during the May survey. Mean DO for each survey ranged from 7.2 to 8.4 mg/l. Differences in surface DO among the Units 2 and 3 monitoring stations for each survey of 1978 ranged from 0.0 to 0.3 mg/l.

**Table 8-2. Surface Dissolved Oxygen Percent Saturation, from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations during 1978**

| Survey Date | Unit 1 (Operational) | | | | Units 2 and 3 (Pre-operational) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CO (Intake) | X0 (Discharge) | C22S (Control) | Mean (Unit 1) | J2S | J2N | J4S | F22S | Mean (Units 2 & 3) |
| 1/18/78 | 95.0 | 95.9 | 96.5 | 95.8 | | | | | |
| 3/7/78 | 98.7 | 114 | 93.0 | 102 | | | | | |
| 5/4/78 | 101 | 106 | 104 | 104 | 102 | 102 | 104 | 103 | 103 |
| 7/10/78 | 108 | 117 | 105 | 110 | 102 | 105 | 101 | 104 | 103 |
| 9/13/78 | 103 | 98.8 | 100 | 101 | 102 | 101 | 100 | 98.3 | 100 |
| 11/16/78 | 96.4 | 91.2 | 97.0 | 94.9 | 89.7 | 89.9 | 90.9 | 94.3 | 91.2 |

Surface DO concentrations at all monitoring stations ranged from 6.2 mg/l at Station C2N during the September survey to a maximum of 9.6 mg/l at Station F2S during the July survey. The 1978 mean for surface DO at all stations was 7.7 mg/l, which was equal to the 1978 mean of the required stations. Surface DO at all stations varied among surveys, with lowest concentrations observed during the autumn and winter surveys and highest concentrations observed during the spring and summer surveys. The largest spatial variation occurred during the July survey when surface DO concentrations varied 2.2 mg/l between Stations H0 and F2S. The smallest spatial variation occurred during the January survey when surface DO concentrations varied 1.0 mg/l between Stations F6N, A6S, B1S, and C14N. Surface DO concentrations greater than 0.42 standard deviations from the mean were not observed during 1978.

Percent saturation of surface dissolved oxygen during 1978 was calculated as a function of temperature and salinity (Table 8-2). DO saturation measured at required Unit 1 monitoring stations ranged from 91.2% to 117%, with a mean of 101% saturation. Spatial trends in DO saturation were not evident; however, a seasonal trend was observed. Highest saturation was observed during summer surveys, while lower saturation was observed during winter surveys. Percent saturation of surface dissolved oxygen at the Units 2 and 3 pre-operational monitoring stations ranged from 89.7% to a maximum of 105%, with a mean of 99.3%. Similar to data from Unit 1 stations, data from Units 2 and 3 stations exhibited no spatial trends, but the same seasonal trend was evident.

## Hydrogen Ion Concentration (pH)

Surface pH at required Unit 1 Stations C0, X0, and C22S are presented in Table 8-3 for each of the bimonthly surveys of 1978. Required Units 2 and 3 Stations J2S, J2N, J4S, and F22S were added after the March survey. Vertical profiles of pH were also taken at all other ETS monitoring stations.

**Table 8-3. Surface Hydrogen Ion Concentrations (pH) from Required Unit 1 Operational and Units 2 and 3 Preoperational Monitoring Stations during 1978**

| Survey Date | Unit 1 (Operational) | | | | Units 2 and 3 (Pre-operational) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CO (Intake) | X0 (Discharge) | C22S (Control) | Mean (Unit 1) | J2S | J2N | J4N | F22S | Mean (Units 2 & 3) |
| 1/18/78 | 8.05 | 8.07 | 8.11 | 8.08 | | | | | |
| 3/7/78 | 8.07 | 8.06 | 8.09 | 8.07 | | | | | |
| 5/4/78 | 8.19 | 8.16 | 8.27 | 8.21 | 8.16 | 8.16 | 8.24 | 8.27 | 8.21 |
| 7/10/78 | 8.06 | 8.05 | 8.31 | 8.14 | 8.10 | 8.13 | 8.10 | 8.30 | 8.16 |
| 9/13/78 | 8.27 | 8.24 | 8.51 | 8.34 | 8.30 | 8.29 | 8.29 | 8.54 | 8.36 |
| 11/16/78 | 8.08 | 8.07 | 7.98 | 8.04 | 8.07 | 8.06 | 8.07 | 7.95 | 8.04 |

Surface pH at the required Unit 1 stations ranged from 7.98 at Station C22S during the November survey to 8.51 at Station C2S during September survey. Mean pH for each survey ranged from 8.04 during November to 8.34 during September. Differences in surface pH among Unit 1 monitoring stations for each survey of 1978 ranged from 0.01 to a maximum of 0.27. The largest difference in pH (0.27) occurred between the SONGS 1 discharge (X0) and control Station C22S during the September survey, a 3% difference. Surface pH at the Units 2 and 3 required stations ranged from 7.95 at Station F22S during the November survey to a maximum of 8.54 at Station F22S during the September survey. Mean pH for each survey ranged from 8.04 to 8.36. Differences in surface pH among stations for each survey of 1978 ranged from 0.0 to 0.25.

Surface pH at all monitoring stations ranged from 7.67 at Station A0 during the July survey to a maximum of 8.39 at Station C4S, also during the July survey. The mean surface pH for all stations during 1978 was 8.14, which was statistically equivalent to the mean of the required stations. Surface pH at all monitoring stations varied among surveys, with lowest concentrations observed during the fall and winter surveys and highest concentrations observed during the spring and summer surveys. The largest spatial variation in surface pH was observed during the July survey, when a difference of 0.72 was observed between Stations A0 and C4S. The smallest spatial variation in surface pH was observed during the January survey, when a difference of 0.11 was observed between Stations A2S and C2S. Surface pH variations greater than 0.11 standard deviations from the mean were not observed.

# APPENDIX A. LITERATURE CITED

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# APPENDIX B. TEMPERATURE DATA

# Temperature Profiles

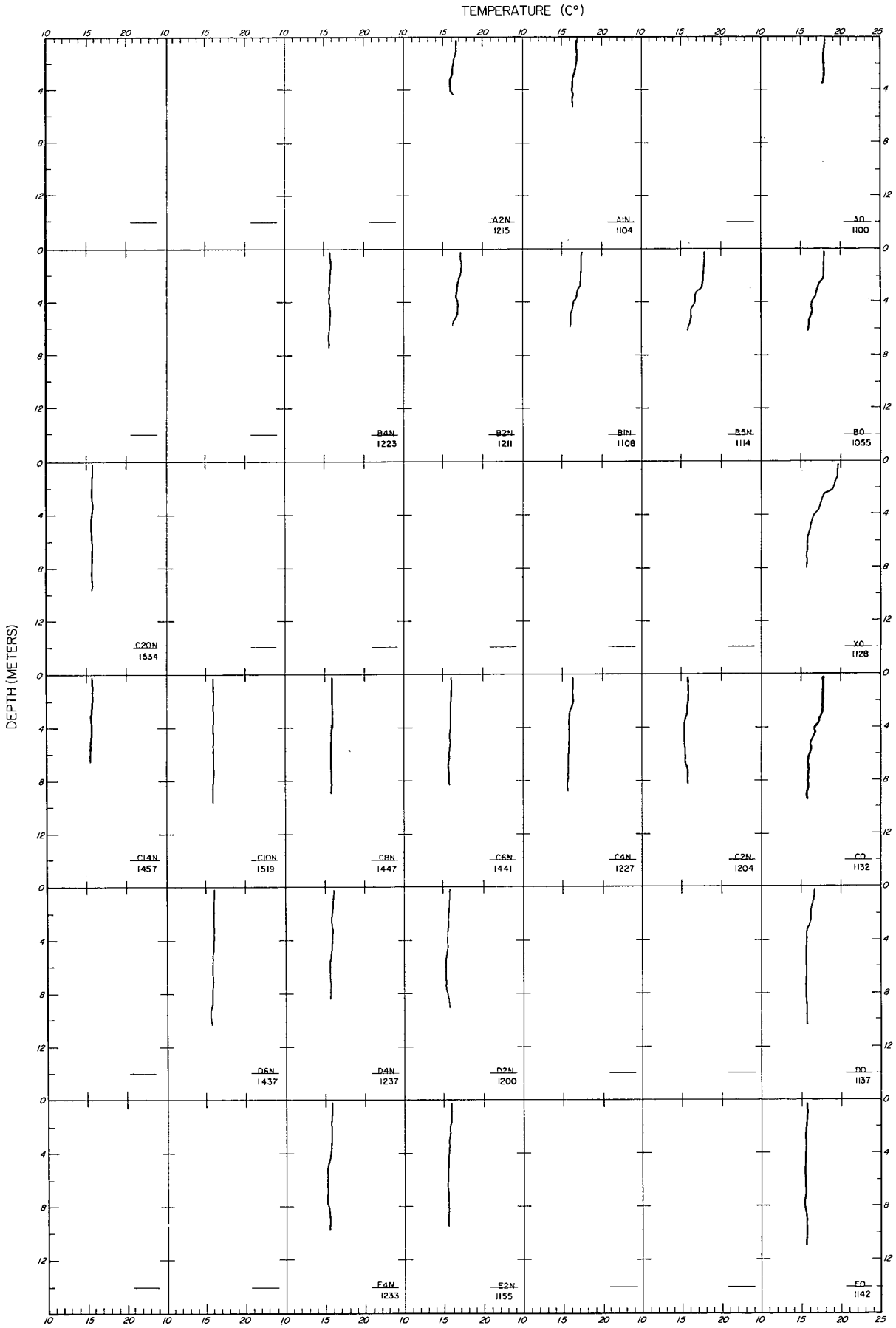



**Figure B-1. Temperature Profiles for January 18, 1978**

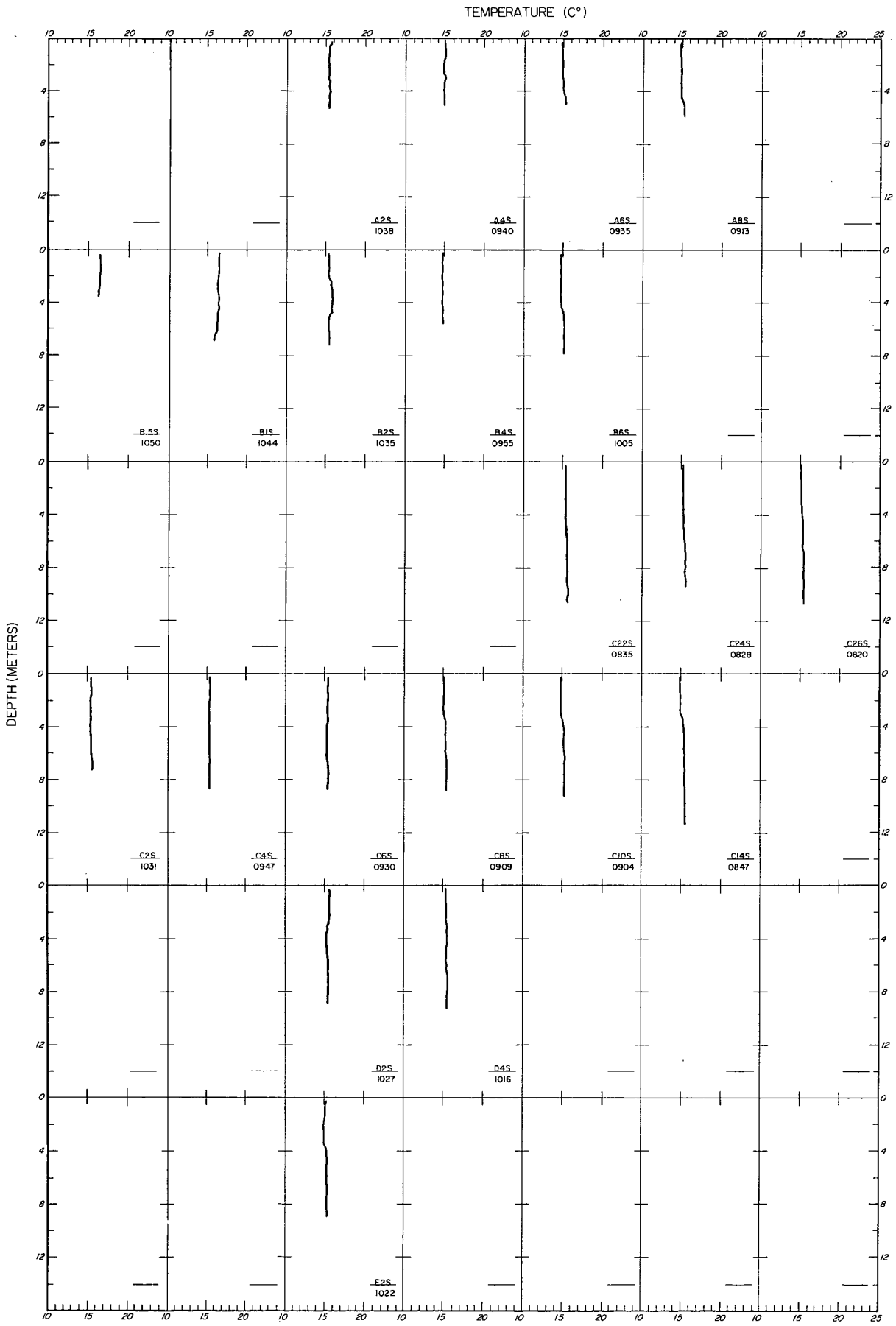



**Figure B-1. Temperature Profiles for January 18, 1978 (cont'd)**

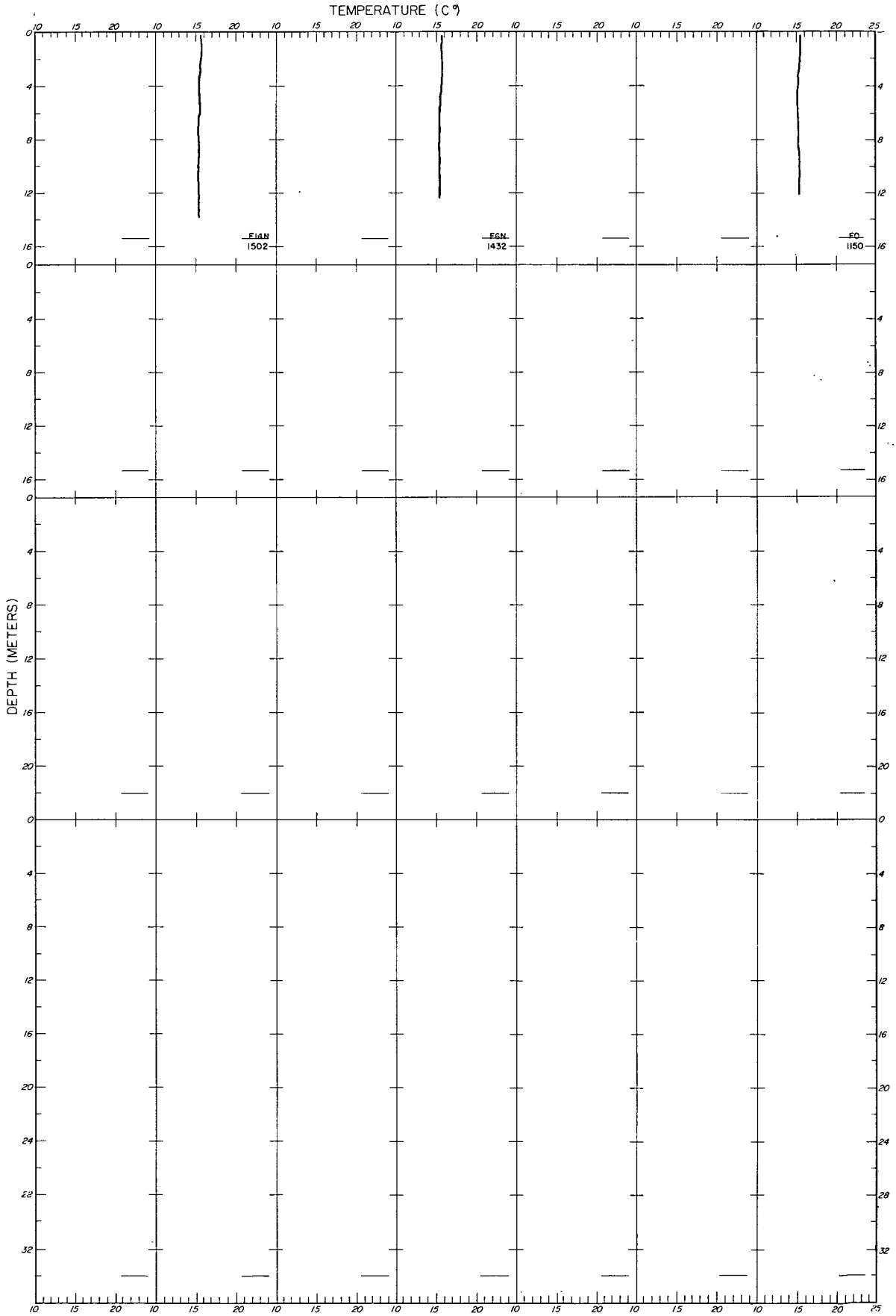
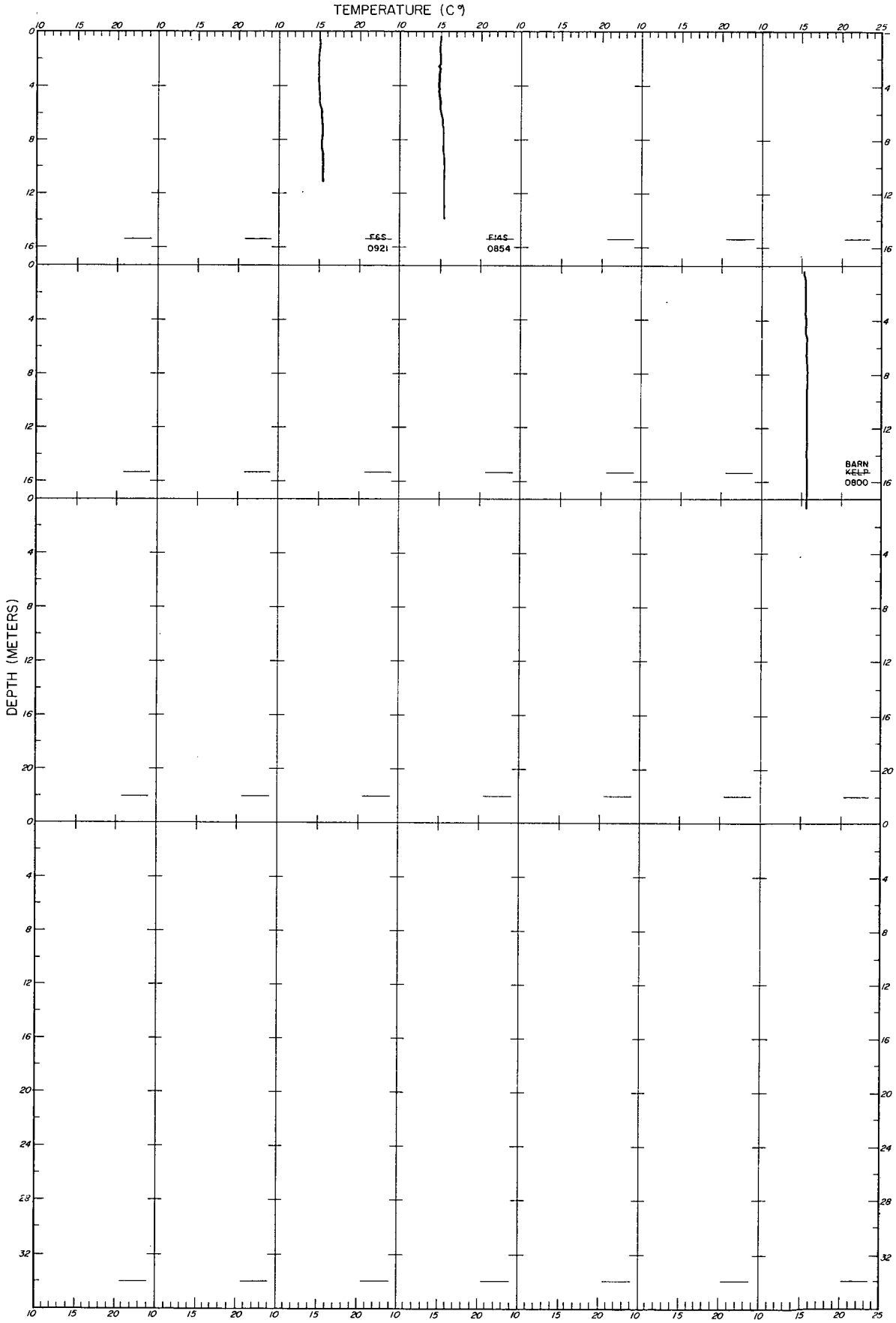



**Figure B-1. Temperature Profiles for January 18, 1978 (cont'd)**

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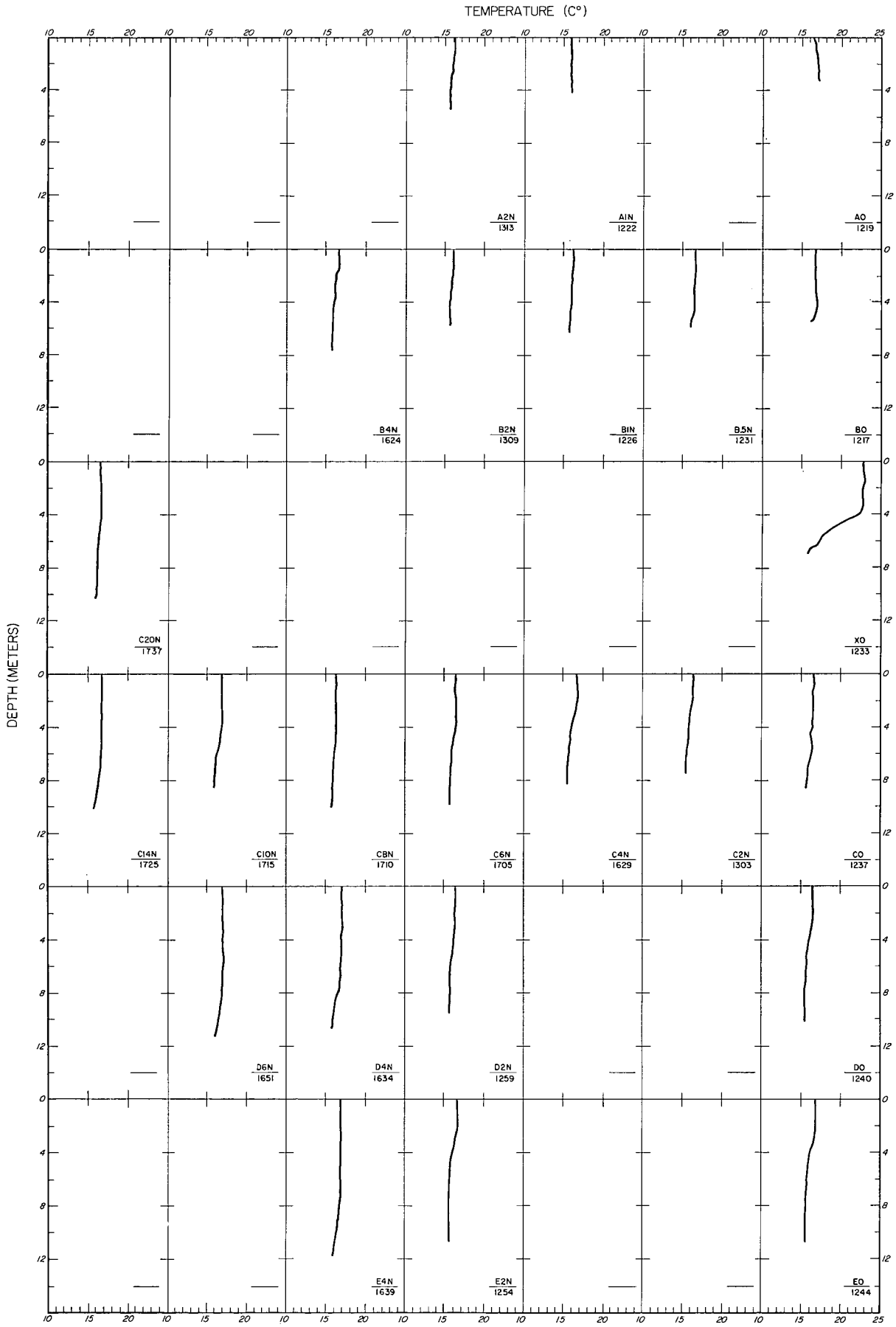



**Figure B-2. Temperature Profiles for March 7, 1978**

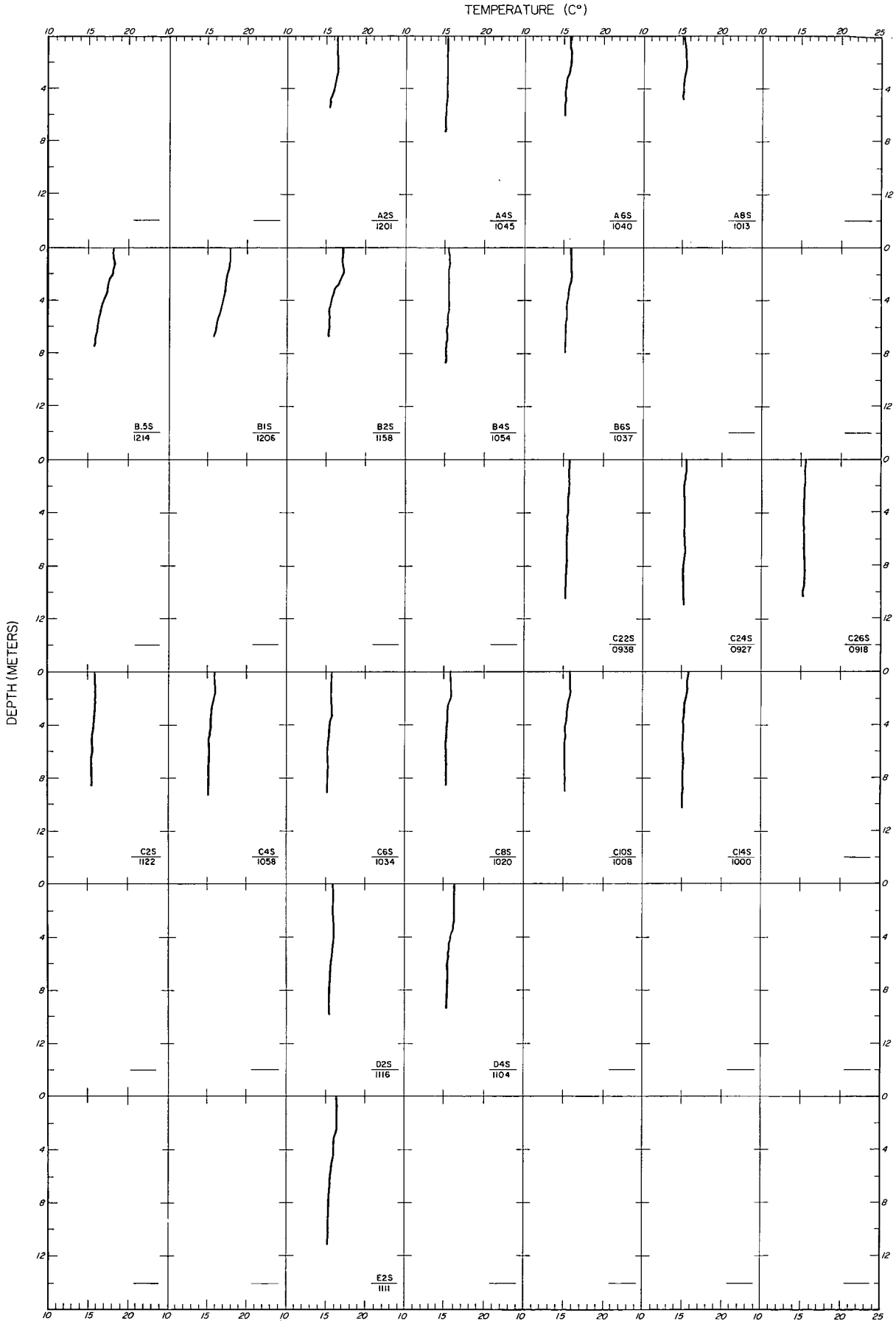



**Figure B-2. Temperature Profiles for March 7, 1978 (cont'd)**

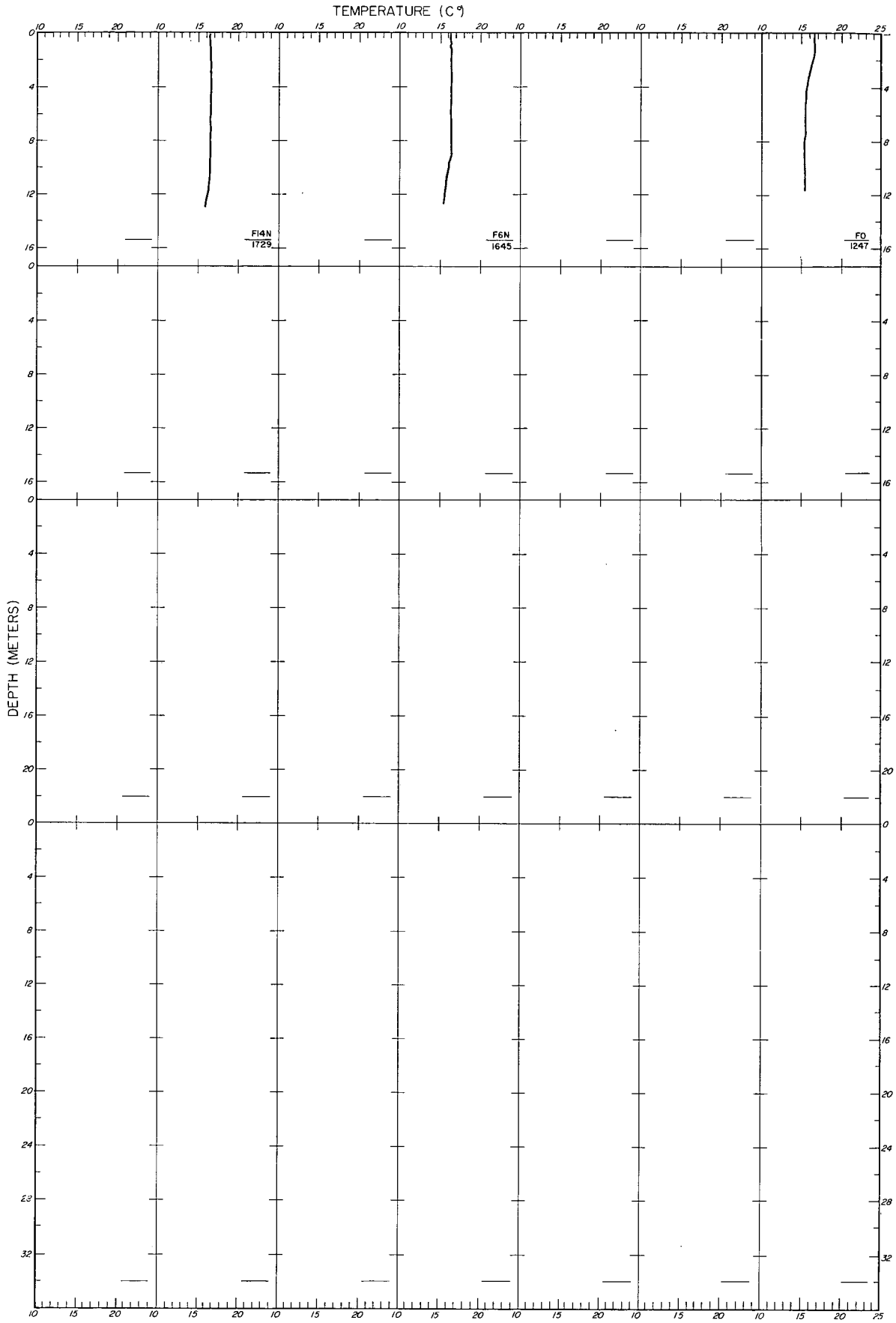



**Figure B-2. Temperature Profiles for March 7, 1978 (cont'd)**

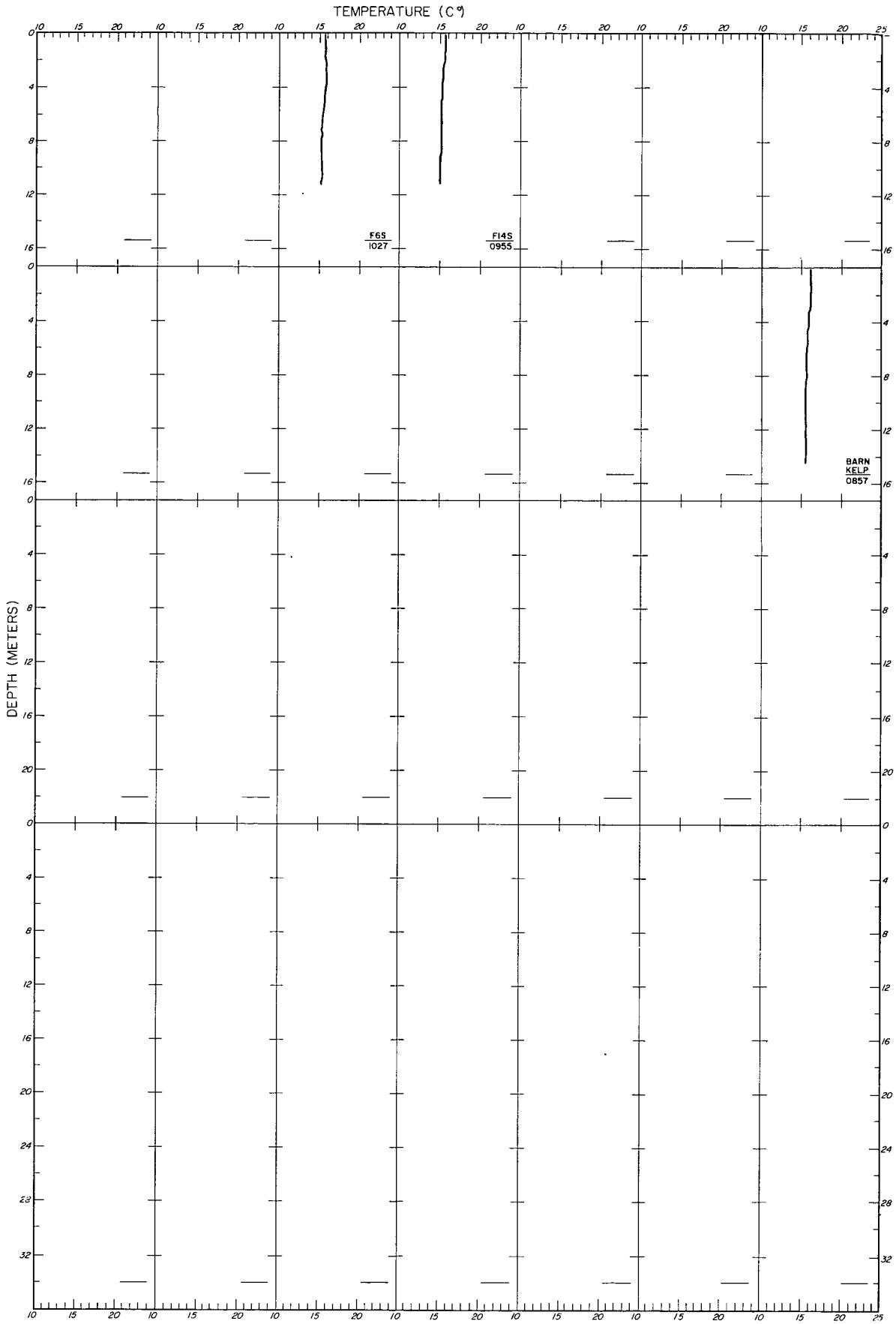



**Figure B-2. Temperature Profiles for March 7, 1978 (cont'd)**

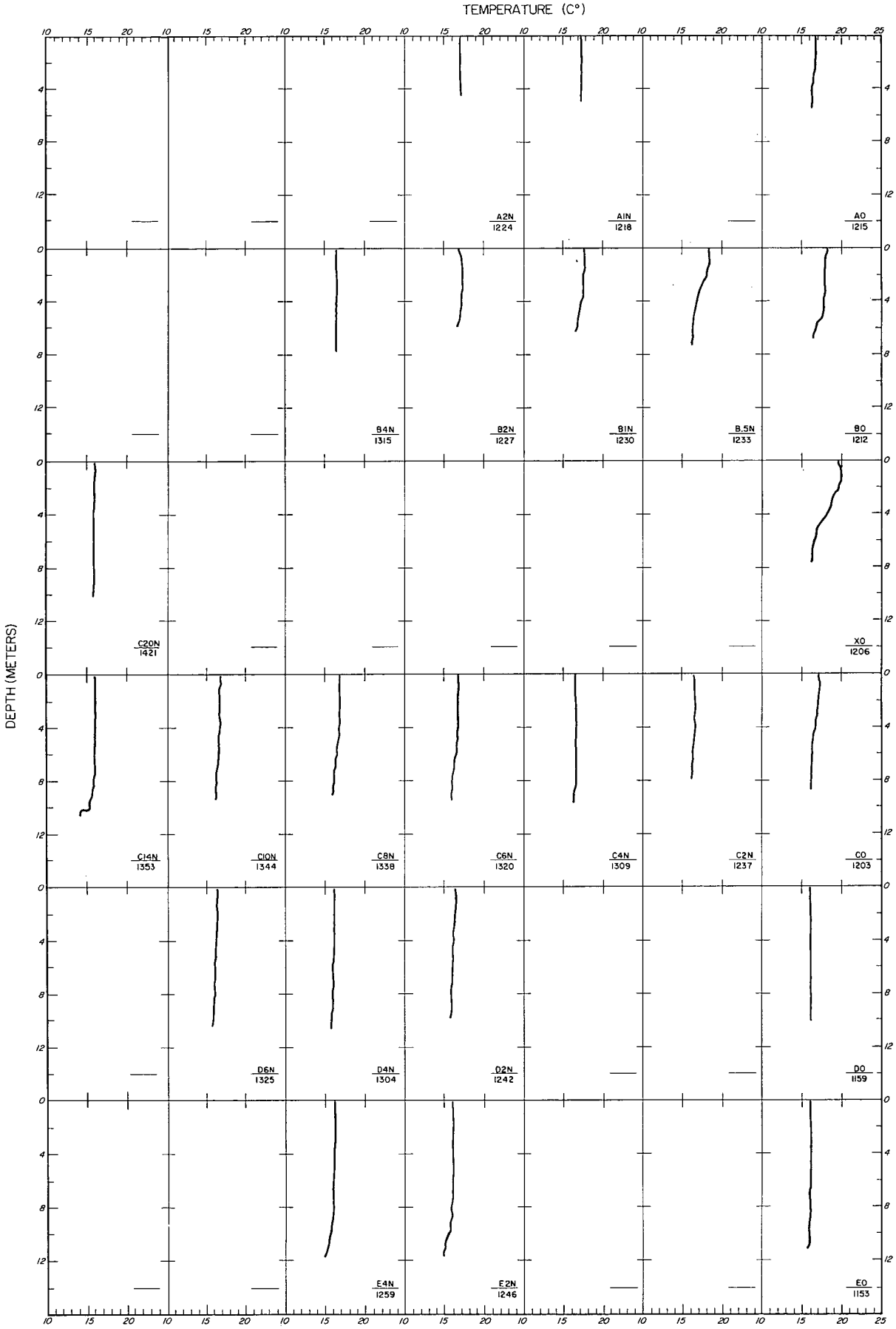
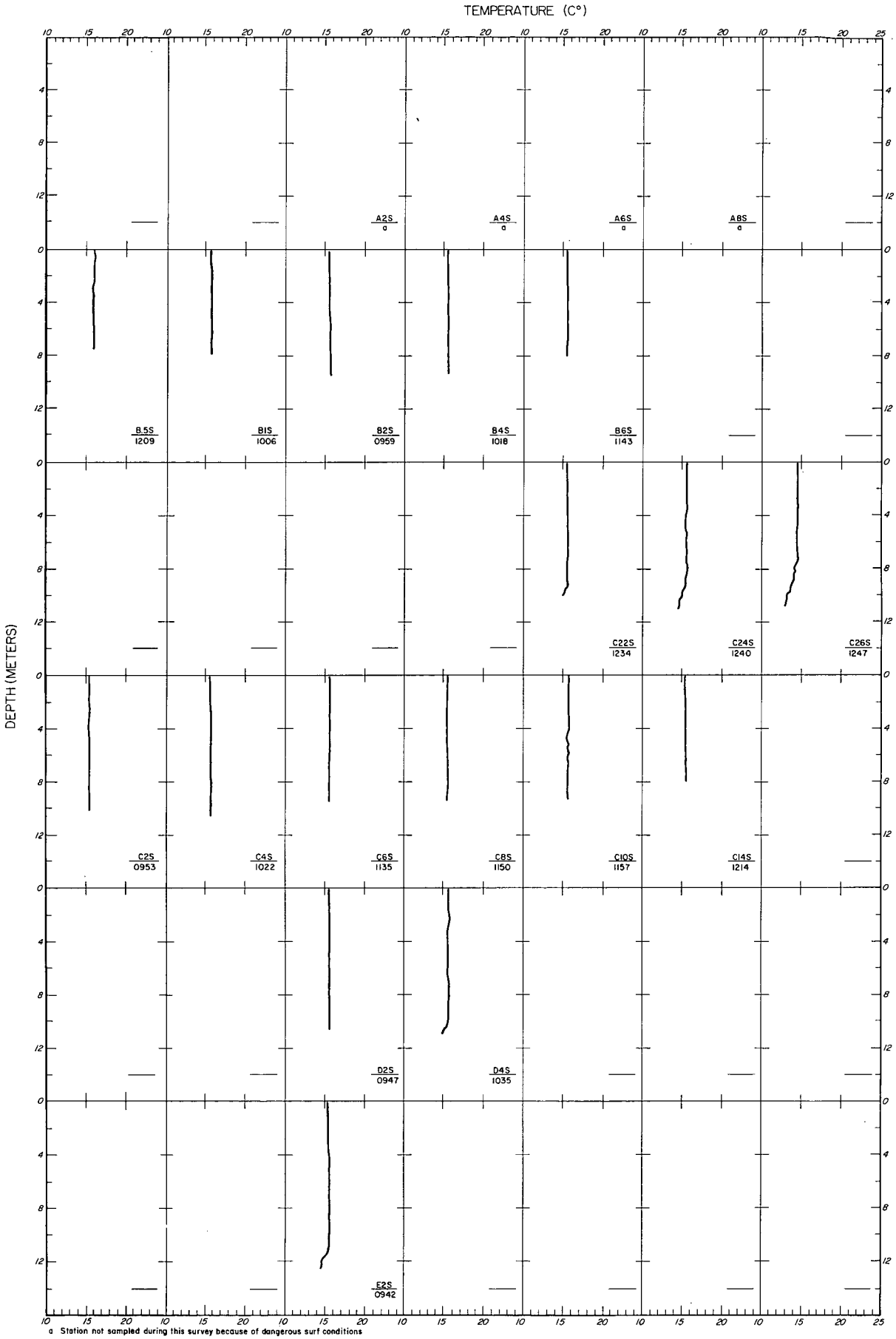
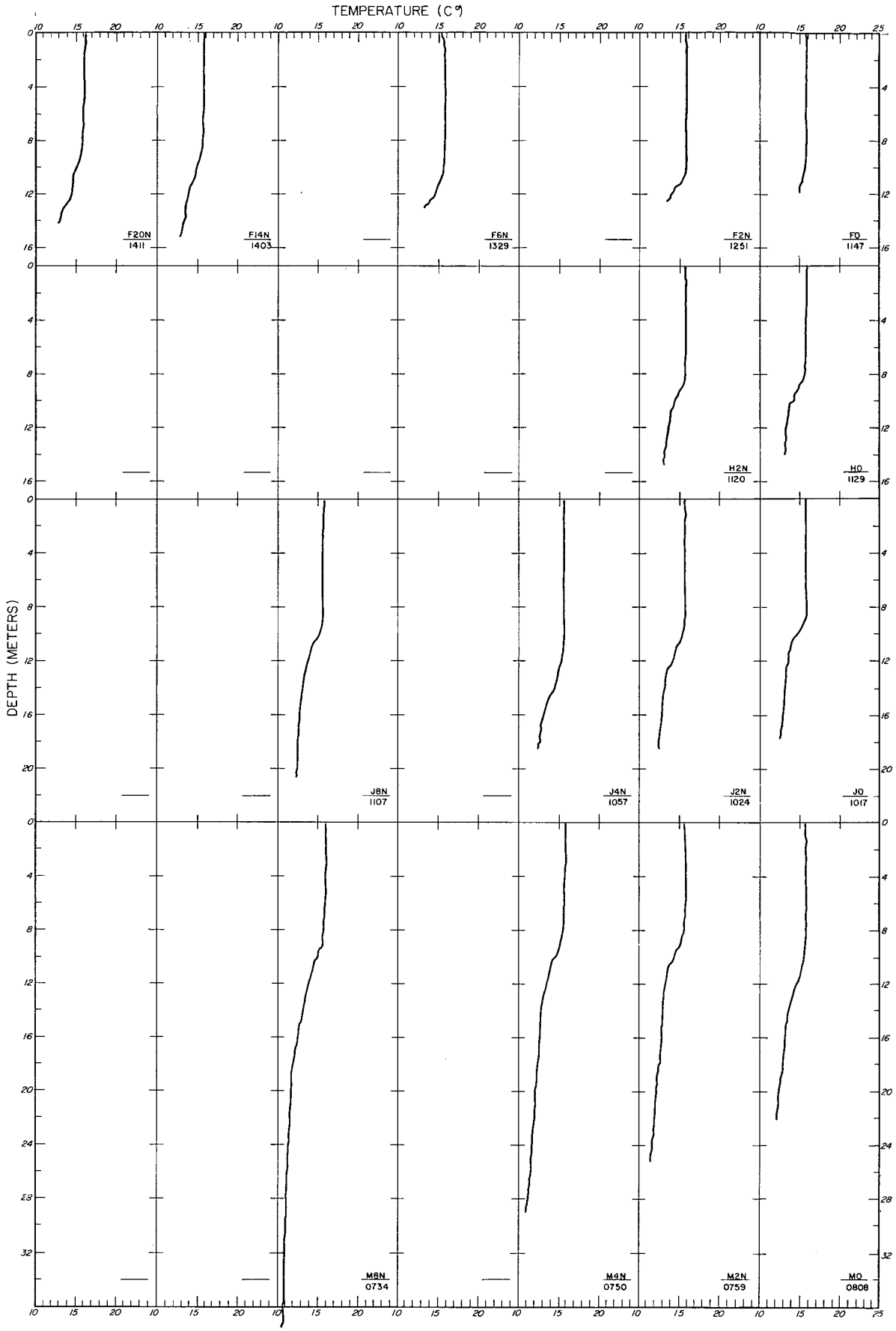



**Figure B-3. Temperature Profiles for May 4, 1978**




a Station not sampled during this survey because of dangerous surf conditions

**Figure B-3. Temperature Profiles for May 4, 1978 (cont'd)**

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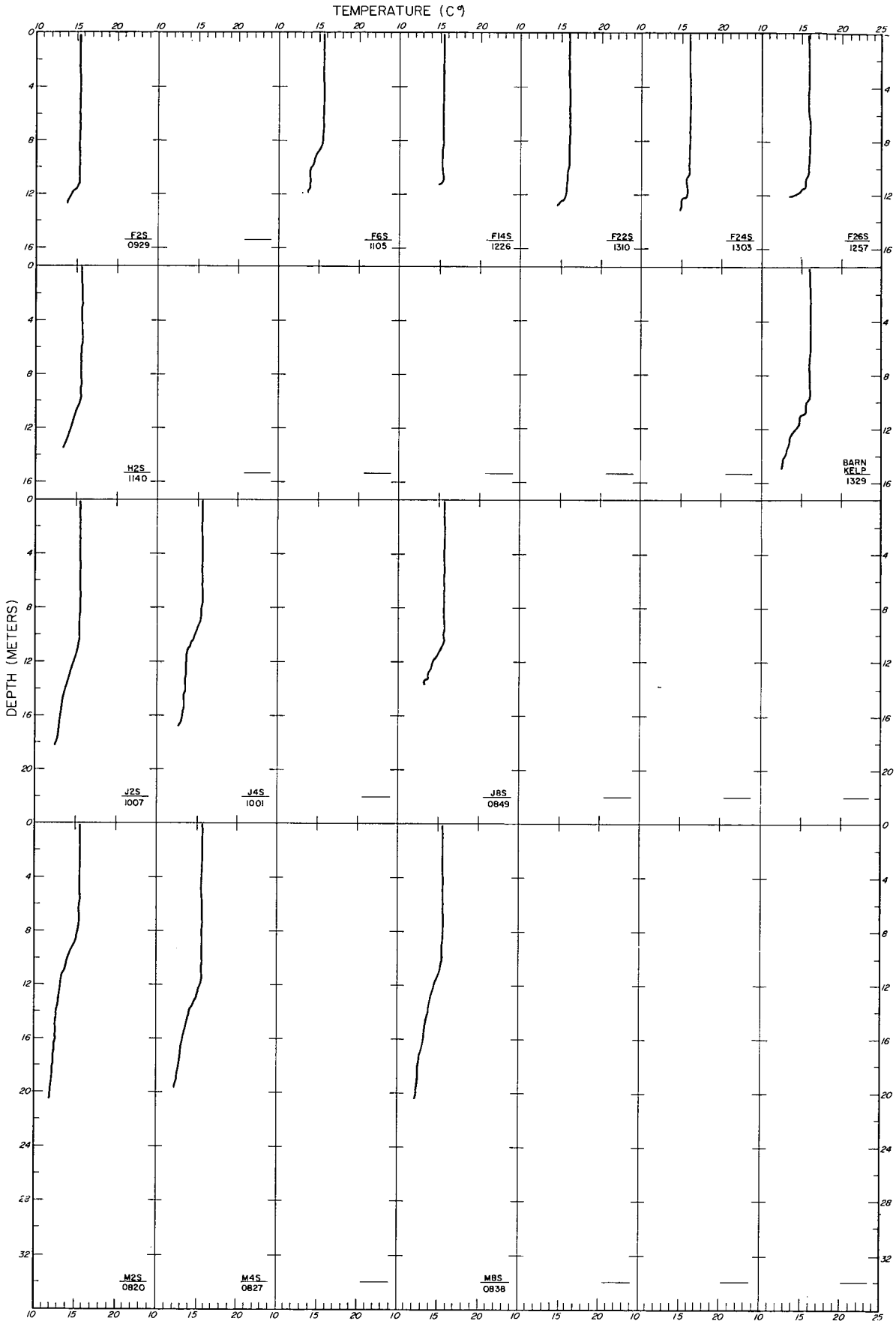


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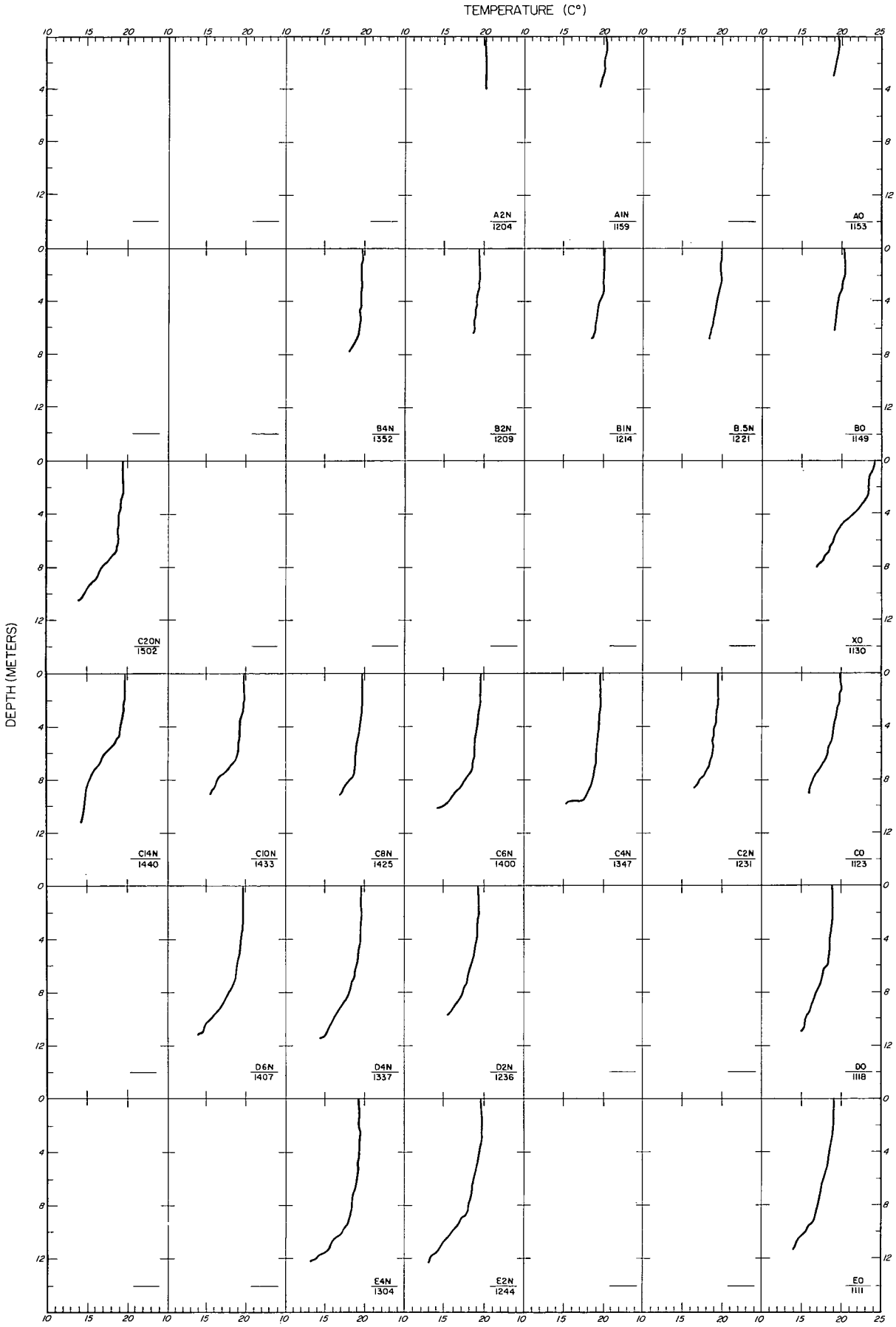



**Figure B-4. Temperature Profiles for July 10, 1978**

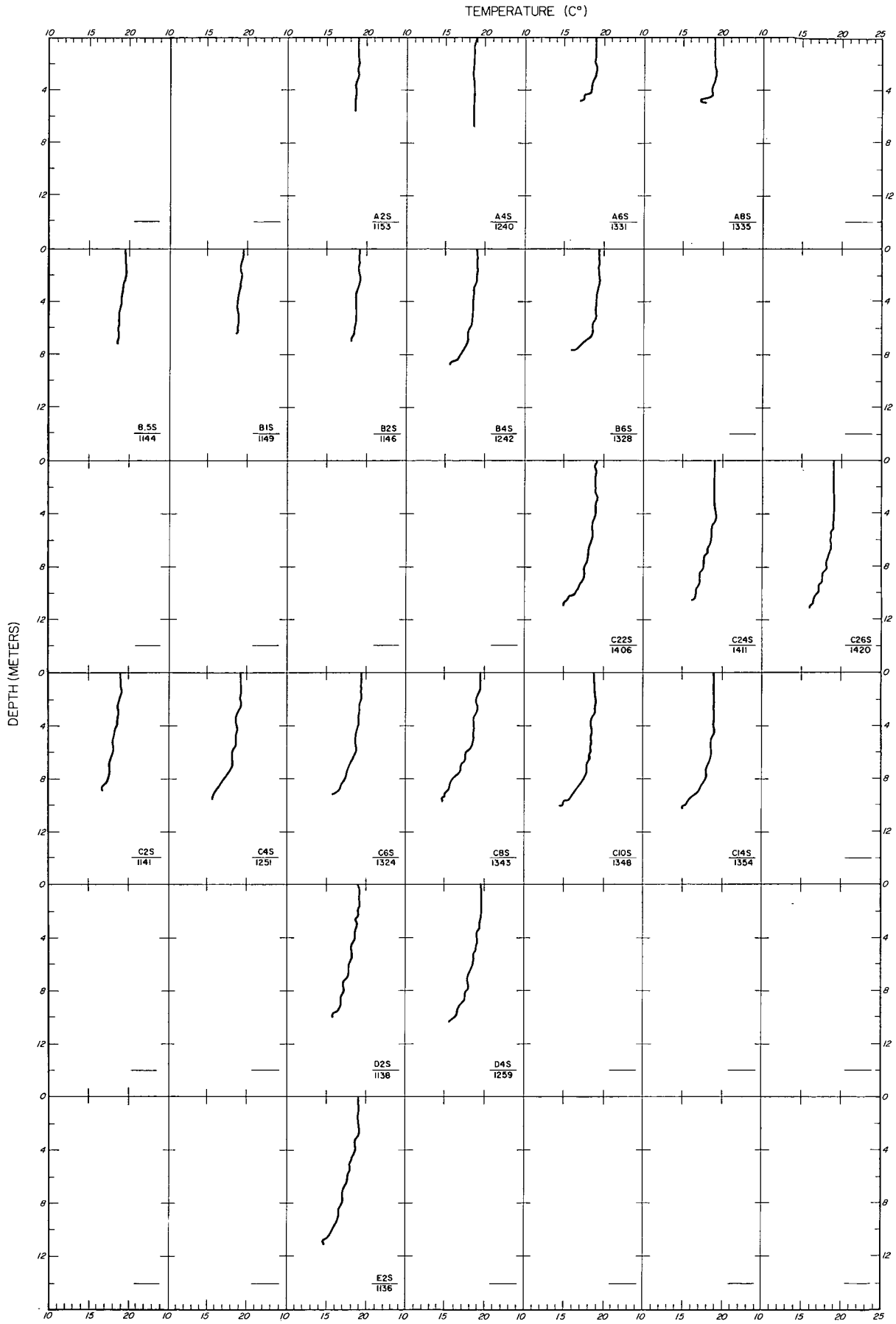



**Figure B-4. Temperature Profiles for July 10, 1978 (cont'd)**

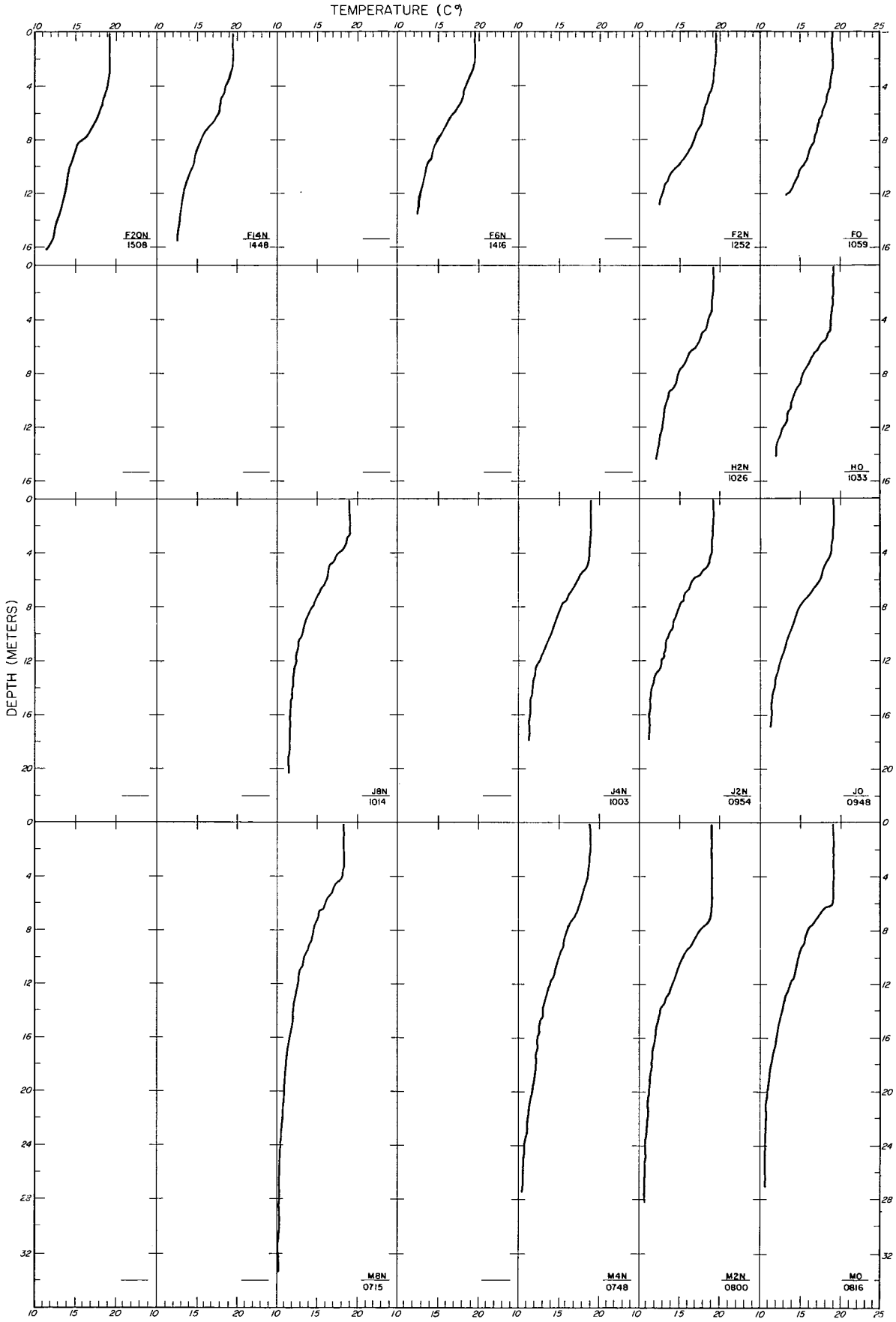
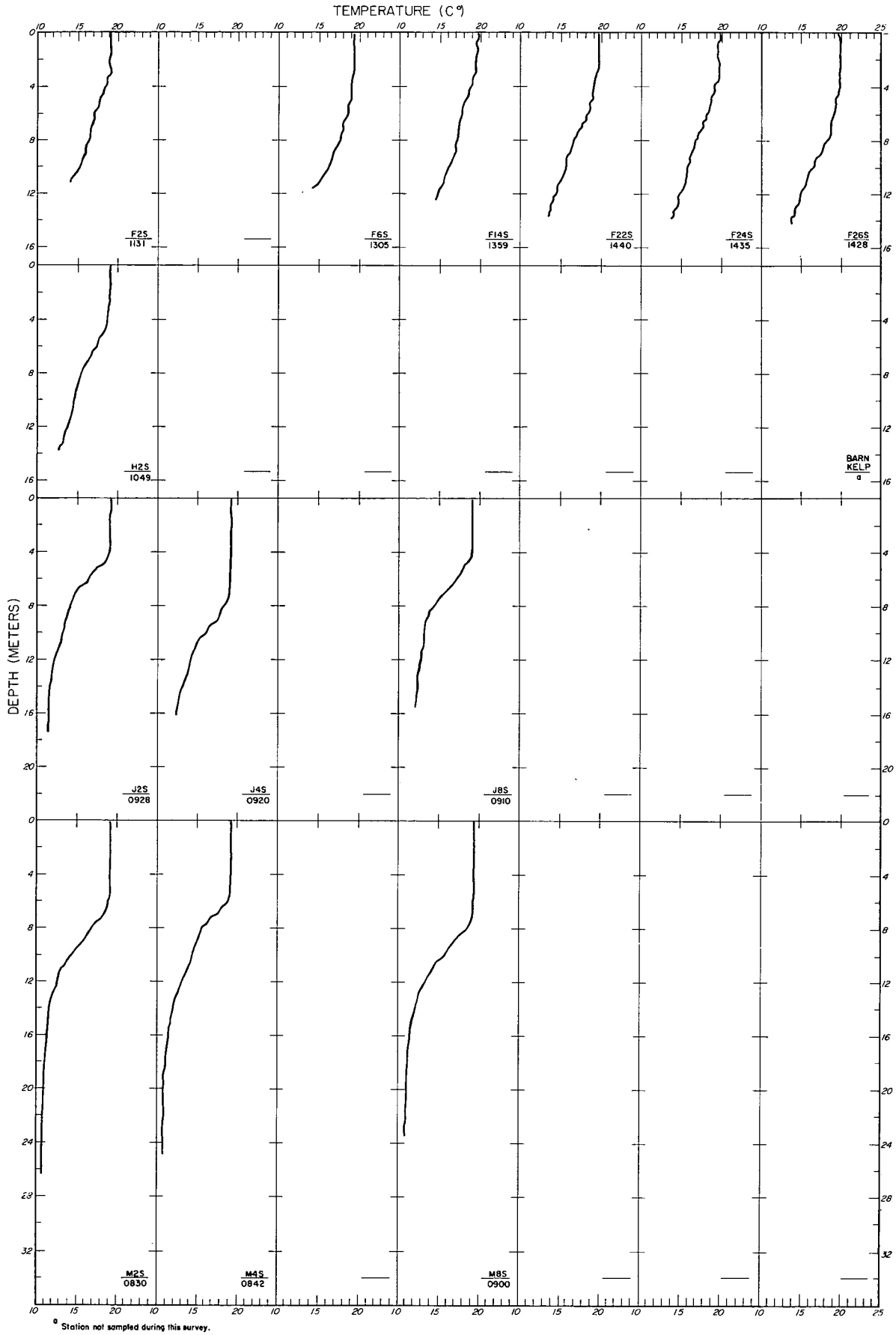
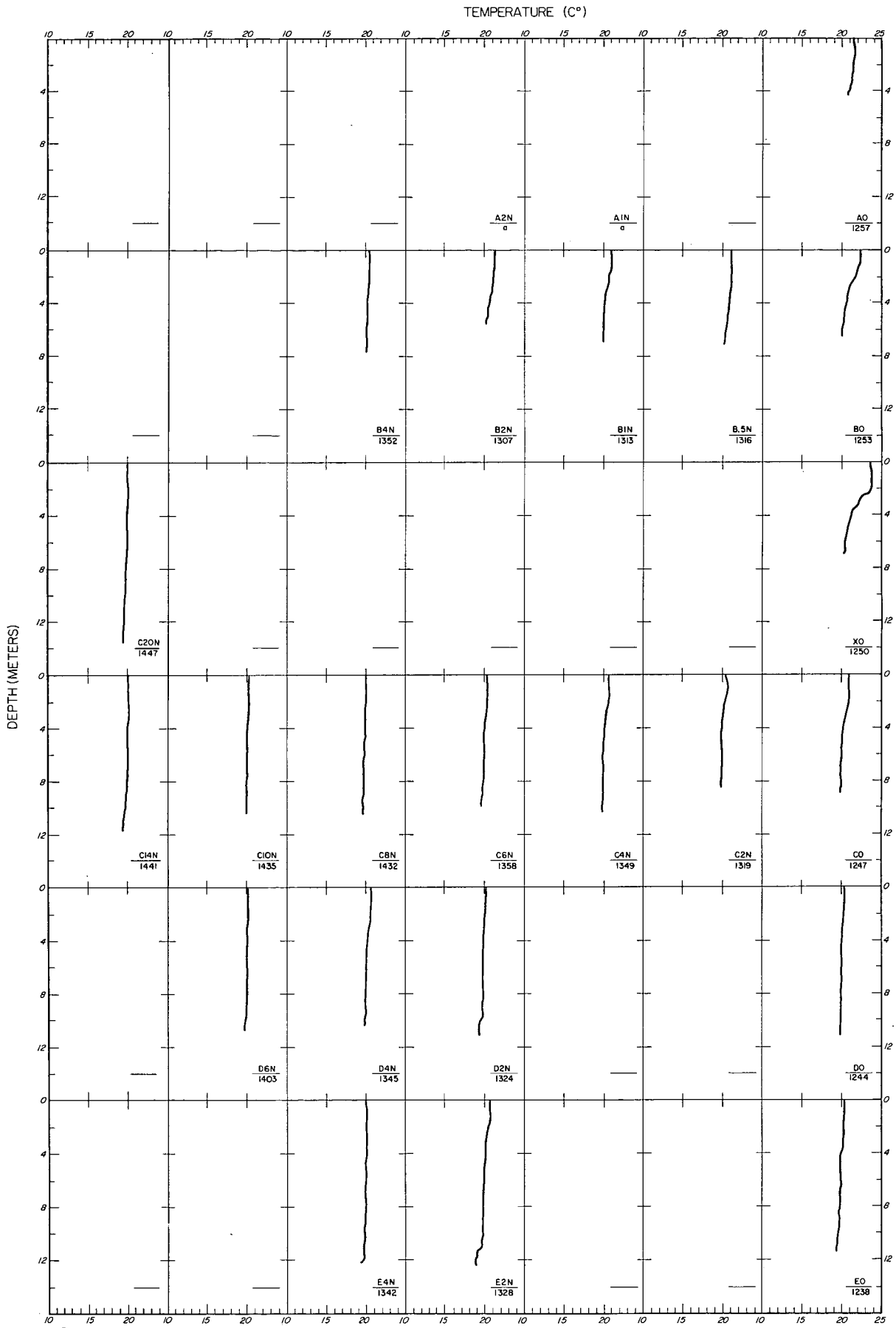



**Figure B-4. Temperature Profiles for July 10, 1978 (cont'd)**




[a] Station not sampled during this survey.

**Figure B-4. Temperature Profiles for July 10, 1978 (cont'd)**




[a] Station not sampled during this survey because of dangerous surf conditions.

**Figure B-5. Temperature Profiles for September 13, 1978**

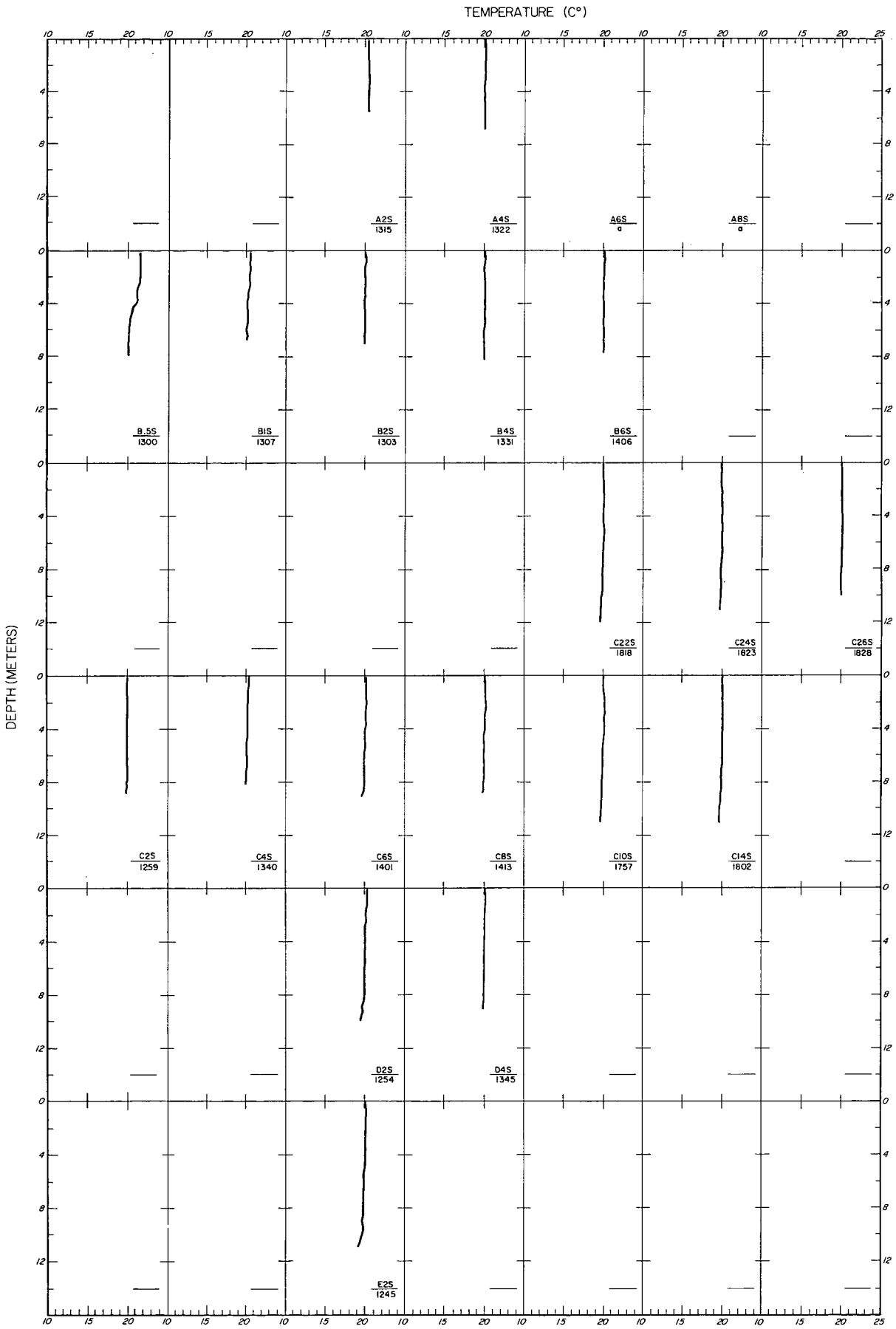



**Figure B-5. Temperature Profiles for September 13, 1978 (cont'd)**

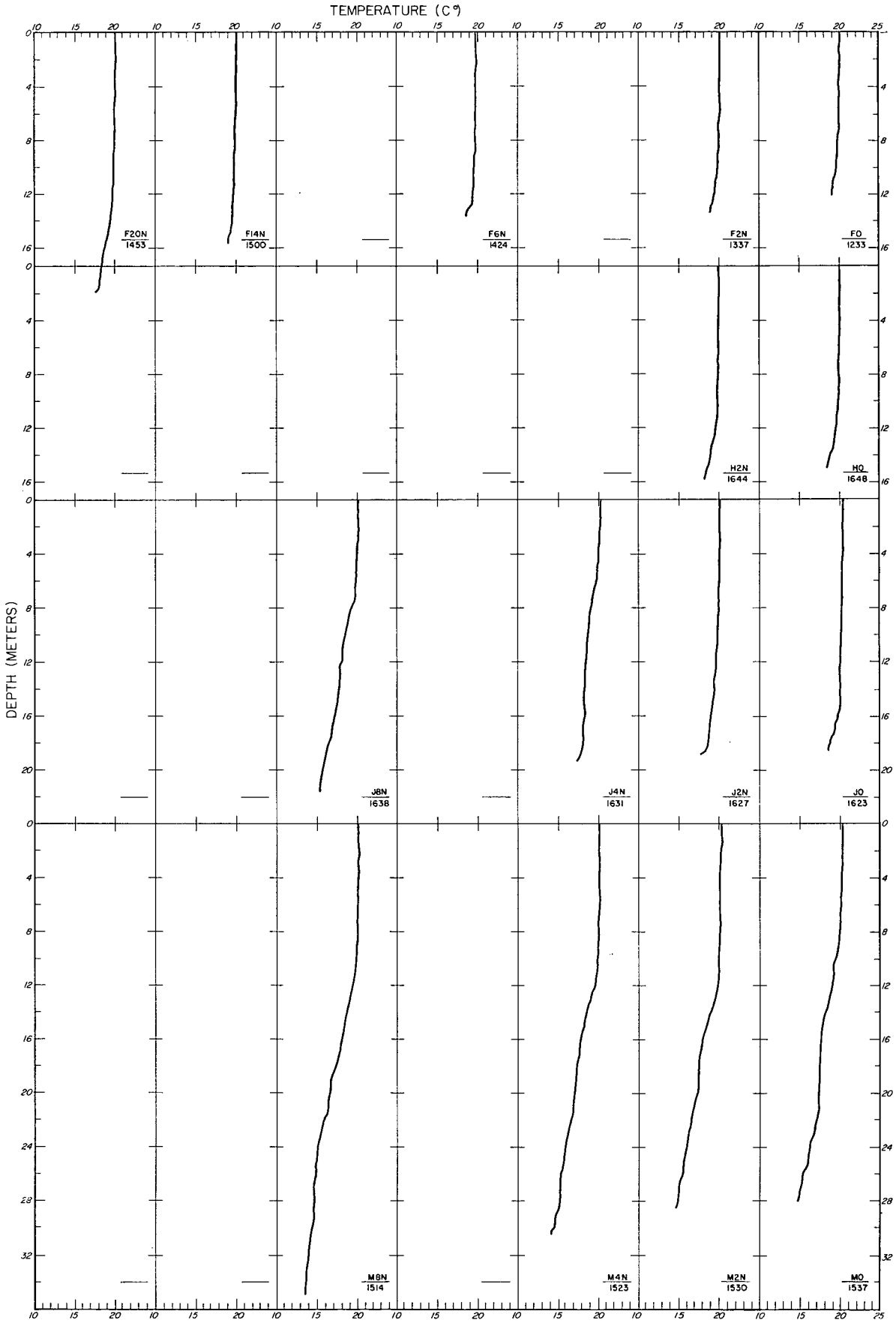
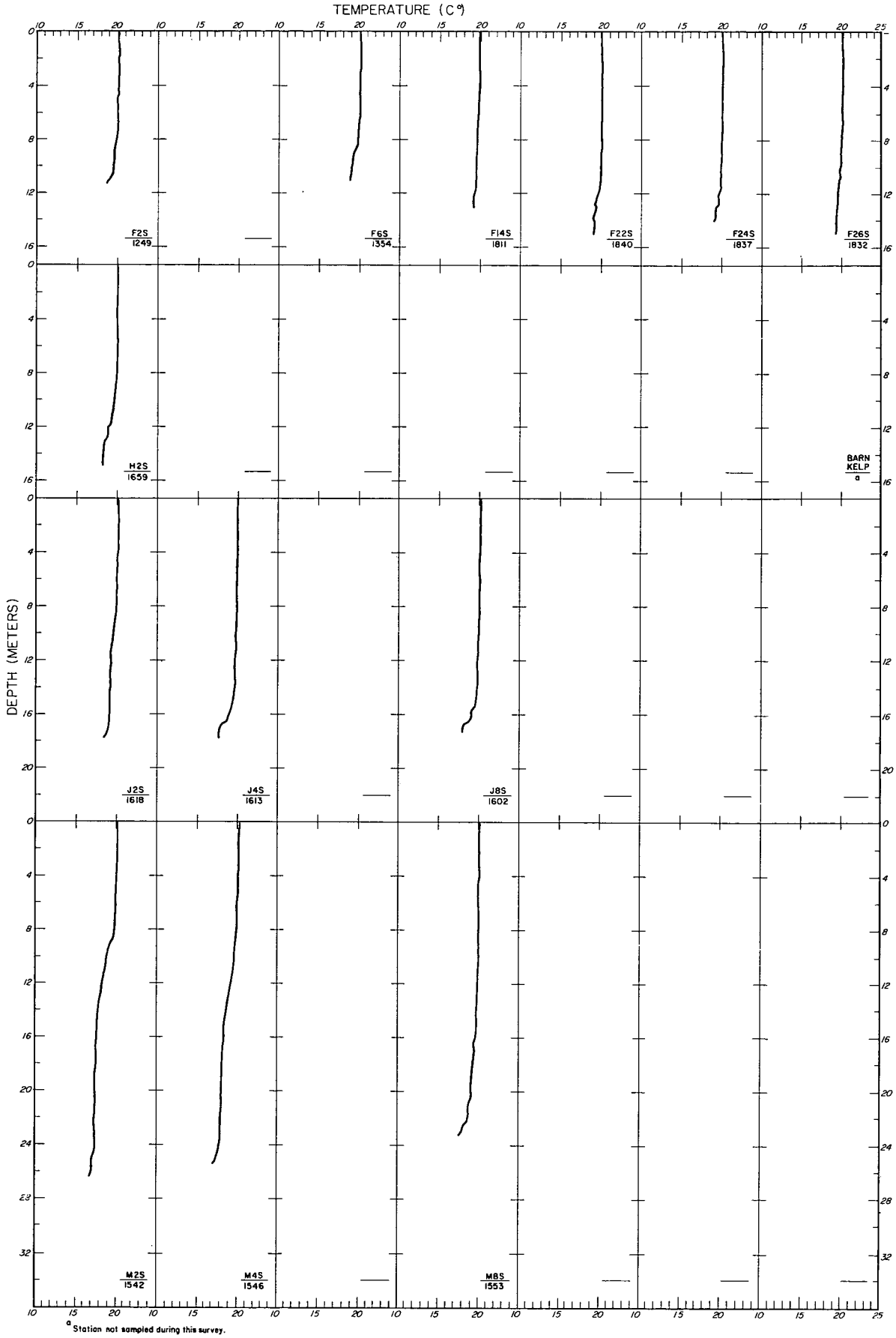



**Figure B-5. Temperature Profiles for September 13, 1978 (cont'd)**




[a] Station not sampled during this survey.

**Figure B-5. Temperature Profiles for September 13, 1978 (cont'd)**

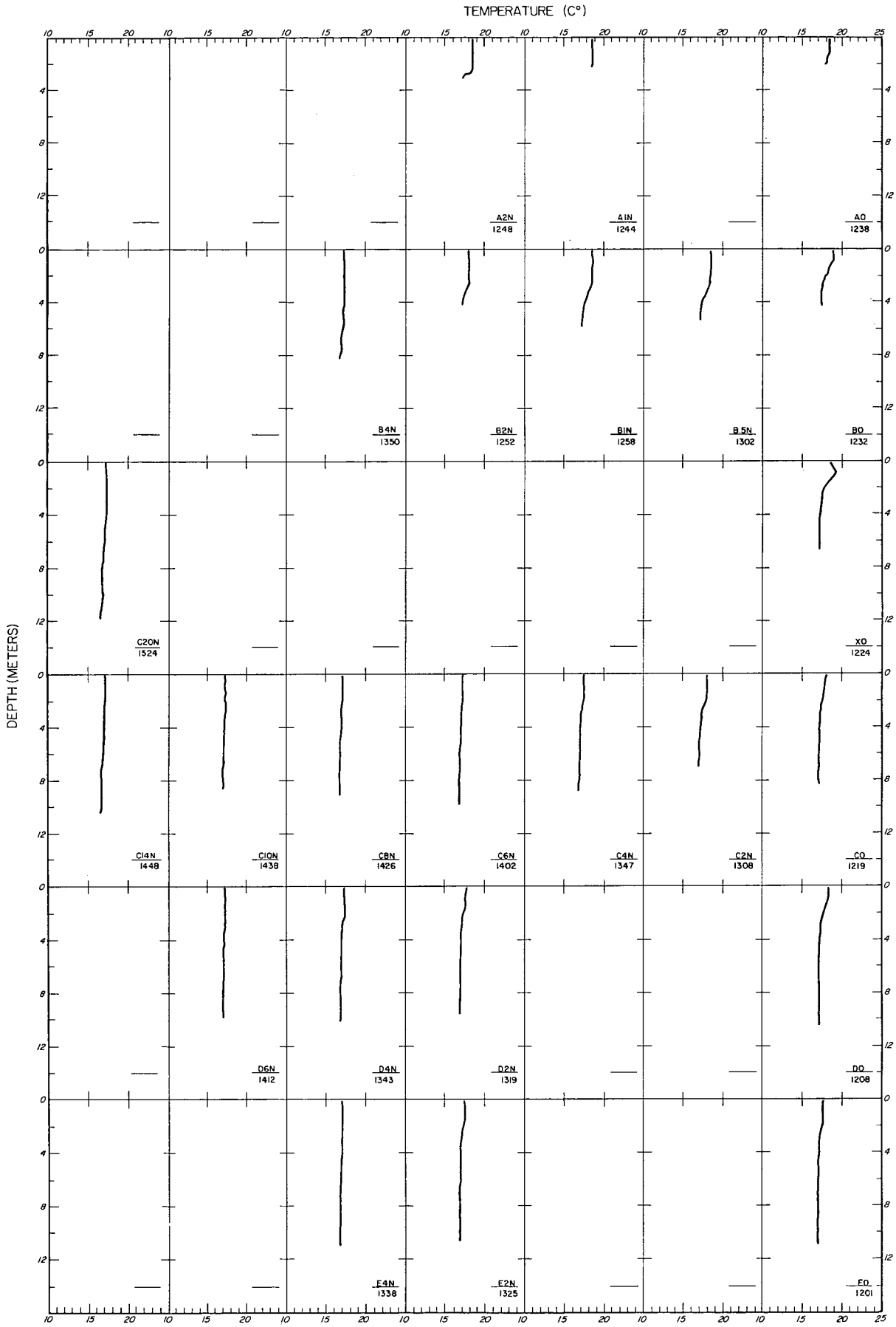



**Figure B-6. Temperature Profiles for November 16, 1978**

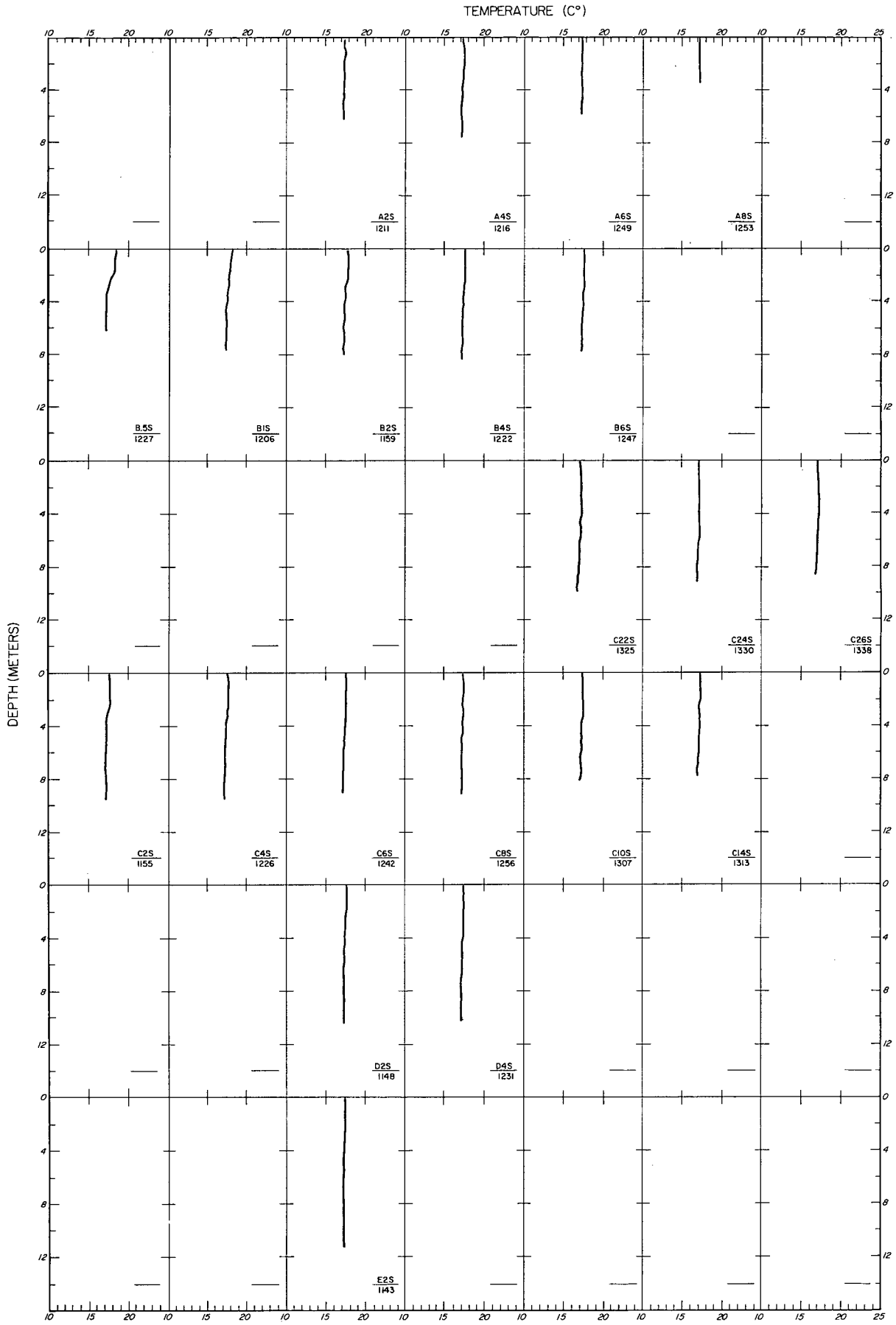



**Figure B-6. Temperature Profiles for November 16, 1978 (cont'd)**

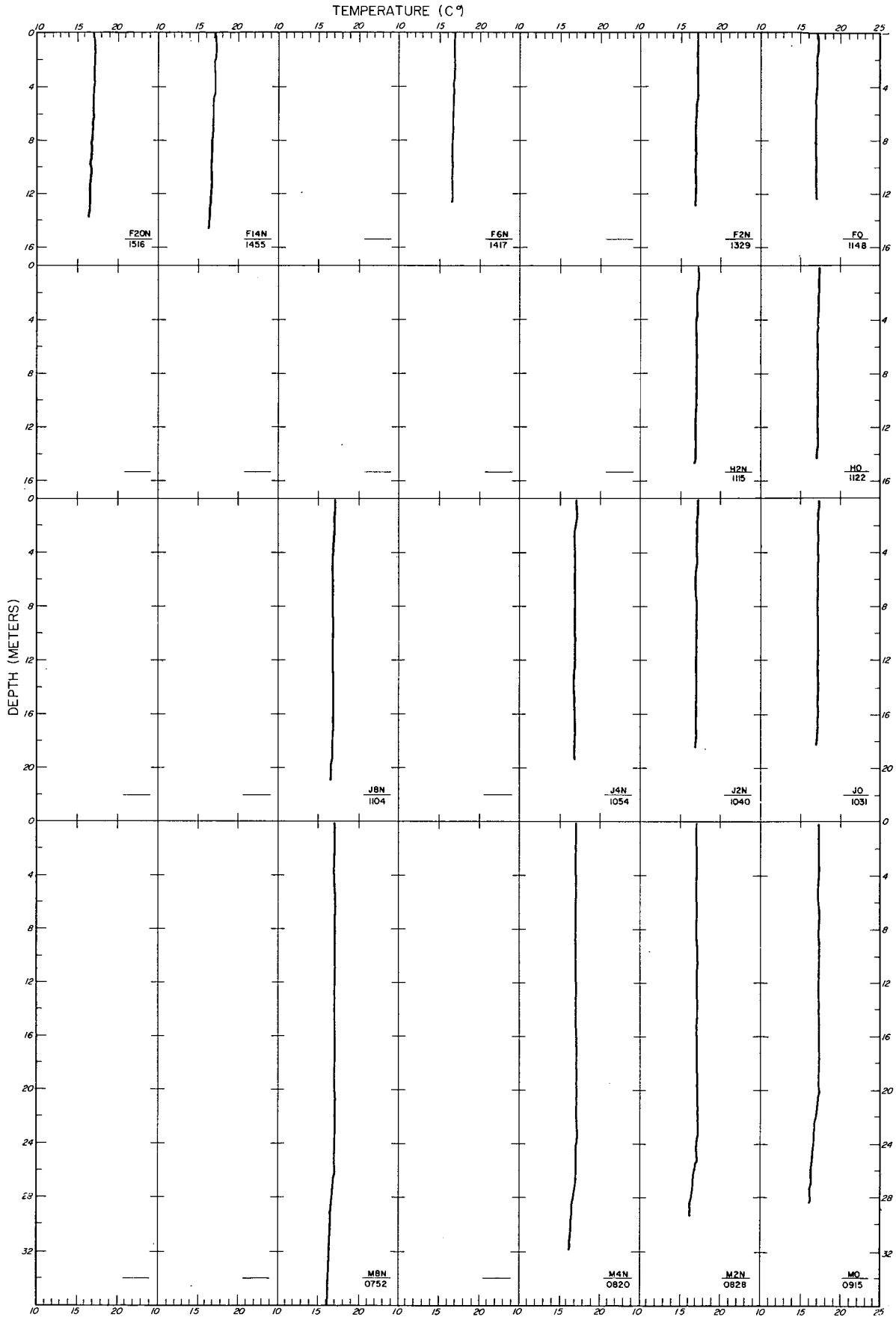



**Figure B-6. Temperature Profiles for November 16, 1978 (cont'd)**

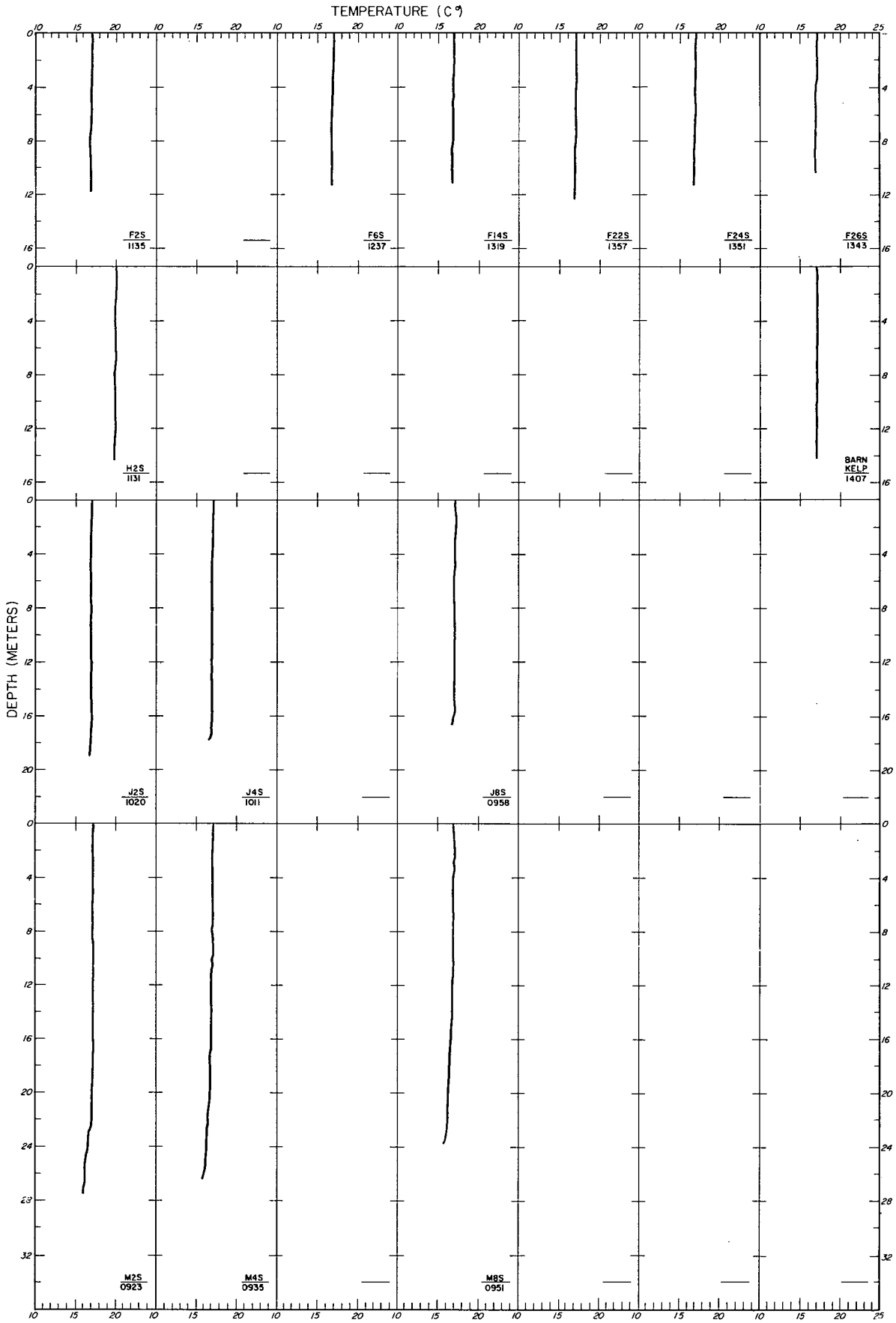



**Figure B-6. Temperature Profiles for November 16, 1978 (cont'd)**

## Vertical Isometric Cross-sections of Temperature

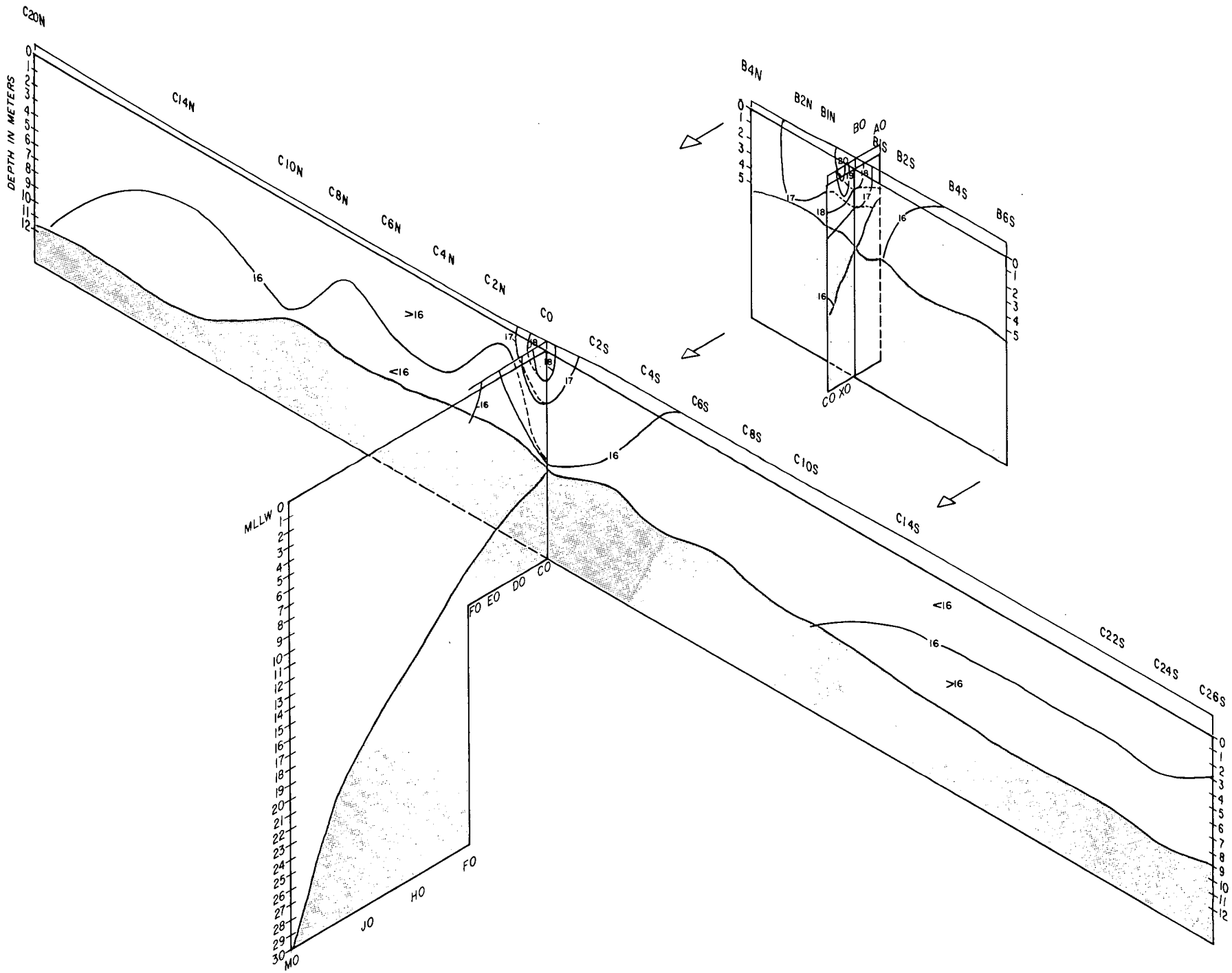



Figure B-7. Temperature Vertical Isometric Cross-section for January 18, 1978

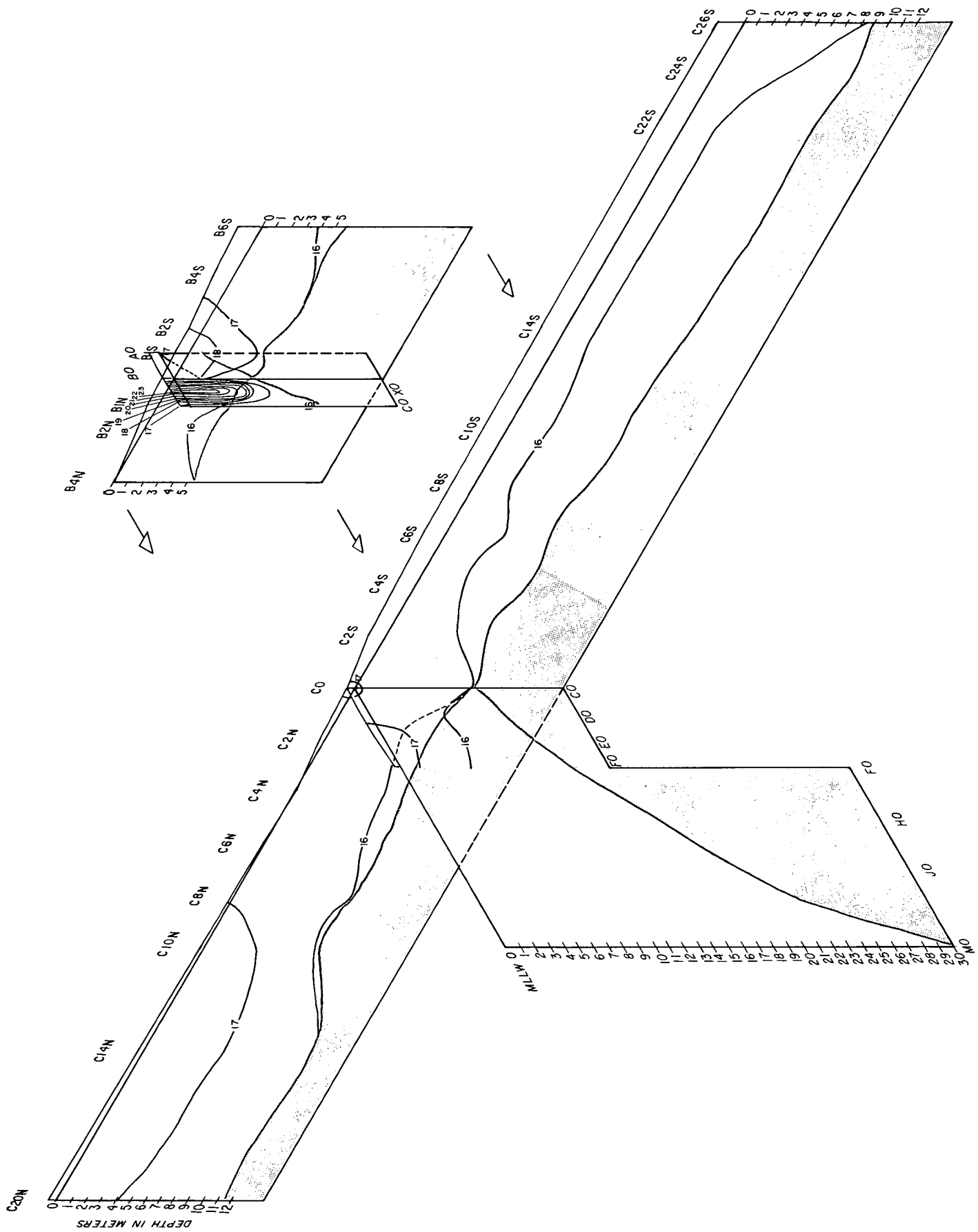



**Figure B-8. Temperature Vertical Isometric Cross-section for March 7, 1978**

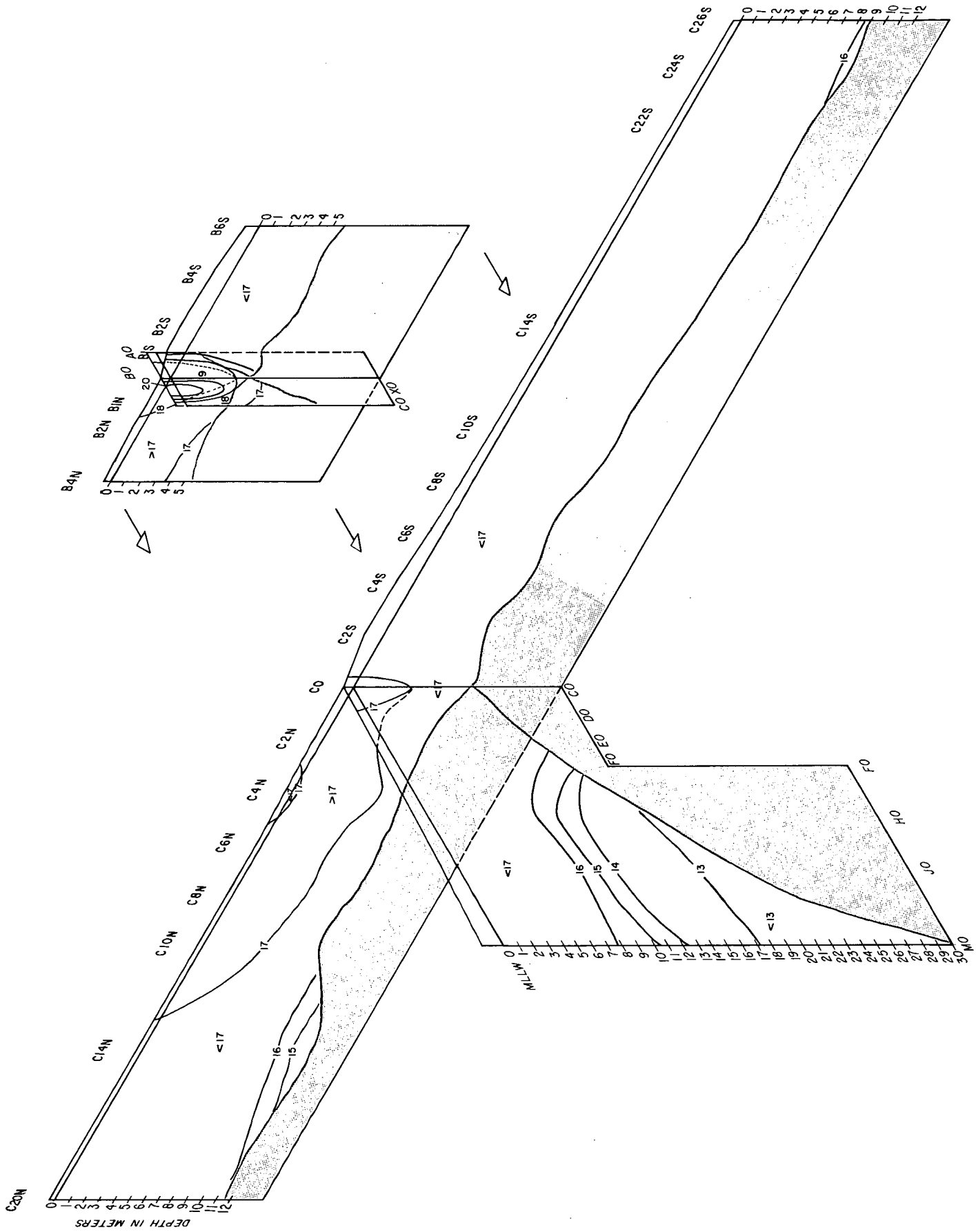



**Figure B-9. Temperature Vertical Isometric Cross-section for May 4, 1978**

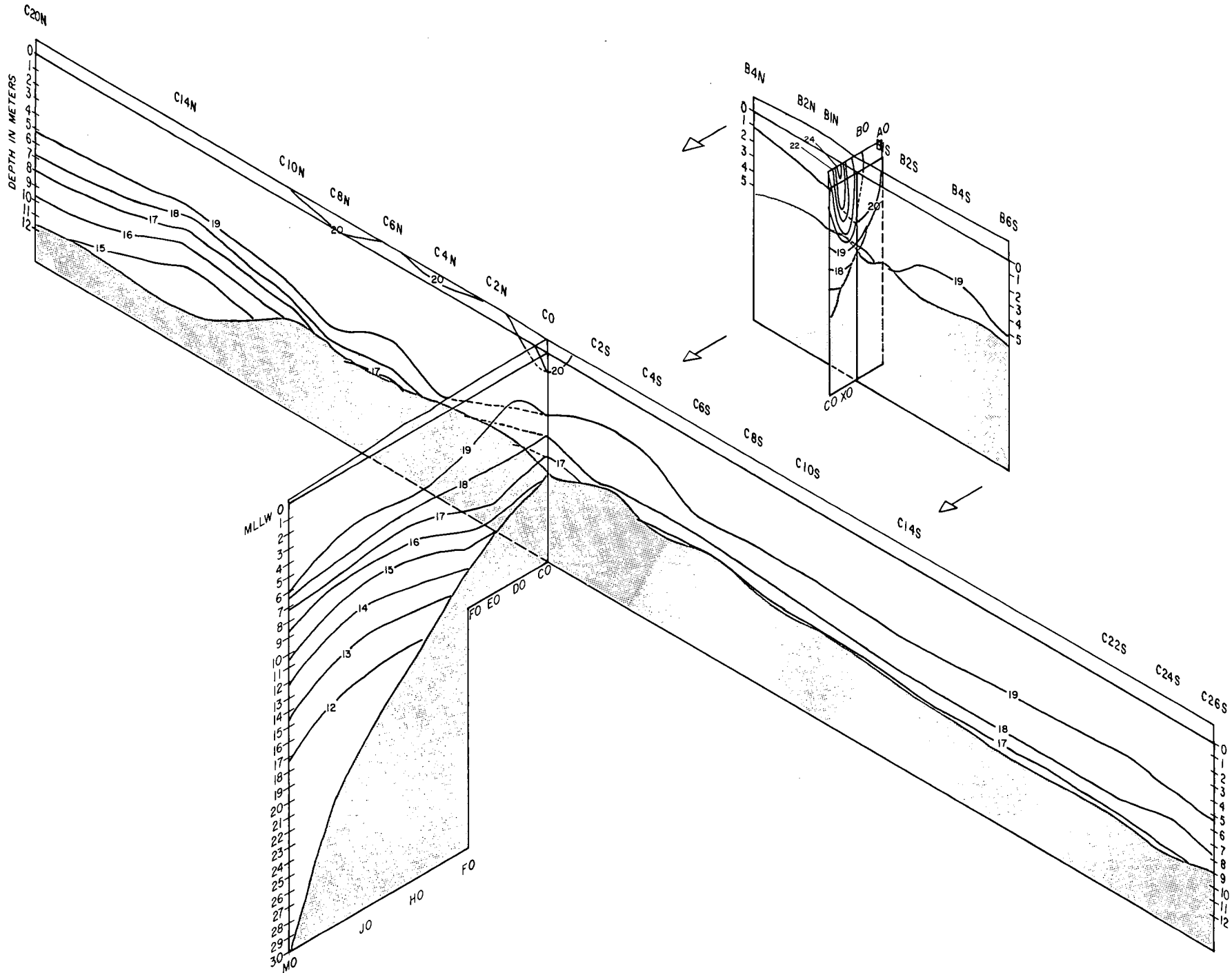



**Figure B-10. Temperature Vertical Isometric Cross-section for July 10, 1978**

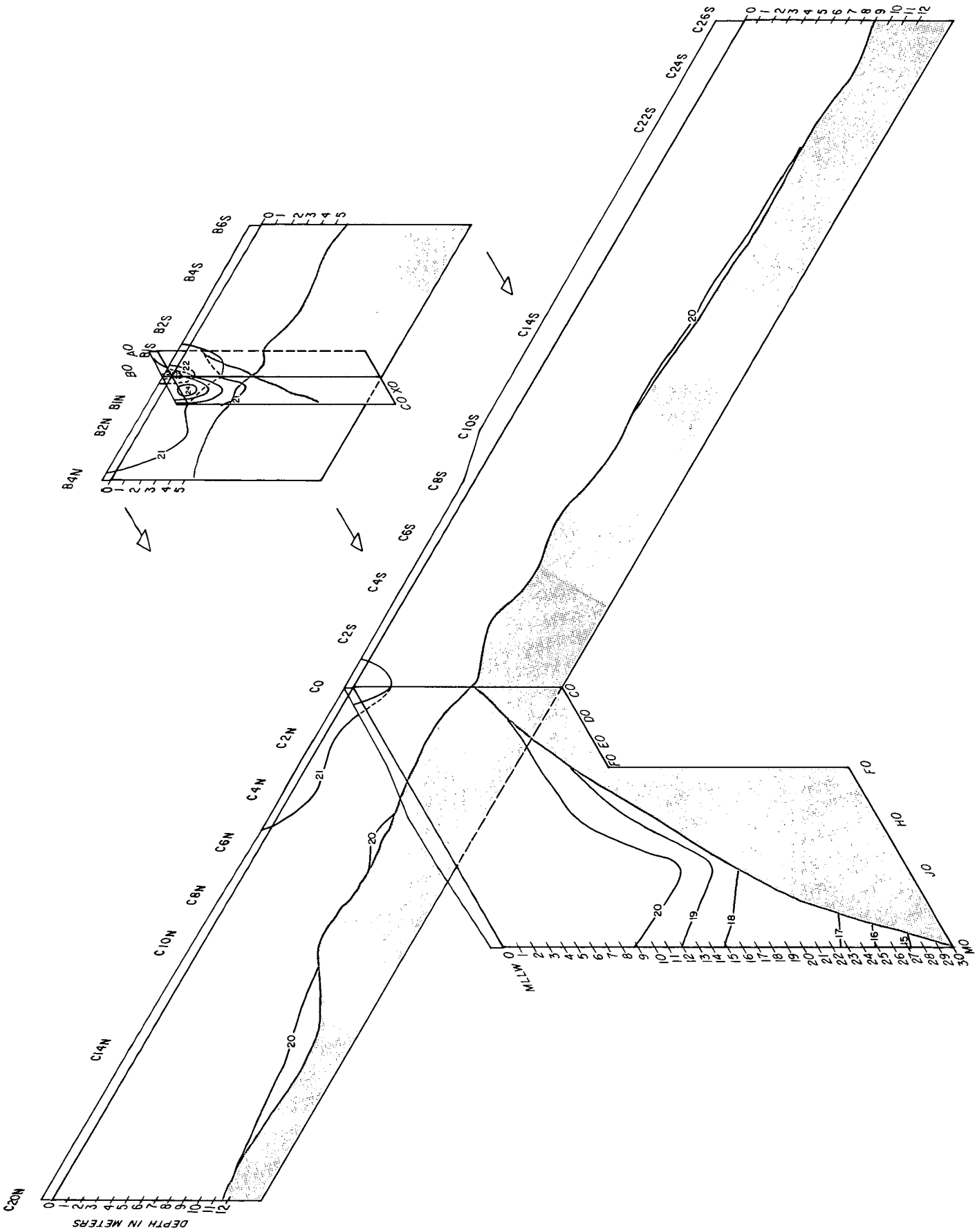



**Figure B-11. Temperature Vertical Isometric Cross-section for September 13, 1978**

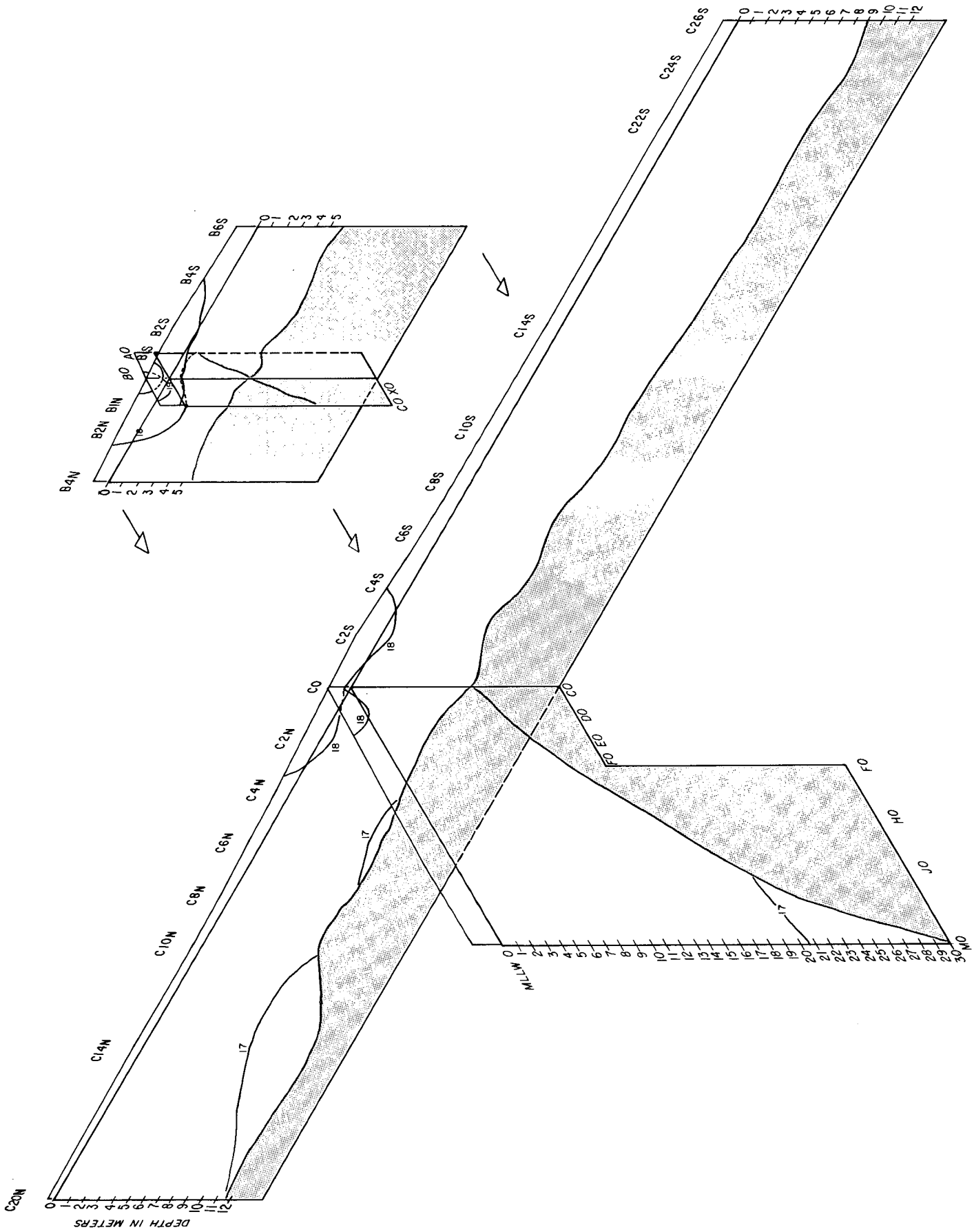



**Figure B-12. Temperature Vertical Isometric Cross-section for November 16, 1978**

**Horizontal Contour Charts of Surface, 4 m, and Bottom Temperatures from Profile Measurements**

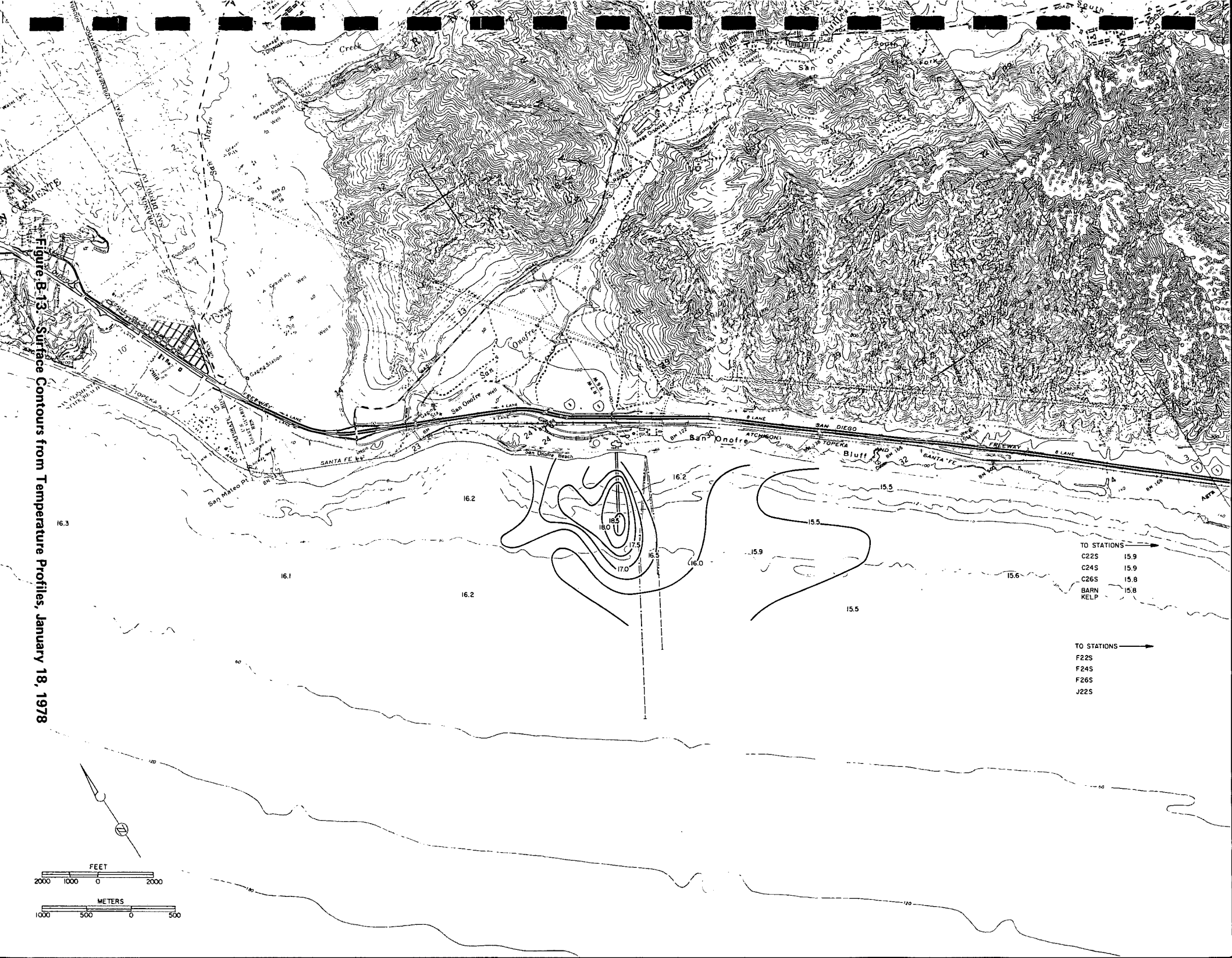



Figure B-13. Surface Contours from Temperature Profiles, January 18, 1978

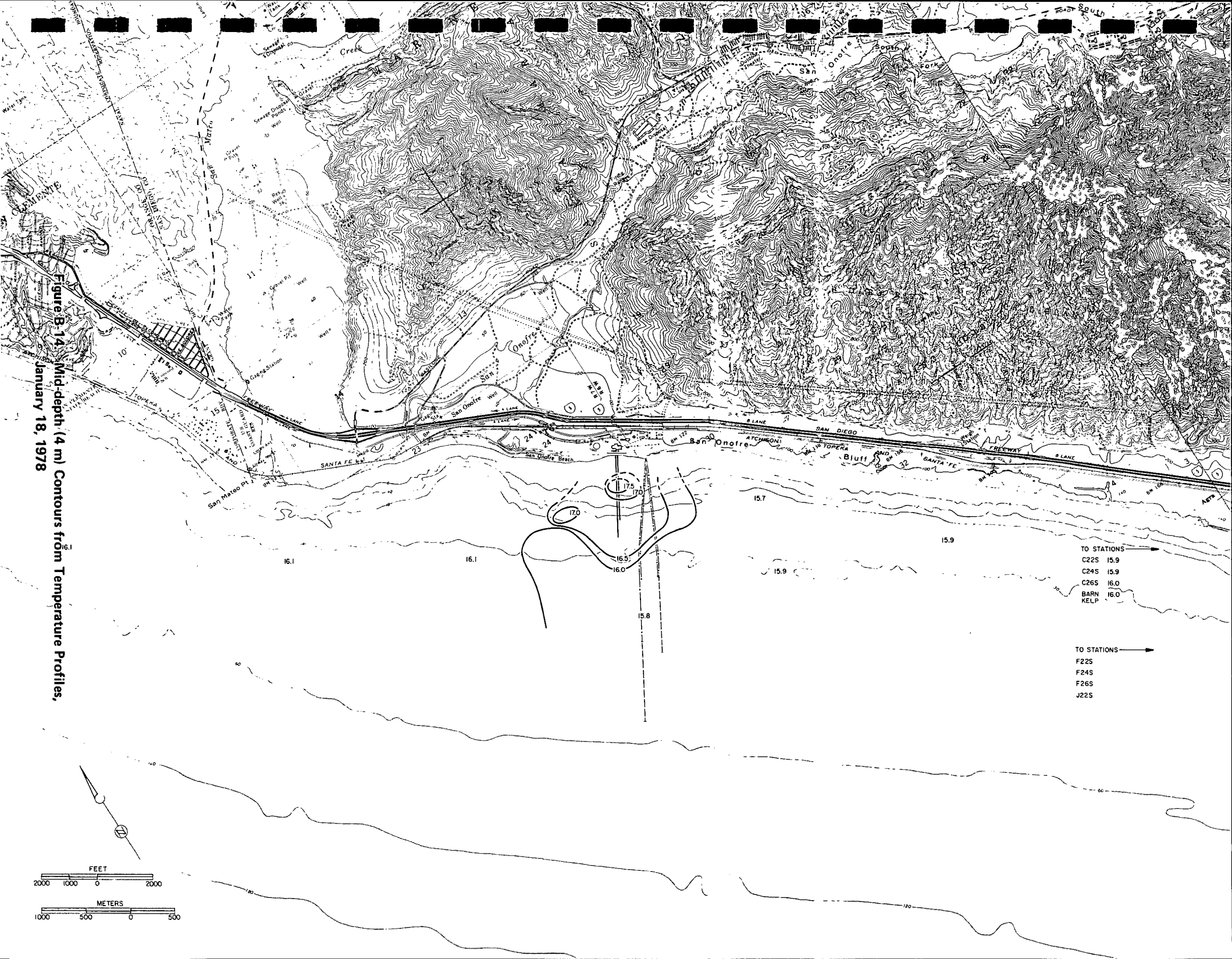



**Figure B-14. Mid-depth (4 m) Contours from Temperature Profiles, January 18, 1978**

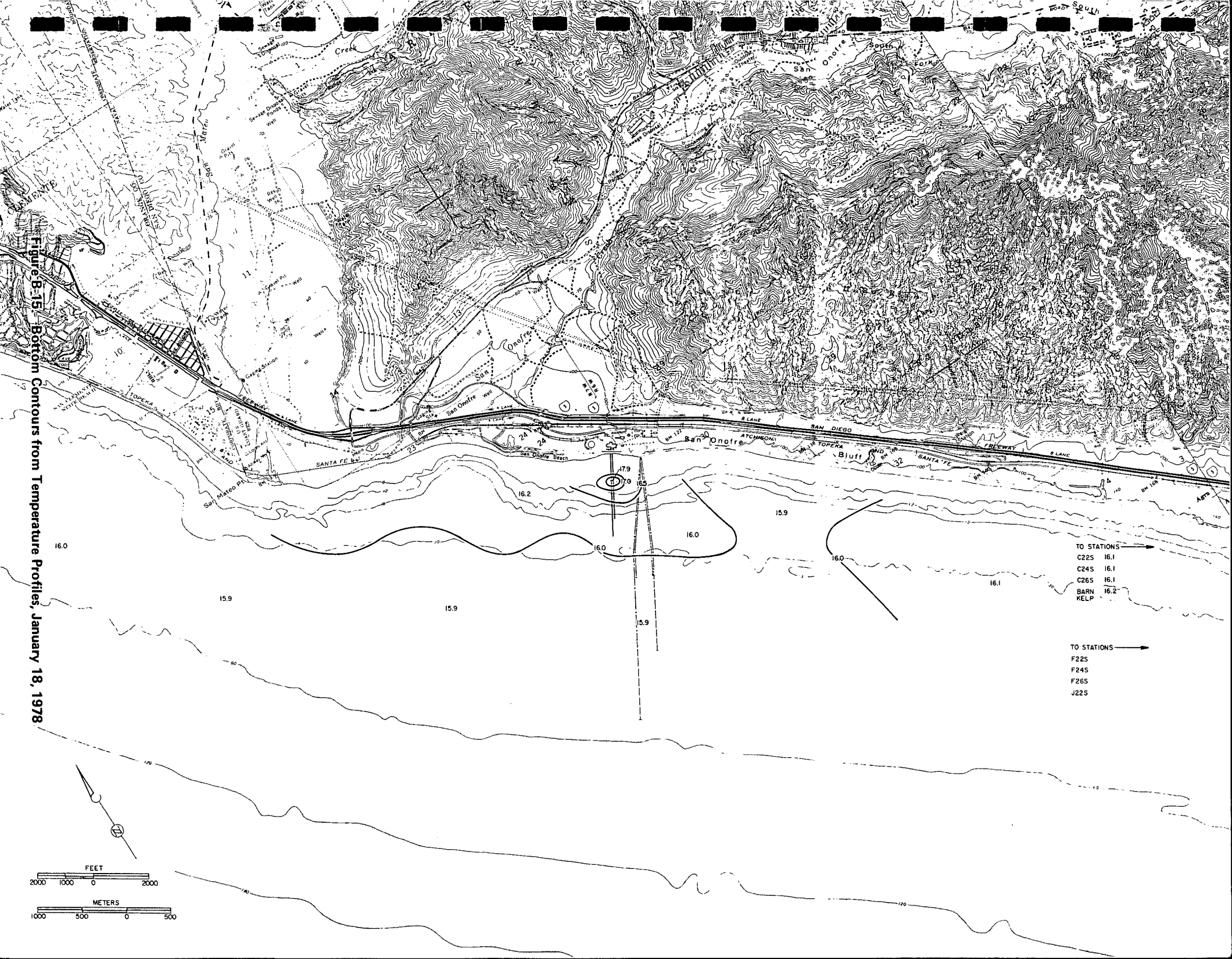



Figure B-15. Bottom Contours from Temperature Profiles, January 18, 1978

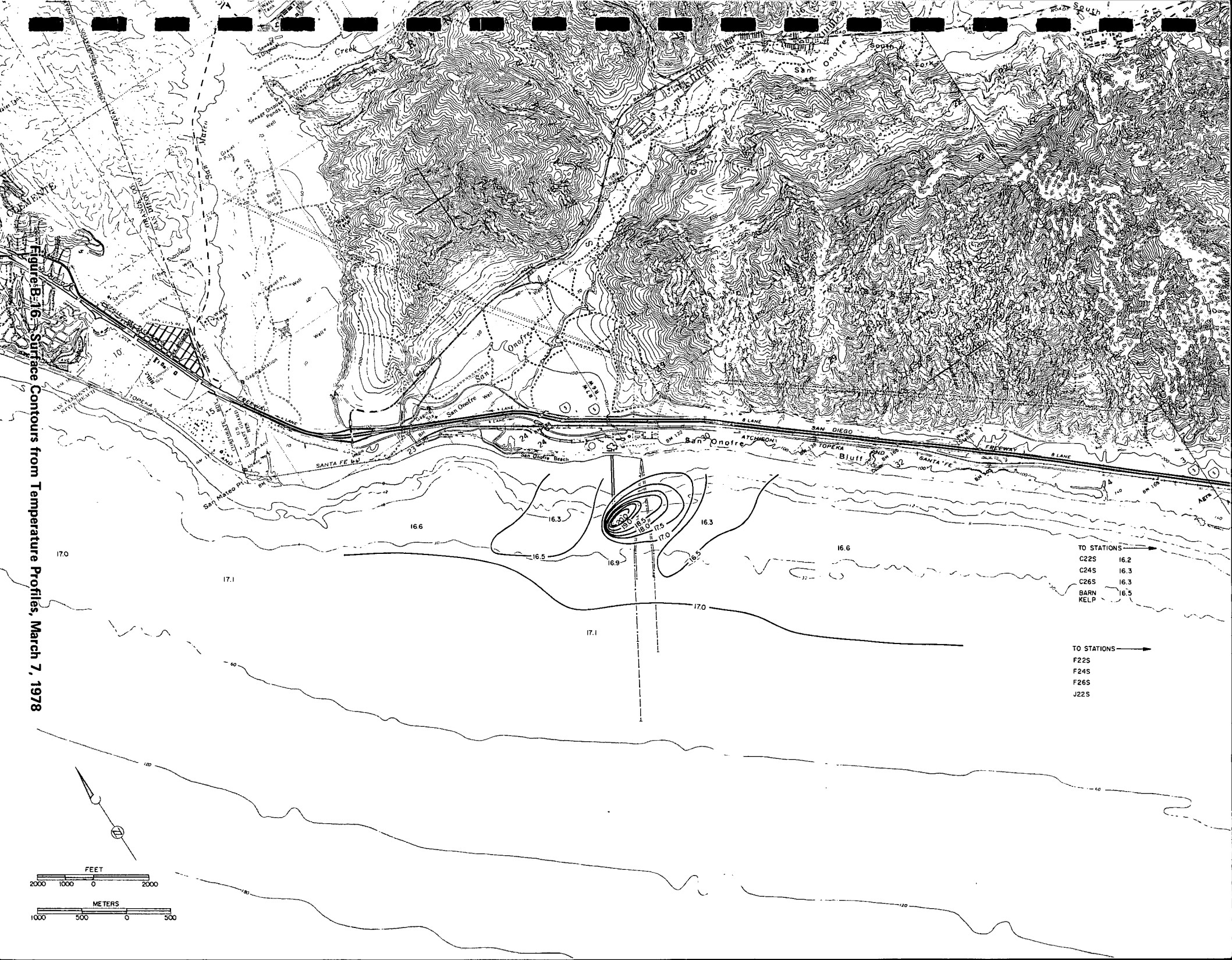



Figure B-16. Surface Contours from Temperature Profiles, March 7, 1978

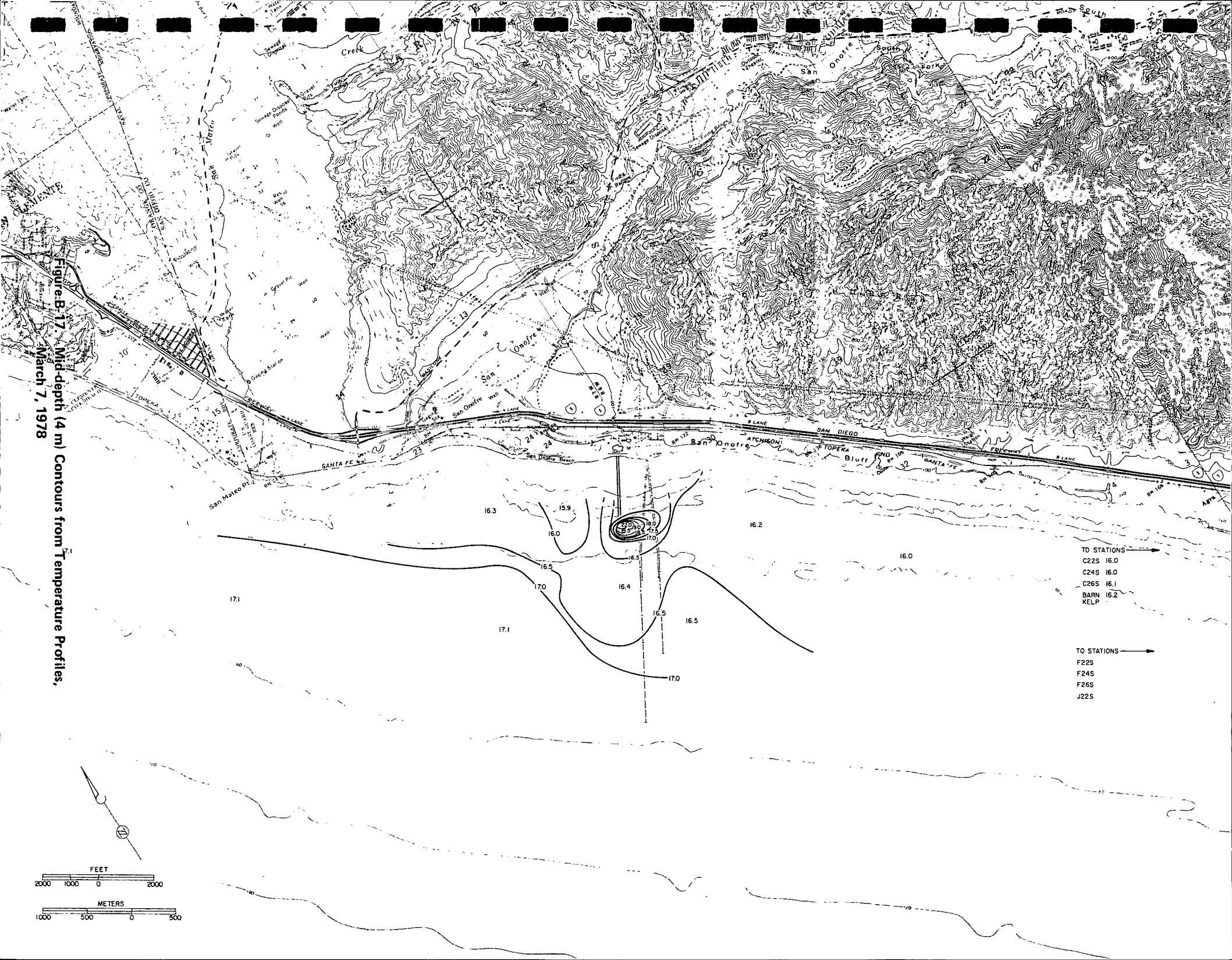



Figure B-17. Mid-depth (4 m) Contours from Temperature Profiles, March 7, 1978

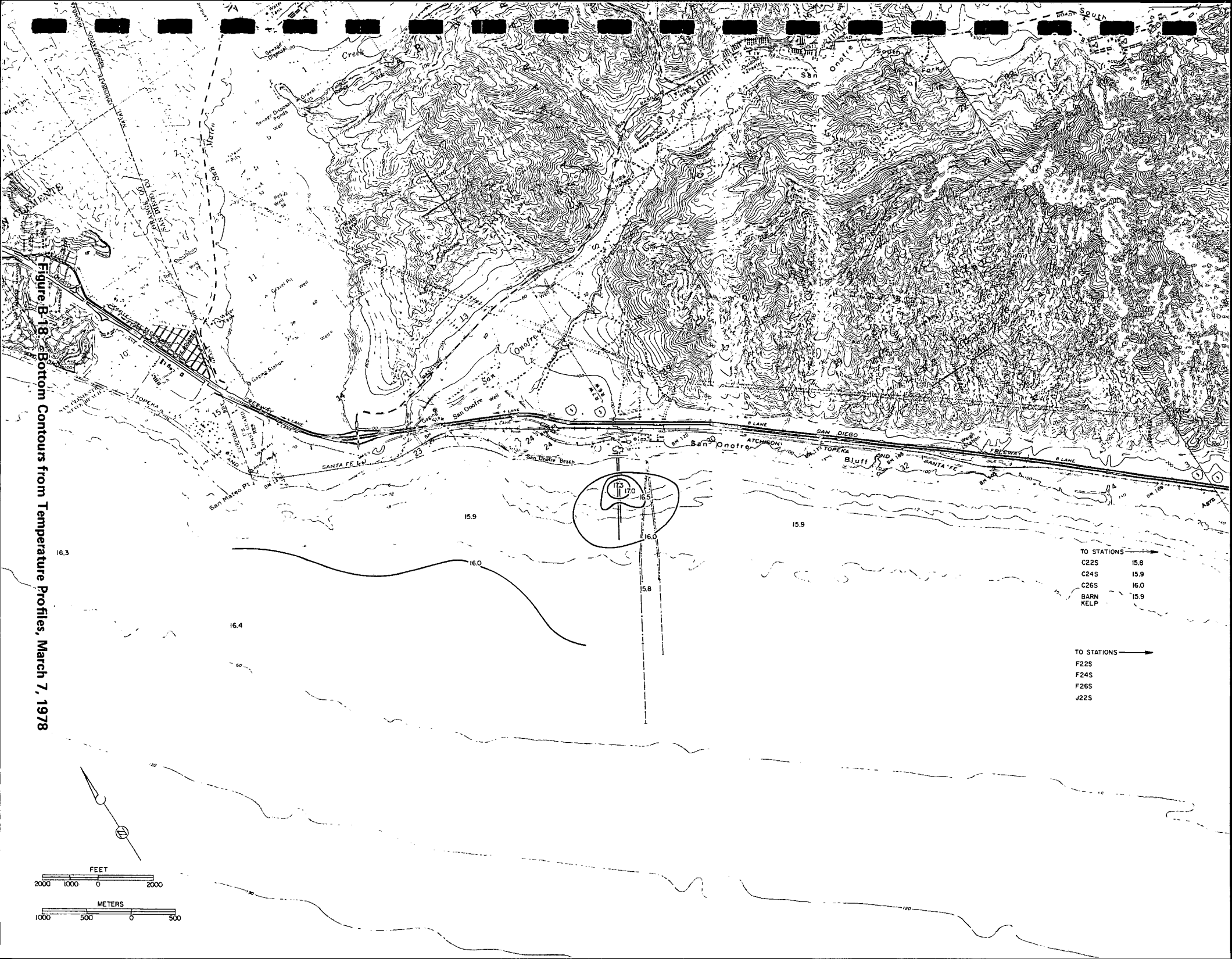



Figure B-18 Bottom Contours from Temperature Profiles, March 7, 1978

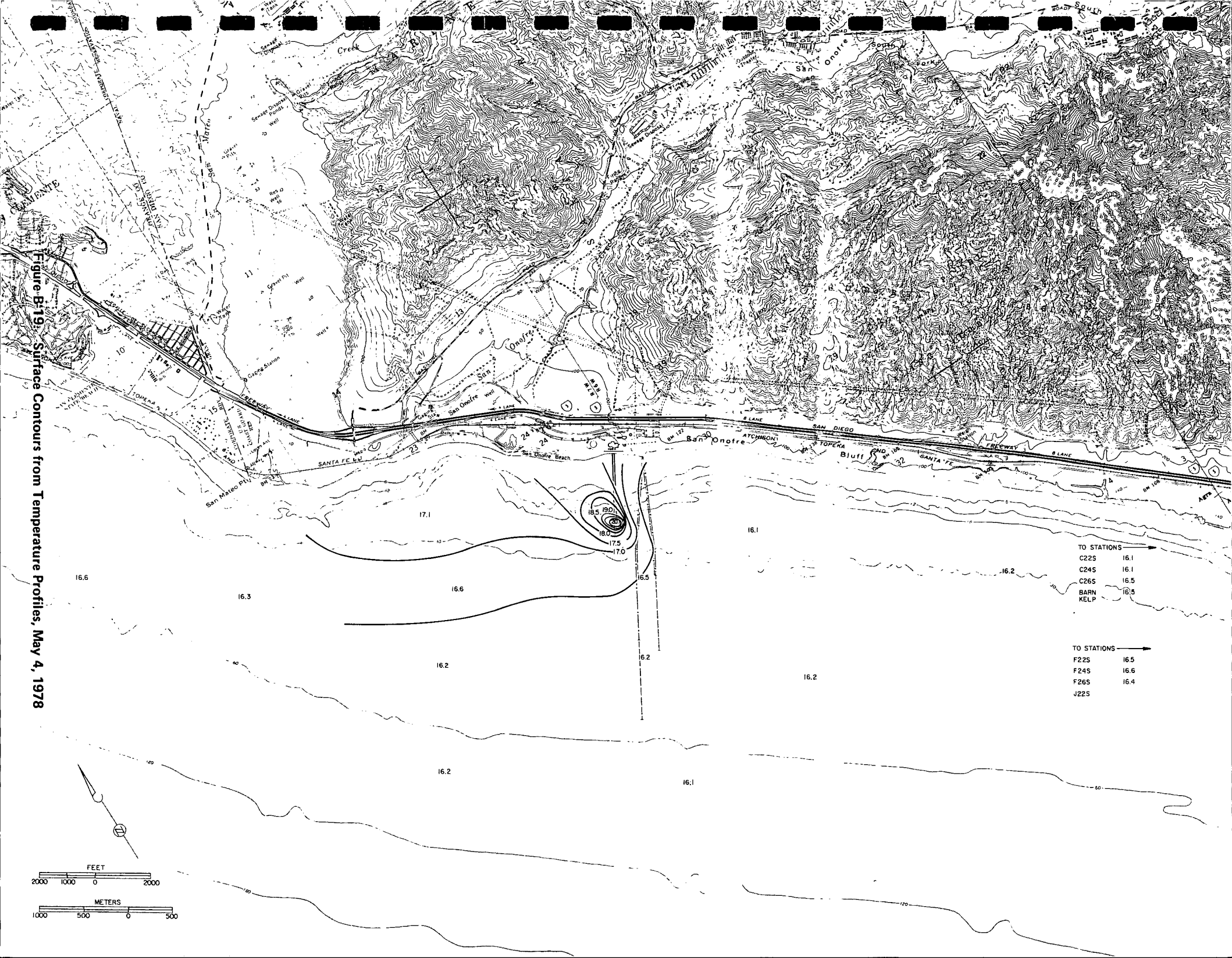



Figure B-19. Surface Contours from Temperature Profiles, May 4, 1978

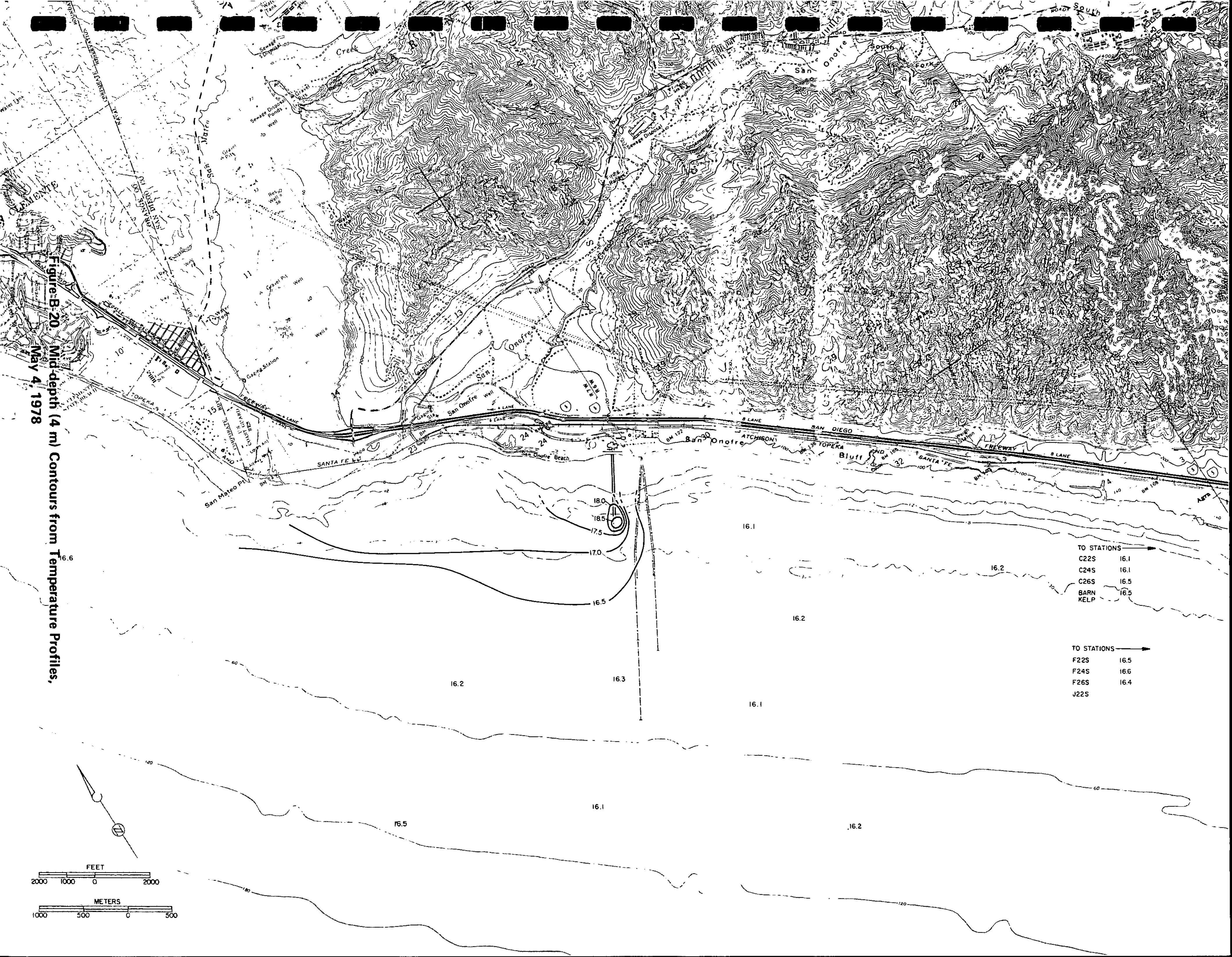



Figure B-20. Mid-depth (4 m) Contours from Temperature Profiles, May 4, 1978

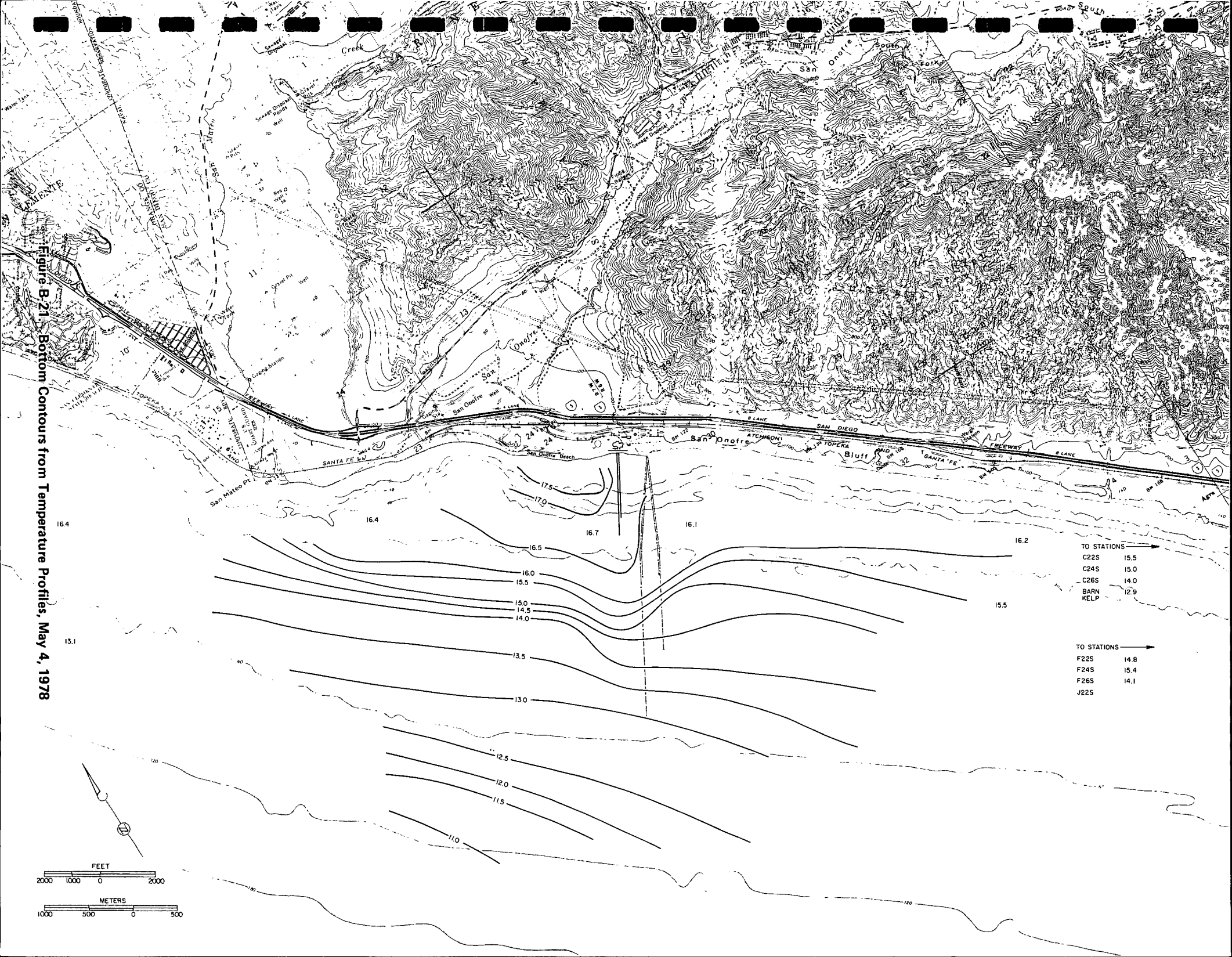



Figure B-21. Bottom Contours from Temperature Profiles, May 4, 1978

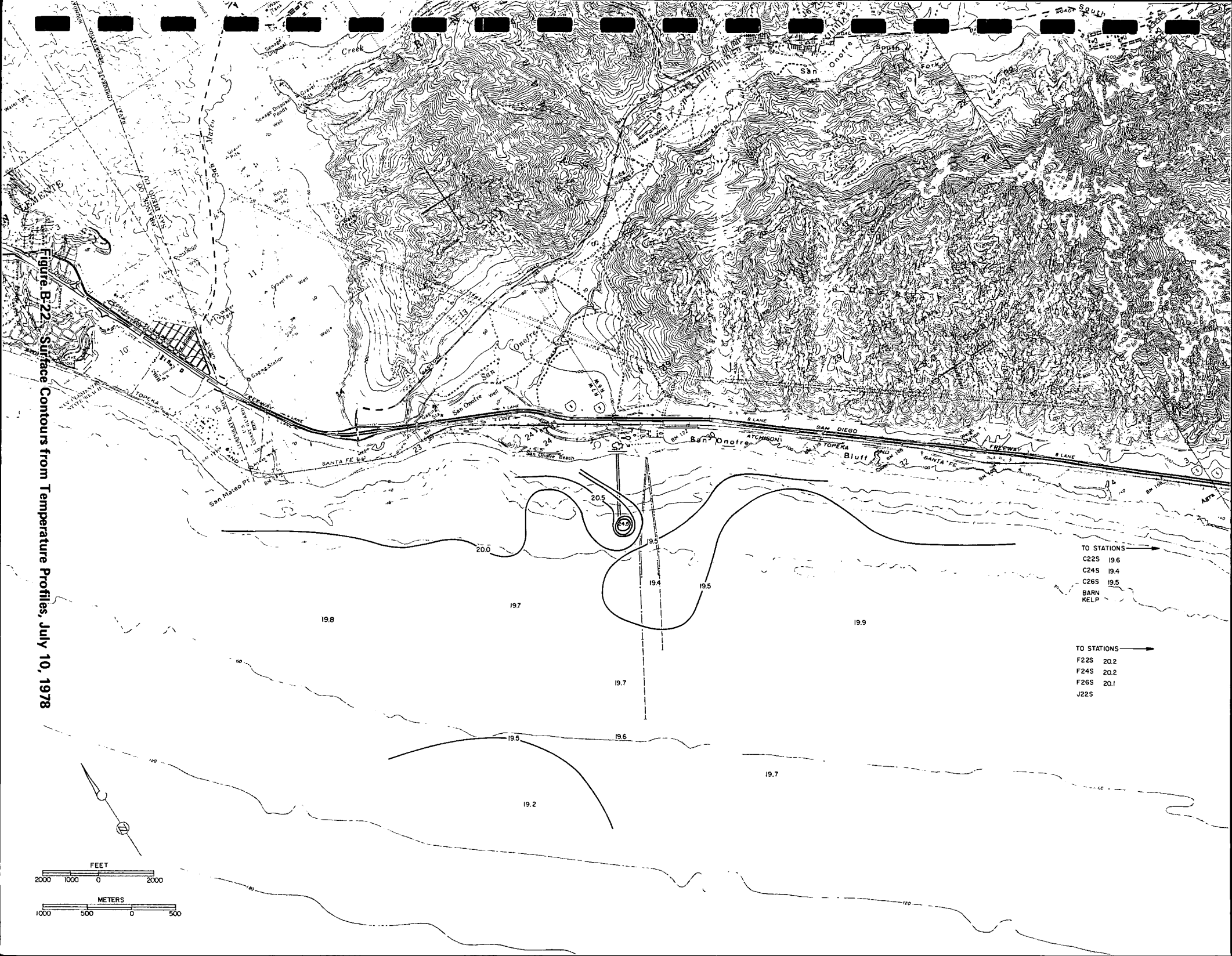



Figure B-22: Surface Contours from Temperature Profiles, July 10, 1978

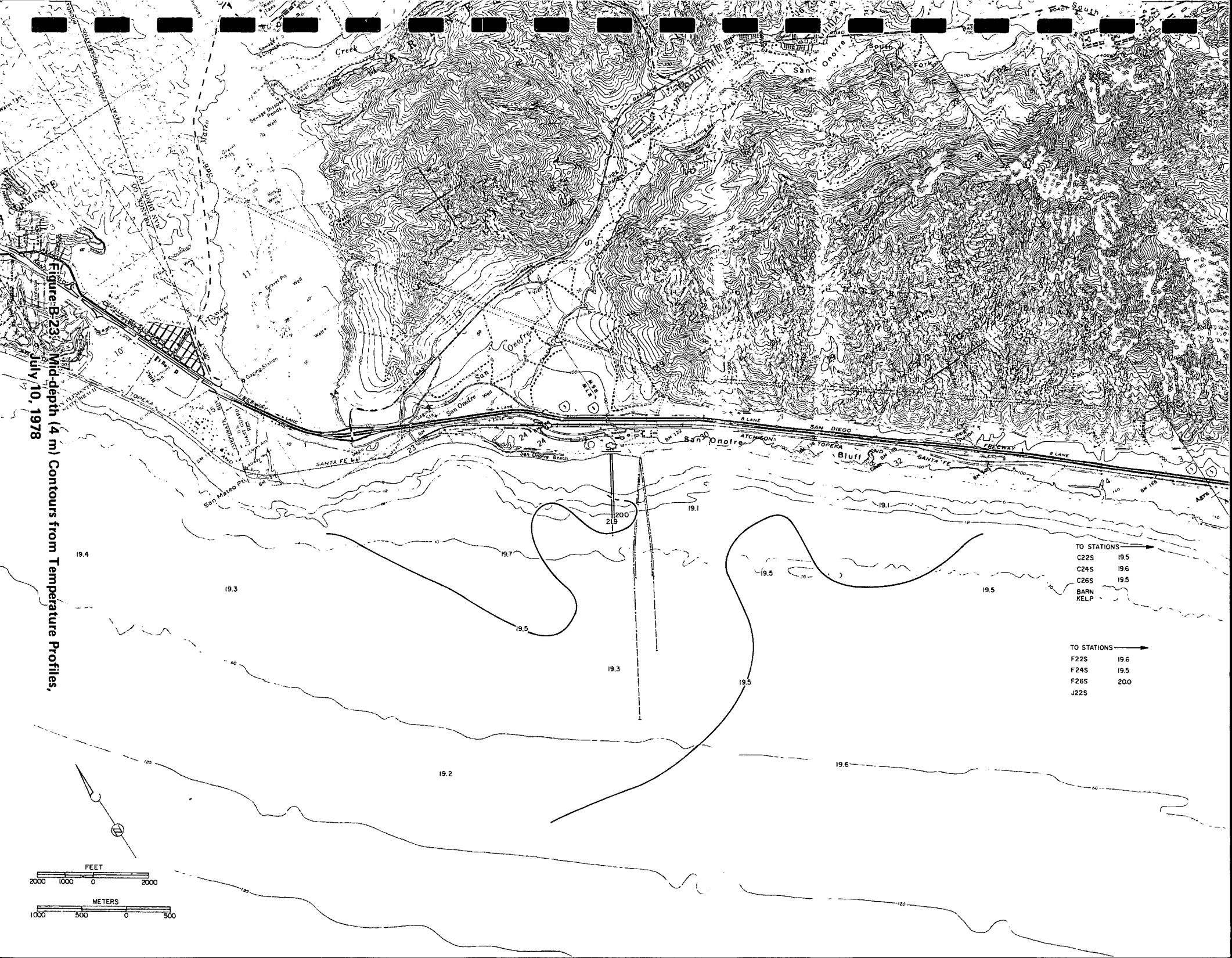



Figure B-23. Mid-depth (4 m) Contours from Temperature Profiles, July 10, 1978

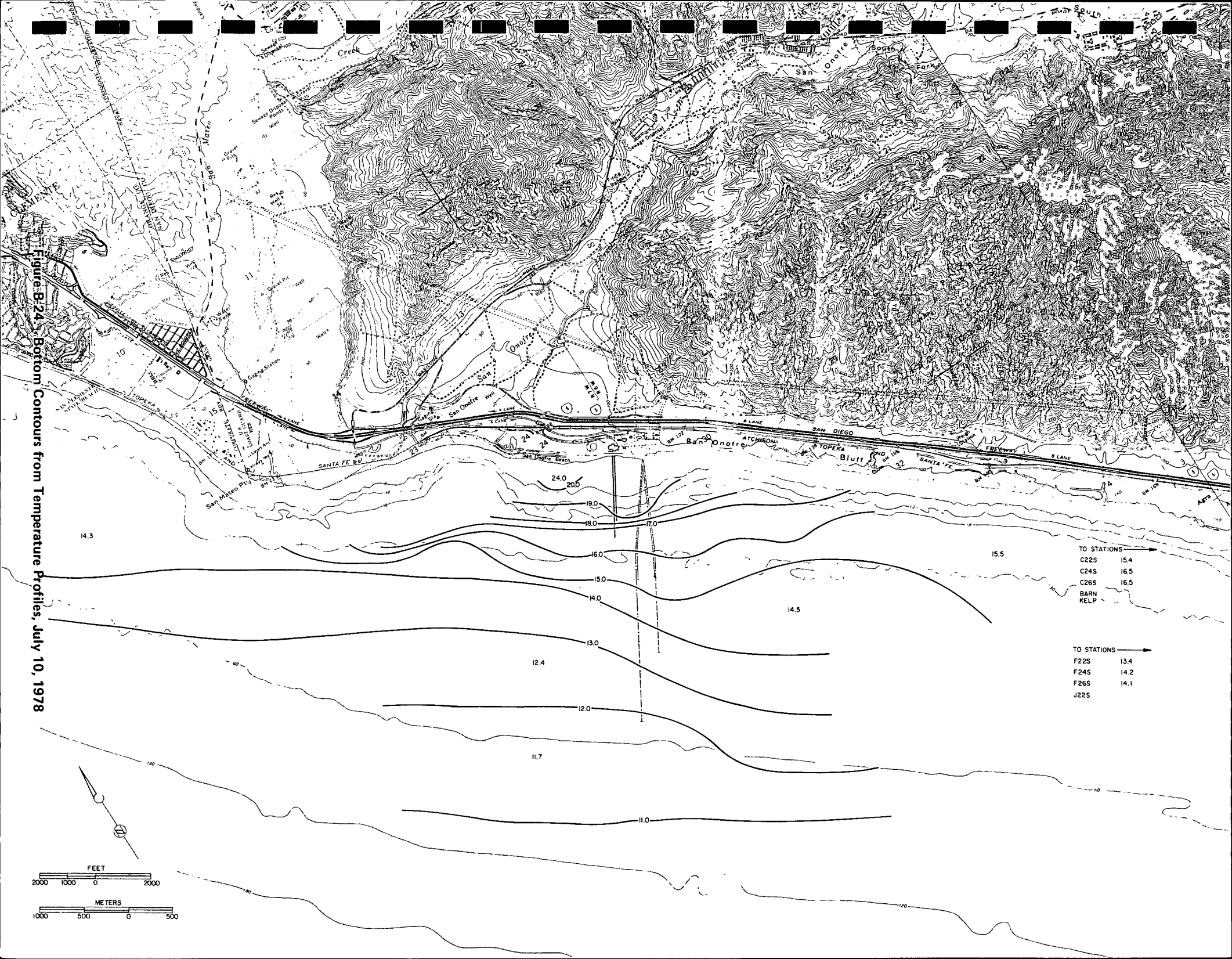



Figure B-24. Bottom Contours from Temperature Profiles, July 10, 1978

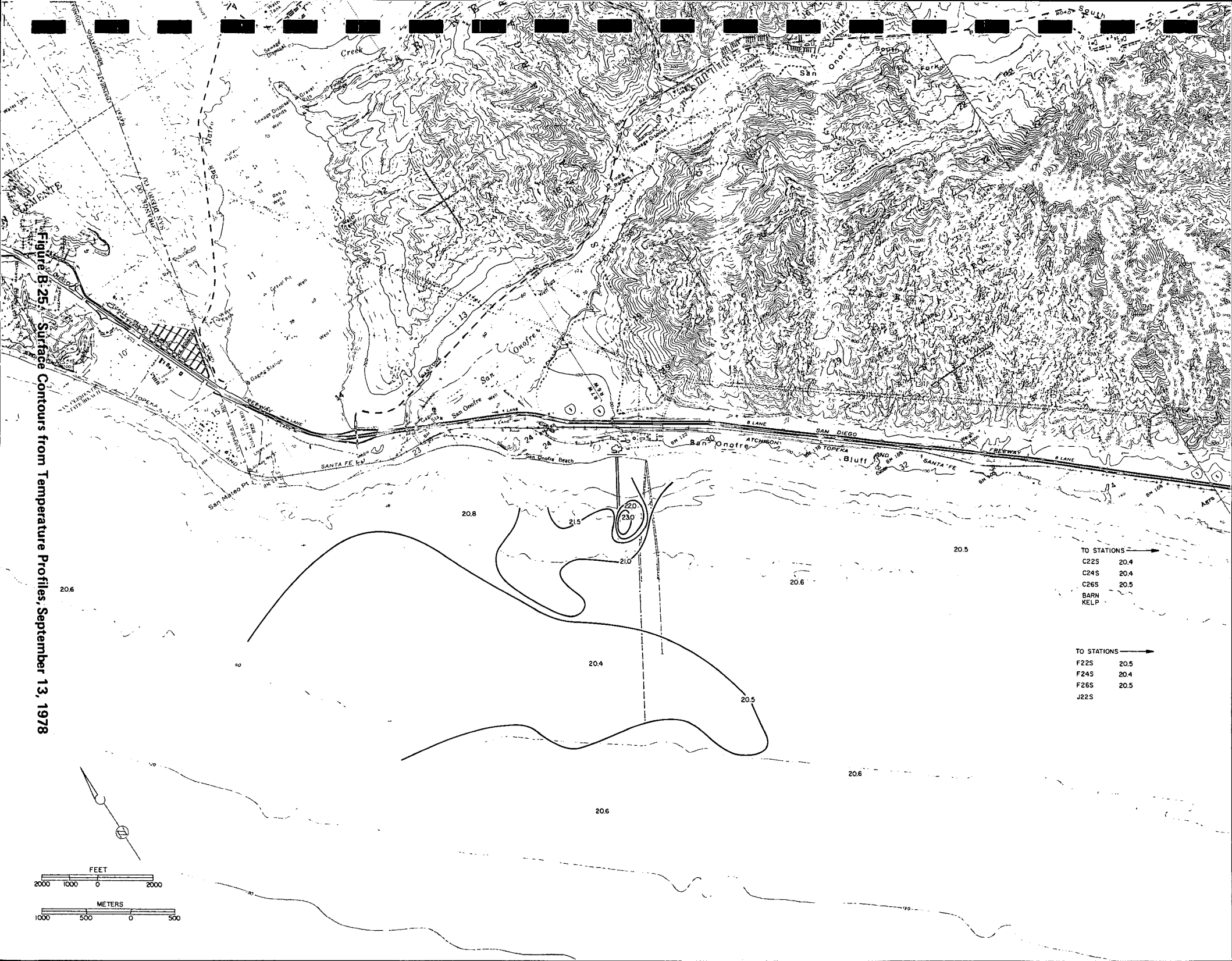



Figure B-25. Surface Contours from Temperature Profiles, September 13, 1978

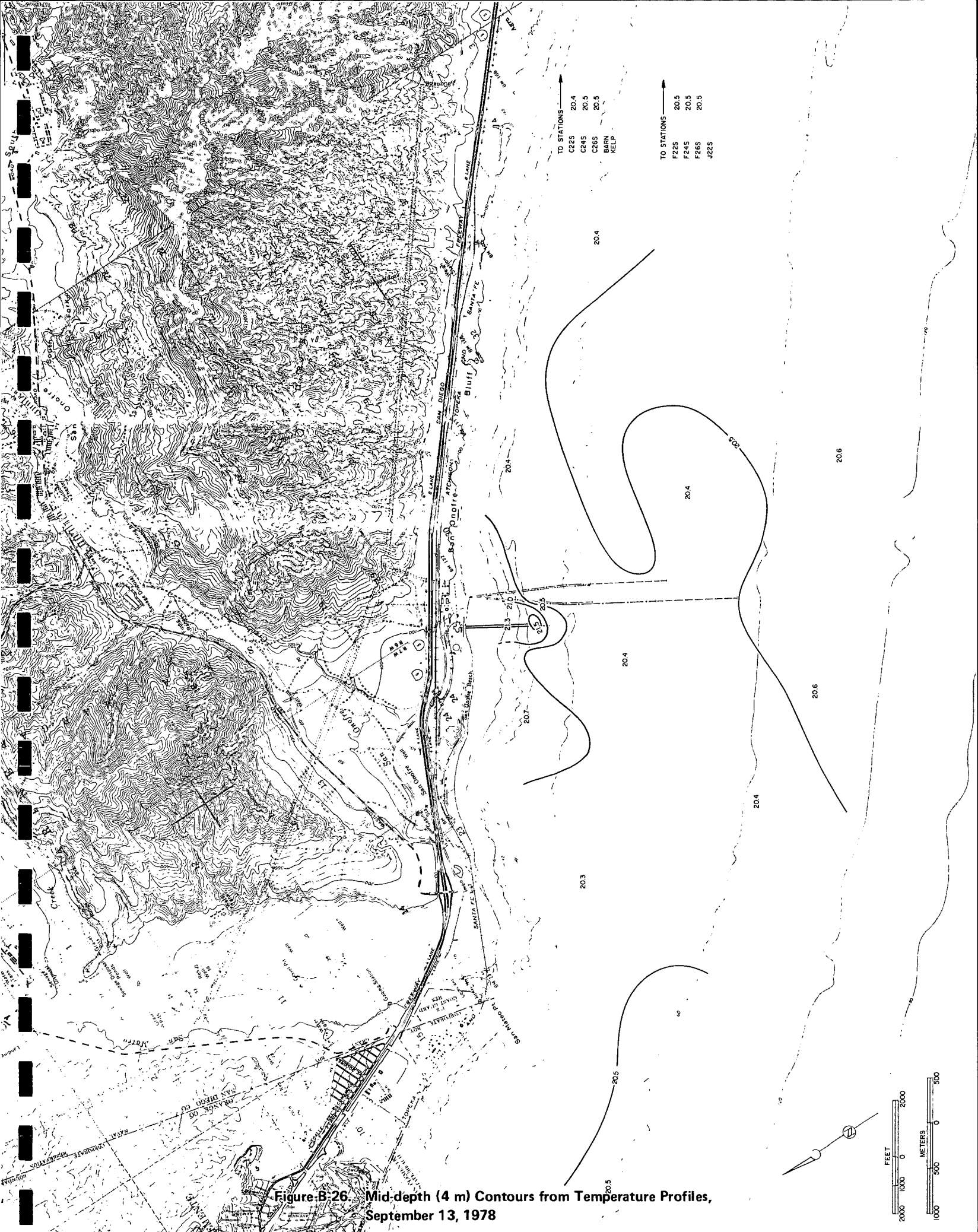



Figure B-26. Mid-depth (4 m) Contours from Temperature Profiles, September 13, 1978

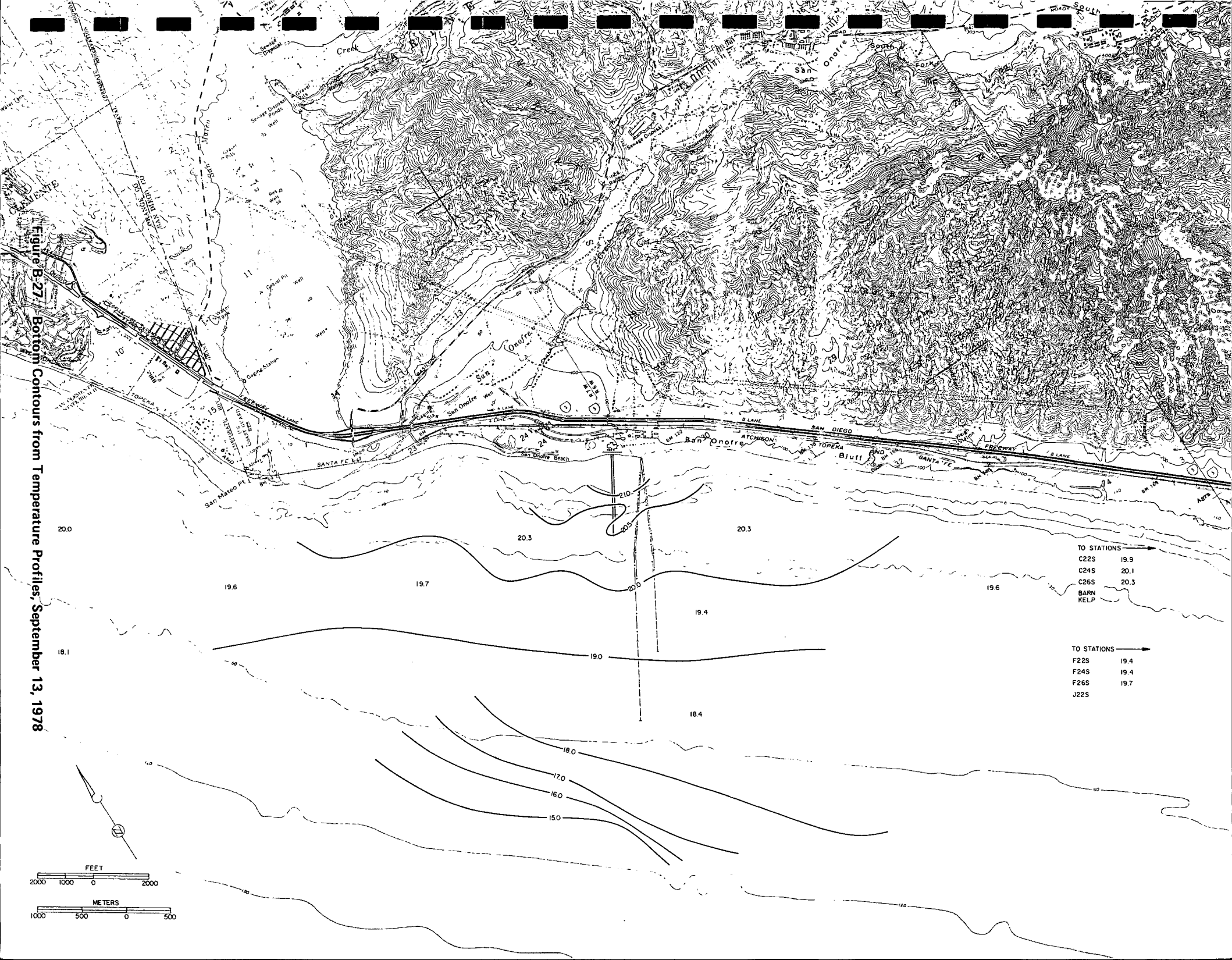



Figure B-27. Bottom Contours from Temperature Profiles, September 13, 1978

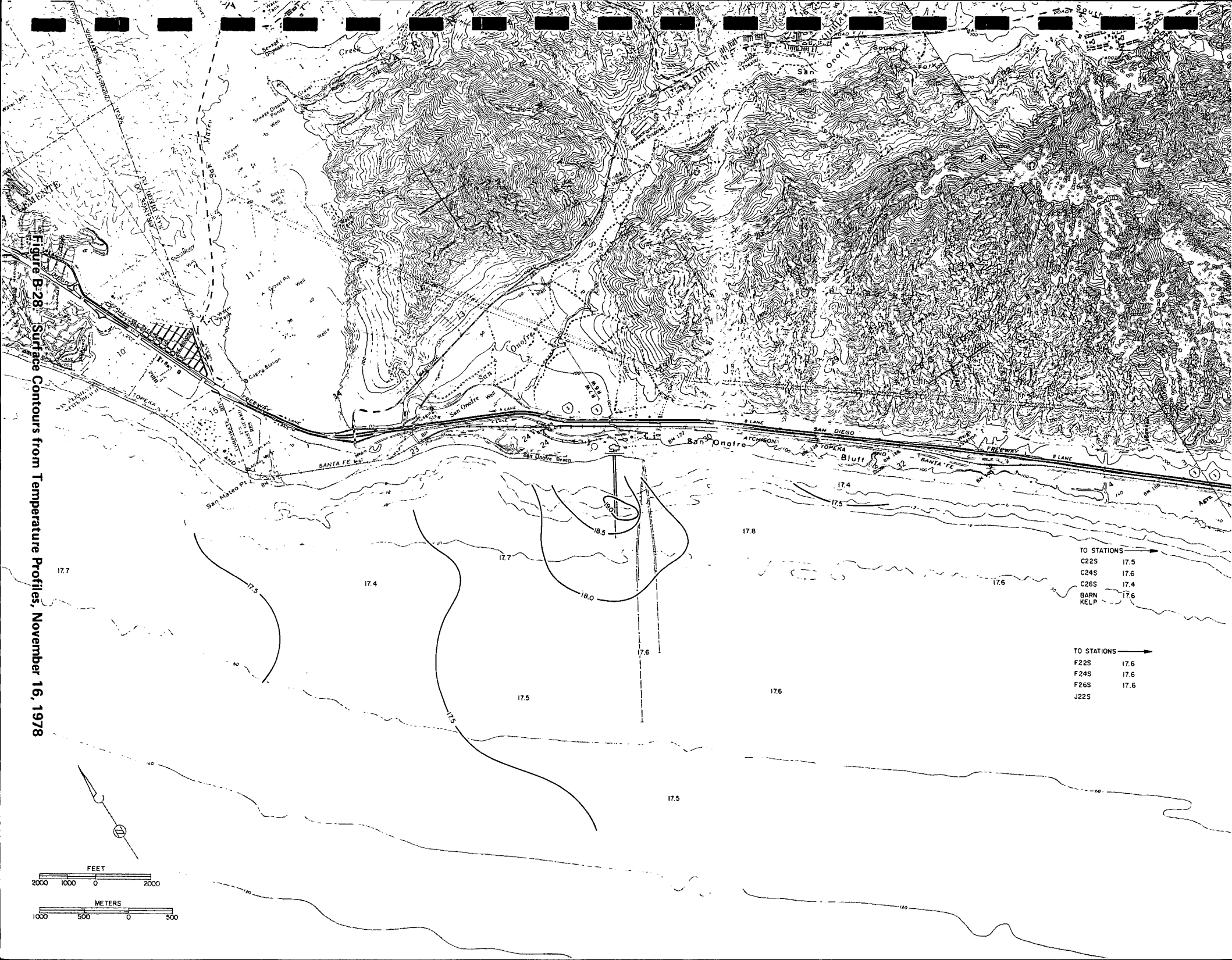



Figure B-28. Surface Contours from Temperature Profiles, November 16, 1978

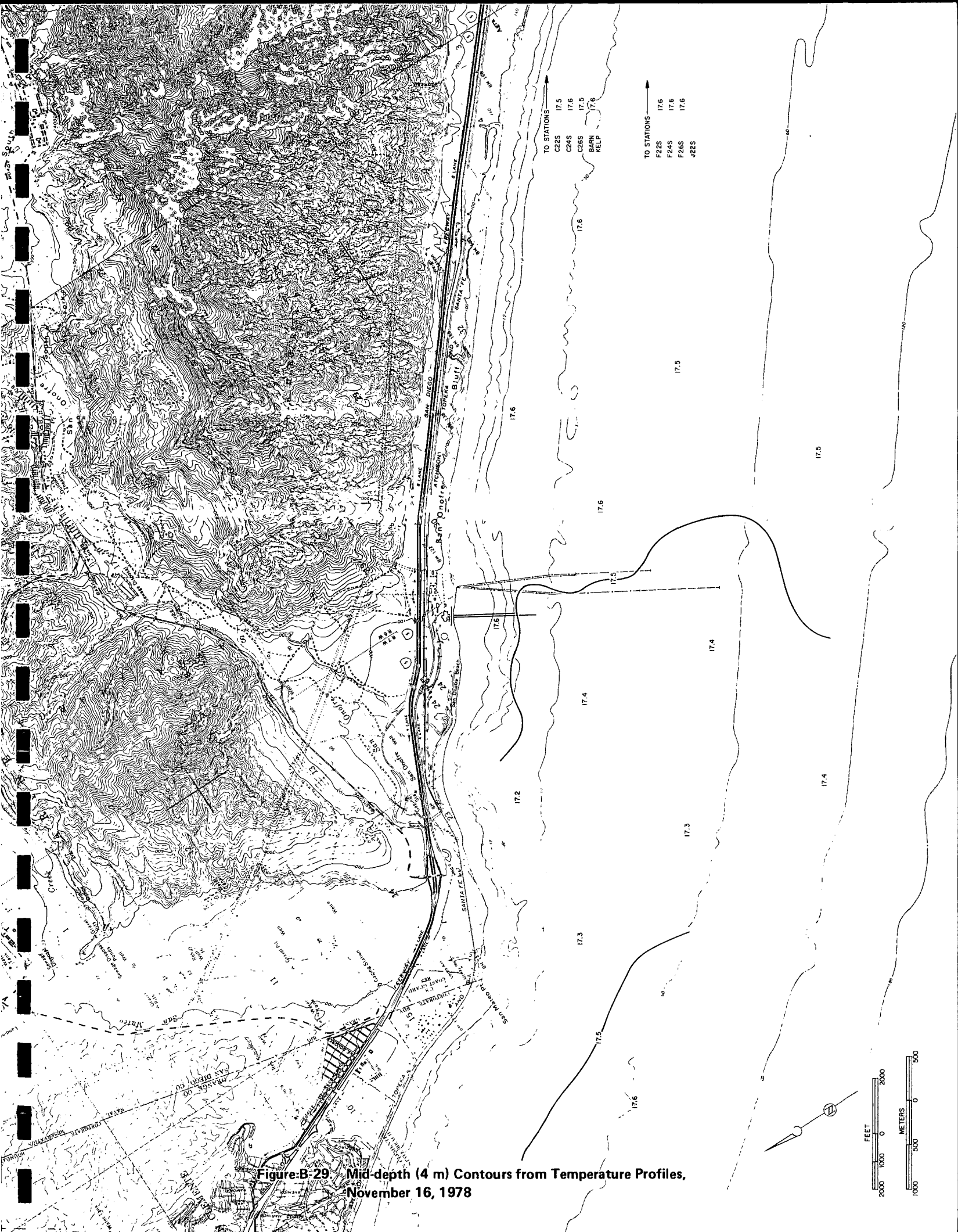



Figure B-29. Mid-depth (4 m) Contours from Temperature Profiles, November 16, 1978

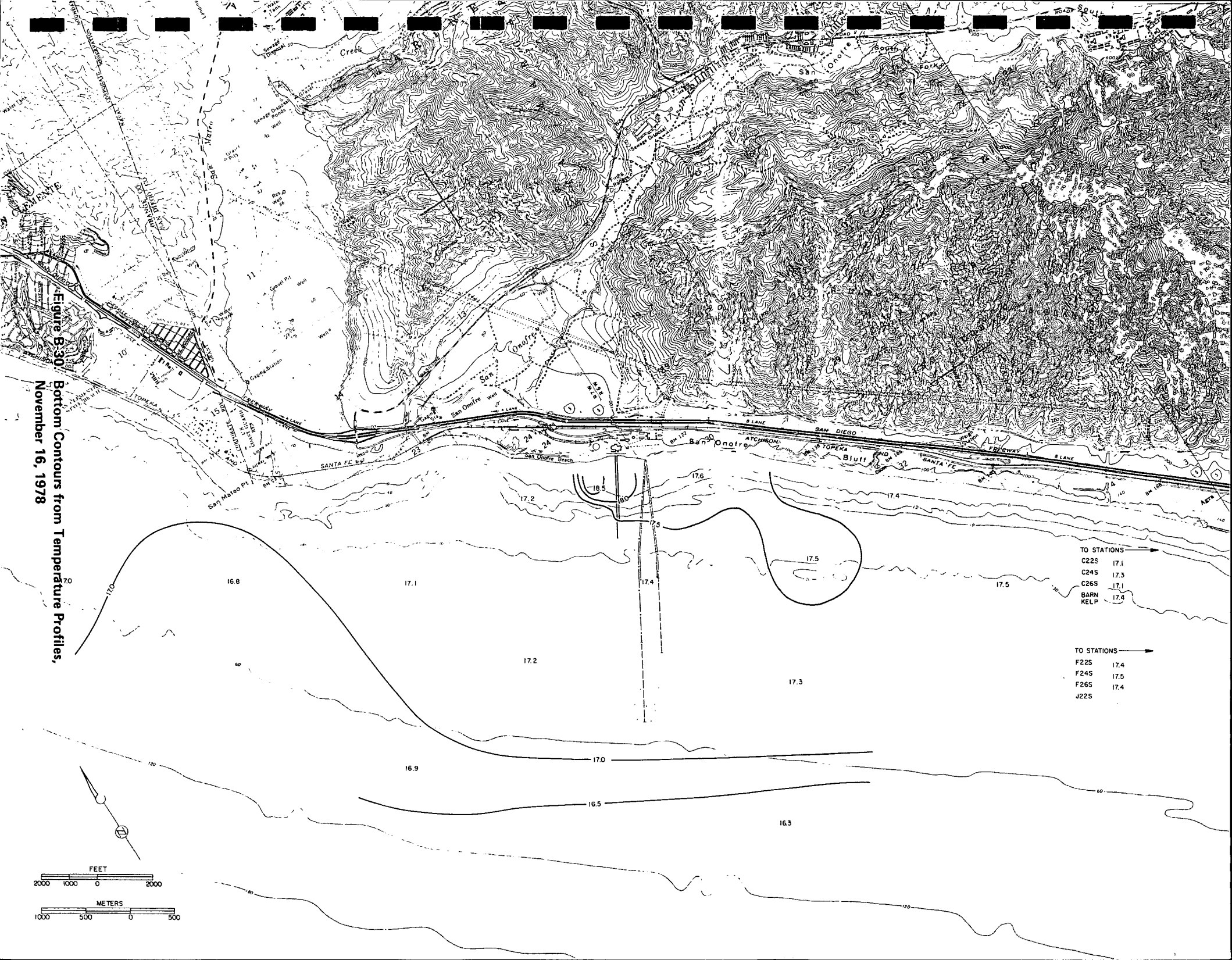



**Figure B-30. Bottom Contours from Temperature Profiles, November 16, 1978**

Surface Temperature Contours and Extents of
1 and 4 F Elevated Temperature Field

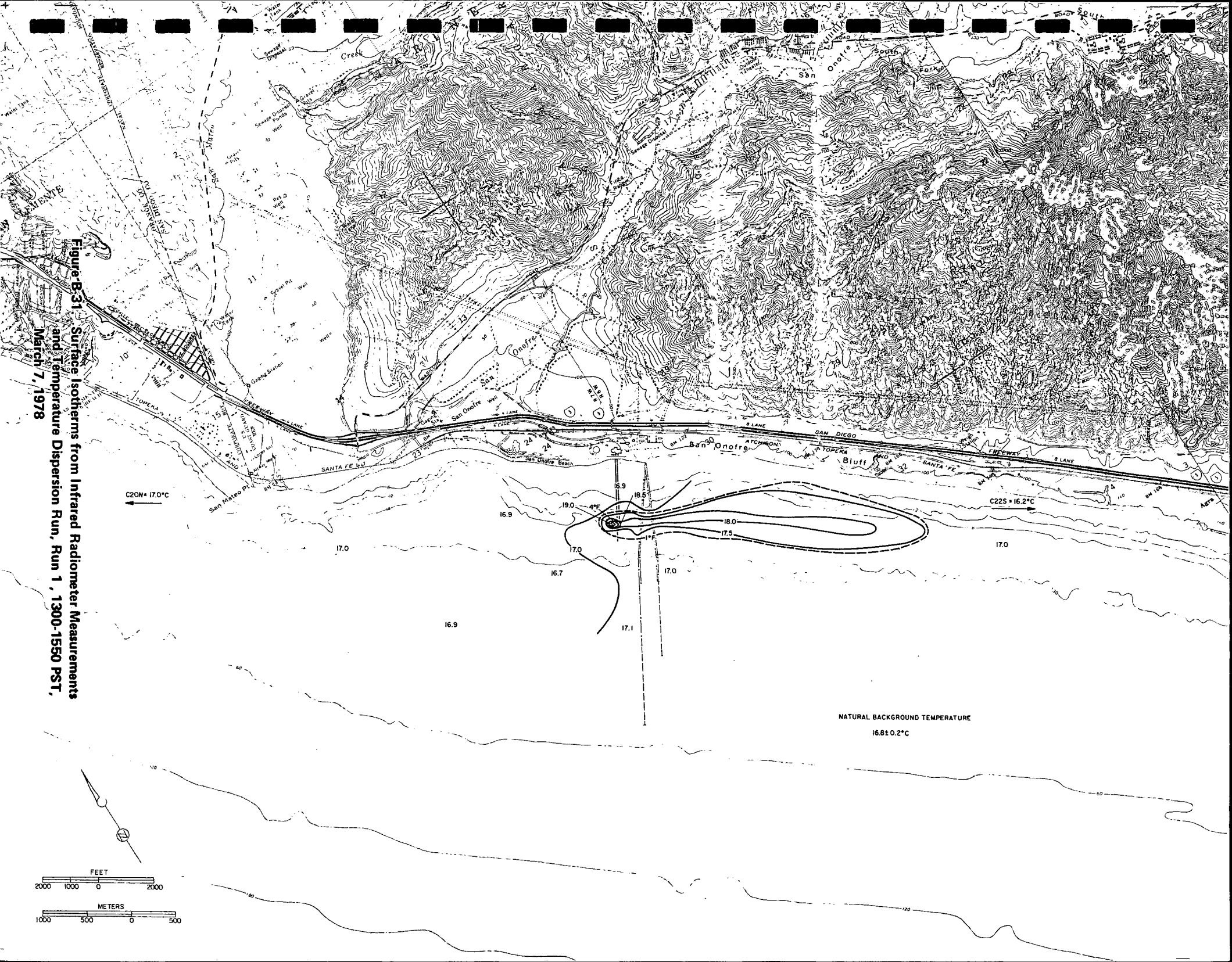



**Figure B-31. Surface Isotherms from Infrared Radiometer Measurements and Temperature Dispersion Run, Run 1, 1300-1550 PST, March 7, 1978**

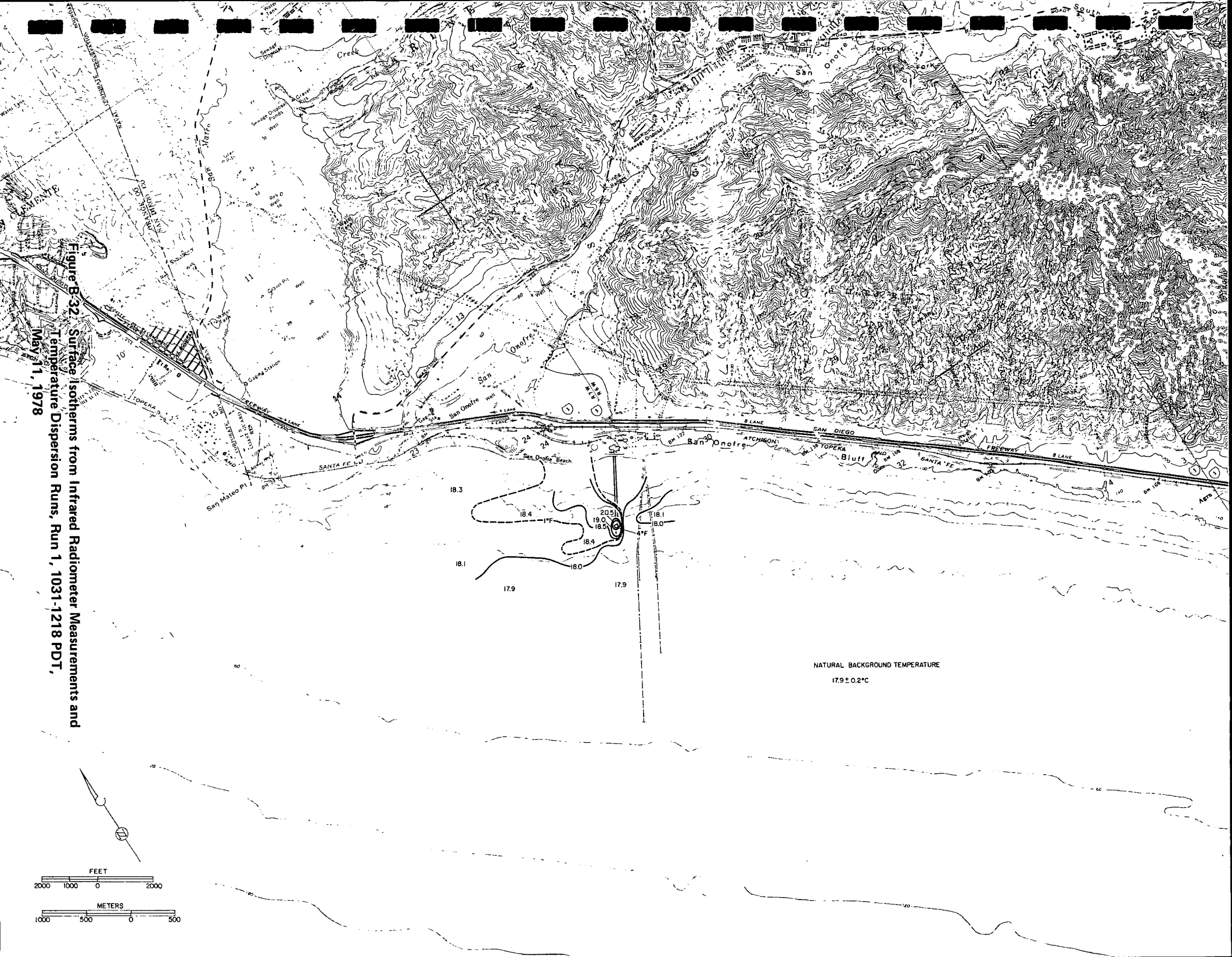



**Figure B-32. Surface Isotherms from Infrared Radiometer Measurements and Temperature Dispersion Runs, Run 1, 1031-1218 PDT, May 11, 1978**

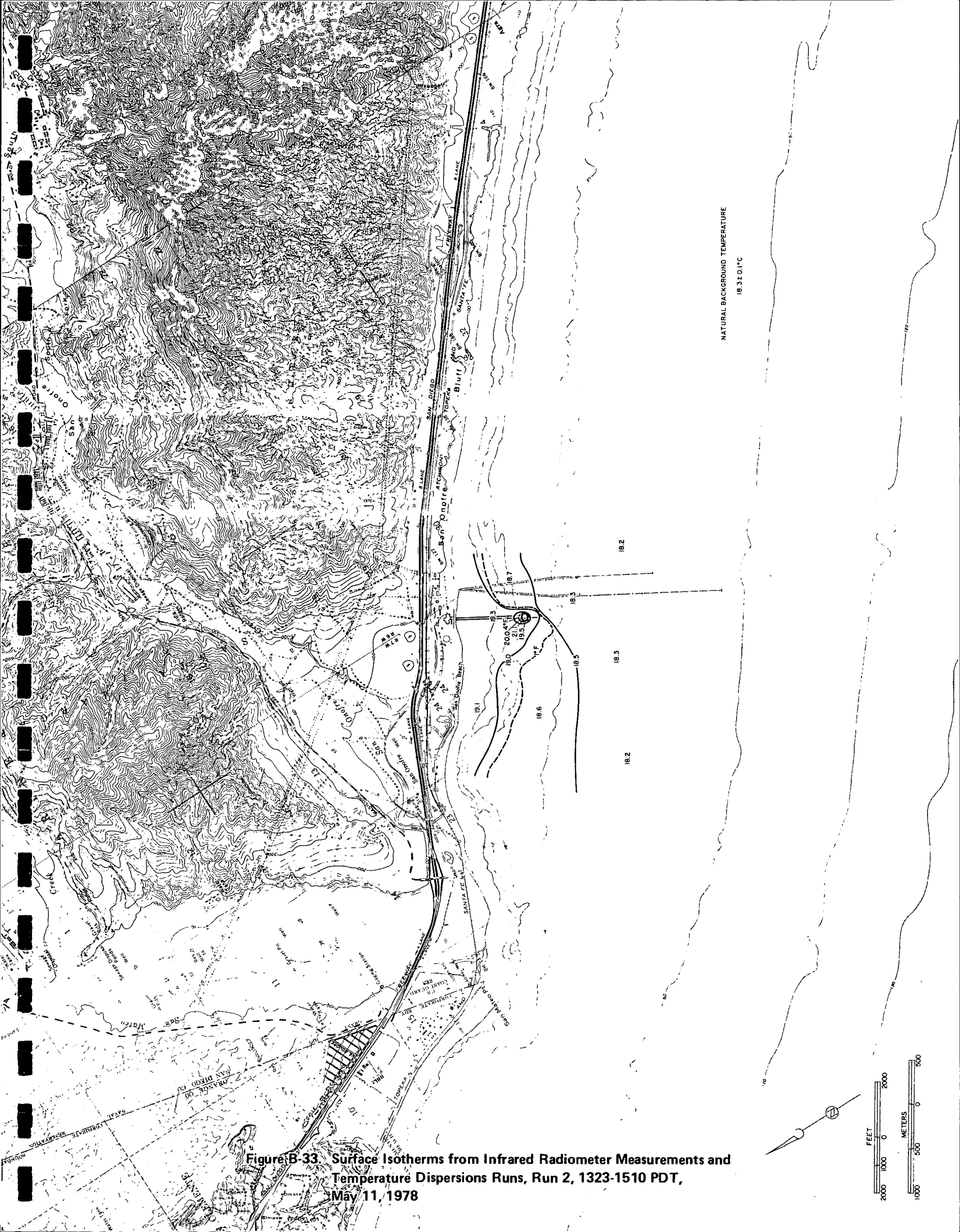



Figure B-33. Surface Isotherms from Infrared Radiometer Measurements and Temperature Dispersions Runs, Run 2, 1323-1510 PDT, May 11, 1978

Figure B-34. Surface Isotherms from Infrared Radiometer Measurements, Flight 1, 1000-1100 PDT, July 10, 1978

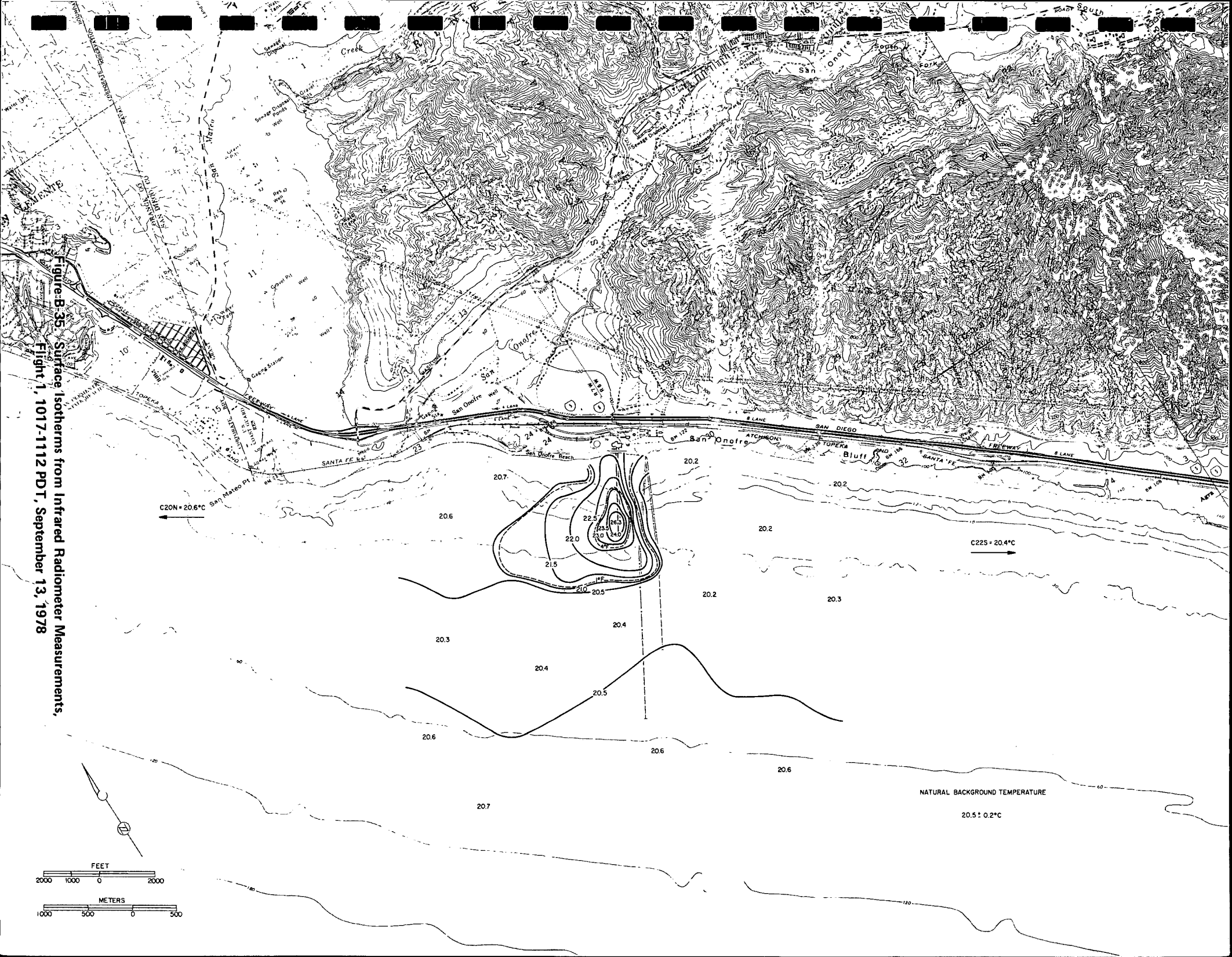



Figure B-35 Surface Isotherms from Infrared Radiometer Measurements, Flight 1, 1017-1112 PDT, September 13, 1978

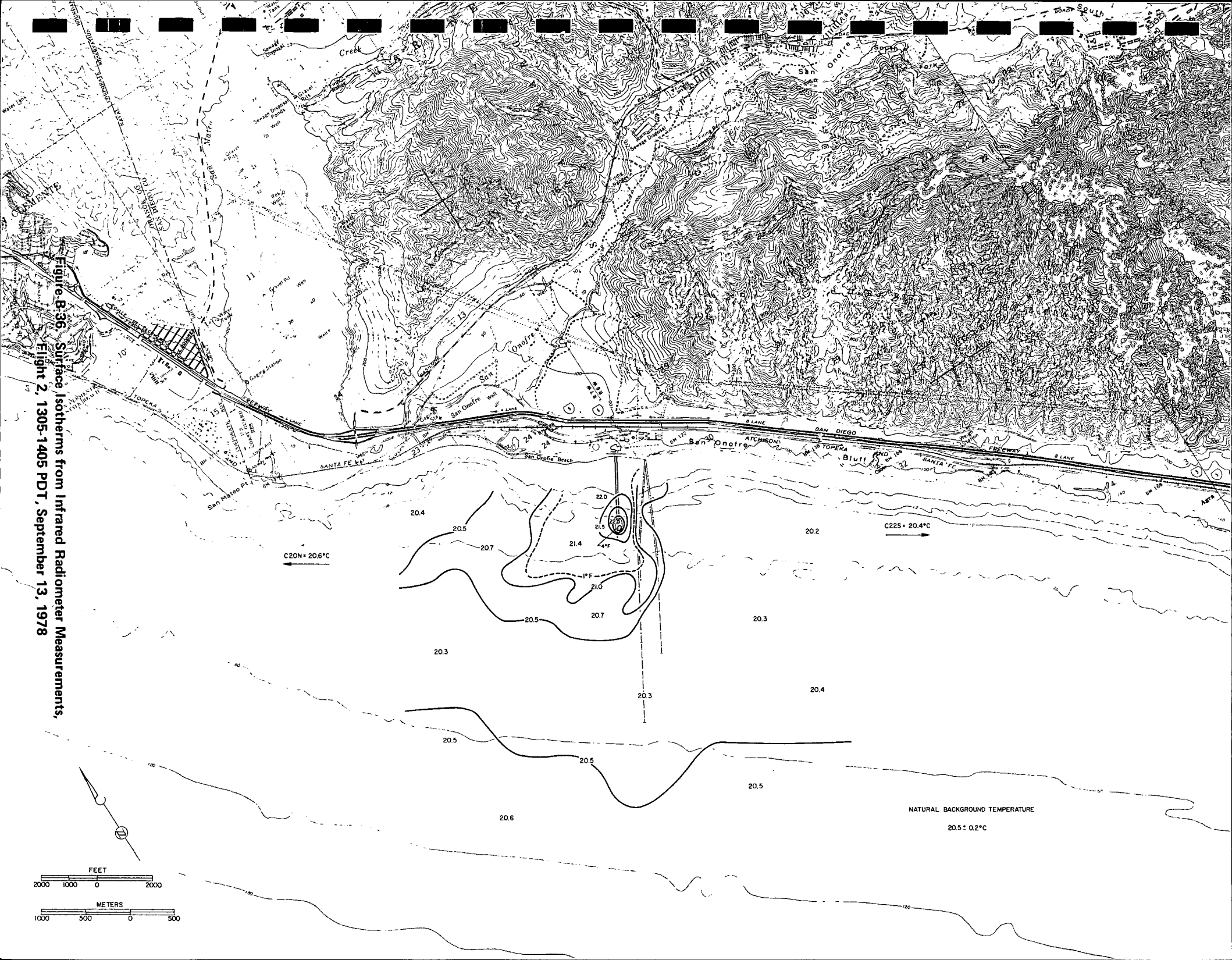



**Figure B-36. Surface Isotherms from Infrared Radiometer Measurements, Flight 2, 1305-1405 PDT, September 13, 1978**

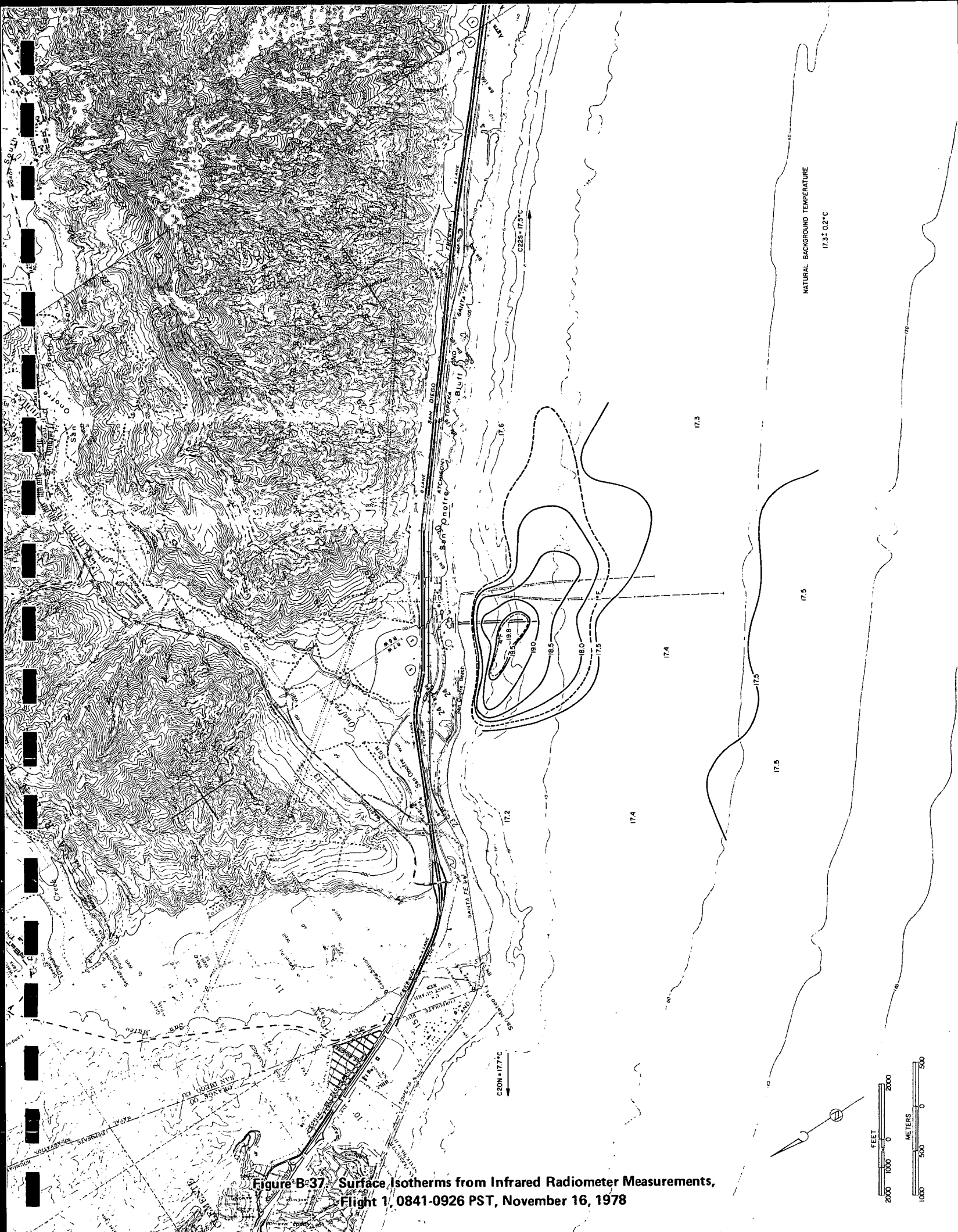



Figure B-37. Surface Isotherms from Infrared Radiometer Measurements, Flight 1, 0841-0926 PST, November 16, 1978

**Figure B-38. Surface Isotherms from Infrared Radiometer Measurements, Flight 2, 1157-1241 PST, November 16, 1978**

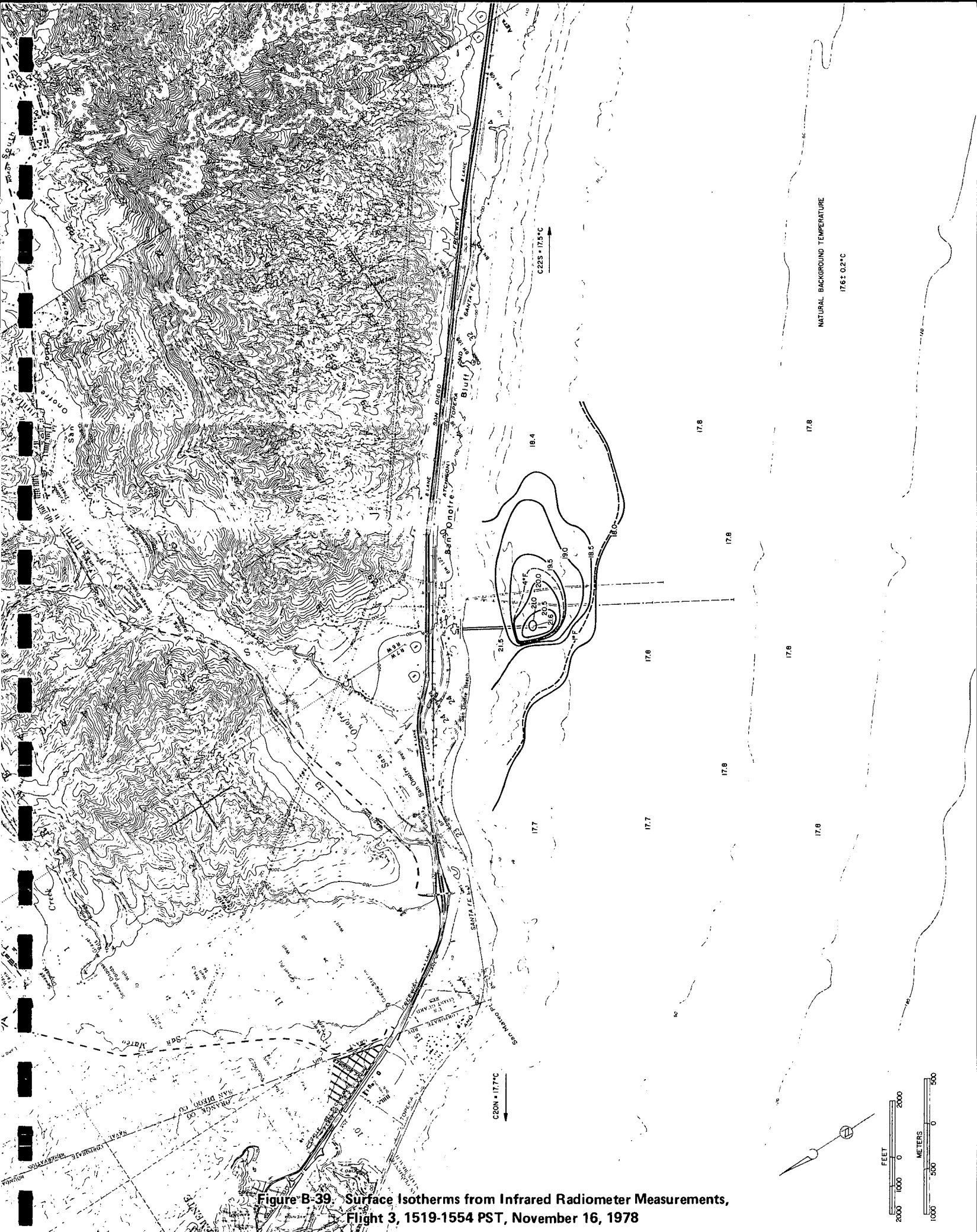



Figure B-39. Surface Isotherms from Infrared Radiometer Measurements, Flight 3, 1519-1554 PST, November 16, 1978

# Surface Temperatures and Times from Profile Measurements

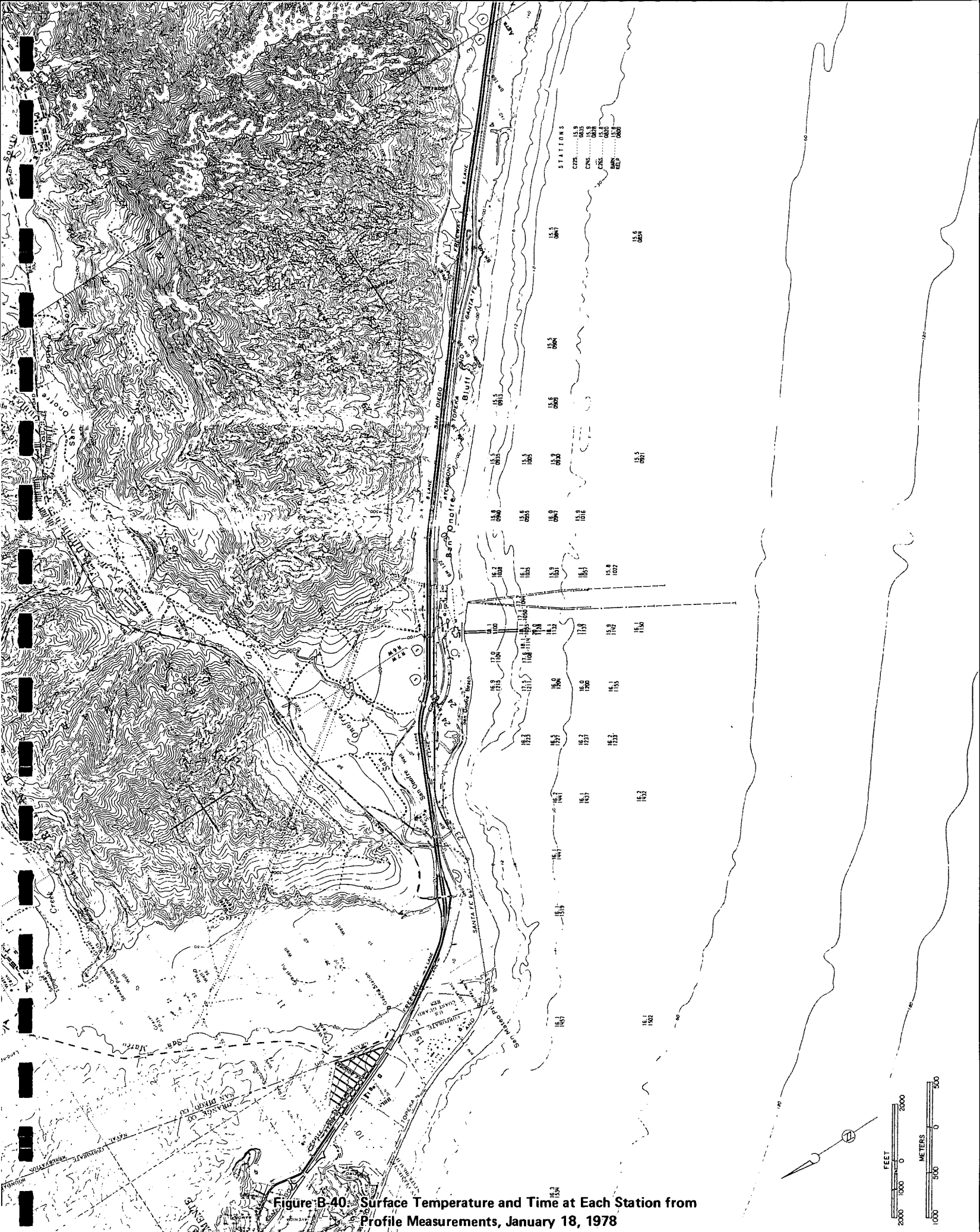



Figure B-40. Surface Temperature and Time at Each Station from Profile Measurements, January 18, 1978

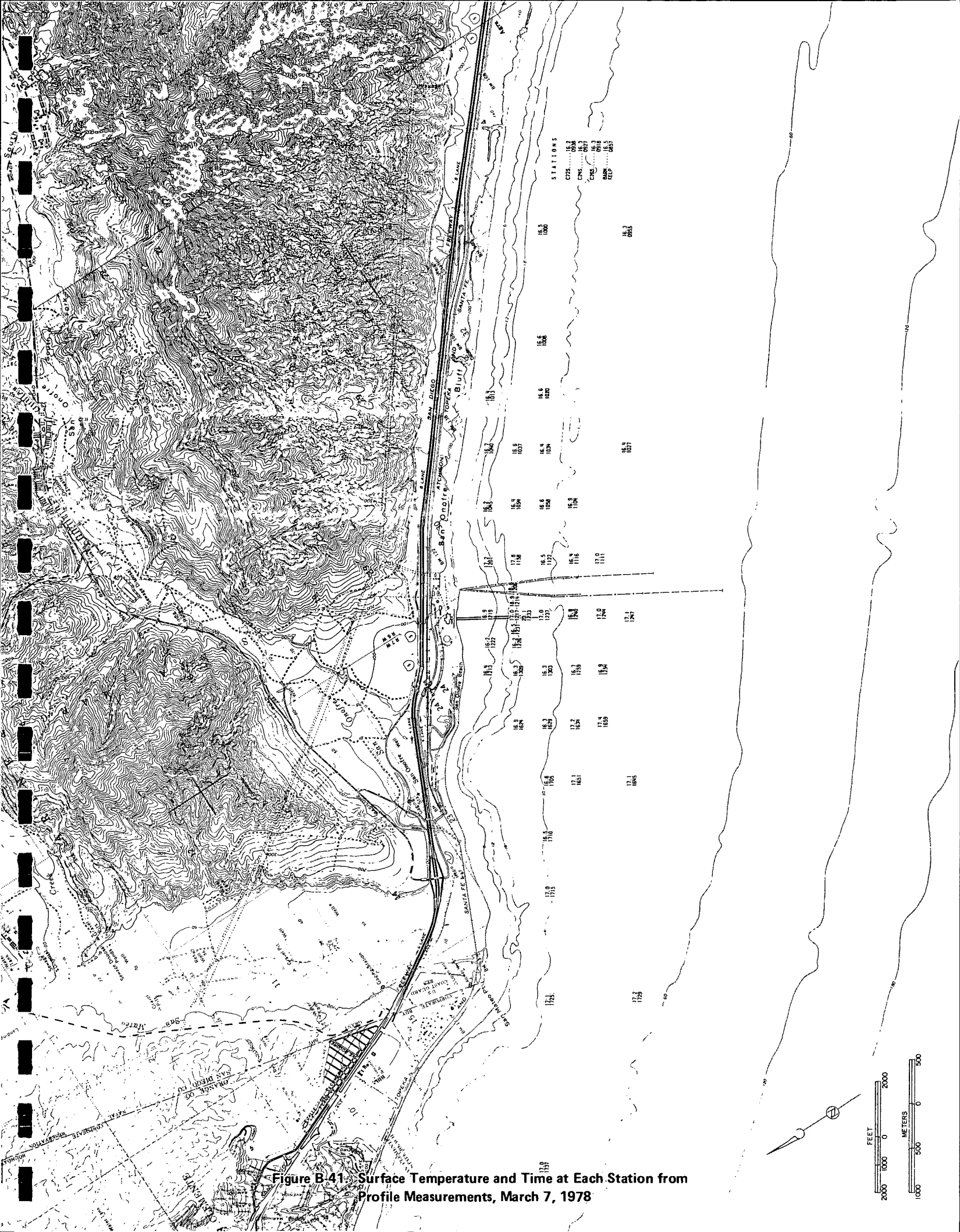



Figure B-41. Surface Temperature and Time at Each Station from Profile Measurements, March 7, 1978

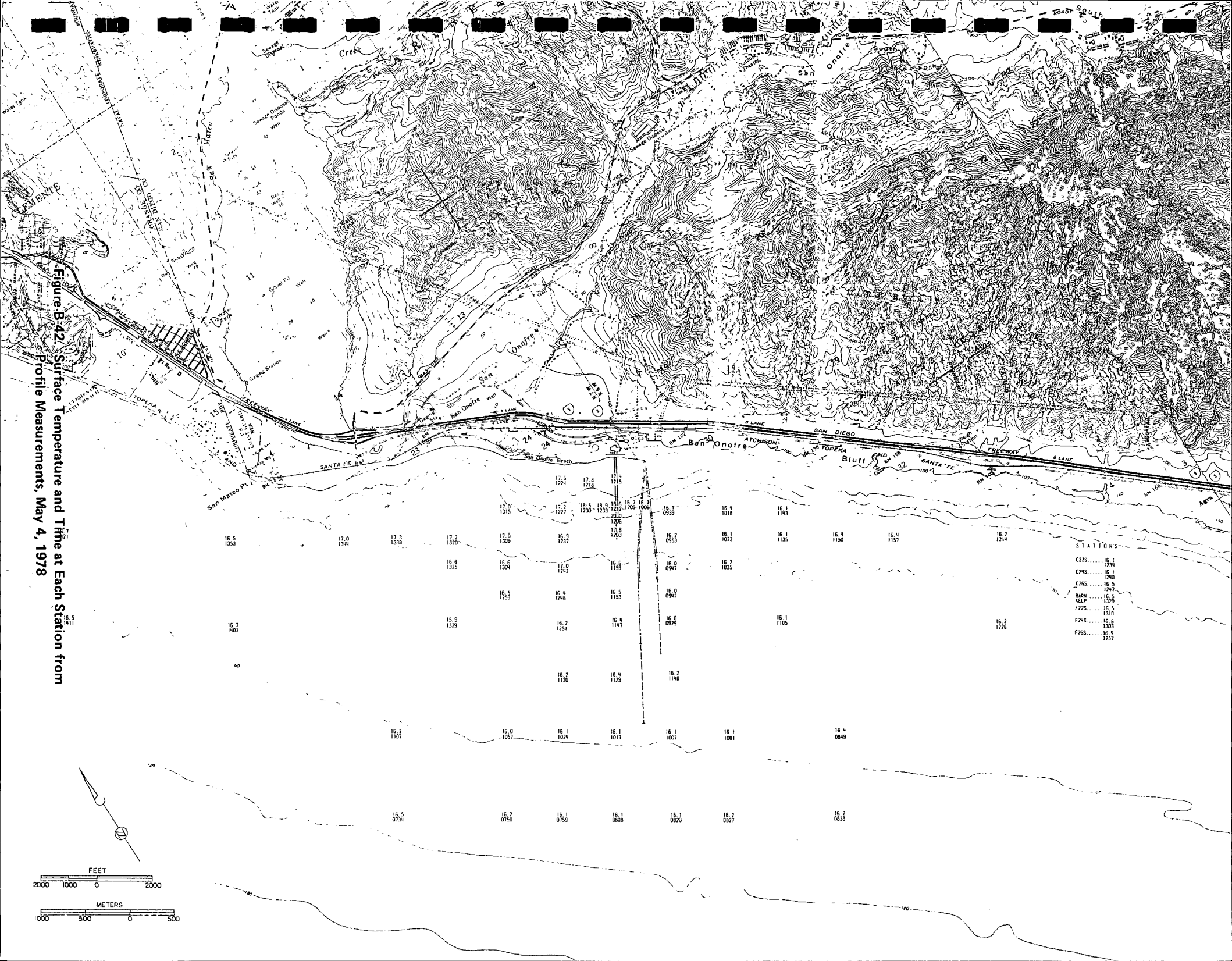



Figure B-42. Surface Temperature and Time at Each Station from Profile Measurements, May 4, 1978

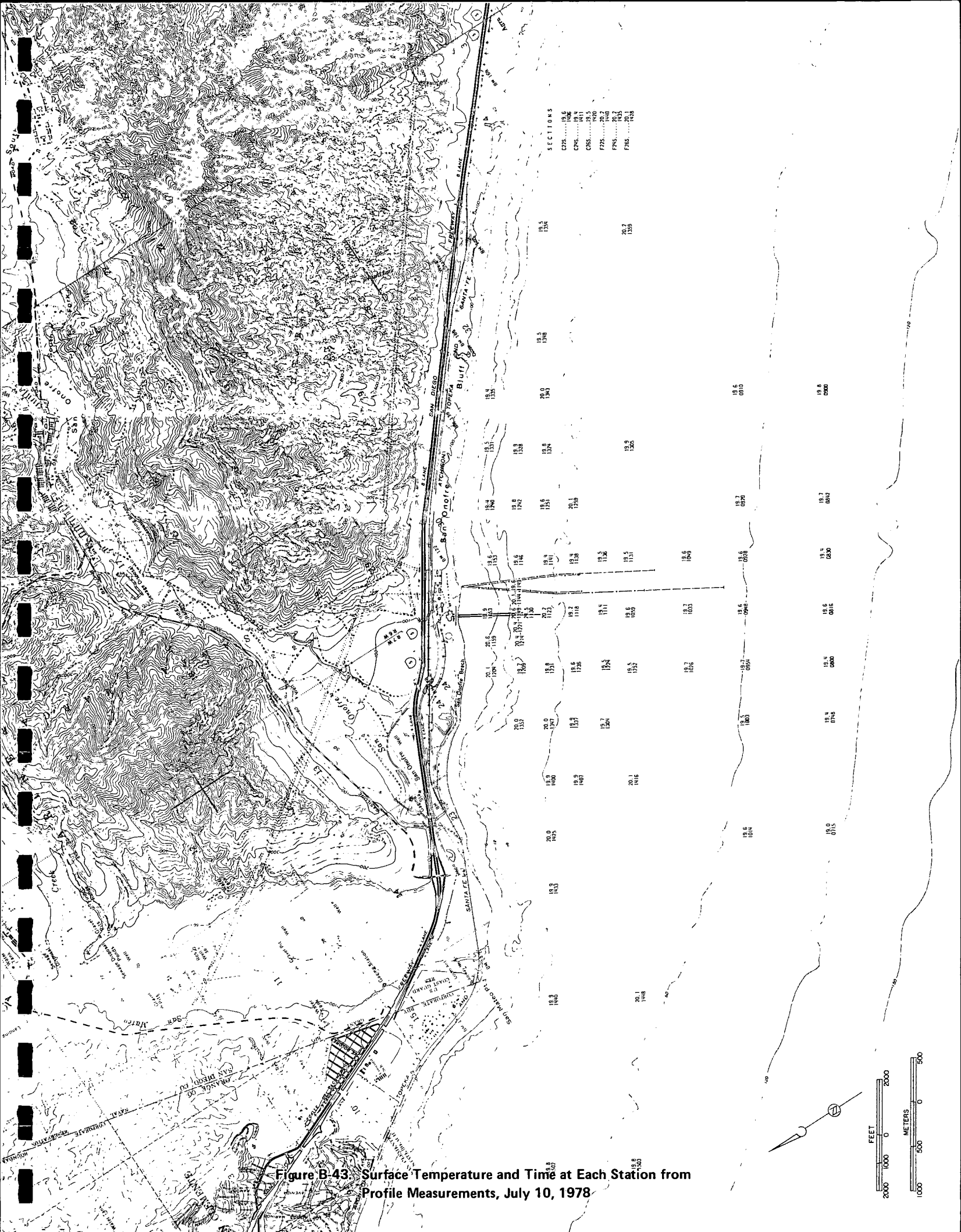



Figure B-43. Surface Temperature and Time at Each Station from Profile Measurements, July 10, 1978

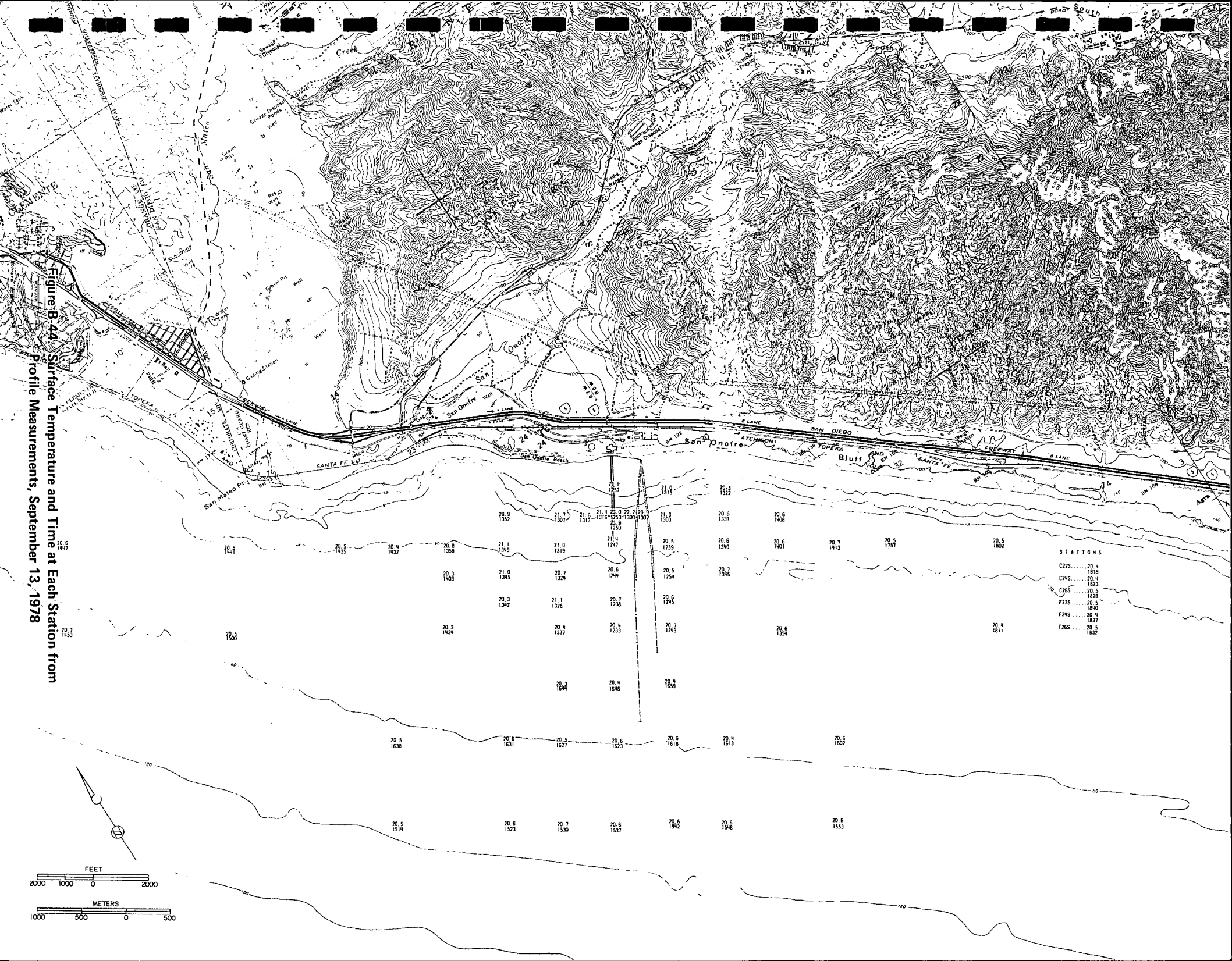



Figure B-44. Surface Temperature and Time at Each Station from Profile Measurements, September 13, 1978

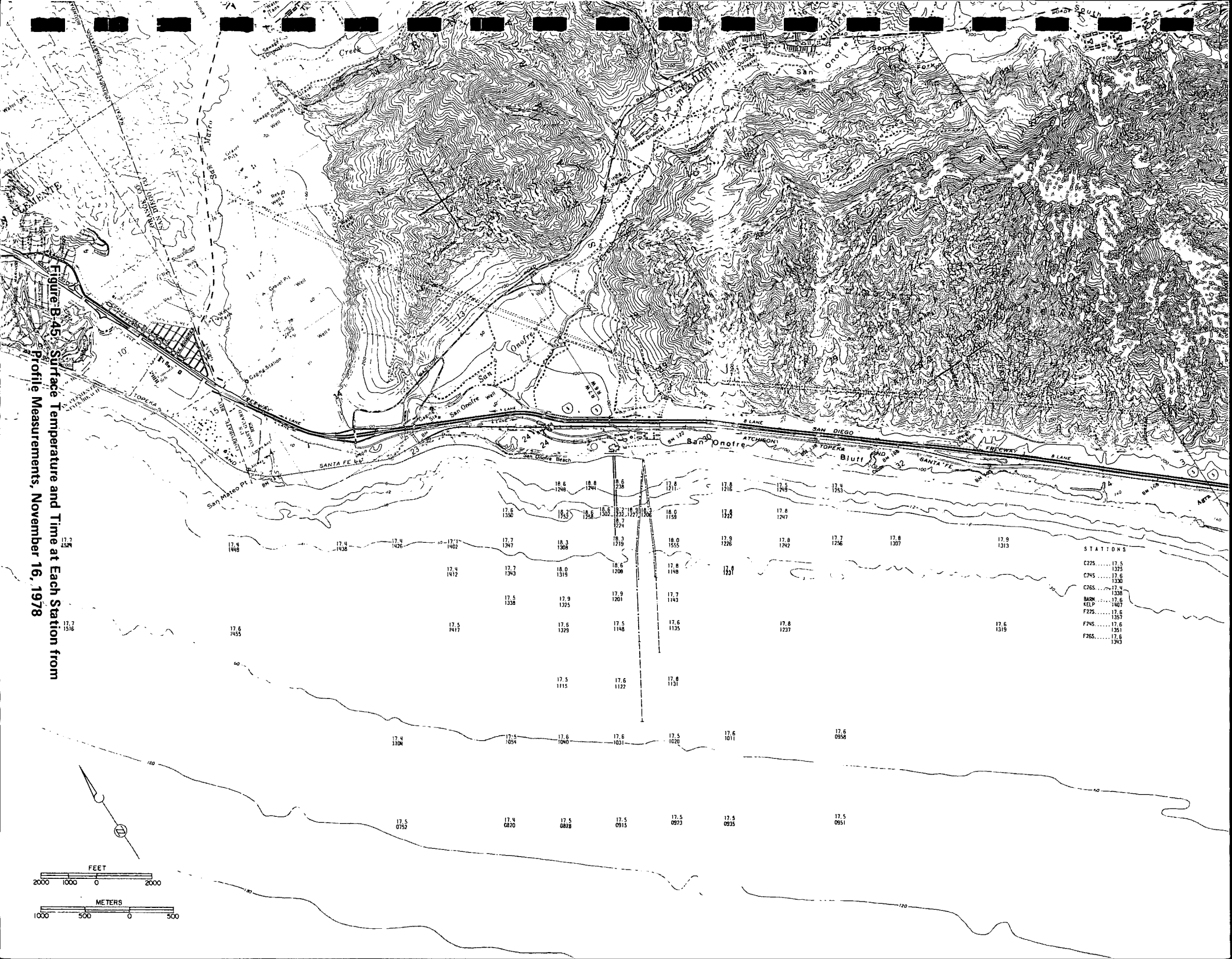



Figure B-45: Surface Temperature and Time at Each Station from Profile Measurements, November 16, 1978

Surface Temperatures from Infrared Radiometer Measurements

**Figure B-46. Surface Temperatures from Infrared Radiometer Measurements and Temperature Dispersion Run by Survey Vessel, 1300-1550 PST, March 7, 1978**

**Figure B-47. Surface Temperatures from Infrared Radiometer Measurements, and Temperature Dispersion Run by Survey Vessel, Run 1, 1031-1218 PDT, May 11, 1978**

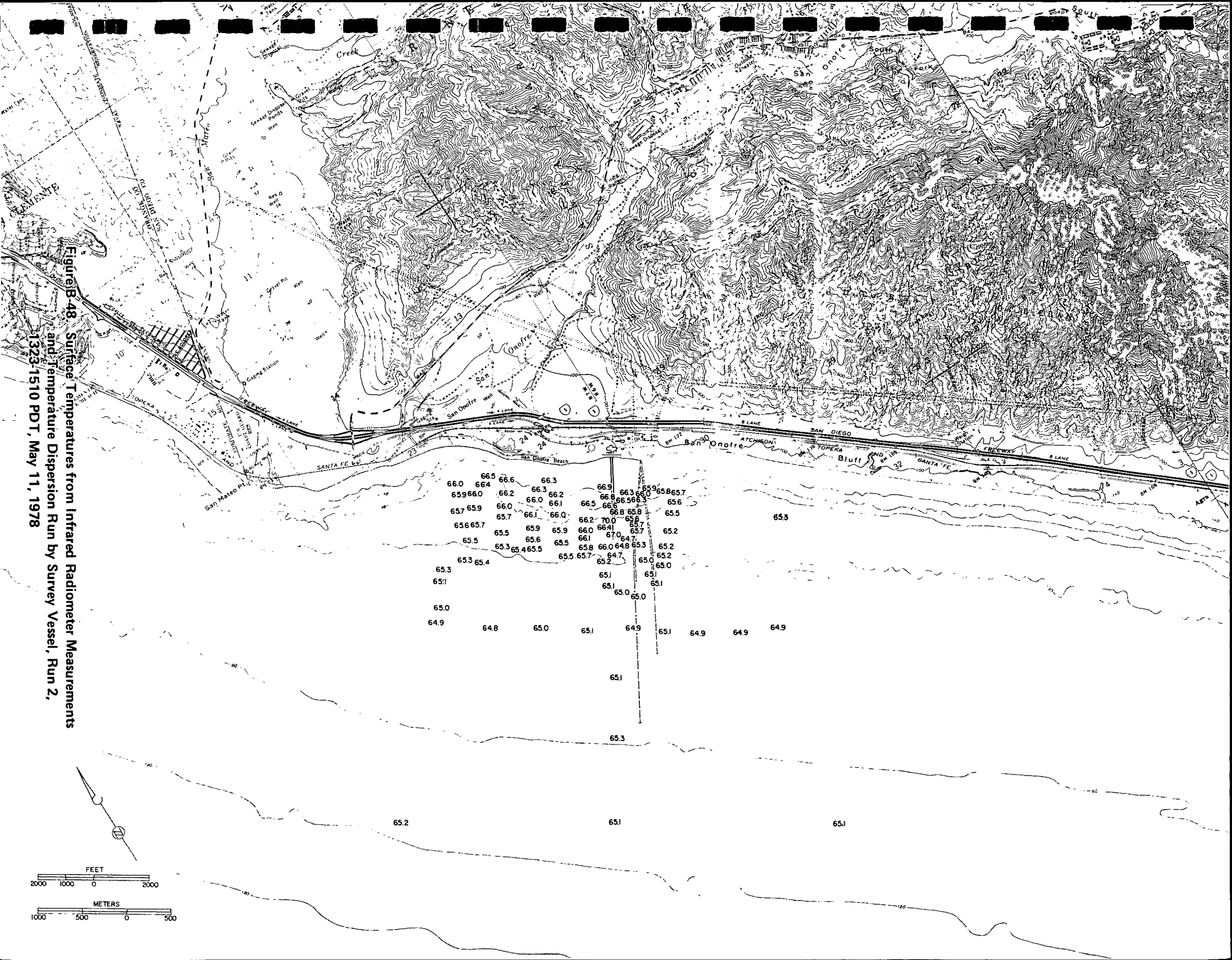



Figure B-48. Surface Temperatures from Infrared Radiometer Measurements and Temperature Dispersion Run by Survey Vessel, Run 2, 1323-1510 PDT, May 11, 1978

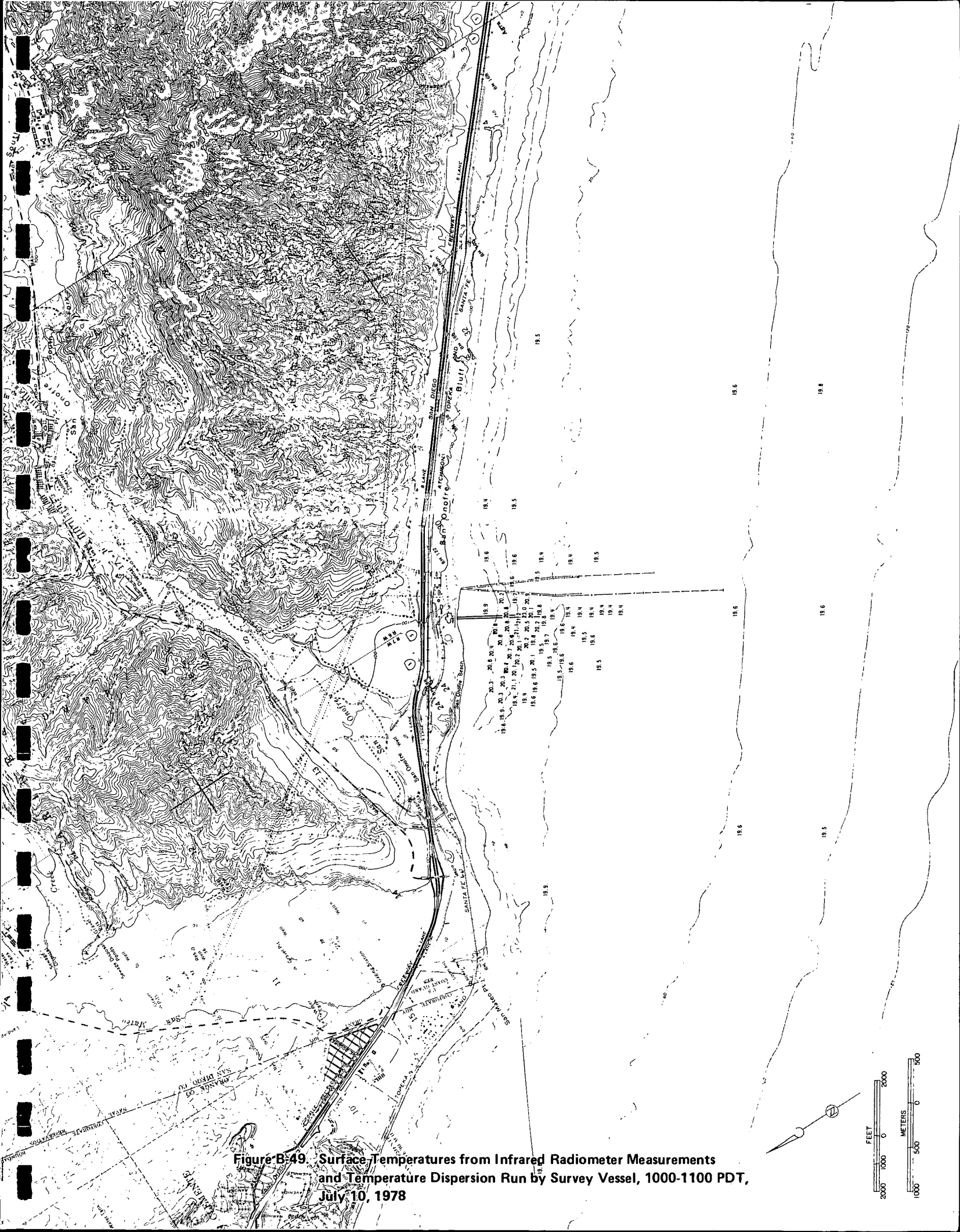



Figure B-49. Surface Temperatures from Infrared Radiometer Measurements and Temperature Dispersion Run by Survey Vessel, 1000-1100 PDT, July 10, 1978

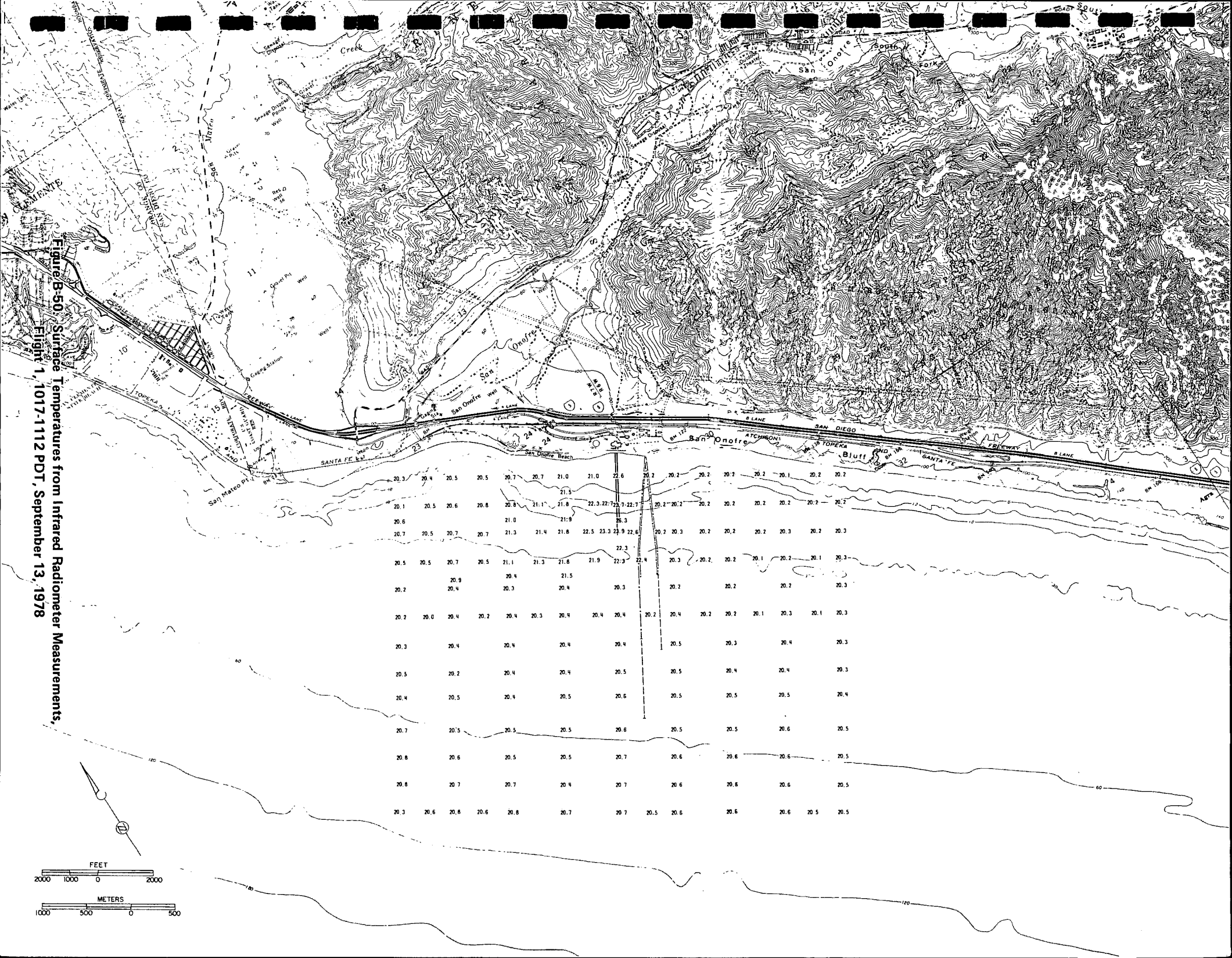



Figure B-50. Surface Temperatures from Infrared Radiometer Measurements, Flight 1, 1017-1112 PDT, September 13, 1978

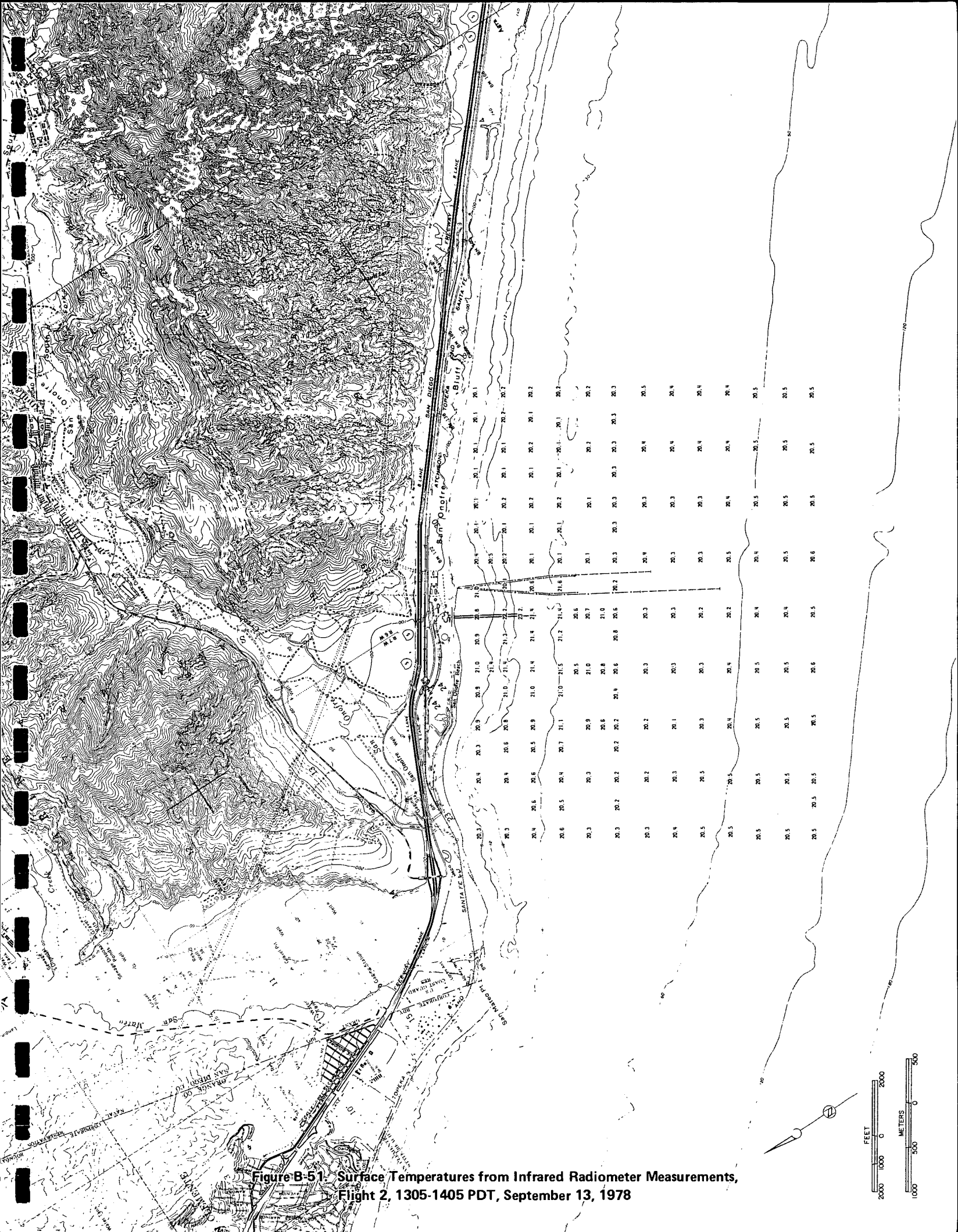



**Figure B-51. Surface Temperatures from Infrared Radiometer Measurements, Flight 2, 1305-1405 PDT, September 13, 1978**

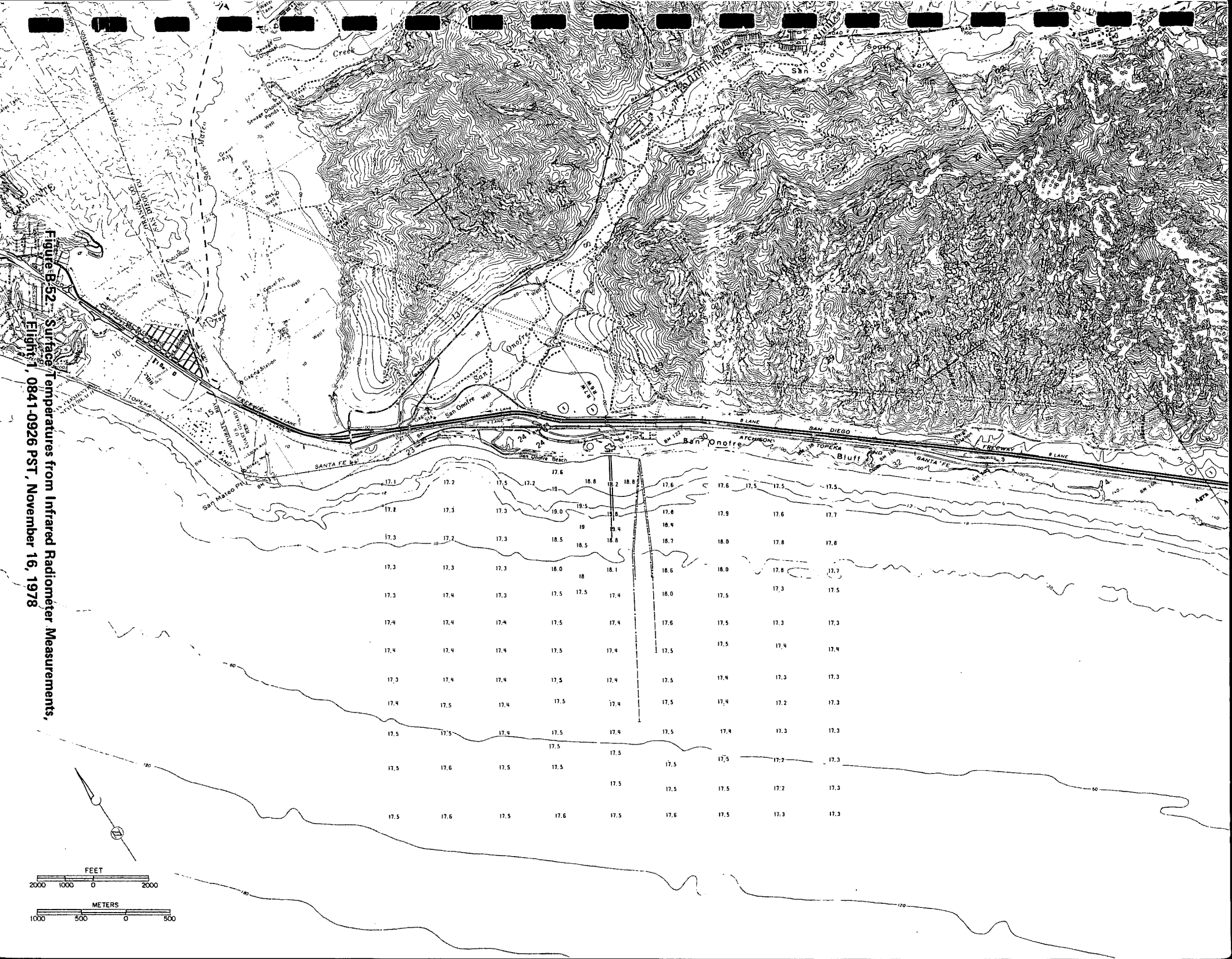



Figure B-52: Surface Temperatures from Infrared Radiometer Measurements, Flight 1, 0841-0926 PST, November 16, 1978

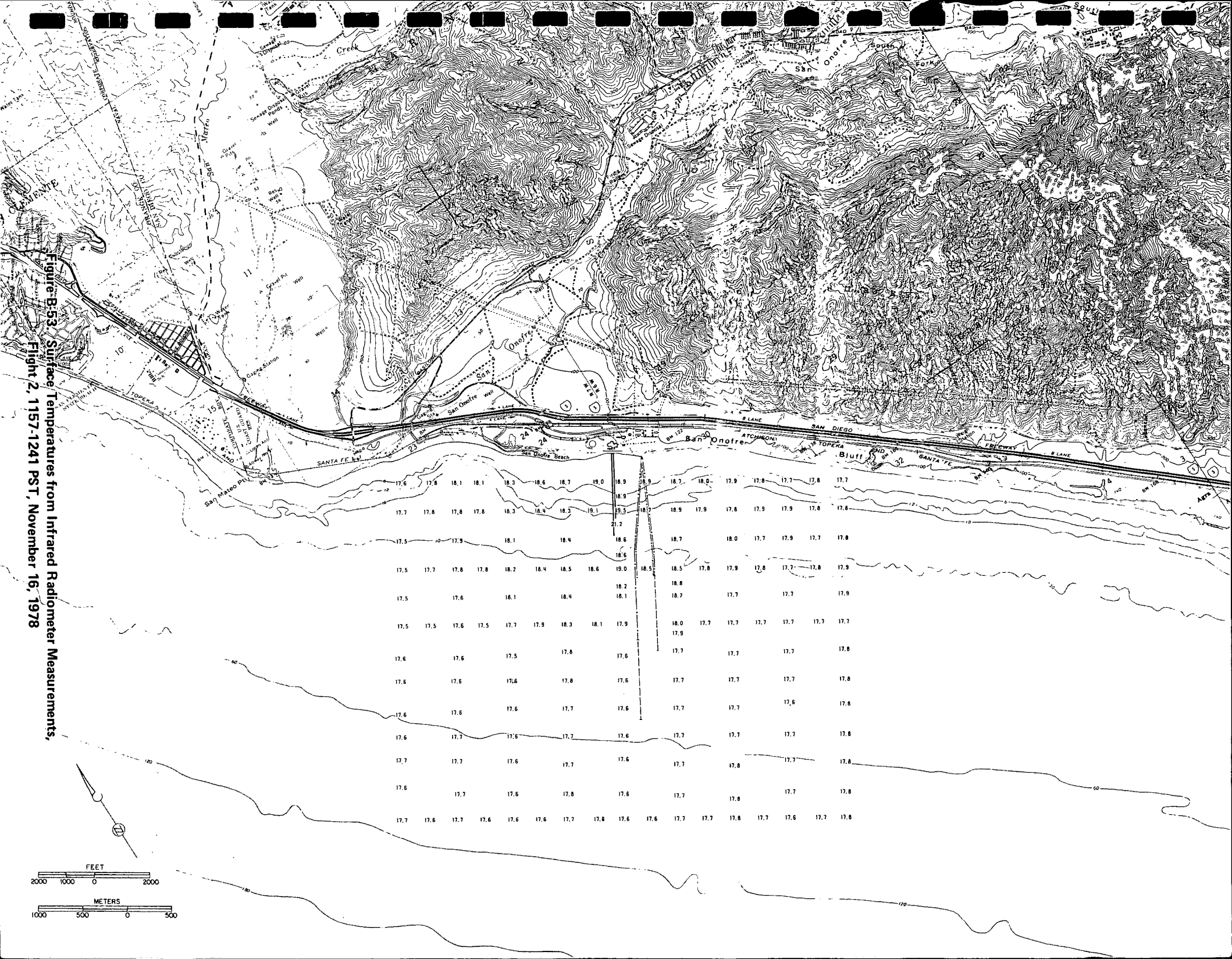



**Figure B-53. Surface Temperatures from Infrared Radiometer Measurements, Flight 2, 1157-1241 PST, November 16, 1978**

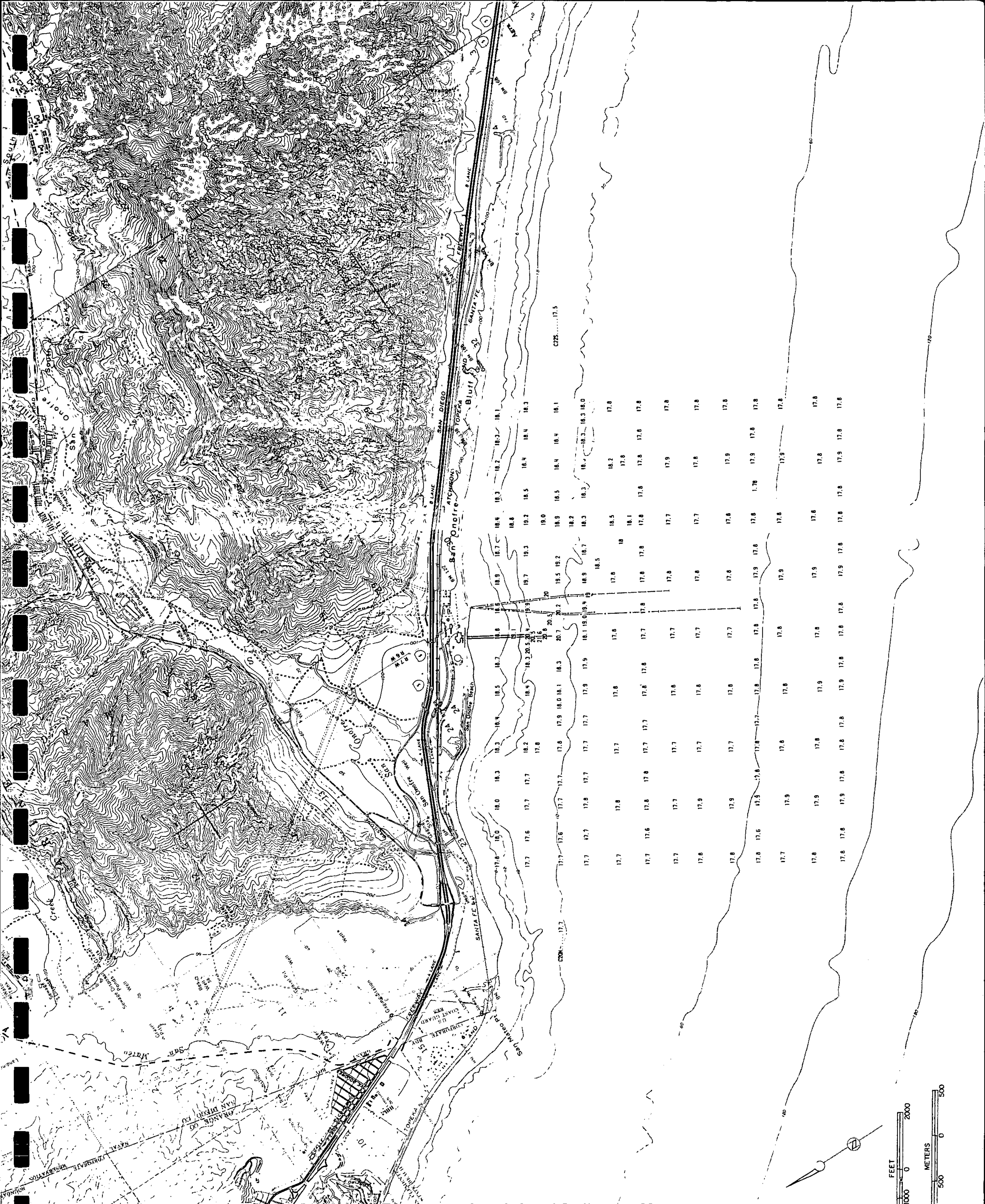


Figure B-54: Surface Temperature from Infrared Radiometer Measurements, Flight 3, 1519-1554 PST, November 16, 1978

# APPENDIX C. CONTINUOUS TEMPERATURE GRAPHS

# Continuous Temperature Graphs

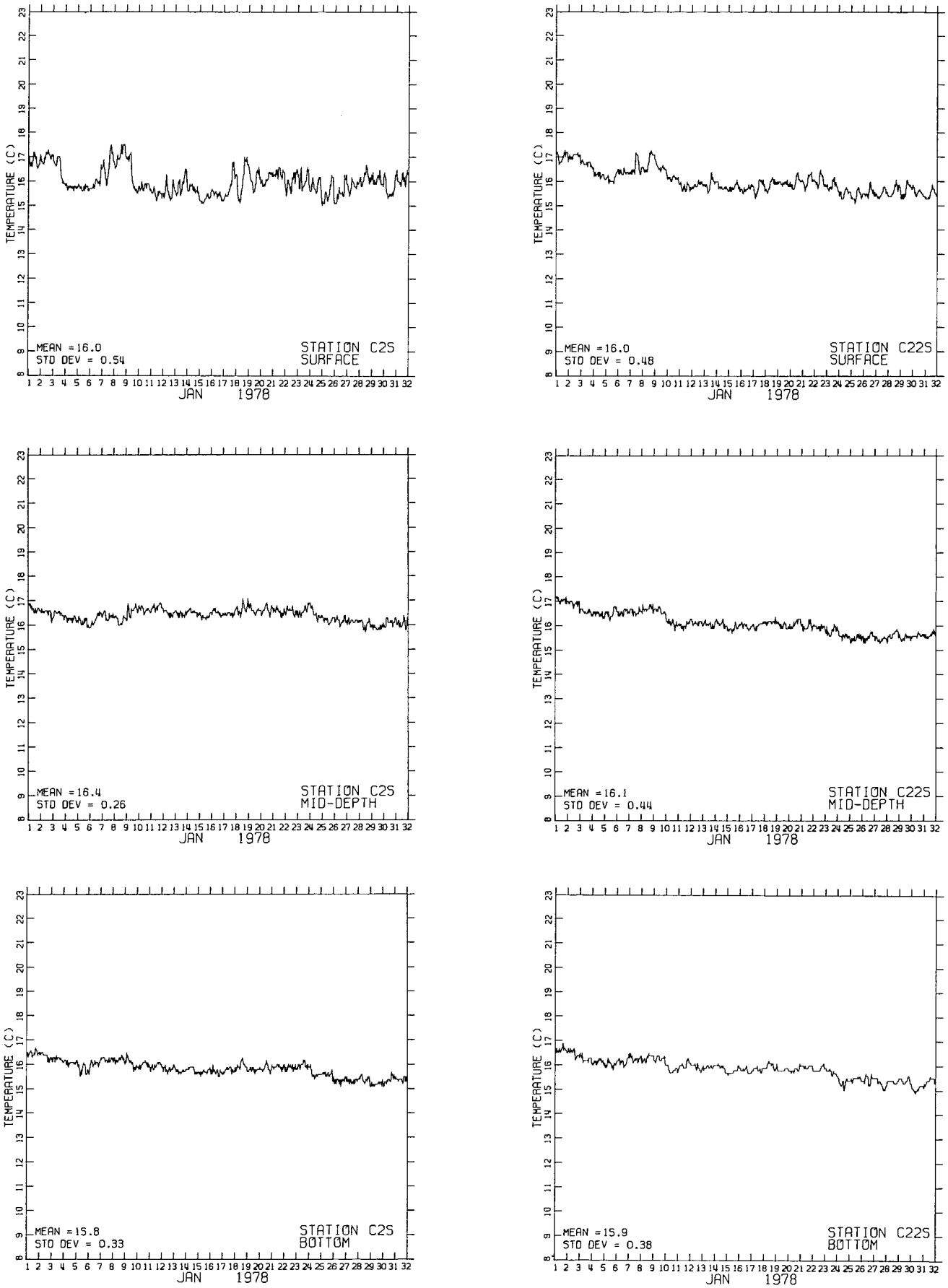



**Figure C-1. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, January, 1978**

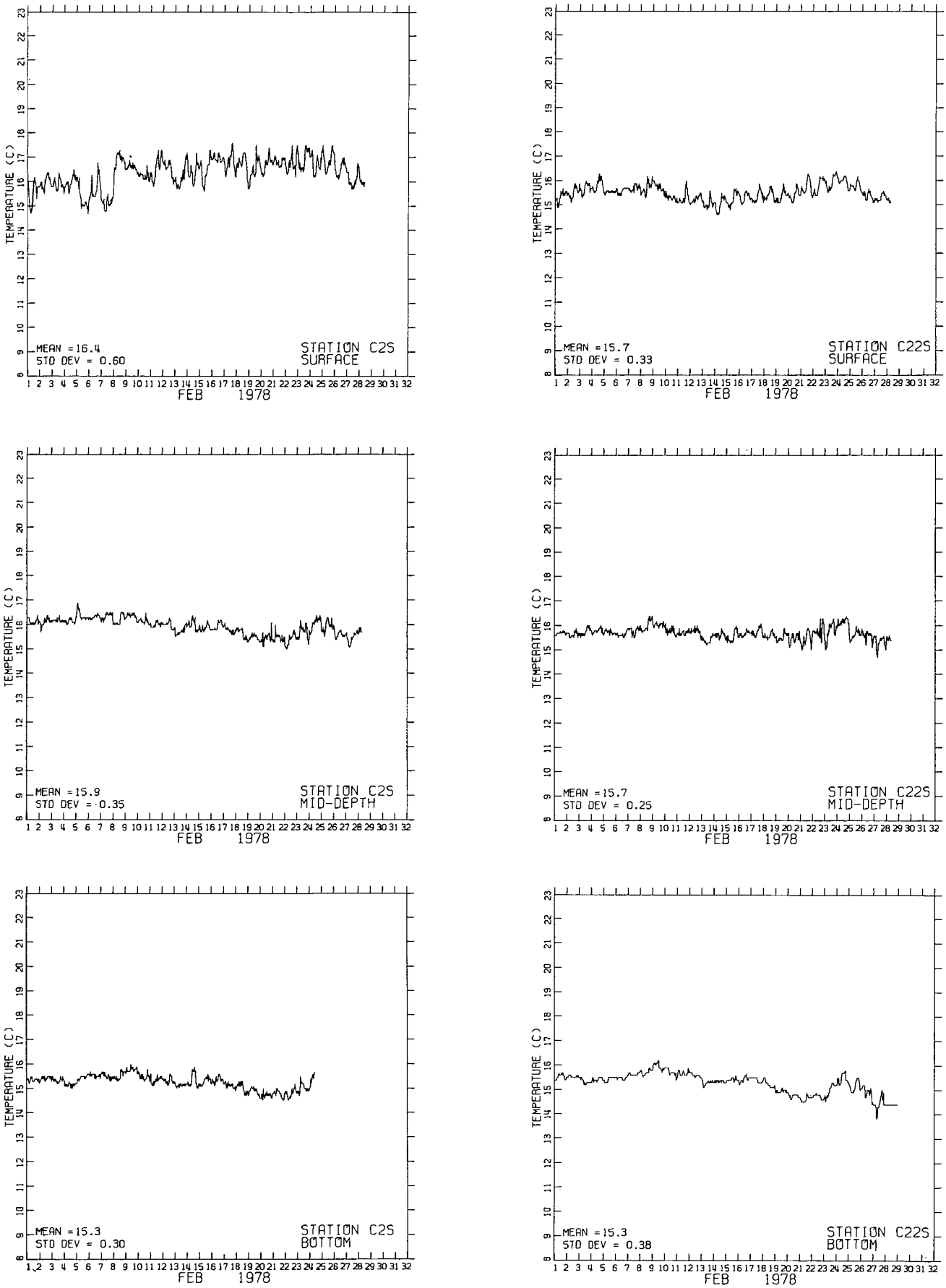



**Figure C-2. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, February, 1978**

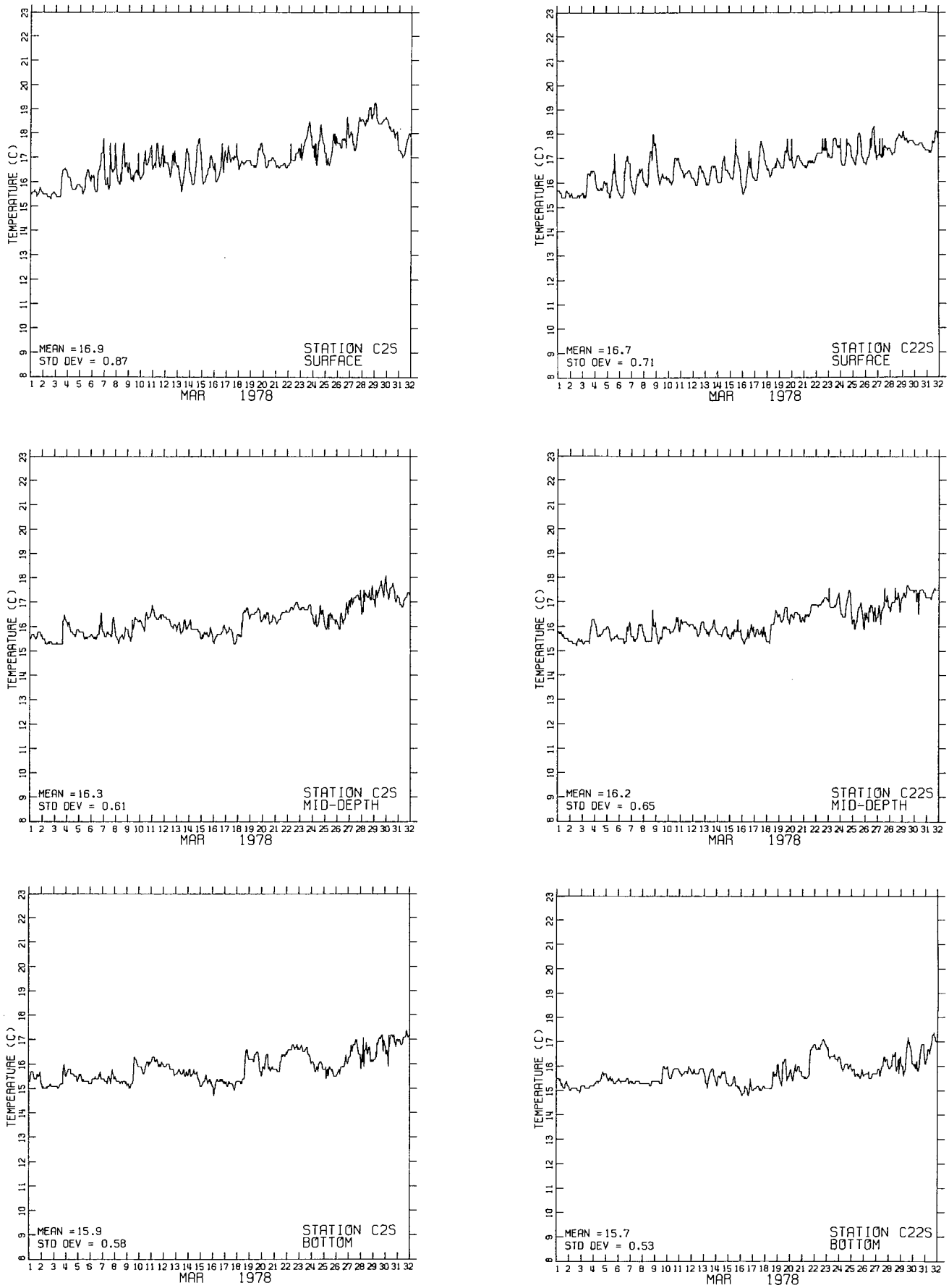



**Figure C-3. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, March, 1978**

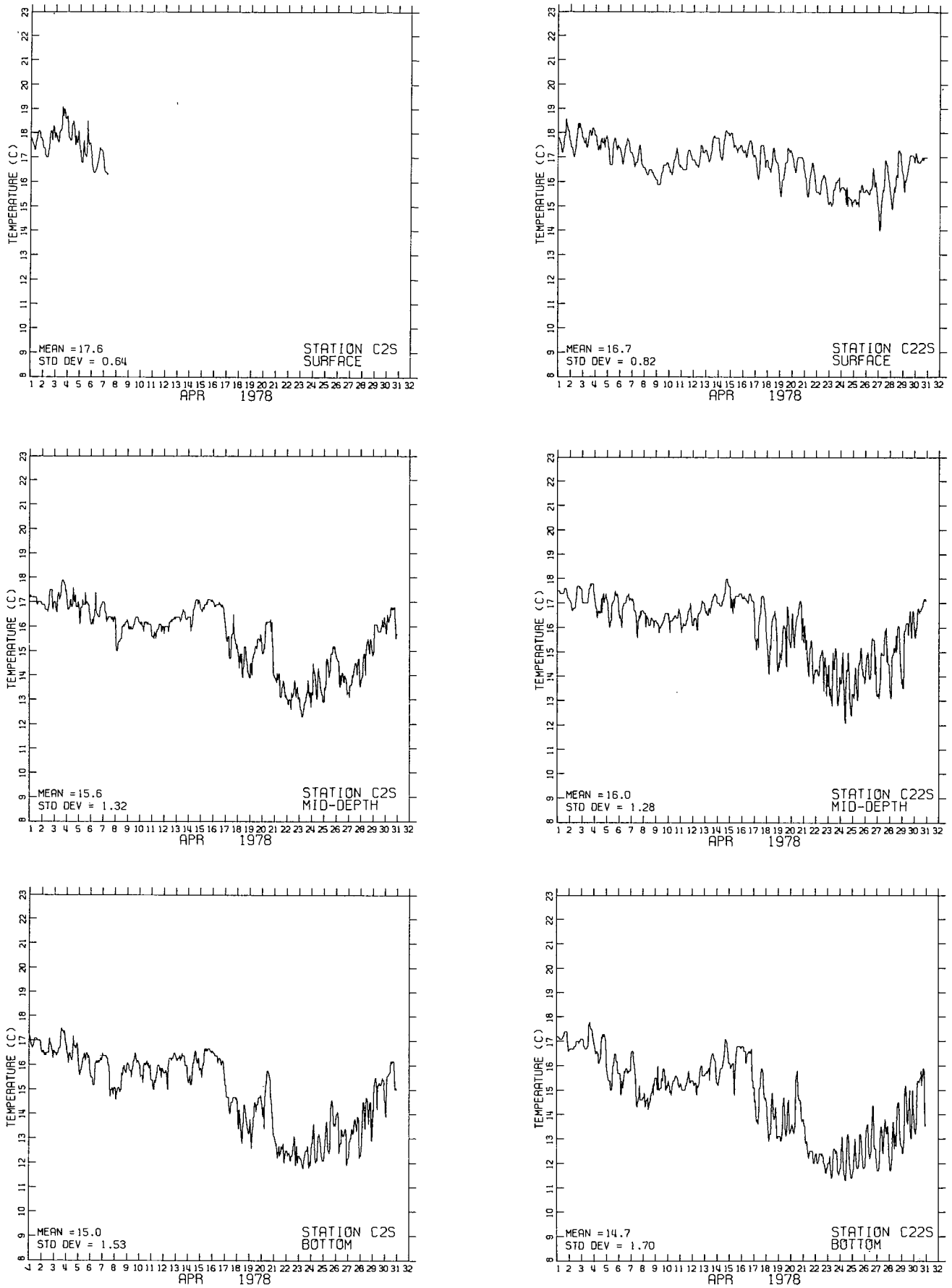



**Figure C-4. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, April, 1978**

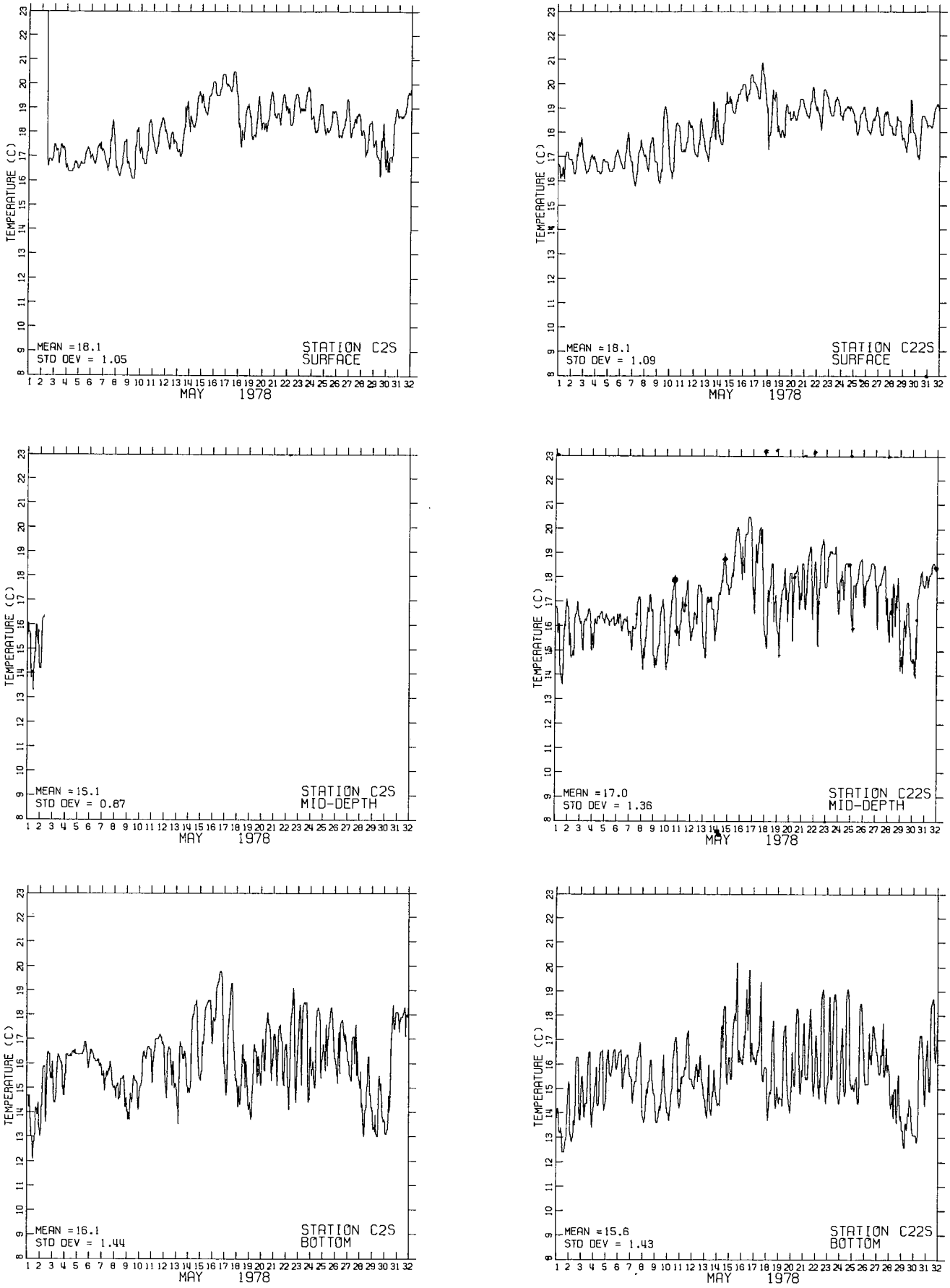



**Figure C-5. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, May, 1978**

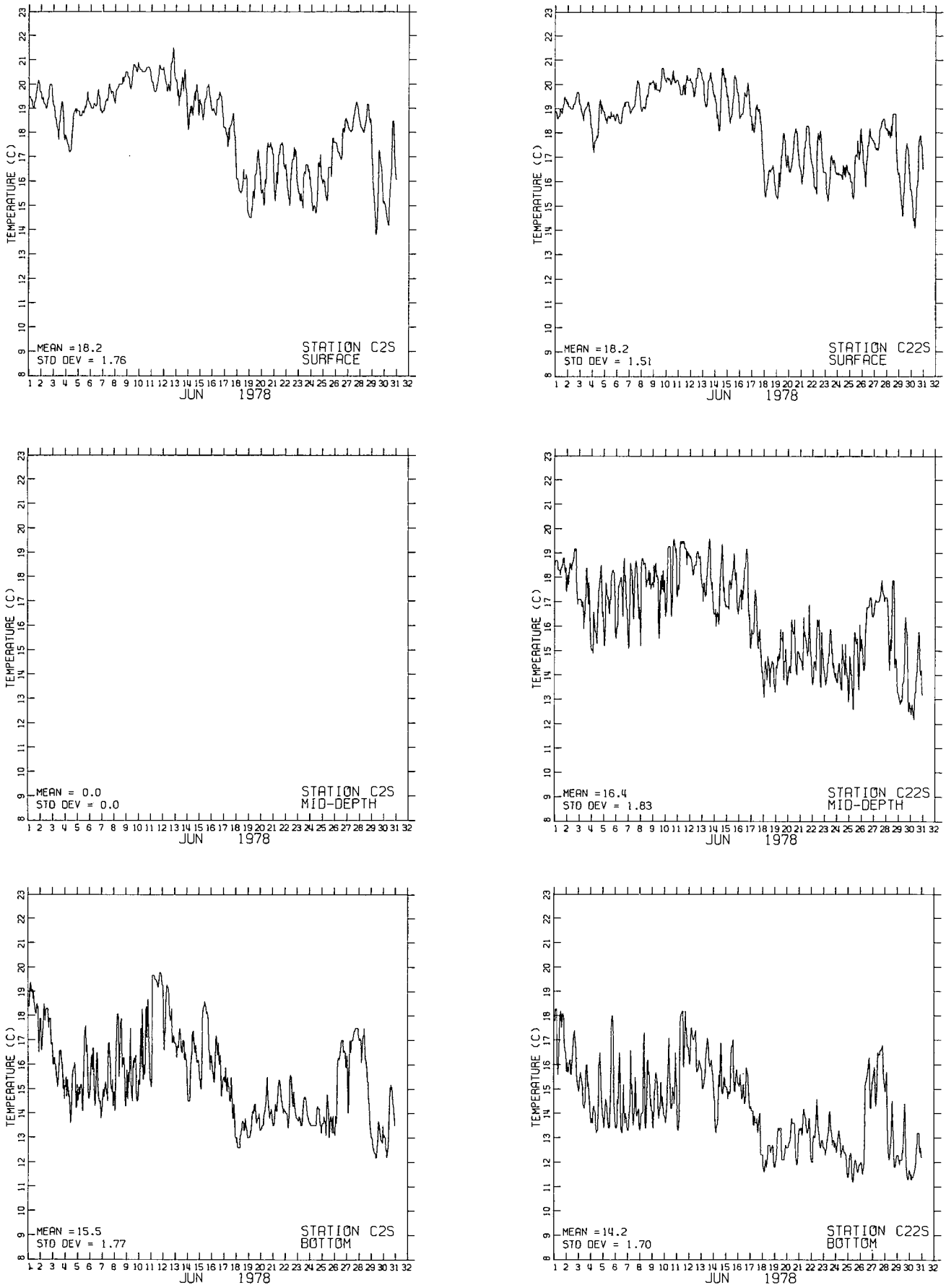



**Figure C-6. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, June, 1978**

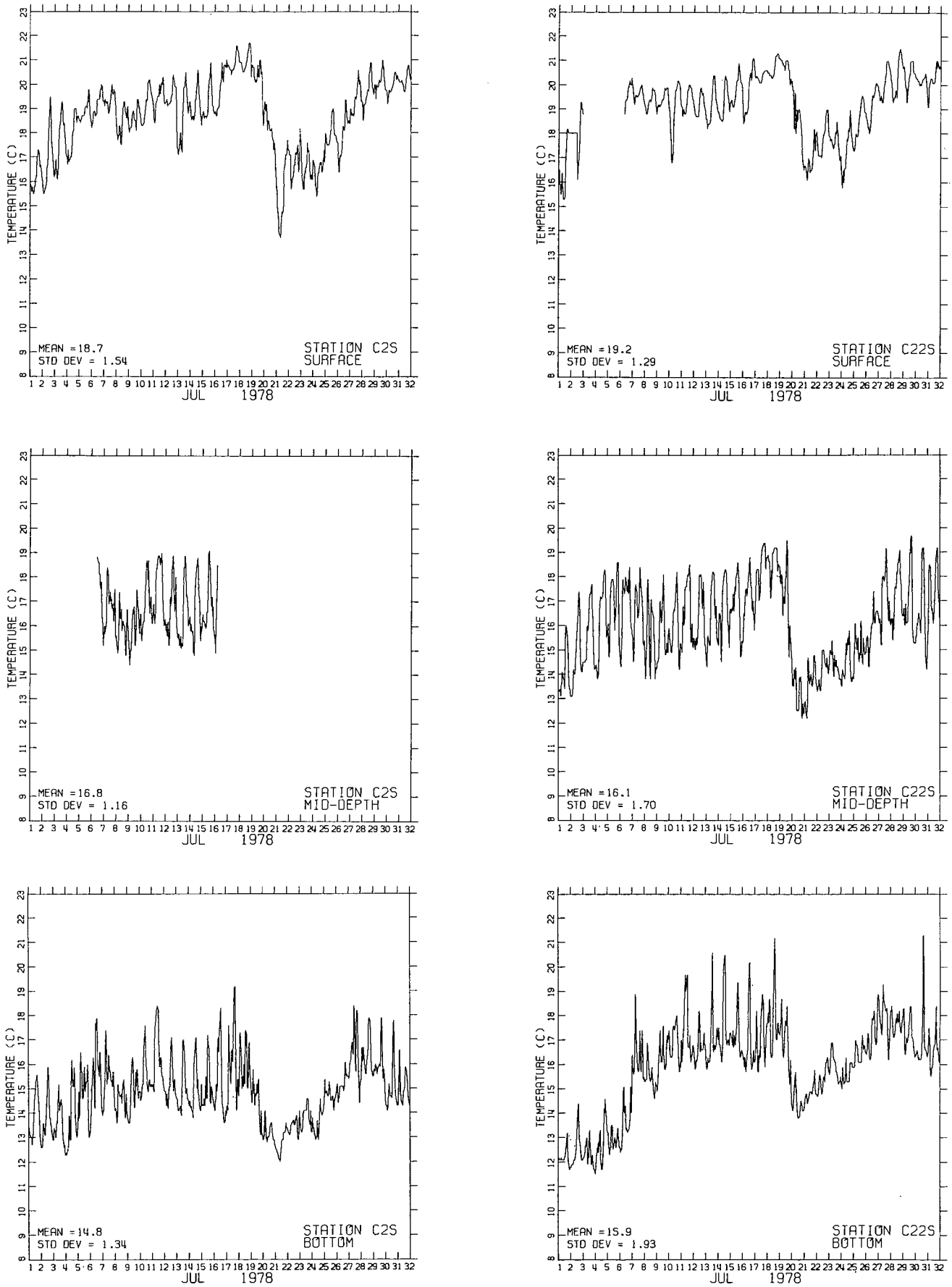



**Figure C-7. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, July, 1978**

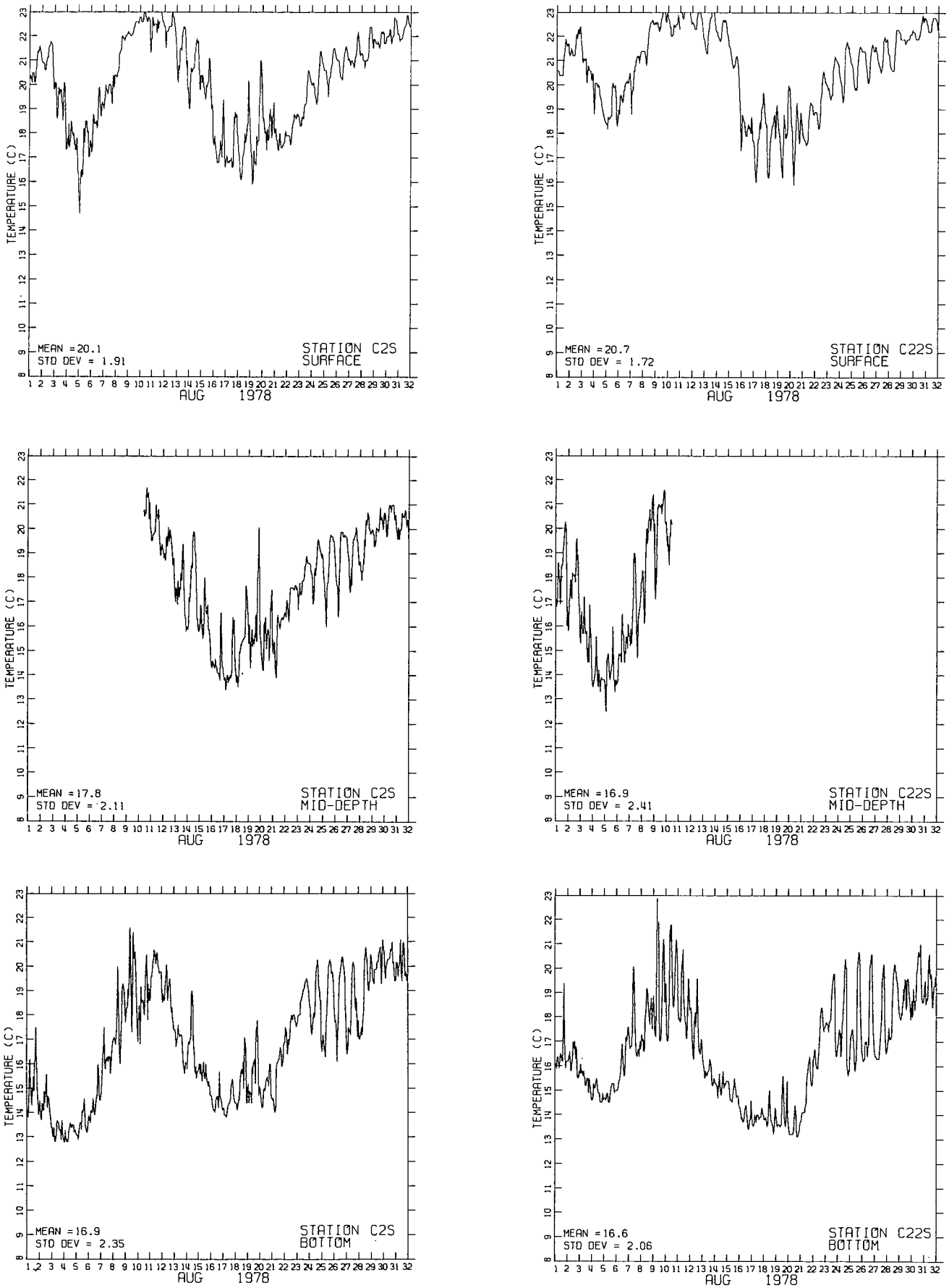
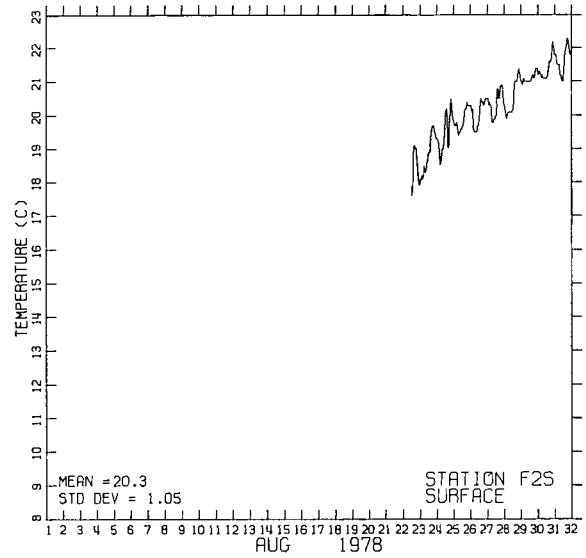
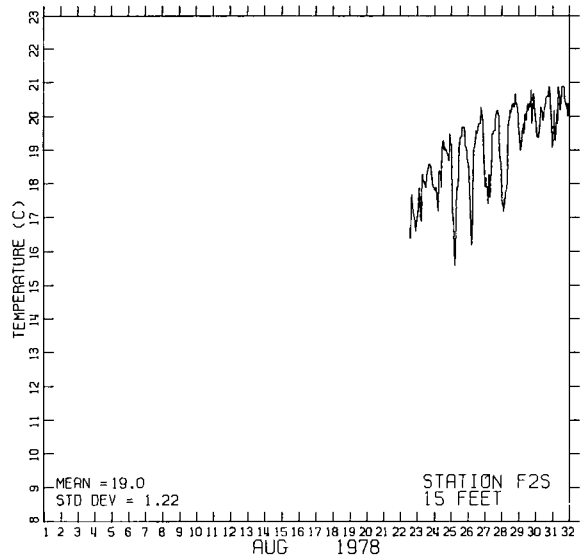
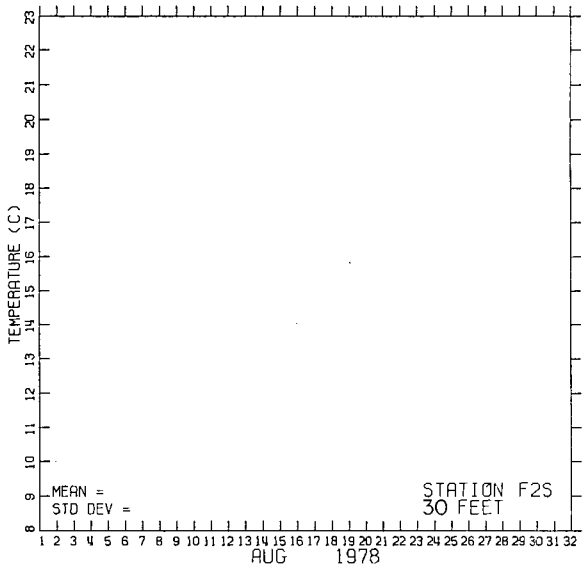



**Figure C-8. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, August, 1978**



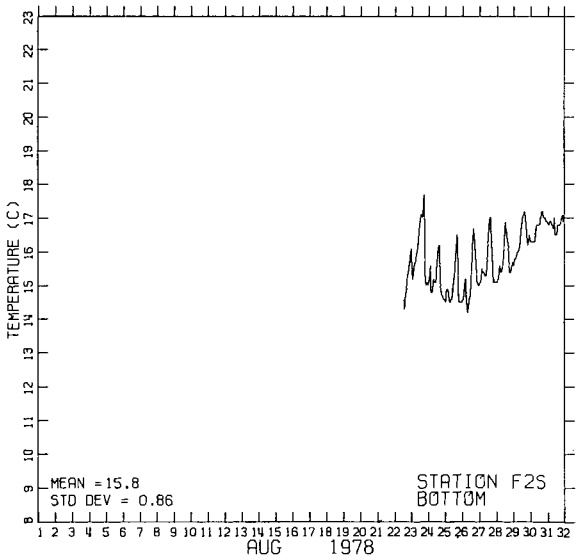




**Figure C-9. Continuous Temperature Graphs for the Surface, 15 and 30 Feet Depth, and Bottom of Stations F2S, August, 1978**

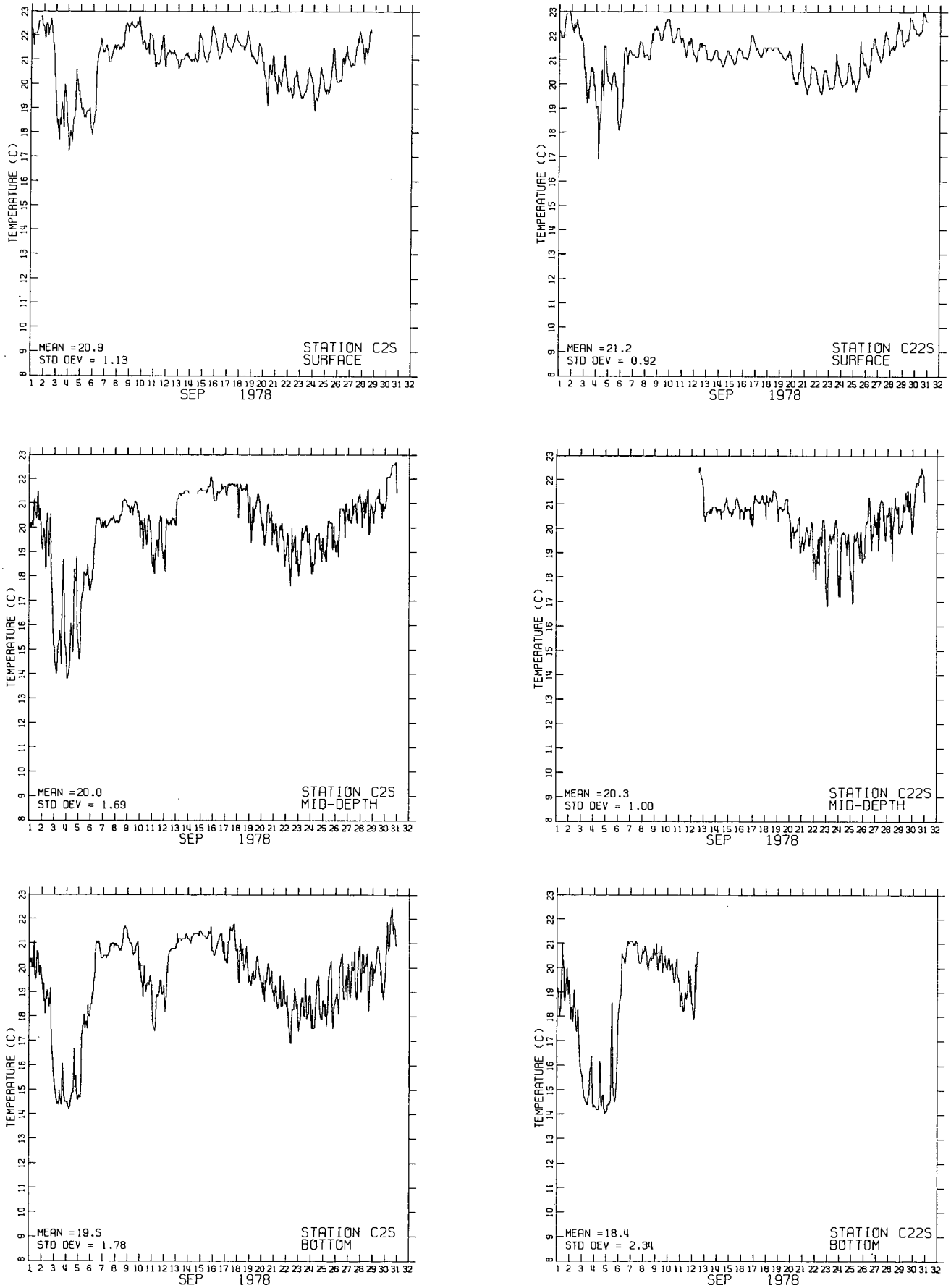
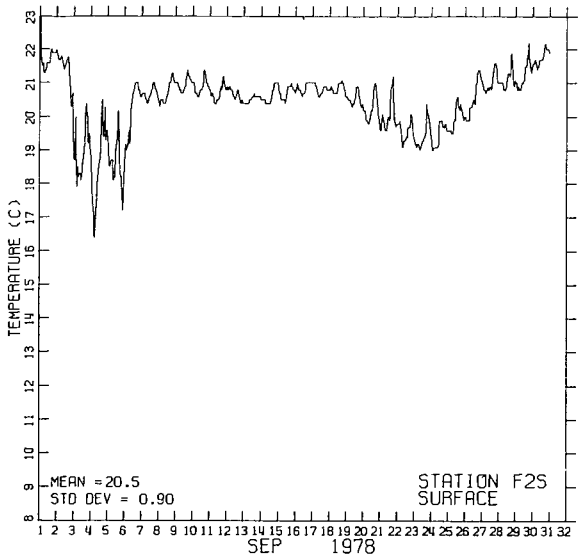
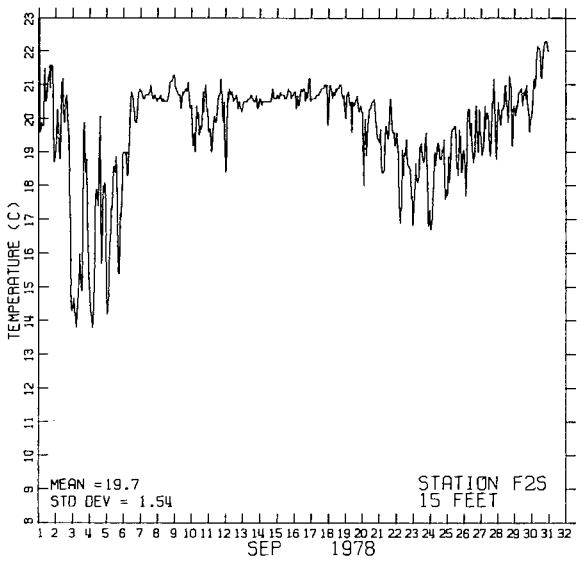
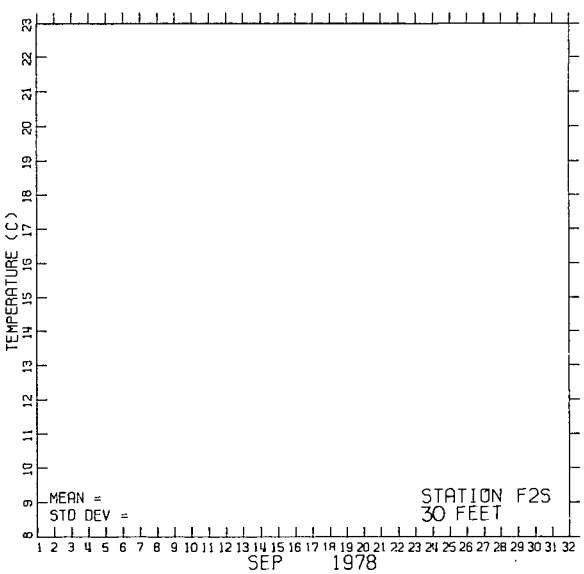



**Figure C-10. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, September, 1978**



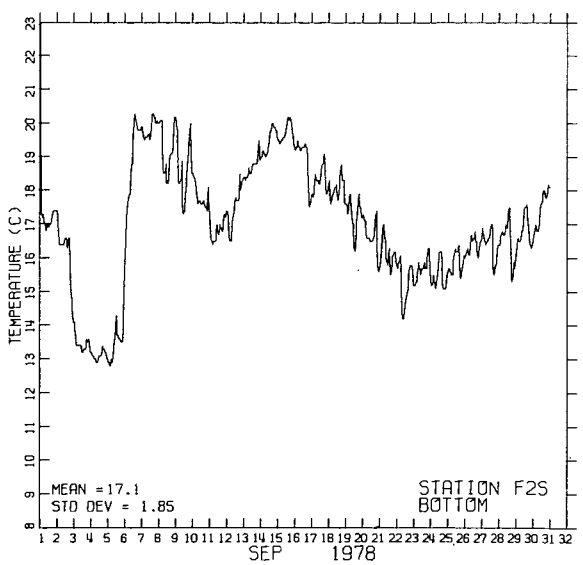




**Figure C-11. Continuous Temperature Graphs for the Surface, 15 and 30 Feet Depth, and Bottom of Station F2S, September, 1978**

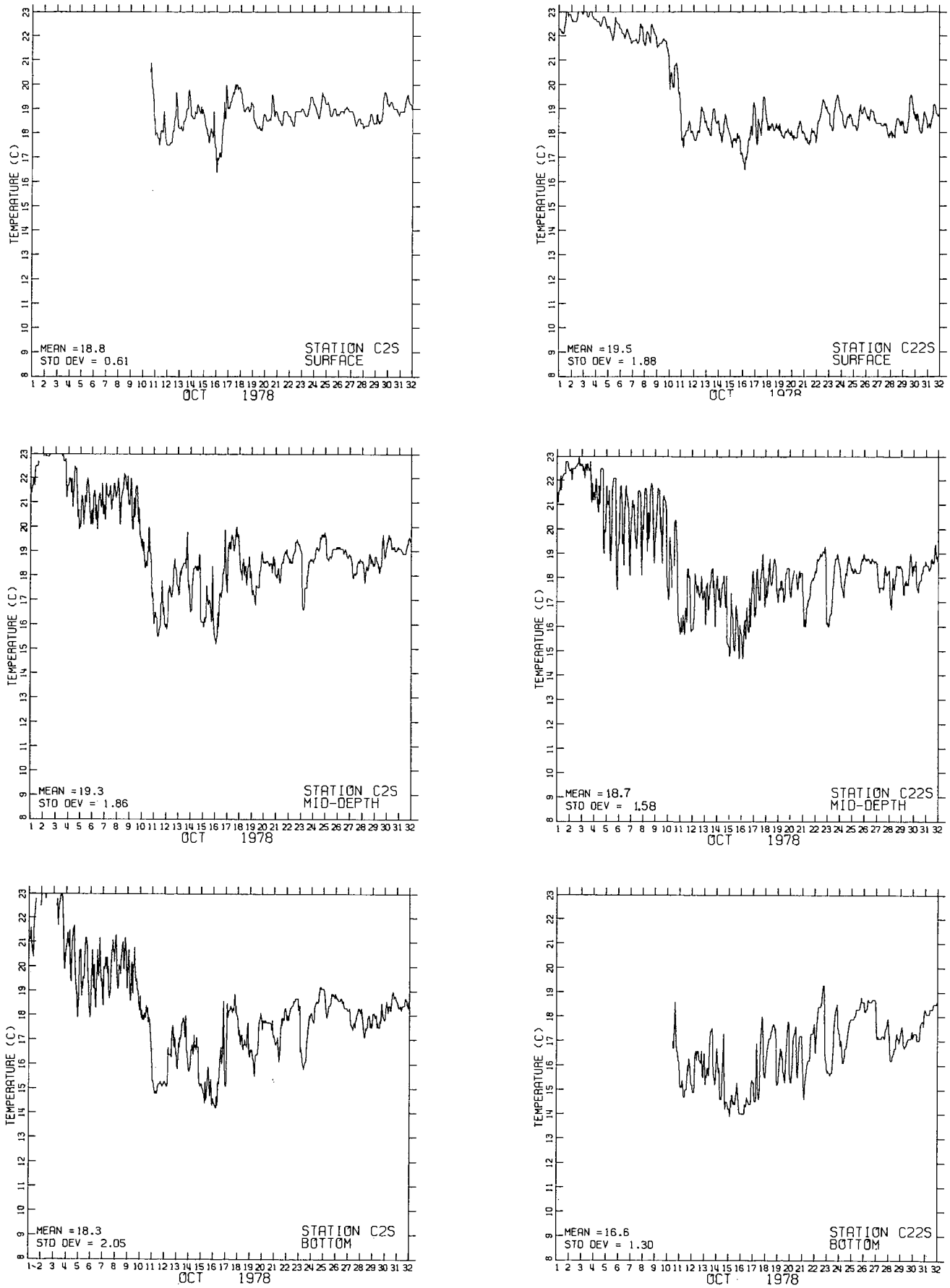
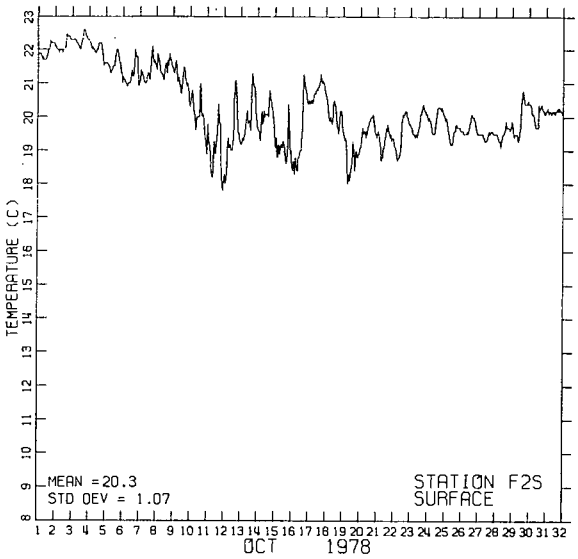
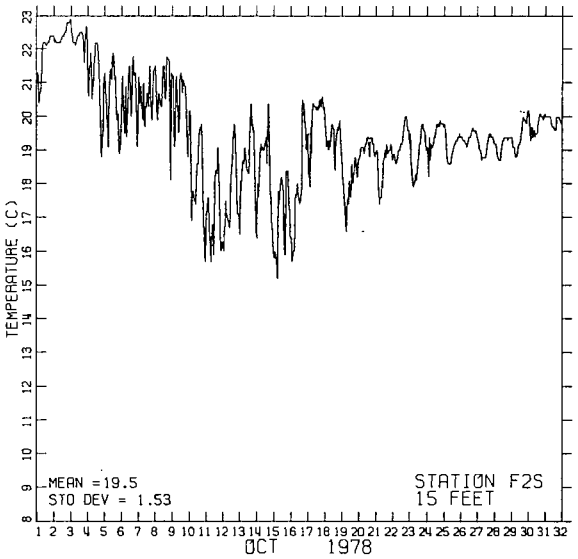
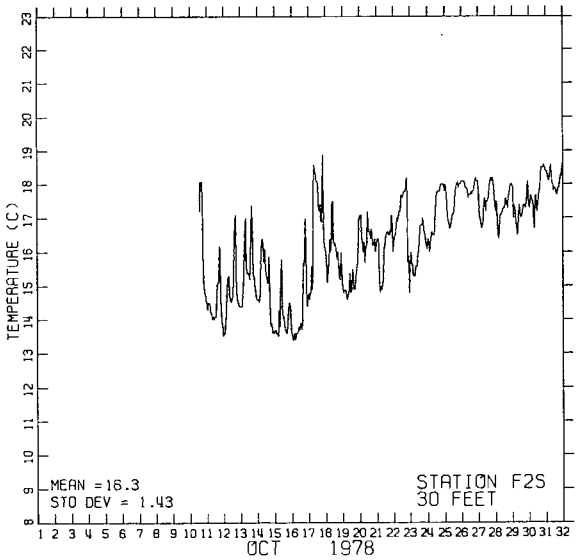



**Figure C-12. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, October, 1978**



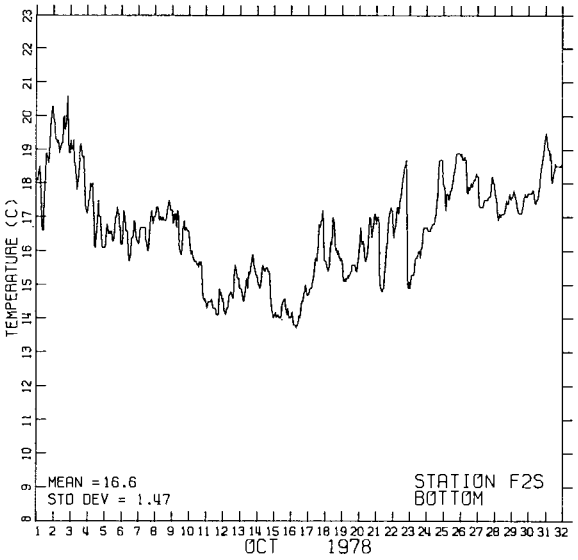




**Figure C-13. Continuous Temperature Graphs for the Surface, 15 and 30 Feet Depth, and Bottom of Station F2S, October, 1978**

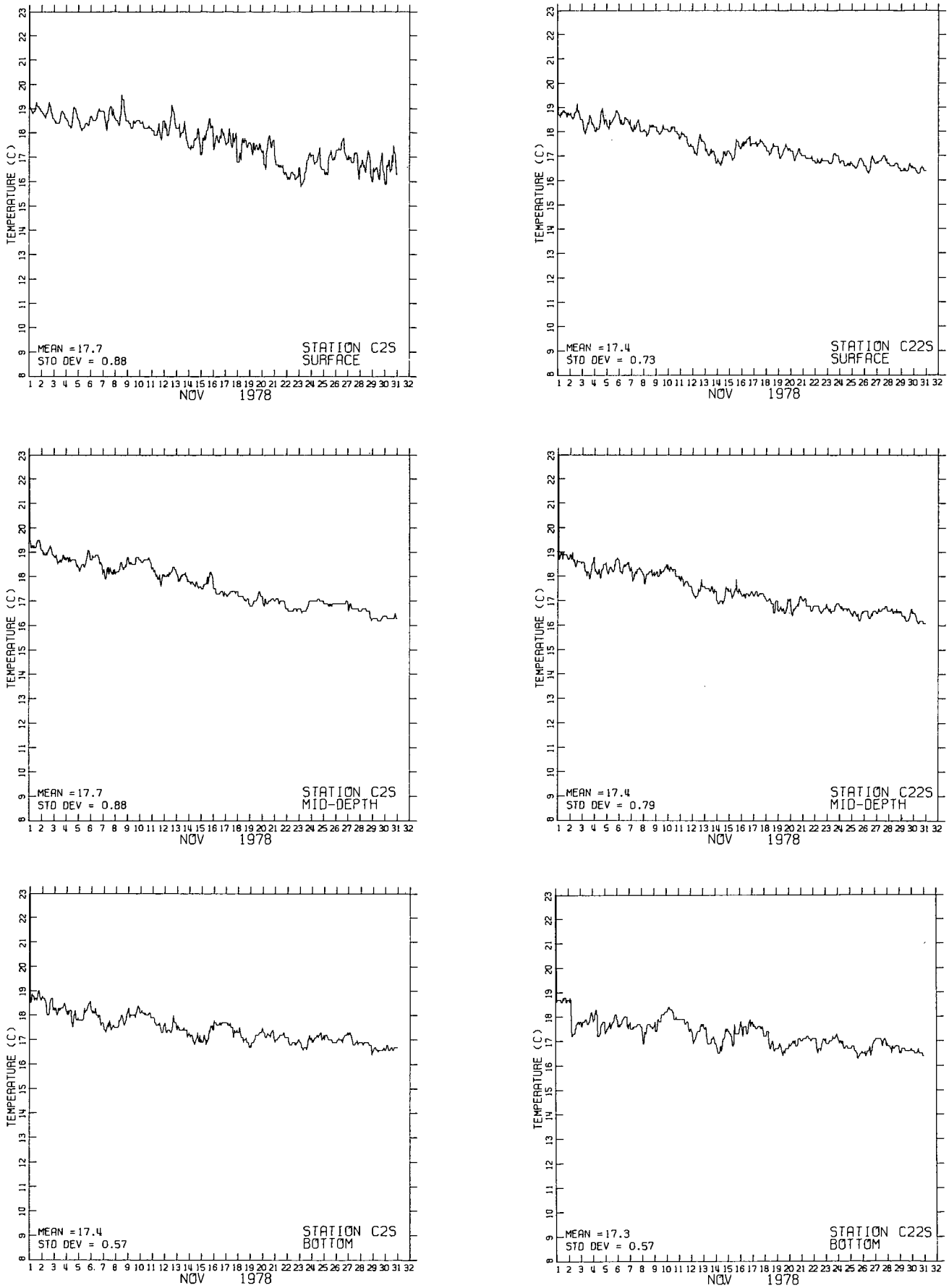
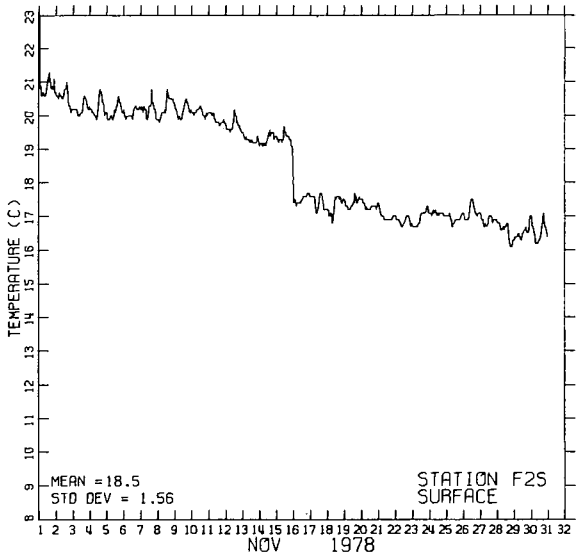
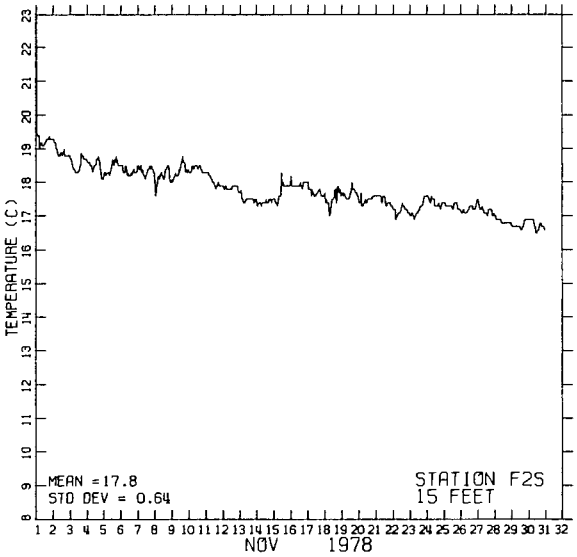
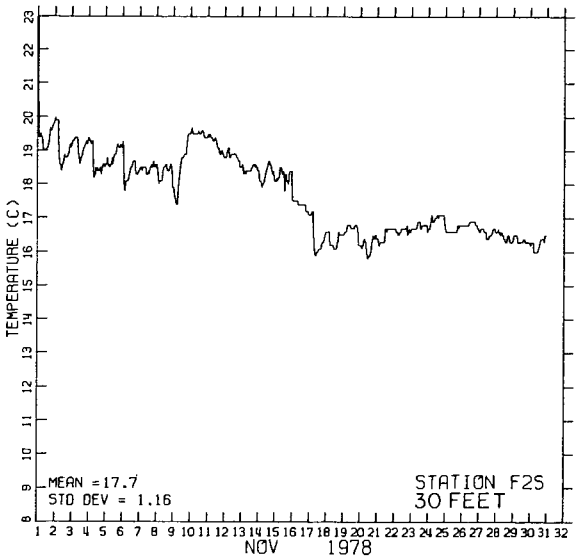



**Figure C-14. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, November, 1978**



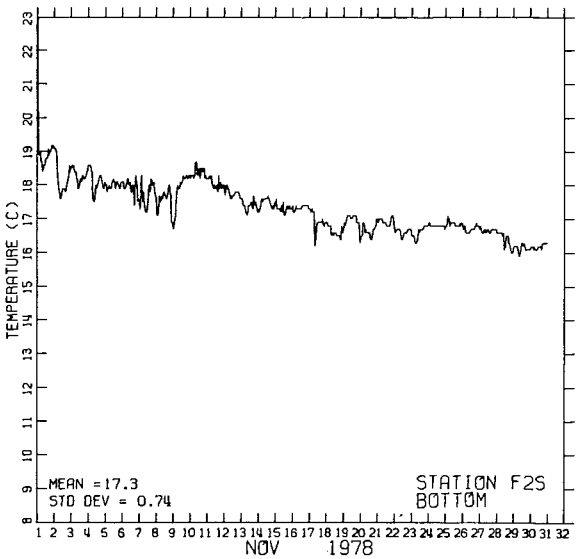




**Figure C-15. Continuous Temperature Graphs for the Surface, 15 and 30 Feet Depth, and Bottom of Station F2S, November, 1978**

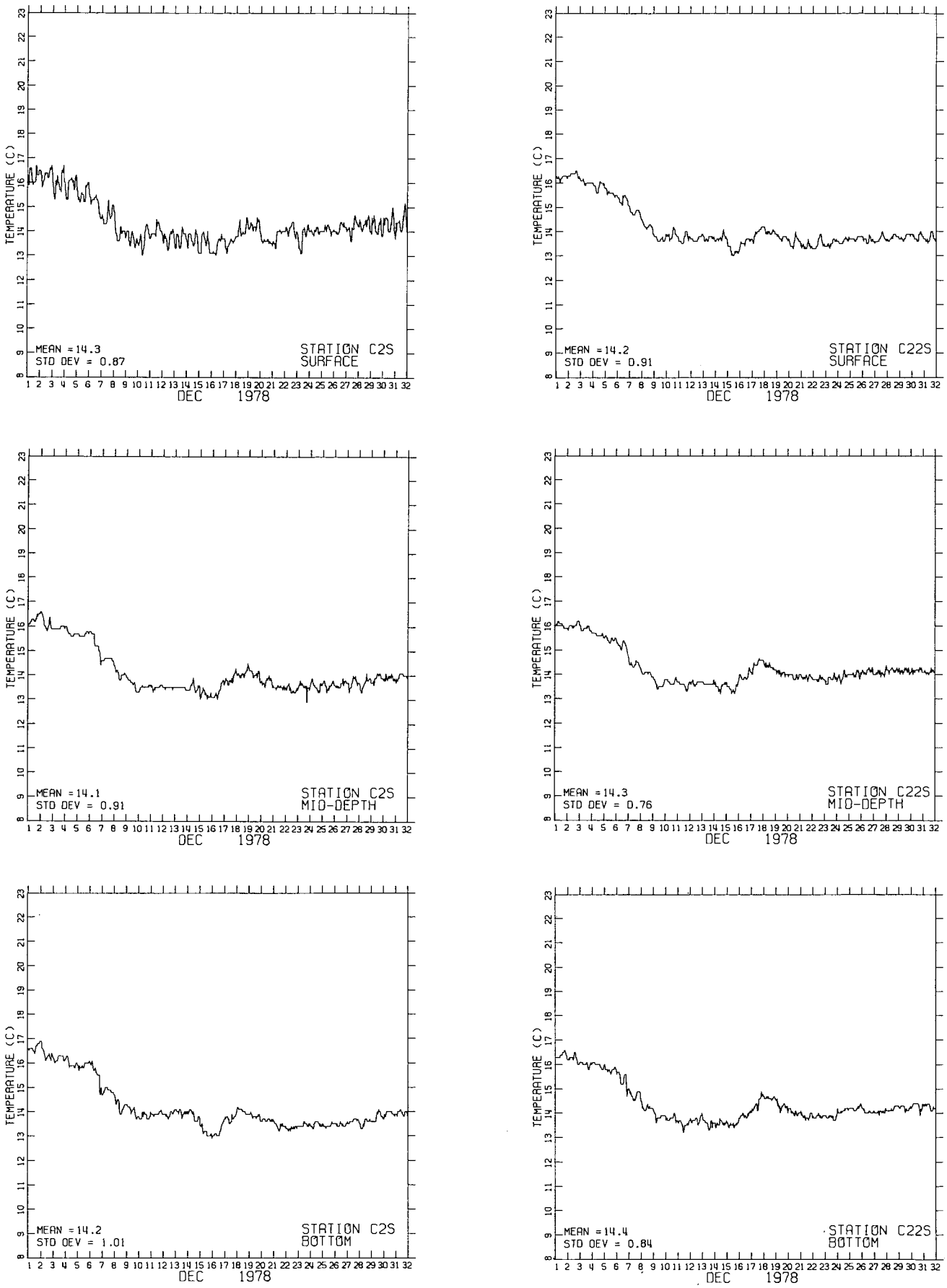
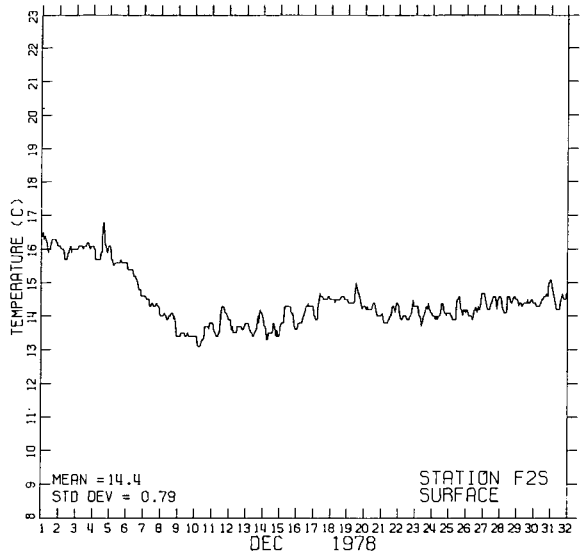
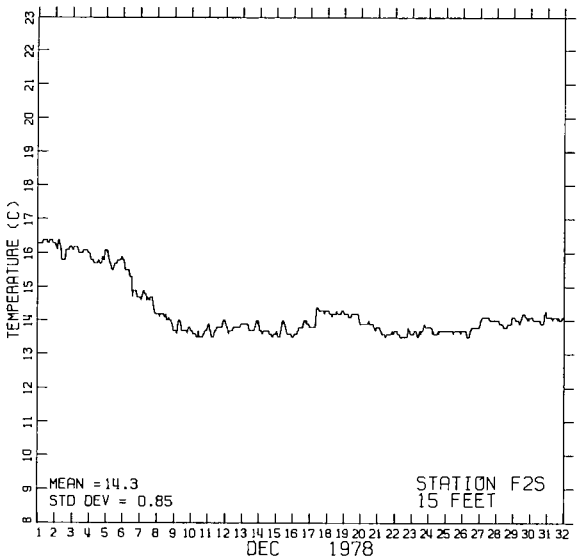
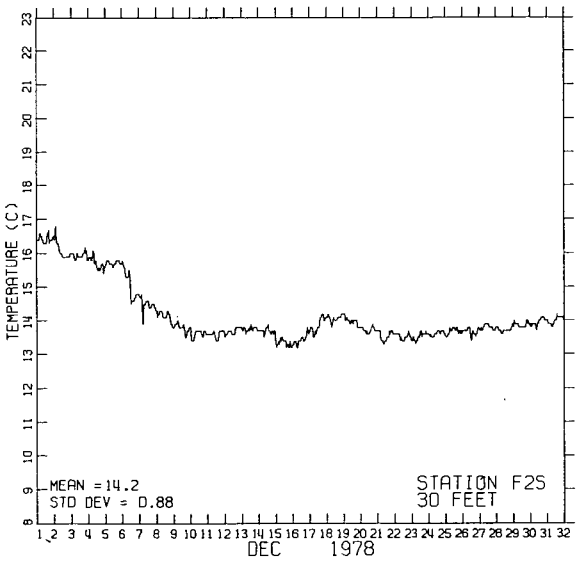



**Figure C-16. Continuous Temperature Graphs for the Surface, Mid-depth, and Bottom of Stations C2S and C22S, December, 1978**



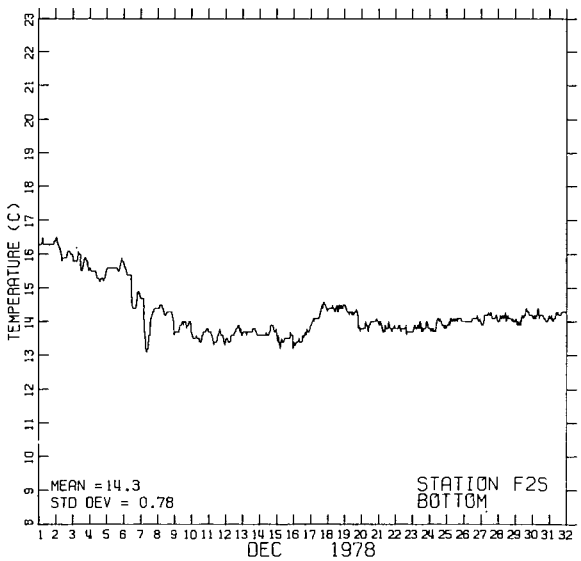




**Figure C-17. Continuous Temperature Graphs for the Surface, 15 and 30 Feet Depth, and Bottom of Station F2S, December, 1978**

# APPENDIX D. INTAKE, DISCHARGE, AND OCEAN AMBIENT TEMPERATURE COMPARISONS

# Comparison Graphs of Intake, Discharge, and Ambient Surface Temperatures

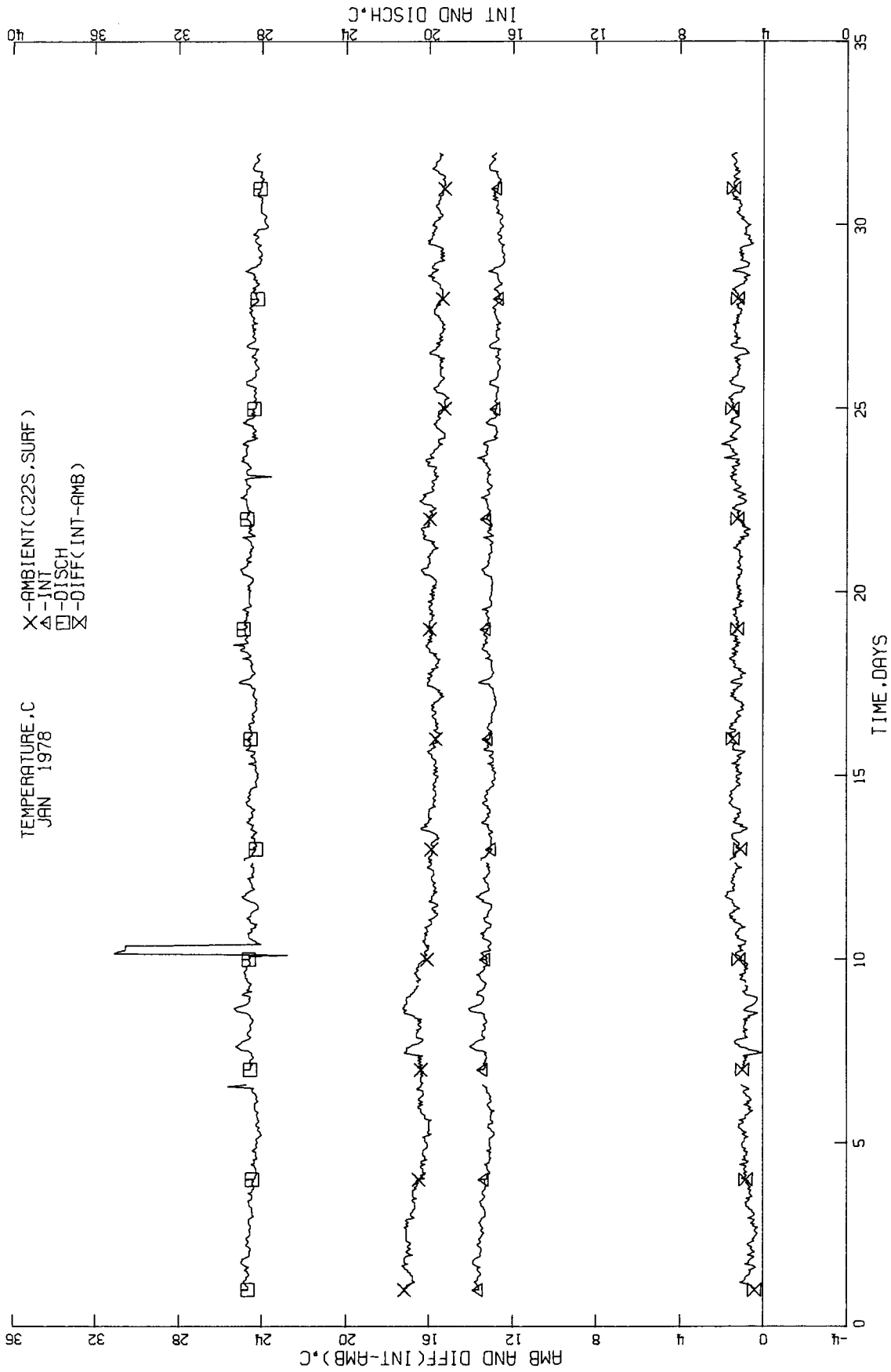



**Figure D-1. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, January, 1978**

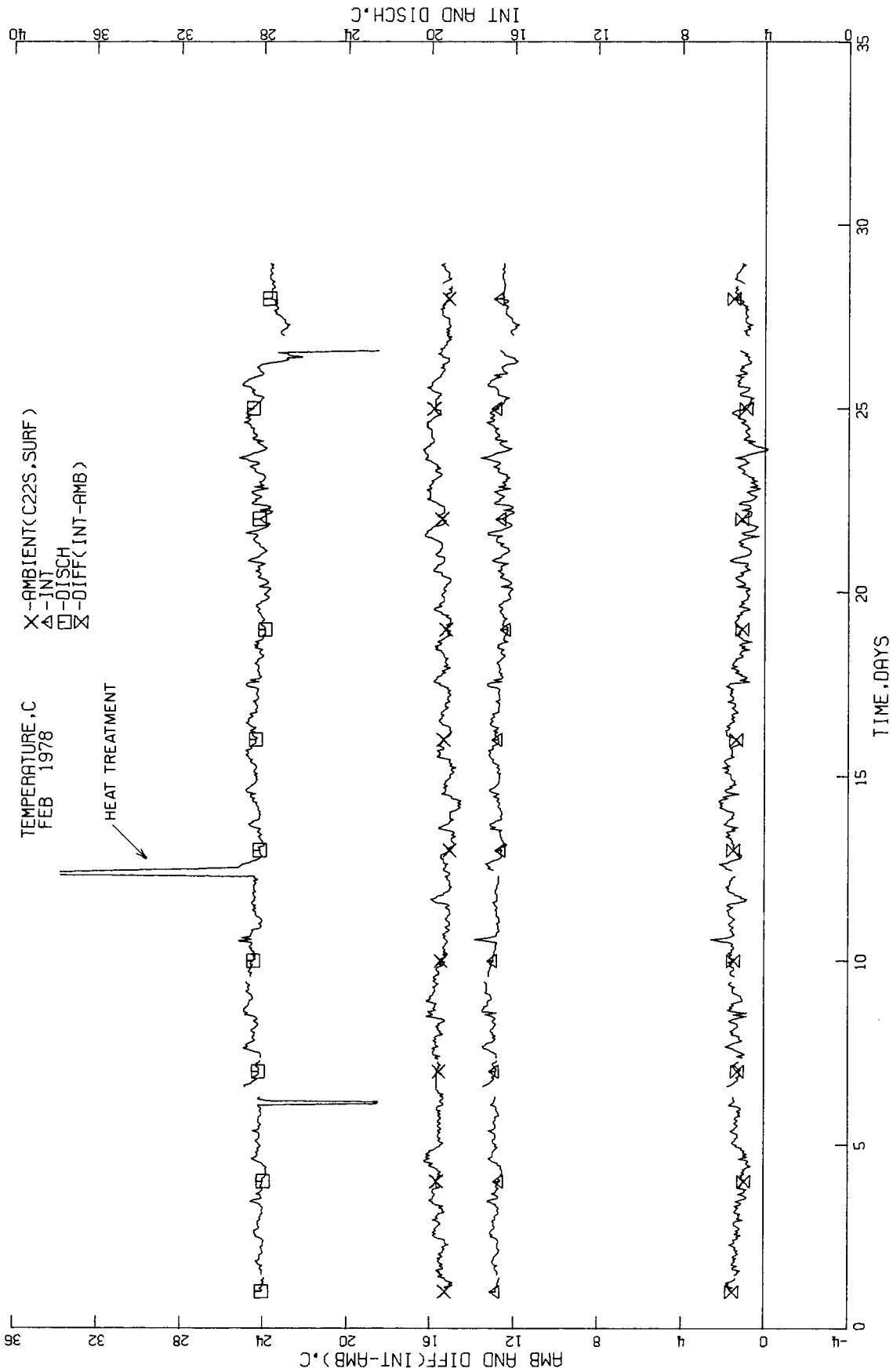



**Figure D-2. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, February, 1978**

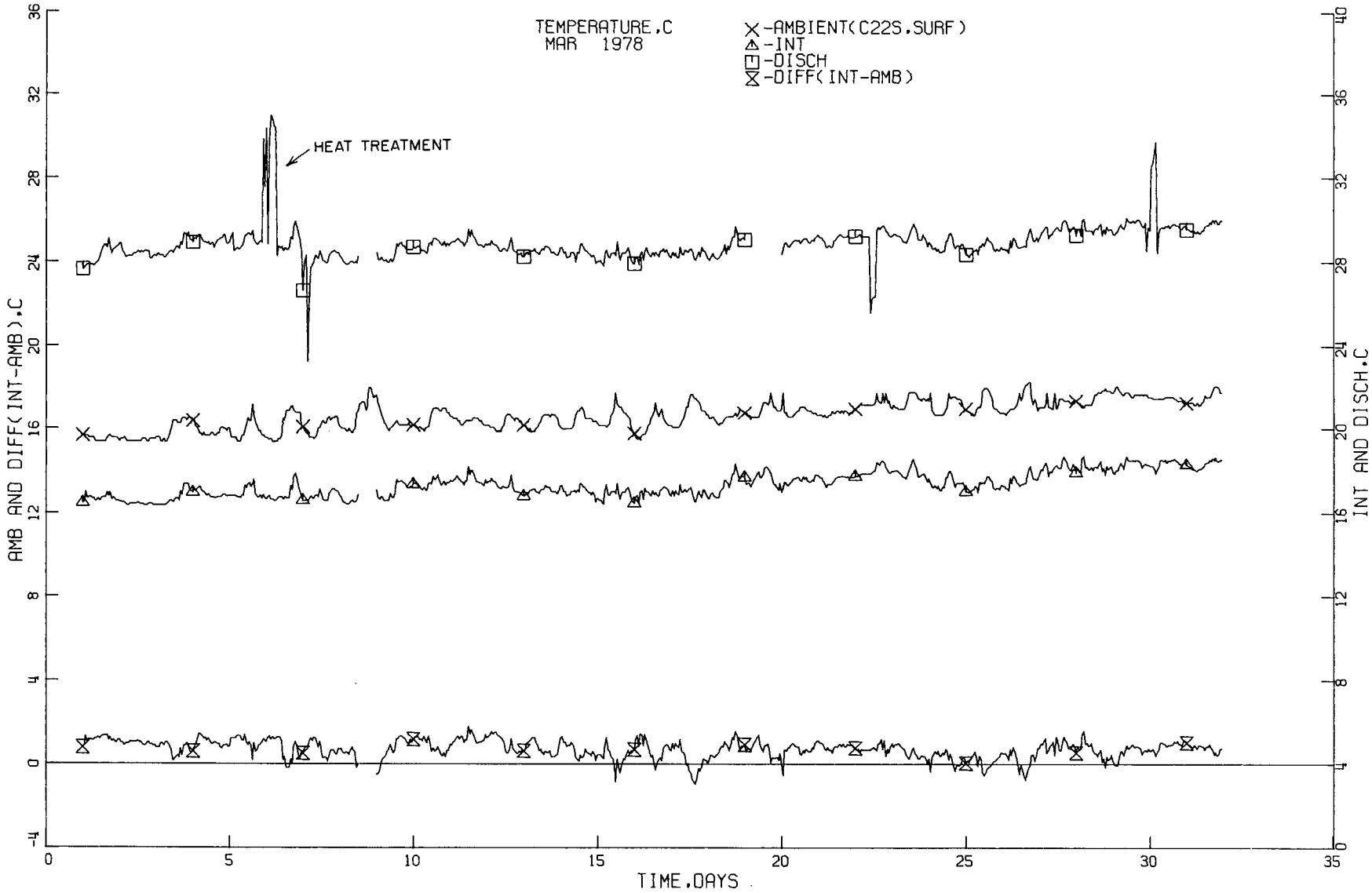



**Figure D-3. Comparison of Intake, Discharge and Ocean Ambient Temperatures, March, 1978**

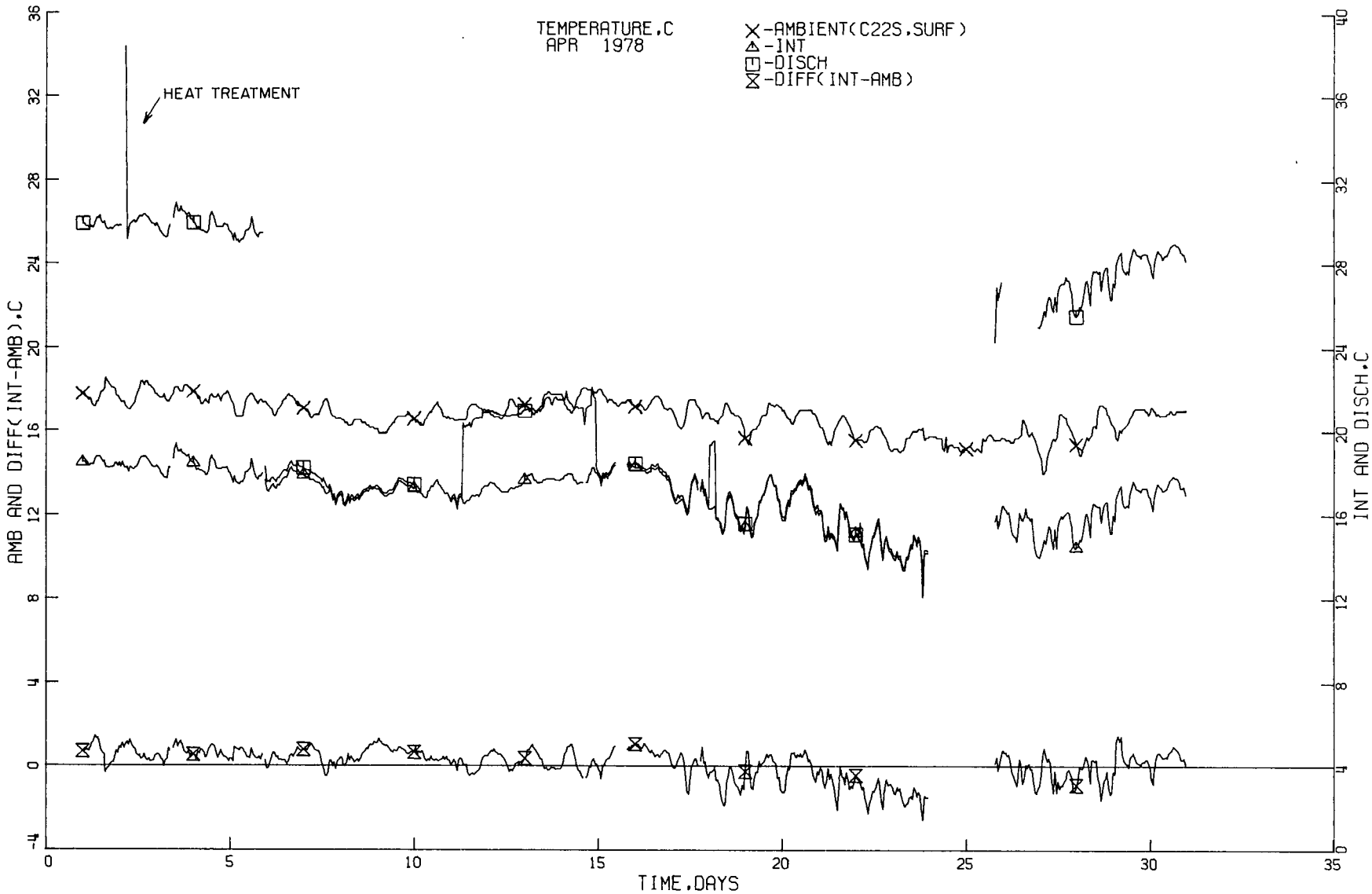



**Figure D-4. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, April, 1978**

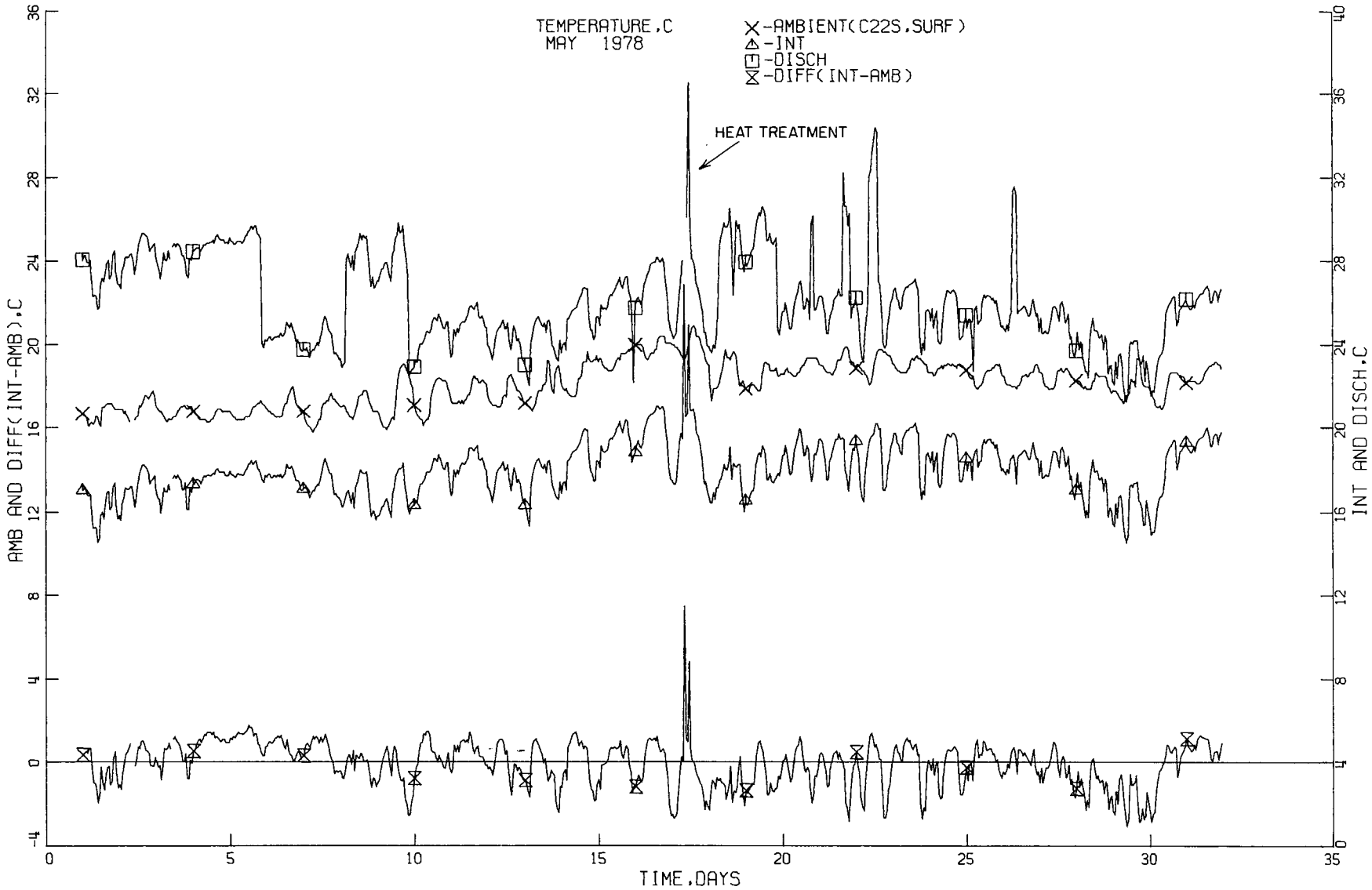



**Figure D-5. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, May, 1978**

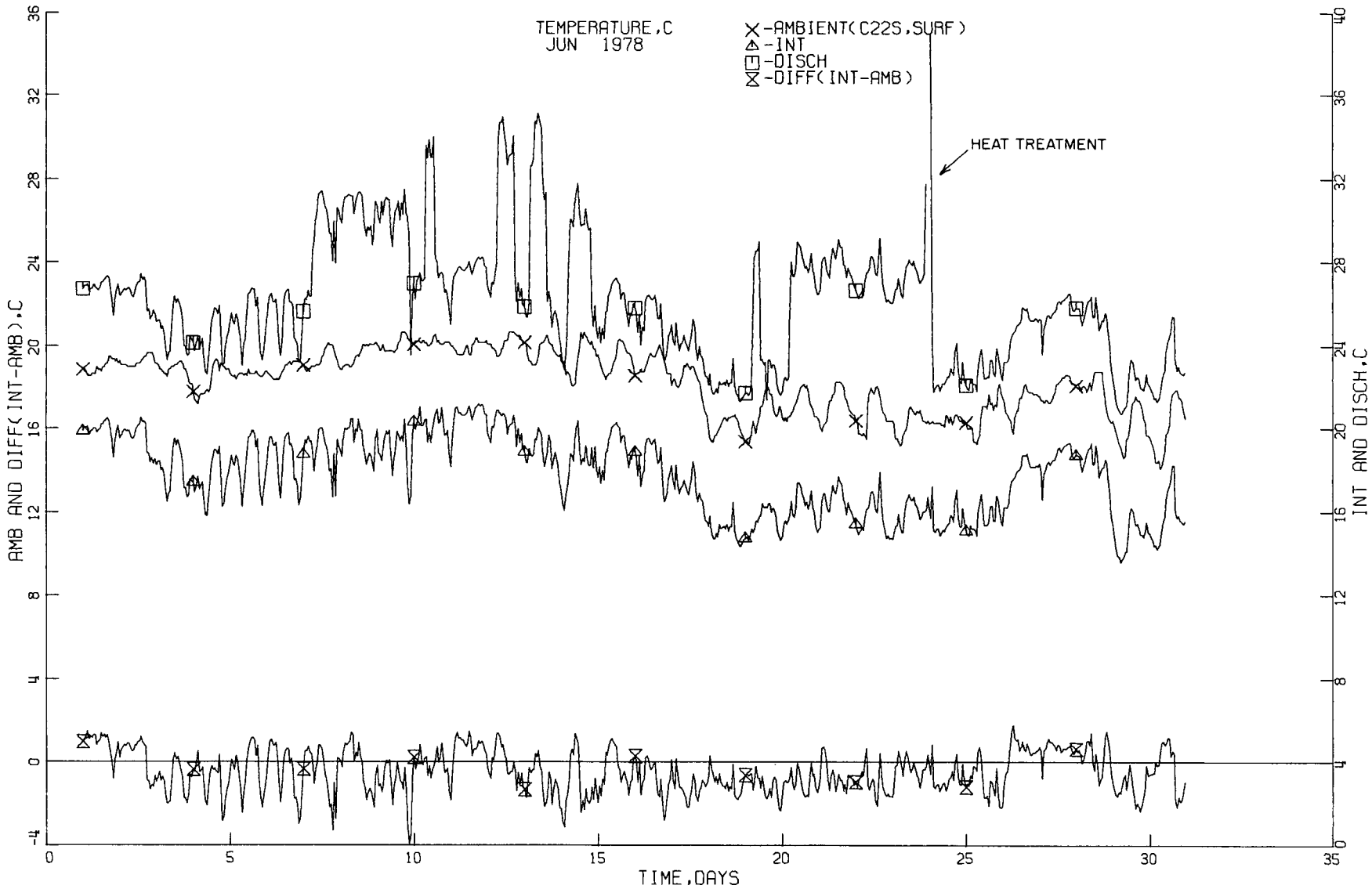



**Figure D-6. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, June, 1978**

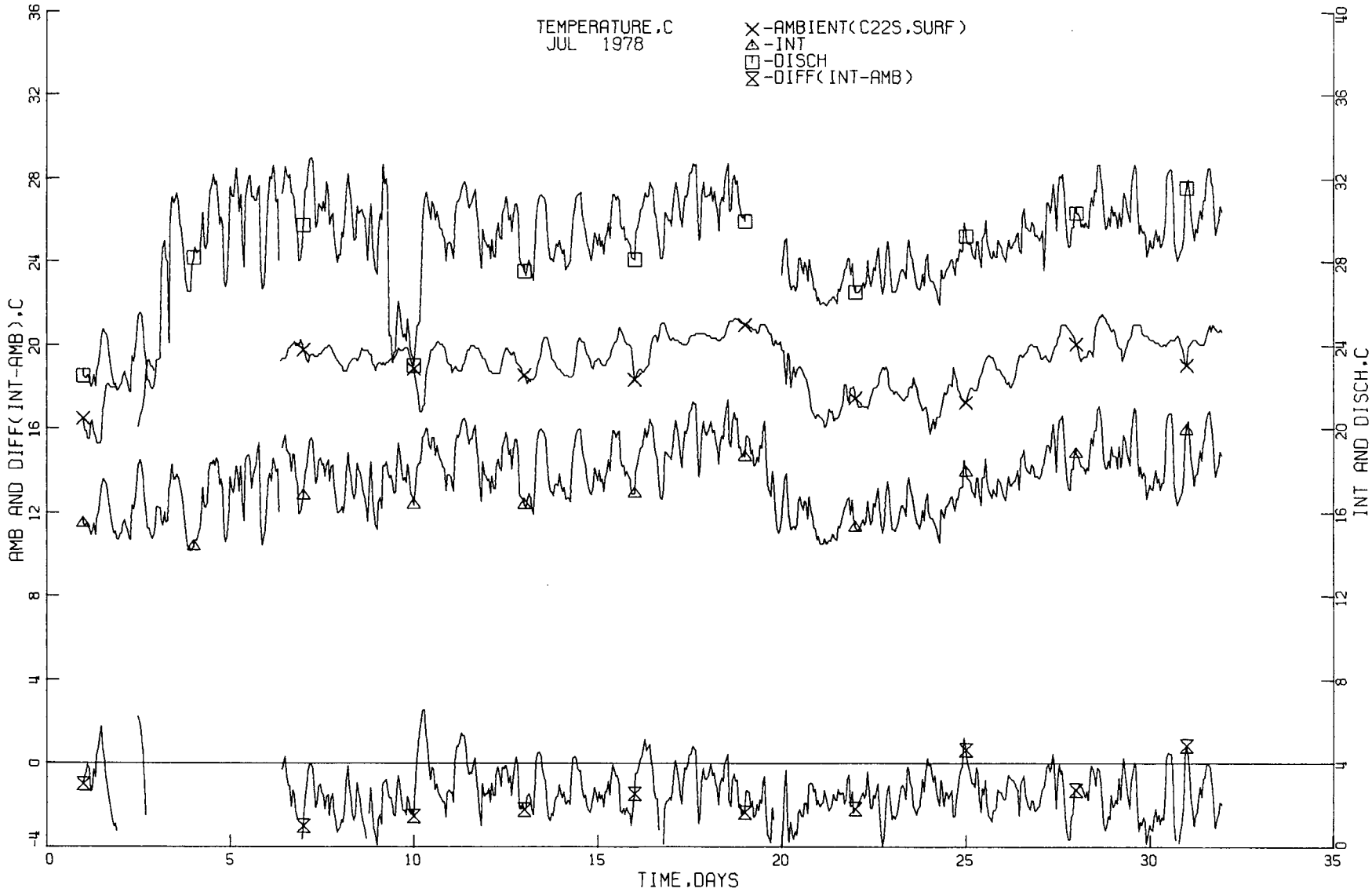



**Figure D-7. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, July, 1978**

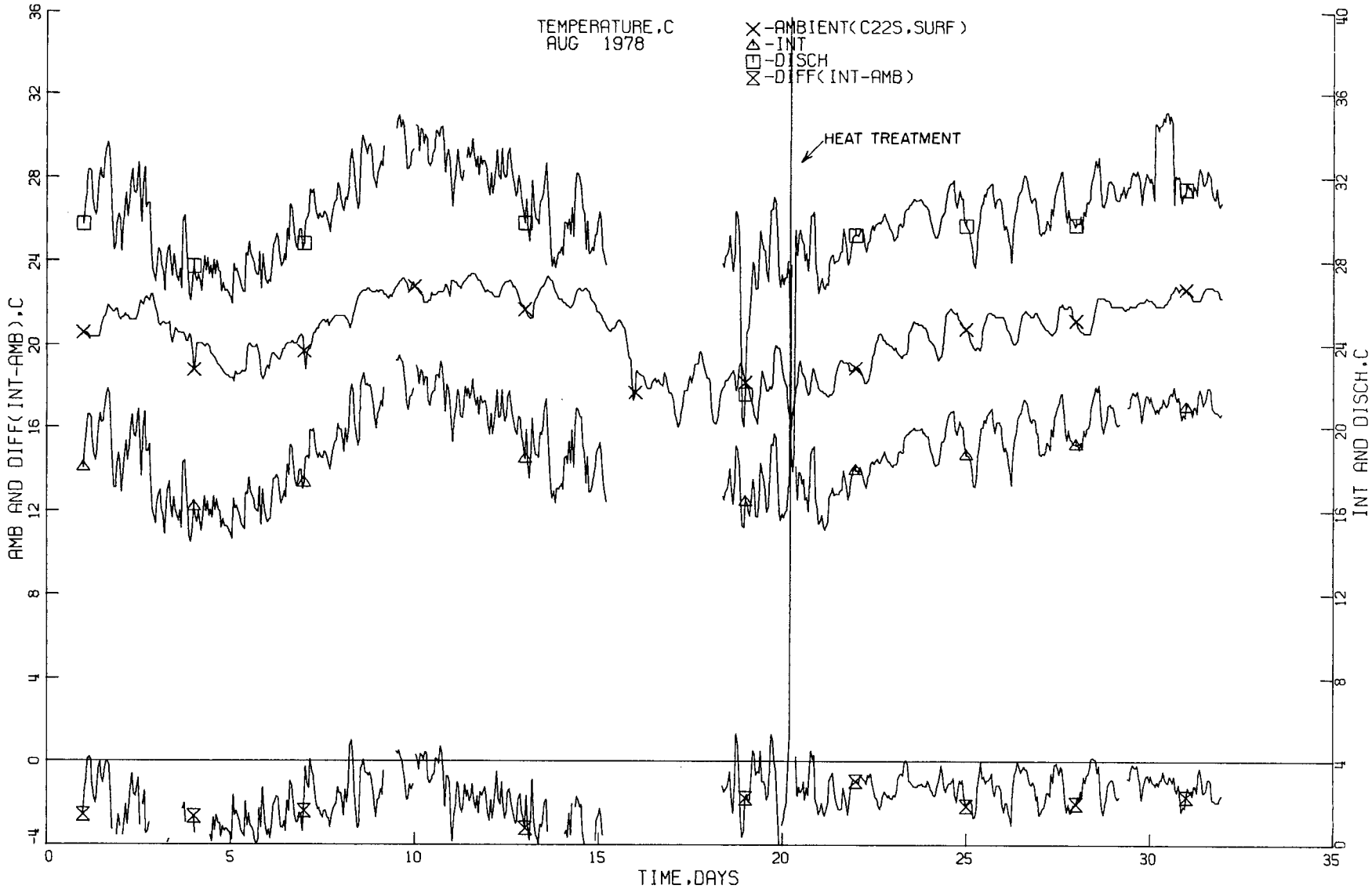



**Figure D-8. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, August, 1978**

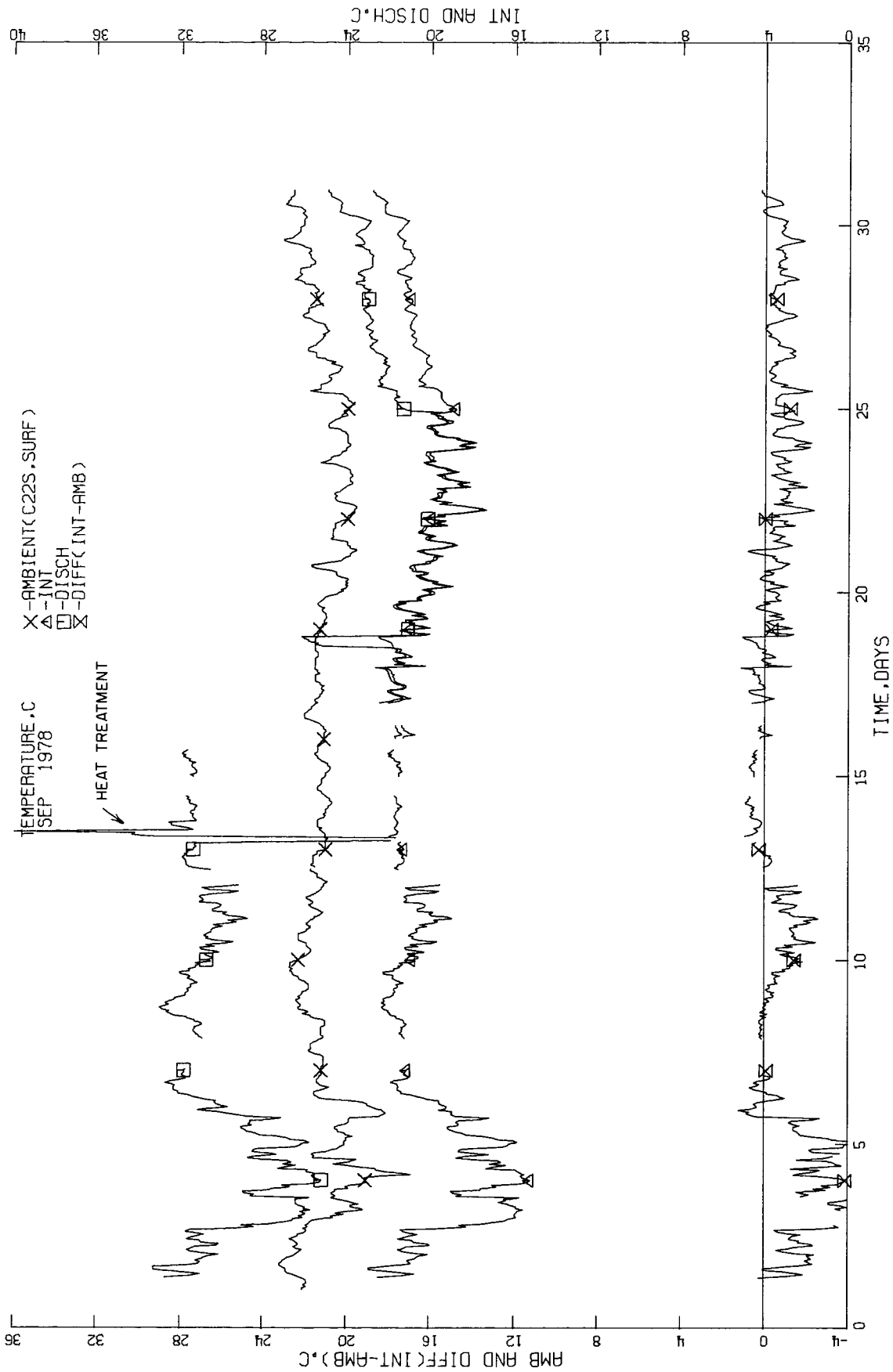



**Figure D-9. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, September, 1978**

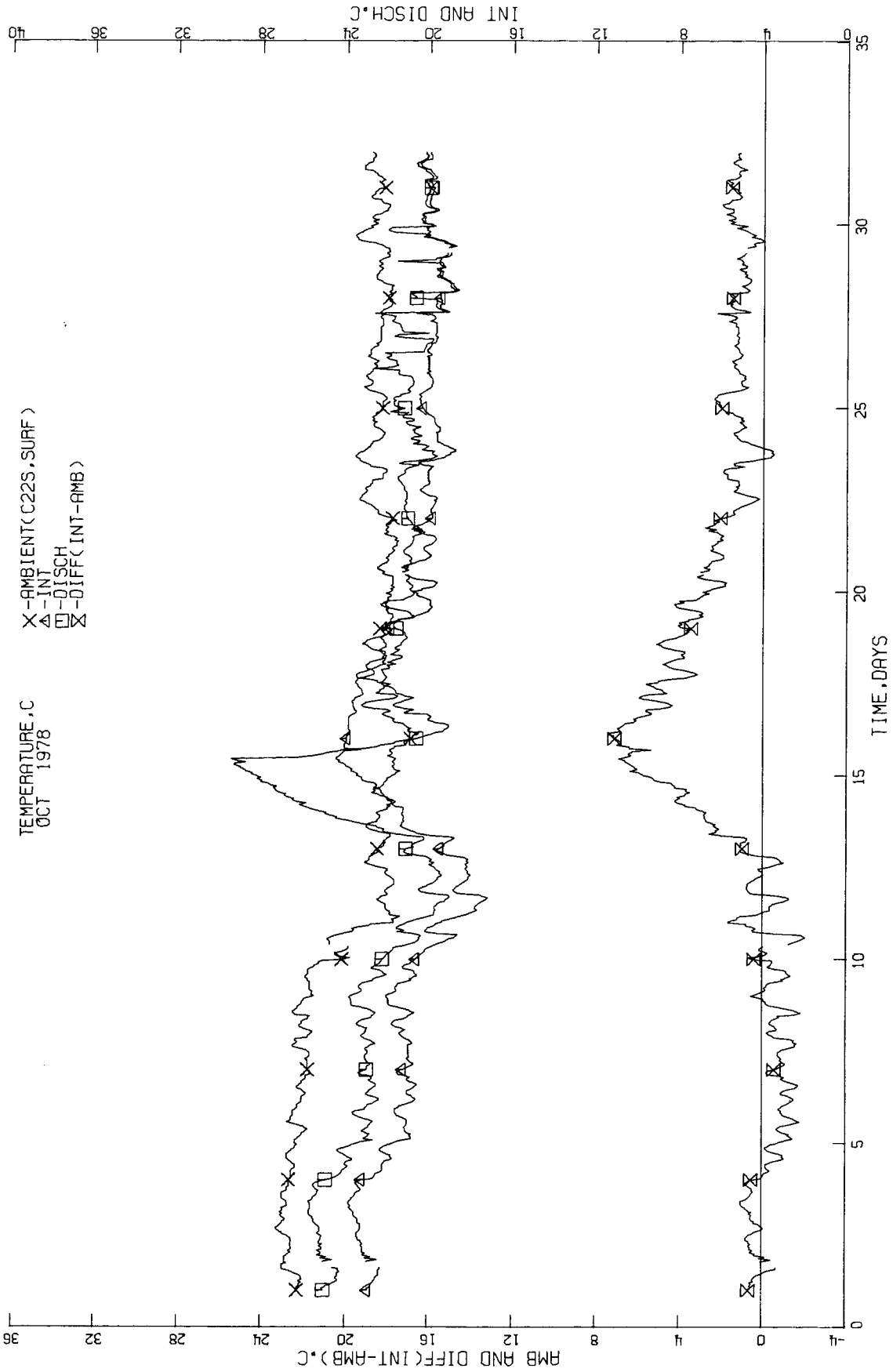



**Figure. D-10. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, October, 1978**

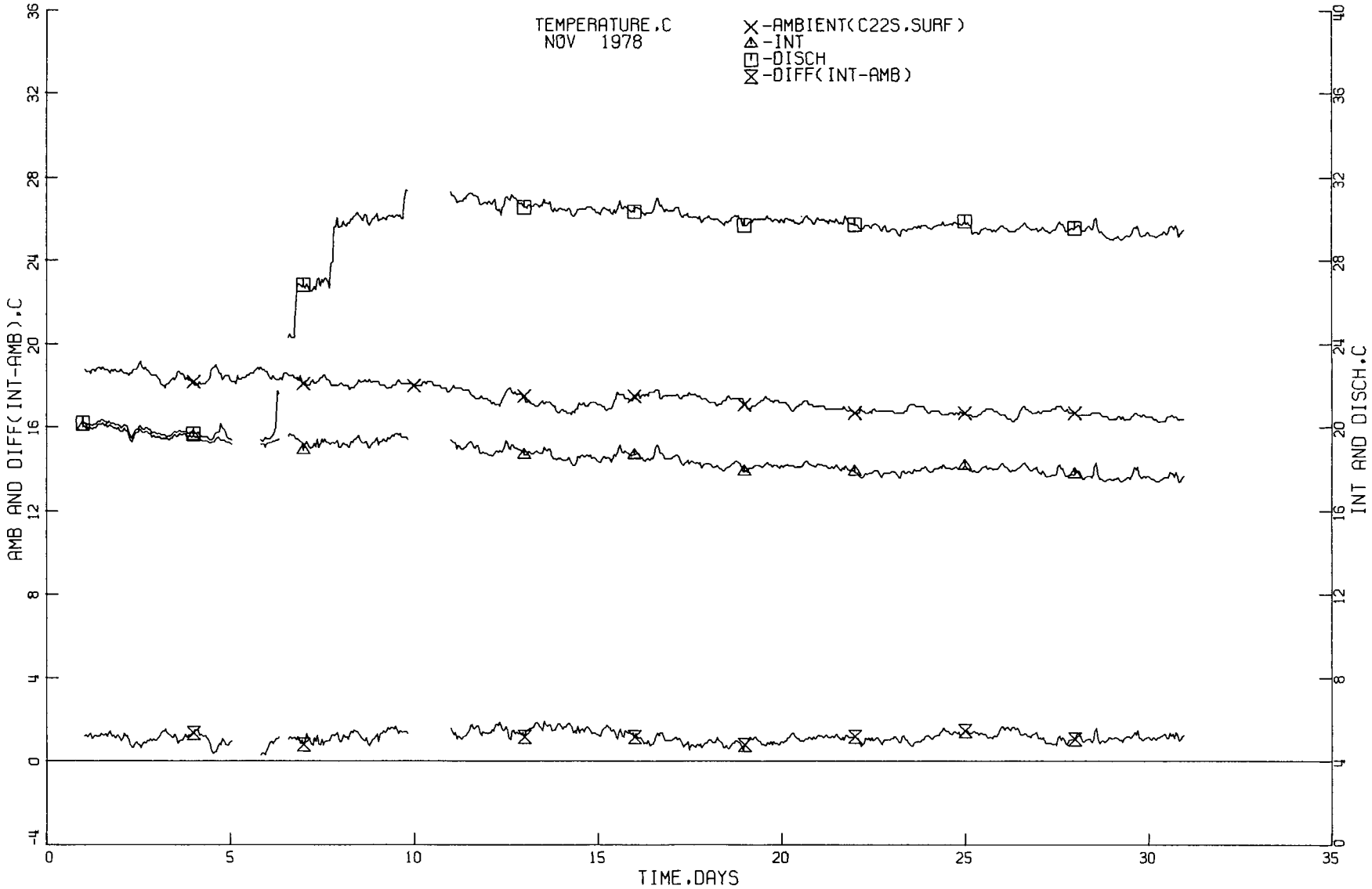



**Figure D-11. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, November, 1978**

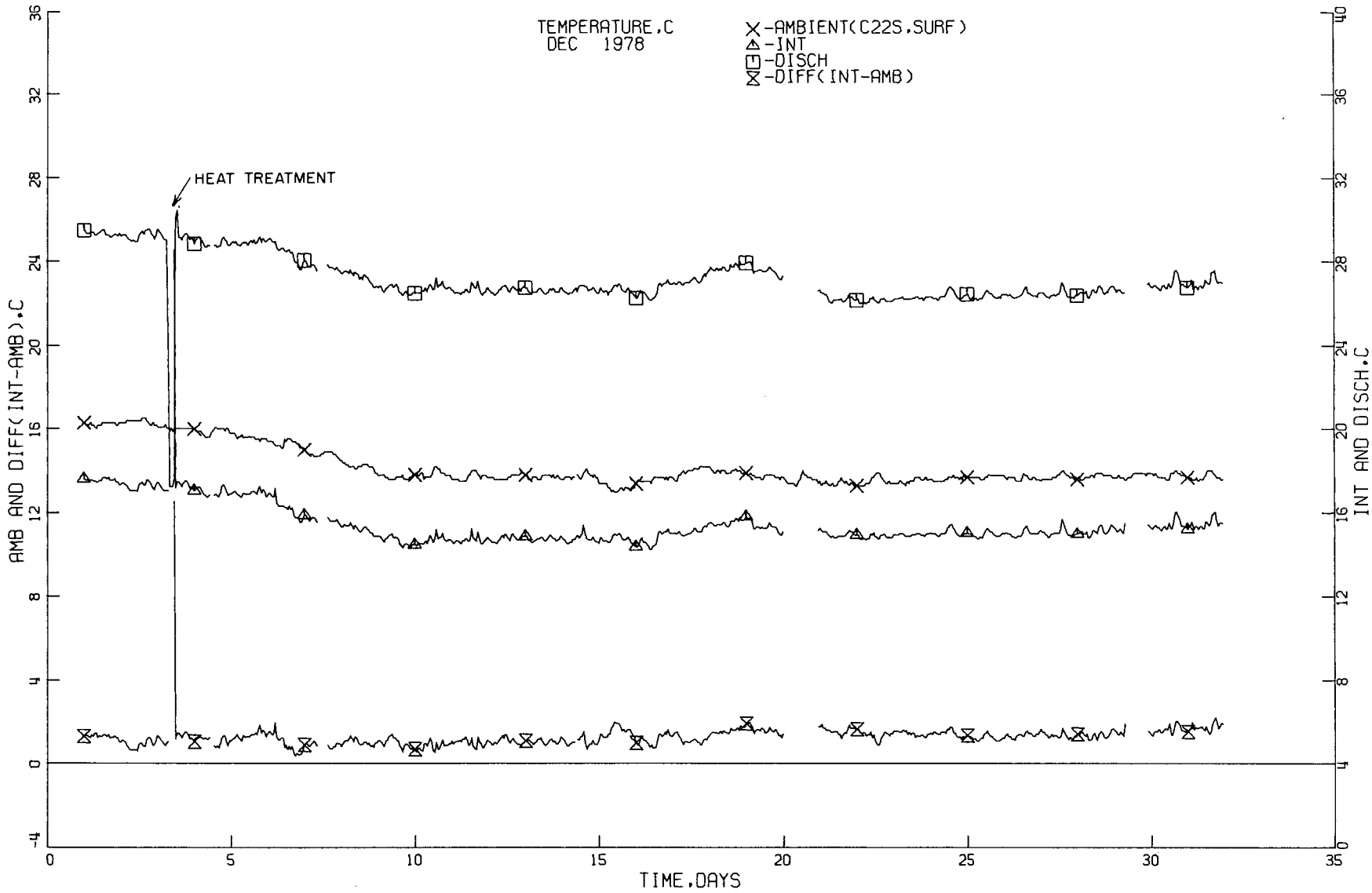



**Figure D-12. Comparison of Intake, Discharge, and Ocean Ambient Temperatures, December, 1978**

# APPENDIX E. TURBIDITY DATA

# Light Transmittance Profiles

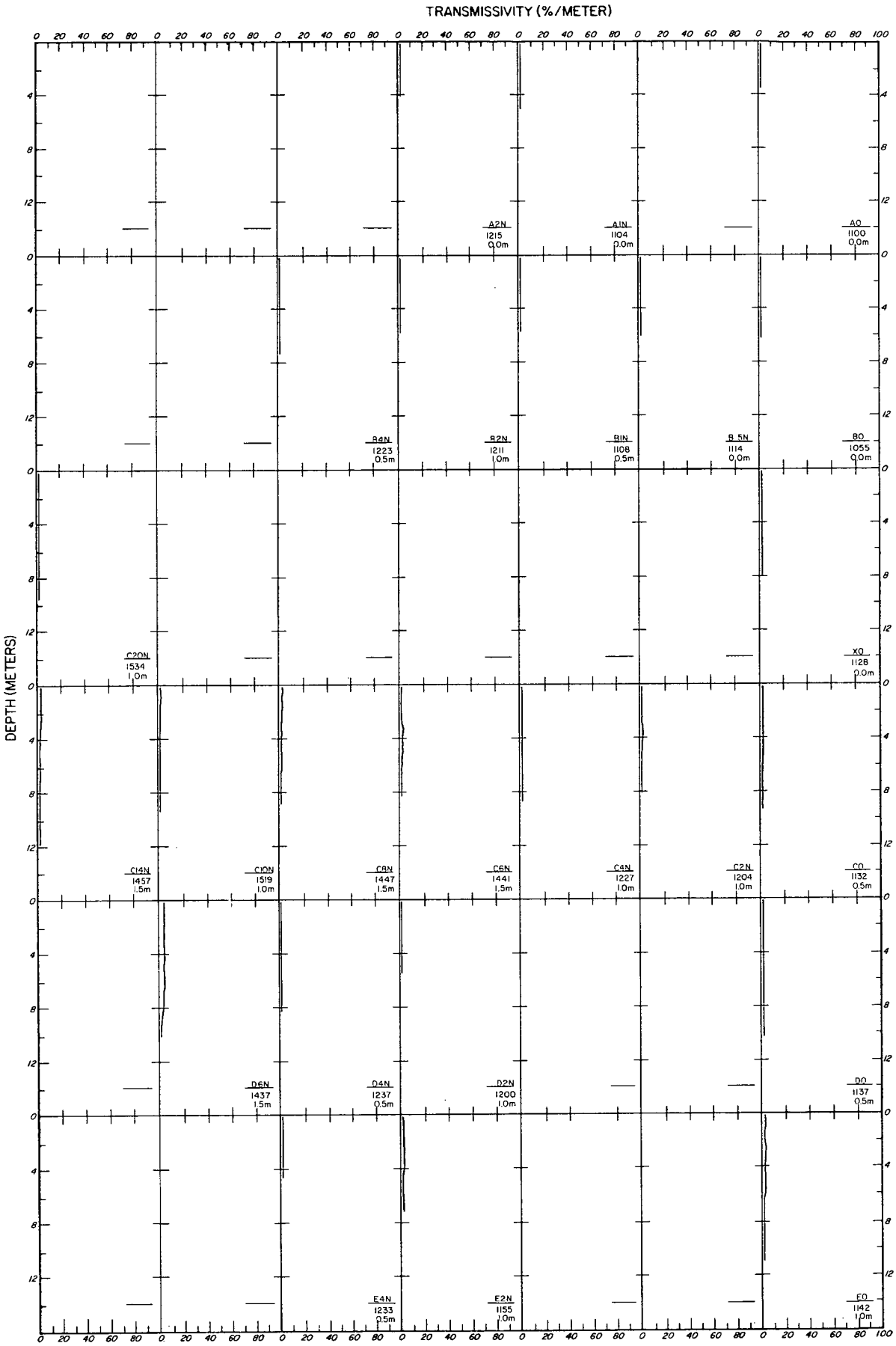



**Figure E-1. Light Transmittance Profiles for January 18, 1978**

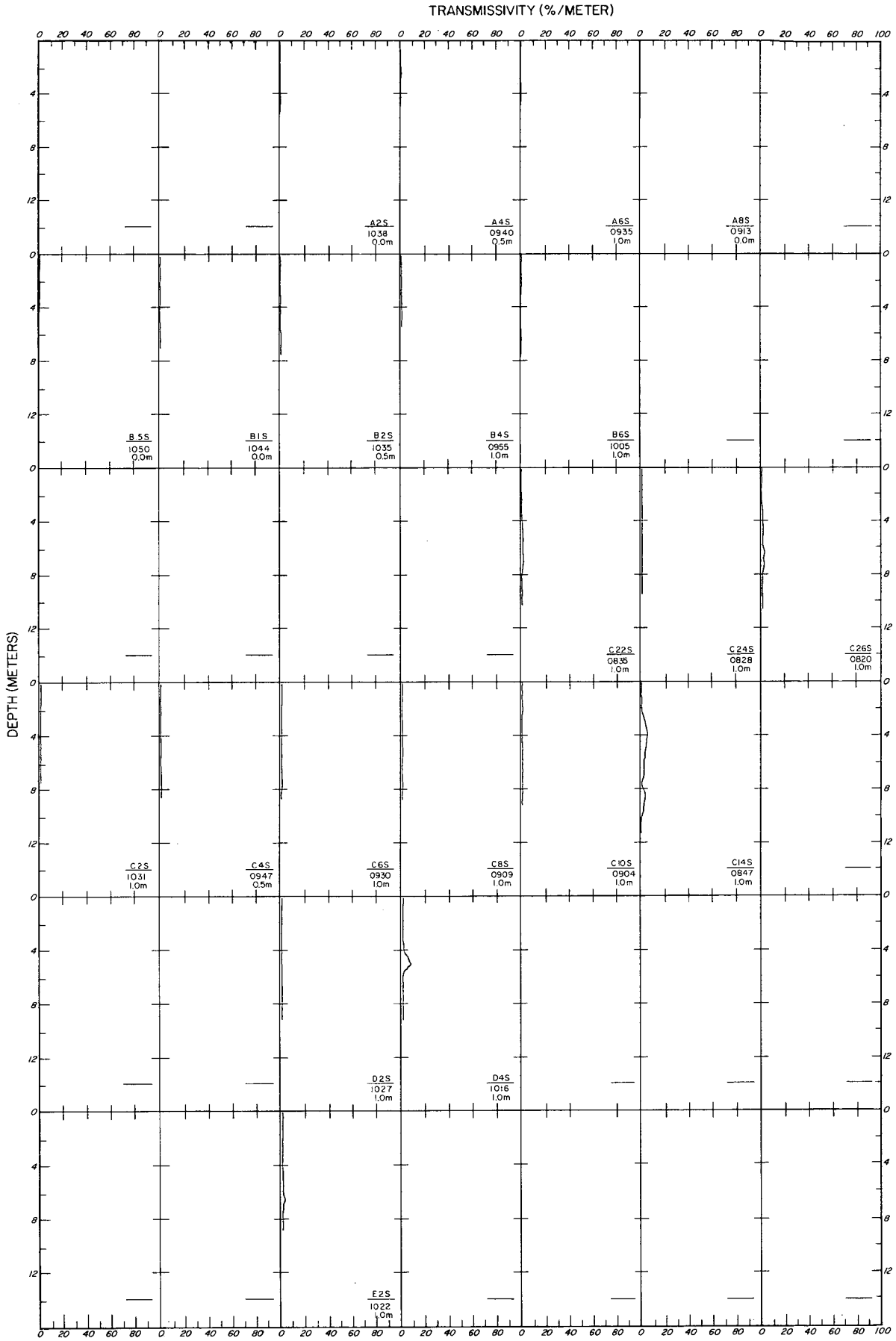



**Figure E-1. Light Transmittance Profiles for January 18, 1978 (cont'd)**

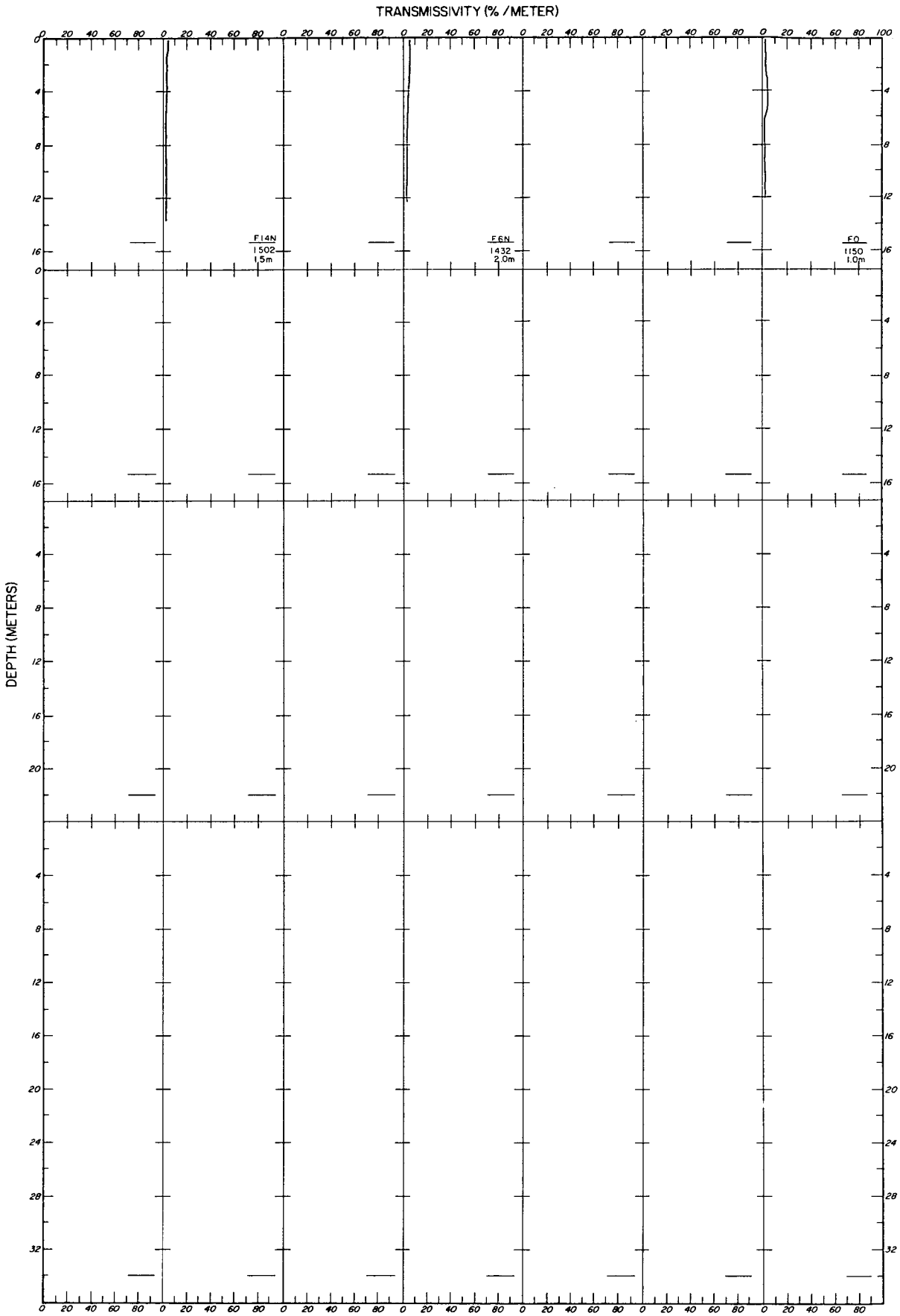



**Figure E-1. Light Transmittance Profiles for January 18, 1978 (cont'd)**

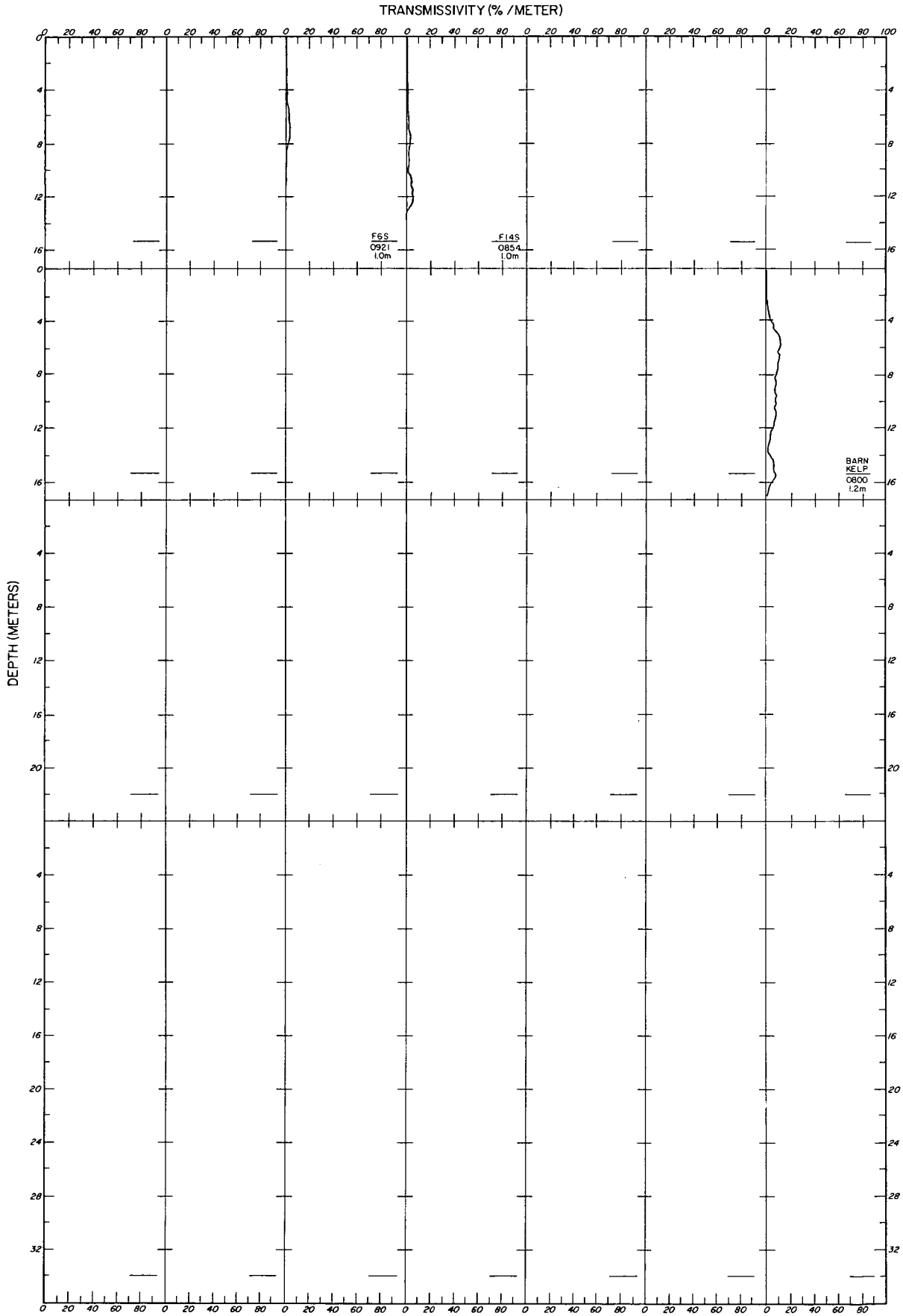



**Figure E-1. Light Transmittance Profiles for January 18, 1978 (cont'd)**

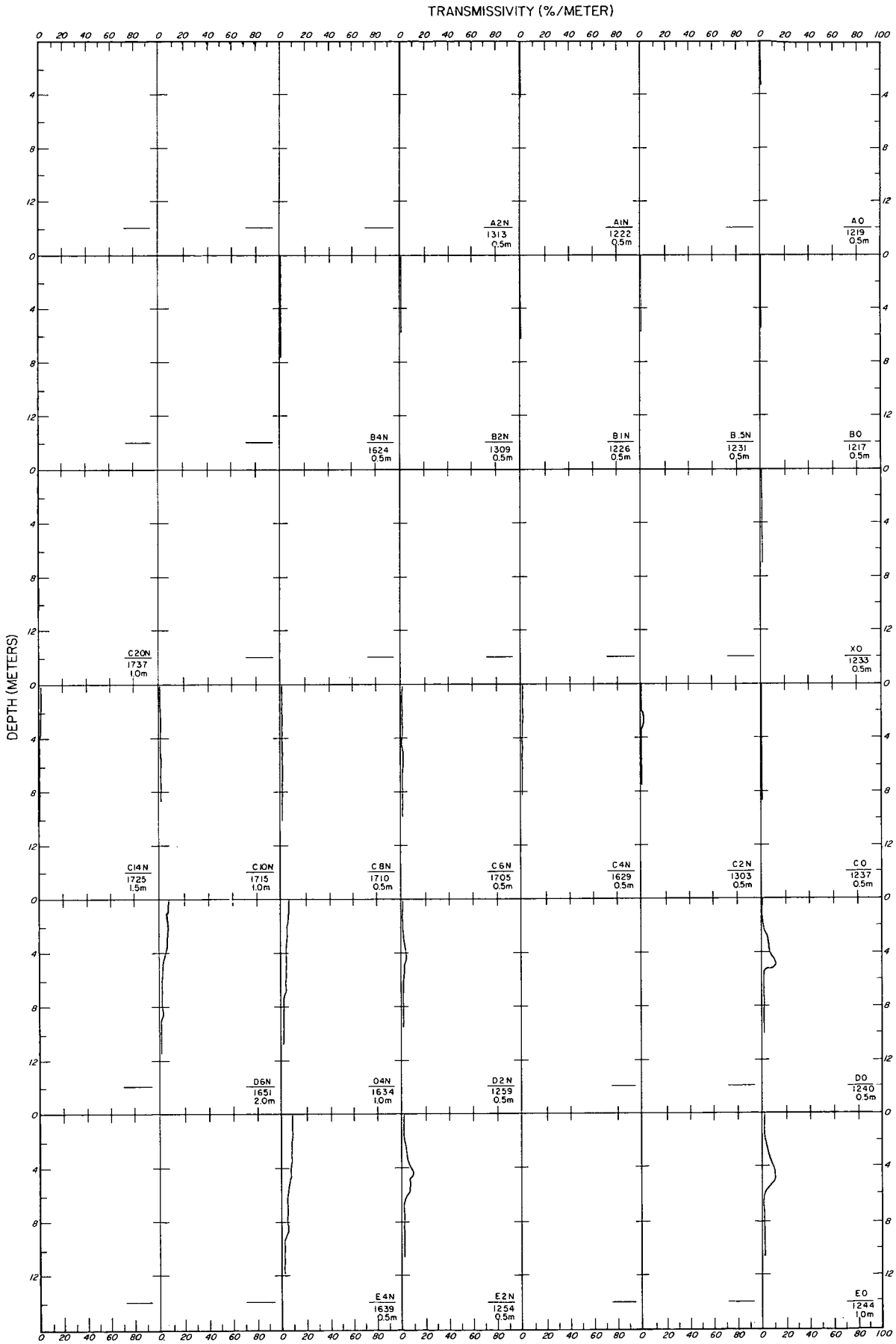



**Figure E-2. Light Transmittance Profiles for March 7, 1978**

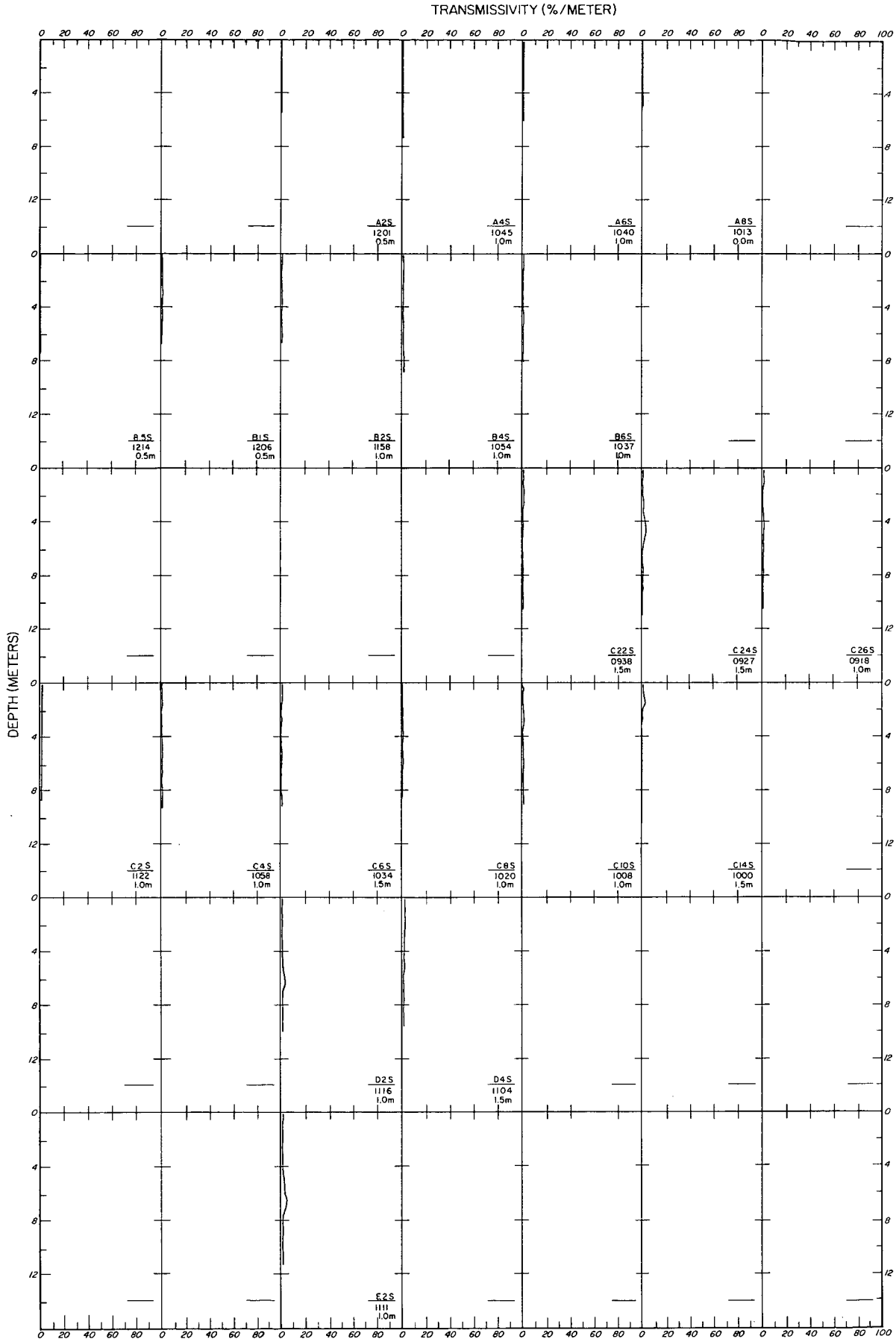



**Figure E-2. Light Transmittance Profiles for March 7, 1978 (cont'd)**

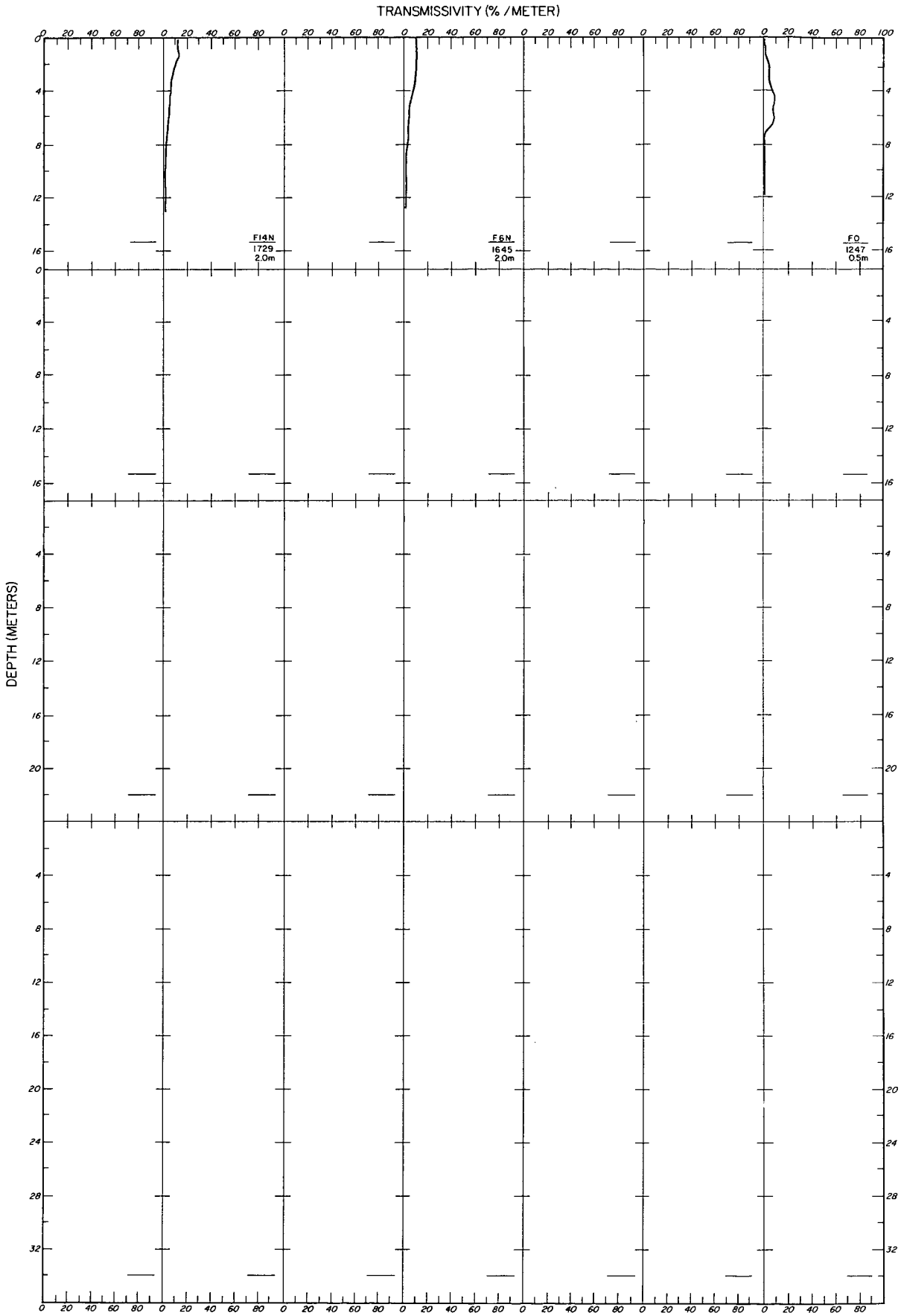



**Figure E-2. Light Transmittance Profiles for March 7, 1978 (cont'd)**

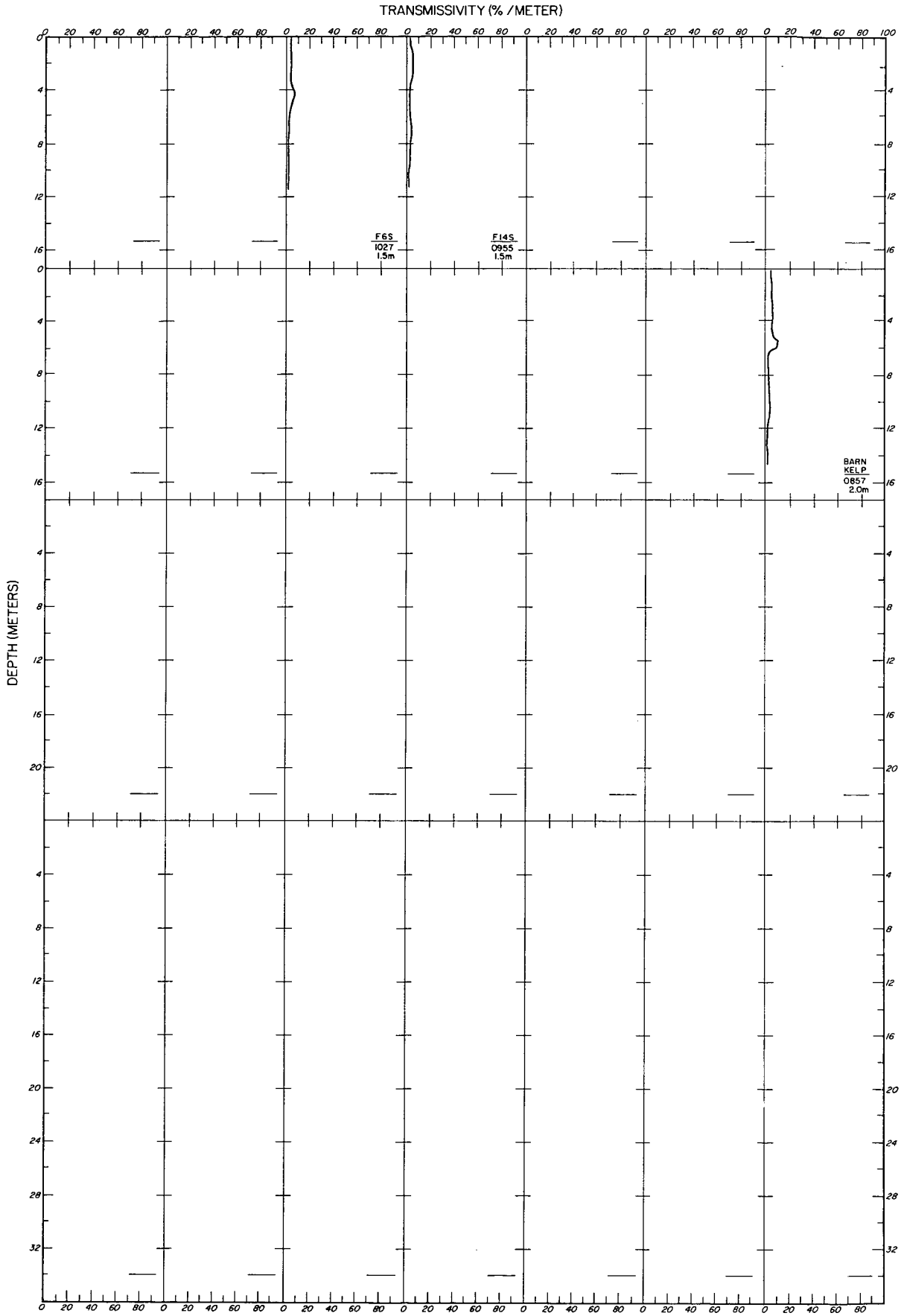



**Figure E-2. Light Transmittance Profiles for March 7, 1978 (cont'd)**

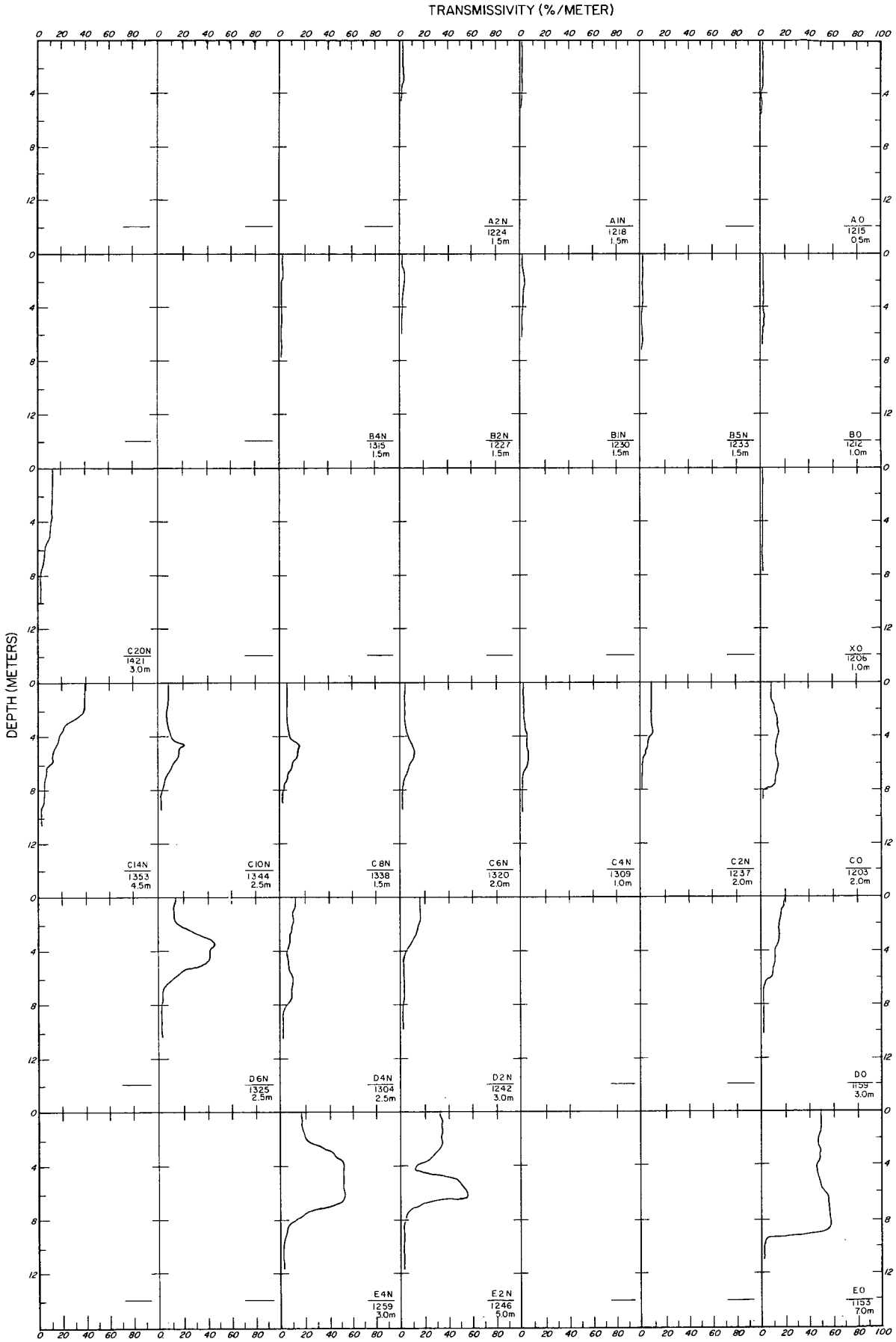
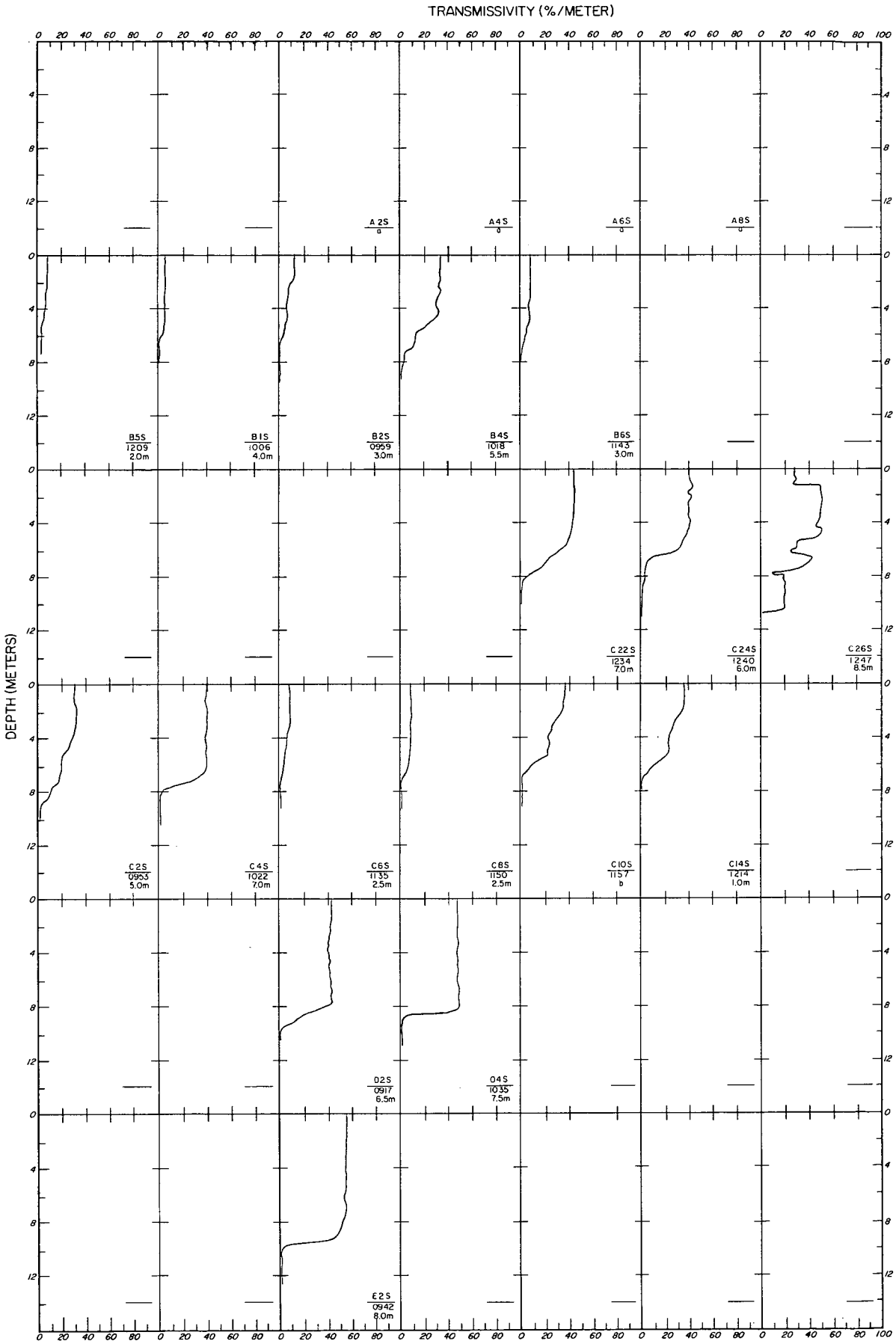



**Figure E-3. Light Transmittance Profiles for May 4, 1978**




[a] STATION NOT SAMPLED DURING THIS SURVEY BECAUSE OF DANGEROUS SURF CONDITIONS

[b] SECCHI DISK NOT SAMPLED

**Figure E-3. Light Transmittance Profiles for May 4, 1978 (cont'd)**

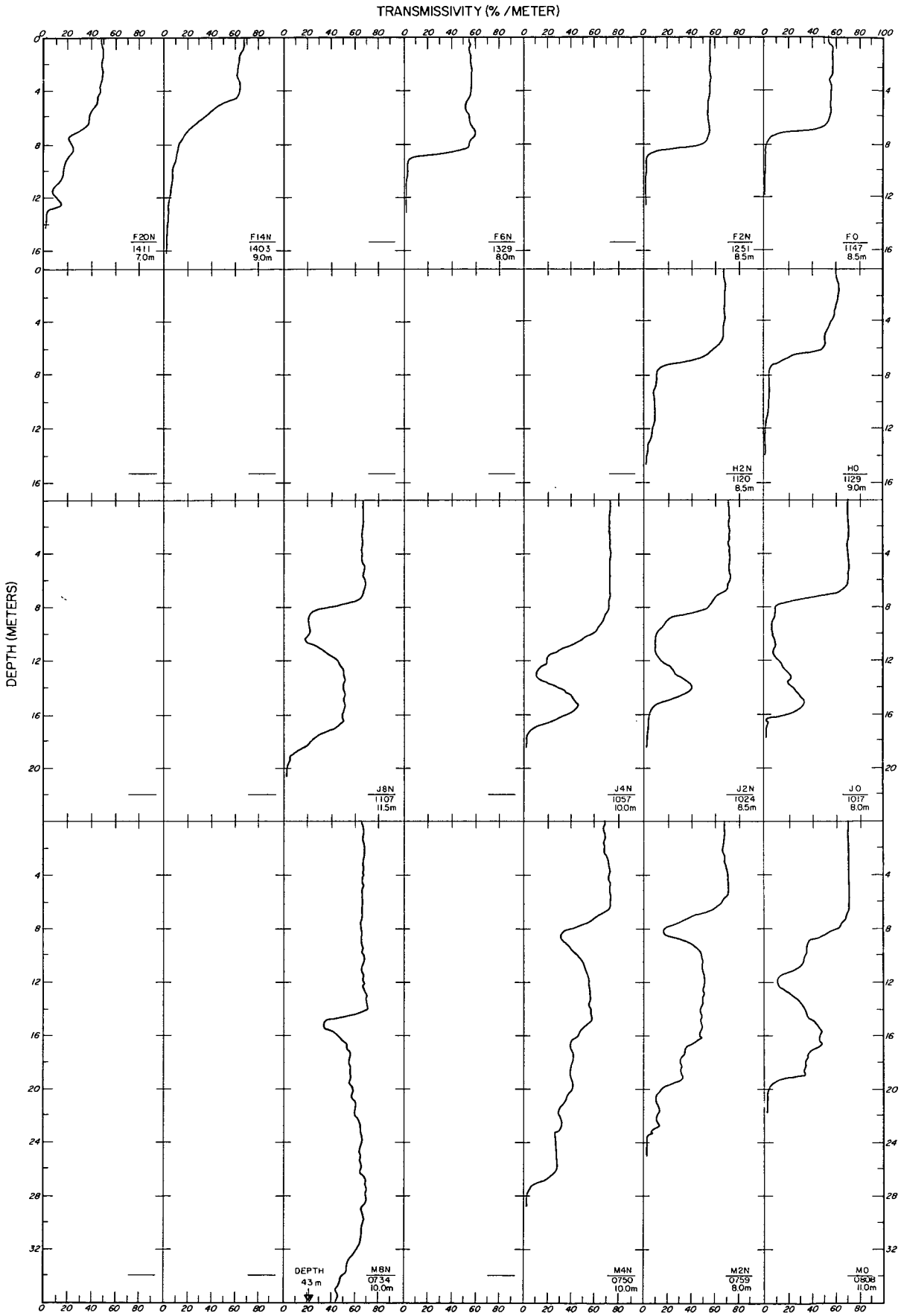



**Figure E-3. Light Transmittance Profiles for May 4, 1978 (cont'd)**

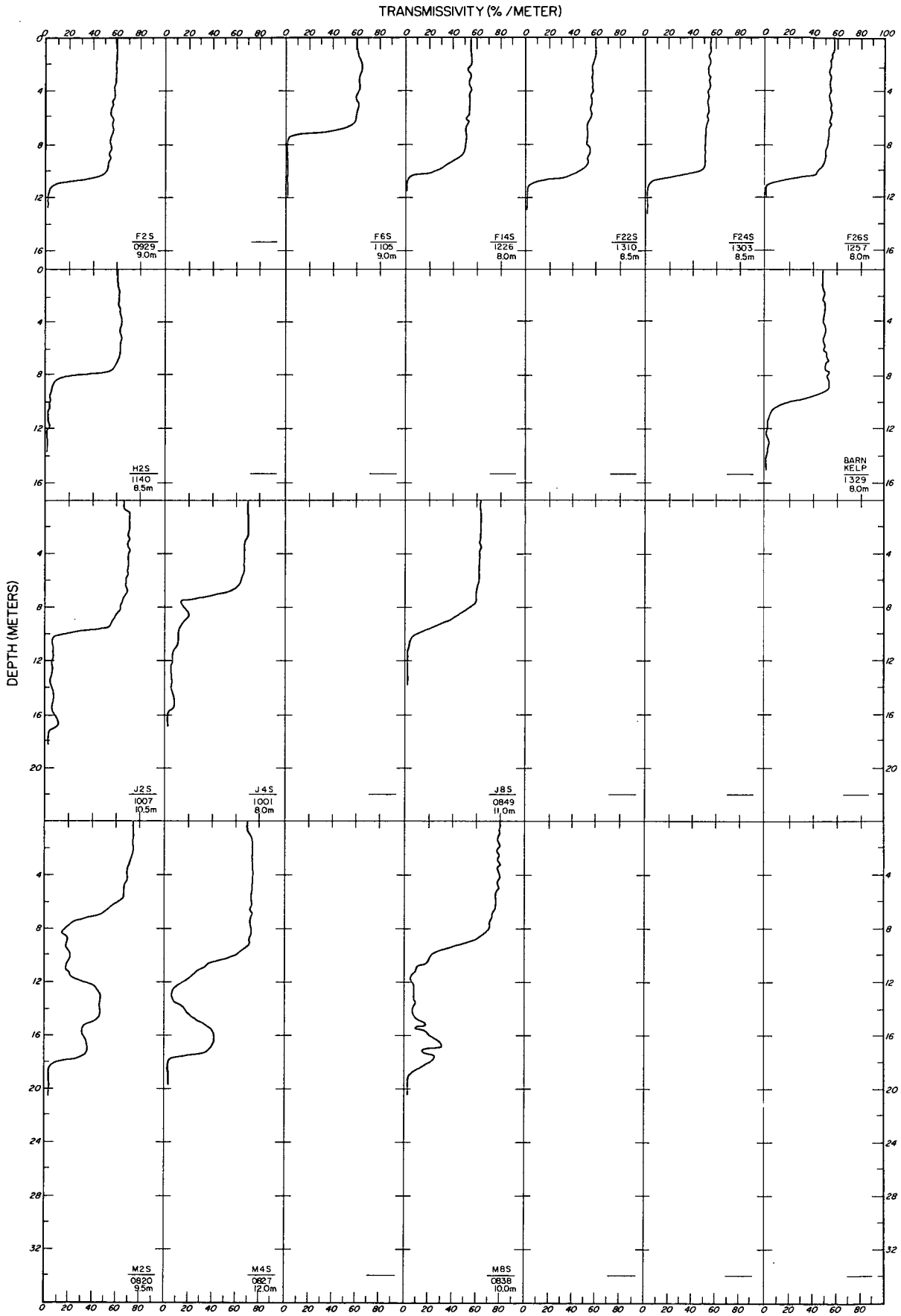



**Figure E-3. Light Transmittance Profiles for May 4, 1978 (cont'd)**

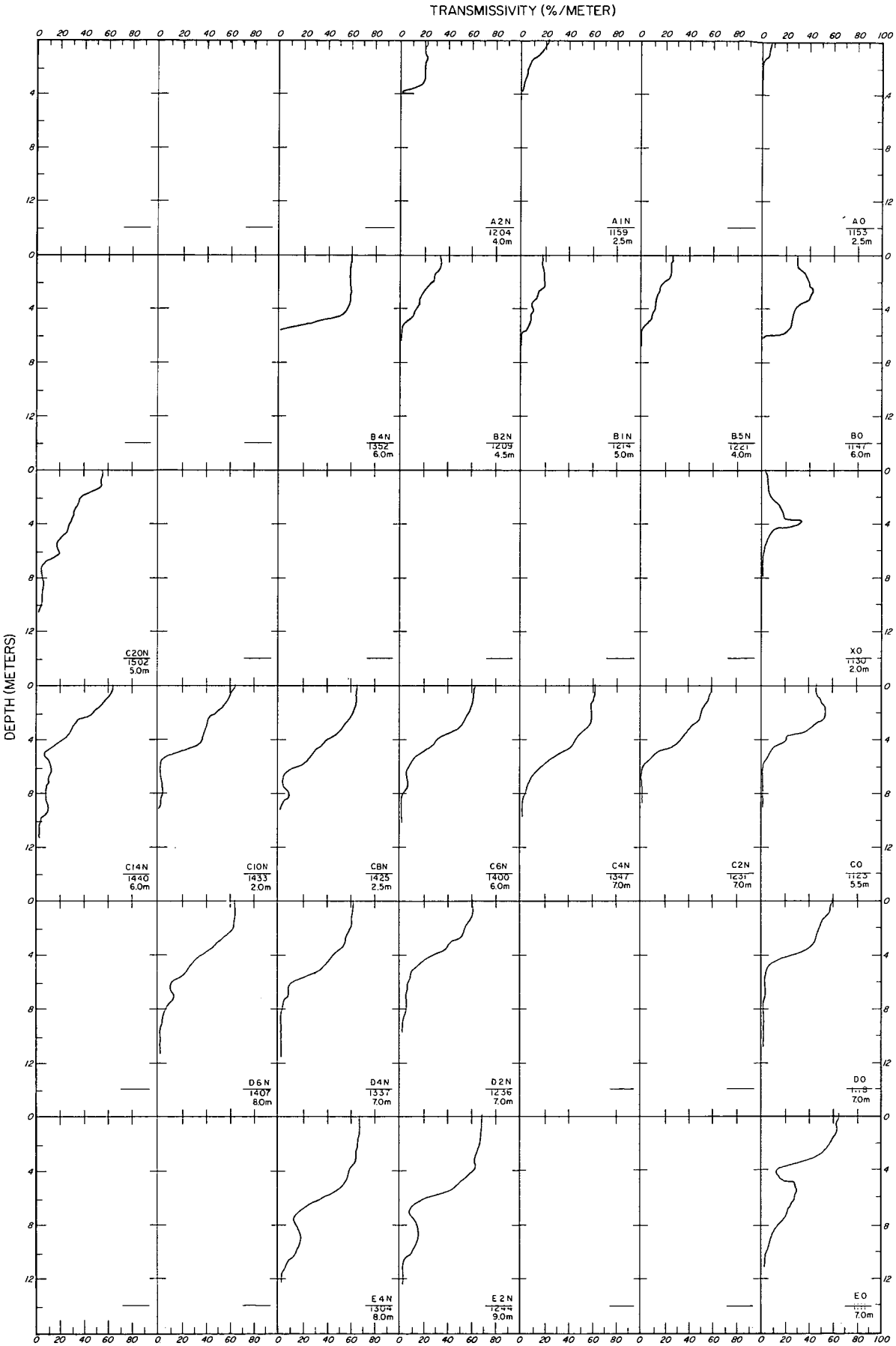



**Figure E-4. Light Transmittance Profiles for July 10, 1978**

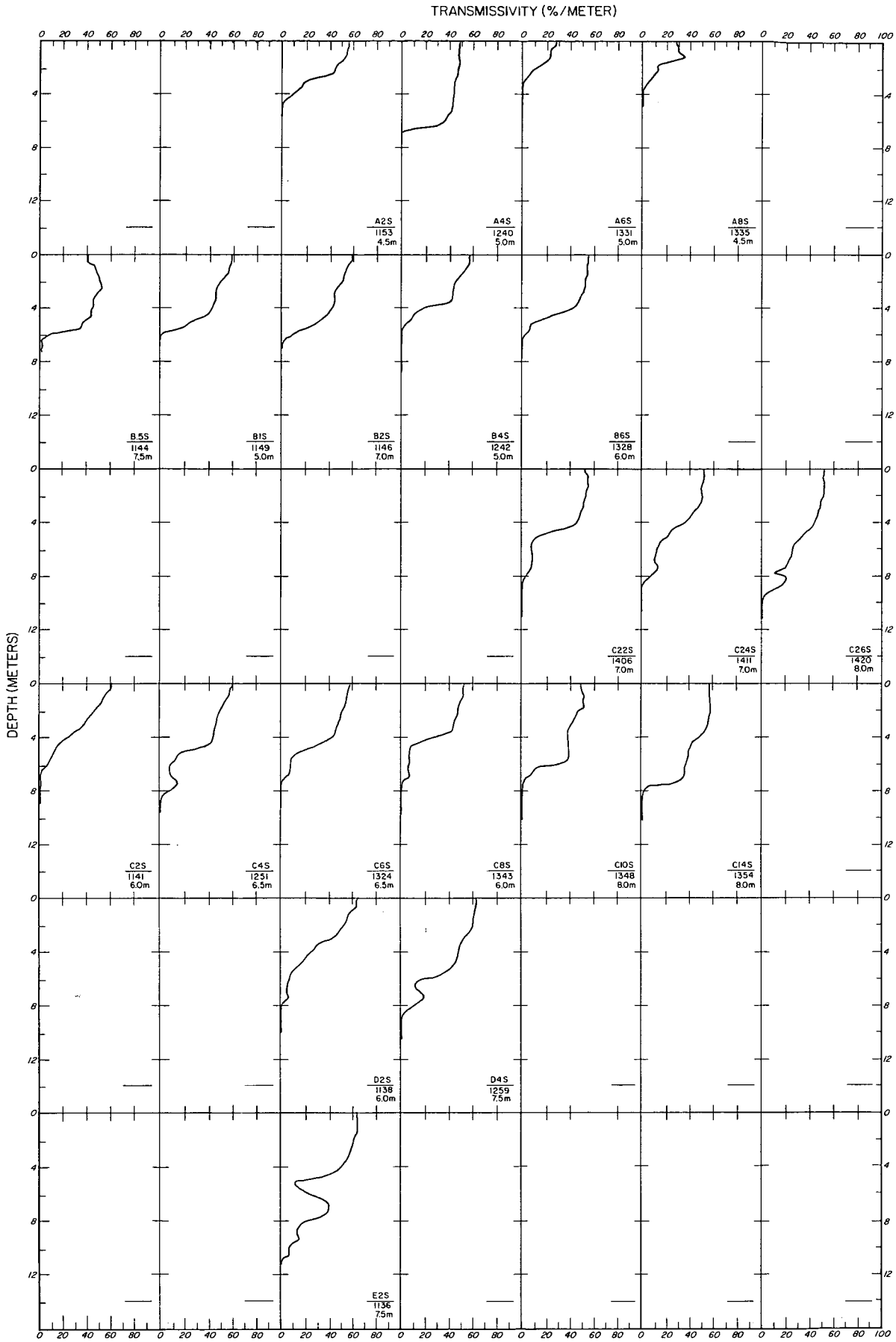



**Figure E-4. Light Transmittance Profiles for July 10, 1978 (cont'd)**

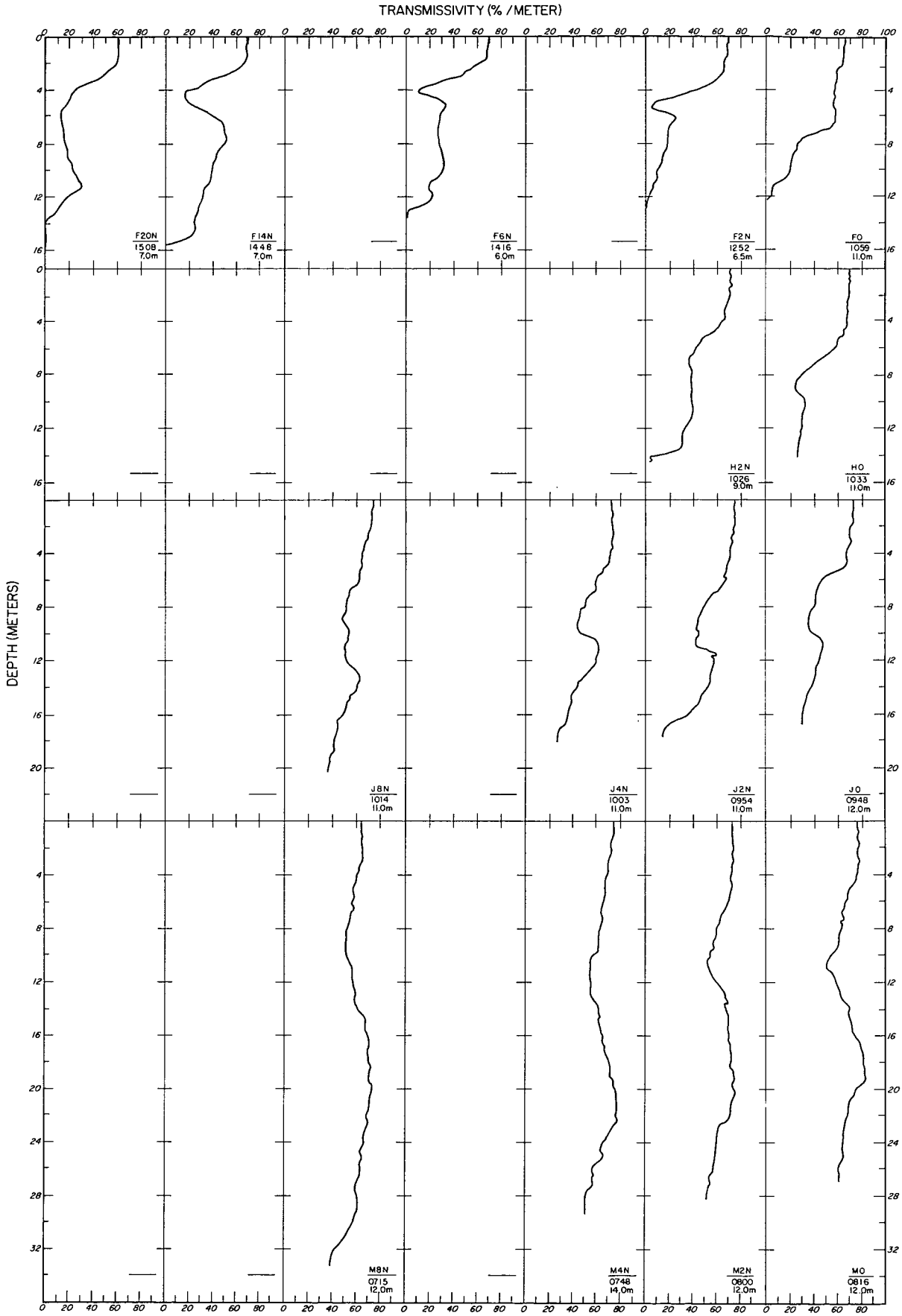



**Figure E-4. Light Transmittance Profiles for July 10, 1978 (cont'd)**

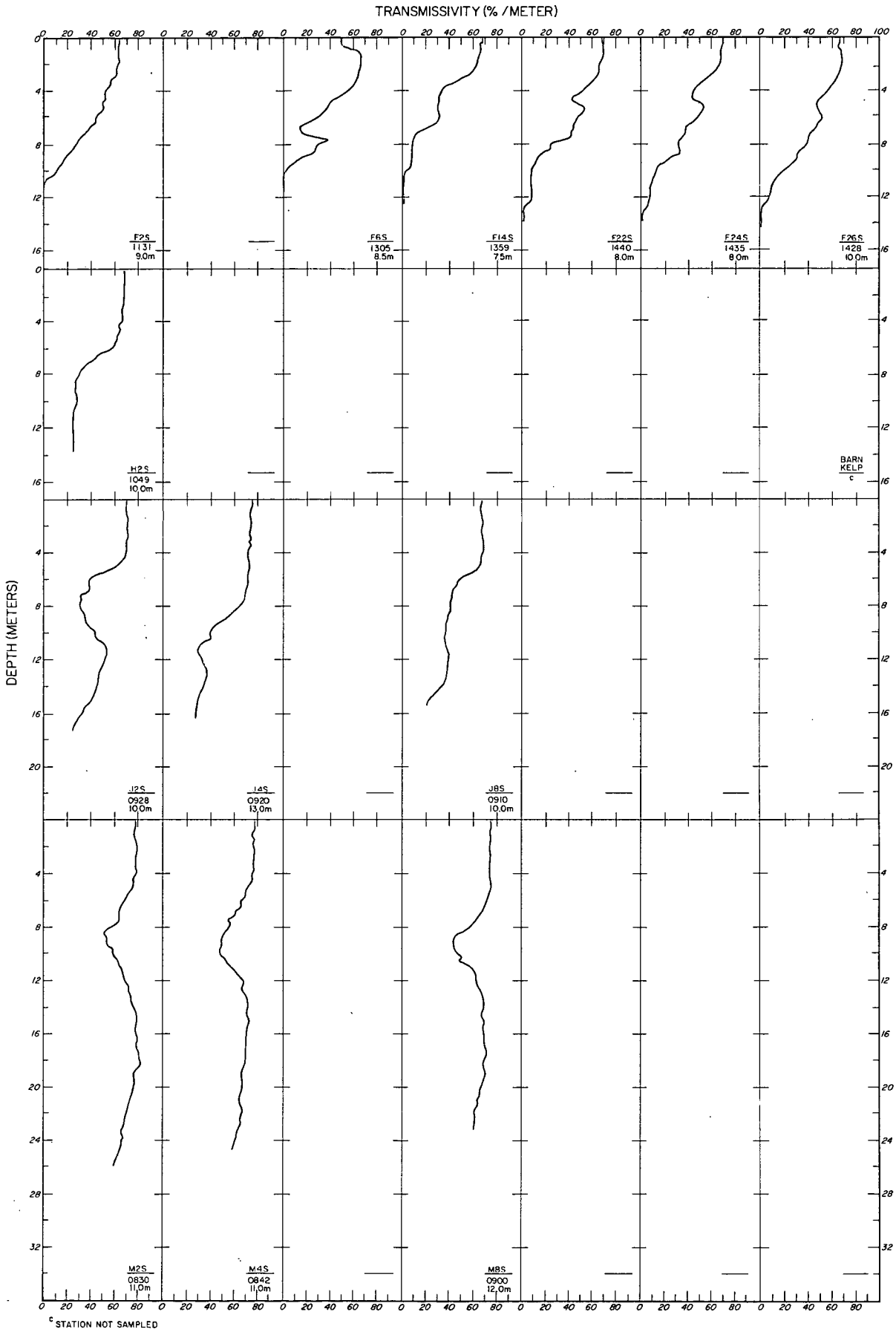



**Figure E-4. Light Transmittance Profiles for July 10, 1978 (cont'd)**

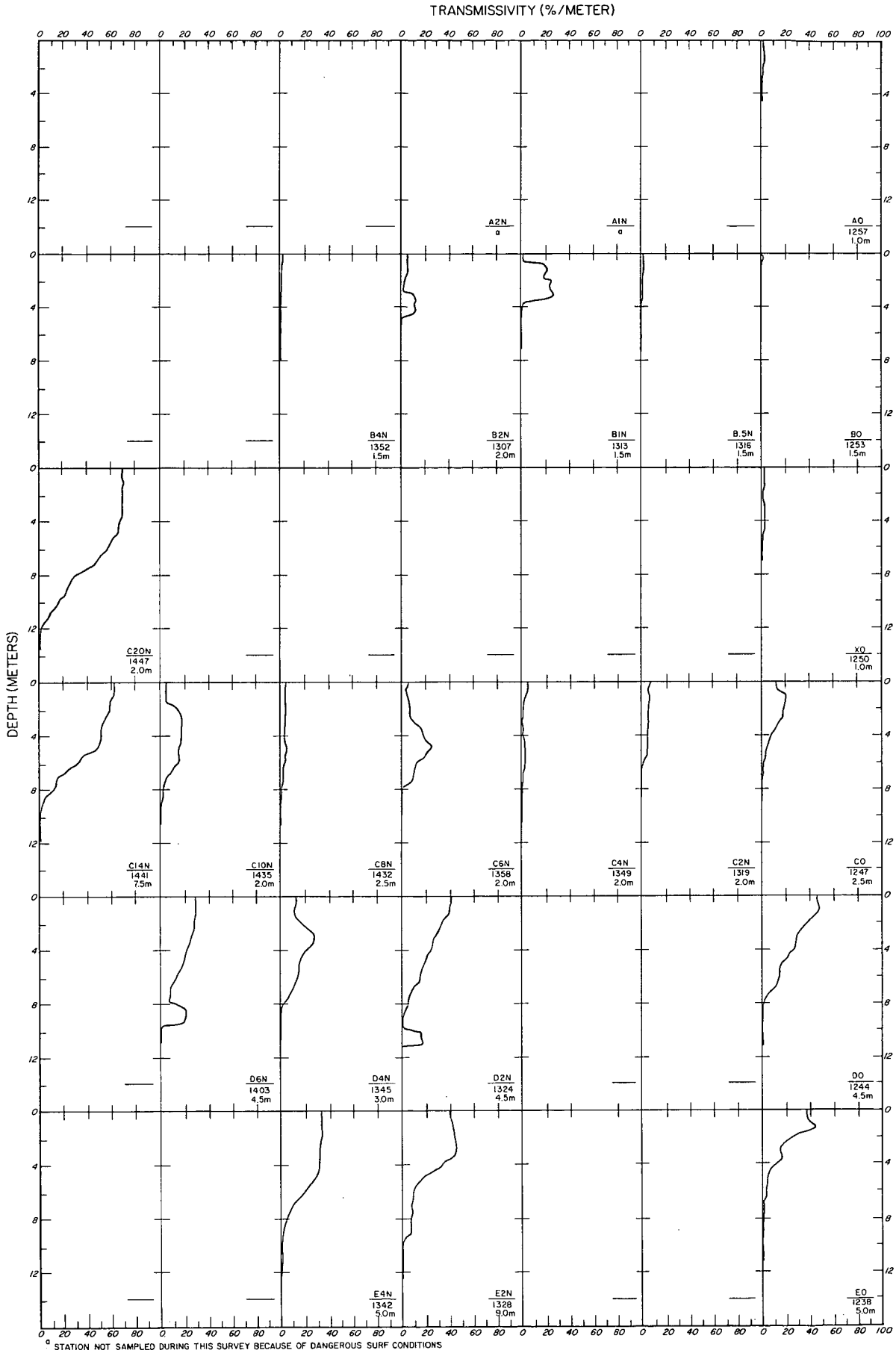



**Figure E-5. Light Transmittance Profiles for September 13, 1978**

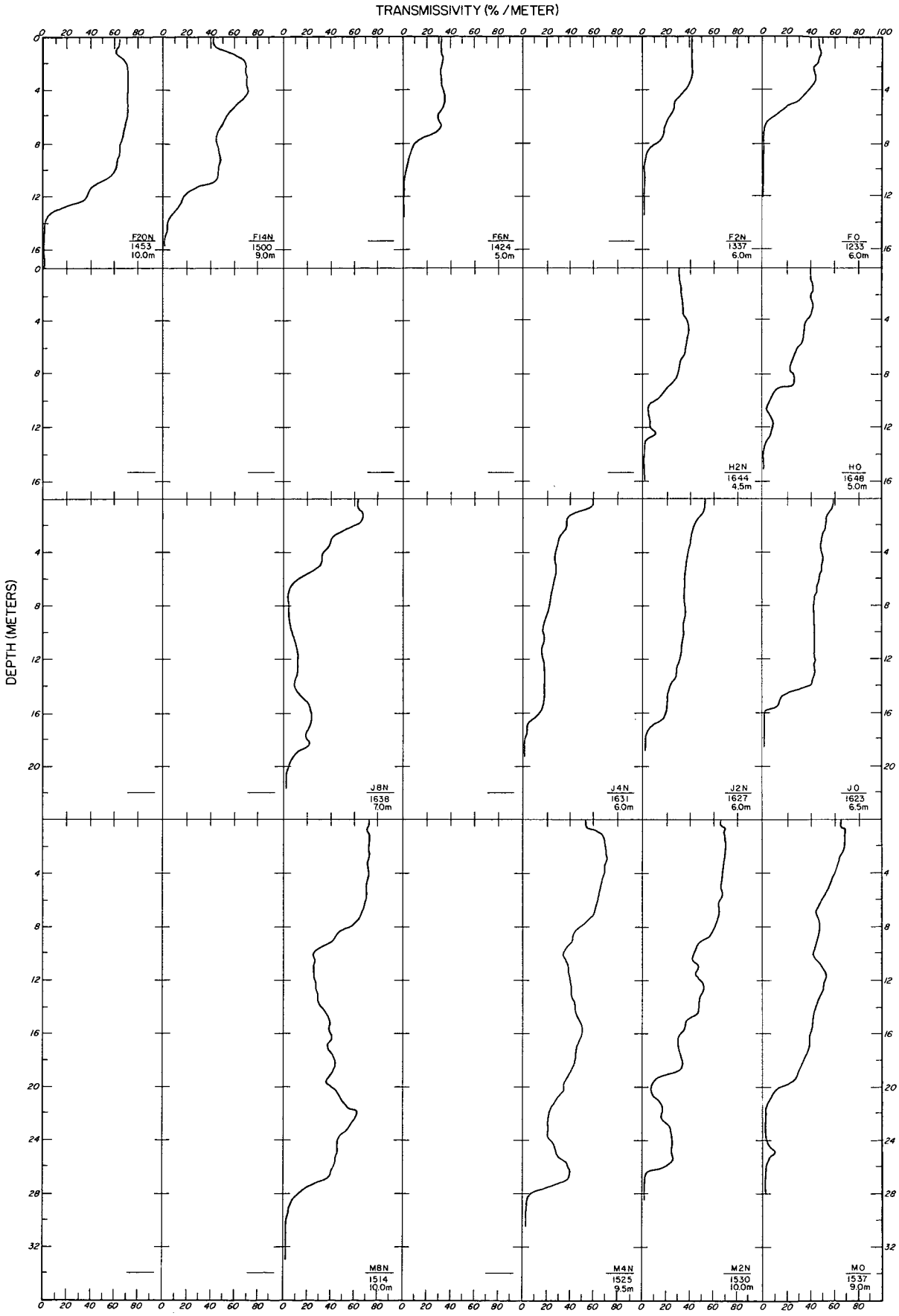



**Figure E-5. Light Transmittance Profiles for September 13, 1978 (cont'd)**

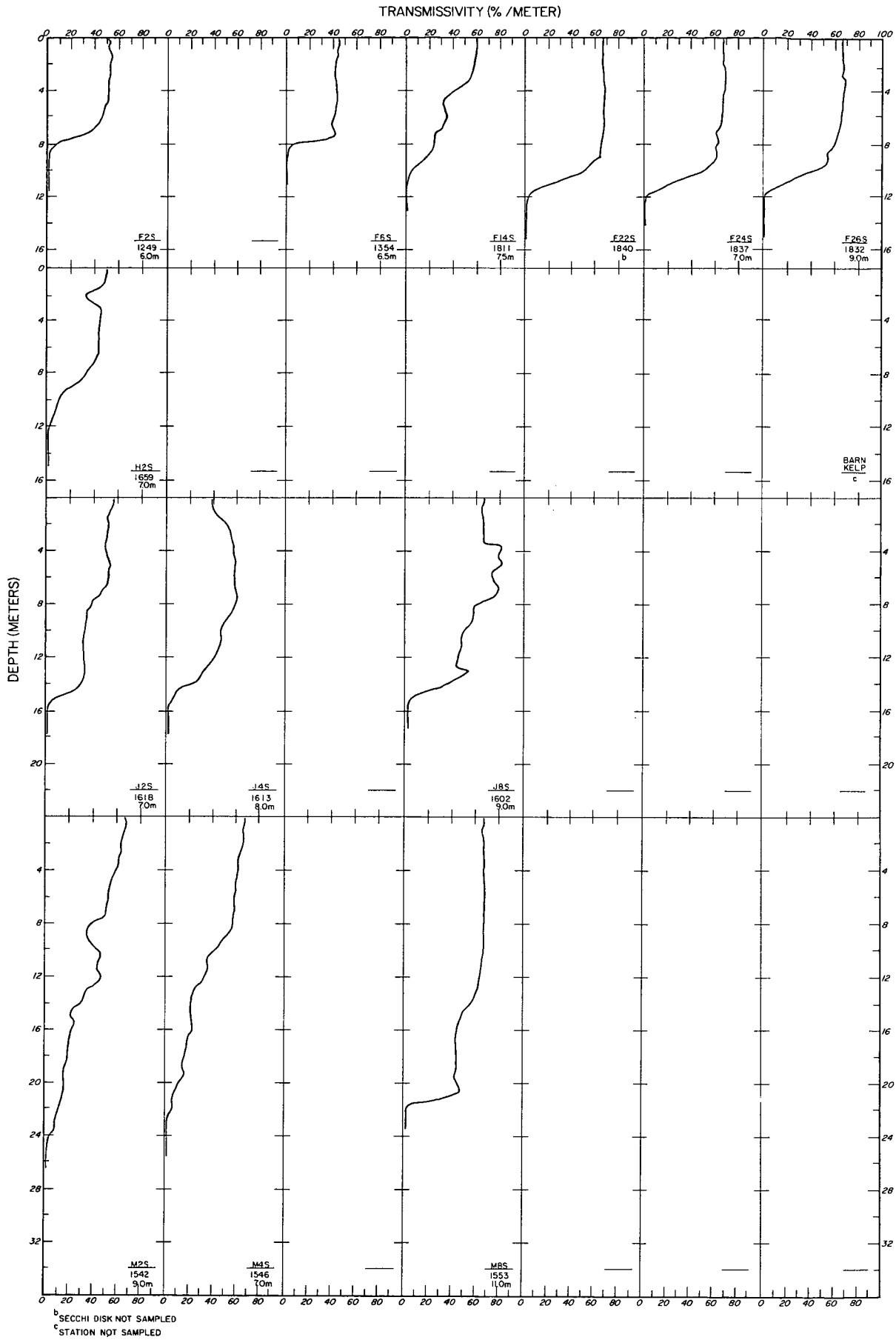



**Figure E-5. Light Transmittance Profiles for September 13, 1978 (cont'd)**

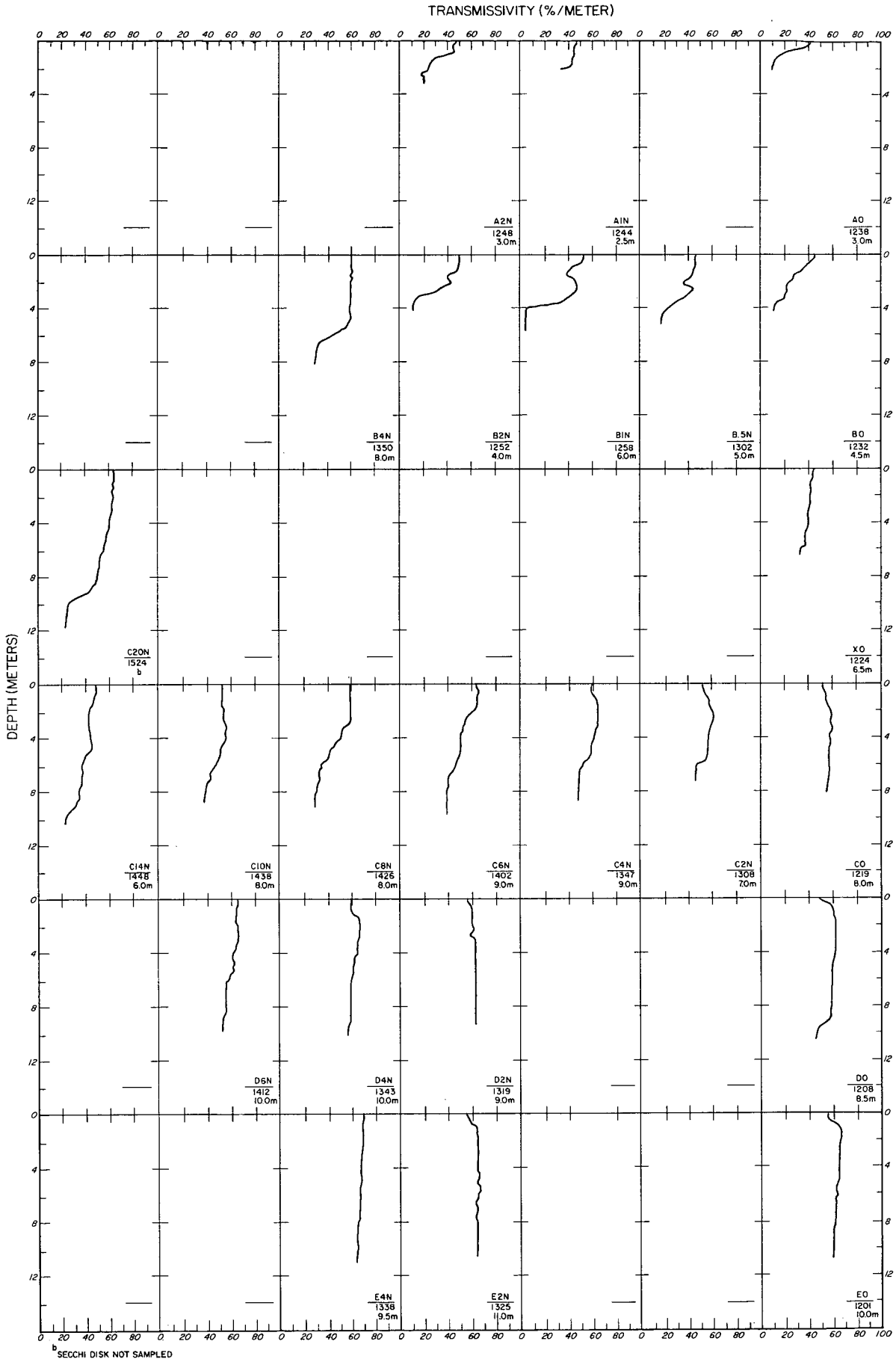



**Figure E-6. Light Transmittance Profiles for November 16, 1978**

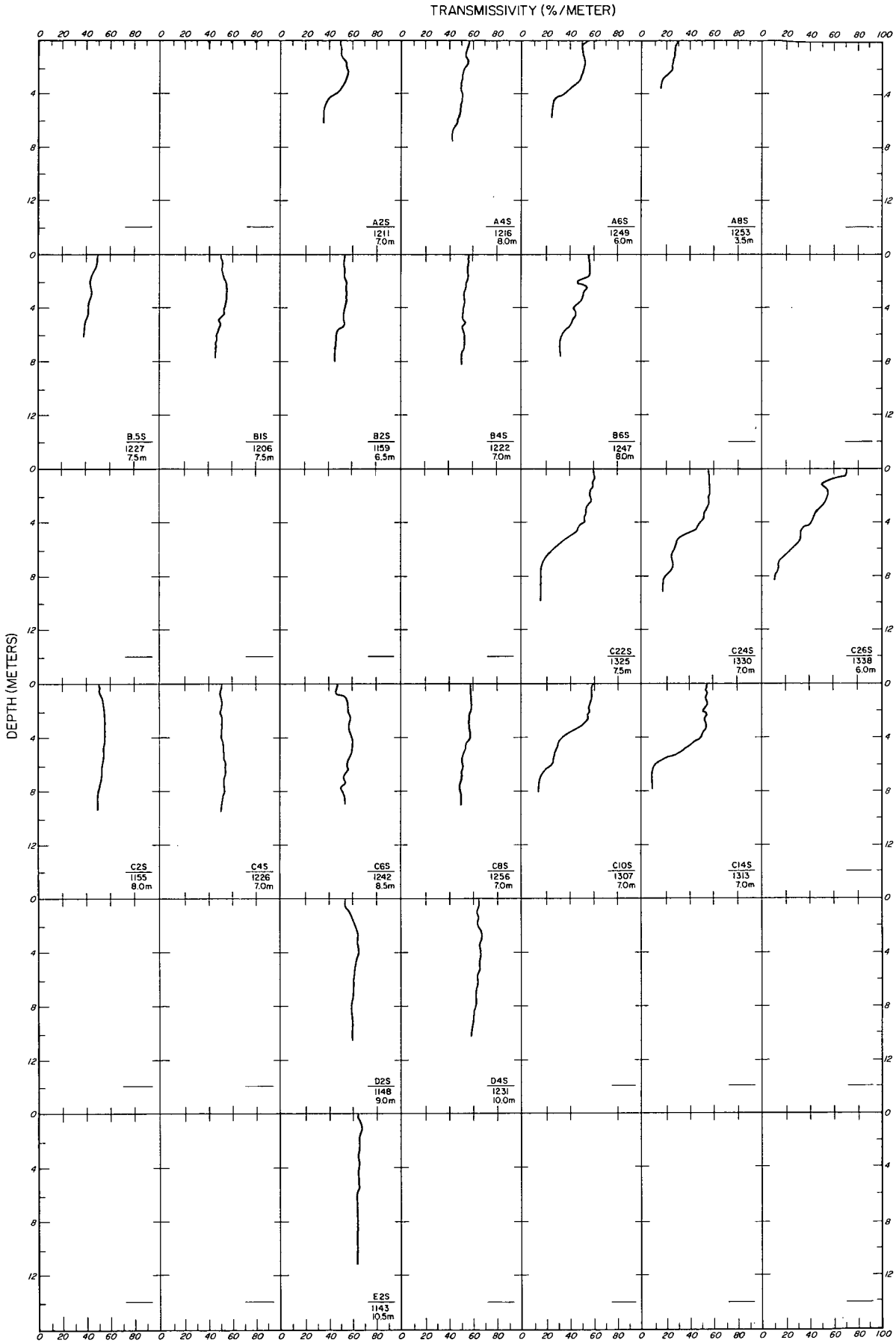



**Figure E-6. Light Transmittance Profiles for November 16, 1978 (cont'd)**

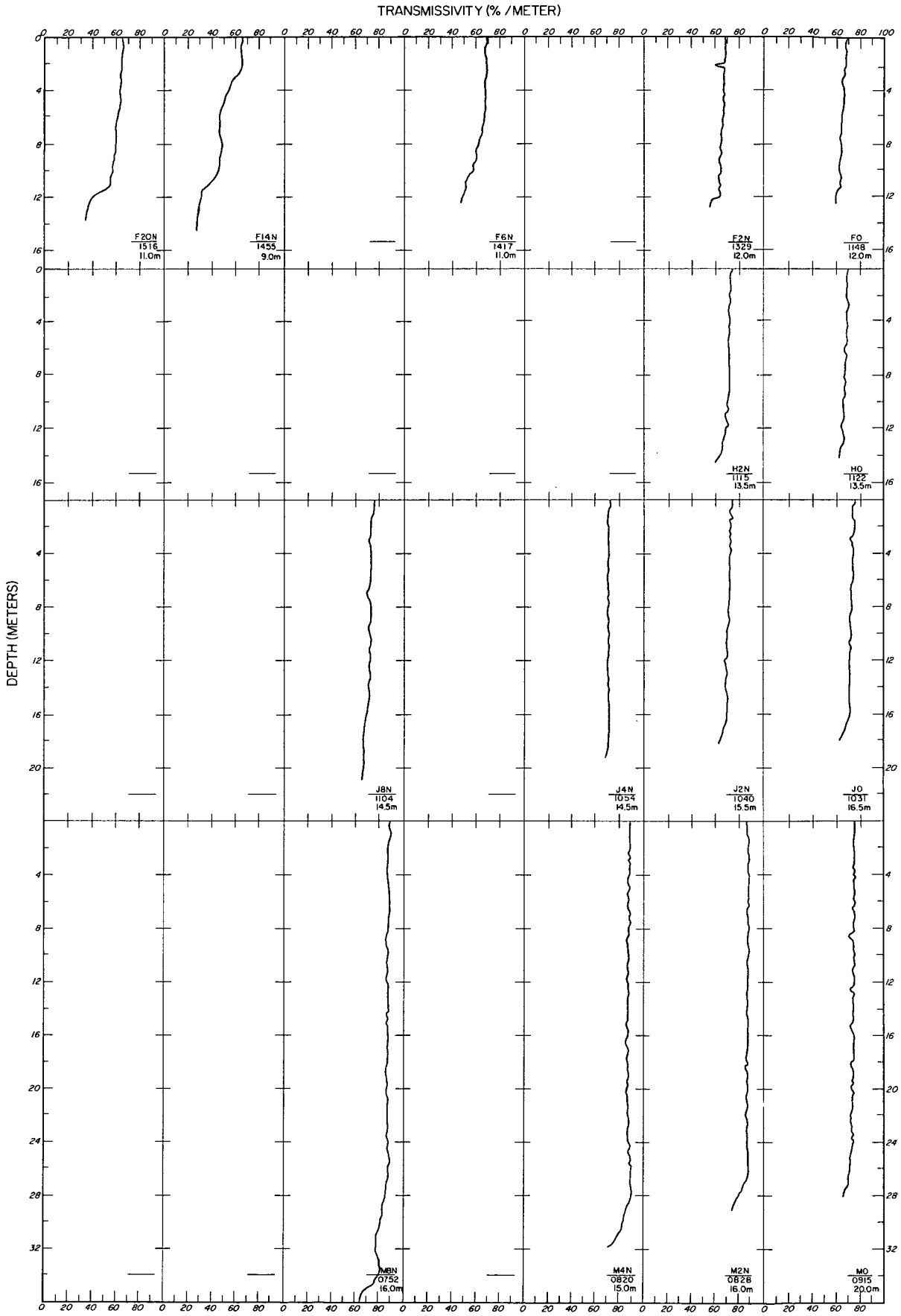



**Figure E-6. Light Transmittance Profiles for November 16, 1978 (cont'd)**

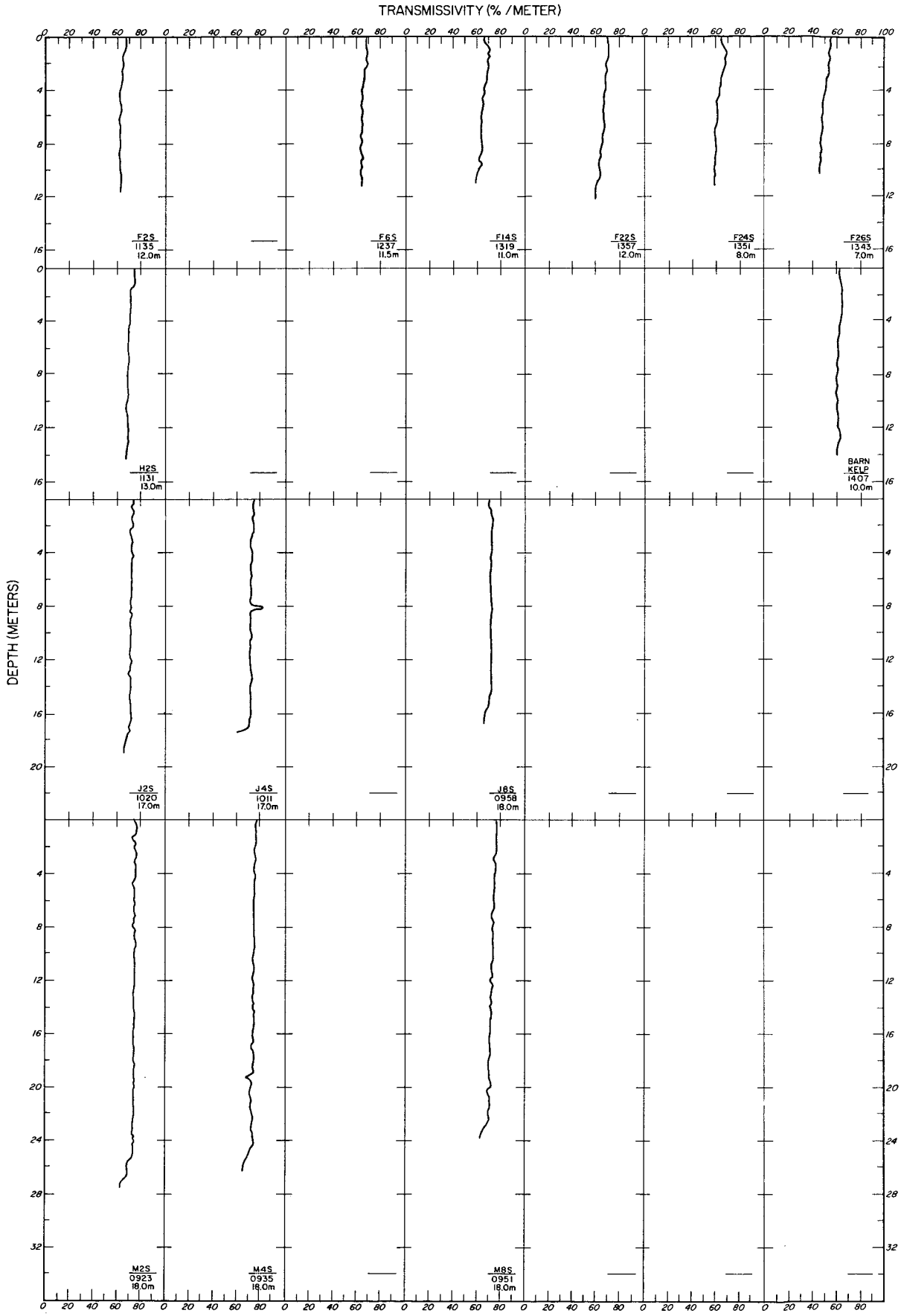



**Figure E-6. Light Transmittance Profiles for November 16, 1978 (cont'd)**

Vertical Isometric Cross-sections of Light Transmittance

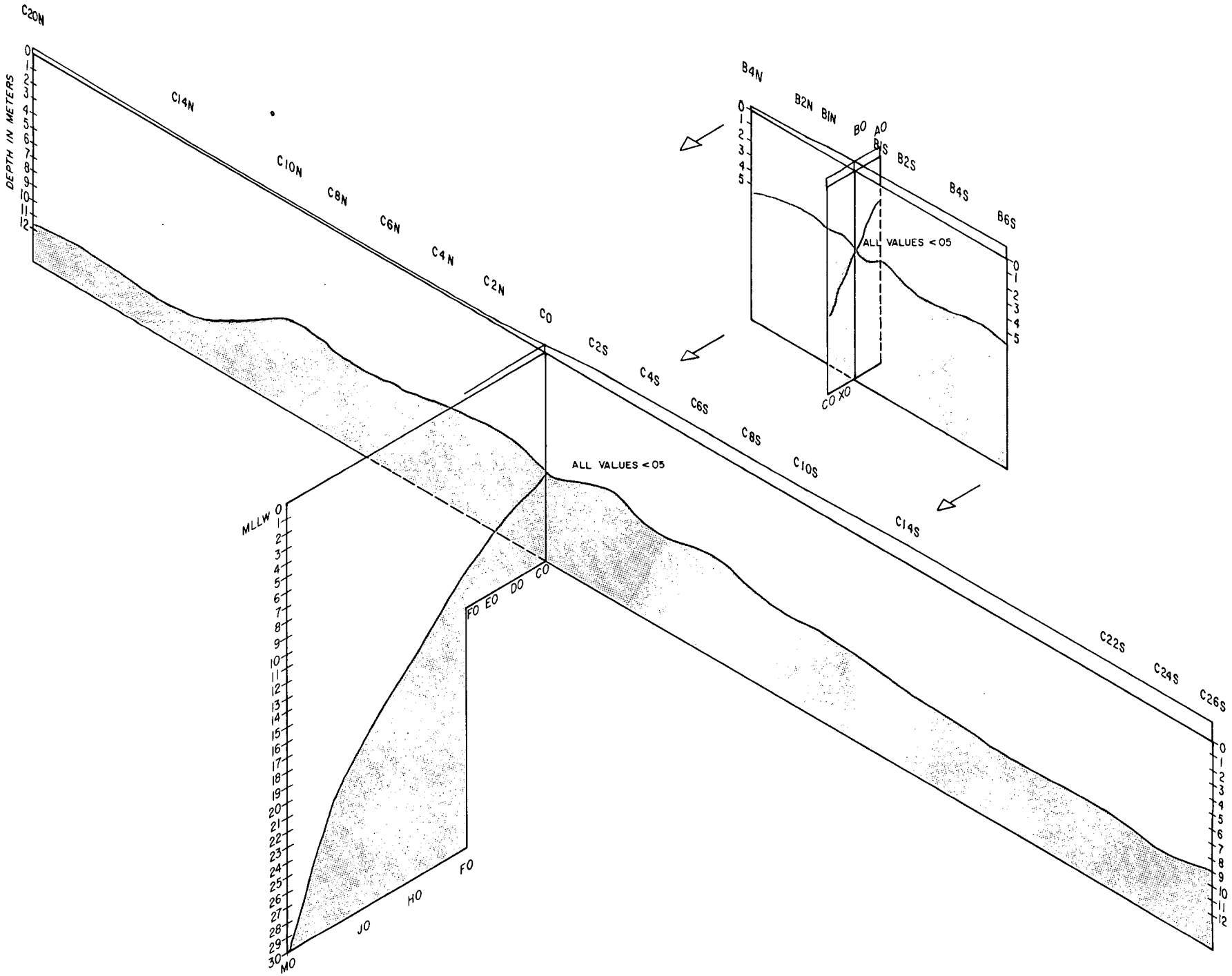



**Figure E-7. Light Transmittance Vertical Isometric Cross-section for January 18, 1978**

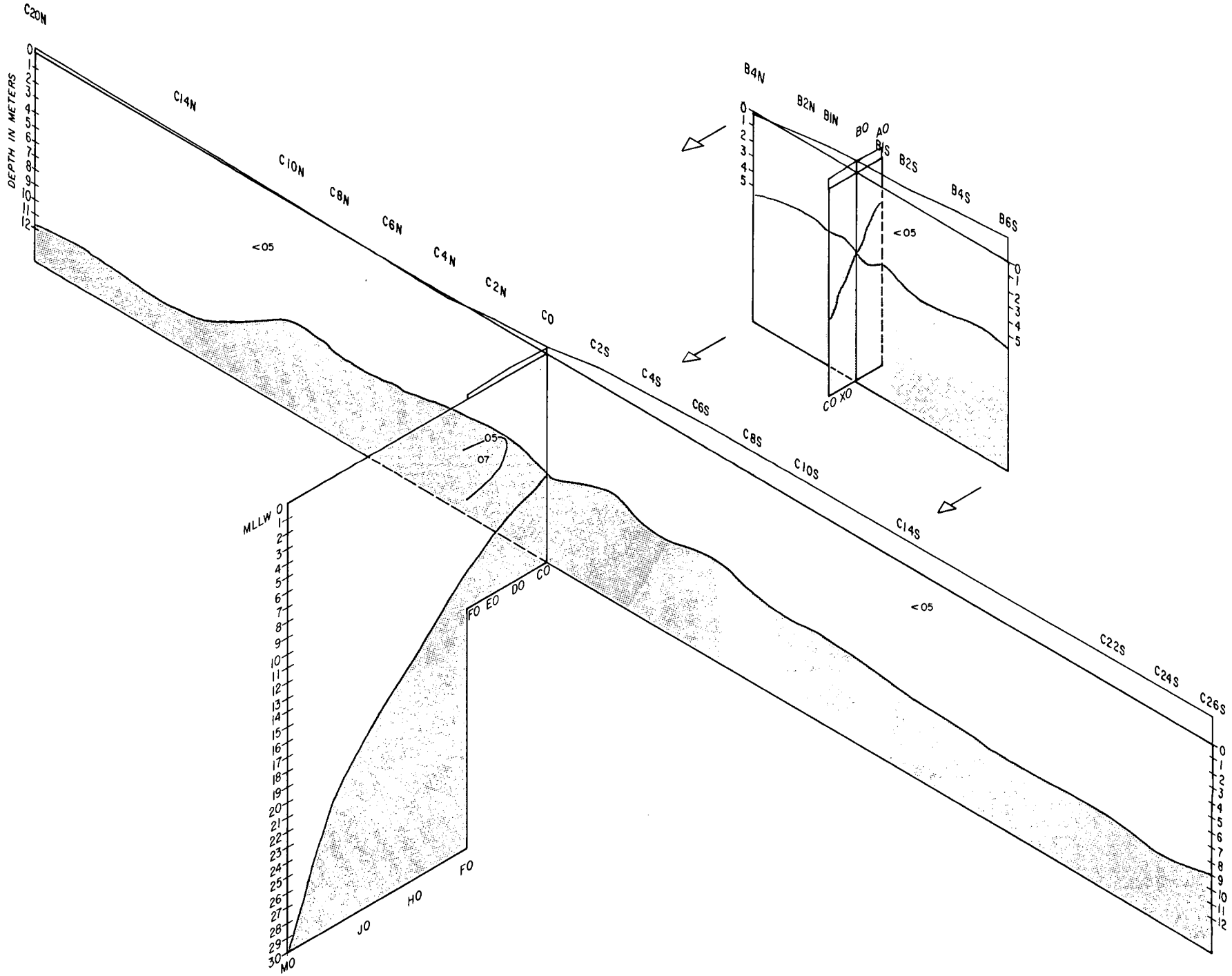



**Figure E-8. Light Transmittance Vertical Isometric Cross-section for March 7, 1978**

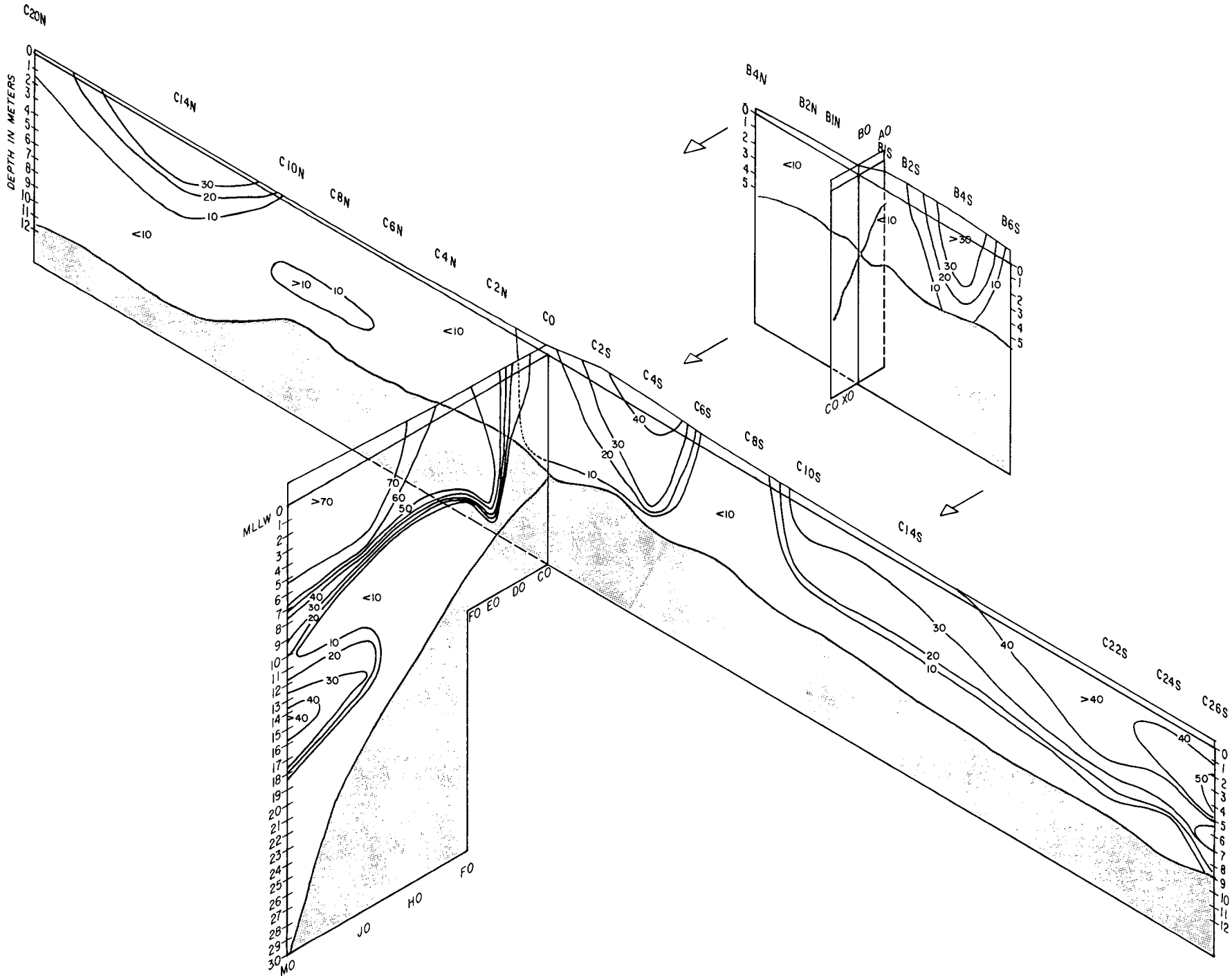



**Figure E-9. Light Transmittance Vertical Isometric Cross-section for May 4, 1978**

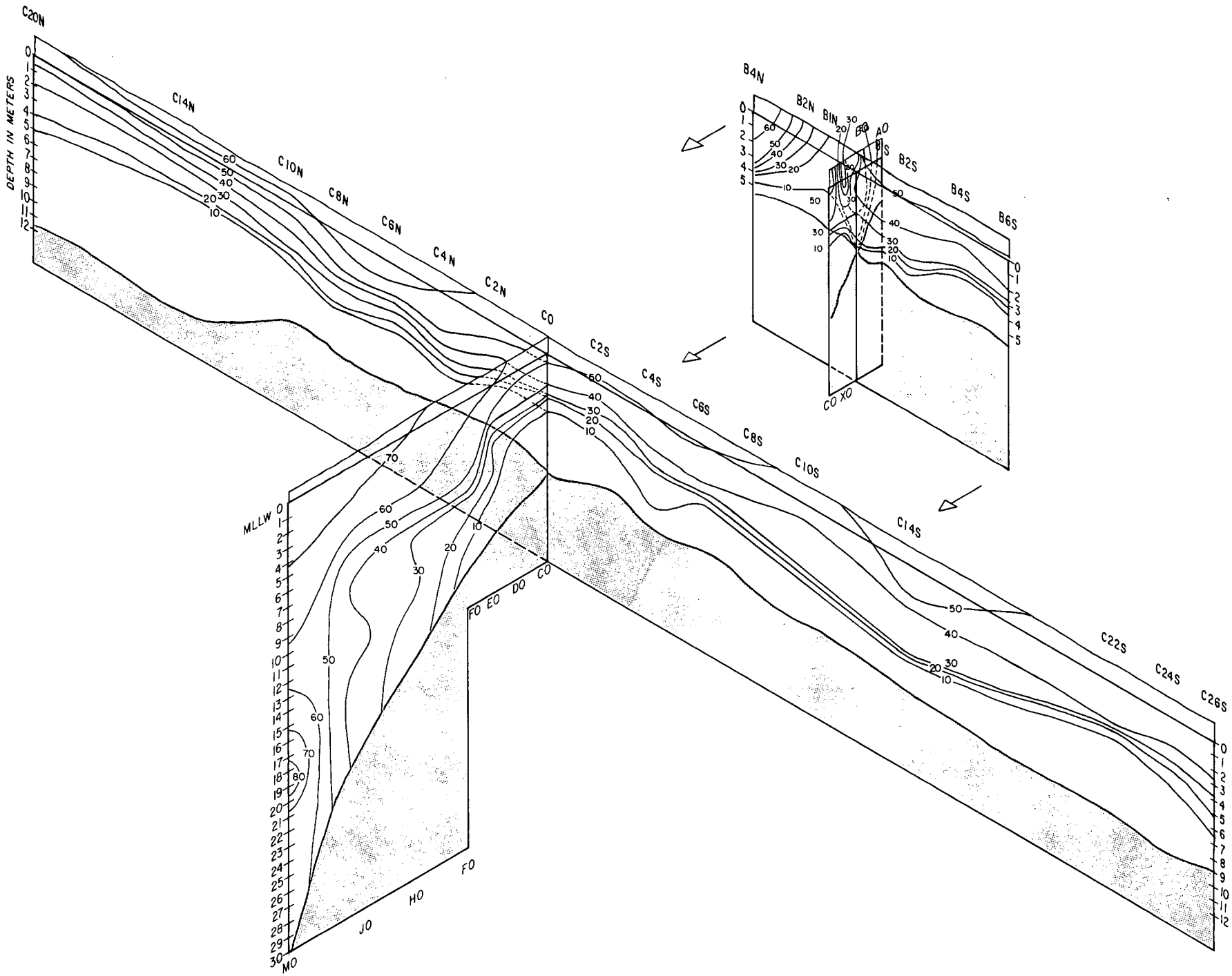



**Figure E-10. Light Transmittance Vertical Isometric Cross-section for July 10, 1978**

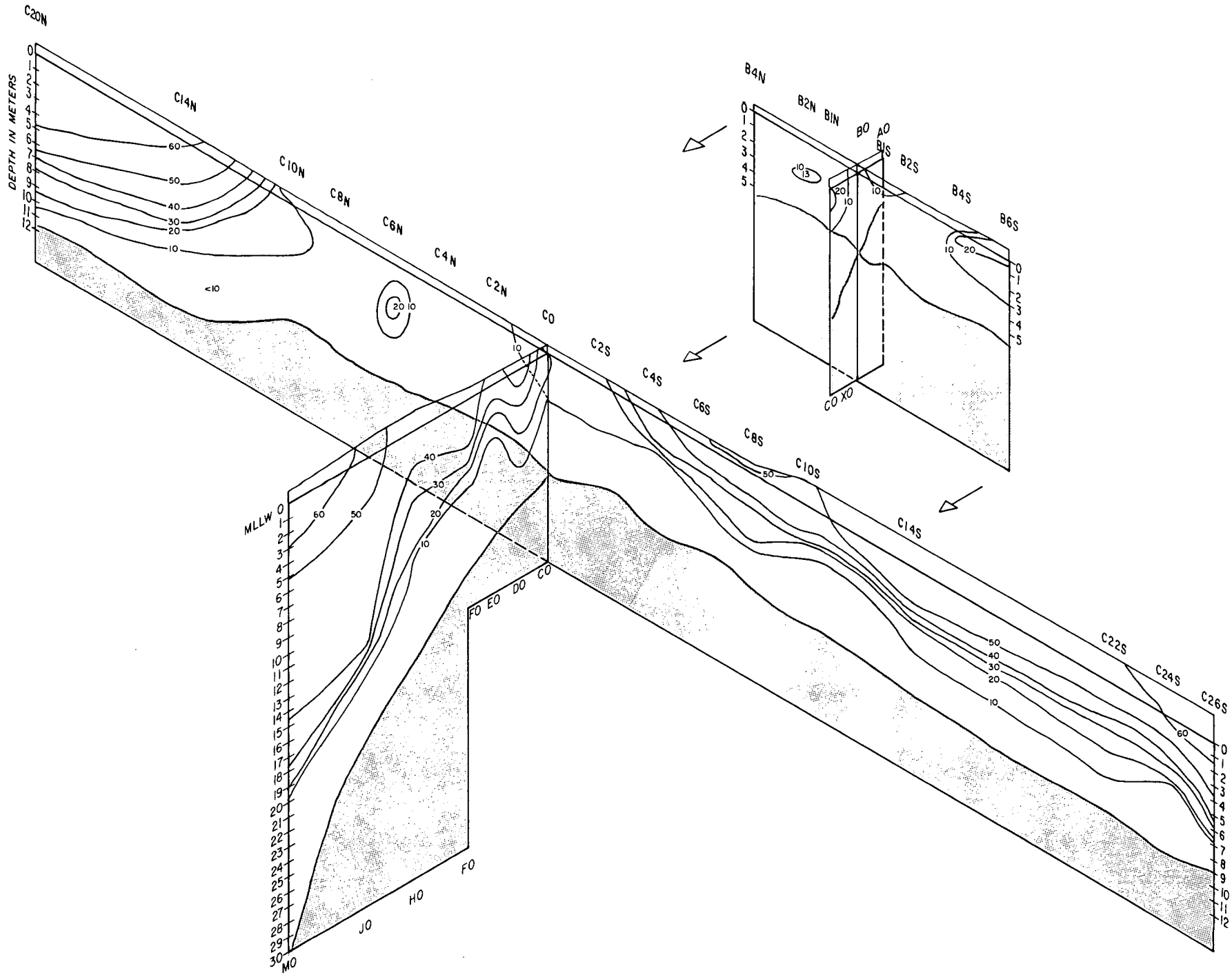



**Figure E-11. Light Transmittance Vertical Isometric Cross-section for September 13, 1978**

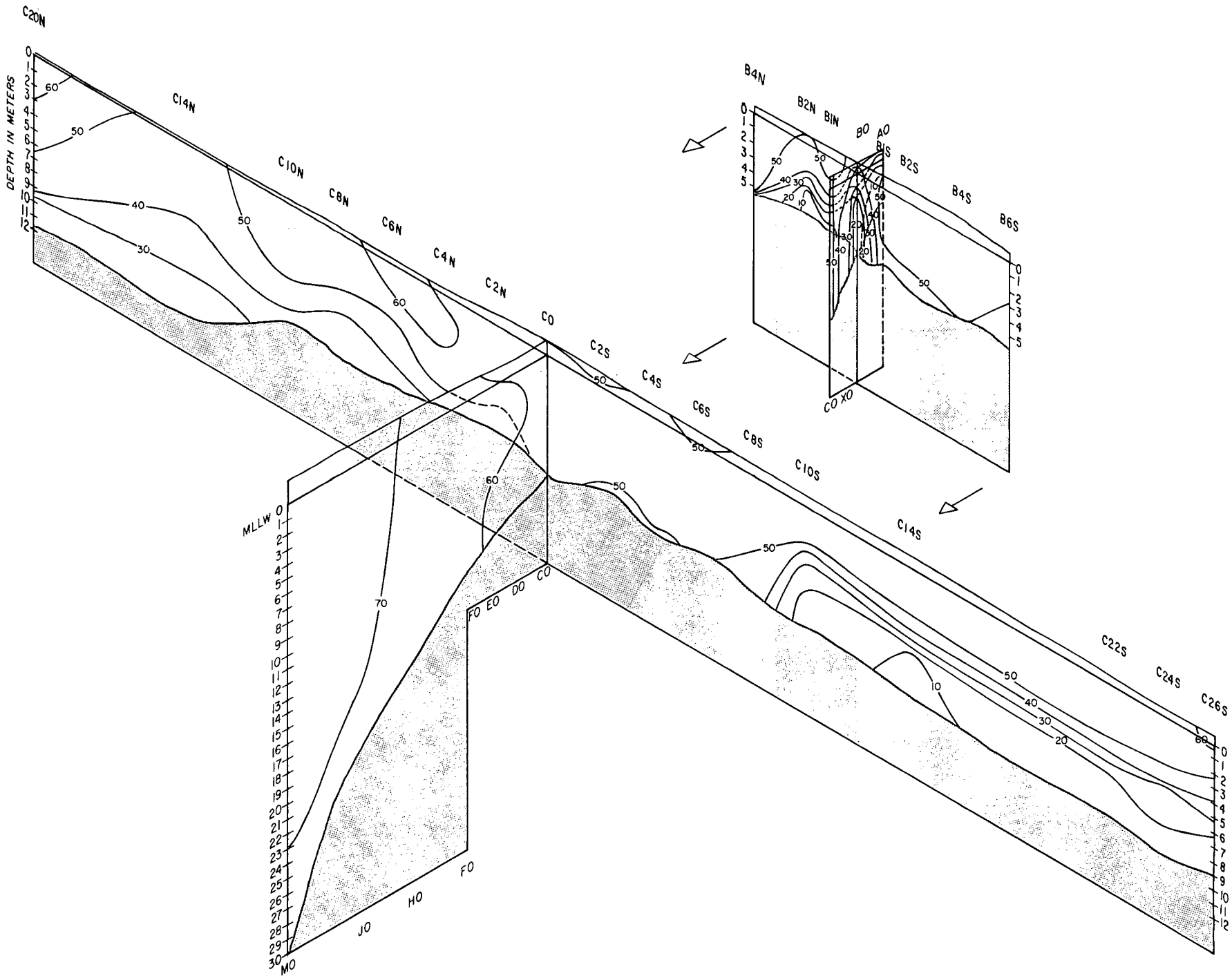



**Figure E-12. Light Transmittance Vertical Isometric Cross-section for November 16, 1978**

**Horizontal Contour Charts of Surface and 4 m Percent Light Transmittance**

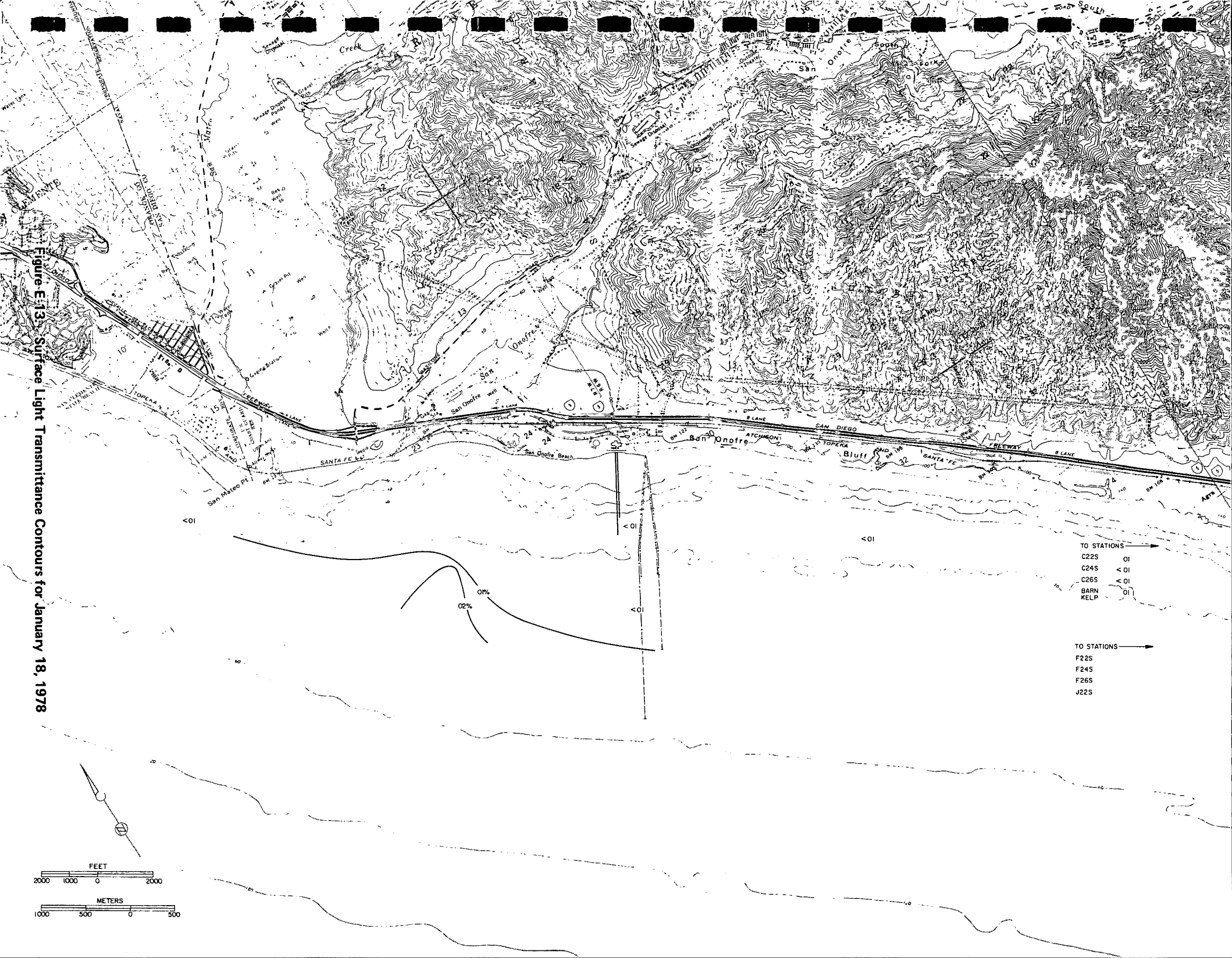



Figure E-13. Surface Light Transmittance Contours for January 18, 1978

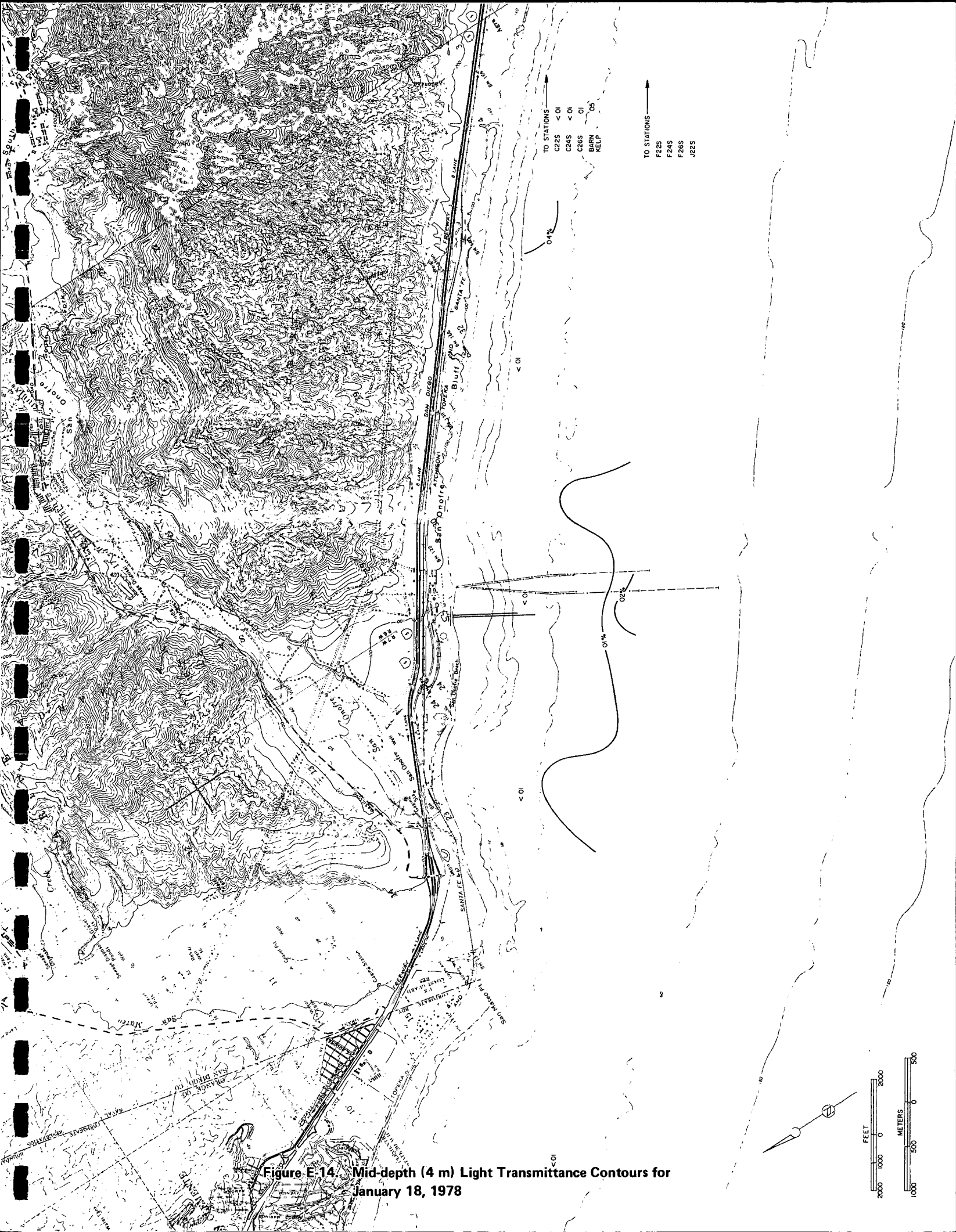



Figure E-14. Mid-depth (4 m) Light Transmittance Contours for January 18, 1978

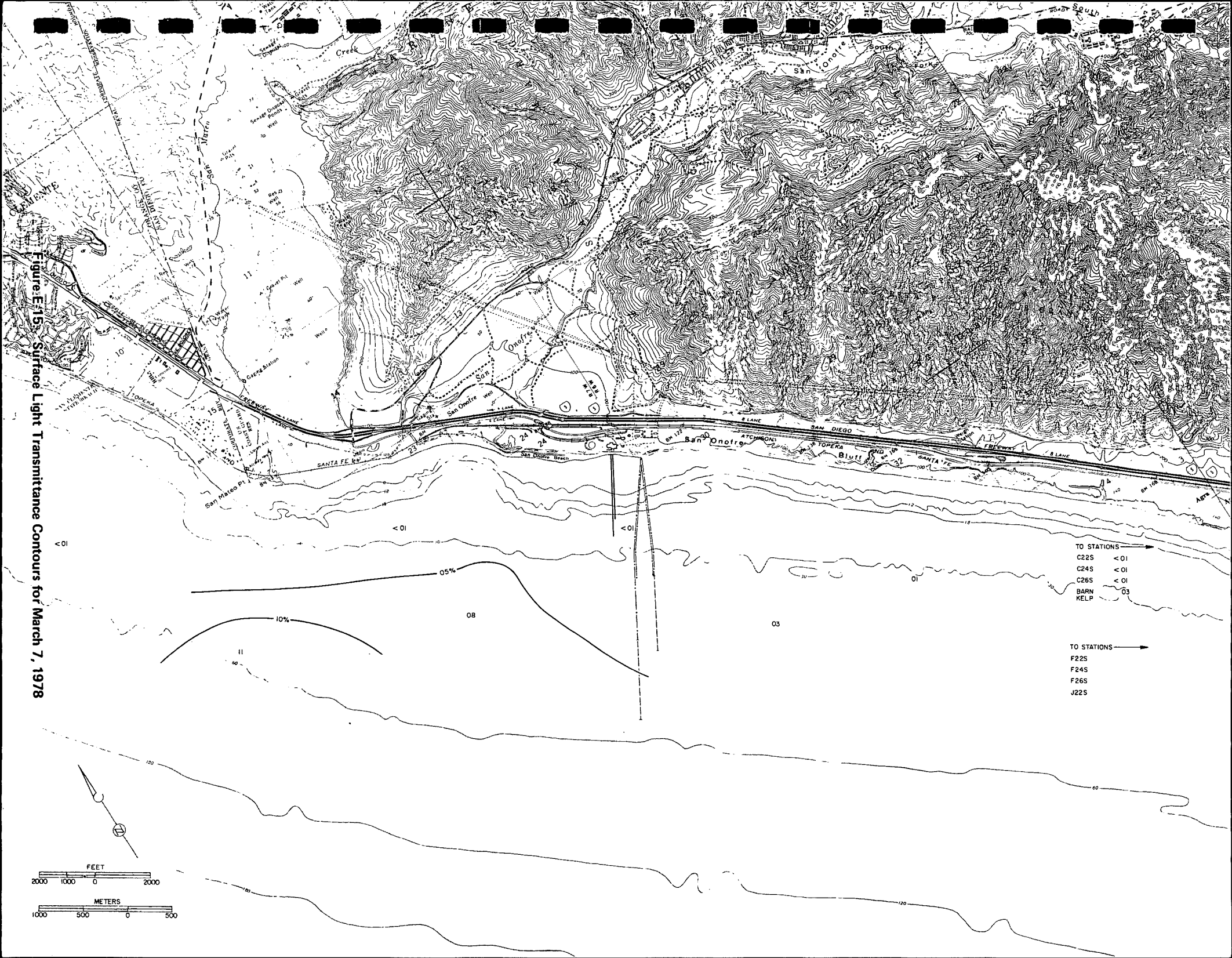



Figure E-15. Surface Light Transmittance Contours for March 7, 1978

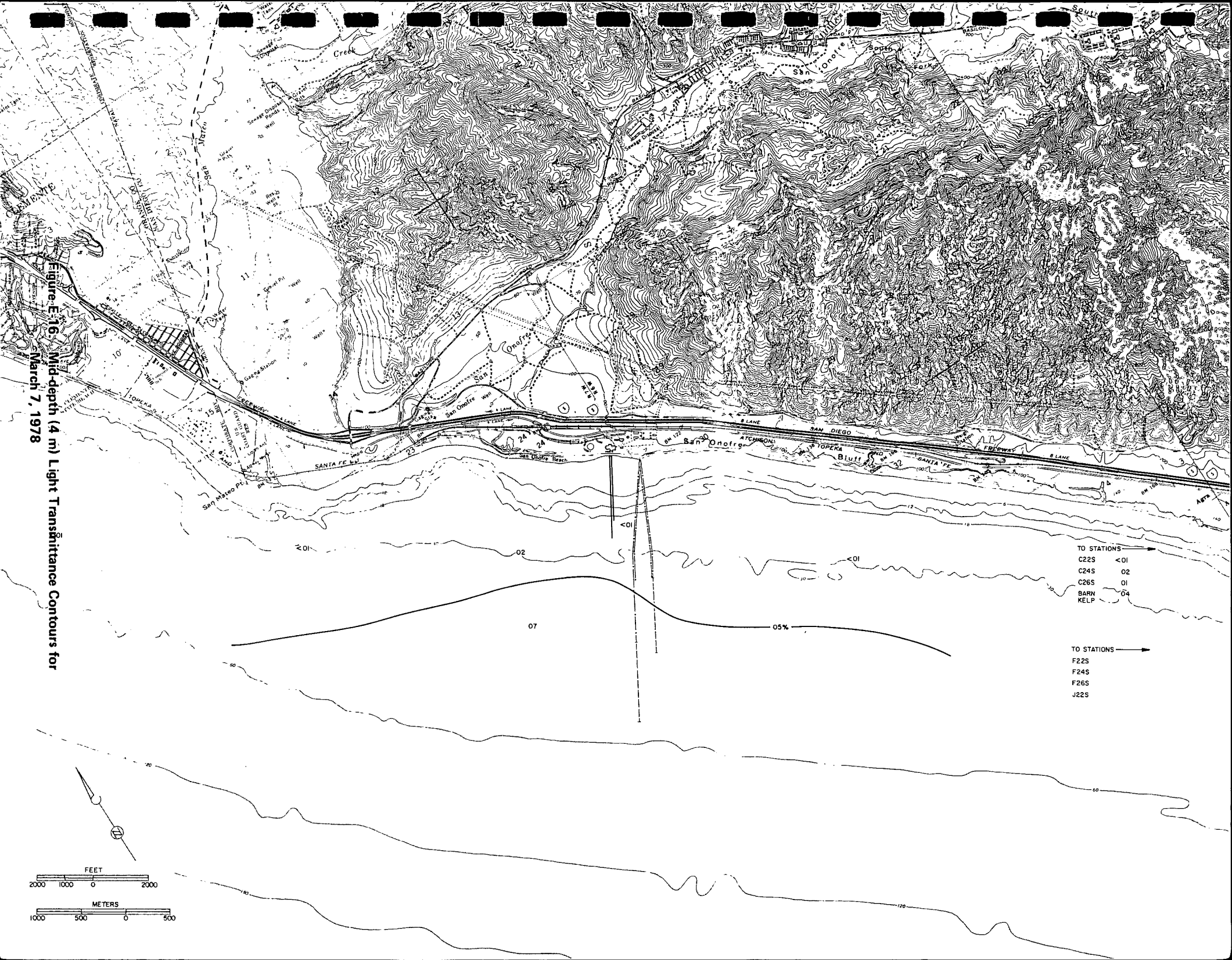



Figure E-16 Mid-depth (4 m) Light Transmittance Contours for March 7, 1978

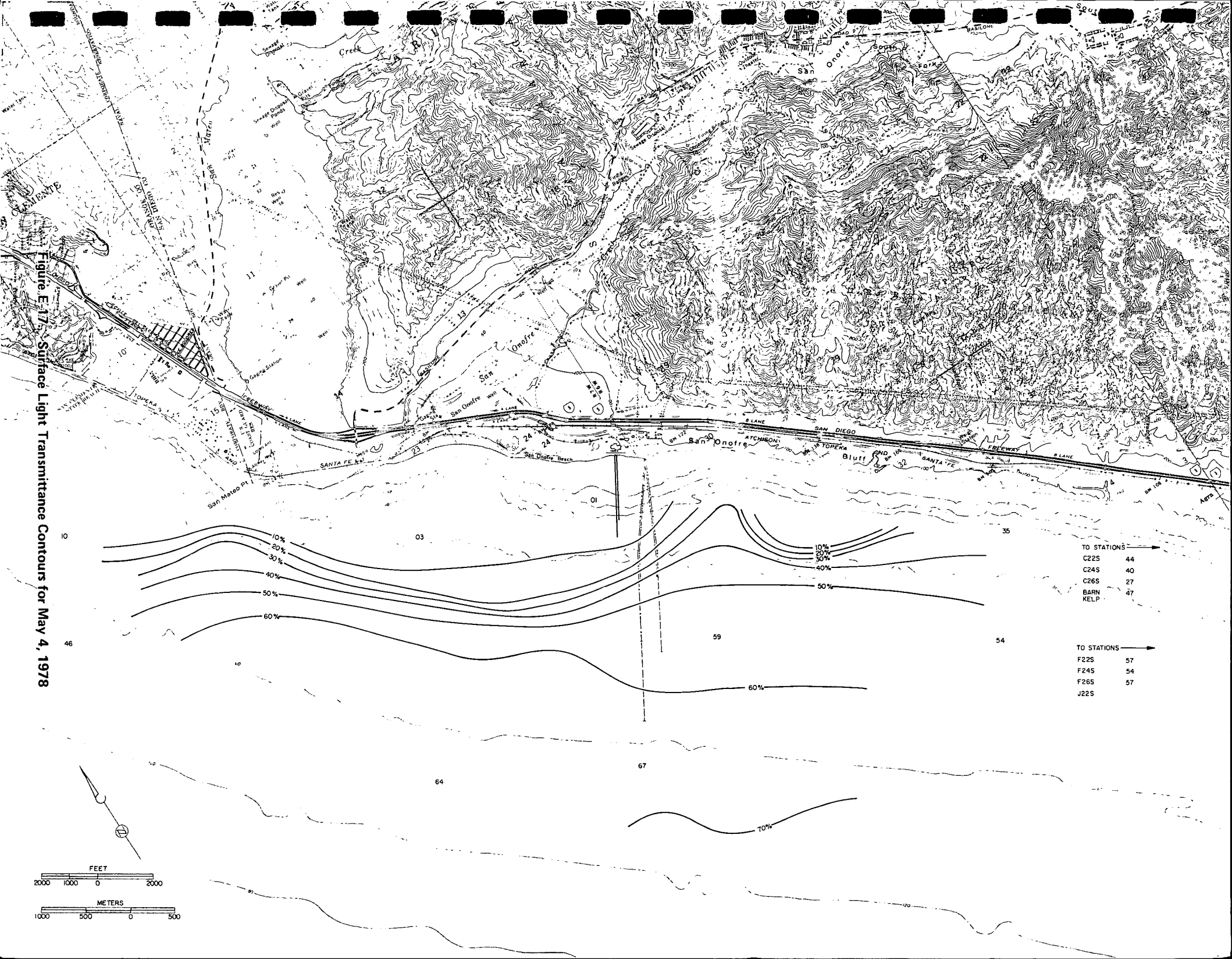



Figure E-17. Surface Light Transmittance Contours for May 4, 1978

Figure E.18. Mid-depth (4 m) Light Transmittance Contours for May 4, 1978

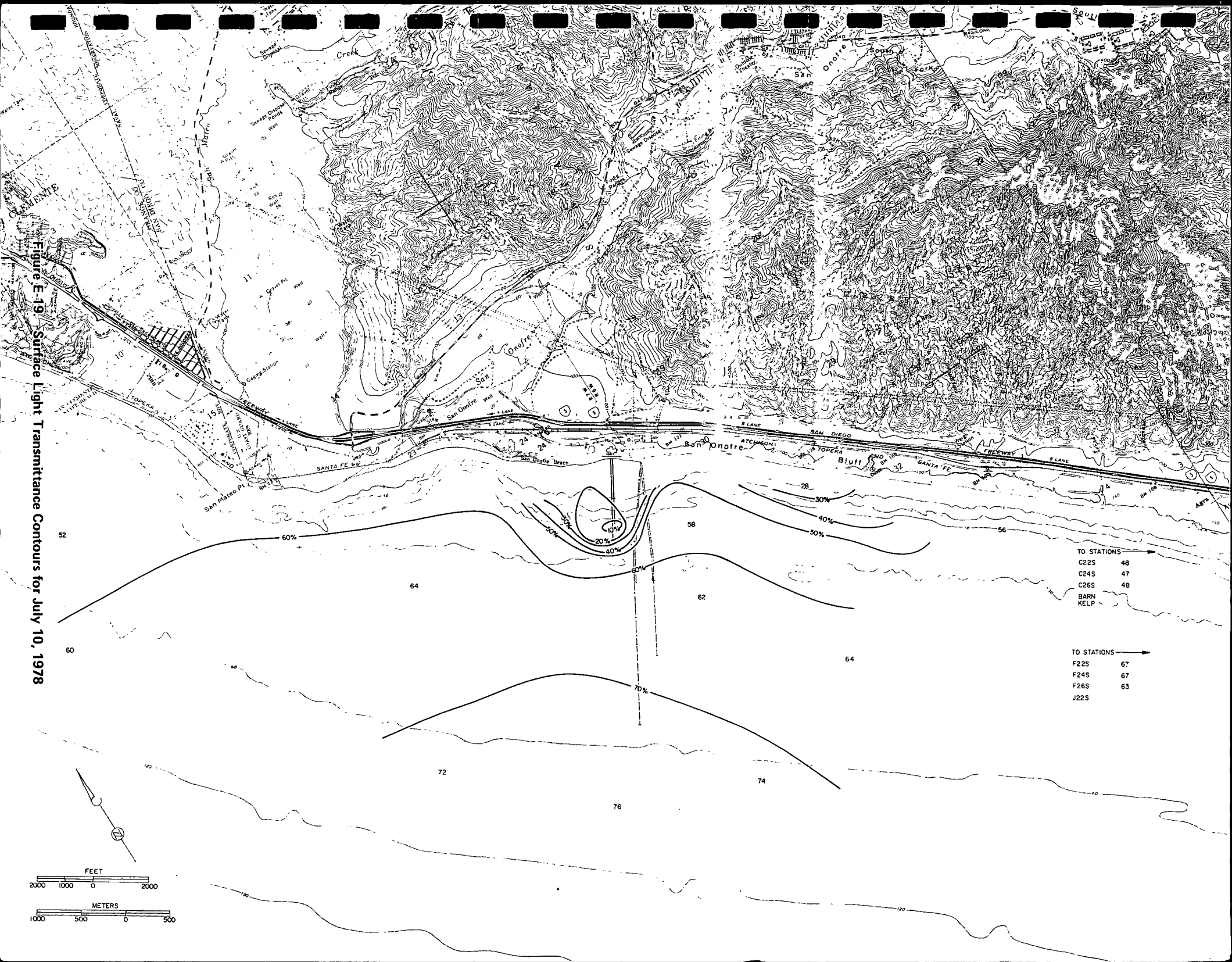



Figure E-19. Surface Light Transmittance Contours for July 10, 1978

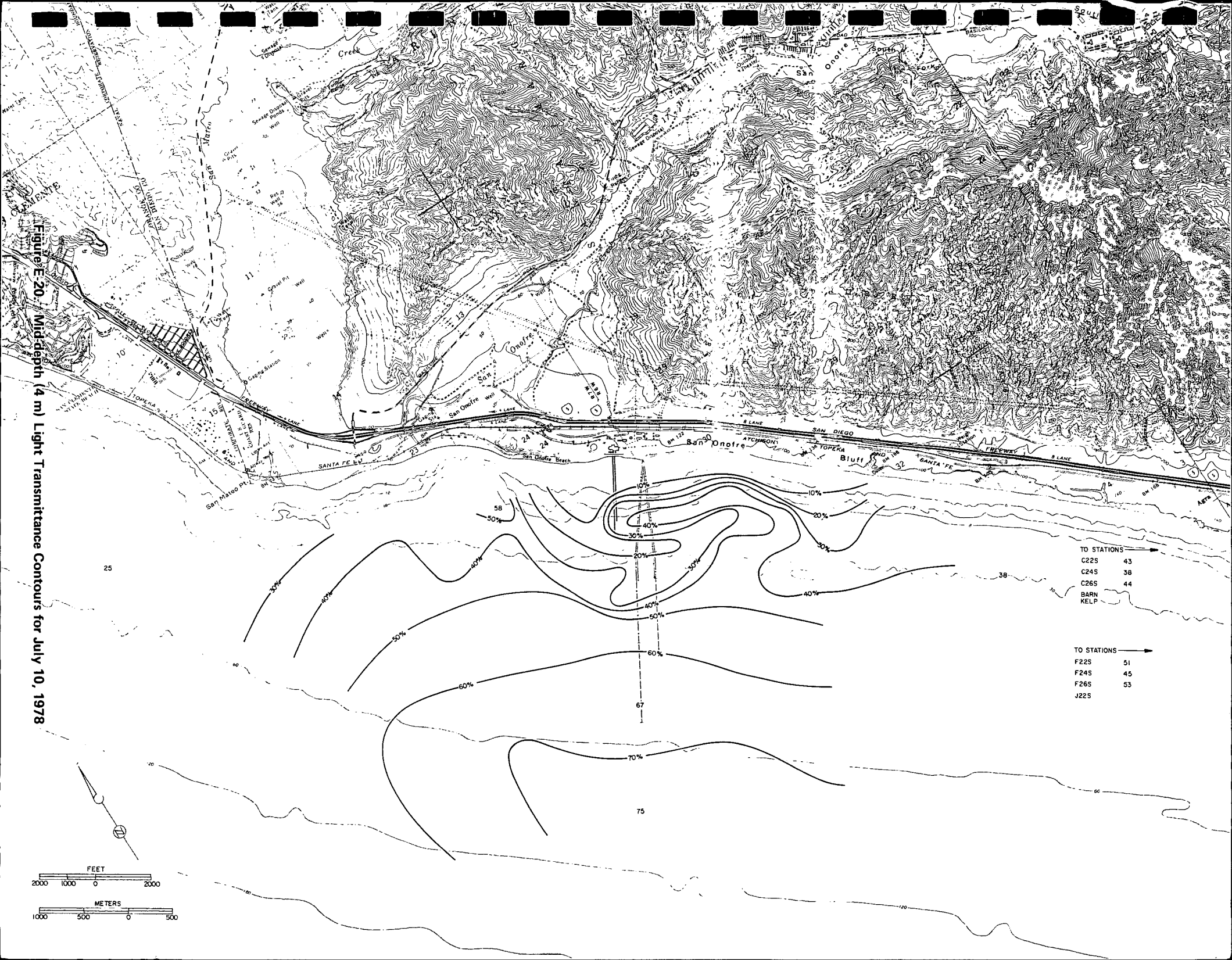



Figure E-20. Mid-depth (4 m) Light Transmittance Contours for July 10, 1978

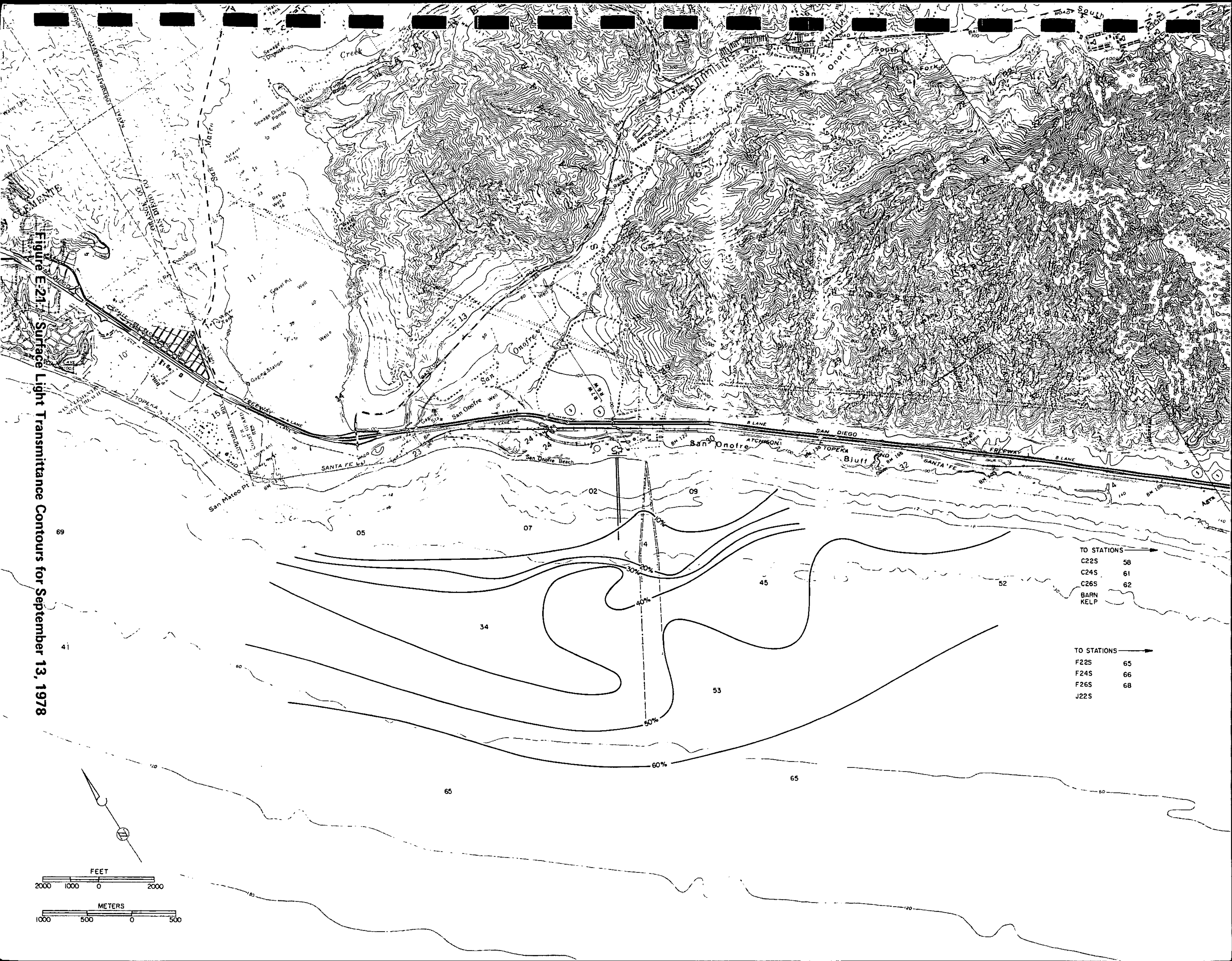



Figure E.21. Surface Light Transmittance Contours for September 13, 1978

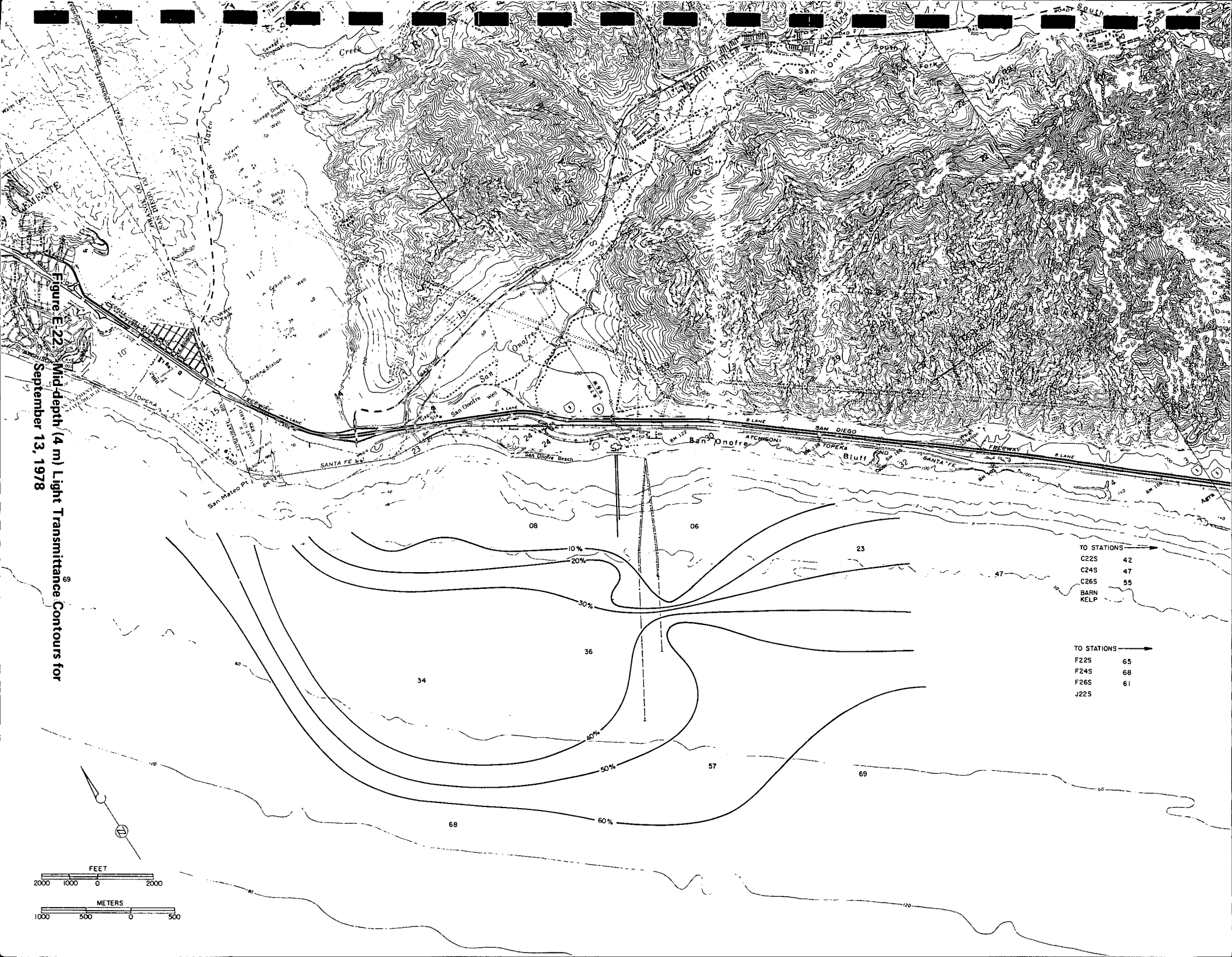



Figure E-22. Mid-depth (4 m) Light Transmittance Contours for September 13, 1978

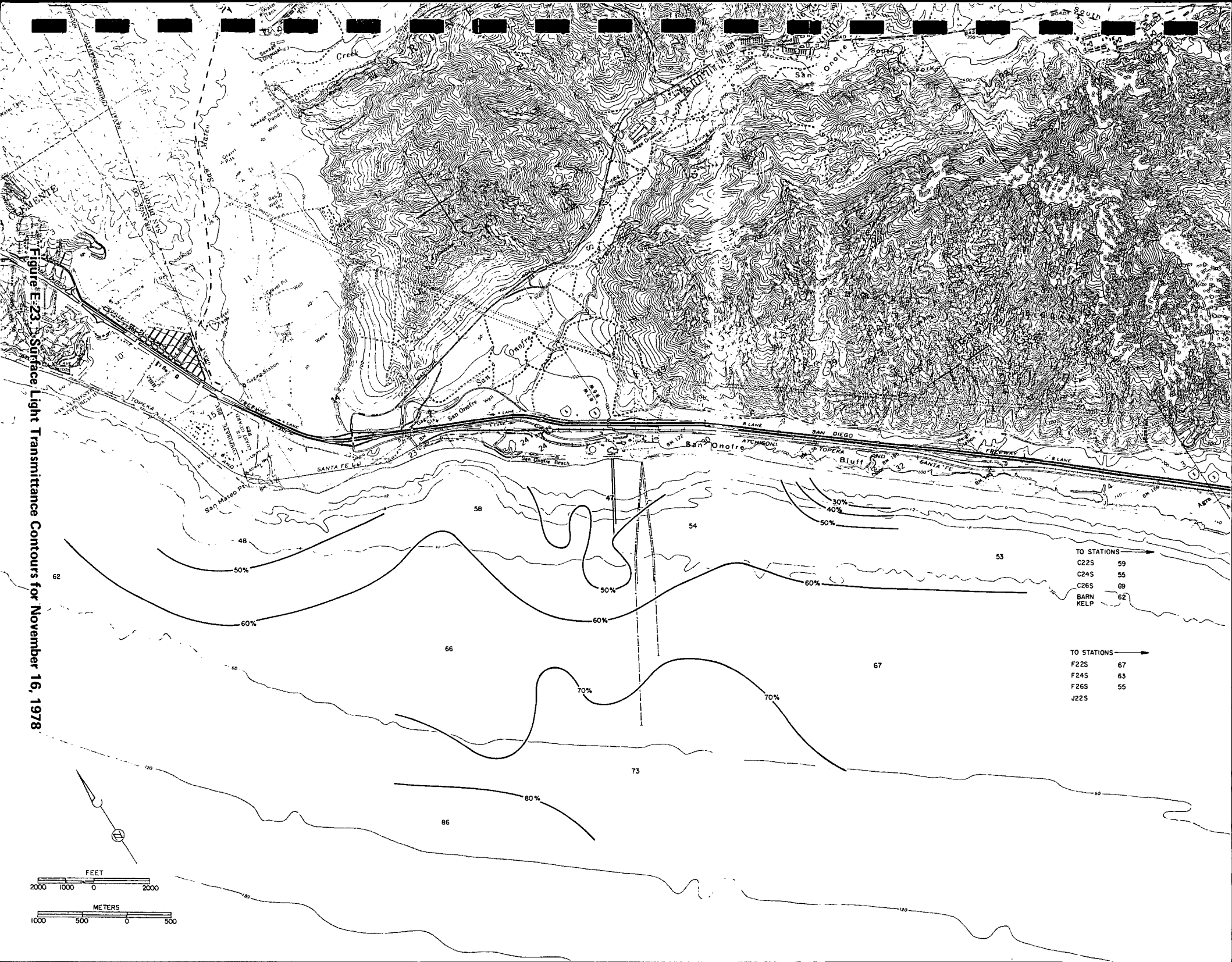



Figure E-23 Surface Light Transmittance Contours for November 16, 1978

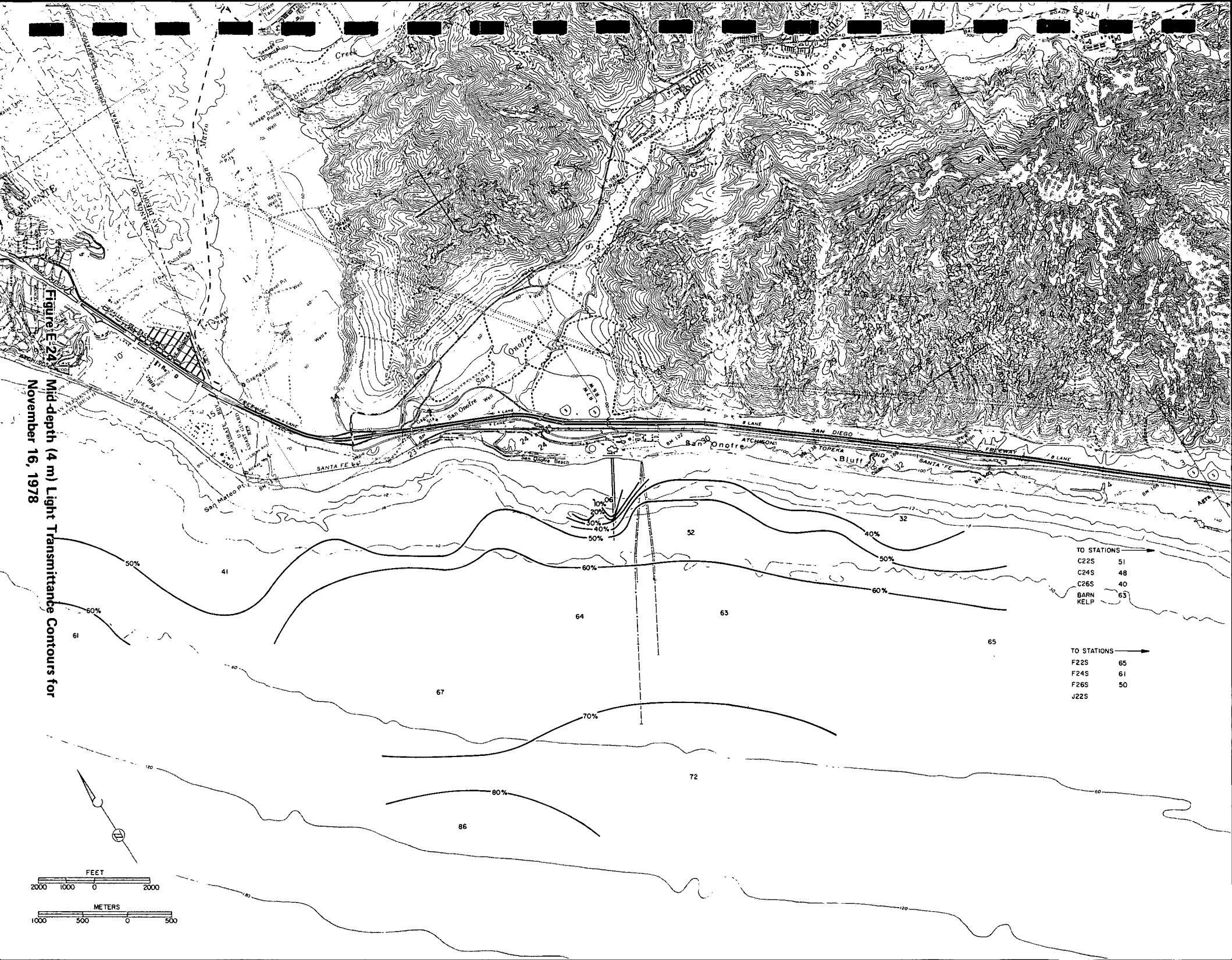



Figure E-24. Mid-depth (4 m) Light Transmittance Contours for November 16, 1978

## Horizontal Contour Charts of Secchi Disc Values

Figure E.25 Secchi Disc Depth of Visibility Contours for January 18, 1978

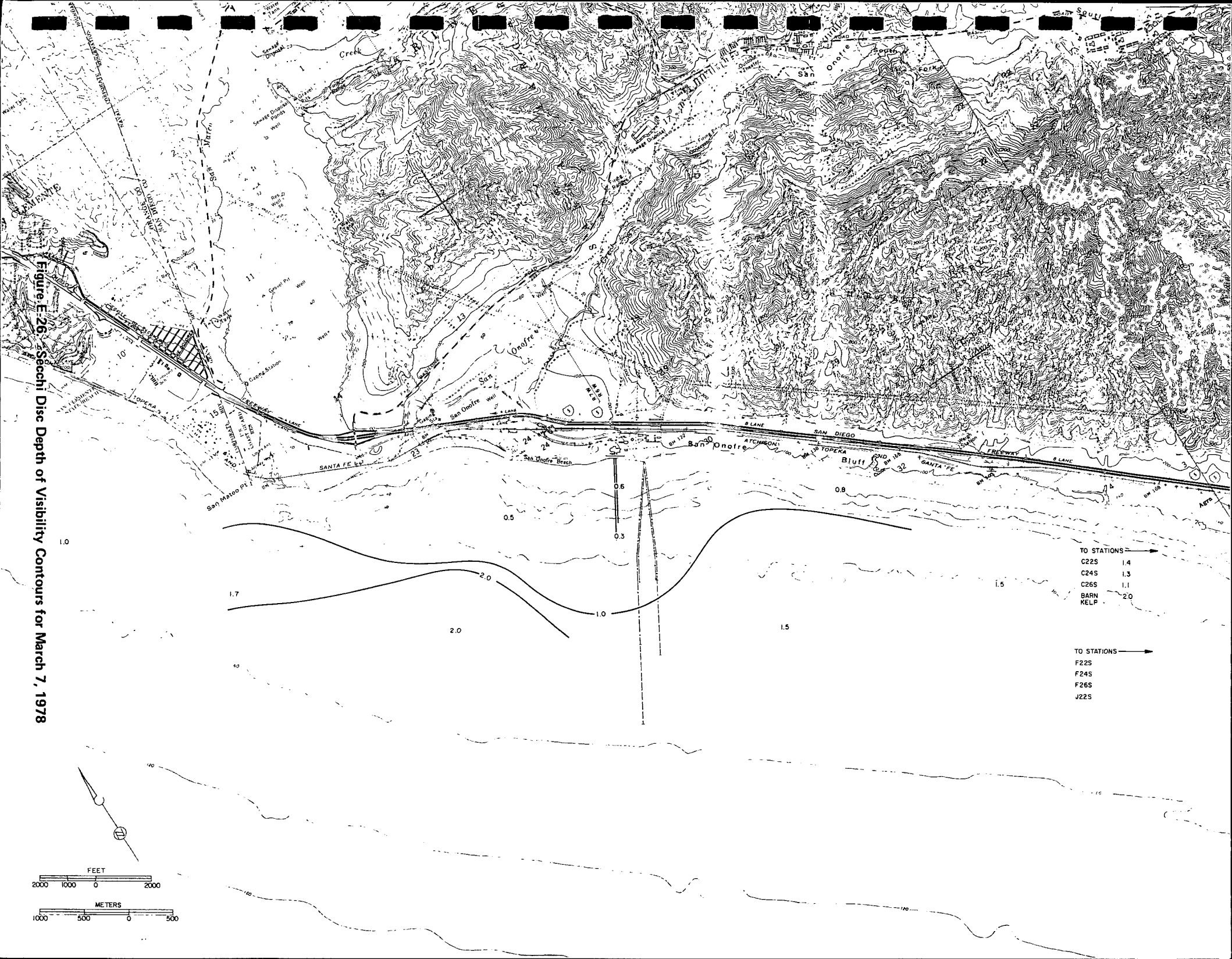



Figure E.26 Secchi Disc Depth of Visibility Contours for March 7, 1978

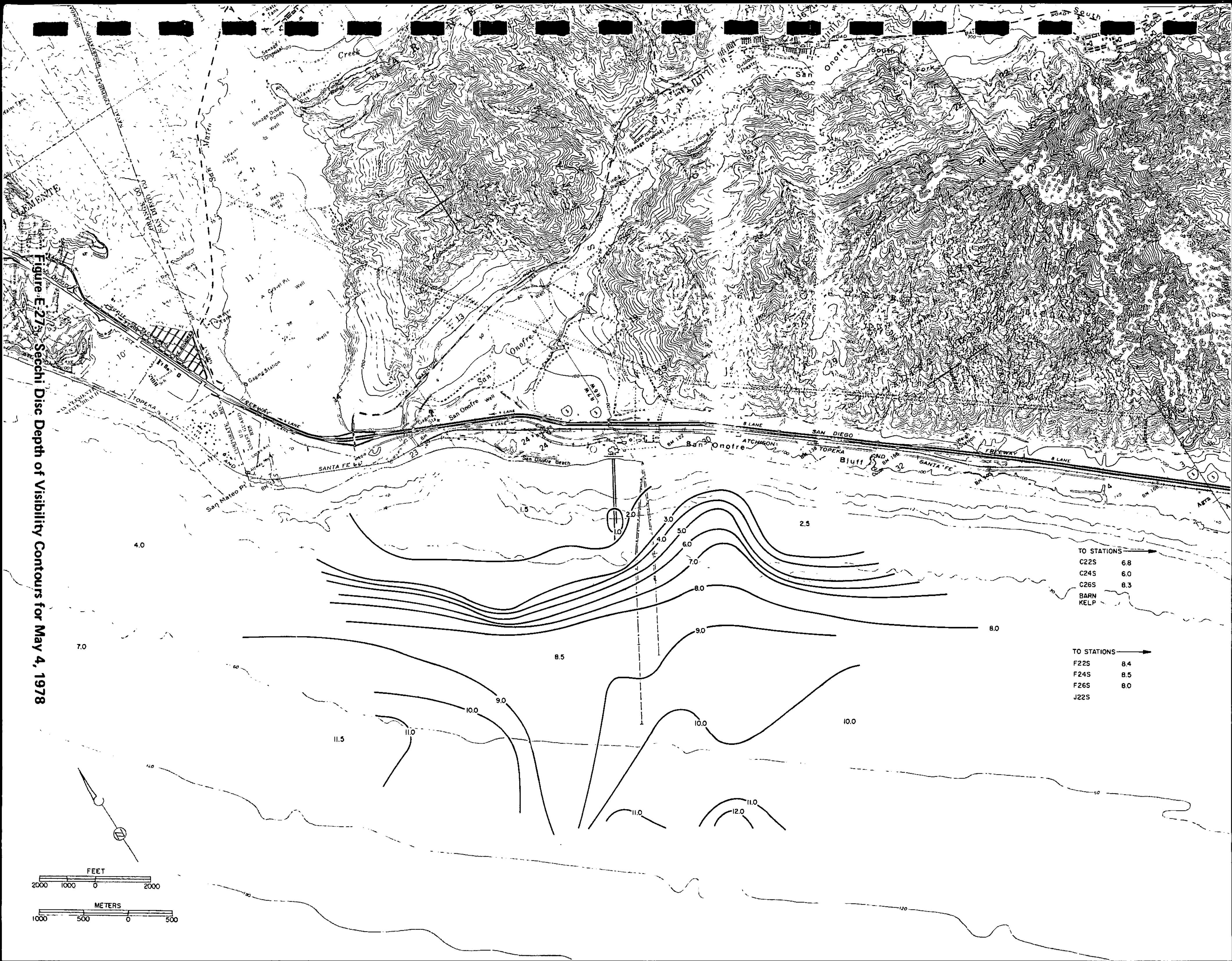



Figure E-27. Secchi Disc Depth of Visibility Contours for May 4, 1978

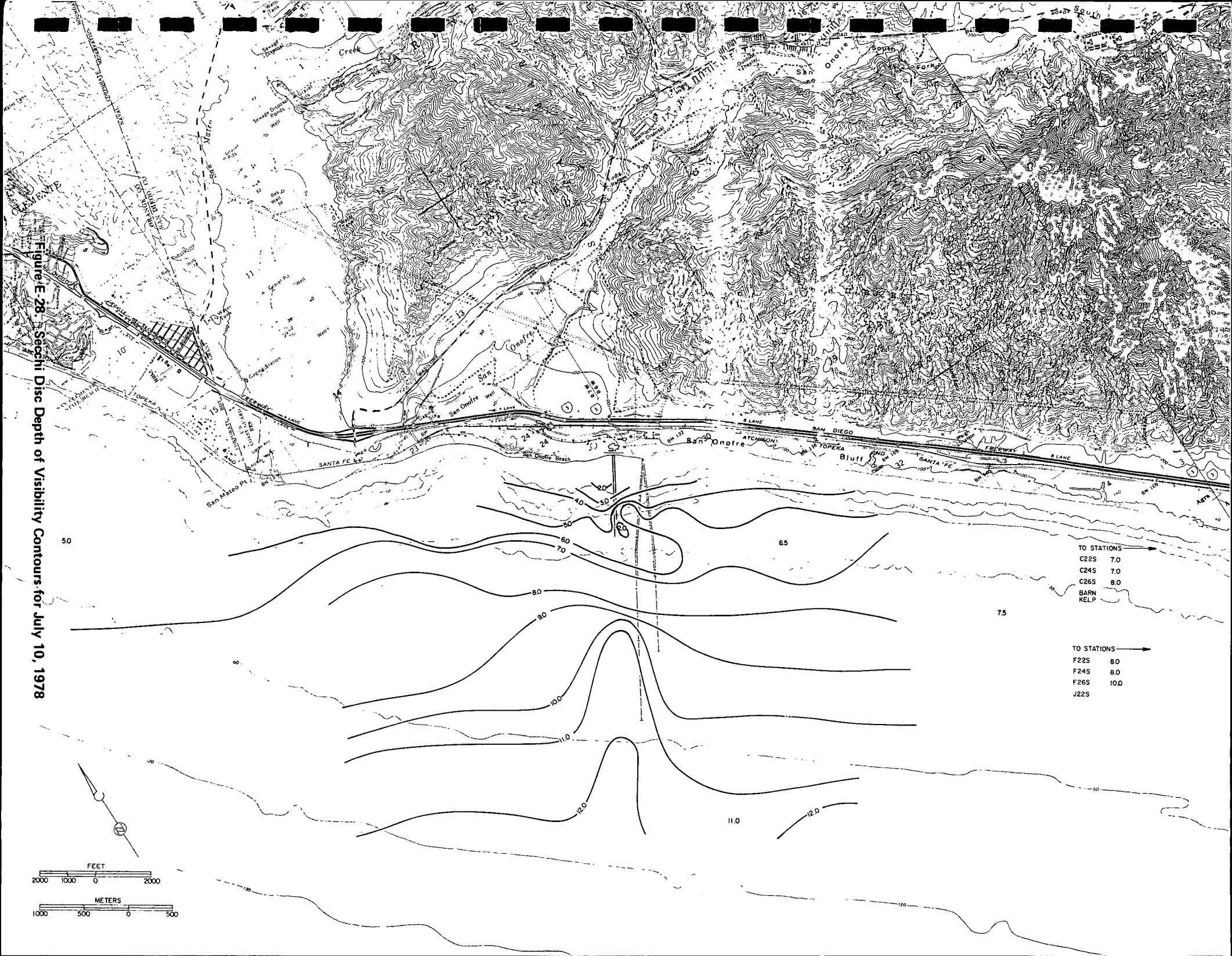



Figure E-28. Secchi Disc Depth of Visibility Contours for July 10, 1978

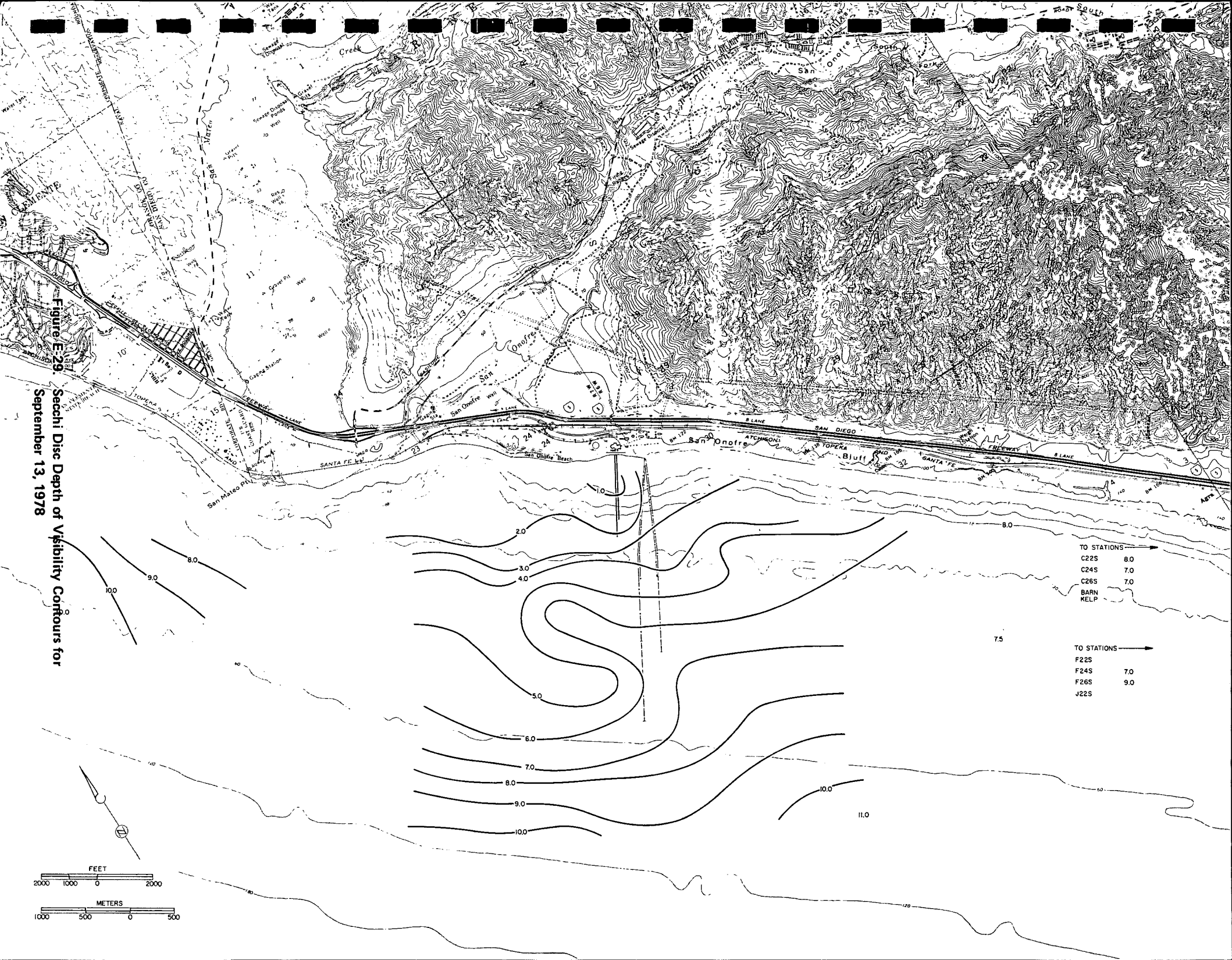



**Figure E-29. Secchi Disc Depth of Visibility Contours for September 13, 1978**

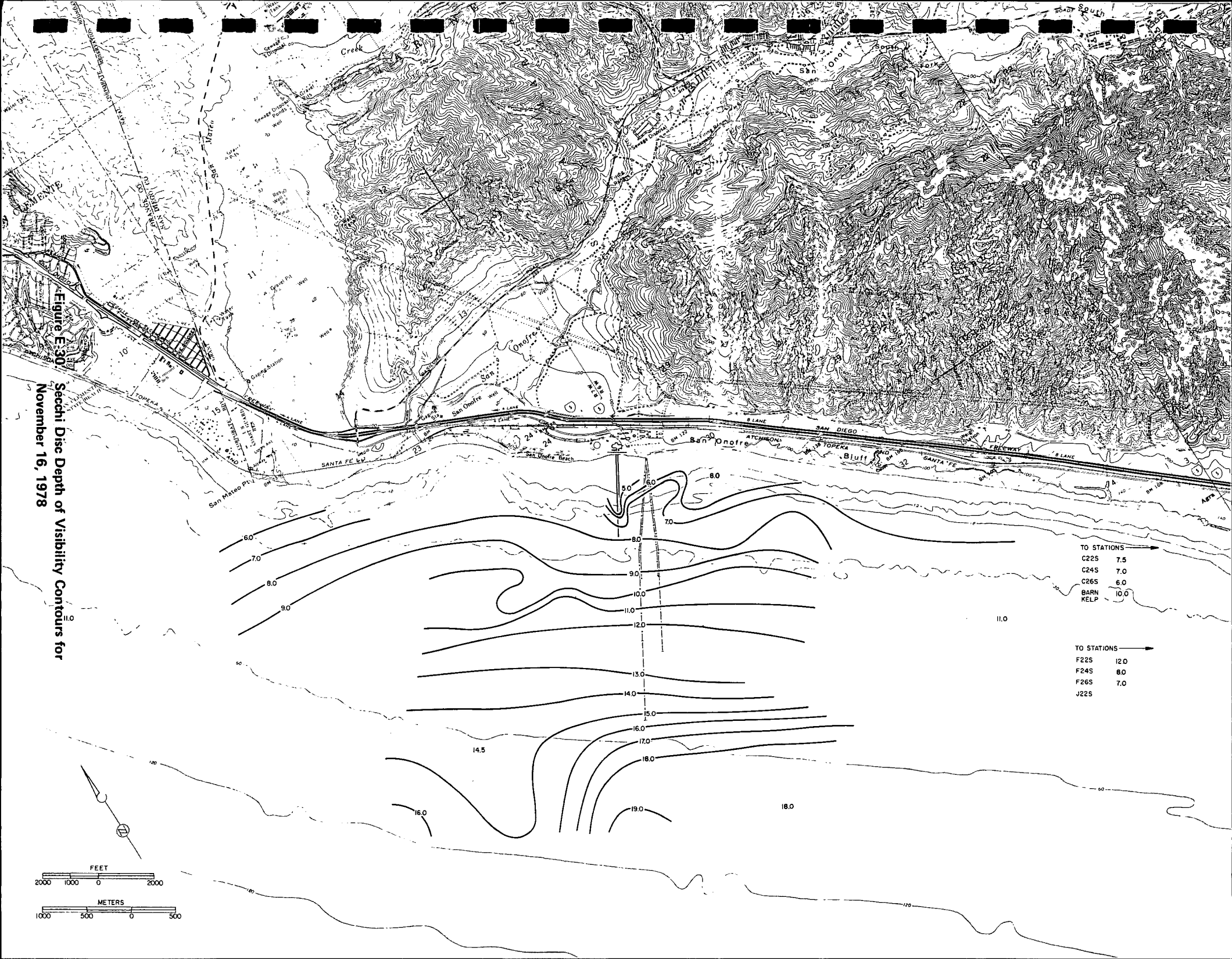



**Figure E-30**
**Secchi Disc Depth of Visibility Contours for November 16, 1978**

Surface and Mid-depth Suspended Solids
Concentration Contours

Figure E-31. Surface Suspended Solids Concentration Contours for July 10, 1978

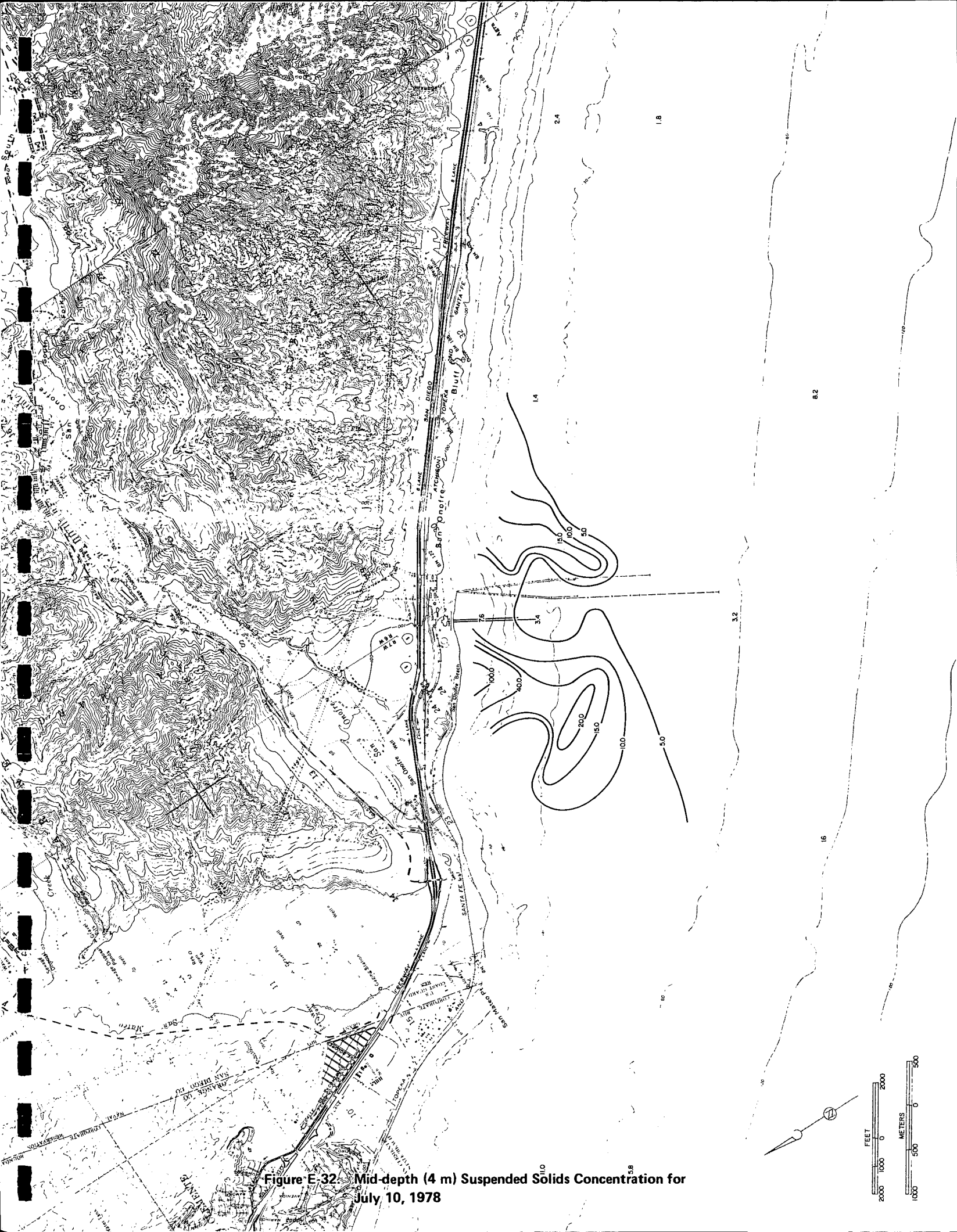



Figure E-32. Mid-depth (4 m) Suspended Solids Concentration for July 10, 1978

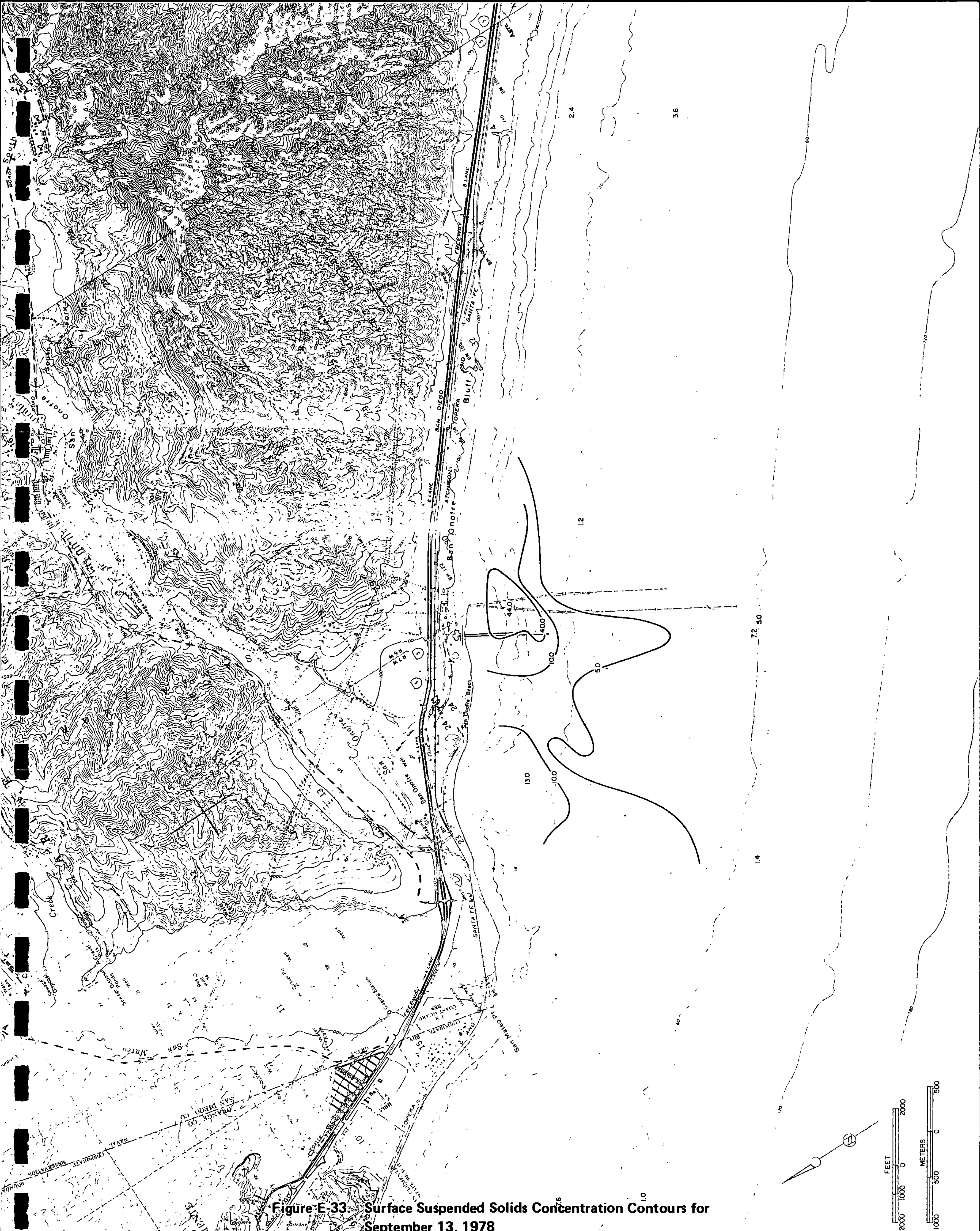



**Figure E-33. Surface Suspended Solids Concentration Contours for September 13, 1978**

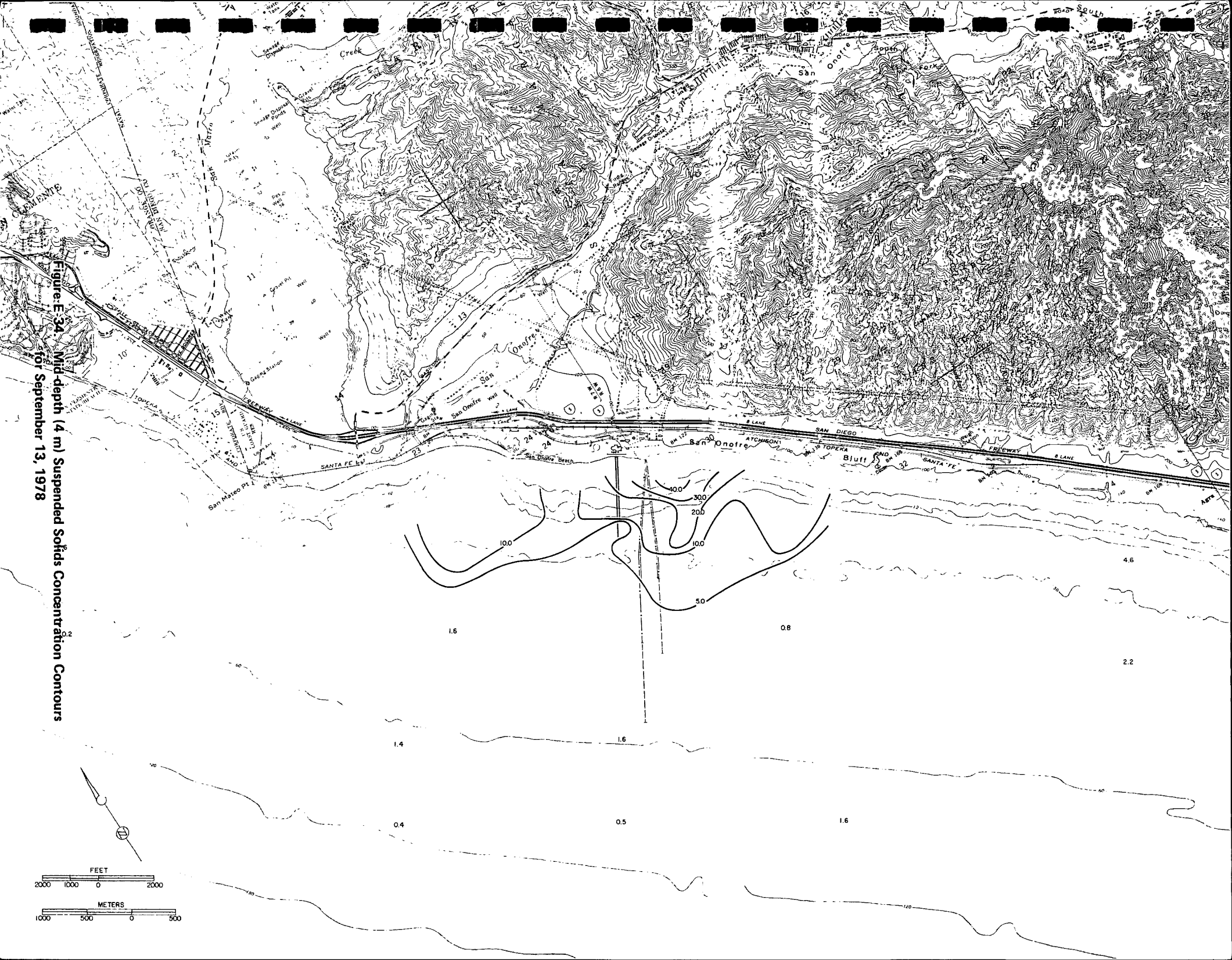



**Figure E-34: Mid-depth (4 m) Suspended Solids Concentration Contours for September 13, 1978**

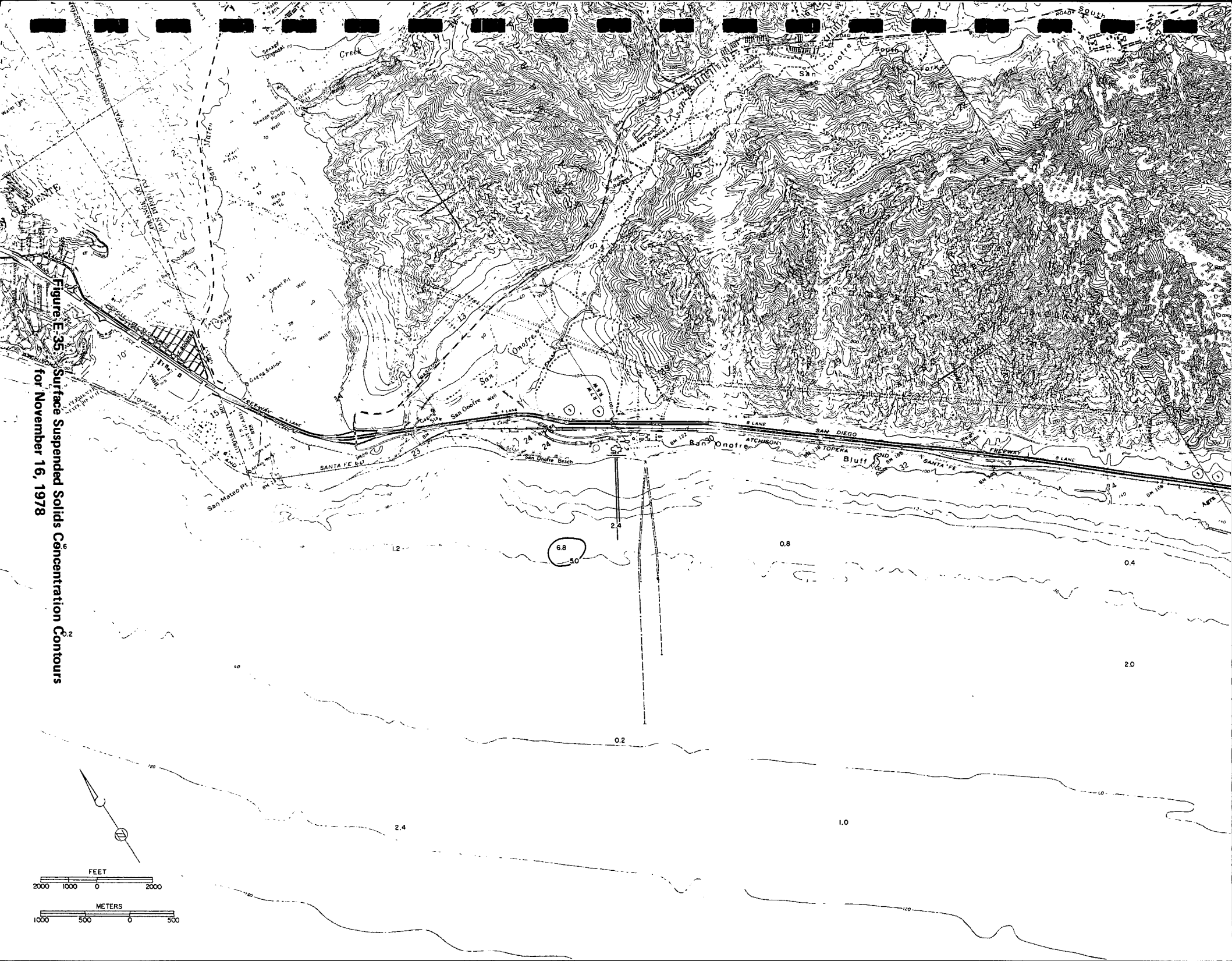



Figure E-35 Surface Suspended Solids Concentration Contours for November 16, 1978

Figure E-36. Mid-depth (4 m) Suspended Solids Concentration Contours for November 16, 1978

## Aerial Photographs

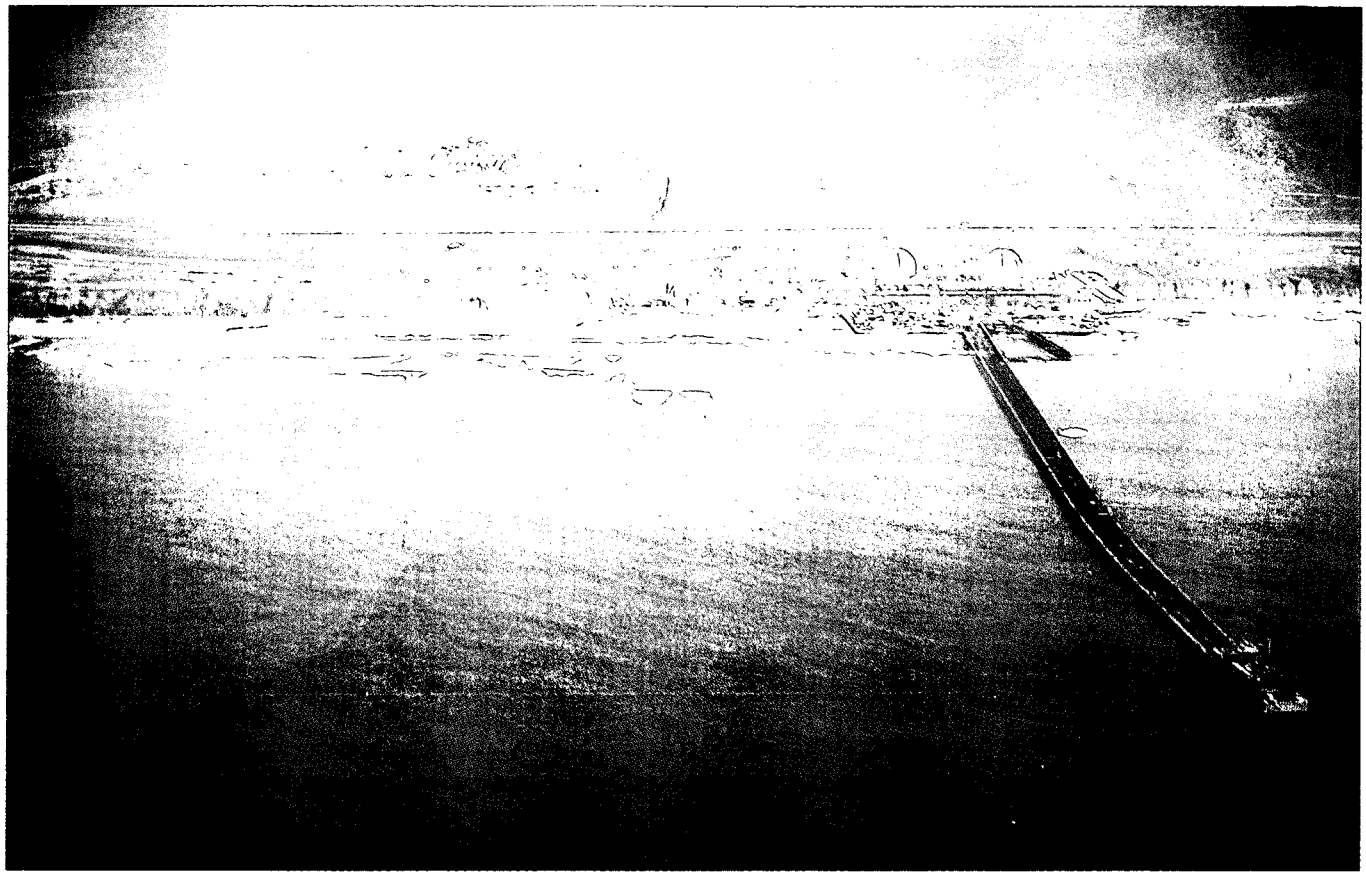


Figure E-37. March 7, 1978 Aerial Photograph Showing from 1000 feet to 3000 feet Upcoast of the Discharge

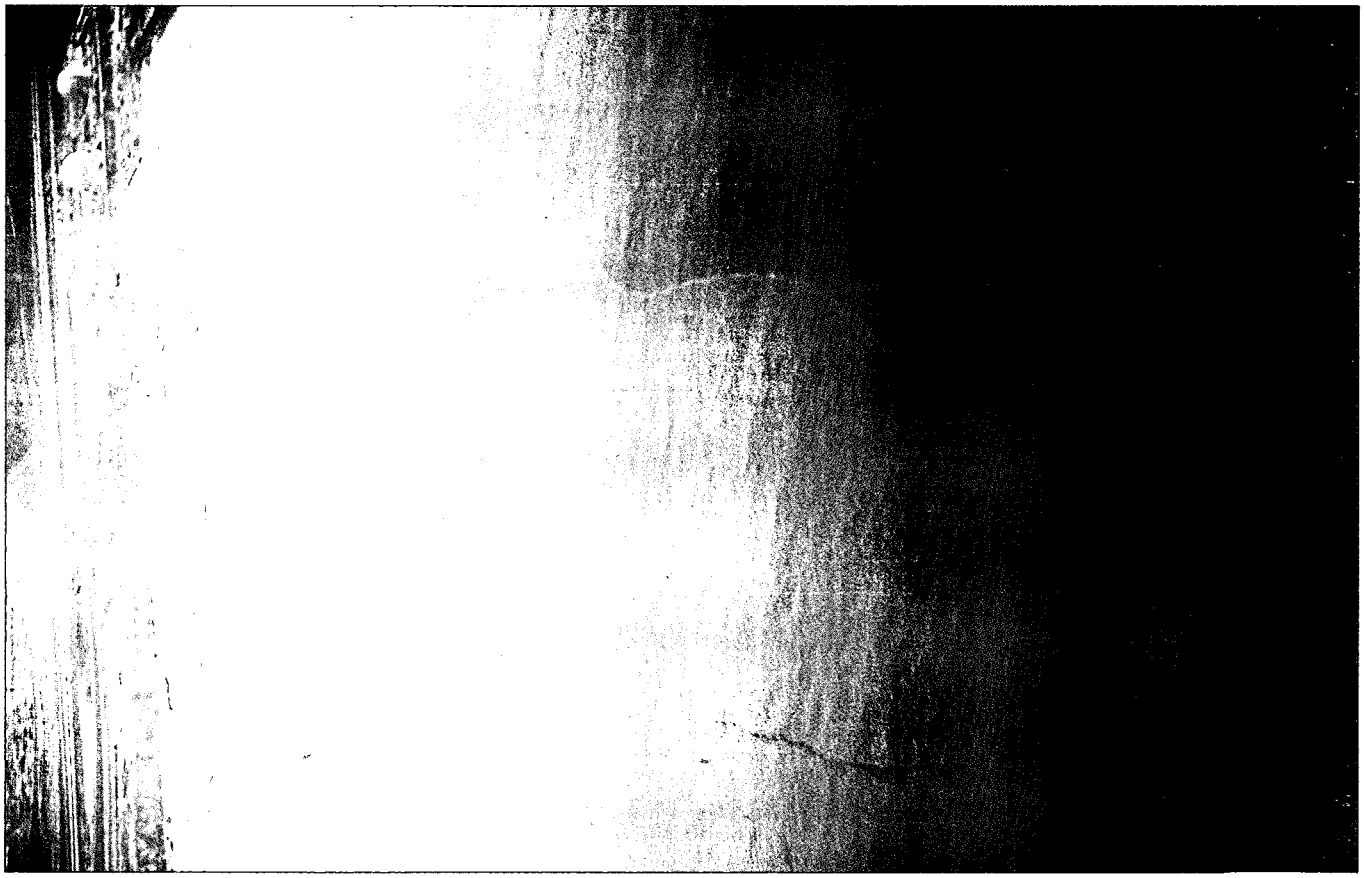


Figure E-38. March 7, 1978 Aerial Photograph Showing from the Discharge to 3000 feet Upcoast

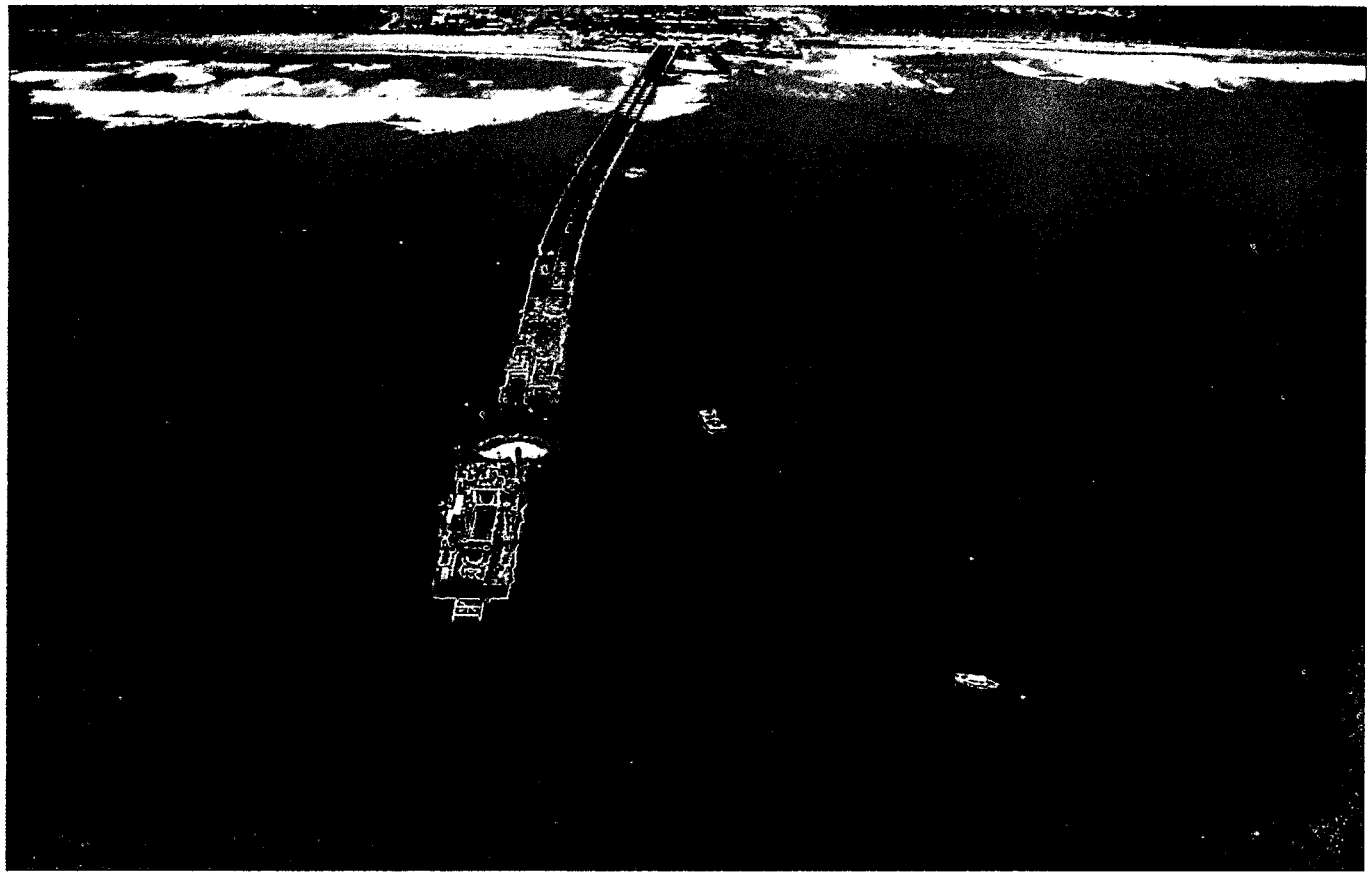


Figure E-39. May 4, 1978 Aerial Photograph Showing from the Discharge to 3000 feet Downcoast

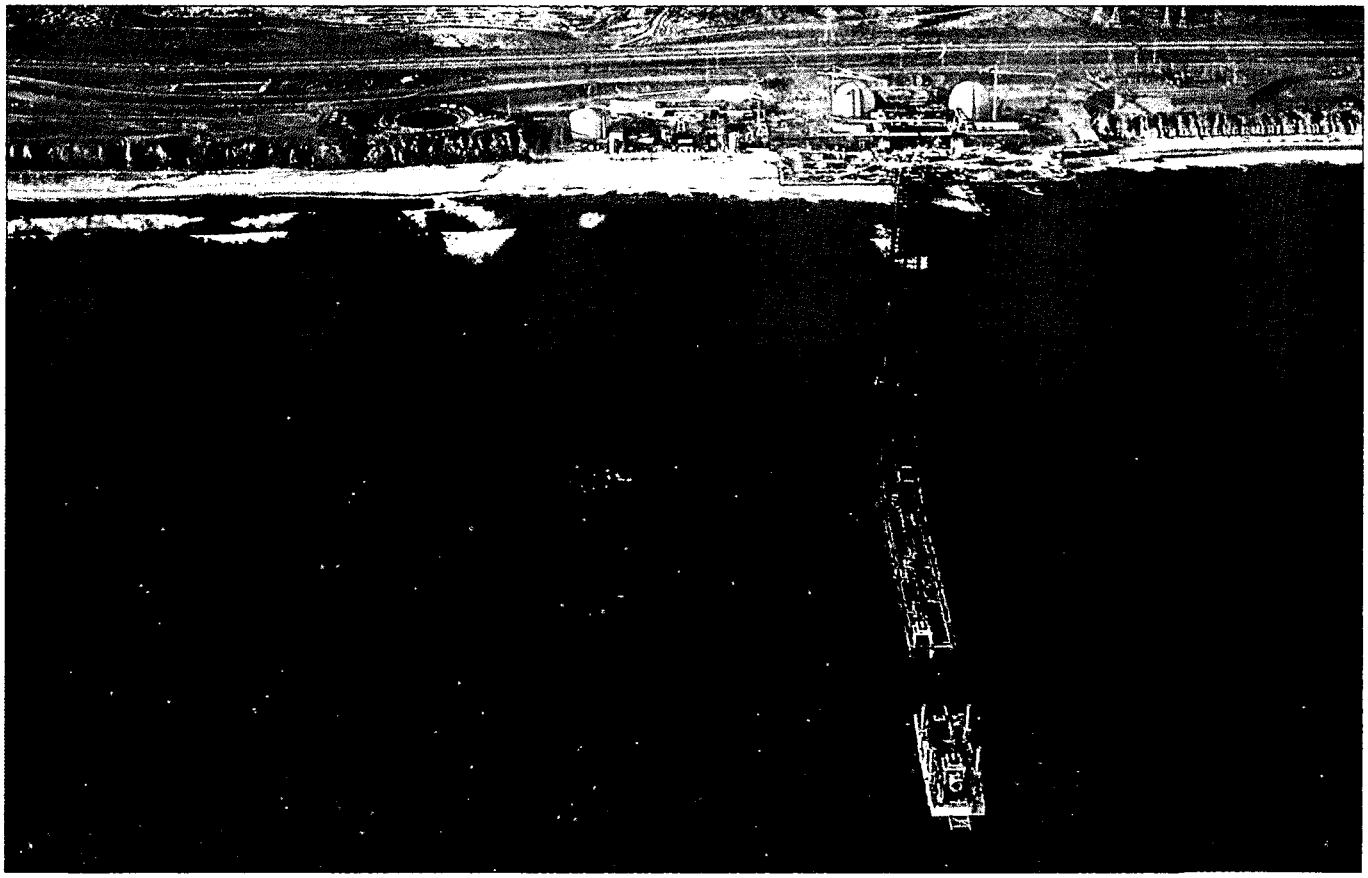


Figure E-40. May 6, 1978 Aerial Photograph Showing from 3000 feet Downcoast to 2000 feet Upcoast of the Discharge

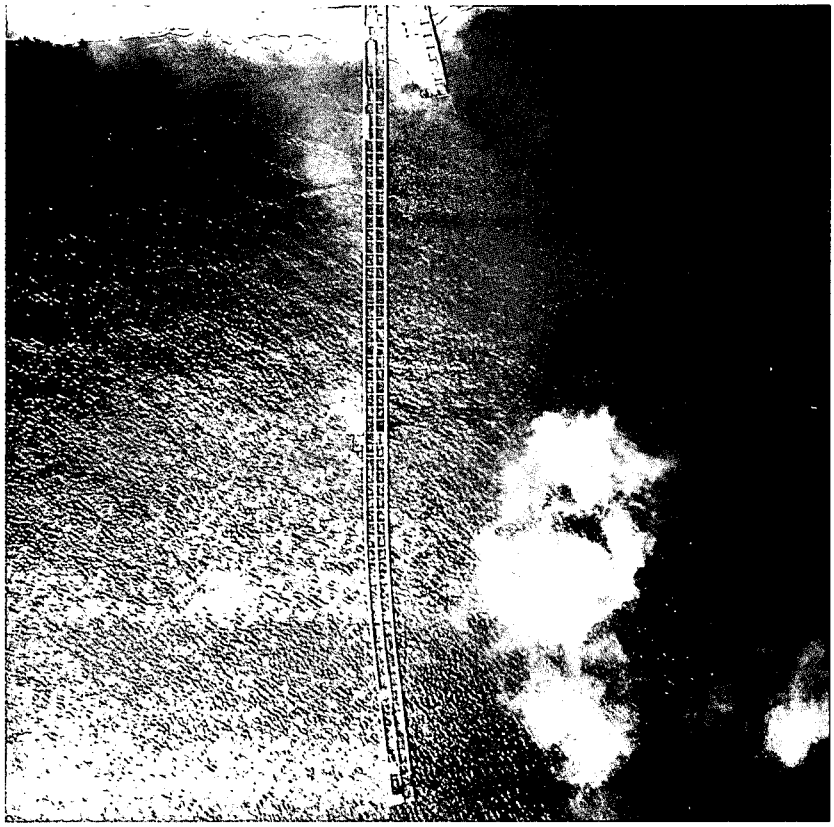


Figure E-41. July 10, 1978 Aerial Photograph Showing from 3000 feet Downcoast to 1000 feet Upcoast of the Discharge

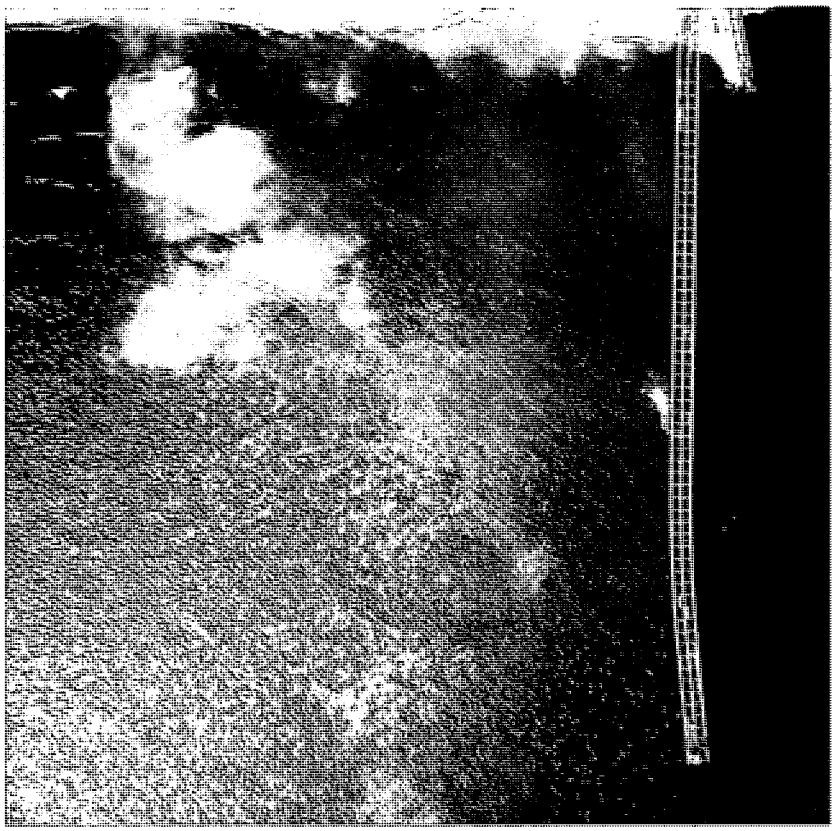


Figure E-42. July 10, 1978 Aerial Photograph Showing from 1000 feet Downcoast to 3000 feet Upcoast of the Discharge

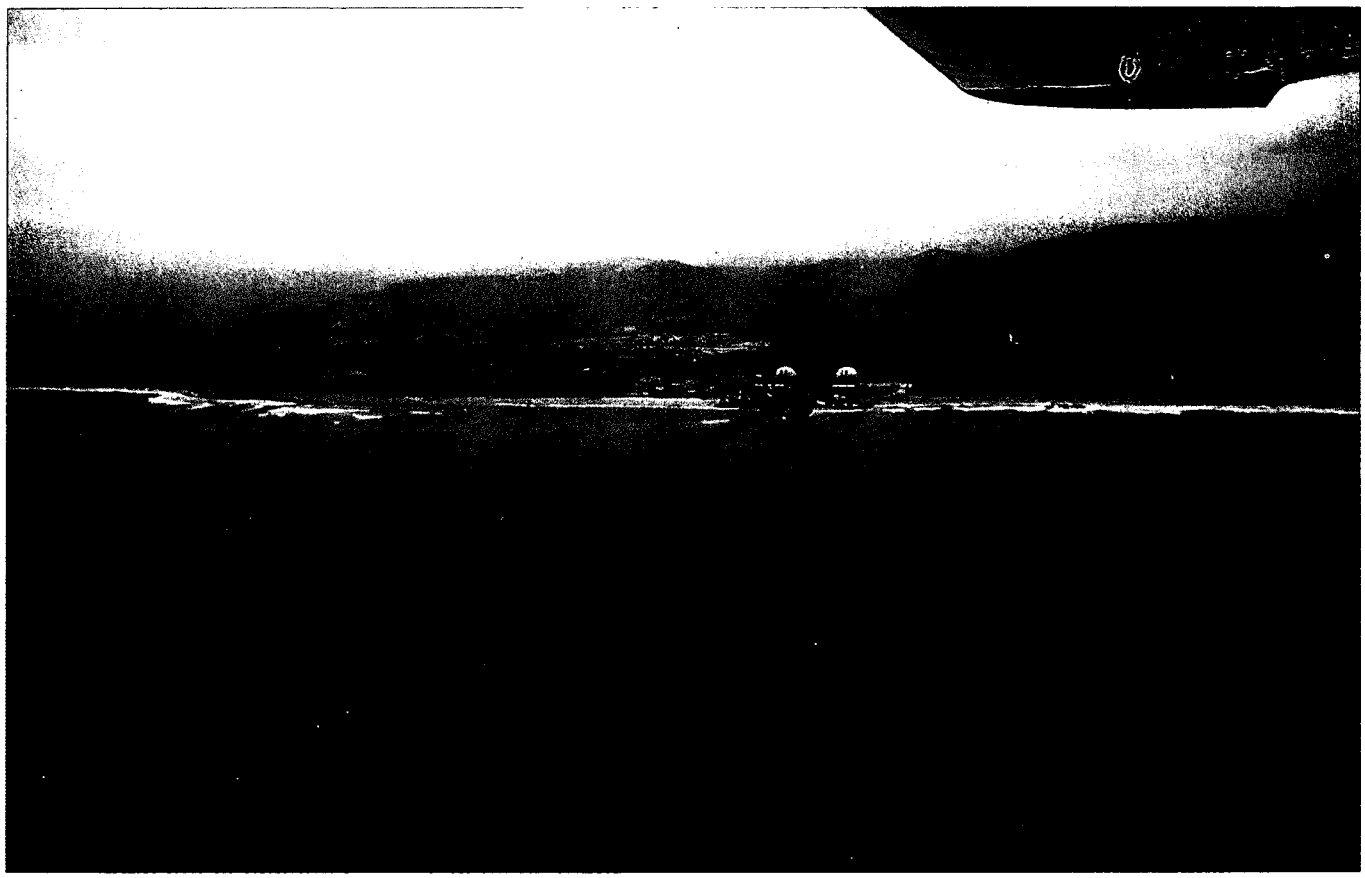


Figure E-43. September 13, 1978 Aerial Photograph Showing the Area from 4000 feet Downcoast to 3000 feet Upcoast of the Discharge

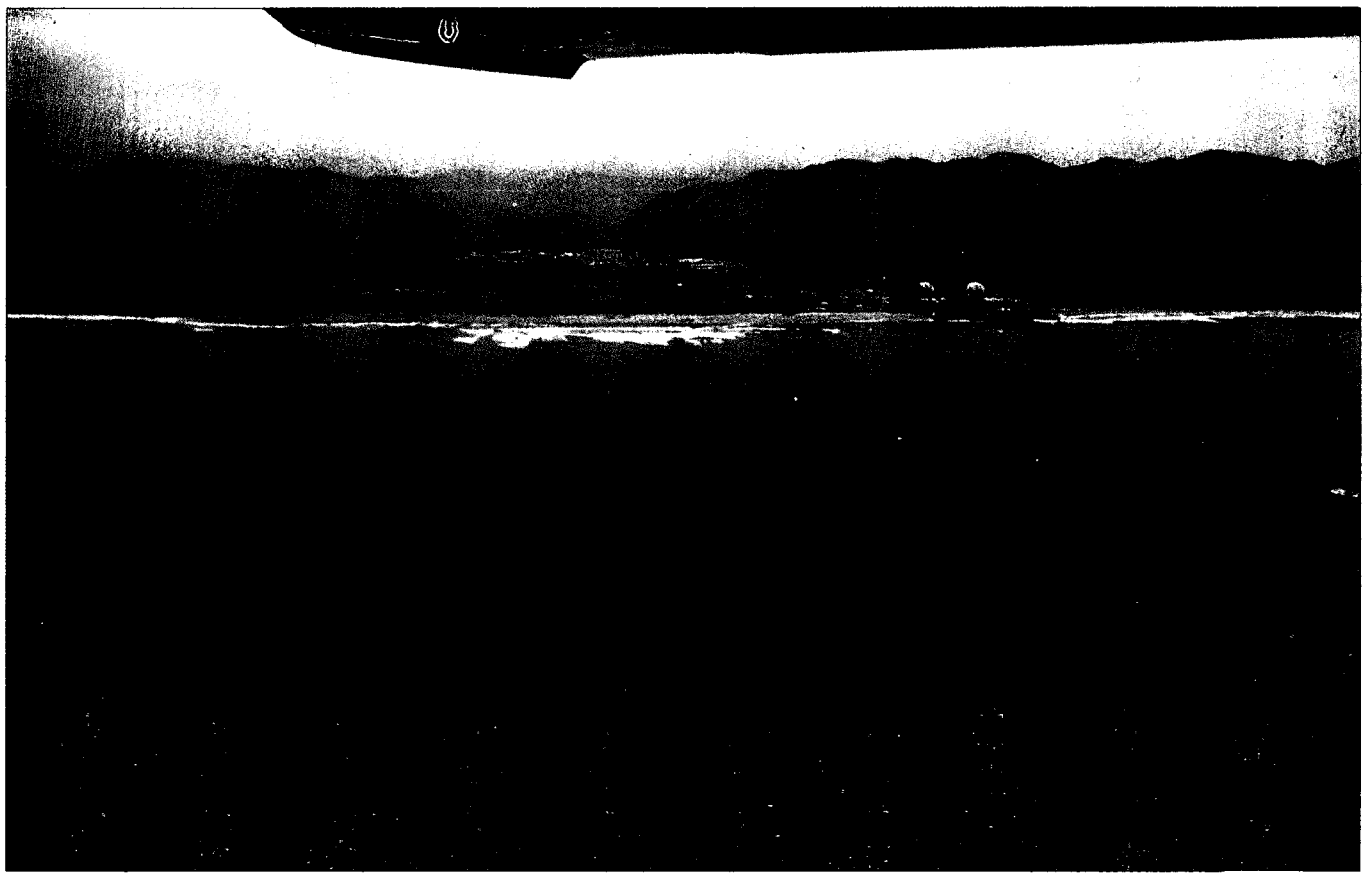


Figure E-44. September 13, 1978 Aerial Photograph Showing from 1000 feet Downcoast to 4000 feet Upcoast of the Discharge

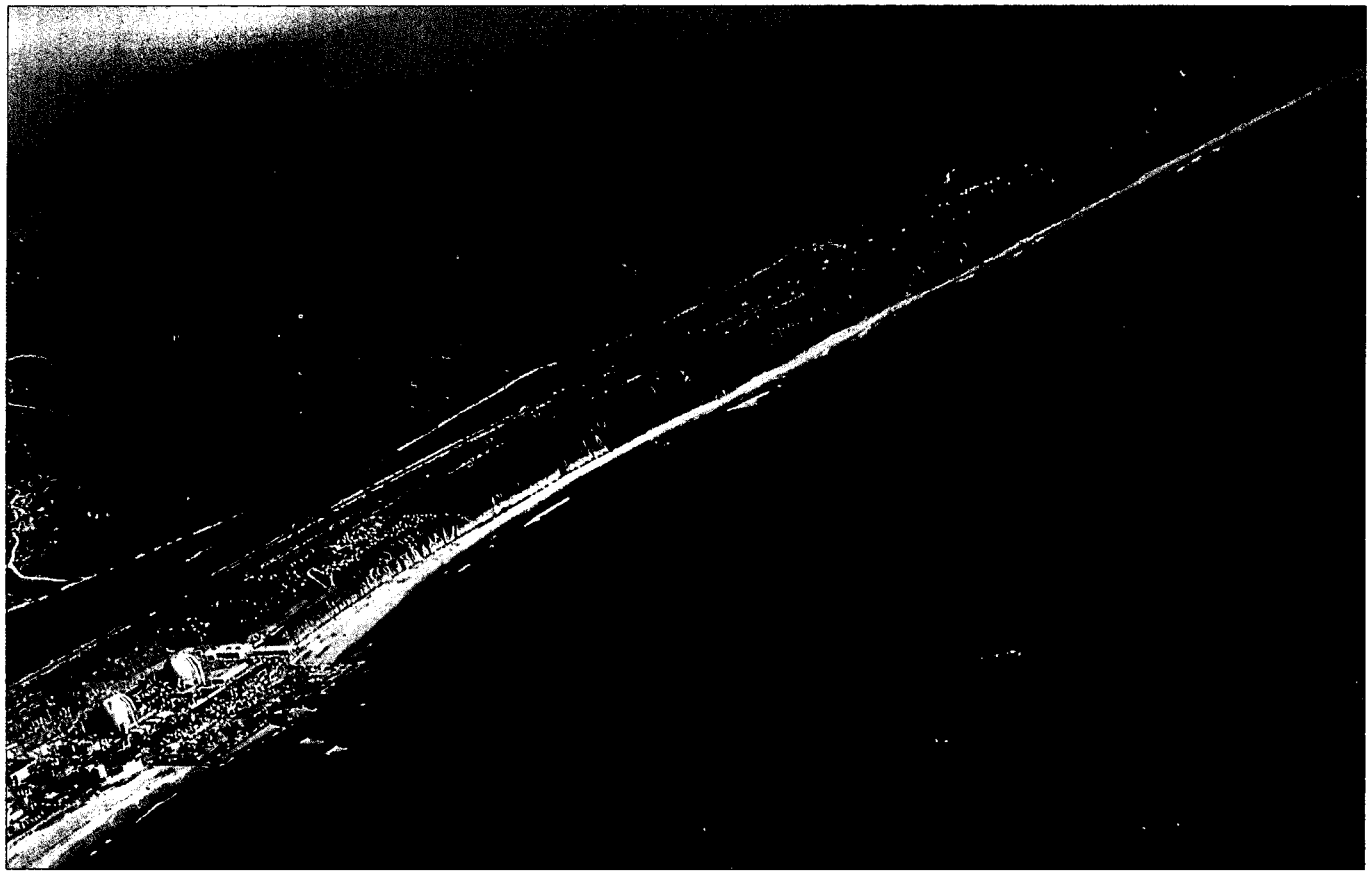


Figure E-45. November 16, 1978 Aerial Photograph Showing from the Discharge to 5000 feet Downcoast

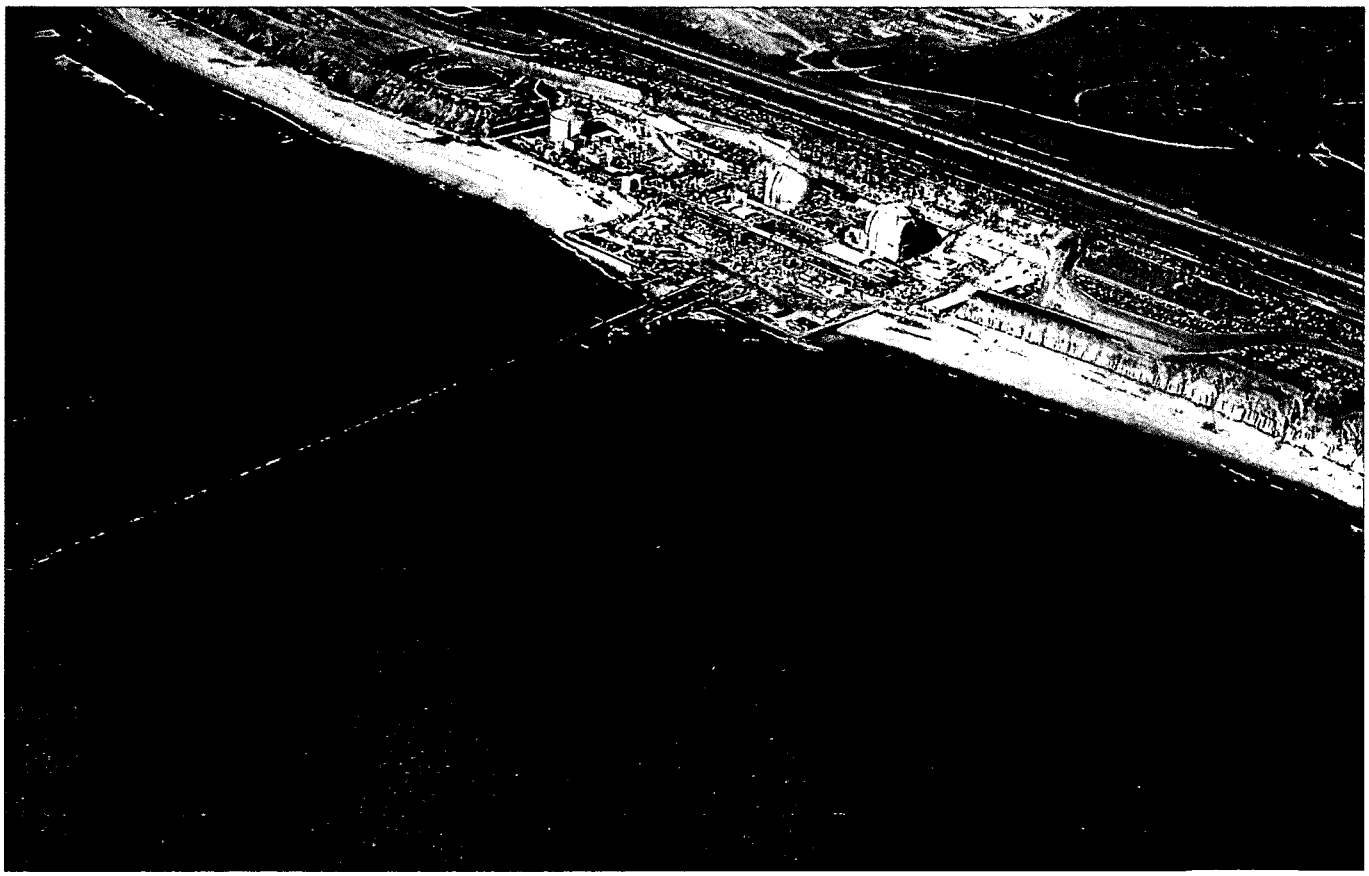


Figure E-46. November 16, 1978 Aerial Photograph Showing from 2000 feet Downcoast to 1000 feet Upcoast of the Discharge

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# ANNUAL OPERATING REPORT

# SAN ONOFRE NUCLEAR GENERATING STATION

## VOLUME II

## BIOLOGICAL DATA - 1978

ENVIRONMENTAL TECHNICAL SPECIFICATIONS - UNIT 1

PREOPERATIONAL MONITORING PROGRAM - UNITS 2 AND 3

# TABLE OF CONTENTS


| | PAGE NO. |
|---|---|
| I. INTRODUCTION | 1 |
| A. STUDY AREA | 8 |
| B. SCHEDULE OF BIOLOGICAL SURVEYS DURING 1978 | 9 |
| C. SUMMARY OF SONGS UNIT 1 PLANT OPERATIONS | |
| 1. MEAN DAILY MEGAWATTS/H, IMPLANT ΔT, AND PUMP FLOW | 10 |
| 2. CONDENSED STATION WATCH ENGINEER'S LOG | 11 |
| II. PLANKTON | 23 |
| A. STUDY AREA - PLANKTON STATION LOCATIONS | 25 |
| B. ZOOPLANKTON DATA | |
| 1. SURVEY OF MARCH 7 | |
| a. Unit 1 ETS | |
| 1) Station 1 | 27 |
| 2) Station 2 | 28 |
| 3) Station 3 | 29 |
| 4) Station 4 | 30 |
| 5) Station 5 | 31 |
| 6) Station 6 | 32 |
| 7) Station 7 | 33 |
| 2. SURVEY OF MAY 11 | |
| a. Unit 1 ETS | |
| 1) Station 1 | 34 |
| 2) Station 2 | 35 |
| 3) Station 3 | 36 |
| 4) Station 4 | 37 |
| 5) Station 5 | 38 |
| 6) Station 6 | 39 |
| 7) Station 7 | 40 |
| 3. SURVEY OF JULY 14-20 | |
| a. July 14 | |
| 1) Station 1 | 41 |
| 2) Station 2 | 42 |
| 3) Station 3 | 43 |
| 4) Station 4 | 44 |
| 5) Station 5 | 45 |
| 6) Station 6 | 46 |
| 7) Station 7 | 47 |

b. July 17

1) Station 9 48
2) Station 10 49
3) Station 11 50
4) Station 12 51
5) Station 13 52
6) Station 14 53
7) Station 15 54
8) Station 16 55
9) Station 17 56

c. July 19

1) Station 1 57
2) Station 4 58
3) Station 6 59
4) Station 7 60
5) Station 9 61
6) Station 10 62
7) Station 11 63
8) Station 12 64
9) Station 13 65
10) Station 14 66
11) Station 15 67
12) Station 16 68
13) Station 17 69

d. July 20

1) Station 1 70
2) Station 4 71
3) Station 6 72
4) Station 7 73
5) Station 9 74
6) Station 10 75
7) Station 11 76
8) Station 12 77
9) Station 13 78
10) Station 14 79
11) Station 15 80
12) Station 16 81
13) Station 17 82

4. SURVEY OF SEPTEMBER 8-10

a. September 8

1) Station 1 83
2) Station 2 84
3) Station 3 85
4) Station 4 86
5) Station 5 87
6) Station 6 88

7) Station 7 89
8) Station 8 90
9) Station 9 91
10) Station 10 92
11) Station 11 93
12) Station 12 94
13) Station 13 95
14) Station 14 96
15) Station 15 97
16) Station 16 98
17) Station 17 99

b. September 9

1) Station 1 100
2) Station 4 101
3) Station 6 102
4) Station 7 103
5) Station 8 104
6) Station 9 105
7) Station 10 106
8) Station 11 107
9) Station 12 108
10) Station 13 109
11) Station 14 110
12) Station 15 111
13) Station 16 112
14) Station 17 113

c. September 10

1) Station 1 114
2) Station 4 115
3) Station 6 116
4) Station 7 117
5) Station 8 118
6) Station 9 119
7) Station 10 120
8) Station 11 121
9) Station 12 122
10) Station 13 123
11) Station 14 124
12) Station 15 125
13) Station 16 126
14) Station 17 127

5. SURVEY OF NOVEMBER 16-18

a. November 16


| | | |
|---|---|---|
| 1) | Station 1 | 128 |
| 2) | Station 2 | 129 |
| 3) | Station 3 | 130 |
| 4) | Station 4 | 131 |
| 5) | Station 5 | 132 |
| 6) | Station 6 | 133 |
| 7) | Station 7 | 134 |
| 8) | Station 8 | 135 |
| 9) | Station 9 | 136 |
| 10) | Station 10 | 137 |
| 11) | Station 11 | 138 |
| 12) | Station 12 | 139 |
| 13) | Station 13 | 140 |
| 14) | Station 14 | 141 |
| 15) | Station 15 | 142 |
| 16) | Station 16 | 143 |
| 17) | Station 17 | 144 |


b. November 17


| | | |
|---|---|---|
| 1) | Station 1 | 145 |
| 2) | Station 4 | 146 |
| 3) | Station 6 | 147 |
| 4) | Station 7 | 148 |
| 5) | Station 8 | 149 |
| 6) | Station 9 | 150 |
| 7) | Station 10 | 151 |
| 8) | Station 11 | 152 |
| 9) | Station 12 | 153 |
| 10) | Station 13 | 154 |
| 11) | Station 14 | 155 |
| 12) | Station 15 | 156 |
| 13) | Station 16 | 157 |
| 14) | Station 17 | 158 |


c. November 18


| | | |
|---|---|---|
| 1) | Station 1 | 159 |
| 2) | Station 4 | 160 |
| 3) | Station 6 | 161 |
| 4) | Station 7 | 162 |
| 5) | Station 8 | 163 |

6) Station 9 164
7) Station 10 165
8) Station 11 166
9) Station 12 167
10) Station 13 168
11) Station 14 169
12) Station 15 170
13) Station 16 171
14) Station 17 172

C. CHLOROPHYLL *a* AND PHAEOPIGMENT DATA

1. SURVEY OF MARCH 7 173

2. SURVEY OF MAY 11 173

3. SURVEY OF JULY 14-20 174

4. SURVEY OF SEPTEMBER 8-10 175

5. SURVEY OF NOVEMBER 16-18 176

D. PHYSICAL DATA

1. TEMPERATURE AND TRANSMISSIVITY MEASUREMENTS

a. Survey of March 7 (Temperature only) 177

b. Survey of May 11 (Temperature only) 177

c. Survey of July 14-20

1) July 14 and 17 178
2) July 19 179
3) July 20 180

d. Survey of September 8-10

1) September 8 181
2) September 9 182
3) September 10 183

e. Survey of November 16-18

1) November 16 184
2) November 17 185
3) November 18 186

2. DROGUE MEASUREMENTS

a. Survey of March 7 187
b. Survey of May 11 187
c. Survey of July 14-20 188
d. Survey of September 8-10 189
e. Survey of November 16-18 190

3. WEATHER OBSERVATIONS, EACH SURVEY 191

4. SAMPLING PERIODS, EACH STATION

a. Surveys of March 7 and May 11 192
b. Survey of July 14-20 193
c. Survey of September 8-10 194
d. Survey of November 16-18 195

III. FISH - RECEIVING WATERS 196

A. STUDY AREA - NEKTON STATION LOCATIONS 203

B. SPECIES COMPOSITION AND ABUNDANCE

1. SURVEY OF MARCH 15-16

a. Otter trawls

1) San Mateo Point stations 204
2) San Onofre stations 205
3) Don Light stations 206

b. Net deployment and recovery data 207

2. SURVEY OF MARCH 30-31

a. 24-h gill nets 208

b. 4-h gill nets

1) Mid-day 210
2) Afternoon - evening 211
3) Night 212

c. Otter trawls

1) San Onofre 20 ft station 213
2) San Onofre 40 ft station 214
3) San Onofre 60 ft station 215

3. SURVEY OF JUNE 14-15

a. 24-h gill nets

1) 30-ft stations 216
2) 45-ft stations 218

b. Otter trawls

1) San Mateo Point stations 220
2) San Onofre stations 221
3) Don Light stations 222

4. SURVEY OF AUGUST 15-16

a. 24-h gill nets

1) 30-ft stations 223
2) 45-ft stations 225

b. Otter trawls

1) San Mateo Point stations 227
2) San Onofre stations 228
3) Don Light stations 230

5. SURVEY OF OCTOBER 11-12

a. 24-h gill nets

1) 30-ft stations 231
2) 45-ft stations 233

b. Otter trawls

1) San Mateo Point stations 235
2) San Onofre stations 236
3) Don Light stations 237

6. SURVEY OF DECEMBER 12-13

a. 24-h gill nets

1) 30-ft stations 238
2) 45-ft stations 240

b. Otter trawls

1) San Mateo Point stations 242
2) San Onofre stations 243
3) Don Light stations 244

## C. LENGTH-FREQUENCY HISTOGRAMS

### 1. *SERIPHUS POLITUS*


a. Survey of March 15-16, otter trawls 246
b. Survey of March 30-31, 24-h gill nets 248
c. Survey of March 30-31, 4-h and 8-h gill nets 250
d. Survey of March 30-31, otter trawls 252
e. Survey of June 14-15, gill nets 254
f. Survey of June 14, otter trawls 256
g. Survey of June 15, otter trawls 258
h. Survey of August 15-16, gill nets 260
i. Survey of August 15, otter trawls 262
j. Survey of August 16, otter trawls 264
k. Survey of October 11-12, gill nets 266
l. Survey of October 11, otter trawls 268
m. Survey of October 12, otter trawls 270
n. Survey of December 12-13, gill nets 272
o. Survey of December 12, otter trawls 274
p. Survey of December 13, otter trawls 276


### 2. *GENYONEMUS LINEATUS*


a. Survey of March 15-16, otter trawls 278
b. Survey of March 30-31, 24-h gill nets 280
c. Survey of March 30-31, 4-h and 8-h gill nets 282
d. Survey of March 30-31, otter trawls 284
e. Survey of June 14-15, gill nets 286
f. Survey of June 14, otter trawls 288
g. Survey of June 15, otter trawls 290
h. Survey of August 15-16, gill nets 292
i. Survey of August 15, otter trawls 294
j. Survey of August 16, otter trawls 296
k. Survey of October 11-12, gill nets 298
l. Survey of October 11, otter trawls 300
m. Survey of October 12, otter trawls 302
n. Survey of December 12-13, gill nets 304
o. Survey of December 12, otter trawls 306
p. Survey of December 13, otter trawls 308


## D. LENGTH-FREQUENCY DATA FOR OTHER SPECIES

### 1. SURVEY OF MARCH 15-16

#### a. Otter trawls


1) San Mateo Point 20-ft stations 310
2) San Mateo Point 40-ft stations 311
3) San Mateo Point 60-ft stations 312
4) San Onofre 20-ft stations 313
5) San Onofre 40-ft stations 314
6) San Onofre 60-ft stations 314
7) Don Light 20-ft stations 315
8) Don Light 40-ft stations 315
9) Don Light 60-ft stations 315

2. SURVEY OF MARCH 30-31

a. 24-h gill nets

1) San Mateo Point stations 316
2) San Onofre stations 320
3) Don Light stations 332

b. 4-h gill nets

1) Mid-day (Window 1) 340
2) Dusk (Window 2) 343
3) Night (Window 3-4) 346

c. Otter trawls

1) San Onofre 20-ft station 349
2) San Onofre 40-ft station 351
3) San Onofre 60-ft station 353

3. SURVEY OF JUNE 14-15

a. 24-h gill nets

1) San Mateo Point 30-ft stations 354
2) San Mateo Point 45-ft stations 355
3) San Onofre 30-ft stations 356
4) San Onofre 45-ft stations 363
5) Don Light 30-ft stations 365
6) Don Light 45-ft stations 368

b. Otter trawls

1) San Mateo Point 20-ft stations 370
2) San Mateo Point 40-ft stations 373
3) San Mateo Point 60-ft stations 374
4) San Onofre 20-ft stations 376
5) San Onofre 40-ft stations 377
6) San Onofre 60-ft stations 379
7) Don Light 20-ft stations 380
8) Don Light 40-ft stations 381
9) Don Light 60-ft stations 383

4. SURVEY OF AUGUST 15-16

a. 24-h gill nets

1) San Mateo Point 30-ft stations 385
2) San Mateo Point 45-ft stations 387
3) San Onofre 30-ft stations 391
4) San Onofre 45-ft stations 398
5) Don Light 30-ft stations 401
6) Don light 45-ft stations 407

b. Otter trawls

1) San Mateo Point 20-ft stations 410
2) San Mateo Point 40-ft stations 412
3) San Mateo Point 60-ft stations 415
4) San Onofre 20-ft stations 417
5) San Onofre 40-ft stations 419
6) San Onofre 60-ft stations 421
7) Don Light 20-ft stations 423
8) Don Light 40-ft stations 425
9) Don Light 60-ft stations 427

5. SURVEY OF OCTOBER 11-12

a. 24-h gill nets

1) San Mateo Point 30-ft stations 429
2) San Mateo Point 45-ft stations 432
3) San Onofre 30-ft stations 434
4) San Onofre 45-ft stations 438
5) Don Light 30-ft stations 440
6) Don Light 45-ft stations 446

b. Otter trawls

1) San Mateo Point 20-ft stations 448
2) San Mateo Point 40-ft stations 449
3) San Mateo Point 60-ft stations 450
4) San Onofre 20-ft stations 451
5) San Onofre 40-ft stations 451
6) San Onofre 60-ft stations 452
7) Don Light 20-ft stations 454
8) Don Light 40-ft stations 455
9) Don Light 60-ft stations 456

6. SURVEY OF DECEMBER 12-13

a. 24-h gill nets

1) San Mateo Point 30-ft stations 458
2) San Mateo Point 45-ft stations 461
3) San Onofre 30-ft stations 463
4) San Onofre 45-ft stations 470
5) Don Light 30-ft stations 471
6) Don Light 45-ft stations 476

b. Otter trawls

1) San Mateo Point 20-ft stations 477
2) San Mateo Point 40-ft stations 478
3) San Mateo Point 60-ft stations 479
4) San Onofre 20-ft stations 480
5) San Onofre 40-ft stations 481
6) San Onofre 60-ft stations 482

7) Don Light 20-ft stations 483
8) Don Light 40-ft stations 484
9) Don Light 60-ft stations 484

E. SEX COMPOSITION

1. SURVEY OF MARCH 15-16 485

2. SURVEY OF MARCH 30-31

a. 24-h gill nets

1) San Mateo Point stations 486
2) San Onofre stations 487
3) Don Light stations 488

b. 4-h gill nets 489

c. Otter trawls

1) San Onofre stations 490

3. SURVEY OF JUNE 14-15

a. 24-h gill nets

1) 30-ft stations 491
2) 45-ft stations 492

b. Otter trawls

1) San Mateo Point stations 493
2) San Onofre stations 494
3) Don Light stations 495

4. SURVEY OF AUGUST 15-16

a. 24-h gill nets

1) 30-ft stations 496
2) 45-ft stations 497

b. Otter trawls

1) San Mateo Point stations 498
2) San Onofre stations 499
3) Don Light stations 500

5. SURVEY OF OCTOBER 11-12

a. 24-h gill nets

1) 30-ft stations 501
2) 45-ft stations 502

b. Otter trawls

1) San Mateo Point stations 503
2) San Onofre stations 504
3) Don Light stations 505

6. SURVEY OF DECEMBER 12-13

a. 24-h gill nets

1) 30-ft stations 506
2) 45-ft stations 507

b. Otter trawls

1) San Mateo Point stations 508
2) San Onofre stations 509
3) Don Light stations 510

F. PHYSICAL DATA

1. TEMPERATURE AND TRANSMISSIVITY DATA

a. Survey of March 30-31 511
b. Survey of June 14-15 512
c. Survey of August 15-16 513
d. Survey of October 11-12 514
e. Survey of December 12-13 515

IV. FISH - IMPINGEMENT 517

A. NORMAL OPERATIONS

1. NUMBERS OF FISH 519

2. WEIGHTS 547

3. LENGTH-FREQUENCY DISTRIBUTIONS

a. *Seriphus politus* 574
b. *Genyonemus lineatus* 576
c. *Phanerodon furcatus* 578
d. *Hyperprosopon argenteum* 580

4. SEX COMPOSITION

a. *Seriphus politus* 582
b. *Genyonemus lineatus* 582
c. *Phanerodon furcatus* 582
d. *Hyperprosopon argenteum* 582

B. HEAT TREATMENTS

1. NUMBERS OF FISH 583

2. WEIGHTS 586

3. LENGTH-FREQUENCY DISTRIBUTIONS

a. *Seriphus politus* 589
b. *Genyonemus lineatus* 591
c. *Phanerodon furcatus* 593
d. *Hyperprosopon argenteum* 595

4. SEX COMPOSITION

a. *Seriphus politus* 597
b. *Genyonemus lineatus* 597
c. *Phanerodon furcatus* 597
d. *Hyperprosopon argenteum* 597

V. FISH - FISHERIES STATISTICS 599

A. CALIFORNIA STATISTIC BLOCKS 600

VI. BENTHOS - ROCK/COBBLE SUBSTRATE, KELP BEDS 601

A. STUDY AREA - BENTHIC STATION LOCATIONS 607

B. ETS DATA

1. SPECIES COMPOSITION AND ABUNDANCE

a. Survey of February 1

1) Station 9 608

b. Survey of May 10-25

1) Station 1 611
2) Station 2 613
3) Station 3 615
4) Station 9 616
5) Station 10 619

c. Survey of July 14 - August 25

1) Station 1 621
2) Station 2 624
3) Station 5 626
4) Station 6 628
5) Station 8 630
6) Station 9 632
7) Station 10 635
8) Station 11 637

d. Survey of October 16-26

1) Station 1 640
2) Station 2 642
3) Station 5 644
4) Station 6 645
5) Station 8 647
6) Station 9 649
7) Station 10 652
8) Station 11 654

2. TEMPERATURE, VISIBILITY, AND SURGE

a. Survey of February 1 657
b. Survey of May 10-25 658
c. Survey of July 14 - August 25 659
d. Survey of October 16-26 660

C. PEM DATA

1. SPECIES COMPOSITION AND ABUNDANCE

a. 6.0 $m^2$ quadrats, August 2-9

1) Station 12 661
2) Station 13 664
3) Station 14 666
4) Station 15 668
5) Station 16 670
6) Station 17 672
7) Station 18 674
8) Station 19 676
9) Station 20 678
10) Station 21 680
11) Numbers of designated solitary organisms 682
12) Field notes 683

b. 6.0 $m^2$ quadrats, October 31 - November 8

1) Station 12 684
2) Station 13 686
3) Station 14 688
4) Station 15 690
5) Station 16 692
6) Station 17 694
7) Station 18 696
8) Station 19 698
9) Station 20 700
10) Station 21 702
11) Numbers of designated solitary organisms 704
12) Field notes 705

c. 0.125 $m^2$ quadrats, August 2-9

1) Station 12 706
2) Station 13 711
3) Station 14 715
4) Station 15 718
5) Station 16 722
6) Station 17 725
7) Station 18 728
8) Station 19 731
9) Station 20 733
10) Station 21 736

d. 0.125 $m^2$ quadrats, October 31 - November 8

1) Station 12 740
2) Station 13 744
3) Station 14 748
4) Station 15 751
5) Station 16 754
6) Station 17 758
7) Station 18 761
8) Station 19 763
9) Station 20 765
10) Station 21 768
11) *Muricea* tagging data 772

2. TEMPERATURE, VISIBILITY, AND SURGE

a. August 2-9 775
b. October 31 - November 8 776

VII. BENTHOS - SETTLING PLATES 777

VIII. INTERTIDAL 779

A. STUDY AREA 782

B. COVERAGE OF MOST ABUNDANT TAXA, ALL SURVEYS 783

APPENDIX

FISH RECEIVING WATERS, Operational Notes and Anomalous Fishes 787

# I. INTRODUCTION

## A. PURPOSE OF THE STUDY

The ongoing marine monitoring studies reported in this volume are being conducted to meet objectives approved by the Nuclear Regulatory Commission (NRC) as stated in the Environmental Technical Specifications (ETS), Docket No. 50-206, Sections 3.1.2a(1) General Ecological Survey and 3.1.2a(2) Impingement of Organisms for San Onofre Nuclear Generating Station (SONGS) Unit 1 and the Preoperational Monitoring Program (PMP) for SONGS Units 2 and 3. Broadly stated, the ETS objectives are to determine the effects of SONGS Unit 1 on the marine resources in the vicinity of the station. The Preoperational Monitoring Program objectives are designed to provide a baseline for the determination of the nature, extent, and significance of the effects of SONGS Units 2 and 3 on the species composition, distribution, and abundance of plankton, fish, and epibenthic cobble substrate macrobiota. These studies are also being conducted in compliance with the National Pollution Discharge Elimination System (NPDES) permit for SONGS Unit 1 which requires that results be reported to the California Regional Water Quality Control Board (CRWQCB), San Diego Region and the regional office of the Environmental Protection Agency.

## B. LOCATION OF STUDY AREA

SONGS Units 1, 2, and 3 are located at 33° 22.5' N and 117° 32.5' W between the cities of Oceanside and San Clemente, California, on a narrow coastal plain which extends inland approximately 3 km from the beach to coastal foothills (Figure I-1). The site is adjacent to the U. S. Marine Corps Base at Camp Pendleton, and is bounded by the San Onofre State Beach on the north and south. The study area extends approximately 6.4 km (4 miles) upcoast, 11.5 km (7 miles)

downcoast, and 3.3 km (2 miles) offshore of SONGS. The study area was originally subdivided into environmental surveillance zones to provide for the general location of sampling stations prior to reconnaissance, which established the exact locations.

## C. BACKGROUND

Marine biological monitoring studies have been conducted in the vicinity of San Onofre since 1963 for the California Regional Water Quality Control Board, San Diego Region and reported on a semiannual basis. Data collected from 1963 to 1972 are summarized by EQA/MBC (1973)*. In 1976, the ETS program was accepted by the Board to replace the previous ongoing studies. In addition to the ongoing ETS biological study initiated in November 1974, the following studies are being conducted at SONGS by SCE: (1) a thermal tolerance study to define the optimum heat treatment for Units 2 and 3, (2) a construction monitoring program to evaluate the effects of the Units 2 and 3 construction on the marine environment, and (3) a physical-chemical oceanographic program, as part of the ETS, to evaluate non-radiological, abiotic receiving water characteristics, (4) an ichthyoplankton study to determine the baseline necessary to evaluate the nature, extent, and significance of the effects of SONGS Units 2 and 3 on ichthyoplankton populations offshroe SONGS Units 2 and 3 and (5) a series of studies designed to fulfill section 316 (b) of the FWPCAA. In July 1978 the NRC approved a Preoperational Monitoring Program for San Onofre Units 2 and 3. This program is designed to complement and expand the existing ETS for Unit 1. Wherever possible, ETS and PMP field and laboratory activities were designed to complement one another in order to maximize the acquistion of information. Preoperational monitoring program studies were initiated in the spring of 1978.

In addition, the Marine Review Committee of the California Coastal Commission is conducting independent studies utilizing several investigators to

*Environmental Quality Analysis, Inc. (EQA) and Marine Biological Consultants, Inc. (MBC). 1973. Thermal Effect Study Final Summary Report, San Onofre Nuclear Generating Station, Unit 1. Volumes 1 and 2. Prepared for Southern California Edison Company, Rosemead, California. n.p.

determine the impact of Unit 1 in specific areas of study and to predict the impact of Units 2 and 3 on the marine environment as part of a California Coastal Commission Permit Requirement for SONGS 2 and 3.

Previous results of the ETS program have been reported in the following documents:

1. San Onofre Nuclear Generating Station Unit 1 Semiannual Operating Report Environmental Technical Specifications November 1974 - July 1975. Lockheed Center for Marine Research (LCMR) 1975.

> This report includes (1) a detailed description of sampling methods, (2) a description of the preliminary surveys used to establish stations, (3) a presentation of the physical and biological data collected, and (4) a preliminary analysis of those data.

2. San Onofre Nuclear Generating Station Unit 1 Semiannual Operating Report Environmental Technical Specifications July - December 1975. (LCMR) 1976*a*.

> This report includes, (1) a presentation of physical and biological data collected, and (2) a preliminary qualitative analysis of those data.

3. San Onofre Nuclear Generating Station Unit 1 Annual Analysis Report - Environmental Technical Specifications January - December 1975. (LCMR) 1976*b*.

> This report contains a detailed statistical analysis and interpretation of the 1975 physical and biological data presented in the two semiannual reports.

4. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume I Oceanographic Data Summary January - December 1976. Brown and Caldwell (B and C) 1977*a*.

> This report includes a summary and preliminary interpretation of physical-chemical oceanographic data collected in 1976.

5. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume II January - December 1976. (B and C) 1977*b*.

This report includes a detailed analysis of oceanographic data collected during 1976.

6. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume III Biological Data Summary January - December 1976. (LCMR) 1977*a*.

This report contains a tabular summary of all biological data collected during 1976.

7. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume IV Biological Data Analysis January - December 1976. (LCMR) 1977*b*.

This report contains a detailed statistical analysis and interpretation of all biological data collected in 1976.

8. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report January - December 1976. Biological Data Supplement (LCMR) 1977*c*.

This report contains a tabular presentation of all raw data collected during 1976.

9. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume I. Oceanographic Data Analysis January - December 1977. (B and C) 1978.

This report presents a summary and analysis of oceanographic data collected during 1977.

10. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume II Biological Data January - December 1977. (LCMR) 1978*a*.

This report contains all raw biological data collected during 1977.

11. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications. Addendum to Biological Data Supplement January - December 1977. (LCMR) 1978*b*.

This report presents additional biological data such as field notes.

12. San Onofre Nuclear Generating Station Unit 1 Environmental Technical Specifications Annual Operating Report - Volume III Biological Data Analysis January - December 1977. (LCMR) 1978*c*.

This report provides a detailed statistical analysis of biological data collected during 1977.

## D. SCOPE AND ORGANIZATION

This document is Volume II of three volumes making up the Annual Operating Report submitted to the NRC and the CRWQCB as per the April 1 reporting deadline of the year following the year of data collection. Volume I summarizes non-radiological, abiotic receiving water characteristics including: receiving water temperature, turbidity, heavy metals (water column and sediment), dissolved oxygen, pH, and chlorine. This program was initiated under ETS requirements and has been expanded to fulfill PMP objectives for physical-chemical receiving water requirements. Volume III will quantitatively assess the environmental effects of sand spoil disposal during construction and dredging operations associated with the construction of SONGS Units 2 and 3. Areas under investigation include the sandy intertidal, subtidal infauna, and kelp bed areas adjacent to SONGS. This study represents a special study for the NRC under the preoperational monitoring program.

This document contains raw biological data collected in 1978. Plankton and fish data are collected under combined ETS and PMP requirements. Benthic data is organized into separate ETS and PMP sections because of differing sampling methodologies.

The physical and biological data analysis for 1978 will be submitted to the appropriate regulartory agencies by July 1, 1979. The analysis will present a detailed statistical evaluation, interpretation and discussion of biological data collected in 1978 and will compare the 1978 data to data collected from 1975 through 1977. The emphasis of the analysis will be directed toward testing hypotheses and answering questions generated in reponse to ETS and PMP objectives. The ETS and NPDES permits specify that the annual Operating Report be forwarded to the NRC by April 1 of the year following the reporting year, but allows for analyses not completed by that date to be submitted by July 1 of that year.

Biological sample collection dates for the 1978 calendar year are summarized in Table I-1.

The purpose of all of these studies is to fulfill the objectives set forth in the ETS and PMP requirements. Fulfilling these objectives will not only satisfy the ETS and PMP requirements but will also provide, to date, the most comprehensive data base characterizing the nearshore biological environment offshore SONGS Units 1, 2, and 3 with regard to (1) the dominant macrobiota of soft and hard bottom intertidal and subtidal habitats, (2) the nearshore fish community, (3) the nearshore plankton community, and (4) the major kelp beds in the vicinity of SONGS Units 1, 2, and 3.

## E. GENERATING STATION OPERATION

The station was offline for maintenance April 5-25, and for overhaul and refueling September 7 - November 5, although water circulation continued intermittently. A complete history of station operation is presented in Figure I-2. A more detailed presentation is contained in Table I-2. Included in the operation summary are conditions which may have influenced results of environmental

studies, such as circulator operating intervals, unit trips, major load changes, and circulating water tunnel configuration.

Throughout the year, several times a week the circulators were "bumped" (stopped momentarily and then restarted). This allows debris collected on the condenser inlet to fall free increasing circulation (exposure) and reducing $\Delta$ T. These occurrences were not recorded due to their frequency but may have influenced fish entrapment.

## F. GENERAL WEATHER CONDITIONS OBSERVED OFFSHORE SONGS IN 1978

Weather conditions offshore SONGS in 1978 were highly unusual compared to previous years. Prolonged storm conditions resulted in poor diver visibility, increased runoff and suspended sediment load. These effects hampered the location and establishment of PMP benthic stations. Some permanently marked ETS benthic cobble stations were completely covered with sand. Persistent rough weather also caused: (1) the cancellaion of the first bimonthly plankton sampling effort in 1978, (2) the disruption of an experimental 24-hr fish sampling study and (3) the loss of some buoys marking benthic stations. Storm activity may also have been responsible for destruction of settling plate arrays.

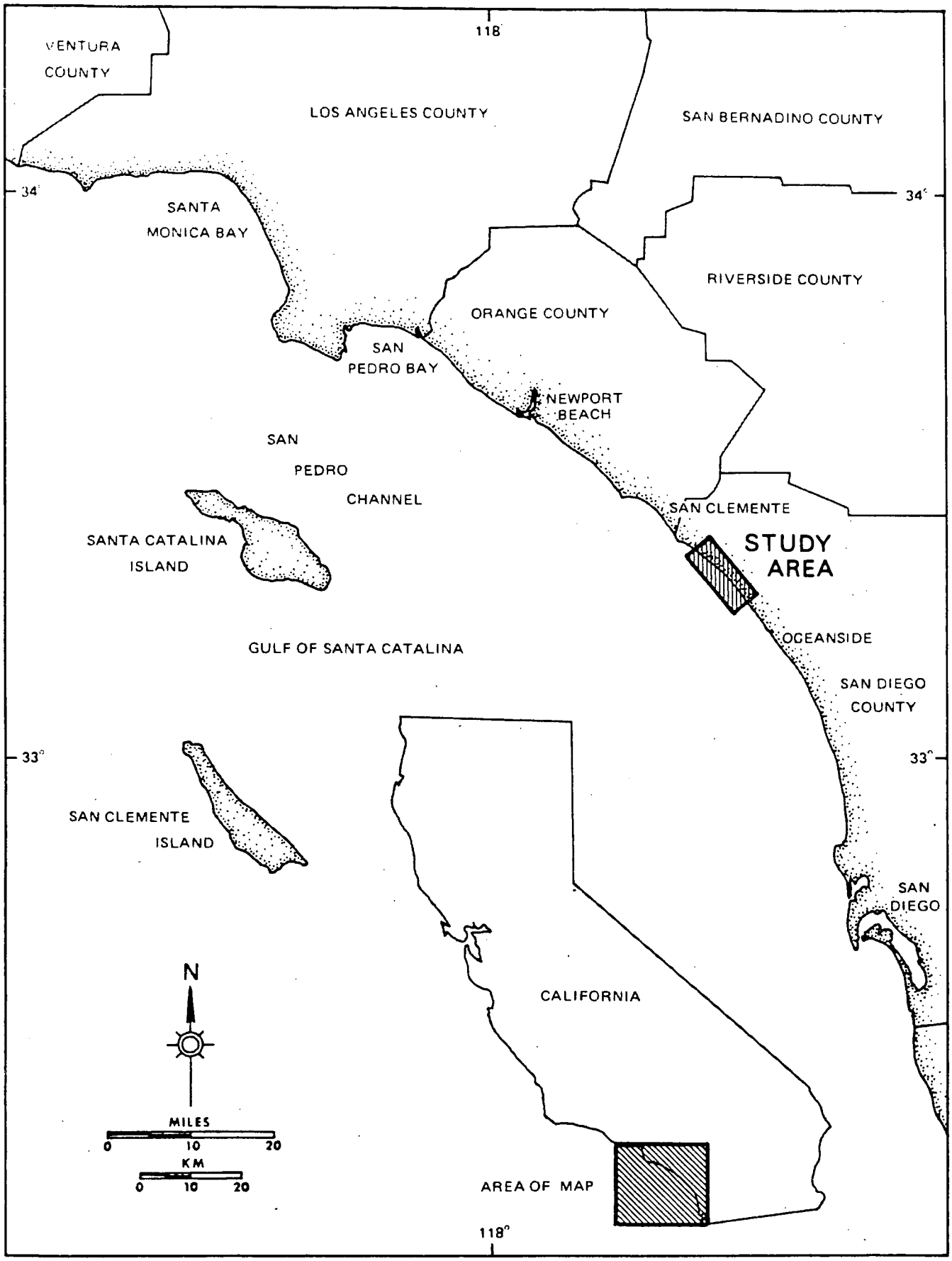


Figure I-1. Study Area

Table I-1. Schedule of biological surveys conducted at SONGS during 1978.

| SURVEY | NPDES | ETS | PMP | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plankton | X | X | | | | 7 | | 11 | | | | | | | |
| | X | X | X | | | | | | | 14-20 | | 8-10 | | 16-18 | |
| Fish | | | | | | | | | | | | | | | |
| Receiving Waters | X | | | | | 15,16 | | | | | | | | | |
| | | X | | | | 30,31 | | | | | | | | | |
| | X | X | X | | | | | | 14,15 | | 15,16 | | 11,12 | | 12,13 |
| Impingement Normal Operation | X | X | | Weekly----------> | | | | | | | | | | | |
| Impingement Heat Treatments | X | X | | | 12 | | 2 | 17 | 24 | | 20 | 13 | | | 3 |
| Benthos | X | X | | | 1 | | | 10-25 | | 14------25 | | | 16-26 | | |
| | | | X | | | | | | | | 2-9 | | 31------8 | | |
| Marine Radiological* | | | | | | | | | | | | | | | |
| Water | | X | | 4-19 | | | | | | | | | | | |
| | | X | X | | | 7,8 | | 11,12 | | 17,21 | | 9,18 | 17 | 17,18 | |
| Animals | | X | X | | | 6------11 | | | | 21------21 | | 14-22 | | 29------22 | |
| Kelp | | X | X | | | | | | | 26 | | | | | 14,20 |
| Sediment | | X | X | | | | | | | 21-------7 | | | | | 20 |

*Sample collection only; data under separate cover.

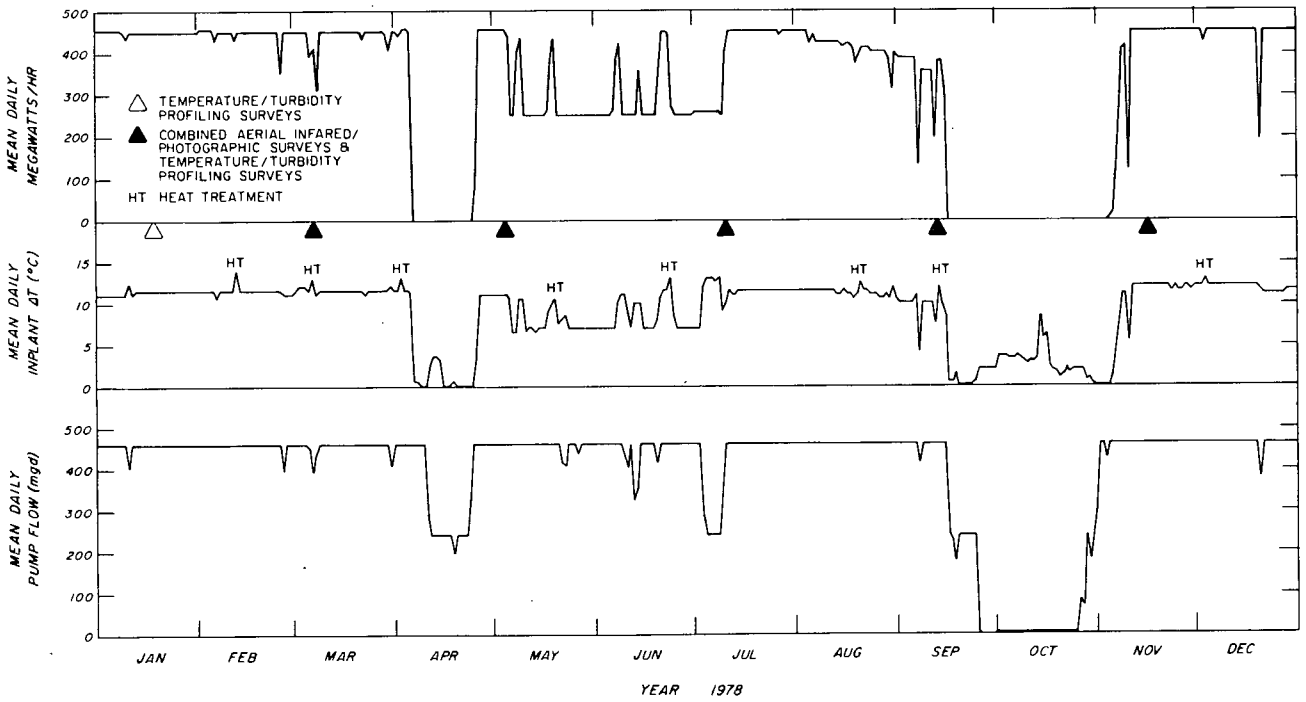


Figure I-2. Summary of SONGS Unit 1 plant operations during 1978.

Table I-2. SONGS 1, 1978 operation summary. This history has been reduced from the Station Watch Engineer's Log.

| DATE | TIME | OCCURRENCE |
|---|---|---|
| JANUARY | | |
| 1 | 0001 | Unit load at 455 MWe |
| 9 | 0300 | Reducing unit load for outage |
| | 0315 | Unit load at 365 MWe |
| | 0350 | Increasing unit load |
| | 0405 | Unit at 454 MWe gross |
| 10 | 0344 | Reducing unit load to check for ground on South Circulating Water Pump |
| | 0403 | Stopped South Circulator |
| | 0425 | Unit load at 382 MWe |
| | 1050 | Returned South Circulator to service |
| | 1104 | Unit at full load |
| 23 | 0400 | Reducing unit load to 365 MWe for outage |
| | 0420 | Unit load at 365 MWe |
| | 0455 | Started unit load increase |
| | 0515 | Unit load at 452 MWe |
| FEBRUARY | | |
| 1 | | Unit load at 455 MWe |
| 6 | 0300 | Reducing unit load to conduct tests |
| | 0345 | Unit load at 205 MWe gross |
| | 0500 | Increasing unit load |
| | 0600 | Unit load at 450 MWe gross |
| 12 | 0800 | Initiated unit load drop to 360 MWe for circ. water system heat treatment |
| | 0920 | Completed circ. water system tunnel reversal |
| | 0940 | Circ. water system intake temp. 100°F |
| | 1125 | Circ. water system heat treat completed |
| | 1215 | Circ. water system temp. normal |
| | 1325 | Circ. water system tunnels returned to normal |
| | 1325 | Initiated load increase to full load |
| | 1355 | Unit load at 450 MWe |
| 26 | 0700 | Started load decrease for condenser cleaning and stop valve testing |
| | 0717 | Stopped the South circ. water pump |
| | 0745 | Unit load at 210 MWe |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| FEBRUARY | | |
| 26 | 1028 | Started the so. circ. water pump |
| | 1055 | Stopped the north circ. water pump |
| | 1435 | Started the north circ. water pump |
| | 1545 | Increasing unit load to full load |
| | 1725 | Unit load at 451 MWe |
| MARCH | | |
| 5 | 2240 | Reducing unit load to 385 MWe to stop north circulating water pump |
| | 2252 | Stopped north circulating water pump |
| 6 | 0001 | Unit load at 267 MWe |
| | 0012 | Cleared the north bar rake and screen |
| | 0020 | Unit load at 210 MWe |
| | 0240 | Started increasing unit load |
| | 0310 | Unit load at 320 MWe and holding |
| | 0700 | Returned north screen to service |
| | 0805 | Unit at full load at 435 MWe |
| 7 | 0001 | Started decreasing load for condenser cleaning and turbine stop valve test |
| | 0055 | Unit load at 210 MWe gross |
| | 0125 | Shut down the south circulating water pump |
| | 0345 | Started the south circulating water pump |
| | 0400 | Increasing unit load |
| 8 | 1511 | Reactor tripped from major system disturbance at SDG&E |
| | 1925 | Unit on line at 25 MWe |
| | 2322 | Unit at 450 MWe |
| 22 | 1043 | Received a load runback during rod exercise test |
| | 1100 | Increasing unit load |
| | 1109 | Stopped load increase at 330 MWe gross |
| | 1406 | Started load increase to full load |
| | 1430 | Unit at 450 MWe gross |
| 29 | 2252 | Reducing unit load to 210 MWe to locate condenser tube leak |
| | 2344 | Stopped north circulating water pump |
| | 2400 | Unit load at 210 MWe gross |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| MARCH | | |
| 30 | 0103 | Increasing load to 275 MWe gross |
| | 0115 | Unit load at 275 MWe gross |
| | 0522 | Started north circulating water pump |
| | 0529 | Started load increase to full load |
| | 0612 | Unit at full load |
| APRIL | | |
| 2 | 0200 | Reducing unit load to heat treat circulating water tunnels |
| | 0215 | Unit load at 380 MWe |
| | 0235 | Completed reversal of the circulating water tunnels |
| | 0450 | Completed heat treat of the intake tunnel |
| | 0620 | Returned the circulating water tunnels to normal configuration |
| | 0625 | Increasing unit load |
| | 0655 | Unit at full load - 453 MWe gross |
| 5 | 2200 | Started load decrease for maintenance outage |
| | 2355 | Unit off line for maintenance - No. & So. circulators stopped |
| 14 | 0835 | Divers at work near intake and outfall |
| | 1830 | Divers clear of circulating water tunnels |
| | 2315 | Started So. circulating water pump |
| 19 | 0650 | Reversed circulating water tunnels |
| | 2130 | Circulating water tunnels returned to normal |
| 21 | 1415 | Reversed circulating water tunnels |
| 22 | 0410 | Circulating water tunnels returned to normal |
| 23 | 1435 | Started north circulating water pump |
| 24 | 0001 | Unit startup in progress |
| | 2345 | Unit is rolling |
| 25 | 0001 | Unit startup in progress - unit rolling |
| | 2035 | Unit at full load |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| MAY | | |
| 5 | 2200 | Started reducing load at dispatchers request |
| | 2252 | Unit load at 250 MWe |
| 8 | 0500 | Started load increase to full load |
| | 0600 | Unit load at 450 MWe |
| 9 | 2203 | Reducing unit load to 250 MWe gross |
| | 2240 | Unit load at 250 MWe |
| 17 | 0812 | Increasing unit load to 320 MWe for heat treatment |
| | 0835 | Unit load at 320 MWe |
| | 0925 | Started circ. water intake tunnel heat treat-tunnels reversed |
| | 1110 | Completed heat treat of circ. water intake tunnel reducing temperature to normal |
| | 1130 | Circ. water system temperature normal decreasing load to 250 MWe gross |
| | 1205 | Unit load at 250 MWe gross |
| | 1240 | Tunnels returned to normal |
| 18 | 0745 | Started unit load increase |
| | 0910 | Unit at full load |
| | 1738 | Unit runback to 300 MWe |
| | 1827 | Increased unit load to 450 MWe |
| | 2000 | Unit load at 450 MWe |
| 19 | 2208 | Started load decrease to 250 MWe |
| | 2238 | Unit load at 250 MWe |
| 20 | 2011 | Stopped So. circulating water pump |
| | 2230 | Started So. circulating water pump |
| 21 | 1723 | Stopped No. circulating water pump |
| | 2235 | Started No. circulating water pump |
| 22 | 1040 | Stopped No. circulator to clear condenser |
| | 1640 | Started No. circulator returning condenser to service |
| 26 | 0843 | Stopped No. circulator water pump |
| | 1330 | Started No. circulator water pump |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| JUNE | | |
| 7 | 0700 | Increasing unit load from 260 MWe to 450 MWe gross |
| | 0900 | Unit load at 430 MWe |
| 8 | 0001 | Unit load at 443 MWe |
| | 2105 | Started unit load decrease to 250 MWe |
| 9 | 2130 | Stopped no. circ. water pump |
| | 2145 | Unit load at 250 MWe gross |
| | 2337 | Started no. circ. water pump |
| 10 | 947 | Stopped no. circ. water pump |
| | 1526 | Started north circulator water pump |
| 12 | 0837 | Stopped north circulator water pump |
| 13 | 1652 | Started north circulating water pump |
| 14 | 0545 | Started unit load increase |
| | 0755 | Unit load at 428 MWe |
| | 2100 | Started unit load decrease to 250 MWe |
| | 2145 | Unit load at 250 MWe |
| 19 | 0655 | Stopped no. circ. water pump |
| | 1150 | Started no. circ. water pump |
| 20 | 0600 | Started unit load increase |
| | 0800 | Unit at 450 MWe |
| 23 | 2300 | Started reducing unit load for circulating water heat treatment of intake tunnel |
| | 2320 | Unit load at 360 MWe net |
| | 2345 | Intake and outfall tunnels reversed |
| 24 | 0050 | Started heat treatment of intake tunnel |
| | 0235 | Completed heat treatment of intake tunnel |
| | 0315 | Started unit load decrease to 250 MWe gross |
| | 0400 | Unit load at 250 MWe |
| | 0410 | Circulating water tunnels returned to normal |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| JULY | | |
| 1 | 0001 | Unit at 256 MWe |
| 3 | 0455 | Stopped south circulating water pump |
| | 0948 | Started south circulating water pump |
| | 1008 | Stopped north circulating water pump |
| 9 | 0942 | Started north circulating water pump |
| | 1120 | Reducing unit load to 200 MWe |
| | 1130 | Unit load at 195 MWe |
| | 1155 | Increasing unit load to 250 MWe |
| | 1210 | Unit at 250 MWe |
| 10 | 0615 | Increasing unit load to 450 MWe |
| | 0837 | Unit load at 450 MWe |
| 27 | 0430 | Started unit load decrease for turbine stop valve test |
| | 0450 | Unit load at 340 MWe |
| | 0545 | Tests complete increasing unit load |
| | 0650 | Unit at full load |
| 28 | 1220 | Divers in area of Unit I intake |
| | 1430 | Divers clear of Unit I intake |
| AUGUST | | |
| 1 | 0001 | Unit load at 449 MWe |
| 5 | 0001 | Unit load at 422 MWe - unit coastdown in effect |
| 6 | 0001 | Unit load at 440 MWe |
| 7 | 0001 | Unit load at 427 MWe |
| 15 | 1315 | Received approval to decrease unit load |
| | 1330 | Unit load at 380 MWe |
| | 1545 | Increasing unit load |
| | 1650 | Unit at full load 420 MWe |
| 18 | 2250 | Unit load reduced to 150 MWe |
| 19 | 0155 | Started increasing unit load |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| AUGUST | | |
| 19 | 0500 | Unit load at 350 MWe |
| | 1435 | Unit load at 419 MWe |
| 20 | 0630 | Started unit load drop for heat treatment |
| | 0638 | Unit load at 360 MWe |
| | 0725 | Circulating water tunnels reversed for heat treatment |
| | 0815 | Started heat treatment of the intake tunnel |
| | 1000 | Completed heat treatment of the intake tunnel |
| | 1120 | Returned circulating water tunnels to normal configuration |
| | 1122 | Increasing unit load |
| | 1143 | Unit load at 405 MWe |
| 21 | 0001 | Unit load at 411 MWe |
| 24 | 0001 | Unit load at 398 MWe - unit coastdown |
| 29 | 0001 | Unit load at 384 MWe |
| 30 | 0505 | Started reducing unit load to 250 MWe gross for work on No. & So. WATER BOXES |
| | 0530 | Unit load at 250 MWe gross |
| | 1730 | Started load increase to maximum |
| | 1812 | Unit 1 load at full load, 384 MWe |
| 31 | | Unit load at 398 MWe |
| SEPTEMBER | | |
| 1 | 0001 | Unit load at 384 MWe |
| 5 | 2154 | Stopped south circulating water pump due to sheared pin. |
| | 2204 | Started south circulating water pump |
| 7 | 0302 | Started reducing unit load to shutdown |
| | 0511 | Unit off the line |
| | 0740 | Stopped north circulating water pump to clean condensers. |
| | 1120 | North circulating water pump returned to service |
| | 1135 | Stopped south circulating water pump |
| | 1445 | Started south circulating water pump |
| | 1728 | Rolled the unit |
| | 1814 | Unit on line at 25 MWe |
| | 1900 | Started increasing unit load |
| | 2135 | Unit load at 355 MWe gross |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| SEPTEMBER | | |
| 12 | 0351 | Turbine tripped - reactor tripped |
| | 0740 | Rolled the turbine |
| | 0846 | Unit on line |
| | 1000 | Unit at full load 230 MWe - continuing increase of load |
| 13 | 0001 | Unit load 380 MWe |
| | 0700 | Reversed tunnels for heat-treatment of intake tunnel |
| | 0815 | Started heat treating the intake tunnel |
| | 1000 | Completed heat treating the intake tunnel |
| | 1115 | Circulating water tunnels returned to normal |
| 15 | 0001 | Unit load at 338 MWe |
| | 2045 | Started reducing load to remove unit from service for overhaul and refueling |
| | 2210 | Unit off line by anti-motoring trip |
| 16 | 2210 | Stopped north circulating water pump |
| 17 | 1820 | Started south circulating water pump NOTE: south circulating water pump shut-down sometime during the last 48 hours - no note on this event |
| 18 | 1250 | Diver working in the north intake structure ocean side of the traveling rakes |
| | 1345 | Stopped the south circulating water pump for diver work |
| | 1455 | Diver is out of the intake structure after removing debris from stop log slots |
| | 2045 | Started the south circulating water pump. Stopped south circulating water pump - No log entry for time of occurrence |
| OCTOBER | | |
| 1 | 0001 | Unit shutdown for fueling and maintenance |
| 13 | 1048 | Diver in the circulating water outfall tunnel for inspection |
| | 1245 | The diver is out of the circulating water outfall tunnel |
| | 1800 | Diver out of the intake tunnel and is inspecting gates 9, 10, 11 and 12 |
| | 1840 | Diver has completed inspection of circulating water gates |
| 23 | 1055 | Divers inspecting the circulating water system |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| OCTOBER | | |
| 26 | 1415 | Started south circulating water pump |
| | 2315 | Stopped south circulating water pump |
| 27 | 0245 | Started south circulating water pump |
| | 0300 | Stopped south circulating water pump |
| | 1640 | Started south circulating water pump |
| 28 | 0015 | Started north circulating water pump |
| | 0115 | Stopped south circulating water pump due to high pressure differential |
| | 0145 | Stopped north circulating water pump due to high vibration |
| | 0500 | Restarted north and south circulating water pump |
| | 0915 | Stopped north circulating water pump |
| 29 | 0116 | Stopped south circulating water pump for testing |
| | 0545 | Started south circulating water pump NOTE: South Circulator stopped with no entry in log |
| | 2235 | Started south circulating water pump |
| 31 | 1620 | Started north circulating water pump |
| NOVEMBER | | |
| 1 | 0001 | Reactor at hot shutdown |
| 3 | 1620 | Started north circulating water pump stopped the south circulating water pump |
| | 2115 | Started south circulating water pump and stopped the north circulating water pump |
| 4 | 1300 | Diver inspecting north bar rakes |
| | 1400 | Diver has completed inspection north intake no. circulating water pump started? |
| 5 | 1110 | Unit rolling at 200 R.P.M. |
| | 1145 | Unit rolling at 600 R.P.M. |
| | 1247 | Unit on line |
| | 1445 | Unit load increased from 25 MWe to 45 MWe |
| | 2255 | Unit off line for turbine test |
| | 2315 | Unit on line |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| NOVEMBER | | |
| 6 | 0001 | Unit load 35 MWe - increasing to 130 MWe |
| | 0143 | Unit tripped from steam flow |
| | 0630 | Unit on line at 25 MWe |
| | 0915 | Unit load increased to 8% of full power |
| | 1015 | Increasing unit load to 30% |
| | 1100 | Unit load at 20% |
| | 1230 | Unit load at 135 MWe |
| | 1925 | Reactor power going to 60% |
| | 2030 | Unit load at 250 MWe |
| | 2155 | Unit on load limit |
| 7 | 1818 | Increasing unit load to 90% reactor power |
| | 2235 | Unit load at 405 MWe |
| 9 | 1930 | Unit load increase to 453 MWe |
| 10 | 0230 | Reactor trip |
| | 1155 | Rolled the turbine |
| | 1247 | Unit on the line at 25 MW |
| | 1530 | Increasing unit load |
| | 2020 | Unit at full load |
| DECEMBER | | |
| 1 | 0001 | Unit load at 451 MWe |
| 2 | 0730 | Initiated unit load drop to 360 MWe for heat treatment of circulating water system |
| | 0755 | Unit load at 360 MWe |
| | 0820 | Completed reversal of circulating water system gates for heat treatment |
| | 0850 | Started heat treatment of the circulating water system intake temp. 100°F |
| | 1035 | Completed heat treatment of circulating water system - reducing water temperature to normal |
| | 1240 | Completed returning circulating water system system gates to normal |
| | 1240 | Started increasing unit load to full power |
| | 1300 | Unit load at 100% power |
| 20 | 0300 | Started load reduction for reactor operator testing and minor maintenance |
| | 0348 | Stopped So. circulating water pump |

Table I-2. SONGS 1, 1978 operation summary (continued).

| DATE | TIME | OCCURRENCE |
|---|---|---|
| DECEMBER | | |
| 20 | 0451 | Unit off line |
| | 0815 | Started So. circulating water pump |
| | 0820 | Stopped No. circulating water pump |
| | 1230 | Started No. circulating water pump |
| | 1702 | Unit on line at 30 MWe |
| | 2255 | Unit load at 450 MWe |

# II. PLANKTON - RECEIVING WATERS

This program was designed to determine the nature, extent, and significance of the effects of SONGS Units 1,2, and 3 operations on the species composition, distribution and abundance of plankton offshore SONGS. This single program meets the requirements of both the ETS and PMP.

## A. METHODS

A detailed description of station locations and field and laboratory methodology is given in combined ETS and PMP procedures (SCE R&D/LCMR, Procedures P-O-8/78). A general review is presented below.

Seventeen stations make up the array of plankton sampling stations included in the combined Unit 1 ETS and Units 2 and 3 PMP programs (Figure II-1). These are arranged in three transects, each transect being oriented parallel to the coastline. Each transect includes stations located directly offshore of SONGS and stations extending upcoast and downcoast from SONGS. Eight stations lie along the 10-m isobath (Zones 5, 1A, 0A, 2A, and 6), five stations lie along the 15-m isobath and the remaining four lie along the 30-m isobath. Surveys during March and May were conducted at inshore stations 1-7 (Figure II-1) in accordance with ETS requirements. Single samples were taken on one day at two discrete depth strata utilizing a plankton pump.

continued in September and November. Biological samples collected include zooplankton samples and whole-water samples for analysis of chlorophyll *a* concentration. These are collected concurrently at each station using a Lockheed designed plankton pump system. Samples are collected from two strata within the water column at each station. The upper stratum extends from the surface to 5-m depth for the stations located along the 10-m

isobaths and from the surface to 8-m depth at stations along the 15 and 30-m isobaths. The lower stratum encompasses the depth interval from 5 to 10-m at the stations located on the 10-m isobath and from 8 m to the bottom for the deeper stations. Within each of these strata, samples are integrated with 1.3 $m^3$ of water being sampled at each 1-m depth interval within a stratum. Zooplankton samples are concentrated by filtering through 202-μm mesh plankton net. A 450-ml whole-water sample is obtained for analysis for chlorophyll *a* and phaeopigment concentration by collecting a small fraction of the water pumped through the plankton net. Two replicate water samples and two replicate zooplankton samples are collected from each stratum at each station. This procedure is repeated on three days within a seven day period for each bimonthly survey except that stations 2,3, and 5 are not sampled on the second and third days. All samples are collected during daylight hours.

Laboratory analysis includes identification and enumeration of select zooplankton taxa. Enumerated categories consist of *Penilia avirostris*, *Acartia tonsa*, *Acartia* spp. copepodites, *Corycaeus anglicus*, *Enterpina acutifrons*, *Labidocera trispinosa* copepodites, *Oithona oculata*, *Paracalanus parvus*, *Paracalanus parvus* copepodites, all other copepods as an aggregate, cypris larvae, cyphonautes larvae, *Sagitta* spp., and all other plankton taxa as an aggregate. If an additional taxon is found to comprise more than 30% of the samples during a survey, it is enumerated as well. Generally zooplankton samples are sufficiently dense that sample abundances are estimated from subsamples. In addition to zooplankton sample processing, whole-water samples are examined with a Turner fluorometer for the determination of chlorophyll *a* and phaeopigment concentrations.

Physical data are collected concurrently with biological sampling. A temperature-depth and transimissivity-depth profile, with measurements

taken at 1-m intervals, is obtained each time a plankton station is occupied using a Martek XMS temperature-transmissivity unit. Gross current speed and direction of flow is estimated by deployment of a sub-surface drogue for a measured length of time (15 min. to 1 hour) while each station is occupied. Meteorological information, including percentage of cloud cover, wind, and sea conditions is obtained each time a station is occupied.

Bimonthly plankton surveys for Unit 1 ETS were scheduled during January, March, May, July, September, and November of 1978. The January survey could not be conducted due to persistently inclement weather.

## B. RESULTS

Data collected during the 1978 plankton surveys are presented in the following raw data tables. These tables are presented by survey in chronological order. Zooplankton abundance (species and total) is presented for each station with stations sequentially ordered within each survey. Chlorophyll *a* and phaeopigment data are presented by survey and station as are temperature, transmissivity, drogue, and weather data. Where available ancillary comments on biological phenomena occurring during the surveys are presented.

A table of arrival and departure times for each station arranged by survey and date is presented to indicate the time interval over which biological samples and physical data were collected.

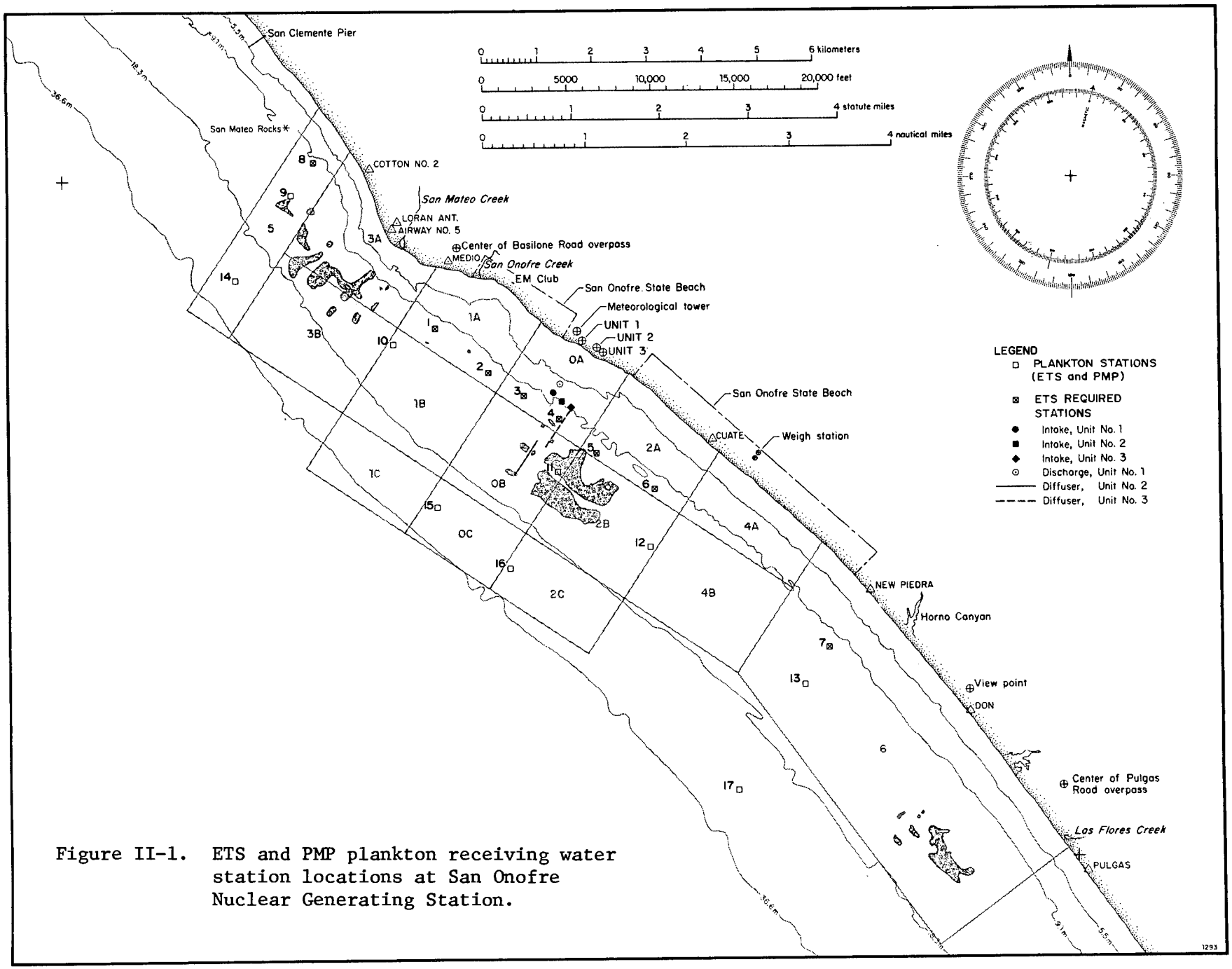


Figure II-1. ETS and PMP plankton receiving water station locations at San Onofre Nuclear Generating Station.

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 167.4 | 4 | 7.77 | / | / | / | 34.9 | 12 | 1.23 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 96.7 | 7 | 4.49 | / | / | / | 54.8 | 1Ø.5 | 1.94 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 617.6 | 1 | 28.67 | / | / | / | 458.2 | 3 | 16.2Ø | / | / | / |
| CORYCAEUS ANGLICUS | 323.7 | 3 | 15.Ø3 | / | / | / | 338.6 | 4 | 11.97 | / | / | / |
| EUTERPINA ACUTIFRONS | 93.Ø | 8 | 4.32 | / | / | / | 1Ø9.6 | 8 | 3.87 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 29.8 | 11 | 1.38 | / | / | / | 64.7 | 9 | 2.29 | / | / | / |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | / | / | / | 14.9 | 13 | Ø.53 | / | / | / |
| PARACALANUS PARVUS | 37.2 | 1Ø | 1.73 | / | / | / | 139.4 | 6 | 4.93 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 89.3 | 9 | 4.15 | / | / | / | 557.8 | 2 | 19.72 | / | / | / |
| OTHER COPEPODS | 115.3 | 6 | 5.35 | / | / | / | 263.9 | 5 | 9.33 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 3.7 | 13 | Ø.17 | / | / | / | Ø.Ø | 14 | Ø.ØØ | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 13Ø.2 | 5 | 6.Ø4 | / | / | / | 129.5 | 7 | 4.58 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 18.6 | 12 | Ø.86 | / | / | / | 54.8 | 1Ø.5 | 1.94 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 431.5 | 2 | 2Ø.Ø3 | / | / | / | 6Ø7.6 | 1 | 21.48 | / | / | / |
| Total Zooplankton | 2154.0 | | | | | | 2828.7 | | | | | |

*Only one replicate taken

PLANKTON STATION 2: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 566.3 | 3 | 15.66 | / | / | / | 171.1 | 6 | 6.25 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 78.7 | 9.5 | 2.18 | / | / | / | 78.1 | 1Ø | 2.85 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 232.5 | 5 | 6.43 | / | / | / | 133.9 | 8 | 4.89 | / | / | / |
| CORYCAEUS ANGLICUS | 69Ø.Ø | 2 | 19.Ø9 | / | / | / | 282.7 | 5 | 1Ø.33 | / | / | / |
| EUTERPINA ACUTIFRONS | 1Ø5.Ø | 8 | 2.9Ø | / | / | / | 167.4 | 7 | 6.11 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 78.7 | 9.5 | 2.18 | / | / | / | 89.3 | 9 | 3.26 | / | / | / |
| OITHONA OCULATA | 7.5 | 14 | Ø.21 | / | / | / | 3.7 | 14 | Ø.14 | / | / | / |
| PARACALANUS PARVUS | 15.Ø | 13 | Ø.41 | / | / | / | 48.4 | 12 | 1.77 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 172.5 | 7 | 4.77 | / | / | / | 364.6 | 2 | 13.32 | / | / | / |
| OTHER COPEPODS | 198.7 | 6 | 5.5Ø | / | / | / | 349.7 | 3 | 12.77 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 41.2 | 11 | 1.14 | / | / | / | 33.5 | 13 | 1.22 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 397.5 | 4 | 11.ØØ | / | / | / | 3Ø1.3 | 4 | 11.Ø1 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 33.7 | 12 | Ø.93 | / | / | / | 63.2 | 11 | 2.31 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 997.5 | 1 | 27.59 | / | / | / | 651.Ø | 1 | 23.78 | / | / | / |
| Total Zooplankton | 3615.0 | | | | | | 2738.1 | | | | | |

*Only one replicate taken

PLANKTON STATION 3: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 412.5 | 3 | 12.97 | / | / | / | 31.Ø | 9.5 | 2.42 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 268.4 | 5 | 8.44 | / | / | / | 14.3 | 11 | 1.12 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 974.2 | 1 | 3Ø.63 | / | / | / | 1ØØ.Ø | 5 | 7.82 | / | / | / |
| CORYCAEUS ANGLICUS | 273.4 | 4 | 8.59 | / | / | / | 138.1 | 4 | 1Ø.8Ø | / | / | / |
| EUTERPINA ACUTIFRONS | 24.9 | 12 | Ø.78 | / | / | / | 57.1 | 7 | 4.47 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 79.5 | 9 | 2.5Ø | / | / | / | 31.Ø | 9.5 | 2.42 | / | / | / |
| PARACALANUS PARVUS | 29.8 | 11 | Ø.94 | / | / | / | 38.1 | 8 | 2.98 | / | / | / |
| **PARACALANUS PARVUS(COPEPODITES)** | **193.8** | **6** | **6.Ø9** | / | / | / | **319.Ø** | **1** | **24.95** | / | / | / |
| **OTHER COPEPODS** | **149.1** | **7** | **4.69** | / | / | / | **176.2** | **3** | **13.78** | / | / | / |
| **ECTOPROCTA** | | | | | | | | | | | | |
| **CYPHONAUTES LARVAE** | **119.3** | **8** | **3.75** | / | / | / | **66.7** | **6** | **5.21** | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 49.7 | 1Ø | 1.56 | / | / | / | 9.5 | 12 | Ø.74 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 6Ø6.4 | 2 | 19.Ø6 | / | / | / | 297.6 | 2 | 23.28 | / | / | / |

Total Zooplankton 3180.9 1278.6

*Only one replicate taken

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 253.Ø | 4 | 1Ø.46 | / | / | / | 42.2 | 8.5 | 3.11 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 79.4 | 9 | 3.28 | / | / | / | 27.3 | 11 | 2.Ø1 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 332.3 | 3 | 13.74 | / | / | / | 169.Ø | 5 | 12.45 | / | / | / |
| CORYCAEUS ANGLICUS | 359.6 | 2 | 14.87 | / | / | / | 188.9 | 3 | 13.92 | / | / | / |
| EUTERPINA ACUTIFRONS | 131.4 | 7 | 5.44 | / | / | / | 146.6 | 6 | 1Ø.81 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 37.2 | 12 | 1.54 | / | / | / | 42.2 | 8.5 | 3.11 | / | / | / |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | / | / | / | 5.Ø | 13 | Ø.37 | / | / | / |
| PARACALANUS PARVUS | 69.4 | 1Ø | 2.87 | / | / | / | 49.7 | 7 | 3.66 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 183.5 | 5 | 7.59 | / | / | / | 248.5 | 1 | 18.32 | / | / | / |
| OTHER COPEPODS | 158.7 | 6 | 6.56 | / | / | / | 181.4 | 4 | 13.37 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.5 | 13 | Ø.1Ø | / | / | / | Ø.Ø | 14 | Ø.ØØ | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 99.2 | 8 | 4.1Ø | / | / | / | 29.8 | 1Ø | 2.2Ø | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 39.7 | 11 | 1.64 | / | / | / | 22.4 | 12 | 1.65 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 672.1 | 1 | 27.79 | / | / | / | 2Ø3.8 | 2 | 15.Ø2 | / | / | / |
| Total Zooplankton | 2418.2 | | | | | | 1356.9 | | | | | |

*Only one replicate taken

PLANKTON STATION 5: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B * | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 422.5 | 2 | 15.95 | / | / | / | 29.6 | 13 | Ø.9Ø | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 188.9 | 7 | 7.13 | / | / | / | 34.6 | 11.5 | 1.Ø6 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 417.5 | 3 | 15.76 | / | / | / | 64.2 | 8 | 1.96 | / | / | / |
| CORYCAEUS ANGLICUS | 278.3 | 5 | 1Ø.51 | / | / | / | 355.7 | 5 | 1Ø.86 | / | / | / |
| EUTERPINA ACUTIFRONS | 29.8 | 11.5 | 1.13 | / | / | / | 34Ø.9 | 6 | 1Ø.41 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 29.8 | 11.5 | 1.13 | / | / | / | 59.3 | 9 | 1.81 | / | / | / |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | / | / | / | 118.6 | 7 | 3.62 | / | / | / |
| PARACALANUS PARVUS | 59.6 | 1Ø | 2.25 | / | / | / | 578.1 | 3 | 17.65 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 149.1 | 8 | 5.63 | / | / | / | 622.5 | 1 | 19.ØØ | / | / | / |
| OTHER COPEPODS | 288.3 | 4 | 1Ø.88 | / | / | / | 37Ø.6 | 4 | 11.31 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | / | / | / | 49.4 | 1Ø | 1.51 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 198.8 | 6 | 7.5Ø | / | / | / | 19.8 | 14 | Ø.6Ø | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 69.6 | 9 | 2.63 | / | / | / | 34.6 | 11.5 | 1.Ø6 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 516.9 | 1 | 19.51 | / | / | / | 597.8 | 2 | 18.25 | / | / | / |

Total Zooplankton 2649.1 3275.7

*Only one replicate taken

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 472.2 | 3 | 16.89 | / | / | / | 72.1 | 6 | 4.22 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 136.7 | 5 | 4.89 | / | / | / | 37.3 | 11 | 2.18 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 79Ø.3 | 1 | 28.27 | / | / | / | 64.6 | 7 | 3.78 | / | / | / |
| CORYCAEUS ANGLICUS | 238.6 | 4 | 8.53 | / | / | / | 275.8 | 3 | 16.13 | / | / | / |
| EUTERPINA ACUTIFRONS | 1Ø6.9 | 8 | 3.82 | / | / | / | 99.4 | 5 | 5.81 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 27.3 | 11 | Ø.98 | / | / | / | 22.4 | 12 | 1.31 | / | / | / |
| PARACALANUS PARVUS | 32.3 | 1Ø | 1.16 | / | / | / | 42.2 | 1Ø | 2.47 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 116.8 | 6.5 | 4.18 | / | / | / | 2Ø6.3 | 4 | 12.Ø6 | / | / | / |
| OTHER COPEPODS | 116.8 | 6.5 | 4.18 | / | / | / | 333.Ø | 2 | 19.48 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.5 | 13 | Ø.Ø8 | / | / | / | 9.9 | 13 | Ø.58 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 39.8 | 9 | 1.42 | / | / | / | 62.1 | 8 | 3.63 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 14.9 | 12 | Ø.53 | / | / | / | 59.6 | 9 | 3.49 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 7ØØ.8 | 2 | 25.Ø7 | / | / | / | 425.Ø | 1 | 24.85 | / | / | / |
| Total Zooplankton | 2795.7 | | | | | | 1209.7 | | | | | |

*Only one replicate taken

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MARCH 7, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 372.Ø | 4 | 12.44 | / | / | / | 8Ø.Ø | 6.5 | 6.Ø6 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 327.4 | 5 | 1Ø.95 | / | / | / | 35.Ø | 9 | 2.65 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 662.2 | 2 | 22.14 | / | / | / | 16Ø.Ø | 4 | 12.12 | / | / | / |
| CORYCAEUS ANGLICUS | 249.3 | 6 | 8.33 | / | / | / | 175.Ø | 3 | 13.26 | / | / | / |
| EUTERPINA ACUTIFRONS | 26.Ø | 1Ø | Ø.87 | / | / | / | 22.5 | 11.5 | 1.7Ø | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.4 | 11 | Ø.25 | / | / | / | 3Ø.Ø | 1Ø | 2.27 | / | / | / |
| OITHONA OCULATA | Ø.Ø | 13 | Ø.ØØ | / | / | / | 5.Ø | 14 | Ø.38 | / | / | / |
| PARACALANUS PARVUS | Ø.Ø | 13 | Ø.ØØ | / | / | / | 42.5 | 8 | 3.22 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 48.4 | 8.5 | 1.62 | / | / | / | 12Ø.Ø | 5 | 9.Ø9 | / | / | / |
| OTHER COPEPODS | 85.6 | 7 | 2.86 | / | / | / | 182.5 | 2 | 13.83 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | / | / | / | 12.5 | 13 | Ø.95 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 744.Ø | 1 | 24.88 | / | / | / | 8Ø.Ø | 6.5 | 6.Ø6 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 48.4 | 8.5 | 1.62 | / | / | / | 22.5 | 11.5 | 1.7Ø | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 42Ø.4 | 3 | 14.Ø5 | / | / | / | 352.5 | 1 | 26.7Ø | / | / | / |
| Total Zooplankton | 2991.1 | | | | | | 1320.0 | | | | | |

*Only one replicate taken

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978 - UNIT 1

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 37.4 | 7.5 | 2.Ø7 | / | / | / | 79.5 | 5 | 1.82 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 829.2 | 1 | 45.99 | / | / | / | 3171.Ø | 1 | 72.42 | / | / | / |
| CORYCAEUS ANGLICUS | 37.4 | 7.5 | 2.Ø7 | / | / | / | 29.8 | 7 | Ø.68 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.5 | 1Ø | Ø.14 | / | / | / | Ø.Ø | 1Ø | Ø.ØØ | / | / | / |
| PARACALANUS PARVUS | 57.3 | 4 | 3.18 | / | / | / | 19.9 | 8 | Ø.45 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 293.8 | 3 | 16.3Ø | / | / | / | 223.7 | 3 | 5.11 | / | / | / |
| OTHER COPEPODS | 47.3 | 5 | 2.62 | / | / | / | 54.7 | 6 | 1.25 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 5.Ø | 9 | Ø.28 | / | / | / | 9.9 | 9 | Ø.23 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 42.3 | 6 | 2.35 | / | / | / | 84.5 | 4 | 1.93 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 45Ø.7 | 2 | 25.ØØ | / | / | / | 7Ø5.8 | 2 | 16.12 | / | / | / |
| Total Zooplankton | 1802.8 | | | | | | 4378.7 | | | | | |

*Only one replicate taken

PLANKTON STATION 2: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 96.7 | 6 | 1.99 | / | / | / | 297.6 | 4 | 3.64 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 1956.8 | 1 | 4Ø.28 | / | / | / | 6Ø41.7 | 1 | 73.95 | / | / | / |
| CORYCAEUS ANGLICUS | 81.8 | 7 | 1.68 | / | / | / | 193.5 | 7 | 2.37 | / | / | / |
| EUTERPINA ACUTIFRONS | 7.4 | 9 | Ø.15 | / | / | / | 14.9 | 11 | Ø.18 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 1Ø.5 | Ø.ØØ | / | / | / | 74.4 | 1Ø | Ø.91 | / | / | / |
| PARACALANUS PARVUS | 111.6 | 5 | 2.3Ø | / | / | / | 163.7 | 8 | 2.ØØ | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 1741.1 | 2 | 35.83 | / | / | / | 223.2 | 6 | 2.73 | / | / | / |
| OTHER COPEPODS | 156.2 | 4 | 3.22 | / | / | / | 133.9 | 9 | 1.64 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 44.6 | 8 | Ø.92 | / | / | / | 267.9 | 5 | 3.28 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 1Ø.5 | Ø.ØØ | / | / | / | 342.3 | 3 | 4.19 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 662.2 | 3 | 13.63 | / | / | / | 416.7 | 2 | 5.1Ø | / | / | / |
| Total Zooplankton | 4858.6 | | | | | | 8169.7 | | | | | |

*Only one replicate taken

PLANKTON STATION 3: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 81.7 | 8.5 | 1.56 | / | / | / | 164.Ø | 6.5 | 3.21 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 19Ø8.4 | 1 | 36.45 | / | / | / | 3645.6 | 1 | 71.39 | / | / | / |
| CORYCAEUS ANGLICUS | 59.4 | 1Ø | 1.13 | / | / | / | 59.6 | 8 | 1.17 | / | / | / |
| EUTERPINA ACUTIFRONS | 22.3 | 11 | Ø.43 | / | / | / | 22.4 | 1Ø | Ø.44 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 81.7 | 8.5 | 1.56 | / | / | / | 44.7 | 9 | Ø.88 | / | / | / |
| OITHONA OCULATA | 7.4 | 12.5 | Ø.14 | / | / | / | Ø.Ø | 13 | Ø.ØØ | / | / | / |
| PARACALANUS PARVUS | 393.6 | 6 | 7.52 | / | / | / | 14.9 | 11.5 | Ø.29 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 72Ø.3 | 3 | 13.76 | / | / | / | 246.Ø | 4 | 4.82 | / | / | / |
| OTHER COPEPODS | 542.1 | 4 | 1Ø.35 | / | / | / | 164.Ø | 6.5 | 3.21 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.4 | 12.5 | Ø.14 | / | / | / | 14.9 | 11.5 | Ø.29 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17Ø.8 | 7 | 3.26 | / | / | / | 171.5 | 5 | 3.36 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 438.1 | 5 | 8.37 | / | / | / | 268.4 | 3 | 5.26 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 8Ø2.Ø | 2 | 15.32 | / | / | / | 29Ø.8 | 2 | 5.69 | / | / | / |

Total Zooplankton 5235.1 5106.9

*Only one replicate taken

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B* | | | REPLICATE A | | | REPLICATE B* | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 14.9 | 11.5 | Ø.45 | / | / | / | 14.9 | 9.5 | Ø.55 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 69.4 | 6 | 2.Ø8 | / | / | / | 9.9 | 11 | Ø.37 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 1537.7 | 1 | 46.13 | / | / | / | 1398.8 | 1 | 51.74 | / | / | / |
| CORYCAEUS ANGLICUS | 49.6 | 7 | 1.49 | / | / | / | 24.8 | 8 | Ø.92 | / | / | / |
| EUTERPINA ACUTIFRONS | 14.9 | 11.5 | Ø.45 | / | / | / | 14.9 | 9.5 | Ø.55 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 19.8 | 1Ø | Ø.6Ø | / | / | / | 5.Ø | 12 | Ø.18 | / | / | / |
| PARACALANUS PARVUS | 396.8 | 4 | 11.9Ø | / | / | / | 138.9 | 5 | 5.14 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 4Ø6.7 | 3 | 12.2Ø | / | / | / | 148.8 | 4 | 5.5Ø | / | / | / |
| OTHER COPEPODS | 44.6 | 8 | 1.34 | / | / | / | 34.7 | 7 | 1.28 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 5.Ø | 13 | Ø.15 | / | / | / | Ø.Ø | 13 | Ø.ØØ | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 39.7 | 9 | 1.19 | / | / | / | 89.3 | 6 | 3.3Ø | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 138.9 | 5 | 4.17 | / | / | / | 248.Ø | 3 | 9.17 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 595.2 | 2 | 17.86 | / | / | / | 575.4 | 2 | 21.28 | / | / | / |
| Total Zooplankton | 3333.3 | | | | | | 2703.4 | | | | | |

*Only one replicate taken

PLANKTON STATION 5: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B * | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.Ø | 12.5 | Ø.ØØ | / | / | / | 19.6 | 12.5 | Ø.33 | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 69.6 | 7.5 | 1.46 | / | / | / | 264.2 | 5 | 4.43 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 646.1 | 4 | 13.57 | / | / | / | 3277.9 | 1 | 54.92 | / | / | / |
| CORYCAEUS ANGLICUS | 99.4 | 6 | 2.Ø9 | / | / | / | 68.5 | 1Ø | 1.15 | / | / | / |
| EUTERPINA ACUTIFRONS | 59.6 | 9 | 1.25 | / | / | / | 156.6 | 7 | 2.62 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.9 | 1Ø.5 | Ø.21 | / | / | / | 39.1 | 11 | Ø.66 | / | / | / |
| OITHONA OCULATA | Ø.Ø | 12.5 | Ø.ØØ | / | / | / | 19.6 | 12.5 | Ø.33 | / | / | / |
| PARACALANUS PARVUS | 675.9 | 3 | 14.2Ø | / | / | / | 1Ø7.6 | 9 | 1.8Ø | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 1292.2 | 2 | 27.14 | / | / | / | 587.1 | 2.5 | 9.84 | / | / | / |
| OTHER COPEPODS | 9.9 | 1Ø.5 | Ø.21 | / | / | / | 166.3 | 6 | 2.79 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 149.1 | 5 | 3.13 | / | / | / | 146.8 | 8 | 2.46 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 69.6 | 7.5 | 1.46 | / | / | / | 528.4 | 4 | 8.85 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1679.9 | 1 | 35.28 | / | / | / | 587.1 | 2.5 | 9.84 | / | / | / |
| Total Zooplankton | 4761.4 | | | | | | 5968.7 | | | | | |

*Only one replicate taken

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B * | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 5.Ø | 12.5 | Ø.19 | / | / | / | Ø.Ø | 13 | Ø.ØØ | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 34.7 | 7.5 | 1.36 | / | / | / | 22.3 | 7 | Ø.46 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 1488.1 | 1 | 58.48 | / | / | / | 3757.4 | 1 | 77.1Ø | / | / | / |
| CORYCAEUS ANGLICUS | 24.8 | 9.5 | Ø.97 | / | / | / | 14.9 | 8.5 | Ø.31 | / | / | / |
| EUTERPINA ACUTIFRONS | 9.9 | 11 | Ø.39 | / | / | / | 7.4 | 11 | Ø.15 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 34.7 | 7.5 | 1.36 | / | / | / | 7.4 | 11 | Ø.15 | / | / | / |
| PARACALANUS PARVUS | 44.6 | 6 | 1.75 | / | / | / | 67.Ø | 6 | 1.37 | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 163.7 | 4 | 6.43 | / | / | / | 193.5 | 3 | 3.97 | / | / | / |
| OTHER COPEPODS | 24.8 | 9.5 | Ø.97 | / | / | / | 14.9 | 8.5 | Ø.31 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 5.Ø | 12.5 | Ø.19 | / | / | / | 7.4 | 11 | Ø.15 | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 129.Ø | 5 | 5.Ø7 | / | / | / | 156.2 | 5 | 3.21 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 248.Ø | 3 | 9.75 | / | / | / | 439.Ø | 2 | 9.Ø1 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 332.3 | 2 | 13.Ø6 | / | / | / | 186.Ø | 4 | 3.82 | / | / | / |
| Total Zooplankton | 2544.6 | | | | | | 4873.5 | | | | | |

*Only one replicate taken

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. MAY 11, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B * | | | REPLICATE A | | | REPLICATE B * | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 24.7 | 1Ø | Ø.63 | / | / | / | 19.8 | 11 | Ø.3Ø | / | / | / |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 64.1 | 9 | 1.63 | / | / | / | 69.4 | 5 | 1.Ø4 | / | / | / |
| ACARTIA SPP.(COPEPODITES) | 2687.4 | 1 | 68.3Ø | / | / | / | 5Ø94.2 | 1 | 76.41 | / | / | / |
| CORYCAEUS ANGLICUS | 14.8 | 11 | Ø.38 | / | / | / | 39.7 | 7.5 | Ø.6Ø | / | / | / |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13 | Ø.ØØ | / | / | / | 34.7 | 9.5 | Ø.52 | / | / | / |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 69.Ø | 8 | 1.75 | / | / | / | 14.9 | 12 | Ø.22 | / | / | / |
| PARACALANUS PARVUS | 88.8 | 7 | 2.26 | / | / | / | 39.7 | 7.5 | Ø.6Ø | / | / | / |
| PARACALANUS PARVUS(COPEPODITES) | 192.3 | 4 | 4.89 | / | / | / | 312.5 | 4 | 4.69 | / | / | / |
| OTHER COPEPODS | 1Ø3.6 | 6 | 2.63 | / | / | / | 44.6 | 6 | Ø.67 | / | / | / |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 4.9 | 12 | Ø.13 | / | / | / | Ø.Ø | 13 | Ø.ØØ | / | / | / |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 147.9 | 5 | 3.76 | / | / | / | 34.7 | 9.5 | Ø.52 | / | / | / |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 226.8 | 3 | 5.76 | / | / | / | 357.1 | 3 | 5.36 | / | / | / |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 31Ø.7 | 2 | 7.89 | / | / | / | 6Ø5.2 | 2 | 9.Ø8 | / | / | / |

Total Zooplankton 3934.9 6666.7

*Only one replicate taken

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1.4 | 6.5 | 4.ØØ | Ø.6 | 8 | 2.33 | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 2.9 | 4.5 | 8.ØØ | 4.8 | 3 | 18.6Ø | 1.8 | 6 | 2.88 | Ø.6 | 6.5 | 3.33 |
| CLAUSOCALANUS SPP. | 8.6 | 3 | 24.ØØ | 6.5 | 1 | 25.58 | 12.5 | 2 | 2Ø.19 | 6.4 | 1 | 36.67 |
| CORYCAEUS ANGLICUS | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | Ø.6 | 6.5 | 3.33 |
| PARACALANUS PARVUS | 1.4 | 6.5 | 4.ØØ | 1.2 | 6.5 | 4.65 | 3.6 | 5 | 5.77 | Ø.Ø | 8.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 9.4 | 1.5 | 26.ØØ | 4.8 | 3 | 18.6Ø | 28.6 | 1 | 46.15 | 5.3 | 2 | 3Ø.ØØ |
| OTHER COPEPODS | 2.9 | 4.5 | 8.ØØ | 1.8 | 5 | 6.98 | Ø.6 | 7 | Ø.96 | 1.2 | 5 | 6.67 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 8.5 | Ø.ØØ | 1.2 | 6.5 | 4.65 | 9.5 | 3 | 15.38 | 1.8 | 3.5 | 1Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 9.4 | 1.5 | 26.ØØ | 4.8 | 3 | 18.6Ø | 5.4 | 4 | 8.65 | 1.8 | 3.5 | 1Ø.ØØ |
| Total Zooplankton | 36.0 | | | 25.6 | | | 61.9 | | | 17.5 | | |

PLANKTON STATION 2: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 3.Ø | 6.5 | 2.46 | Ø.8 | 8.5 | Ø.58 | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| PODON POLYPHEMOIDES | 1.2 | 1Ø | Ø.99 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 11 | Ø.ØØ | Ø.8 | 8.5 | Ø.58 | Ø.Ø | 9 | Ø.ØØ | Ø.6 | 8 | Ø.53 |
| ACARTIA SPP.(COPEPODITES) | 4.3 | 5 | 3.45 | 3.2 | 6 | 2.33 | 3.Ø | 5 | 3.62 | 3.4 | 5.5 | 3.17 |
| CLAUSOCALANUS SPP. | 36.Ø | 1 | 29.Ø6 | 42.1 | 2 | 3Ø.81 | 18.3 | 3 | 21.74 | 24.6 | 2 | 23.28 |
| CORYCAEUS ANGLICUS | 2.4 | 8 | 1.97 | 1.6 | 7 | 1.16 | 3.7 | 4 | 4.35 | 1.1 | 7 | 1.Ø6 |
| PARACALANUS PARVUS | 3.Ø | 6.5 | 2.46 | 6.3 | 4 | 4.65 | 2.4 | 6 | 2.9Ø | 5.6 | 4 | 5.29 |
| PARACALANUS PARVUS(COPEPODITES) | 32.3 | 2 | 26.11 | 54.8 | 1 | 4Ø.12 | 34.8 | 1 | 41.3Ø | 5Ø.3 | 1 | 47.62 |
| OTHER COPEPODS | 9.1 | 4 | 7.39 | 4.Ø | 5 | 2.91 | Ø.Ø | 9 | Ø.ØØ | 3.4 | 5.5 | 3.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1.8 | 9 | 1.48 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 3Ø.5 | 3 | 24.63 | 23.Ø | 3 | 16.86 | 22.Ø | 2 | 26.Ø9 | 16.8 | 3 | 15.87 |
| Total Zooplankton | 123.8 | | | 136.5 | | | 84.1 | | | 105.6 | | |

PLANKTON STATION 3: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 5 | Ø.35 | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.6 | 5.5 | Ø.8Ø | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| CLAUSOCALANUS SPP. | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | Ø.5 | 5.5 | 1.3Ø |
| CORYCAEUS ANGLICUS | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 5 | Ø.35 | Ø.Ø | 8.5 | Ø.ØØ | 1.6 | 4 | 3.9Ø |
| EUTERPINA ACUTIFRONS | Ø.6 | 5.5 | Ø.8Ø | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| PARACALANUS PARVUS | 2.4 | 3 | 3.2Ø | 2.4 | 3 | 1.39 | Ø.Ø | 8.5 | Ø.ØØ | Ø.5 | 5.5 | 1.3Ø |
| PARACALANUS PARVUS(COPEPODITES) | 31.5 | 2 | 42.4Ø | 3Ø.2 | 2 | 17.77 | 13.Ø | 2 | 43.14 | 9.Ø | 3 | 22.Ø8 |
| OTHER COPEPODS | Ø.6 | 5.5 | Ø.8Ø | Ø.Ø | 9.5 | Ø.ØØ | Ø.6 | 3.5 | 1.96 | Ø.Ø | 9.5 | Ø.ØØ |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 5 | Ø.35 | Ø.6 | 3.5 | 1.96 | Ø.Ø | 9.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | 14.4 | 2 | 35.Ø6 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.6 | 5.5 | Ø.8Ø | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 38.1 | 1 | 51.2Ø | 135.5 | 1 | 79.79 | 16.Ø | 1 | 52.94 | 14.9 | 1 | 36.36 |
| Total Zooplankton | 74.4 | | | 169.8 | | | 30.2 | | | 41.0 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.6 | 7 | 1.82 | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 7.5 | 2.78 | Ø.Ø | 1Ø | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.6 | 6.5 | 1.23 | Ø.6 | 7.5 | 2.78 | Ø.Ø | 1Ø | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | Ø.6 | 7 | 1.82 | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| CLAUSOCALANUS SPP. | 9.8 | 2 | 29.Ø9 | 14.5 | 2 | 32.1Ø | 2.8 | 3 | 13.89 | 13.4 | 2 | 21.36 |
| CORYCAEUS ANGLICUS | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | 4.3 | 4 | 6.8Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 7.5 | 2.78 | Ø.Ø | 1Ø | Ø.ØØ |
| OITHONA OCULATA | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ | Ø.6 | 7.5 | 2.78 | Ø.Ø | 1Ø | Ø.ØØ |
| PARACALANUS PARVUS | 1.2 | 4.5 | 3.64 | 2.2 | 4.5 | 4.94 | 1.1 | 4.5 | 5.56 | 4.3 | 4 | 6.8Ø |
| PARACALANUS PARVUS(COPEPODITES) | 11.Ø | 1 | 32.73 | 21.2 | 1 | 46.91 | 7.3 | 1 | 36.11 | 32.9 | 1 | 52.43 |
| OTHER COPEPODS | 1.2 | 4.5 | 3.64 | Ø.6 | 6.5 | 1.23 | 1.1 | 4.5 | 5.56 | 1.2 | 7 | 1.94 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.6 | 7 | 1.82 | 2.2 | 4.5 | 4.94 | Ø.Ø | 11 | Ø.ØØ | 2.4 | 6 | 3.88 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 8.5 | 3 | 25.45 | 3.9 | 3 | 8.64 | 5.6 | 2 | 27.78 | 4.3 | 4 | 6.3Ø |
| Total Zooplankton | 33.5 | | | 45.3 | | | 20.1 | | | 62.8 | | |

PLANKTON STATION 5: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 6.1 | 1Ø | Ø.32 | 11.4 | 7 | Ø.66 | Ø.Ø | 12.5 | Ø.ØØ | 2.4 | 11 | Ø.Ø8 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 11.6 | 7 | Ø.61 | 3.8 | 1Ø.5 | Ø.22 | 2.4 | 1Ø | Ø.3Ø | 4.9 | 9 | Ø.17 |
| ACARTIA SPP.(COPEPODITES) | 9.1 | 9 | Ø.48 | 15.2 | 6 | Ø.88 | 4.9 | 8.5 | Ø.6Ø | 2.4 | 11 | Ø.Ø8 |
| CLAUSOCALANUS SPP. | 7ØØ.Ø | 1 | 36.7Ø | 343.Ø | 3 | 19.87 | 36.6 | 4 | 4.52 | 19Ø.2 | 4 | 6.55 |
| CORYCAEUS ANGLICUS | 217.1 | 3 | 11.38 | 99.1 | 5 | 5.74 | 82.9 | 3 | 1Ø.24 | 119.5 | 6 | 4.11 |
| EUTERPINA ACUTIFRONS | 1.2 | 12.5 | Ø.Ø6 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.6 | 14 | Ø.Ø3 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| PARACALANUS PARVUS | 151.2 | 5 | 7.93 | 175.3 | 4 | 1Ø.15 | 22.Ø | 6 | 2.71 | 28Ø.5 | 3 | 9.66 |
| PARACALANUS PARVUS(COPEPODITES) | 21Ø.4 | 4 | 11.Ø3 | 499.2 | 2 | 28.92 | 92.7 | 2 | 11.45 | 765.9 | 2 | 26.36 |
| OTHER COPEPODS | 34.1 | 6 | 1.79 | 7.6 | 8.5 | Ø.44 | 7.3 | 7 | Ø.9Ø | 22.Ø | 7 | Ø.76 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.2 | 12.5 | Ø.Ø6 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 2.4 | 11 | Ø.Ø8 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 11.Ø | 8 | Ø.58 | 7.6 | 8.5 | Ø.44 | 26.8 | 5 | 3.31 | 156.1 | 5 | 5.37 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 5.5 | 11 | Ø.29 | 3.8 | 1Ø.5 | Ø.22 | 4.9 | 8.5 | Ø.6Ø | 7.3 | 8 | Ø.25 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 548.2 | 2 | 28.74 | 56Ø.2 | 1 | 32.45 | 529.3 | 1 | 65.36 | 1351.2 | 1 | 46.52 |
| Total Zooplankton | 1907.3 | | | 1726.4 | | | 809.5 | | | 2904.9 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.6 | 6.5 | 1.28 | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | Ø.Ø | 9 | Ø.ØØ | Ø.6 | 7 | 1.45 | Ø.Ø | 8 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ |
| CLAUSOCALANUS SPP. | 13.6 | 2 | 29.49 | 16.Ø | 1 | 39.13 | 5.3 | 1 | 36.ØØ | 3.Ø | 1.5 | 27.78 |
| CORYCAEUS ANGLICUS | 5.3 | 4 | 11.54 | 3.6 | 4 | 8.7Ø | 1.2 | 4 | 8.ØØ | 3.Ø | 1.5 | 27.78 |
| PARACALANUS PARVUS | 1.8 | 5 | 3.85 | Ø.6 | 7 | 1.45 | Ø.Ø | 8 | Ø.ØØ | Ø.6 | 6 | 5.56 |
| PARACALANUS PARVUS(COPEPODITES) | 9.5 | 3 | 2Ø.51 | 5.9 | 3 | 14.49 | 4.7 | 2 | 32.ØØ | 1.2 | 4 | 11.11 |
| OTHER COPEPODS | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 8 | Ø.ØØ | Ø.6 | 6 | 5.56 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 9 | Ø.ØØ | Ø.6 | 7 | 1.45 | Ø.Ø | 8 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.6 | 6.5 | 1.28 | 1.8 | 5 | 4.35 | Ø.6 | 5 | 4.ØØ | Ø.6 | 6 | 5.56 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 14.8 | 1 | 32.Ø5 | 11.8 | 2 | 28.99 | 3.Ø | 3 | 2Ø.ØØ | 1.8 | 3 | 16.67 |
| Total Zooplankton | 46.2 | | | 40.8 | | | 14.8 | | | 10.8 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 14, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 4.9 | 7 | Ø.73 | 1.3 | 8.5 | Ø.62 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 2.4 | 9 | Ø.36 | Ø.8 | 1Ø.5 | Ø.41 | Ø.5 | 9 | Ø.85 | Ø.Ø | 1Ø.5 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 2.4 | 9 | Ø.36 | 2.1 | 7 | 1.Ø3 | 2.4 | 6 | 4.24 | 5.8 | 6.5 | 4.17 |
| CLAUSOCALANUS SPP. | Ø.Ø | 11 | Ø.ØØ | 3.Ø | 6 | 1.44 | 2Ø.3 | 1 | 36.44 | 53.7 | 1 | 38.69 |
| CORYCAEUS ANGLICUS | 14.6 | 5 | 2.19 | 4.7 | 4.5 | 2.27 | 4.2 | 5 | 7.63 | 4.1 | 8 | 2.98 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.4 | 9 | Ø.36 | Ø.8 | 1Ø.5 | Ø.41 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.8 | 9 | Ø.6Ø |
| PARACALANUS PARVUS | 7.3 | 6 | 1.Ø9 | 4.7 | 4.5 | 2.27 | 1.4 | 8 | 2.54 | 5.8 | 6.5 | 4.17 |
| PARACALANUS PARVUS(COPEPODITES) | 47Ø.7 | 1 | 7Ø.44 | 147.Ø | 1 | 71.55 | 9.4 | 2 | 16.95 | 29.8 | 2 | 21.43 |
| OTHER COPEPODS | 17.1 | 4 | 2.55 | 1.3 | 8.5 | Ø.62 | 1.9 | 7 | 3.39 | 8.3 | 5 | 5.95 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 61.Ø | 3 | 9.12 | 17.4 | 3 | 8.45 | 6.6 | 4 | 11.86 | 15.7 | 3 | 11.31 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 85.4 | 2 | 12.77 | 22.5 | 2 | 1Ø.93 | 9.Ø | 3 | 16.1Ø | 14.9 | 4 | 1Ø.71 |
| Total Zooplankton | 668.3 | | | 205.5 | | | 55.7 | | | 138.8 | | |

PLANKTON STATION 9 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 14.Ø | 4 | 8.87 | 2.3 | 7.5 | 2.42 | 6.2 | 11 | 1.42 | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1.9 | 1Ø | 1.23 | 2.3 | 7.5 | 2.42 | 22.7 | 9 | 5.19 | 33.Ø | 6 | 7.81 |
| ACARTIA SPP.(COPEPODITES) | 3.1 | 8 | 1.97 | Ø.4 | 1Ø.5 | Ø.4Ø | 74.2 | 1 | 16.98 | 129.9 | 1 | 3Ø.77 |
| CLAUSOCALANUS SPP. | 51.Ø | 1 | 32.27 | 28.5 | 2 | 29.84 | 45.4 | 5.5 | 1Ø.38 | 36.1 | 5 | 8.55 |
| CORYCAEUS ANGLICUS | 2.7 | 9 | 1.72 | 1.9 | 9 | 2.Ø2 | 53.6 | 3 | 12.26 | 26.3 | 7 | 6.23 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 13 | Ø.ØØ | Ø.4 | 1Ø.5 | Ø.4Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 13.2 | 5 | 8.37 | 5.8 | 4 | 6.Ø5 | 28.9 | 7.5 | 6.6Ø | 22.2 | 8 | 5.25 |
| PARACALANUS PARVUS(COPEPODITES) | 29.2 | 3 | 18.47 | 15.Ø | 3 | 15.73 | 7Ø.1 | 2 | 16.Ø4 | 59.8 | 2 | 14.16 |
| OTHER COPEPODS | 6.6 | 6 | 4.19 | 4.6 | 5 | 4.84 | 45.4 | 5.5 | 1Ø.38 | 47.4 | 3 | 11.23 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.8 | 11.5 | Ø.49 | Ø.Ø | 12.5 | Ø.ØØ | 2.1 | 12 | Ø.47 | Ø.5 | 11 | Ø.12 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 4.3 | 7 | 2.71 | 2.7 | 6 | 2.82 | 28.9 | 7.5 | 6.6Ø | 17.5 | 9 | 4.15 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.8 | 11.5 | Ø.49 | Ø.Ø | 12.5 | Ø.ØØ | 1Ø.3 | 1Ø | 2.36 | 4.6 | 1Ø | 1.1Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 3Ø.4 | 2 | 19.21 | 31.5 | 1 | 33.Ø6 | 49.5 | 4 | 11.32 | 44.8 | 4 | 1Ø.62 |
| Total Zooplankton | 158.0 | | | 95.4 | | | 437.1 | | | 422.2 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 9.7 | 8 | Ø.3Ø | 92.4 | 5.5 | 2.5Ø | 133.2 | 3 | 9.86 | 13Ø.6 | 4 | 9.77 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 4.9 | 9.5 | Ø.15 | 38.9 | 7 | 1.Ø5 | 65.2 | 8 | 4.83 | 27.8 | 1Ø | 2.Ø8 |
| ACARTIA SPP.(COPEPODITES) | 19.5 | 7 | Ø.59 | 4.9 | 1Ø | Ø.13 | 95.1 | 6 | 7.Ø4 | 197.2 | 2 | 14.76 |
| CLAUSOCALANUS SPP. | 1921.2 | 1 | 58.35 | 1546.7 | 1 | 41.84 | 111.4 | 4 | 8.25 | 127.8 | 5 | 9.56 |
| CORYCAEUS ANGLICUS | 34.Ø | 5 | 1.Ø3 | 92.4 | 5.5 | 2.5Ø | 51.6 | 9 | 3.82 | 72.2 | 7 | 5.41 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | 8.2 | 12 | Ø.6Ø | Ø.Ø | 13 | Ø.ØØ |
| PARACALANUS PARVUS | 175.1 | 4 | 5.32 | 287.Ø | 4 | 7.76 | 84.2 | 7 | 6.24 | 58.3 | 9 | 4.37 |
| PARACALANUS PARVUS(COPEPODITES) | 189.7 | 3 | 5.76 | 612.8 | 3 | 16.58 | 396.7 | 1 | 29.38 | 363.9 | 1 | 27.23 |
| OTHER COPEPODS | 24.3 | 6 | Ø.74 | 34.Ø | 8 | Ø.92 | 48.9 | 1Ø | 3.62 | 111.1 | 6 | 8.32 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 5.6 | 12 | Ø.42 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12 | Ø.ØØ | 9.7 | 9 | Ø.26 | 1ØØ.5 | 5 | 7.44 | 63.9 | 8 | 4.78 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.9 | 9.5 | Ø.15 | Ø.Ø | 12 | Ø.ØØ | 35.3 | 11 | 2.62 | 16.7 | 11 | 1.25 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 9Ø9.5 | 2 | 27.62 | 977.6 | 2 | 26.45 | 22Ø.1 | 2 | 16.3Ø | 161.1 | 3 | 12.Ø6 |
| Total Zooplankton | 3292.8 | | | 3696.5 | | | 1350.5 | | | 1336.1 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 42.3 | 8 | 2.58 | 4.9 | 9.5 | Ø.4Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PODON POLYPHEMOIDES | 7.Ø | 12.5 | Ø.43 | 2.5 | 12 | Ø.2Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 3Ø.5 | 9 | 1.86 | 4.9 | 9.5 | Ø.4Ø | 31.2 | 9 | 2.49 | 39.6 | 7 | 3.25 |
| ACARTIA SPP.(COPEPODITES) | 18.8 | 1Ø | 1.14 | 9.8 | 7 | Ø.8Ø | 137.5 | 3 | 1Ø.96 | 239.6 | 2 | 19.69 |
| CLAUSOCALANUS SPP. | 5Ø5.2 | 1 | 3Ø.76 | 487.7 | 1 | 39.88 | 62.5 | 5 | 4.98 | 37.5 | 8 | 3.Ø8 |
| CORYCAEUS ANGLICUS | 94.Ø | 6 | 5.72 | 61.3 | 6 | 5.Ø1 | 125.Ø | 4 | 9.97 | 1Ø8.3 | 4 | 8.9Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 44.6 | 7 | 2.72 | 4.9 | 9.5 | Ø.4Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 143.3 | 5 | 8.73 | 76.Ø | 4 | 6.21 | 5Ø.Ø | 6 | 3.99 | 54.2 | 5 | 4.45 |
| PARACALANUS PARVUS(COPEPODITES) | 314.8 | 2 | 19.17 | 272.1 | 2 | 22.24 | 162.5 | 2 | 12.96 | 143.7 | 3 | 11.82 |
| OTHER COPEPODS | 164.5 | 4 | 1Ø.Ø1 | 71.1 | 5 | 5.81 | 33.3 | 7.5 | 2.66 | 52.1 | 6 | 4.28 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.Ø | 12.5 | Ø.43 | 4.9 | 9.5 | Ø.4Ø | 2.1 | 11 | Ø.17 | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 14.1 | 11 | Ø.86 | Ø.Ø | 13.5 | Ø.ØØ | 33.3 | 7.5 | 2.66 | 35.4 | 9 | 2.91 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 16.7 | 1Ø | 1.33 | 12.5 | 1Ø | 1.Ø3 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 256.1 | 3 | 15.59 | 223.Ø | 3 | 18.24 | 6ØØ.Ø | 1 | 47.84 | 493.8 | 1 | 4Ø.58 |
| Total Zooplankton | 1642.4 | | | 1223.0 | | | 1254.2 | | | 1216.7 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 4.9 | 1Ø.5 | Ø.4Ø | 2.4 | 1Ø | Ø.22 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 17.Ø | 7 | 1.39 | 38.5 | 7 | 3.46 | 42.9 | 6 | 8.27 | 15Ø.5 | 4 | 12.7Ø |
| ACARTIA SPP.(COPEPODITES) | 4.9 | 1Ø.5 | Ø.4Ø | 43.3 | 6 | 3.89 | 83.9 | 2 | 16.17 | 3Ø5.2 | 1 | 25.74 |
| CLAUSOCALANUS SPP. | 778.2 | 1 | 63.49 | 613.Ø | 1 | 55.Ø8 | 23.4 | 7 | 4.51 | 84.5 | 6 | 7.13 |
| CORYCAEUS ANGLICUS | 53.5 | 5 | 4.37 | 48.1 | 5 | 4.32 | 21.5 | 8 | 4.14 | 41.2 | 7.5 | 3.48 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 2.Ø | 12 | Ø.38 | 4.1 | 11 | Ø.35 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.3 | 8.5 | Ø.6Ø | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 2.1 | 13 | Ø.17 |
| PARACALANUS PARVUS | 92.4 | 3 | 7.54 | 1Ø3.4 | 3 | 9.29 | 7.8 | 9 | 1.5Ø | 14.4 | 9 | 1.22 |
| PARACALANUS PARVUS(COPEPODITES) | 6Ø.8 | 4 | 4.96 | 52.9 | 4 | 4.75 | 3.9 | 1Ø.5 | Ø.75 | 4.1 | 11 | Ø.35 |
| OTHER COPEPODS | 21.9 | 6 | 1.79 | 12.Ø | 9 | 1.Ø8 | 74.1 | 3 | 14.29 | 148.5 | 5 | 12.52 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 3.9 | 1Ø.5 | Ø.75 | 4.1 | 11 | Ø.35 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.3 | 8.5 | Ø.6Ø | 21.6 | 8 | 1.94 | 6Ø.5 | 4 | 11.65 | 216.5 | 2 | 18.26 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 58.5 | 5 | 11.28 | 41.2 | 7.5 | 3.48 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 177.5 | 2 | 14.48 | 177.9 | 2 | 15.98 | 136.6 | 1 | 26.32 | 169.1 | 3 | 14.26 |
| Total Zooplankton | 1225.7 | | | 1113.0 | | | 519.0 | | | 1185.6 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 9.2 | 6 | Ø.98 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ |
| PODON POLYPHEMOIDES | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.8 | 11.5 | Ø.15 | Ø.Ø | 14.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1.5 | 1Ø | Ø.16 | 4.8 | 7.5 | Ø.34 | 54.2 | 5 | 1Ø.51 | 69.2 | 4 | 12.38 |
| ACARTIA SPP.(COPEPODITES) | 6.2 | 8.5 | Ø.65 | 2.4 | 9.5 | Ø.17 | 16Ø.8 | 1 | 31.17 | 1Ø1.5 | 3 | 18.88 |
| CLAUSOCALANUS SPP. | 381.5 | 1 | 4Ø.59 | 682.7 | 1 | 48.46 | 4.6 | 1Ø | Ø.89 | 8.1 | 1Ø | 1.5Ø |
| CORYCAEUS ANGLICUS | 32.3 | 5 | 3.44 | 26.4 | 5 | 1.88 | 22.7 | 7 | 4.4Ø | 12.7 | 8 | 2.36 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 2.3 | 12.5 | Ø.43 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.4 | 13 | Ø.Ø7 | 2.3 | 12.5 | Ø.43 |
| PARACALANUS PARVUS | 129.2 | 4 | 13.75 | 197.1 | 3 | 13.99 | 1Ø.Ø | 8 | 1.94 | 1Ø.4 | 9 | 1.93 |
| PARACALANUS PARVUS(COPEPODITES) | 143.1 | 3 | 15.22 | 149.Ø | 4 | 1Ø.58 | 69.6 | 3 | 13.5Ø | 43.8 | 5 | 8.15 |
| OTHER COPEPODS | 6.2 | 8.5 | Ø.65 | 4.8 | 7.5 | Ø.34 | 27.7 | 6 | 5.37 | 33.5 | 6 | 6.22 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.8 | 11.5 | Ø.15 | 3.5 | 11 | Ø.64 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 13 | Ø.ØØ | 9.6 | 6 | Ø.68 | 64.6 | 4 | 12.53 | 1Ø9.6 | 2 | 2Ø.39 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 7.7 | 7 | Ø.82 | 2.4 | 9.5 | Ø.17 | 7.3 | 9 | 1.42 | 3Ø.Ø | 7 | 5.58 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 223.1 | 2 | 23.73 | 329.3 | 2 | 23.38 | 92.3 | 2 | 17.9Ø | 11Ø.8 | 1 | 2Ø.6Ø |
| Total Zooplankton | 940.0 | | | 1408.7 | | | 515.8 | | | 537.7 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 14.5 | 9 | Ø.32 | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 28.1 | 11 | 1.27 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 5Ø.9 | 8 | 1.12 | 14.5 | 9 | Ø.23 | 57.5 | 9 | 3.78 | 5Ø.9 | 9 | 2.3Ø |
| ACARTIA SPP.(COPEPODITES) | 65.4 | 6 | 1.44 | 65.2 | 7 | 1.Ø5 | 132.7 | 3 | 8.72 | 112.4 | 4 | 5.Ø8 |
| CLAUSOCALANUS SPP. | 1831.4 | 1 | 4Ø.32 | 3286.7 | 1 | 53.1Ø | 61.9 | 8 | 4.Ø7 | 7Ø.2 | 7 | 3.17 |
| CORYCAEUS ANGLICUS | 174.4 | 5 | 3.84 | 173.7 | 5 | 2.81 | 64.2 | 7 | 4.22 | 63.2 | 8 | 2.85 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 19.9 | 11 | 1.31 | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 356.1 | 4 | 7.84 | 543.Ø | 4 | 8.77 | 35.4 | 1Ø | 2.33 | 82.5 | 5 | 3.73 |
| PARACALANUS PARVUS(COPEPODITES) | 1279.1 | 2 | 28.16 | 1Ø35.2 | 2 | 16.73 | 95.1 | 5 | 6.25 | 136.9 | 3 | 6.19 |
| OTHER COPEPODS | Ø.Ø | 12 | Ø.ØØ | 1Ø1.4 | 6 | 1.64 | 46Ø.2 | 1 | 3Ø.23 | 682.9 | 2 | 3Ø.85 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 2.2 | 12 | Ø.15 | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.3 | 1Ø | Ø.16 | 29.Ø | 8 | Ø.47 | 1Ø4.Ø | 4 | 6.83 | 8Ø.8 | 6 | 3.65 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 58.1 | 7 | 1.28 | Ø.Ø | 11.5 | Ø.ØØ | 66.4 | 6 | 4.36 | 35.1 | 1Ø | 1.59 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 7Ø4.9 | 3 | 15.52 | 941.1 | 3 | 15.2Ø | 422.6 | 2 | 27.76 | 87Ø.8 | 1 | 39.33 |
| Total Zooplankton | 4542.2 | | | 6189.7 | | | 1522.1 | | | 2213.8 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 77.6 | 11 | 1.86 | 7.8 | 11 | Ø.24 |
| PODON POLYPHEMOIDES | 29.Ø | 9 | Ø.52 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1Ø6.2 | 8 | 1.91 | 156.2 | 8 | 2.48 | 333.9 | 4 | 8.Ø1 | 2Ø9.6 | 6 | 6.35 |
| ACARTIA SPP.(COPEPODITES) | 193.1 | 7 | 3.47 | 185.5 | 7 | 2.95 | 1Ø24.8 | 1 | 24.58 | 543.5 | 3 | 16.47 |
| CLAUSOCALANUS SPP. | 164Ø.9 | 1 | 29.46 | 2548.8 | 1 | 4Ø.47 | 155.3 | 8 | 3.72 | 116.5 | 8 | 3.53 |
| CORYCAEUS ANGLICUS | 279.9 | 6 | 5.Ø3 | 195.3 | 6 | 3.1Ø | 163.Ø | 7 | 3.91 | 17Ø.8 | 7 | 5.18 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.7 | 11 | Ø.17 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 7.8 | 12.5 | Ø.19 | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 492.3 | 4 | 8.84 | 38Ø.9 | 5 | 6.Ø5 | 287.3 | 6 | 6.89 | 24Ø.7 | 5 | 7.29 |
| PARACALANUS PARVUS(COPEPODITES) | 137Ø.7 | 2 | 24.61 | 1357.4 | 2 | 21.55 | 846.3 | 2 | 2Ø.3Ø | 7Ø6.5 | 2 | 21.41 |
| OTHER COPEPODS | 473.Ø | 5 | 8.49 | 439.5 | 4 | 6.98 | 326.1 | 5 | 7.82 | 357.1 | 4 | 1Ø.82 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 9.7 | 11 | Ø.17 | 9.8 | 1Ø.5 | Ø.16 | 7.8 | 12.5 | Ø.19 | 7.8 | 11 | Ø.24 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 9.7 | 11 | Ø.17 | 39.1 | 9 | Ø.62 | 85.4 | 1Ø | 2.Ø5 | 7.8 | 11 | Ø.24 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 14 | Ø.ØØ | 9.8 | 1Ø.5 | Ø.16 | 93.2 | 9 | 2.23 | 77.6 | 9 | 2.35 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 955.6 | 3 | 17.16 | 976.6 | 3 | 15.5Ø | 76Ø.9 | 3 | 18.25 | 854.Ø | 1 | 25.88 |
| Total Zooplankton | 5569.5 | | | 6298.8 | | | 4169.3 | | | 3299.7 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 21Ø.8 | 6 | 3.44 | 197.Ø | 7 | 2.13 | 19.9 | 1Ø | 2.22 | 14.7 | 11 | 2.Ø8 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1Ø9.Ø | 7 | 1.78 | 24Ø.8 | 6 | 2.6Ø | 8Ø.7 | 5 | 9.ØØ | 46.1 | 7 | 6.49 |
| ACARTIA SPP.(COPEPODITES) | 29.1 | 1Ø | Ø.48 | 87.5 | 8 | Ø.94 | 167.2 | 2 | 18.64 | 41.5 | 8 | 5.84 |
| CLAUSOCALANUS SPP. | 3219.5 | 1 | 52.61 | 4311.8 | 1 | 46.54 | 78.8 | 6 | 8.79 | 55.3 | 4.5 | 7.79 |
| CORYCAEUS ANGLICUS | 414.2 | 5 | 6.77 | 7ØØ.4 | 3 | 7.56 | 26.6 | 9 | 2.97 | 5Ø.7 | 6 | 7.14 |
| EUTERPINA ACUTIFRONS | 14.5 | 12 | Ø.24 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 1.8 | 12 | Ø.26 |
| PARACALANUS PARVUS | 486.9 | 4 | 7.96 | 634.7 | 4 | 6.85 | 51.3 | 7 | 5.72 | 35.Ø | 9 | 4.94 |
| PARACALANUS PARVUS(COPEPODITES) | 755.8 | 2 | 12.35 | 62Ø.1 | 5 | 6.69 | 147.2 | 3 | 16.42 | 72.8 | 3 | 1Ø.26 |
| OTHER COPEPODS | 5Ø.9 | 9 | Ø.83 | 58.4 | 1Ø | Ø.63 | 116.8 | 4 | 13.Ø3 | 111.5 | 2 | 15.71 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.9 | 13 | Ø.13 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 58.1 | 8 | Ø.95 | 65.7 | 9 | Ø.71 | 29.4 | 8 | 3.28 | 55.3 | 4.5 | 7.79 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 21.8 | 11 | Ø.36 | 51.1 | 11 | Ø.55 | 1Ø.4 | 11 | 1.17 | 31.3 | 1Ø | 4.42 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 748.5 | 3 | 12.23 | 2298.2 | 2 | 24.8Ø | 168.1 | 1 | 18.75 | 192.7 | 1 | 27.14 |
| Total Zooplankton | 6119.2 | | | 9265.6 | | | 896.7 | | | 709.8 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 21.8 | 8 | Ø.42 | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 116.3 | 5 | 2.25 | 51.7 | 6 | 1.52 | 4.4 | 6 | 1.87 | 714.3 | 1 | 19.19 |
| ACARTIA SPP.(COPEPODITES) | 7.3 | 9.5 | Ø.14 | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 621.1 | 2 | 16.68 |
| CLAUSOCALANUS SPP. | 3829.9 | 1 | 74.23 | 2465.6 | 1 | 72.61 | 6.8 | 5 | 2.93 | 462.Ø | 4 | 12.41 |
| CORYCAEUS ANGLICUS | 1Ø1.7 | 6 | 1.97 | 59.1 | 5 | 1.74 | 1.2 | 8 | Ø.53 | 174.7 | 8 | 4.69 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 3.9 | 11 | Ø.1Ø |
| PARACALANUS PARVUS | 218.Ø | 3 | 4.23 | 265.7 | 3 | 7.83 | 3.7 | 7 | 1.6Ø | 582.3 | 3 | 15.64 |
| PARACALANUS PARVUS(COPEPODITES) | 145.3 | 4 | 2.82 | 66.4 | 4 | 1.96 | 24.9 | 3 | 1Ø.67 | 434.8 | 5 | 11.68 |
| OTHER COPEPODS | 43.6 | 7 | Ø.85 | 14.8 | 8 | Ø.43 | 139.3 | 1 | 59.73 | 232.9 | 7 | 6.26 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | Ø.6 | 9 | Ø.27 | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | 28.6 | 2 | 12.27 | 89.3 | 9 | 2.4Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 7.3 | 9.5 | Ø.14 | 29.5 | 7 | Ø.87 | Ø.Ø | 11.5 | Ø.ØØ | 58.2 | 1Ø | 1.56 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 668.6 | 2 | 12.96 | 442.9 | 2 | 13.Ø4 | 23.6 | 4 | 1Ø.13 | 349.4 | 6 | 9.38 |
| Total Zooplankton | 5159.9 | | | 3395.7 | | | 233.3 | | | 3722.8 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1.8 | 8 | 1.53 | Ø.6 | 12.5 | Ø.47 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ |
| PODON POLYPHEMOIDES | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 16 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 14.5 | Ø.ØØ | 6.1 | 7.5 | 4.72 | 1Ø4.9 | 3 | 1Ø.21 | 87.8 | 4 | 8.72 |
| ACARTIA SPP.(COPEPODITES) | 3.Ø | 7 | 2.55 | 17.1 | 3 | 13.21 | 248.8 | 2 | 24.23 | 3Ø4.9 | 2 | 3Ø.27 |
| CLAUSOCALANUS SPP. | 16.4 | 4 | 13.78 | 9.8 | 6 | 7.55 | 2.4 | 12 | Ø.24 | 7.3 | 11.5 | Ø.73 |
| CORYCAEUS ANGLICUS | Ø.Ø | 14.5 | Ø.ØØ | Ø.6 | 12.5 | Ø.47 | 24.4 | 8 | 2.38 | 7.3 | 11.5 | Ø.73 |
| EUTERPINA ACUTIFRONS | Ø.6 | 11.5 | Ø.51 | Ø.6 | 12.5 | Ø.47 | 9.8 | 9 | Ø.95 | 12.2 | 8 | 1.21 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 14.5 | Ø.ØØ | Ø.6 | 12.5 | Ø.47 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ |
| OITHONA OCULATA | Ø.6 | 11.5 | Ø.51 | Ø.6 | 12.5 | Ø.47 | Ø.Ø | 14.5 | Ø.ØØ | 9.8 | 9.5 | Ø.97 |
| PARACALANUS PARVUS | 1.2 | 9.5 | 1.Ø2 | 3.7 | 9 | 2.83 | 73.2 | 5 | 7.13 | 14.6 | 7 | 1.45 |
| PARACALANUS PARVUS(COPEPODITES) | 9.7 | 5 | 8.16 | 13.4 | 4 | 1Ø.38 | 95.1 | 4 | 9.26 | 48.8 | 5 | 4.84 |
| OTHER COPEPODS | 2Ø.Ø | 2 | 16.84 | 25.6 | 2 | 19.81 | 331.7 | 1 | 32.3Ø | 343.9 | 1 | 34.14 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 4.2 | 6 | 3.57 | 6.1 | 7.5 | 4.72 | 7.3 | 1Ø | Ø.71 | 9.8 | 9.5 | Ø.97 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 18.2 | 3 | 15.31 | 12.8 | 5 | 9.91 | 56.1 | 7 | 5.46 | 46.3 | 6 | 4.6Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 1.2 | 9.5 | 1.Ø2 | Ø.6 | 12.5 | Ø.47 | 4.9 | 11 | Ø.48 | 2.4 | 13 | Ø.24 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 41.8 | 1 | 35.2Ø | 31.1 | 1 | 24.Ø6 | 68.3 | 6 | 6.65 | 112.2 | 3 | 11.14 |
| Total Zooplankton | 118.8 | | | 129.3 | | | 1026.8 | | | 1007.3 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.Ø | 14.5 | Ø.ØØ | Ø.6 | 12.5 | Ø.5Ø | 19.4 | 1Ø | 1.82 | Ø.Ø | 14 | Ø.ØØ |
| PODON POLYPHEMOIDES | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 5.5 | 7 | 4.62 | 2.4 | 8 | 2.ØØ | 6Ø.6 | 4.5 | 5.68 | 1Ø9.8 | 3 | 9.72 |
| ACARTIA SPP.(COPEPODITES) | 8.5 | 5 | 7.18 | 3Ø.9 | 1 | 25.5Ø | 552.7 | 1 | 51.82 | 619.5 | 1 | 54.86 |
| CLAUSOCALANUS SPP. | 22.4 | 2 | 18.97 | 12.7 | 4 | 1Ø.5Ø | 38.8 | 6 | 3.64 | 14.6 | 8 | 1.3Ø |
| CORYCAEUS ANGLICUS | 2.4 | 1Ø | 2.Ø5 | 1.8 | 1Ø.5 | 1.5Ø | 24.2 | 9 | 2.27 | 7.3 | 9.5 | Ø.65 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.2 | 11 | 1.Ø3 | 1.8 | 1Ø.5 | 1.5Ø | 7.3 | 11 | Ø.68 | 4.9 | 11 | Ø.43 |
| OITHONA OCULATA | Ø.6 | 12 | Ø.51 | Ø.6 | 12.5 | Ø.5Ø | 4.8 | 12.5 | Ø.45 | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 7.3 | 6 | 6.15 | 2.4 | 8 | 2.ØØ | 29.1 | 8 | 2.73 | 22.Ø | 7 | 1.94 |
| PARACALANUS PARVUS(COPEPODITES) | 3Ø.3 | 1 | 25.64 | 21.8 | 3 | 18.ØØ | 97.Ø | 3 | 9.Ø9 | 65.9 | 5 | 5.83 |
| OTHER COPEPODS | 3.6 | 9 | 3.Ø8 | 9.7 | 5 | 8.ØØ | 133.3 | 2 | 12.5Ø | 161.Ø | 2 | 14.25 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 4.8 | 8 | 4.1Ø | 9.1 | 6 | 7.5Ø | 33.9 | 7 | 3.18 | 46.3 | 6 | 4.1Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 12.1 | 4 | 1Ø.26 | 2.4 | 8 | 2.ØØ | 4.8 | 12.5 | Ø.45 | 7.3 | 9.5 | Ø.65 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 19.4 | 3 | 16.41 | 24.8 | 2 | 2Ø.5Ø | 6Ø.6 | 4.5 | 5.68 | 7Ø.7 | 4 | 6.26 |
| Total Zooplankton | 118.2 | | | 121.2 | | | 1066.7 | | | 1129.3 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PODON POLYPHEMOIDES | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1.8 | 6.5 | 2.8Ø | 1.2 | 6 | 2.Ø4 | 11.7 | 4 | 3.23 | 15.5 | 3 | 4.45 |
| ACARTIA SPP.(COPEPODITES) | 3Ø.9 | 1 | 47.66 | 34.8 | 1 | 58.16 | 279.8 | 1 | 77.42 | 265.5 | 1 | 76.37 |
| CLAUSOCALANUS SPP. | Ø.6 | 9.5 | Ø.93 | 1.2 | 6 | 2.Ø4 | 2.5 | 9 | Ø.68 | Ø.Ø | 12.5 | Ø.ØØ |
| CORYCAEUS ANGLICUS | 2.4 | 4.5 | 3.74 | Ø.Ø | 12.5 | Ø.ØØ | 4.3 | 8 | 1.19 | 5.4 | 7 | 1.54 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.6 | 9.5 | Ø.93 | 1.2 | 6 | 2.Ø4 | 6.1 | 7 | 1.7Ø | 7.1 | 6 | 2.Ø5 |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 1.2 | 8 | 1.87 | Ø.6 | 8 | 1.Ø2 | 1.8 | 1Ø | Ø.51 | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 2.4 | 4.5 | 3.74 | 5.5 | 3 | 9.18 | 8.6 | 5 | 2.38 | 3.Ø | 8 | Ø.86 |
| OTHER COPEPODS | 9.1 | 3 | 14.Ø2 | 3.Ø | 4 | 5.1Ø | 22.7 | 2 | 6.28 | 27.4 | 2 | 7.88 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.6 | 11 | Ø.17 | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1.8 | 6.5 | 2.8Ø | Ø.Ø | 12.5 | Ø.ØØ | 8.Ø | 6 | 2.21 | 9.5 | 5 | 2.74 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 13.9 | 2 | 21.5Ø | 12.2 | 2 | 2Ø.41 | 15.3 | 3 | 4.24 | 14.3 | 4 | 4.11 |
| Total Zooplankton | 64.8 | | | 59.8 | | | 361.4 | | | 347.6 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 5.Ø | 6.5 | 4.55 | 2.5 | 6.5 | 2.82 | 1.8 | 9 | 2.44 | Ø.6 | 1Ø | 1.43 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 3.7 | 8 | 3.41 | 1.2 | 11 | 1.41 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 45.3 | 1 | 41.48 | 11.7 | 3 | 13.38 | 14.7 | 2 | 19.51 | 1Ø.6 | 2 | 24.29 |
| CLAUSOCALANUS SPP. | 5.Ø | 6.5 | 4.55 | 1.9 | 8.5 | 2.11 | 3.7 | 7 | 4.88 | 2.5 | 6 | 5.71 |
| CORYCAEUS ANGLICUS | 1.9 | 1Ø.5 | 1.7Ø | 1.9 | 8.5 | 2.11 | Ø.6 | 11 | Ø.81 | 3.1 | 5 | 7.14 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14 | Ø.ØØ | Ø.6 | 13 | Ø.7Ø | Ø.Ø | 14.5 | Ø.ØØ | Ø.6 | 1Ø | 1.43 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.9 | 1Ø.5 | 1.7Ø | 1.2 | 11 | 1.41 | 4.9 | 6 | 6.5Ø | 1.2 | 8 | 2.86 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | 1.2 | 11 | 1.41 | Ø.6 | 11 | Ø.81 | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 2.5 | 9 | 2.27 | 2.5 | 6.5 | 2.82 | 3.1 | 8 | 4.Ø7 | Ø.6 | 1Ø | 1.43 |
| PARACALANUS PARVUS(COPEPODITES) | 7.5 | 4 | 6.82 | 8.Ø | 4 | 9.15 | 8.Ø | 4 | 1Ø.57 | 5.Ø | 3.5 | 11.43 |
| OTHER COPEPODS | 11.8 | 3 | 1Ø.8Ø | 28.4 | 1 | 32.39 | 2Ø.2 | 1 | 26.83 | 12.4 | 1 | 28.57 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.6 | 11 | Ø.81 | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 5.6 | 5 | 5.11 | 6.2 | 5 | 7.Ø4 | 5.5 | 5 | 7.32 | 1.9 | 7 | 4.29 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 19.3 | 2 | 17.61 | 2Ø.4 | 2 | 23.24 | 11.7 | 3 | 15.45 | 5.Ø | 3.5 | 11.43 |
| Total Zooplankton | 109.3 | | | 87.7 | | | 75.5 | | | 43.5 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 15.6 | 1Ø | Ø.97 | 9.7 | 1Ø | Ø.71 | Ø.Ø | 12 | Ø.ØØ | 9.5 | 1Ø | Ø.37 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 32.7 | 8 | 2.Ø5 | 19.4 | 8 | 1.43 | 122.4 | 6 | 5.39 | 145.2 | 4 | 5.74 |
| ACARTIA SPP.(COPEPODITES) | 147.9 | 3 | 9.26 | 118.7 | 3 | 8.75 | 979.4 | 1 | 43.12 | 12Ø9.Ø | 1 | 47.82 |
| CLAUSOCALANUS SPP. | 675.5 | 1 | 42.3Ø | 658.9 | 1 | 48.57 | 77.3 | 9 | 3.4Ø | 53.7 | 9 | 2.12 |
| CORYCAEUS ANGLICUS | 88.7 | 6 | 5.56 | 48.4 | 7 | 3.57 | 9Ø.2 | 8 | 3.97 | 116.8 | 5 | 4.62 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 6.2 | 11.5 | Ø.39 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | 3.2 | 12 | Ø.12 |
| PARACALANUS PARVUS | 1Ø5.8 | 4 | 6.63 | 7Ø.3 | 5 | 5.18 | 128.9 | 4.5 | 5.67 | 94.7 | 6 | 3.75 |
| PARACALANUS PARVUS(COPEPODITES) | 35Ø.2 | 2 | 21.93 | 237.4 | 2 | 17.5Ø | 428.5 | 2 | 18.87 | 533.5 | 2 | 21.1Ø |
| OTHER COPEPODS | 34.2 | 7 | 2.14 | 65.4 | 6 | 4.82 | 93.4 | 7 | 4.11 | 88.4 | 7.5 | 3.5Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.6 | 13 | Ø.Ø9 | Ø.Ø | 12 | Ø.ØØ | 3.2 | 1Ø | Ø.14 | 6.3 | 11 | Ø.25 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 29.6 | 9 | 1.85 | 12.1 | 9 | Ø.89 | 128.9 | 4.5 | 5.67 | 88.4 | 7.5 | 3.5Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 6.2 | 11.5 | Ø.39 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø2.7 | 5 | 6.43 | 116.3 | 4 | 8.57 | 219.1 | 3 | 9.65 | 179.9 | 3 | 7.12 |
| Total Zooplankton | 1596.9 | | | 1356.6 | | | 2271.3 | | | 2528.4 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 15Ø5.7 | 5 | 6.15 | 155.Ø | 4 | 9.ØØ | 5Ø.8 | 11 | 1.Ø6 | 454.5 | 11 | 1.53 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 284.1 | 12 | 1.16 | 1Ø.Ø | 11 | Ø.59 | 133.2 | 9 | 2.77 | 1136.4 | 7 | 3.82 |
| ACARTIA SPP.(COPEPODITES) | 965.9 | 7 | 3.94 | 65.Ø | 6 | 3.81 | 666.2 | 3 | 13.87 | 4734.8 | 3 | 15.9Ø |
| CLAUSOCALANUS SPP. | 3295.5 | 3 | 13.46 | 2Ø7.5 | 3 | 12.17 | 3Ø4.6 | 6 | 6.34 | 833.3 | 9 | 2.8Ø |
| CORYCAEUS ANGELICUS | 454.5 | 1Ø | 1.86 | 35.Ø | 9 | 2.Ø5 | 1Ø7.9 | 1Ø | 2.25 | 1Ø98.5 | 8 | 3.69 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | 2.5 | 13 | Ø.15 | 6.3 | 12.5 | Ø.13 | 189.4 | 12 | Ø.64 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 34Ø.9 | 11 | 1.39 | 12.5 | 1Ø | Ø.73 | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 1136.4 | 6 | 4.64 | 55.Ø | 7 | 3.23 | 228.4 | 7 | 4.76 | 2Ø83.3 | 5 | 7.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 8806.8 | 1 | 35.96 | 56Ø.Ø | 1 | 32.84 | 1389.6 | 1 | 28.93 | 7992.4 | 1 | 26.84 |
| OTHER COPEPODS | 159Ø.9 | 4 | 6.5Ø | 77.5 | 5 | 4.55 | 615.5 | 4 | 12.81 | 3863.6 | 4 | 12.98 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 6.3 | 12.5 | Ø.13 | 37.9 | 13 | Ø.13 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 767.Ø | 9 | 3.13 | 5Ø.Ø | 8 | 2.93 | 393.4 | 5 | 8.19 | 159Ø.9 | 6 | 5.34 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 9Ø9.1 | 8 | 3.71 | 5.Ø | 12 | Ø.29 | 177.7 | 8 | 3.7Ø | 681.8 | 1Ø | 2.29 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 4431.8 | 2 | 18.1Ø | 47Ø.Ø | 2 | 27.57 | 723.4 | 2 | 15.Ø6 | 5Ø75.8 | 2 | 17.Ø5 |

Total Zooplankton 24488.6 1705.0 4803.3 29772.7

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B * | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PODON POLYPHEMOIDES | 14.3 | 9.5 | Ø.39 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 7.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 827.Ø | 2 | 22.48 | 4.5 | 9 | 1.97 | 517.1 | 3 | 11.98 | Ø.Ø | 7.5 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 1126.4 | 1 | 3Ø.62 | 22.Ø | 3 | 9.54 | 25Ø3.2 | 1 | 57.97 | Ø.Ø | 7.5 | Ø.ØØ |
| CLAUSOCALANUS SPP. | 32Ø.8 | 4 | 8.72 | 1ØØ.8 | 1 | 43.75 | 98.4 | 6 | 2.28 | Ø.Ø | 7.5 | Ø.ØØ |
| CORYCAEUS ANGLICUS | 14.3 | 9.5 | Ø.39 | 11.Ø | 7 | 4.77 | 73.Ø | 7 | 1.69 | Ø.Ø | 7.5 | Ø.ØØ |
| EUTERPINA ACUTIFRONS | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 5Ø.8 | 1Ø | 1.18 | Ø.Ø | 7.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 12.5 | Ø.ØØ | 1.9 | 1Ø | Ø.82 | 38.1 | 11 | Ø.88 | Ø.Ø | 7.5 | Ø.ØØ |
| PARACALANUS PARVUS | 199.6 | 6 | 5.43 | 4.9 | 8 | 2.14 | 63.5 | 9 | 1.47 | Ø.Ø | 7.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 655.9 | 3 | 17.83 | 42.Ø | 2 | 18.26 | 558.4 | 2 | 12.93 | Ø.Ø | 7.5 | Ø.ØØ |
| OTHER COPEPODS | 135.5 | 7 | 3.68 | 12.9 | 5.5 | 5.59 | 1Ø4.7 | 5 | 2.42 | Ø.Ø | 7.5 | Ø.ØØ |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12.5 | Ø.ØØ | Ø.4 | 11 | Ø.16 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 7.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12.5 | Ø.ØØ | 12.9 | 5.5 | 5.59 | 28.6 | 12 | Ø.66 | Ø.Ø | 7.5 | Ø.ØØ |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 85.6 | 8 | 2.33 | Ø.Ø | 13 | Ø.ØØ | 69.8 | 8 | 1.62 | Ø.Ø | 7.5 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 299.4 | 5 | 8.14 | 17.Ø | 4 | 7.4Ø | 212.6 | 4 | 4.92 | Ø.Ø | 7.5 | Ø.ØØ |
| Total Zooplankton | 3678.7 | | | 230.3 | | | 4317.9 | | | -- | | |

*Sample lost due to improper preservation

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 8.8 | 7.5 | 4.9Ø | 11.9 | 7 | 6.55 | 14.1 | 9 | 2.Ø7 | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 9.2 | 6 | 5.12 | 3.2 | 1Ø | 1.75 | 62.6 | 5 | 9.17 | 1Ø1.Ø | 2 | 14.25 |
| ACARTIA SPP.(COPEPODITES) | 26.7 | 2 | 14.93 | 29.2 | 3 | 16.16 | 149.5 | 1 | 21.89 | 286.9 | 1 | 4Ø.46 |
| CLAUSOCALANUS SPP. | 2.3 | 1Ø.5 | 1.28 | 2.8 | 11 | 1.53 | 4.Ø | 11 | Ø.59 | 6.1 | 1Ø | Ø.85 |
| CORYCAEUS ANGLICUS | 11.1 | 5 | 6.18 | 6.7 | 8 | 3.71 | 48.5 | 7 | 7.1Ø | 34.3 | 8 | 4.84 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.3 | 1Ø.5 | 1.28 | 4.7 | 9 | 2.62 | 2.Ø | 12 | Ø.3Ø | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 16.4 | 4 | 9.17 | 16.6 | 4 | 9.17 | 56.6 | 6 | 8.28 | 44.4 | 7 | 6.27 |
| PARACALANUS PARVUS(COPEPODITES) | 64.5 | 1 | 36.Ø3 | 45.1 | 1 | 24.89 | 115.2 | 2 | 16.86 | 72.7 | 3 | 1Ø.26 |
| OTHER COPEPODS | 8.8 | 7.5 | 4.9Ø | 12.3 | 6 | 6.77 | 1Ø5.1 | 3 | 15.38 | 48.5 | 5 | 6.84 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.9 | 12 | 1.Ø7 | Ø.8 | 12 | Ø.44 | 8.1 | 1Ø | 1.18 | 6.1 | 1Ø | Ø.85 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 6.9 | 9 | 3.84 | 14.2 | 5 | 7.86 | 72.7 | 4 | 1Ø.65 | 46.5 | 6 | 6.55 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 1.5 | 13 | Ø.85 | Ø.4 | 13 | Ø.22 | Ø.Ø | 13 | Ø.ØØ | 6.1 | 1Ø | Ø.85 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 18.7 | 3 | 1Ø.45 | 33.2 | 2 | 18.34 | 44.4 | 8 | 6.51 | 56.6 | 4 | 7.98 |
| Total Zooplankton | 179.0 | | | 181.0 | | | 682.8 | | | 709.1 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978-2&3 PRE-OP

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 17.1 | 1Ø | 3.Ø3 | 31.Ø | 8 | 5.Ø1 | 6.2 | 11 | Ø.87 | Ø.Ø | 15 | Ø.ØØ |
| PODON POLYPHEMOIDES | Ø.4 | 13 | Ø.Ø6 | 1.6 | 13 | Ø.25 | 4.1 | 12.5 | Ø.58 | 2.1 | 13 | Ø.27 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 48.6 | 4 | 8.6Ø | 2Ø.2 | 9 | 3.26 | 235.1 | 1 | 33.24 | 41.5 | 4 | 5.35 |
| ACARTIA SPP.(COPEPODITES) | 65.4 | 3 | 11.56 | 51.2 | 4 | 8.27 | 28.9 | 7 | 4.Ø8 | 238.3 | 2 | 3Ø.75 |
| CLAUSOCALANUS SPP. | 196.9 | 1 | 34.82 | 229.5 | 1 | 37.Ø9 | 3Ø.9 | 6 | 4.37 | 1Ø.4 | 1Ø | 1.34 |
| CORYCAEUS ANGLICUS | 26.1 | 7 | 4.61 | 46.5 | 6 | 7.52 | 39.2 | 5 | 5.54 | 2Ø.7 | 8 | 2.67 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | 12.4 | 9 | 1.6Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.6 | 11 | Ø.28 | 6.2 | 11 | 1.ØØ | 2.1 | 14 | Ø.29 | 2.1 | 13 | Ø.27 |
| OITHONA OCULATA | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 18.6 | 9.5 | 2.62 | 2.1 | 13 | Ø.27 |
| PARACALANUS PARVUS | 22.6 | 8 | 3.99 | 1Ø.9 | 1Ø | 1.75 | 2Ø4.1 | 2 | 28.86 | 26.9 | 7 | 3.48 |
| PARACALANUS PARVUS(COPEPODITES) | 94.2 | 2 | 16.66 | 8Ø.6 | 2 | 13.Ø3 | 18.6 | 9.5 | 2.62 | 271.5 | 1 | 35.Ø3 |
| OTHER COPEPODS | 45.9 | 5 | 8.12 | 32.6 | 7 | 5.26 | 24.7 | 8 | 3.5Ø | 35.2 | 6 | 4.55 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.2 | 12 | Ø.21 | 4.7 | 12 | Ø.75 | 4.1 | 12.5 | Ø.58 | 4.1 | 11 | Ø.53 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17.9 | 9 | 3.17 | 54.3 | 3 | 8.77 | 47.4 | 3 | 6.71 | 37.3 | 5 | 4.81 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 27.6 | 6 | 4.89 | 49.6 | 5 | 8.Ø2 | 43.3 | 4 | 6.12 | 7Ø.5 | 3 | 9.Ø9 |
| Total Zooplankton | 565.4 | | | 618.6 | | | 707.2 | | | 775.1 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 31Ø.1 | 5 | 4.89 | 184.1 | 6 | 3.13 | 3.5 | 11 | Ø.19 | 42.4 | 11 | 1.Ø7 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 77.5 | 9 | 1.22 | 38.8 | 9 | Ø.66 | 59.9 | 7.5 | 3.29 | 69.Ø | 1Ø | 1.74 |
| ACARTIA SPP.(COPEPODITES) | 19.4 | 1Ø | Ø.31 | 19.4 | 1Ø | Ø.33 | 7.1 | 1Ø | Ø.39 | 1Ø6.1 | 8 | 2.67 |
| CLAUSOCALANUS SPP. | 249Ø.3 | 1 | 39.3Ø | 1918.6 | 2 | 32.62 | 268.Ø | 3 | 14.73 | 44Ø.2 | 4 | 11.1Ø |
| CORYCAEUS ANGLICUS | 281.Ø | 6 | 4.43 | 77.5 | 8 | 1.32 | 59.9 | 7.5 | 3.29 | 127.3 | 7 | 3.21 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.7 | 11.5 | Ø.15 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 1569.8 | 2 | 24.77 | 2Ø34.9 | 1 | 34.6Ø | 176.3 | 4 | 9.69 | 53Ø.4 | 3 | 13.37 |
| PARACALANUS PARVUS(COPEPODITES) | 629.8 | 3 | 9.94 | 562.Ø | 4 | 9.56 | 67.Ø | 6 | 3.68 | 153.8 | 6 | 3.88 |
| OTHER COPEPODS | 213.2 | 7 | 3.36 | 213.2 | 5 | 3.62 | 511.3 | 1 | 28.1Ø | 917.6 | 2 | 23.13 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1Ø6.6 | 8 | 1.68 | 87.2 | 7 | 1.48 | 148.1 | 5 | 8.14 | 196.3 | 5 | 4.95 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 9.7 | 11.5 | Ø.15 | 9.7 | 11 | Ø.16 | 45.8 | 9 | 2.52 | 74.3 | 9 | 1.87 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 62Ø.2 | 4 | 9.79 | 736.4 | 3 | 12.52 | 472.5 | 2 | 25.97 | 131Ø.1 | 1 | 33.Ø2 |
| Total Zooplankton | 6337.2 | | | 5881.8 | | | 1819.5 | | | 3967.5 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 398.8 | 5 | 8.35 | 4Ø8.6 | 5 | 5.58 | 59.Ø | 9 | 1.Ø5 | 1Ø2.4 | 7 | 3.45 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 48.6 | 8 | 1.Ø2 | 116.7 | 8 | 1.59 | 51.6 | 1Ø.5 | Ø.92 | 63.6 | 1Ø | 2.14 |
| ACARTIA SPP.(COPEPODITES) | 9.7 | 1Ø | Ø.2Ø | 19.5 | 11 | Ø.27 | 51.6 | 1Ø.5 | Ø.92 | 84.7 | 9 | 2.86 |
| CLAUSOCALANUS SPP. | 1386.2 | 1 | 29.Ø2 | 2Ø42.8 | 2 | 27.89 | 449.9 | 3 | 8.Ø2 | 374.3 | 3 | 12.62 |
| CORYCAEUS ANGLICUS | 17Ø.2 | 6 | 3.56 | 175.1 | 6 | 2.39 | 199.1 | 5 | 3.55 | 113.Ø | 6 | 3.81 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 7.4 | 12 | Ø.13 | 3.5 | 12.5 | Ø.12 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 4.9 | 12 | Ø.1Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 3.5 | 12.5 | Ø.12 |
| PARACALANUS PARVUS | 525.3 | 4 | 11.ØØ | 7ØØ.4 | 4 | 9.56 | 154.9 | 7 | 2.76 | 144.8 | 5 | 4.88 |
| PARACALANUS PARVUS(COPEPODITES) | 1254.9 | 2 | 26.27 | 2Ø62.3 | 1 | 28.15 | 236.Ø | 4 | 4.2Ø | 2Ø4.8 | 4 | 6.9Ø |
| OTHER COPEPODS | 145.9 | 7 | 3.Ø5 | 145.9 | 7 | 1.99 | 1688.8 | 2 | 3Ø.Ø9 | 653.2 | 2 | 22.Ø2 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 4.9 | 12 | Ø.1Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 43.8 | 9 | Ø.92 | 1Ø7.Ø | 9 | 1.46 | 184.4 | 6 | 3.29 | 88.3 | 8 | 2.98 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.9 | 12 | Ø.1Ø | 48.6 | 1Ø | Ø.66 | 95.9 | 8 | 1.71 | 35.3 | 11 | 1.19 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 778.2 | 3 | 16.29 | 1498.1 | 3 | 2Ø.45 | 2433.6 | 1 | 43.36 | 1Ø94.6 | 1 | 36.9Ø |
| Total Zooplankton | 4776.3 | | | 7324.9 | | | 5612.1 | | | 2966.1 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 179.3 | 5 | 5.95 | 82.4 | 8 | 3.16 | 145.6 | 8 | 3.Ø3 | 134.2 | 9 | 1.57 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 72.7 | 9 | 2.41 | 33.9 | 1Ø | 1.3Ø | 93.2 | 11 | 1.94 | 31Ø.7 | 6.5 | 3.65 |
| ACARTIA SPP.(COPEPODITES) | 169.6 | 7 | 5.63 | 159.9 | 6 | 6.13 | 227.1 | 5 | 4.72 | 946.3 | 4 | 11.1Ø |
| CLAUSOCALANUS SPP. | 1235.5 | 1 | 41.ØØ | 1Ø56.2 | 1 | 4Ø.52 | 25Ø.4 | 4 | 5.21 | 275.4 | 8 | 3.23 |
| CORYCAEUS ANGLICUS | 1Ø1.7 | 8 | 3.38 | 48.4 | 9 | 1.86 | 198.Ø | 6 | 4.12 | 31Ø.7 | 6.5 | 3.65 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 14.5 | 11.5 | Ø.48 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ |
| PARACALANUS PARVUS | 174.4 | 6 | 5.79 | 174.4 | 5 | 6.69 | 18Ø.5 | 7 | 3.75 | 459.Ø | 5 | 5.39 |
| PARACALANUS PARVUS(COPEPODITES) | 465.1 | 2 | 15.43 | 494.2 | 2 | 18.96 | 4Ø1.8 | 3 | 8.35 | 1221.8 | 3 | 14.33 |
| OTHER COPEPODS | 242.2 | 4 | 8.Ø4 | 218.Ø | 4 | 8.36 | 1385.9 | 2 | 28.81 | 2182.2 | 2 | 25.6Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 48.4 | 1Ø | 1.61 | 24.2 | 11 | Ø.93 | 99.Ø | 1Ø | 2.Ø6 | 84.7 | 11.5 | Ø.99 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 14.5 | 11.5 | Ø.48 | 92.1 | 7 | 3.53 | 11Ø.6 | 9 | 2.3Ø | 12Ø.1 | 1Ø | 1.41 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 9.7 | 13 | Ø.32 | Ø.Ø | 12.5 | Ø.ØØ | 75.7 | 12 | 1.57 | 84.7 | 11.5 | Ø.99 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 285.9 | 3 | 9.49 | 222.9 | 3 | 8.55 | 1642.1 | 1 | 34.14 | 2394.1 | 1 | 28.Ø9 |
| Total Zooplankton | 3013.6 | | | 2606.6 | | | 4809.8 | | | 8524.0 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 19, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 663.9 | 3 | 13.4Ø | 248.1 | 5 | 8.Ø8 | 14.8 | 11 | Ø.43 | 212.2 | 6 | 5.1Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 153.2 | 6 | 3.Ø9 | 43.8 | 8 | 1.43 | 11Ø.8 | 7 | 3.26 | 91.9 | 1Ø | 2.21 |
| ACARTIA SPP.(COPEPODITES) | 7.3 | 1Ø | Ø.15 | 19.5 | 1Ø | Ø.63 | 132.9 | 6 | 3.91 | 169.7 | 8 | 4.Ø8 |
| CLAUSOCALANUS SPP. | 1Ø94.4 | 2 | 22.Ø9 | 1Ø7Ø.Ø | 1 | 34.87 | 265.9 | 4 | 7.83 | 452.6 | 4 | 1Ø.88 |
| CORYCAEUS ANGLICUS | 145.9 | 7 | 2.95 | 17Ø.2 | 6 | 5.55 | 229.Ø | 5 | 6.74 | 148.5 | 9 | 3.57 |
| PARACALANUS PARVUS | 554.5 | 4 | 11.19 | 311.3 | 3 | 1Ø.14 | 88.6 | 9 | 2.61 | 219.2 | 5 | 5.27 |
| PARACALANUS PARVUS(COPEPODITES) | 1692.6 | 1 | 34.17 | 8Ø2.5 | 2 | 26.15 | 295.4 | 3 | 8.7Ø | 516.3 | 3 | 12.41 |
| OTHER COPEPODS | 116.7 | 8 | 2.36 | 68.1 | 7 | 2.22 | 93Ø.6 | 2 | 27.39 | 968.9 | 2 | 23.3Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 11.5 | Ø.ØØ | 4.9 | 11 | Ø.16 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.9 | 9 | Ø.44 | 38.9 | 9 | 1.27 | 96.Ø | 8 | 2.83 | 198.Ø | 7 | 4.76 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | 29.5 | 1Ø | Ø.87 | 7Ø.7 | 11 | 1.7Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 5Ø3.4 | 5 | 1Ø.16 | 291.8 | 4 | 9.51 | 12Ø3.8 | 1 | 35.43 | 111Ø.3 | 1 | 26.7Ø |
| Total Zooplankton | 4953.8 | | | 3069.1 | | | 3397.3 | | | 4158.4 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 15 | 0.00 | 0.0 | 15 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 15 | 0.00 | 0.0 | 15 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1.8 | 9 | 1.69 | 1.8 | 9.5 | 1.95 | 39.0 | 7 | 4.57 | 95.9 | 7 | 5.02 |
| ACARTIA SPP.(COPEPODITES) | 36.6 | 1 | 33.71 | 31.5 | 1 | 33.77 | 261.0 | 1 | 30.57 | 717.0 | 1 | 37.55 |
| CLAUSOCALANUS SPP. | 4.9 | 7.5 | 4.49 | 3.6 | 5 | 3.90 | 56.1 | 5 | 6.57 | 107.4 | 5 | 5.62 |
| CORYCAEUS ANGLICUS | 4.9 | 7.5 | 4.49 | 3.0 | 6.5 | 3.25 | 51.2 | 6 | 6.00 | 15.3 | 10 | 0.80 |
| EUTERPINA ACUTIFRONS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 2.4 | 12 | 0.29 | 3.8 | 12.5 | 0.20 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.6 | 10.5 | 0.56 | 2.4 | 8 | 2.60 | 26.8 | 10 | 3.14 | 42.2 | 9 | 2.21 |
| OITHONA OCULATA | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 2.4 | 12 | 0.29 | 7.7 | 11 | 0.40 |
| PARACALANUS PARVUS | 5.5 | 6 | 5.06 | 1.8 | 9.5 | 1.95 | 29.3 | 9 | 3.43 | 88.2 | 8 | 4.62 |
| PARACALANUS PARVUS(COPEPODITES) | 12.2 | 3.5 | 11.24 | 6.7 | 4 | 7.14 | 158.5 | 2 | 18.57 | 287.6 | 2 | 15.06 |
| OTHER COPEPODS | 9.8 | 5 | 8.99 | 3.0 | 6.5 | 3.25 | 119.5 | 3 | 14.00 | 272.2 | 3 | 14.26 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.6 | 10.5 | 0.56 | 0.0 | 13.5 | 0.00 | 2.4 | 12 | 0.29 | 3.8 | 12.5 | 0.20 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 19.5 | 2 | 17.98 | 25.5 | 2 | 27.27 | 36.6 | 8 | 4.29 | 99.7 | 6 | 5.22 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 15 | 0.00 | 0.0 | 15 | 0.00 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 12.2 | 3.5 | 11.24 | 13.9 | 3 | 14.94 | 68.3 | 4 | 8.00 | 168.7 | 4 | 8.84 |
| Total Zooplankton | 108.5 | | | 93.3 | | | 853.7 | | | 1909.5 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 4.2 | 6.5 | 3.76 | 0.7 | 8 | 3.33 | 6.6 | 6.5 | 2.64 | 16.4 | 6 | 3.88 |
| ACARTIA SPP.(COPEPODITES) | 49.1 | 1 | 43.55 | 4.7 | 1 | 23.33 | 106.6 | 1 | 42.79 | 215.8 | 1 | 51.15 |
| CLAUSOCALANUS SPP. | 3.0 | 8 | 2.69 | 0.7 | 8 | 3.33 | 5.4 | 9 | 2.16 | 15.2 | 7 | 3.59 |
| CORYCAEUS ANGLICUS | 1.2 | 10 | 1.08 | 0.0 | 13.5 | 0.00 | 6.0 | 8 | 2.40 | 9.7 | 9 | 2.30 |
| EUTERPINA ACUTIFRONS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.6 | 12 | 0.24 | 0.6 | 12.5 | 0.14 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.8 | 9 | 1.61 | 0.0 | 13.5 | 0.00 | 4.2 | 10 | 1.68 | 6.1 | 10 | 1.44 |
| OITHONA OCULATA | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 1.2 | 11 | 0.29 |
| PARACALANUS PARVUS | 4.2 | 6.5 | 3.76 | 0.7 | 8 | 3.33 | 6.6 | 6.5 | 2.64 | 13.9 | 8 | 3.30 |
| PARACALANUS PARVUS(COPEPODITES) | 12.1 | 4 | 10.75 | 2.0 | 5 | 10.00 | 46.1 | 2 | 18.51 | 52.1 | 2 | 12.36 |
| OTHER COPEPODS | 12.7 | 3 | 11.29 | 2.7 | 4 | 13.33 | 24.6 | 3 | 9.86 | 46.7 | 3 | 11.06 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14 | 0.00 | 0.7 | 8 | 3.33 | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 6.7 | 5 | 5.91 | 4.0 | 2 | 20.00 | 20.4 | 4 | 8.17 | 21.8 | 4.5 | 5.17 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.6 | 11 | 0.54 | 0.7 | 8 | 3.33 | 2.4 | 11 | 0.96 | 0.6 | 12.5 | 0.14 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 17.0 | 2 | 15.05 | 3.3 | 3 | 16.67 | 19.8 | 5 | 7.93 | 21.8 | 4.5 | 5.17 |
| Total Zooplankton | 112.7 | | | 20.0 | | | 249.1 | | | 421.8 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 0.0 | 13.5 | 0.00 | 0.0 | 14 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 13.5 | 0.00 | 0.0 | 14 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 6.7 | 2.5 | 9.40 | 48.5 | 3 | 6.87 | 34.3 | 5 | 2.07 | 15.2 | 7 | 0.93 |
| ACARTIA SPP.(COPEPODITES) | 43.9 | 1 | 61.54 | 436.4 | 1 | 61.86 | 1337.7 | 1 | 80.69 | 1444.4 | 1 | 88.55 |
| CLAUSOCALANUS SPP. | 1.2 | 7 | 1.71 | 14.5 | 7.5 | 2.06 | 11.4 | 8 | 0.69 | 0.0 | 12.5 | 0.00 |
| CORYCAEUS ANGLICUS | 0.0 | 13.5 | 0.00 | 14.5 | 7.5 | 2.06 | 7.6 | 10 | 0.46 | 0.0 | 12.5 | 0.00 |
| EUTERPINA ACUTIFRONS | 0.6 | 9.5 | 0.85 | 0.0 | 14 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 13.5 | 0.00 | 9.7 | 9.5 | 1.37 | 15.2 | 7 | 0.92 | 26.7 | 4 | 1.64 |
| OITHONA OCULATA | 0.6 | 9.5 | 0.85 | 0.0 | 14 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| PARACALANUS PARVUS | 1.2 | 7 | 1.71 | 33.9 | 5 | 4.81 | 7.6 | 10 | 0.46 | 0.0 | 12.5 | 0.00 |
| PARACALANUS PARVUS(COPEPODITES) | 4.9 | 4 | 6.84 | 65.5 | 2 | 9.28 | 57.2 | 3 | 3.45 | 7.6 | 8 | 0.47 |
| OTHER COPEPODS | 4.3 | 5 | 5.98 | 41.2 | 4 | 5.84 | 38.1 | 4 | 2.30 | 41.9 | 3 | 2.57 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 13.5 | 0.00 | 2.4 | 11 | 0.34 | 3.8 | 12 | 0.23 | 0.0 | 12.5 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1.2 | 7 | 1.71 | 9.7 | 9.5 | 1.37 | 30.5 | 6 | 1.84 | 53.4 | 2 | 3.27 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 13.5 | 0.00 | 0.0 | 14 | 0.00 | 7.6 | 10 | 0.46 | 22.9 | 5 | 1.40 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 6.7 | 2.5 | 9.40 | 29.1 | 6 | 4.12 | 106.7 | 2 | 6.44 | 19.1 | 6 | 1.17 |
| Total Zooplankton | 71.3 | | | 705.5 | | | 1657.8 | | | 1631.1 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 14.5 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 14.5 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 2.4 | 6.5 | 5.13 | 3.0 | 5 | 3.16 | 43.9 | 6 | 3.50 | 142.2 | 5 | 3.97 |
| ACARTIA SPP.(COPEPODITES) | 18.8 | 1 | 39.74 | 54.3 | 1 | 56.33 | 890.2 | 1 | 71.01 | 2432.6 | 1 | 67.85 |
| CLAUSOCALANUS SPP. | 3.0 | 5 | 6.41 | 1.8 | 7 | 1.90 | 14.6 | 7.5 | 1.17 | 52.4 | 8 | 1.46 |
| CORYCAEUS ANGLICUS | 0.0 | 14 | 0.00 | 1.8 | 7 | 1.90 | 4.9 | 10 | 0.39 | 41.2 | 9 | 1.15 |
| EUTERPINA ACUTIFRONS | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 3.7 | 11.5 | 0.10 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.2 | 9 | 2.56 | 0.0 | 13.5 | 0.00 | 2.4 | 11.5 | 0.19 | 26.2 | 10 | 0.73 |
| OITHONA OCULATA | 0.0 | 14 | 0.00 | 0.0 | 13.5 | 0.00 | 0.0 | 14.5 | 0.00 | 0.0 | 14.5 | 0.00 |
| PARACALANUS PARVUS | 1.2 | 9 | 2.56 | 1.8 | 7 | 1.90 | 14.6 | 7.5 | 1.17 | 67.4 | 7 | 1.88 |
| PARACALANUS PARVUS(COPEPODITES) | 7.3 | 2 | 15.38 | 11.0 | 3 | 11.39 | 73.2 | 3 | 5.84 | 183.4 | 3 | 5.11 |
| OTHER COPEPODS | 3.6 | 4 | 7.69 | 13.4 | 2 | 13.92 | 51.2 | 5 | 4.09 | 359.3 | 2 | 10.02 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.2 | 9 | 2.56 | 1.2 | 9.5 | 1.27 | 7.3 | 9 | 0.58 | 3.7 | 11.5 | 0.10 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 2.4 | 6.5 | 5.13 | 1.2 | 9.5 | 1.27 | 87.8 | 2 | 7.00 | 127.2 | 6 | 3.55 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.6 | 11 | 1.28 | 0.0 | 13.5 | 0.00 | 2.4 | 11.5 | 0.19 | 0.0 | 14.5 | 0.00 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 5.5 | 3 | 11.54 | 6.7 | 4 | 6.96 | 61.0 | 4 | 4.86 | 146.0 | 4 | 4.07 |
| Total Zooplankton | 47.3 | | | 96.3 | | | 1253.7 | | | 3585.3 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 42.6 | 11.5 | 0.94 | 54.8 | 12 | 1.05 | 0.0 | 12.5 | 0.00 | 18.2 | 12 | 0.21 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 558.7 | 3 | 12.38 | 766.9 | 2 | 14.65 | 1308.6 | 4 | 15.12 | 1356.2 | 4 | 15.65 |
| ACARTIA SPP.(COPEPODITES) | 222.5 | 8 | 4.93 | 458.2 | 5 | 8.75 | 1709.0 | 2.5 | 19.75 | 1820.4 | 2 | 21.01 |
| CLAUSOCALANUS SPP. | 213.1 | 9 | 4.72 | 239.0 | 9 | 4.57 | 253.9 | 6 | 2.93 | 236.7 | 6.5 | 2.73 |
| CORYCAEUS ANGLICUS | 369.3 | 5 | 8.18 | 278.9 | 7 | 5.33 | 127.0 | 10 | 1.47 | 209.3 | 8 | 2.42 |
| EUTERPINA ACUTIFRONS | 4.7 | 13 | 0.10 | 14.9 | 13 | 0.29 | 0.0 | 12.5 | 0.00 | 9.1 | 13 | 0.11 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 42.6 | 11.5 | 0.94 | 64.7 | 11 | 1.24 | 29.3 | 11 | 0.34 | 27.3 | 11 | 0.32 |
| PARACALANUS PARVUS | 274.6 | 7 | 6.09 | 199.2 | 10 | 3.81 | 205.1 | 7 | 2.37 | 236.7 | 6.5 | 2.73 |
| PARACALANUS PARVUS(COPEPODITES) | 1060.6 | 1 | 23.50 | 712.2 | 3 | 13.61 | 966.8 | 5 | 11.17 | 901.1 | 5 | 10.40 |
| OTHER COPEPODS | 359.8 | 6 | 7.97 | 572.7 | 4 | 10.94 | 1709.0 | 2.5 | 19.75 | 1875.0 | 1 | 21.64 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 378.8 | 4 | 8.39 | 338.6 | 6 | 6.47 | 175.8 | 8 | 2.03 | 81.9 | 10 | 0.95 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 203.6 | 10 | 4.51 | 254.0 | 8 | 4.85 | 106.0 | 9 | 1.22 | 163.8 | 9 | 1.89 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 781.2 | 2 | 17.31 | 1279.9 | 1 | 24.45 | 2002.0 | 1 | 23.14 | 1729.4 | 3 | 19.96 |
| Total Zooplankton | 4512.3 | | | 5234.1 | | | 8652.3 | | | 8665.1 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 4.8 | 11.5 | 0.21 | 0.0 | 14.5 | 0.00 | 0.0 | 13.5 | 0.00 | 28.7 | 9 | 0.62 |
| PODON POLYPHEMOIDES | 0.0 | 14 | 0.00 | 2.4 | 13 | 0.16 | 0.0 | 13.5 | 0.00 | 9.6 | 11.5 | 0.21 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 238.5 | 4 | 10.48 | 111.3 | 6 | 7.33 | 566.0 | 5 | 9.13 | 564.4 | 4 | 12.22 |
| ACARTIA SPP.(COPEPODITES) | 596.4 | 1 | 26.21 | 265.2 | 2.5 | 17.47 | 1792.5 | 1 | 28.90 | 1358.4 | 1 | 29.40 |
| CLAUSOCALANUS SPP. | 186.1 | 6 | 8.18 | 272.3 | 1 | 17.94 | 400.9 | 6 | 6.46 | 430.5 | 5 | 9.32 |
| CORYCAEUS ANGLICUS | 95.4 | 8 | 4.19 | 63.9 | 8 | 4.21 | 165.1 | 8 | 2.66 | 143.5 | 8 | 3.11 |
| EUTERPINA ACUTIFRONS | 0.0 | 14 | 0.00 | 4.7 | 11.5 | 0.31 | 0.0 | 13.5 | 0.00 | 0.0 | 14 | 0.00 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 4.8 | 11.5 | 0.21 | 0.0 | 14.5 | 0.00 | 11.8 | 10.5 | 0.19 | 0.0 | 14 | 0.00 |
| PARACALANUS PARVUS | 162.2 | 7 | 7.13 | 80.5 | 7 | 5.30 | 342.0 | 7 | 5.51 | 248.7 | 7 | 5.38 |
| PARACALANUS PARVUS(COPEPODITES) | 405.5 | 2 | 17.82 | 258.0 | 4 | 17.00 | 1120.3 | 2 | 18.06 | 660.1 | 3 | 14.29 |
| OTHER COPEPODS | 338.7 | 3 | 14.88 | 153.9 | 5 | 10.14 | 1096.7 | 3 | 17.68 | 727.0 | 2 | 15.73 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 23.9 | 9.5 | 1.05 | 4.7 | 11.5 | 0.31 | 11.8 | 10.5 | 0.19 | 0.0 | 14 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 23.9 | 9.5 | 1.05 | 26.0 | 9 | 1.72 | 0.0 | 13.5 | 0.00 | 19.1 | 10 | 0.41 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 14 | 0.00 | 9.5 | 10 | 0.62 | 23.6 | 9 | 0.38 | 9.6 | 11.5 | 0.21 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 195.6 | 5 | 8.60 | 265.2 | 2.5 | 17.47 | 672.2 | 4 | 10.84 | 420.9 | 6 | 9.11 |
| Total Zooplankton | 2275.8 | | | 1517.5 | | | 6202.8 | | | 4620.5 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PODON POLYPHEMOIDES | 0.0 | 14.5 | 0.00 | 2.4 | 14 | 0.11 | 0.0 | 14.5 | 0.00 | 0.0 | 14 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 105.8 | 5 | 5.24 | 145.5 | 5 | 6.80 | 1058.7 | 2 | 27.43 | 2208.1 | 2 | 28.26 |
| ACARTIA SPP.(COPEPODITES) | 1035.8 | 1 | 51.25 | 985.2 | 1 | 46.04 | 1168.0 | 1 | 30.27 | 3407.4 | 1 | 43.61 |
| CLAUSOCALANUS SPP. | 17.6 | 10 | 0.87 | 40.6 | 7 | 1.90 | 13.7 | 12 | 0.35 | 9.5 | 12 | 0.12 |
| CORYCAEUS ANGLICUS | 32.8 | 9 | 1.62 | 35.8 | 8 | 1.67 | 41.0 | 10.5 | 1.06 | 57.1 | 9.5 | 0.73 |
| EUTERPINA ACUTIFRONS | 7.6 | 11 | 0.37 | 9.5 | 11 | 0.45 | 54.6 | 9 | 1.42 | 57.1 | 9.5 | 0.73 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.5 | 13 | 0.12 | 2.4 | 14 | 0.11 | 0.0 | 14.5 | 0.00 | 0.0 | 14 | 0.00 |
| OITHONA OCULATA | 0.0 | 14.5 | 0.00 | 2.4 | 14 | 0.11 | 41.0 | 10.5 | 1.06 | 95.2 | 7.5 | 1.22 |
| PARACALANUS PARVUS | 103.3 | 6 | 5.11 | 83.5 | 6 | 3.90 | 280.1 | 5 | 7.26 | 485.4 | 4 | 6.21 |
| PARACALANUS PARVUS(COPEPODITES) | 219.3 | 2 | 10.85 | 310.1 | 2 | 14.49 | 341.5 | 3 | 8.85 | 533.0 | 3 | 6.82 |
| OTHER COPEPODS | 186.5 | 4 | 9.23 | 250.5 | 3 | 11.71 | 157.1 | 7 | 4.07 | 475.9 | 5 | 6.09 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 5.0 | 12 | 0.25 | 4.8 | 12 | 0.22 | 6.8 | 13 | 0.18 | 0.0 | 14 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 60.5 | 7 | 2.99 | 26.2 | 9 | 1.23 | 307.4 | 4 | 7.96 | 95.2 | 7.5 | 1.22 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 47.9 | 8 | 2.37 | 16.7 | 10 | 0.78 | 150.3 | 8 | 3.89 | 19.0 | 11 | 0.24 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 196.6 | 3 | 9.73 | 224.2 | 4 | 10.48 | 239.1 | 6 | 6.19 | 371.2 | 6 | 4.75 |
| Total Zooplankton | 2021.2 | | | 2139.8 | | | 3859.3 | | | 7814.1 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 23, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1.6 | 12.5 | Ø.26 | 3.1 | 12 | Ø.56 | Ø.Ø | 14.5 | Ø.ØØ | 3.2 | 12 | Ø.18 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 12.4 | 9 | 2.Ø6 | 6.2 | 1Ø | 1.11 | 268.8 | 4 | 15.51 | 55Ø.9 | 1 | 3Ø.65 |
| ACARTIA SPP.(COPEPODITES) | 19Ø.7 | 1 | 31.62 | 161.9 | 1 | 28.97 | 362.7 | 1.5 | 2Ø.93 | 27Ø.6 | 3 | 15.Ø5 |
| CLAUSOCALANUS SPP. | 21.7 | 8 | 3.6Ø | 21.8 | 7 | 3.9Ø | 9.7 | 11 | Ø.56 | 12.9 | 1Ø | Ø.72 |
| CORYCAEUS ANGLICUS | 4.7 | 1Ø | Ø.77 | 4.7 | 11 | Ø.84 | 29.1 | 9 | 1.68 | 41.9 | 9 | 2.33 |
| EUTERPINA ACUTIFRONS | 1.6 | 12.5 | Ø.26 | Ø.Ø | 14 | Ø.ØØ | 19.4 | 1Ø | 1.12 | 6.4 | 11 | Ø.36 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 3.1 | 11 | Ø.51 | 14.Ø | 8.5 | 2.51 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| OITHONA OCULATA | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 3.2 | 13 | Ø.19 | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 148.8 | 2 | 24.68 | 154.1 | 2 | 27.58 | 327.1 | 3 | 18.88 | 354.4 | 2 | 19.71 |
| PARACALANUS PARVUS(COPEPODITES) | 24.8 | 7 | 4.11 | 14.Ø | 8.5 | 2.51 | 93.9 | 6 | 5.42 | 58.Ø | 8 | 3.23 |
| OTHER COPEPODS | 66.7 | 3 | 11.Ø5 | 56.Ø | 4 | 1Ø.Ø3 | 362.7 | 1.5 | 2Ø.93 | 219.1 | 4 | 12.19 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 6.5 | 12 | Ø.37 | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 43.4 | 5 | 7.2Ø | 24.9 | 6 | 4.46 | 42.1 | 8 | 2.43 | 74.1 | 7 | 4.12 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 46.5 | 4 | 7.71 | 59.1 | 3 | 1Ø.58 | 64.8 | 7 | 3.74 | 99.9 | 6 | 5.56 |
| INVERTEBRATES, UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 37.2 | 6 | 6.17 | 38.9 | 5 | 6.96 | 142.5 | 5 | 8.22 | 1Ø6.3 | 5 | 5.91 |
| Total Zooplankton | 603.1 | | | 558.8 | | | 1732.5 | | | 1797.7 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978-2&3 PRE-OP

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 7.4 | 11 | 0.52 | 4.9 | 13 | 0.48 | 2.1 | 12 | 0.17 | 0.0 | 15 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 15.5 | 0.00 | 0.0 | 16 | 0.00 | 0.0 | 14.5 | 0.00 | 3.2 | 12 | 0.19 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 95.6 | 5 | 6.78 | 48.6 | 6 | 4.83 | 147.2 | 4 | 11.93 | 317.4 | 3 | 18.25 |
| ACARTIA SPP.(COPEPODITES) | 529.4 | 1 | 37.58 | 338.0 | 1 | 33.57 | 306.7 | 1 | 24.87 | 408.0 | 1 | 23.46 |
| CLAUSOCALANUS SPP. | 88.2 | 6 | 6.26 | 38.9 | 7.5 | 3.86 | 8.3 | 11 | 0.67 | 3.2 | 12 | 0.19 |
| CORYCAEUS ANGLICUS | 25.0 | 10 | 1.77 | 12.2 | 10.5 | 1.21 | 29.0 | 9 | 2.35 | 38.9 | 8 | 2.23 |
| EUTERPINA ACUTIFRONS | 2.9 | 12.5 | 0.21 | 9.7 | 12 | 0.97 | 24.9 | 10 | 2.02 | 13.0 | 10 | 0.74 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.9 | 12.5 | 0.21 | 12.2 | 10.5 | 1.21 | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 |
| OITHONA OCULATA | 1.5 | 14 | 0.10 | 2.4 | 14.5 | 0.24 | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 |
| PARACALANUS PARVUS | 58.8 | 7 | 4.18 | 38.9 | 7.5 | 3.86 | 95.3 | 6 | 7.73 | 93.9 | 6 | 5.40 |
| PARACALANUS PARVUS(COPEPODITES) | 208.8 | 2 | 14.82 | 155.6 | 2 | 15.46 | 153.4 | 3 | 12.44 | 330.3 | 2 | 18.99 |
| OTHER COPEPODS | 33.8 | 9 | 2.40 | 68.1 | 5 | 6.76 | 223.8 | 2 | 18.15 | 268.8 | 4 | 15.46 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 15.5 | 0.00 | 2.4 | 14.5 | 0.24 | 0.0 | 14.5 | 0.00 | 3.2 | 12 | 0.19 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 50.0 | 8 | 3.55 | 29.2 | 9 | 2.90 | 66.3 | 7 | 5.38 | 61.5 | 7 | 3.54 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 142.6 | 4 | 10.13 | 111.9 | 4 | 11.11 | 31.1 | 8 | 2.52 | 22.7 | 9 | 1.30 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 161.8 | 3 | 11.48 | 133.8 | 3 | 13.29 | 145.1 | 5 | 11.76 | 174.9 | 5 | 10.06 |
| Total Zooplankton | 1408.8 | | | 1006.8 | | | 1233.2 | | | 1739.0 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 140.0 | 8 | 4.01 | 126.0 | 9 | 2.70 | 3.7 | 11 | 0.14 | 37.0 | 11 | 0.90 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 178.6 | 7 | 5.12 | 208.3 | 7 | 4.47 | 81.1 | 7 | 3.11 | 192.3 | 6.5 | 4.68 |
| ACARTIA SPP.(COPEPODITES) | 627.4 | 2 | 17.98 | 484.5 | 4 | 10.38 | 125.4 | 5 | 4.81 | 613.9 | 3 | 14.95 |
| CLAUSOCALANUS SPP. | 521.2 | 4 | 14.94 | 843.0 | 2 | 18.07 | 328.2 | 4 | 12.59 | 480.8 | 5 | 11.71 |
| CORYCAEUS ANGLICUS | 101.4 | 9 | 2.90 | 179.3 | 8 | 3.84 | 66.4 | 8 | 2.55 | 66.6 | 8 | 1.62 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.7 | 13 | 0.28 | 0.0 | 12.5 | 0.00 | 0.0 | 12.5 | 0.00 | 0.0 | 13 | 0.00 |
| PARACALANUS PARVUS | 308.9 | 5 | 8.85 | 407.0 | 5 | 8.72 | 110.6 | 6 | 4.24 | 192.3 | 6.5 | 4.68 |
| PARACALANUS PARVUS(COPEPODITES) | 661.2 | 1 | 18.95 | 1453.5 | 1 | 31.15 | 368.7 | 3 | 14.14 | 576.9 | 4 | 14.05 |
| OTHER COPEPODS | 275.1 | 6 | 7.88 | 353.7 | 6 | 7.58 | 818.6 | 1 | 31.40 | 658.3 | 2 | 16.04 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 57.9 | 11 | 1.66 | 24.2 | 11 | 0.52 | 18.4 | 9 | 0.71 | 51.8 | 10 | 1.26 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 62.7 | 10 | 1.80 | 33.9 | 10 | 0.73 | 0.0 | 12.5 | 0.00 | 14.8 | 12 | 0.36 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 14.5 | 12 | 0.41 | 0.0 | 12.5 | 0.00 | 7.4 | 10 | 0.28 | 59.2 | 9 | 1.44 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 530.9 | 3 | 15.21 | 552.3 | 3 | 11.84 | 678.5 | 2 | 26.03 | 1161.2 | 1 | 28.29 |
| Total Zooplankton | 3489.4 | | | 4665.7 | | | 2606.9 | | | 4105.0 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 53.3 | 10 | 1.14 | 21.9 | 10 | 0.49 | 177.8 | 8 | 3.14 | 59.2 | 10 | 1.16 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 266.5 | 6 | 5.70 | 116.7 | 8 | 2.63 | 251.9 | 6 | 4.44 | 266.3 | 6 | 5.24 |
| ACARTIA SPP.(COPEPODITES) | 634.7 | 4 | 13.58 | 809.8 | 2 | 18.26 | 718.5 | 4 | 12.68 | 784.0 | 3 | 15.43 |
| CLAUSOCALANUS SPP. | 794.6 | 2 | 16.99 | 656.6 | 3 | 14.80 | 400.0 | 5 | 7.06 | 355.0 | 5 | 6.99 |
| CORYCAEUS ANGLICUS | 193.8 | 8 | 4.15 | 131.3 | 7 | 2.96 | 185.2 | 7 | 3.27 | 170.1 | 7 | 3.35 |
| EUTERPINA ACUTIFRONS | 9.7 | 11 | 0.21 | 0.0 | 12 | 0.00 | 7.4 | 12.5 | 0.13 | 0.0 | 12 | 0.00 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 12.5 | 0.00 | 0.0 | 12 | 0.00 | 7.4 | 12.5 | 0.13 | 0.0 | 12 | 0.00 |
| PARACALANUS PARVUS | 222.9 | 7 | 4.77 | 248.1 | 6 | 5.59 | 140.7 | 9 | 2.48 | 140.5 | 8 | 2.77 |
| PARACALANUS PARVUS(COPEPODITES) | 1259.7 | 1 | 26.94 | 1524.8 | 1 | 34.37 | 888.9 | 3 | 15.69 | 710.1 | 4 | 13.97 |
| OTHER COPEPODS | 363.4 | 5 | 7.77 | 394.0 | 5 | 8.88 | 1266.7 | 2 | 22.35 | 1279.6 | 1 | 25.18 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 92.1 | 9 | 1.97 | 65.7 | 9 | 1.48 | 118.5 | 10 | 2.09 | 81.4 | 9 | 1.60 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 12.5 | 0.00 | 0.0 | 12 | 0.00 | 44.4 | 11 | 0.78 | 0.0 | 12 | 0.00 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 784.9 | 3 | 16.79 | 466.9 | 4 | 10.53 | 1459.3 | 1 | 25.75 | 1235.2 | 2 | 24.31 |
| Total Zooplankton | 4675.4 | | | 4435.8 | | | 5666.7 | | | 5081.4 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 21.9 | 10 | 0.42 | 48.6 | 10 | 1.24 | 11.2 | 11 | 0.44 | 29.6 | 11 | 1.02 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 102.1 | 9 | 1.97 | 92.4 | 9 | 2.36 | 164.9 | 7 | 6.45 | 258.9 | 4 | 8.91 |
| ACARTIA SPP.(COPEPODITES) | 306.4 | 5 | 5.92 | 131.3 | 8 | 3.35 | 191.2 | 6 | 7.48 | 218.2 | 6 | 7.51 |
| CLAUSOCALANUS SPP. | 547.2 | 3 | 10.58 | 374.5 | 4 | 9.57 | 217.4 | 5 | 8.50 | 347.6 | 3 | 11.96 |
| CORYCAEUS ANGLICUS | 255.4 | 7 | 4.94 | 165.4 | 7 | 4.22 | 142.4 | 8 | 5.57 | 136.8 | 8 | 4.71 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 11.5 | 0.00 | 9.7 | 12 | 0.25 | 0.0 | 12 | 0.00 | 0.0 | 12 | 0.00 |
| PARACALANUS PARVUS | 2356.5 | 1 | 45.56 | 1755.8 | 1 | 44.84 | 258.6 | 3 | 10.12 | 247.8 | 5 | 8.52 |
| PARACALANUS PARVUS(COPEPODITES) | 612.8 | 2 | 11.85 | 394.0 | 2 | 10.06 | 247.4 | 4 | 9.68 | 173.8 | 7 | 5.98 |
| OTHER COPEPODS | 167.8 | 8 | 3.24 | 291.8 | 5 | 7.45 | 802.1 | 1 | 31.38 | 865.4 | 1 | 29.77 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 299.1 | 6 | 5.78 | 243.2 | 6 | 6.21 | 60.0 | 9 | 2.35 | 96.2 | 9 | 3.31 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 11.5 | 0.00 | 19.5 | 11 | 0.50 | 41.2 | 10 | 1.61 | 48.1 | 10 | 1.65 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 503.4 | 4 | 9.73 | 389.1 | 3 | 9.94 | 419.8 | 2 | 16.42 | 484.5 | 2 | 16.67 |
| Total Zooplankton | 5172.7 | | | 3915.4 | | | 2556.2 | | | 2906.8 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. JULY 20, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 7.3 | 10 | 0.36 | 4.9 | 12.5 | 0.14 | 0.0 | 13 | 0.00 | 22.2 | 11 | 0.61 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 102.1 | 6 | 5.07 | 97.3 | 8 | 2.84 | 92.7 | 8 | 3.23 | 96.2 | 8 | 2.64 |
| ACARTIA SPP.(COPEPODITES) | 291.8 | 3 | 14.49 | 423.2 | 4 | 12.38 | 307.9 | 4 | 10.71 | 406.8 | 4 | 11.16 |
| CLAUSOCALANUS SPP. | 381.8 | 2 | 18.96 | 554.5 | 2 | 16.22 | 174.3 | 5 | 6.06 | 159.0 | 5 | 4.36 |
| CORYCAEUS ANGLICUS | 92.4 | 7 | 4.59 | 136.2 | 7 | 3.98 | 85.3 | 10 | 2.97 | 129.4 | 6 | 3.55 |
| EUTERPINA ACUTIFRONS | 0.0 | 12.5 | 0.00 | 4.9 | 12.5 | 0.14 | 14.8 | 11 | 0.52 | 0.0 | 13 | 0.00 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 12.5 | 0.00 | 19.5 | 10.5 | 0.57 | 0.0 | 13 | 0.00 | 0.0 | 13 | 0.00 |
| PARACALANUS PARVUS | 187.3 | 5 | 9.30 | 291.8 | 6 | 8.53 | 96.4 | 7 | 3.35 | 85.1 | 9 | 2.33 |
| PARACALANUS PARVUS(COPEPODITES) | 642.0 | 1 | 31.88 | 1065.2 | 1 | 31.15 | 478.5 | 2 | 16.65 | 554.7 | 3 | 15.21 |
| OTHER COPEPODS | 77.8 | 8 | 3.86 | 311.3 | 5 | 9.10 | 957.0 | 1 | 33.29 | 1220.4 | 1 | 33.47 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 12.5 | 0.00 | 19.5 | 10.5 | 0.57 | 0.0 | 13 | 0.00 | 0.0 | 13 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.9 | 9 | 1.09 | 58.4 | 9 | 1.71 | 118.7 | 6 | 4.13 | 114.6 | 7 | 3.14 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 12.5 | 0.00 | 0.0 | 14 | 0.00 | 89.0 | 9 | 3.10 | 66.6 | 10 | 1.83 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 209.1 | 4 | 10.39 | 432.9 | 3 | 12.66 | 459.9 | 3 | 16.00 | 791.4 | 2 | 21.70 |
| Total Zooplankton | 2013.6 | | | 3419.3 | | | 2874.6 | | | 3646.5 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 49.2 | 7 | 2.43 | 5Ø.8 | 8 | 1.42 | Ø.Ø | 14 | Ø.ØØ | 4.Ø | 12 | Ø.63 |
| PODON POLYPHEMOIDES | 15.2 | 12 | Ø.75 | 25.4 | 11 | Ø.71 | Ø.Ø | 14 | Ø.ØØ | 24.3 | 9 | 3.84 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 18.9 | 11 | Ø.93 | 82.5 | 7 | 2.31 | 454.5 | 5 | 3.45 | 9.9 | 11 | 1.57 |
| ACARTIA SPP.(COPEPODITES) | 825.8 | 1 | 4Ø.75 | 736.Ø | 2 | 2Ø.6Ø | 75Ø.Ø | 3 | 5.7Ø | 1Ø3.5 | 3 | 16.38 |
| CORYCAEUS ANGLICUS | 41.7 | 8 | 2.Ø6 | 44.4 | 9 | 1.24 | 45.5 | 1Ø | Ø.35 | 25.2 | 8 | 4.ØØ |
| EUTERPINA ACUTIFRONS | 3.8 | 13.5 | Ø.19 | Ø.Ø | 14.5 | Ø.ØØ | 113.6 | 7 | Ø.86 | Ø.Ø | 14.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 37.9 | 9 | 1.87 | 19.Ø | 12.5 | Ø.53 | 22.7 | 11.5 | Ø.17 | 23.8 | 1Ø | 3.76 |
| OITHONA OCULATA | 3.8 | 13.5 | Ø.19 | 31.7 | 1Ø | Ø.89 | 225Ø.Ø | 2 | 17.1Ø | 1.5 | 13 | Ø.24 |
| PARACALANUS PARVUS | 132.6 | 5 | 6.54 | 165.Ø | 5 | 4.62 | 9Ø.9 | 8 | Ø.69 | 56.9 | 5 | 9.Ø1 |
| PARACALANUS PARVUS(COPEPODITES) | 348.5 | 2 | 17.2Ø | 475.9 | 3 | 13.32 | 386.4 | 6 | 2.94 | 112.4 | 1 | 17.79 |
| OTHER COPEPODS | 181.8 | 4 | 8.97 | 1453.Ø | 1 | 4Ø.67 | 84Ø9.1 | 1 | 63.9Ø | 89.6 | 4 | 14.18 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 22.7 | 11.5 | Ø.17 | Ø.Ø | 14.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 22.7 | 1Ø | 1.12 | 19.Ø | 12.5 | Ø.53 | Ø.Ø | 14 | Ø.ØØ | 41.6 | 6 | 6.58 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 56.8 | 6 | 2.8Ø | 1Ø1.5 | 6 | 2.84 | 68.2 | 9 | Ø.52 | 32.2 | 7 | 5.Ø9 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 287.9 | 3 | 14.21 | 368.Ø | 4 | 1Ø.3Ø | 545.5 | 4 | 4.15 | 1Ø6.9 | 2 | 16.93 |
| Total Zooplankton | 2026.5 | | | 3572.3 | | | 13159.1 | | | 631.7 | | |

PLANKTON STATION 2: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 36.5 | 7 | 3.59 | 41.2 | 7 | 4.53 | 2.Ø | 1Ø.5 | Ø.36 | 22.4 | 8 | 2.87 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | 7.3 | 11 | Ø.8Ø | Ø.7 | 13.5 | Ø.12 | 9.7 | 1Ø | 1.24 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 14.2 | 8 | 1.39 | 19.4 | 1Ø | 2.13 | 35.1 | 6 | 6.32 | 48.5 | 7 | 6.21 |
| ACARTIA SPP.(COPEPODITES) | 127.9 | 3 | 12.55 | 113.9 | 3 | 12.53 | 199.3 | 1 | 35.92 | 17Ø.3 | 2 | 21.8Ø |
| CORYCAEUS ANGLICUS | 73.1 | 6 | 7.17 | 48.5 | 6 | 5.33 | 37.7 | 5 | 6.8Ø | 49.7 | 6 | 6.36 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 4.1 | 1Ø | Ø.4Ø | 2.4 | 13 | Ø.27 | 1.3 | 12 | Ø.24 | 3.6 | 13 | Ø.47 |
| OITHONA OCULATA | 2.Ø | 12 | Ø.2Ø | 2.4 | 13 | Ø.27 | 2.Ø | 1Ø.5 | Ø.36 | 1.8 | 14 | Ø.23 |
| PARACALANUS PARVUS | 83.2 | 5 | 8.17 | 65.5 | 5 | 7.2Ø | 23.8 | 7 | 4.3Ø | 55.2 | 5 | 7.Ø6 |
| PARACALANUS PARVUS(COPEPODITES) | 284.3 | 1 | 27.89 | 276.4 | 1 | 3Ø.4Ø | 75.5 | 3 | 13.6Ø | 24Ø.6 | 1 | 3Ø.8Ø |
| OTHER COPEPODS | 115.7 | 4 | 11.35 | 8Ø.Ø | 4 | 8.8Ø | 97.4 | 2 | 17.54 | 75.8 | 4 | 9.7Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.Ø | 12 | Ø.2Ø | 24.2 | 8.5 | 2.67 | Ø.7 | 13.5 | Ø.12 | 12.1 | 9 | 1.55 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 8.1 | 9 | Ø.8Ø | 24.2 | 8.5 | 2.67 | 4.6 | 8.5 | Ø.84 | 6.1 | 12 | Ø.78 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 2.Ø | 12 | Ø.2Ø | 2.4 | 13 | Ø.27 | 4.6 | 8.5 | Ø.84 | 9.1 | 11 | 1.16 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 266.Ø | 2 | 26.1Ø | 2Ø1.2 | 2 | 22.13 | 7Ø.2 | 4 | 12.65 | 76.4 | 3 | 9.78 |
| Total Zooplankton | 1019.3 | | | 909.1 | | | 555.0 | | | 781.2 | | |

PLANKTON STATION 3: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 96.4 | 6 | 3.81 | 77.6 | 6 | 4.89 | 68.2 | 11 | 1.75 | 98.5 | 7 | 4.68 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 7.6 | 14.5 | Ø.19 | 22.7 | 11 | 1.Ø8 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1ØØ.Ø | 5 | 3.95 | 14.5 | 9.5 | Ø.92 | 477.3 | 2 | 12.23 | 83.3 | 8 | 3.96 |
| ACARTIA SPP.(COPEPODITES) | 82.1 | 7 | 3.24 | 41.2 | 7 | 2.6Ø | 1151.5 | 1 | 29.51 | 484.8 | 2 | 23.Ø6 |
| CORYCAEUS ANGLICUS | 6Ø.7 | 8 | 2.4Ø | 8Ø.Ø | 5 | 5.Ø5 | 113.6 | 9 | 2.91 | 75.8 | 1Ø | 3.6Ø |
| EUTERPINA ACUTIFRONS | 3.6 | 12 | Ø.14 | Ø.Ø | 13.5 | Ø.ØØ | 15.2 | 13 | Ø.39 | 3.8 | 14.5 | Ø.18 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 39.3 | 9 | 1.55 | 14.5 | 9.5 | Ø.92 | 174.2 | 7 | 4.47 | 128.8 | 5 | 6.13 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 151.5 | 8 | 3.88 | 7.6 | 12.5 | Ø.36 |
| PARACALANUS PARVUS | 6Ø7.1 | 2 | 23.98 | 53Ø.9 | 1 | 33.49 | 424.2 | 4.5 | 1Ø.87 | 166.7 | 4 | 7.93 |
| PARACALANUS PARVUS(COPEPODITES) | 3ØØ.Ø | 3 | 11.85 | 15Ø.3 | 4 | 9.48 | 325.8 | 6 | 8.35 | 3Ø3.Ø | 3 | 14.41 |
| OTHER COPEPODS | 167.9 | 4 | 6.63 | 189.1 | 3 | 11.93 | 424.2 | 4.5 | 1Ø.87 | 79.5 | 9 | 3.78 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 7.6 | 14.5 | Ø.19 | 3.8 | 14.5 | Ø.18 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 14.3 | 11 | Ø.56 | 9.7 | 11 | Ø.61 | 22.7 | 12 | Ø.58 | 7.6 | 12.5 | Ø.36 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 17.9 | 1Ø | Ø.71 | 24.2 | 8 | 1.53 | 98.5 | 1Ø | 2.52 | 121.2 | 6 | 5.77 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø42.9 | 1 | 41.18 | 453.3 | 2 | 28.59 | 439.4 | 3 | 11.26 | 515.2 | 1 | 24.5Ø |
| Total Zooplankton | 2532.1 | | | 1585.5 | | | 3901.5 | | | 2102.3 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 45.2 | 10 | 1.11 | 83.3 | 9 | 1.43 | 92.1 | 7 | 6.70 | 99.4 | 6 | 6.75 |
| PODON POLYPHEMOIDES | 0.0 | 14 | 0.00 | 0.0 | 13 | 0.00 | 0.0 | 14.5 | 0.00 | 2.4 | 15 | 0.16 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 165.7 | 7 | 4.07 | 371.2 | 5 | 6.37 | 97.0 | 6 | 7.05 | 140.6 | 4 | 9.56 |
| ACARTIA SPP.(COPEPODITES) | 180.7 | 5.5 | 4.44 | 310.6 | 6 | 5.33 | 271.5 | 2 | 19.75 | 307.9 | 1 | 20.92 |
| CORYCAEUS ANGLICUS | 180.7 | 5.5 | 4.44 | 219.7 | 7 | 3.77 | 60.6 | 8 | 4.41 | 29.1 | 9 | 1.98 |
| EUTERPINA ACUTIFRONS | 0.0 | 14 | 0.00 | 0.0 | 13 | 0.00 | 7.3 | 12 | 0.53 | 14.5 | 12 | 0.99 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 60.2 | 9 | 1.48 | 75.8 | 10 | 1.30 | 138.2 | 4 | 10.05 | 130.9 | 5 | 8.90 |
| OITHONA OCULATA | 7.5 | 12 | 0.19 | 0.0 | 13 | 0.00 | 2.4 | 13 | 0.18 | 19.4 | 10.5 | 1.32 |
| PARACALANUS PARVUS | 293.7 | 4 | 7.22 | 568.2 | 4 | 9.75 | 53.3 | 9 | 3.88 | 60.6 | 8 | 4.12 |
| PARACALANUS PARVUS(COPEPODITES) | 1024.1 | 2 | 25.19 | 1295.5 | 2 | 22.24 | 133.3 | 5 | 9.70 | 97.0 | 7 | 6.59 |
| OTHER COPEPODS | 707.8 | 3 | 17.41 | 909.1 | 3 | 15.60 | 150.3 | 3 | 10.93 | 237.6 | 3 | 16.14 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14 | 0.00 | 0.0 | 13 | 0.00 | 0.0 | 14.5 | 0.00 | 4.8 | 13.5 | 0.33 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 15.1 | 11 | 0.37 | 0.0 | 13 | 0.00 | 12.1 | 11 | 0.88 | 4.8 | 13.5 | 0.33 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 128.0 | 8 | 3.15 | 106.1 | 8 | 1.82 | 43.6 | 10 | 3.17 | 19.4 | 10.5 | 1.32 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1257.5 | 1 | 30.93 | 1886.4 | 1 | 32.38 | 312.7 | 1 | 22.75 | 303.0 | 2 | 20.59 |
| Total Zooplankton | 4066.3 | | | 5825.8 | | | 1374.5 | | | 1471.5 | | |

PLANKTON STATION 5: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 41.7 | 9 | Ø.99 | 83.3 | 1Ø | Ø.75 | 37.2 | 1Ø | 2.Ø7 | 3.5 | 13 | Ø.19 |
| PODON POLYPHEMOIDES | 34.1 | 1Ø | Ø.81 | 45.5 | 12 | Ø.41 | 11.2 | 11 | Ø.62 | Ø.Ø | 14.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 363.6 | 5 | 8.66 | 651.5 | 5 | 5.87 | 1ØØ.4 | 6.5 | 5.6Ø | 178.1 | 6 | 9.73 |
| ACARTIA SPP.(COPEPODITES) | 375.Ø | 4 | 8.93 | 886.4 | 4 | 7.98 | 323.7 | 3 | 18.Ø5 | 579.6 | 1 | 31.68 |
| CORYCAEUS ANGLICUS | 1Ø2.3 | 8 | 2.43 | 159.1 | 8 | 1.43 | 44.6 | 8.5 | 2.49 | 17.5 | 11 | Ø.95 |
| EUTERPINA ACUTIFRONS | 121.2 | 7 | 2.89 | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 24.4 | 8 | 1.34 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.6 | 12.5 | Ø.18 | 318.2 | 7 | 2.86 | 1ØØ.4 | 6.5 | 5.6Ø | 2Ø.9 | 9.5 | 1.15 |
| OITHONA OCULATA | 3.8 | 14.5 | Ø.Ø9 | Ø.Ø | 14 | Ø.ØØ | 3.7 | 13 | Ø.21 | 27.9 | 7 | 1.53 |
| PARACALANUS PARVUS | 579.5 | 3 | 13.8Ø | 175Ø.Ø | 3 | 15.76 | 119.Ø | 4 | 6.64 | 199.Ø | 3.5 | 1Ø.88 |
| PARACALANUS PARVUS(COPEPODITES) | 1587.1 | 1 | 37.78 | 4454.5 | 1 | 4Ø.11 | 394.3 | 2 | 21.99 | 356.1 | 2 | 19.47 |
| OTHER COPEPODS | 3Ø6.8 | 6 | 7.3Ø | 621.2 | 6 | 5.59 | 115.3 | 5 | 6.43 | 192.Ø | 5 | 1Ø.5Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.6 | 12.5 | Ø.18 | Ø.Ø | 14 | Ø.ØØ | 7.4 | 12 | Ø.41 | Ø.Ø | 14.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 3.8 | 14.5 | Ø.Ø9 | 53.Ø | 11 | Ø.48 | Ø.Ø | 14.5 | Ø.ØØ | 1Ø.5 | 12 | Ø.57 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 22.7 | 11 | Ø.54 | 121.2 | 9 | 1.Ø9 | 44.6 | 8.5 | 2.49 | 2Ø.9 | 9.5 | 1.15 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 643.9 | 2 | 15.33 | 1962.1 | 2 | 17.67 | 491.1 | 1 | 27.39 | 199.Ø | 3.5 | 1Ø.88 |
| Total Zooplankton | 4200.8 | | | 11106.1 | | | 1793.2 | | | 1829.6 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 448.6 | 6 | 5.79 | 386.4 | 7 | 4.58 | 439.4 | 1 | 27.55 | 61.4 | 3 | 17.96 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | 22.7 | 11.5 | Ø.27 | 11.4 | 11 | Ø.71 | Ø.Ø | 15 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1173.3 | 3 | 15.16 | 1159.1 | 3 | 13.73 | 26.5 | 9.5 | 1.66 | 3.6 | 1Ø.5 | 1.Ø6 |
| ACARTIA SPP.(COPEPODITES) | 322.1 | 7 | 4.16 | 6Ø2.3 | 5 | 7.13 | 162.9 | 5 | 1Ø.21 | 24.1 | 7 | 7.Ø4 |
| CORYCAEUS ANGLICUS | 115.Ø | 8 | 1.49 | 227.3 | 8 | 2.69 | 41.7 | 7.5 | 2.61 | 25.3 | 5.5 | 7.39 |
| EUTERPINA ACUTIFRONS | 11.5 | 12 | Ø.15 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 1.2 | 14 | Ø.35 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 69.Ø | 9 | Ø.89 | 56.8 | 9 | Ø.67 | 3.8 | 12 | Ø.24 | 5.4 | 9 | 1.58 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 3.Ø | 12 | Ø.88 |
| PARACALANUS PARVUS | 1Ø23.8 | 4 | 13.22 | 818.2 | 4 | 9.69 | 26.5 | 9.5 | 1.66 | 7.8 | 8 | 2.29 |
| PARACALANUS PARVUS(COPEPODITES) | 1817.5 | 2 | 23.48 | 2375.Ø | 1 | 28.13 | 17Ø.5 | 4 | 1Ø.69 | 75.3 | 1 | 22.Ø1 |
| OTHER COPEPODS | 586.7 | 5 | 7.58 | 59Ø.9 | 6 | 7.ØØ | 117.4 | 6 | 7.36 | 25.3 | 5.5 | 7.39 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | 11.4 | 13 | Ø.13 | Ø.Ø | 14 | Ø.ØØ | 2.4 | 13 | Ø.7Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 57.5 | 1Ø.5 | Ø.74 | 22.7 | 11.5 | Ø.27 | 257.6 | 3 | 16.15 | 74.7 | 2 | 21.83 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 57.5 | 1Ø.5 | Ø.74 | 34.1 | 1Ø | Ø.4Ø | 41.7 | 7.5 | 2.61 | 3.6 | 1Ø.5 | 1.Ø5 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2Ø59.Ø | 1 | 26.6Ø | 2136.4 | 2 | 25.3Ø | 295.5 | 2 | 18.53 | 28.9 | 4 | 8.45 |
| Total Zooplankton | 7741.6 | | | 8443.2 | | | 1594.7 | | | 342.2 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 249.2 | 4 | 8.49 | 72.5 | 5 | 6.89 | 46.6 | 4 | 9.99 | 19.9 | 4 | 7.19 |
| PODON POLYPHEMOIDES | 19.8 | 11 | Ø.67 | 7.5 | 9 | Ø.71 | 16.8 | 7 | 3.6Ø | 5.Ø | 1Ø.5 | 1.8Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 43.5 | 8.5 | 1.48 | 37.5 | 7 | 3.56 | 11.2 | 9.5 | 2.4Ø | 3.1 | 12 | 1.12 |
| ACARTIA SPP.(COPEPODITES) | 399.5 | 3 | 13.61 | 12Ø.Ø | 3 | 11.4Ø | 49.1 | 3 | 1Ø.52 | 23.6 | 3 | 8.54 |
| CORYCAEUS ANGLICUS | 91.Ø | 7 | 3.1Ø | 42.5 | 6 | 4.Ø4 | 1Ø.6 | 11 | 2.26 | 16.1 | 5 | 5.84 |
| EUTERPINA ACUTIFRONS | 11.9 | 12.5 | Ø.4Ø | Ø.Ø | 13 | Ø.ØØ | 2.5 | 14 | Ø.53 | Ø.Ø | 14.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 43.5 | 8.5 | 1.48 | 3Ø.Ø | 8 | 2.85 | 5.Ø | 13 | 1.Ø7 | 5.Ø | 1Ø.5 | 1.8Ø |
| OITHONA OCULATA | 4.Ø | 15 | Ø.13 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ |
| PARACALANUS PARVUS | 178.Ø | 6 | 6.Ø6 | 15Ø.Ø | 2 | 14.25 | 24.8 | 6 | 5.33 | 11.2 | 7 | 4.Ø4 |
| PARACALANUS PARVUS(COPEPODITES) | 1Ø24.5 | 1 | 34.91 | 482.5 | 1 | 45.84 | 97.5 | 2 | 2Ø.91 | 96.3 | 1 | 34.83 |
| OTHER COPEPODS | 241.3 | 5 | 8.22 | 1Ø5.Ø | 4 | 9.98 | 26.7 | 5 | 5.73 | 1Ø.6 | 8 | 3.82 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.9 | 14 | Ø.27 | Ø.Ø | 13 | Ø.ØØ | 6.8 | 12 | 1.46 | 1.9 | 13 | Ø.67 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 39.6 | 1Ø | 1.35 | Ø.Ø | 13 | Ø.ØØ | 11.2 | 9.5 | 2.4Ø | 14.9 | 6 | 5.39 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 11.9 | 12.5 | Ø.4Ø | 5.Ø | 1Ø | Ø.48 | 14.9 | 8 | 3.2Ø | 9.3 | 9 | 3.37 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 569.6 | 2 | 19.41 | Ø.Ø | 13 | Ø.ØØ | 142.9 | 1 | 3Ø.63 | 59.6 | 2 | 21.57 |
| Total Zooplankton | 2935.1 | | | 1052.5 | | | 466.5 | | | 276.4 | | |

PLANKTON STATION 8: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 13.8 | 8 | 1.88 | 11.2 | 9 | 2.69 | 11.9 | 7.5 | 2.52 | 12.4 | 8 | 3.Ø4 |
| PODON POLYPHEMOIDES | 3.8 | 11 | Ø.51 | 15.5 | 8 | 3.74 | 41.9 | 3 | 8.87 | 22.4 | 4 | 5.48 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 19.5 | 7 | 2.65 | 3.7 | 11 | Ø.9Ø | 9.4 | 1Ø | 1.99 | 5.Ø | 1Ø | 1.22 |
| ACARTIA SPP.(COPEPODITES) | 124.5 | 3 | 16.95 | 59.Ø | 4 | 14.22 | 1Ø1.2 | 2 | 21.46 | 135.4 | 1 | 33.18 |
| CORYCAEUS ANGLICUS | 13.2 | 9 | 1.8Ø | 2.5 | 12 | Ø.6Ø | 5.Ø | 12 | 1.Ø6 | 3.7 | 13 | Ø.91 |
| EUTERPINA ACUTIFRONS | 1.3 | 14.5 | Ø.17 | Ø.6 | 14.5 | Ø.15 | Ø.Ø | 15 | Ø.ØØ | 1.9 | 14 | Ø.46 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.3 | 14.5 | Ø.17 | 1.2 | 13 | Ø.3Ø | 3.7 | 13 | Ø.79 | Ø.Ø | 15 | Ø.ØØ |
| OITHONA OCULATA | 7.5 | 1Ø | 1.Ø3 | 21.1 | 6 | 5.Ø9 | 1.2 | 14 | Ø.26 | 7.5 | 9 | 1.83 |
| PARACALANUS PARVUS | 58.5 | 4 | 7.96 | 19.3 | 7 | 4.64 | 38.1 | 4 | 8.Ø8 | 29.2 | 3 | 7.15 |
| PARACALANUS PARVUS(COPEPODITES) | 2Ø8.8 | 1 | 28.42 | 1Ø1.2 | 1 | 24.4Ø | 31.2 | 5 | 6.62 | 2Ø.5 | 5.5 | 5.Ø2 |
| OTHER COPEPODS | 57.2 | 5 | 7.79 | 7Ø.8 | 3 | 17.Ø7 | 28.7 | 6 | 6.Ø9 | 2Ø.5 | 5.5 | 5.Ø2 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.5 | 13 | Ø.34 | 4.3 | 1Ø | 1.Ø5 | 6.9 | 11 | 1.46 | 4.3 | 11.5 | 1.Ø7 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.4 | 6 | 2.91 | 23.Ø | 5 | 5.54 | 11.9 | 7.5 | 2.52 | 15.5 | 7 | 3.81 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 3.1 | 12 | Ø.43 | Ø.6 | 14.5 | Ø.15 | 1Ø.6 | 9 | 2.25 | 4.3 | 11.5 | 1.Ø7 |
| INVERTEBRATES, UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 198.1 | 2 | 26.97 | 8Ø.7 | 2 | 19.46 | 17Ø.Ø | 1 | 36.Ø3 | 125.5 | 2 | 3Ø.75 |
| Total Zooplankton | 734.6 | | | 414.9 | | | 471.9 | | | 408.1 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 2.3 | 14 | Ø.64 | 72.3 | 9 | 4.39 | 234.4 | 8 | 4.74 | 1.9 | 13.5 | Ø.25 |
| PODON POLYPHEMOIDES | 3.9 | 1Ø.5 | 1.Ø7 | 9.2 | 13 | Ø.56 | Ø.Ø | 14 | Ø.ØØ | 9.6 | 1Ø | 1.27 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 4.3 | 9 | 1.18 | 38.5 | 1Ø | 2.33 | 498.Ø | 3.5 | 1Ø.Ø8 | 5.7 | 11.5 | Ø.76 |
| ACARTIA SPP.(COPEPODITES) | 37.9 | 5 | 1Ø.4Ø | 1ØØ.Ø | 7 | 6.Ø7 | 752.Ø | 2 | 15.22 | 38.3 | 6 | 5.Ø6 |
| CORYCAEUS ANGLICUS | 16.4 | 8 | 4.5Ø | 112.3 | 5.5 | 6.82 | 127.Ø | 1Ø | 2.57 | 15.3 | 8 | 2.Ø3 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 3.9 | 1Ø.5 | 1.Ø7 | 2Ø.Ø | 11 | 1.21 | 68.4 | 11 | 1.38 | 13.4 | 9 | 1.77 |
| OITHONA OCULATA | 2.7 | 12.5 | Ø.75 | 1Ø.8 | 12 | Ø.65 | 9.8 | 12.5 | Ø.2Ø | 5.7 | 11.5 | Ø.76 |
| PARACALANUS PARVUS | 22.7 | 6 | 6.22 | 286.2 | 2 | 17.37 | 478.5 | 5 | 9.68 | 23.Ø | 7 | 3.Ø4 |
| PARACALANUS PARVUS(COPEPODITES) | 7Ø.7 | 2 | 19.4Ø | 221.5 | 3 | 13.45 | 498.Ø | 3.5 | 1Ø.Ø8 | 8Ø.4 | 3.5 | 1Ø.63 |
| OTHER COPEPODS | 46.9 | 4 | 12.86 | 112.3 | 5.5 | 6.82 | 371.1 | 6 | 7.51 | 45.9 | 5 | 6.Ø8 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.7 | 12.5 | Ø.75 | 1.5 | 14 | Ø.Ø9 | 9.8 | 12.5 | Ø.2Ø | 1.9 | 13.5 | Ø.25 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 48.4 | 3 | 13.29 | 213.8 | 4 | 12.98 | 283.2 | 7 | 5.73 | 8Ø.4 | 3.5 | 1Ø.63 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 18.Ø | 7 | 4.93 | 81.5 | 8 | 4.95 | 195.3 | 9 | 3.95 | 86.1 | 2 | 11.39 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 83.6 | 1 | 22.94 | 367.7 | 1 | 22.32 | 1416.Ø | 1 | 28.66 | 348.3 | 1 | 46.Ø8 |
| Total Zooplankton | 364.5 | | | 1647.7 | | | 4941.4 | | | 756.0 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 284.1 | 6 | 4.27 | 42Ø.9 | 7 | 5.Ø5 | 38.1 | 1Ø | 1.95 | 16.2 | 1Ø | 1.53 |
| PODON POLYPHEMOIDES | 9.5 | 12 | Ø.14 | 25.5 | 11 | Ø.31 | 9.5 | 13 | Ø.49 | Ø.Ø | 14.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 265.2 | 7 | 3.99 | 637.8 | 6 | 7.66 | 323.6 | 3 | 16.56 | 68.7 | 6 | 6.49 |
| ACARTIA SPP.(COPEPODITES) | 662.9 | 2 | 9.97 | 1135.2 | 2 | 13.63 | 342.6 | 2 | 17.53 | 155.6 | 3.5 | 14.69 |
| CORYCAEUS ANGLICUS | 161.Ø | 8 | 2.42 | 293.4 | 8 | 3.52 | 177.7 | 6 | 9.Ø9 | 155.6 | 3.5 | 14.69 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14 | Ø.ØØ | 12.8 | 12.5 | Ø.15 | 9.5 | 13 | Ø.49 | 4.Ø | 12.5 | Ø.38 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 28.4 | 1Ø.5 | Ø.43 | 63.8 | 1Ø | Ø.77 | 44.4 | 9 | 2.27 | 18.2 | 9 | 1.72 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 31.7 | 11 | 1.62 | 4.Ø | 12.5 | Ø.38 |
| PARACALANUS PARVUS | 473.5 | 4 | 7.12 | 892.9 | 4 | 1Ø.72 | 76.1 | 7 | 3.9Ø | 64.6 | 7 | 6.11 |
| PARACALANUS PARVUS(COPEPODITES) | 36Ø8.Ø | 1 | 54.27 | 2997.4 | 1 | 35.99 | 364.8 | 1 | 18.67 | 173.7 | 2 | 16.41 |
| OTHER COPEPODS | 34Ø.9 | 5 | 5.13 | 663.3 | 5 | 7.96 | 26Ø.2 | 4 | 13.31 | 88.9 | 5 | 8.4Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 28.4 | 1Ø.5 | Ø.43 | 12.8 | 12.5 | Ø.15 | 9.5 | 13 | Ø.49 | 8.1 | 11 | Ø.76 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 142.Ø | 9 | 2.14 | 114.8 | 9 | 1.38 | 63.5 | 8 | 3.25 | 48.5 | 8 | 4.58 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 643.9 | 3 | 9.69 | 1Ø58.7 | 3 | 12.71 | 2Ø3.Ø | 5 | 1Ø.39 | 252.5 | 1 | 23.85 |
| Total Zooplankton | 6647.7 | | | 8329.1 | | | 1954.3 | | | 1058.6 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 19Ø.1 | 5 | 3.98 | 99.8 | 8 | 2.37 | 66.6 | 1Ø | 1.25 | 18.9 | 12 | Ø.32 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 114.1 | 7 | 2.39 | 1Ø6.9 | 6.5 | 2.54 | 371.2 | 7 | 6.94 | 539.8 | 6 | 9.ØØ |
| ACARTIA SPP.(COPEPODITES) | 76.Ø | 9 | 1.59 | 21.4 | 1Ø.5 | Ø.51 | 533.Ø | 5 | 9.96 | 5Ø1.9 | 7 | 8.37 |
| CORYCAEUS ANGLICUS | 123.6 | 6 | 2.58 | 185.4 | 5 | 4.41 | 475.9 | 6 | 8.9Ø | 568.2 | 5 | 9.48 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13 | Ø.ØØ | 7.1 | 12.5 | Ø.17 | 85.7 | 9 | 1.6Ø | 132.6 | 9 | 2.21 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.5 | 11 | Ø.2Ø | 21.4 | 1Ø.5 | Ø.51 | 28.6 | 11 | Ø.53 | 47.3 | 1Ø | Ø.79 |
| OITHONA OCULATA | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 19.Ø | 12 | Ø.36 | 9.5 | 13.5 | Ø.16 |
| PARACALANUS PARVUS | 8Ø8.Ø | 3 | 16.9Ø | 7Ø5.8 | 4 | 16.78 | 637.7 | 4 | 11.92 | 1278.4 | 1 | 21.33 |
| PARACALANUS PARVUS(COPEPODITES) | 12Ø7.2 | 2 | 25.25 | 869.8 | 2 | 2Ø.68 | 666.2 | 3 | 12.46 | 861.7 | 3 | 14.38 |
| OTHER COPEPODS | 684.4 | 4 | 14.31 | 748.6 | 3 | 17.8Ø | 799.5 | 2 | 14.95 | 729.2 | 4 | 12.16 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | 7.1 | 12.5 | Ø.17 | 9.5 | 13 | Ø.18 | 28.4 | 11 | Ø.47 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 95.1 | 8 | 1.99 | 57.Ø | 9 | 1.36 | Ø.Ø | 14 | Ø.ØØ | 9.5 | 13.5 | Ø.16 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 57.Ø | 1Ø | 1.19 | 1Ø6.9 | 6.5 | 2.54 | 3Ø4.6 | 8 | 5.69 | 378.8 | 8 | 6.32 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1416.4 | 1 | 29.62 | 1269.Ø | 1 | 3Ø.17 | 1351.5 | 1 | 25.27 | 89Ø.2 | 2 | 14.85 |
| Total Zooplankton | 4781.4 | | | 4206.3 | | | 5349.0 | | | 5994.3 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 21.3 | 9 | Ø.55 | 7.1 | 1Ø.5 | Ø.17 | 8.6 | 6 | 2.34 | 15.2 | 6 | 3.36 |
| PODON POLYPHEMOIDES | 35.5 | 8 | Ø.91 | 49.9 | 8 | 1.16 | 6.6 | 7 | 1.79 | 4.5 | 7 | 1.Ø1 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 177.6 | 5 | 4.55 | 149.7 | 5 | 3.49 | 1.Ø | 1Ø | Ø.27 | 3.Ø | 8 | Ø.67 |
| ACARTIA SPP.(COPEPODITES) | 518.5 | 3 | 13.3Ø | 563.2 | 3 | 13.12 | 58.4 | 4 | 15.8Ø | 85.4 | 3 | 18.9Ø |
| CORYCAEUS ANGLICUS | 1Ø6.5 | 7 | 2.73 | 85.6 | 7 | 1.99 | 66.5 | 3 | 17.99 | 91.4 | 2 | 2Ø.25 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 12 | Ø.ØØ | 14.3 | 9 | Ø.33 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 12Ø.7 | 6 | 3.1Ø | 121.2 | 6 | 2.82 | 3.Ø | 8 | Ø.82 | 1.5 | 1Ø | Ø.34 |
| PARACALANUS PARVUS(COPEPODITES) | 2Ø73.9 | 1 | 53.19 | 2Ø74.6 | 1 | 48.34 | 125.9 | 1 | 34.Ø7 | 16Ø.1 | 1 | 35.46 |
| OTHER COPEPODS | 255.7 | 4 | 6.56 | 349.3 | 4 | 8.14 | 25.4 | 5 | 6.87 | 28.3 | 5 | 6.26 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | 7.1 | 1Ø.5 | Ø.17 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 2.5 | 9 | Ø.69 | Ø.Ø | 12 | Ø.ØØ |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 7.1 | 1Ø | Ø.18 | Ø.Ø | 12.5 | Ø.ØØ | Ø.5 | 11 | Ø.14 | 2.Ø | 9 | Ø.45 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 582.4 | 2 | 14.94 | 869.8 | 2 | 2Ø.27 | 71.1 | 2 | 19.23 | 6Ø.1 | 4 | 13.31 |
| Total Zooplankton | 3899.1 | | | 4291.8 | | | 369.5 | | | 451.5 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 392.4 | 4 | 4.36 | 525.3 | 4 | 5.55 | 4.1 | 9 | 1.Ø8 | 16.6 | 4 | 4.92 |
| PODON POLYPHEMOIDES | 13Ø.8 | 7 | 1.45 | 58.4 | 1Ø | Ø.62 | 7.8 | 6 | 2.Ø2 | 1.6 | 11.5 | Ø.46 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 348.8 | 5 | 3.88 | 394.Ø | 5 | 4.16 | 3.1 | 11 | Ø.81 | 1Ø.4 | 8 | 3.Ø7 |
| ACARTIA SPP.(COPEPODITES) | 2921.5 | 2 | 32.47 | 2Ø72.Ø | 2 | 21.88 | 4Ø.4 | 3 | 1Ø.48 | 64.2 | 3 | 19.Ø5 |
| CORYCAEUS ANGLICUS | 247.1 | 6 | 2.75 | 233.5 | 7 | 2.47 | 24.4 | 4 | 6.32 | 11.4 | 6.5 | 3.38 |
| EUTERPINA ACUTIFRONS | 14.5 | 11 | Ø.16 | Ø.Ø | 12 | Ø.ØØ | 1.Ø | 12 | Ø.27 | Ø.Ø | 13 | Ø.ØØ |
| PARACALANUS PARVUS | 116.3 | 8 | 1.29 | 175.1 | 8 | 1.85 | 3.6 | 1Ø | Ø.94 | 5.7 | 9 | 1.69 |
| PARACALANUS PARVUS(COPEPODITES) | 3Ø52.3 | 1 | 33.93 | 3954.3 | 1 | 41.76 | 93.3 | 2 | 24.19 | 65.8 | 2 | 19.51 |
| OTHER COPEPODS | 87.2 | 9 | Ø.97 | 248.1 | 6 | 2.62 | 5.7 | 7 | 1.48 | 11.9 | 5 | 3.53 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.5 | 13 | Ø.13 | 1.6 | 11.5 | Ø.46 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 29.1 | 1Ø | Ø.32 | Ø.Ø | 12 | Ø.ØØ | 5.2 | 8 | 1.34 | 11.4 | 6.5 | 3.38 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 12.5 | Ø.ØØ | 73.Ø | 9 | Ø.77 | 1Ø.4 | 5 | 2.69 | 3.1 | 1Ø | Ø.92 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1657.Ø | 3 | 18.42 | 1736.4 | 3 | 18.34 | 186.Ø | 1 | 48.25 | 133.7 | 1 | 39.63 |
| Total Zooplankton | 8997.1 | | | 9469.8 | | | 385.5 | | | 337.3 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 537.8 | 6 | 5.83 | 466.7 | 5 | 4.5Ø | 6Ø.7 | 9 | 1.44 | 121.6 | 8 | 2.15 |
| PODON POLYPHEMOIDES | Ø.Ø | 13.5 | Ø.ØØ | 16.1 | 13 | Ø.16 | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 279Ø.7 | 1 | 3Ø.24 | 3653.4 | 1 | 35.25 | 961.5 | 1 | 22.81 | 1324.3 | 1 | 23.44 |
| ACARTIA SPP.(COPEPODITES) | 639.5 | 4 | 6.93 | 853.Ø | 4 | 8.23 | 683.2 | 3 | 16.21 | 75Ø.Ø | 3 | 13.28 |
| CORYCAEUS ANGLICUS | 465.1 | 7 | 5.Ø4 | 257.5 | 8.5 | 2.48 | 531.4 | 4 | 12.61 | 648.6 | 4 | 11.48 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 5.1 | 13 | Ø.12 | 6.8 | 13.5 | Ø.12 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 29.1 | 11 | Ø.31 | 64.4 | 12 | Ø.62 | 4Ø.5 | 1Ø | Ø.96 | 67.6 | 11 | 1.2Ø |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | 8Ø.5 | 11 | Ø.78 | 1Ø.1 | 12 | Ø.24 | 33.8 | 12 | Ø.6Ø |
| PARACALANUS PARVUS | 595.9 | 5 | 6.46 | 354.1 | 6 | 3.42 | 288.5 | 7 | 6.84 | 283.8 | 7 | 5.Ø2 |
| PARACALANUS PARVUS(COPEPODITES) | 2441.9 | 2 | 26.46 | 23Ø1.5 | 2 | 22.2Ø | 718.6 | 2 | 17.Ø5 | 127Ø.3 | 2 | 22.49 |
| OTHER COPEPODS | 348.8 | 8 | 3.78 | 241.4 | 1Ø | 2.33 | 313.8 | 6 | 7.44 | 4Ø5.4 | 6 | 7.18 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 6.8 | 13.5 | Ø.12 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 2Ø3.5 | 1Ø | 2.2Ø | 257.5 | 8.5 | 2.48 | 35.4 | 11 | Ø.84 | 1Ø1.4 | 1Ø | 1.79 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 218.Ø | 9 | 2.36 | 3Ø5.8 | 7 | 2.95 | 86.Ø | 8 | 2.Ø4 | 114.9 | 9 | 2.Ø3 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 959.3 | 3 | 1Ø.39 | 1512.9 | 3 | 14.6Ø | 48Ø.8 | 5 | 11.4Ø | 513.5 | 5 | 9.Ø9 |
| Total Zooplankton | 9229.7 | | | 10364.8 | | | 4215.6 | | | 5648.6 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 42.8 | 7 | 1.65 | 19.5 | 7 | Ø.51 | 84.7 | 8 | 1.6Ø | 35.2 | 9 | Ø.8Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 28.5 | 9.5 | 1.1Ø | 4.9 | 8.5 | Ø.13 | 134.2 | 7 | 2.53 | 63.3 | 8 | 1.44 |
| ACARTIA SPP.(COPEPODITES) | 61.8 | 6 | 2.39 | 58.4 | 6 | 1.52 | 48Ø.2 | 4 | 9.Ø4 | 499.3 | 4 | 11.34 |
| CORYCAEUS ANGLICUS | 76.Ø | 5 | 2.94 | 82.7 | 5 | 2.15 | 452.Ø | 5 | 8.51 | 295.4 | 6 | 6.71 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 7.1 | 11.5 | Ø.13 | Ø.Ø | 12 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 7.1 | 11.5 | Ø.13 | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 218.6 | 4 | 8.44 | 4Ø8.6 | 4 | 1Ø.61 | 395.5 | 6 | 7.45 | 3Ø2.4 | 5 | 6.87 |
| PARACALANUS PARVUS(COPEPODITES) | 8Ø3.2 | 2 | 31.Ø1 | 1585.6 | 1 | 41.16 | 2175.1 | 1 | 4Ø.96 | 1884.7 | 1 | 42.81 |
| OTHER COPEPODS | 442.Ø | 3 | 17.Ø6 | 544.7 | 3 | 14.14 | 579.1 | 3 | 1Ø.9Ø | 5Ø6.3 | 3 | 11.5Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | 7.1 | 11.5 | Ø.13 | Ø.Ø | 12 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 28.5 | 9.5 | 1.1Ø | 4.9 | 8.5 | Ø.13 | 77.7 | 9 | 1.46 | 84.4 | 7 | 1.92 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 38.Ø | 8 | 1.47 | Ø.Ø | 11.5 | Ø.ØØ | 7.1 | 11.5 | Ø.13 | 28.1 | 1Ø | Ø.64 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 85Ø.8 | 1 | 32.84 | 1143.Ø | 2 | 29.67 | 9Ø4.Ø | 2 | 17.Ø2 | 7Ø3.2 | 2 | 15.97 |
| Total Zooplankton | 2590.3 | | | 3852.1 | | | 5310.7 | | | 4402.3 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 79.9 | 8 | 1.97 | 19.5 | 11 | Ø.34 | 73.7 | 8.5 | 1.14 | 11Ø.7 | 8 | 1.68 |
| PODON POLYPHEMOIDES | Ø.Ø | 12.5 | Ø.ØØ | 38.9 | 8.5 | Ø.67 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 145.3 | 5 | 3.58 | 145.9 | 5 | 2.53 | 464.6 | 6 | 7.21 | 387.3 | 5 | 5.89 |
| ACARTIA SPP.(COPEPODITES) | Ø.Ø | 12.5 | Ø.ØØ | 29.2 | 1Ø | Ø.51 | 5Ø8.8 | 5 | 7.89 | 269.7 | 7 | 4.11 |
| CORYCAEUS ANGLICUS | 13Ø.8 | 6 | 3.22 | 97.3 | 6 | 1.69 | 383.5 | 7 | 5.95 | 359.6 | 6 | 5.47 |
| EUTERPINA ACUTIFRONS | 14.5 | 1Ø | Ø.36 | Ø.Ø | 13 | Ø.ØØ | 7.4 | 11 | Ø.11 | Ø.Ø | 12.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.3 | 11 | Ø.18 | 9.7 | 12 | Ø.17 | Ø.Ø | 12.5 | Ø.ØØ | 6.9 | 11 | Ø.11 |
| PARACALANUS PARVUS | 683.1 | 2 | 16.82 | 612.8 | 4 | 1Ø.62 | 582.6 | 3 | 9.Ø4 | 746.9 | 4 | 11.37 |
| PARACALANUS PARVUS(COPEPODITES) | 1736.9 | 1 | 42.75 | 3219.8 | 1 | 55.82 | 2595.9 | 1 | 4Ø.27 | 2648.7 | 1 | 4Ø.32 |
| OTHER COPEPODS | 5Ø1.5 | 4 | 12.34 | 632.3 | 3 | 1Ø.96 | 115Ø.4 | 2 | 17.85 | 1154.9 | 2 | 17.58 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1Ø9.Ø | 7 | 2.68 | 68.1 | 7 | 1.18 | 29.5 | 1Ø | Ø.46 | 13.8 | 1Ø | Ø.21 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 29.1 | 9 | Ø.72 | 38.9 | 8.5 | Ø.67 | 73.7 | 8.5 | 1.14 | 83.Ø | 9 | 1.26 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 625.Ø | 3 | 15.38 | 856.Ø | 2 | 14.84 | 575.2 | 4 | 8.92 | 788.4 | 3 | 12.ØØ |
| Total Zooplankton | 4062.5 | | | 5768.5 | | | 6445.4 | | | 6569.8 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 8, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 65.4 | 7 | 1.12 | 232.6 | 5 | 3.35 | 57.5 | 7 | 3.15 | 148.3 | 8 | 3.55 |
| PODON POLYPHEMOIDES | 29.1 | 9 | Ø.5Ø | 13Ø.8 | 6.5 | 1.88 | 25.1 | 9 | 1.38 | 26.5 | 1Ø | Ø.63 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 5Ø.9 | 8 | Ø.87 | 116.3 | 8.5 | 1.67 | 46.7 | 8 | 2.56 | 211.9 | 7 | 5.Ø8 |
| ACARTIA SPP.(COPEPODITES) | 138.1 | 5 | 2.36 | 13Ø.8 | 6.5 | 1.88 | 179.6 | 4 | 9.84 | 911.Ø | 2 | 21.83 |
| CORYCAEUS ANGLICUS | 116.3 | 6 | 1.99 | 116.3 | 8.5 | 1.67 | 262.2 | 3 | 14.37 | 413.1 | 4 | 9.9Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.3 | 11 | Ø.12 | Ø.Ø | 12.5 | Ø.ØØ | 7.2 | 1Ø.5 | Ø.39 | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 479.7 | 3 | 8.2Ø | 799.4 | 3 | 11.51 | 111.4 | 6 | 6.1Ø | 254.2 | 5 | 6.Ø9 |
| PARACALANUS PARVUS(COPEPODITES) | 3437.5 | 1 | 58.76 | 311Ø.5 | 1 | 44.77 | 621.4 | 1 | 34.Ø6 | 125Ø.Ø | 1 | 29.95 |
| OTHER COPEPODS | 239.8 | 4 | 4.1Ø | 625.Ø | 4 | 9.ØØ | 168.8 | 5 | 9.25 | 243.6 | 6 | 5.84 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12.5 | Ø.ØØ | 14.5 | 11 | Ø.21 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 21.2 | 11 | Ø.51 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 21.8 | 1Ø | Ø.37 | 87.2 | 1Ø | 1.26 | 7.2 | 1Ø.5 | Ø.39 | 63.6 | 9 | 1.52 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1264.5 | 2 | 21.61 | 1584.3 | 2 | 22.8Ø | 337.6 | 2 | 18.5Ø | 63Ø.3 | 3 | 15.1Ø |
| Total Zooplankton | 5850.3 | | | 6947.7 | | | 1824.7 | | | 4173.7 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 38.1 | 6 | 2.21 | 3Ø.3 | 8 | 1.56 | 83.3 | 8 | 2.17 | 6.9 | 12 | Ø.59 |
| PODON POLYPHEMOIDES | 26.7 | 8 | 1.55 | 75.8 | 7 | 3.9Ø | 15.2 | 1Ø | Ø.39 | 9.2 | 11 | Ø.79 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 3Ø.5 | 7 | 1.77 | 162.9 | 6 | 8.38 | 325.8 | 5 | 8.46 | 4Ø.2 | 6 | 3.45 |
| ACARTIA SPP.(COPEPODITES) | 388.7 | 2 | 22.52 | 287.9 | 2 | 14.81 | 454.5 | 4 | 11.81 | 328.7 | 1 | 28.18 |
| CORYCAEUS ANGLICUS | 15.2 | 9 | Ø.88 | 11.4 | 1Ø.5 | Ø.58 | 7.6 | 12.5 | Ø.2Ø | 23.Ø | 8 | 1.97 |
| EUTERPINA ACUTIFRONS | 7.6 | 12 | Ø.44 | 3.8 | 13.5 | Ø.19 | 22.7 | 9 | Ø.59 | 5.7 | 13.5 | Ø.49 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 11.4 | 1Ø.5 | Ø.66 | 18.9 | 9 | Ø.97 | Ø.Ø | 15 | Ø.ØØ | 5.7 | 13.5 | Ø.49 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | 7.6 | 12 | Ø.39 | 1318.2 | 1 | 34.25 | 47.1 | 5 | 4.Ø4 |
| PARACALANUS PARVUS | 1Ø6.7 | 4.5 | 6.18 | 2Ø8.3 | 5 | 1Ø.72 | 212.1 | 6 | 5.51 | 37.9 | 7 | 3.25 |
| PARACALANUS PARVUS(COPEPODITES) | 2Ø5.8 | 3 | 11.92 | 223.5 | 3 | 11.5Ø | 151.5 | 7 | 3.94 | 233.3 | 2 | 2Ø.ØØ |
| OTHER COPEPODS | 1Ø6.7 | 4.5 | 6.18 | 215.9 | 4 | 11.11 | 545.5 | 3 | 14.17 | 172.4 | 4 | 14.78 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | 3.8 | 13.5 | Ø.19 | 7.6 | 12.5 | Ø.2Ø | 1Ø.3 | 1Ø | Ø.89 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 11.4 | 1Ø.5 | Ø.66 | Ø.Ø | 15 | Ø.ØØ | 7.6 | 12.5 | Ø.2Ø | 19.5 | 9 | 1.67 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 14 | Ø.ØØ | 11.4 | 1Ø.5 | Ø.58 | 7.6 | 12.5 | Ø.2Ø | Ø.Ø | 15 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 777.4 | 1 | 45.Ø3 | 681.8 | 1 | 35.Ø9 | 689.4 | 2 | 17.91 | 226.4 | 3 | 19.41 |
| Total Zooplankton | 1726.4 | | | 1943.2 | | | 3848.5 | | | 1166.7 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 137.3 | 6 | 3.Ø9 | 167.7 | 7 | 2.69 | 21.8 | 9 | 2.59 | 24.2 | 1Ø | 2.53 |
| PODON POLYPHEMOIDES | 28.9 | 1Ø | Ø.65 | 3Ø.5 | 12 | Ø.49 | 14.5 | 1Ø | 1.72 | 36.4 | 9 | 3.79 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 115.6 | 7 | 2.61 | 182.9 | 6 | 2.94 | 24.2 | 7.5 | 2.87 | 41.2 | 8 | 4.29 |
| ACARTIA SPP.(COPEPODITES) | 166.2 | 5 | 3.75 | 4Ø4.Ø | 5 | 6.49 | 133.3 | 3 | 15.8Ø | 135.8 | 3 | 14.14 |
| CORYCAEUS ANGLICUS | Ø.Ø | 13.5 | Ø.ØØ | 83.8 | 9 | 1.35 | 38.8 | 6 | 4.6Ø | 43.6 | 7 | 4.55 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 2.4 | 13.5 | Ø.25 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 5Ø.6 | 9 | 1.14 | 1Ø6.7 | 8 | 1.71 | 24.2 | 7.5 | 2.87 | 67.9 | 6 | 7.Ø7 |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | 7.6 | 13 | Ø.12 | 7.3 | 12 | Ø.86 | 4.8 | 12 | Ø.51 |
| PARACALANUS PARVUS | 672.Ø | 2 | 15.15 | 762.2 | 2 | 12.24 | 84.8 | 5 | 1Ø.Ø6 | 72.7 | 5 | 7.58 |
| PARACALANUS PARVUS(COPEPODITES) | 2268.8 | 1 | 51.14 | 2919.2 | 1 | 46.88 | 21Ø.9 | 1 | 25.ØØ | 254.5 | 1 | 26.52 |
| OTHER COPEPODS | 375.7 | 4 | 8.47 | 754.6 | 3 | 12.12 | 1Ø4.2 | 4 | 12.36 | 89.7 | 4 | 9.34 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.2 | 11 | Ø.16 | 38.1 | 11 | Ø.61 | Ø.Ø | 14 | Ø.ØØ | 2.4 | 13.5 | Ø.25 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 12.1 | 11 | 1.44 | 7.3 | 11 | Ø.76 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 1Ø1.2 | 8 | 2.28 | 53.4 | 1Ø | Ø.86 | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 513.Ø | 3 | 11.56 | 716.5 | 4 | 11.51 | 167.3 | 2 | 19.83 | 177.Ø | 2 | 18.43 |
| Total Zooplankton | 4436.4 | | | 6227.1 | | | 843.6 | | | 960.0 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 179.1 | 5 | 5.42 | 122.7 | 7 | 3.75 | 3Ø.3 | 1Ø.5 | Ø.31 | 22.7 | 14 | Ø.39 |
| PODON POLYPHEMOIDES | Ø.Ø | 13.5 | Ø.ØØ | 3.8 | 12 | Ø.12 | Ø.Ø | 14 | Ø.ØØ | 37.9 | 11.5 | Ø.65 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 68.6 | 9 | 2.Ø8 | 99.7 | 8 | 3.Ø5 | 1757.6 | 2 | 17.71 | 14Ø1.5 | 2 | 23.87 |
| ACARTIA SPP.(COPEPODITES) | 362.Ø | 4 | 1Ø.96 | 46Ø.1 | 3 | 14.Ø7 | 44Ø9.1 | 1 | 44.43 | 1818.2 | 1 | 3Ø.97 |
| CORYCAEUS ANGLICUS | 118.1 | 7 | 3.58 | 76.7 | 9 | 2.34 | 6Ø.6 | 9 | Ø.61 | 68.2 | 1Ø | 1.16 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 121.2 | 7 | 1.22 | 75.8 | 9 | 1.29 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 83.8 | 8 | 2.54 | 256.9 | 5 | 7.85 | 3Ø.3 | 1Ø.5 | Ø.31 | 128.8 | 8 | 2.19 |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 56Ø.6 | 5 | 5.65 | 181.8 | 6.5 | 3.1Ø |
| PARACALANUS PARVUS | 141.Ø | 6 | 4.27 | 141.9 | 6 | 4.34 | 272.7 | 6 | 2.75 | 181.8 | 6.5 | 3.1Ø |
| PARACALANUS PARVUS(COPEPODITES) | 556.4 | 3 | 16.84 | 579.Ø | 2 | 17.7Ø | 1515.2 | 3 | 15.27 | 962.1 | 3 | 16.39 |
| OTHER COPEPODS | 72Ø.3 | 2 | 21.8Ø | 421.8 | 4 | 12.9Ø | 1Ø6.1 | 8 | 1.Ø7 | 265.2 | 5 | 4.52 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 15.2 | 12 | Ø.15 | Ø.Ø | 15 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 15.2 | 11 | Ø.46 | 23.Ø | 11 | Ø.7Ø | Ø.Ø | 14 | Ø.ØØ | 3Ø.3 | 13 | Ø.52 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 3Ø.5 | 1Ø | Ø.92 | 46.Ø | 1Ø | 1.41 | Ø.Ø | 14 | Ø.ØØ | 37.9 | 11.5 | Ø.65 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø29.Ø | 1 | 31.14 | 1Ø39.1 | 1 | 31.77 | 1Ø45.5 | 4 | 1Ø.53 | 659.1 | 4 | 11.23 |
| Total Zooplankton | 3304.1 | | | 3270.7 | | | 9924.2 | | | 5871.2 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1Ø2.3 | 8.5 | 1.14 | 34.1 | 1Ø | Ø.4Ø | 7.3 | 14 | Ø.12 | 28.7 | 7 | 2.3Ø |
| PODON POLYPHEMOIDES | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | 1.2 | 15 | Ø.Ø9 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 477.3 | 5 | 5.33 | 738.6 | 4 | 8.72 | 857.6 | 2 | 14.69 | 41.9 | 6 | 3.35 |
| ACARTIA SPP.(COPEPODITES) | 659.1 | 4 | 7.36 | 465.9 | 5 | 5.5Ø | 25Ø7.3 | 1 | 42.96 | 529.3 | 1 | 42.3Ø |
| CORYCAEUS ANGLICUS | 1Ø2.3 | 8.5 | 1.14 | 68.2 | 9 | Ø.81 | 36.3 | 12 | Ø.62 | 22.8 | 9 | 1.82 |
| EUTERPINA ACUTIFRONS | 11.4 | 13 | Ø.13 | Ø.Ø | 14 | Ø.ØØ | 138.1 | 7 | 2.37 | 4.8 | 13 | Ø.38 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 17Ø.5 | 7 | 1.9Ø | 261.4 | 6 | 3.Ø9 | 1Ø9.Ø | 8 | 1.87 | 19.2 | 1Ø | 1.53 |
| OITHONA OCULATA | 34.1 | 11 | Ø.38 | Ø.Ø | 14 | Ø.ØØ | 58.1 | 9 | 1.ØØ | 7.2 | 11 | Ø.57 |
| PARACALANUS PARVUS | 1488.6 | 3 | 16.62 | 2295.5 | 2 | 27.11 | 661.3 | 3 | 11.33 | 159.3 | 3 | 12.73 |
| PARACALANUS PARVUS(COPEPODITES) | 3886.4 | 1 | 43.4Ø | 2625.Ø | 1 | 31.Ø1 | 356.1 | 6 | 6.1Ø | 116.2 | 4 | 9.28 |
| OTHER COPEPODS | 363.6 | 6 | 4.Ø6 | 25Ø.Ø | 7 | 2.95 | 625.Ø | 4 | 1Ø.71 | 61.1 | 5 | 4.88 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | 11.4 | 11.5 | Ø.13 | 43.6 | 11 | Ø.75 | 6.Ø | 12 | Ø.48 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 22.7 | 12 | Ø.25 | 11.4 | 11.5 | Ø.13 | 21.8 | 13 | Ø.37 | 3.6 | 14 | Ø.29 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 56.8 | 1Ø | Ø.63 | 79.5 | 8 | Ø.94 | 5Ø.9 | 1Ø | Ø.87 | 24.Ø | 8 | 1.91 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1579.5 | 2 | 17.64 | 1625.Ø | 3 | 19.19 | 363.4 | 5 | 6.23 | 226.3 | 2 | 18.Ø9 |
| Total Zooplankton | 8954.5 | | | 8465.9 | | | 5835.8 | | | 1251.5 | | |

PLANKTON STATION 8:ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 7.8 | 8 | 1.54 | 4.1 | 1Ø | Ø.74 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 46.1 | 5 | 9.12 | 28.Ø | 5.5 | 5.ØØ | 8.9 | 6 | 2.71 | 6.9 | 8 | 1.75 |
| ACARTIA SPP.(COPEPODITES) | 9Ø.2 | 3 | 17.83 | 139.4 | 2 | 24.88 | 1Ø3.8 | 1 | 31.78 | 119.4 | 1 | 3Ø.32 |
| CORYCAEUS ANGLICUS | 3.1 | 1Ø | Ø.61 | 7.8 | 8 | 1.39 | 5.1 | 8 | 1.55 | 1Ø.6 | 7 | 2.7Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 3.6 | 9 | Ø.72 | 4.7 | 9 | Ø.83 | 1.9 | 9.5 | Ø.58 | 6.2 | 9 | 1.59 |
| OITHONA OCULATA | 1.Ø | 11.5 | Ø.2Ø | Ø.5 | 13 | Ø.Ø9 | Ø.Ø | 12 | Ø.ØØ | 1.2 | 11 | Ø.32 |
| PARACALANUS PARVUS | 54.9 | 4 | 1Ø.86 | 43.Ø | 4 | 7.68 | 22.8 | 5 | 6.98 | 21.9 | 5 | 5.56 |
| PARACALANUS PARVUS(COPEPODITES) | 132.6 | 1 | 26.23 | 156.Ø | 1 | 27.84 | 92.4 | 2 | 28.29 | 11Ø.Ø | 2 | 27.94 |
| OTHER COPEPODS | 26.4 | 6 | 5.23 | 28.Ø | 5.5 | 5.ØØ | 53.8 | 3 | 16.47 | 43.1 | 4 | 1Ø.95 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.Ø | 11.5 | Ø.2Ø | 1.6 | 11 | Ø.28 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 24.4 | 7 | 4.82 | 17.6 | 7 | 3.15 | 5.7 | 7 | 1.74 | 11.2 | 6 | 2.86 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.5 | 13 | Ø.1Ø | 1.Ø | 12 | Ø.19 | 1.9 | 9.5 | Ø.58 | 1.9 | 1Ø | Ø.48 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 114.Ø | 2 | 22.54 | 128.5 | 3 | 22.94 | 3Ø.4 | 4 | 9.3Ø | 61.2 | 3 | 15.56 |
| Total Zooplankton | 505.7 | | | 560.1 | | | 326.6 | | | 393.8 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 77.5 | 9 | 2.2Ø | 128.7 | 7 | 3.58 | 1Ø.4 | 1Ø.5 | 1.Ø2 | 8.3 | 12 | Ø.48 |
| PODON POLYPHEMOIDES | Ø.Ø | 14.5 | Ø.ØØ | 32.2 | 13 | Ø.89 | 2.1 | 13 | Ø.2Ø | 2.1 | 15 | Ø.12 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 198.6 | 4 | 5.63 | 197.6 | 4 | 5.49 | 2Ø.7 | 8 | 2.Ø5 | 53.9 | 6 | 3.13 |
| ACARTIA SPP.(COPEPODITES) | 78Ø.Ø | 3 | 22.12 | 693.9 | 3 | 19.28 | 89.1 | 4 | 8.81 | 451.8 | 1 | 26.23 |
| CORYCAEUS ANGLICUS | 53.3 | 1Ø | 1.51 | 64.3 | 9.5 | 1.79 | 41.5 | 6 | 4.1Ø | 99.5 | 5 | 5.78 |
| EUTERPINA ACUTIFRONS | 9.7 | 12.5 | Ø.27 | Ø.Ø | 15 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 4.1 | 13.5 | Ø.24 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 96.9 | 8 | 2.75 | 133.3 | 6 | 3.7Ø | 24.9 | 7 | 2.46 | 41.5 | 9 | 2.41 |
| OITHONA OCULATA | 9.7 | 12.5 | Ø.27 | 46.Ø | 11 | 1.28 | 14.5 | 9 | 1.43 | 22.8 | 1Ø | 1.32 |
| PARACALANUS PARVUS | 164.7 | 5 | 4.67 | 179.2 | 5 | 4.98 | 6Ø.1 | 5 | 5.94 | 51.8 | 7.5 | 3.Ø1 |
| PARACALANUS PARVUS(COPEPODITES) | 93Ø.2 | 1 | 26.37 | 946.7 | 2 | 26.31 | 246.6 | 2 | 24.39 | 41Ø.4 | 2 | 23.83 |
| OTHER COPEPODS | 111.4 | 7 | 3.16 | 64.3 | 9.5 | 1.79 | 194.8 | 3 | 19.26 | 2Ø1.Ø | 4 | 11.67 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | 13.8 | 14 | Ø.38 | 1Ø.4 | 1Ø.5 | 1.Ø2 | 1Ø.4 | 11 | Ø.6Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 155.Ø | 6 | 4.4Ø | 96.5 | 8 | 2.68 | 6.2 | 12 | Ø.61 | 4.1 | 13.5 | Ø.24 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 33.9 | 11 | Ø.96 | 41.4 | 12 | 1.15 | Ø.Ø | 14.5 | Ø.ØØ | 51.8 | 7.5 | 3.Ø1 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 9Ø6.Ø | 2 | 25.69 | 96Ø.5 | 1 | 26.69 | 29Ø.2 | 1 | 28.69 | 3Ø8.8 | 3 | 17.93 |
| Total Zooplankton | 3527.1 | | | 3598.3 | | | 1011.4 | | | 1722.3 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 178.2 | 9 | 2.2Ø | 234.Ø | 9 | 2.17 | 25.4 | 11 | Ø.53 | Ø.Ø | 14.5 | Ø.ØØ |
| PODON POLYPHEMOIDES | 14.3 | 13 | Ø.18 | 42.6 | 12.5 | Ø.4Ø | 6.3 | 13.5 | Ø.13 | Ø.Ø | 14.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 47Ø.5 | 6 | 5.8Ø | 787.2 | 5 | 7.31 | 45Ø.5 | 5 | 9.34 | 18Ø.8 | 8 | 4.21 |
| ACARTIA SPP.(COPEPODITES) | 477.7 | 5 | 5.89 | 68Ø.9 | 6 | 6.32 | 742.4 | 3 | 15.39 | 1142.1 | 1 | 26.61 |
| CORYCAEUS ANGLICUS | 213.9 | 8 | 2.64 | 553.2 | 7 | 5.14 | 336.3 | 7 | 6.97 | 314.1 | 6 | 7.32 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 12.7 | 12 | Ø.26 | 9.5 | 13 | Ø.22 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 399.2 | 7 | 4.92 | 34Ø.4 | 8 | 3.16 | 165.Ø | 8 | 3.42 | 418.8 | 5 | 9.76 |
| OITHONA OCULATA | 57.Ø | 11.5 | Ø.7Ø | 85.1 | 11 | Ø.79 | 76.1 | 9 | 1.58 | 85.7 | 9 | 2.ØØ |
| PARACALANUS PARVUS | 1582.7 | 2 | 19.51 | 2361.7 | 2 | 21.94 | 425.1 | 6 | 8.82 | 266.5 | 7 | 6.21 |
| PARACALANUS PARVUS(COPEPODITES) | 1539.9 | 3 | 18.98 | 1829.8 | 3 | 17.ØØ | 774.1 | 2 | 16.Ø5 | 571.1 | 3 | 13.3Ø |
| OTHER COPEPODS | 549.Ø | 4 | 6.77 | 8Ø8.5 | 4 | 7.51 | 514.Ø | 4 | 1Ø.66 | 475.9 | 4 | 11.Ø9 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | 28.6 | 1Ø | Ø.67 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 57.Ø | 11.5 | Ø.7Ø | 42.6 | 12.5 | Ø.4Ø | 6.3 | 13.5 | Ø.13 | 19.Ø | 11.5 | Ø.44 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 1Ø6.9 | 1Ø | 1.32 | 1Ø6.4 | 1Ø | Ø.99 | 57.1 | 1Ø | 1.18 | 19.Ø | 11.5 | Ø.44 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2466.7 | 1 | 3Ø.4Ø | 2893.6 | 1 | 26.88 | 1231.Ø | 1 | 25.53 | 761.4 | 2 | 17.74 |
| Total Zooplankton | 8113.1 | | | 10766.0 | | | 4822.3 | | | 4292.5 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 92.7 | 6 | 1.99 | 39.8 | 7.5 | 1.93 | 48.9 | 9 | 1.Ø3 | 112.5 | 9 | 1.74 |
| PODON POLYPHEMOIDES | Ø.Ø | 13.5 | Ø.ØØ | 2.3 | 13 | Ø.11 | Ø.Ø | 15 | Ø.ØØ | 9.4 | 12.5 | Ø.15 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 85.6 | 7 | 1.84 | 39.8 | 7.5 | 1.93 | 179.3 | 7 | 3.77 | 187.5 | 8 | 2.91 |
| ACARTIA SPP.(COPEPODITES) | 64.2 | 8 | 1.38 | 32.8 | 9 | 1.59 | 513.6 | 3.5 | 1Ø.81 | 815.6 | 2 | 12.65 |
| CORYCAEUS ANGLICUS | 221.Ø | 5 | 4.75 | 11Ø.Ø | 5 | 5.35 | 277.2 | 6 | 5.83 | 5Ø6.3 | 5 | 7.85 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 13.5 | Ø.ØØ | 7.Ø | 11 | Ø.34 | 16.3 | 11.5 | Ø.34 | 9.4 | 12.5 | Ø.15 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.1 | 11 | Ø.15 | 4.7 | 12 | Ø.23 | 8.2 | 13.5 | Ø.17 | 9.4 | 12.5 | Ø.15 |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 16.3 | 11.5 | Ø.34 | Ø.Ø | 15 | Ø.ØØ |
| PARACALANUS PARVUS | 313.7 | 4 | 6.74 | 149.8 | 4 | 7.28 | 513.6 | 3.5 | 1Ø.81 | 3Ø9.4 | 6 | 4.8Ø |
| PARACALANUS PARVUS(COPEPODITES) | 848.4 | 3 | 18.22 | 554.8 | 2 | 26.96 | 1956.5 | 1 | 41.17 | 2681.2 | 1 | 41.57 |
| OTHER COPEPODS | 16Ø4.1 | 1 | 34.46 | 653.1 | 1 | 31.74 | 595.1 | 2 | 12.52 | 768.8 | 3.5 | 11.92 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14.5 | Ø.ØØ | 8.2 | 13.5 | Ø.17 | 9.4 | 12.5 | Ø.15 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 49.9 | 9 | 1.Ø7 | 42.1 | 6 | 2.Ø5 | 24.5 | 1Ø | Ø.51 | 28.1 | 1Ø | Ø.44 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 35.6 | 1Ø | Ø.77 | 18.7 | 1Ø | Ø.91 | 97.8 | 8 | 2.Ø6 | 234.4 | 7 | 3.63 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1333.2 | 2 | 28.64 | 4Ø2.6 | 3 | 19.57 | 497.3 | 5 | 1Ø.46 | 768.8 | 3.5 | 11.92 |
| Total Zooplankton | 4655.4 | | | 2057.6 | | | 4752.7 | | | 6450.0 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 52.1 | 8 | 1.26 | 114.1 | 5 | 5.22 | 3.2 | 11 | Ø.16 | 25.3 | 1Ø | 1.29 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 3.2 | 13 | Ø.16 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 4.7 | 11 | Ø.11 | 4.8 | 1Ø | Ø.22 | 79.3 | 7 | 4.Ø7 | 63.1 | 7 | 3.23 |
| ACARTIA SPP.(COPEPODITES) | 85.2 | 5 | 2.Ø6 | 47.5 | 8 | 2.17 | 317.3 | 2 | 16.26 | 359.8 | 2 | 18.42 |
| CORYCAEUS ANGLICUS | 71.Ø | 6 | 1.72 | 57.Ø | 6.5 | 2.61 | 1Ø1.5 | 6 | 5.2Ø | 69.4 | 6 | 3.55 |
| EUTERPINA ACUTIFRONS | 4.7 | 11 | Ø.11 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 3.2 | 13 | Ø.16 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.5 | 9 | Ø.23 | 4.8 | 1Ø | Ø.22 | 3.2 | 11 | Ø.16 | 6.3 | 11 | Ø.32 |
| OITHONA OCULATA | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 3.2 | 13 | Ø.16 |
| PARACALANUS PARVUS | 17Ø.5 | 4 | 4.12 | 128.3 | 4 | 5.87 | 155.5 | 4 | 7.97 | 135.7 | 5 | 6.95 |
| PARACALANUS PARVUS(COPEPODITES) | 658.1 | 3 | 15.9Ø | 399.2 | 3 | 18.26 | 843.9 | 1 | 43.25 | 76Ø.7 | 1 | 38.93 |
| OTHER COPEPODS | 1ØØ8.5 | 2 | 24.37 | 546.6 | 2 | 25.ØØ | 139.6 | 5 | 7.15 | 183.1 | 4 | 9.37 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 3.2 | 11 | Ø.16 | Ø.Ø | 15 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 56.8 | 7 | 1.37 | 57.Ø | 6.5 | 2.61 | 6.3 | 9 | Ø.33 | 28.4 | 9 | 1.45 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.7 | 11 | Ø.11 | 4.8 | 1Ø | Ø.22 | 34.9 | 8 | 1.79 | 41.Ø | 8 | 2.1Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2Ø12.3 | 1 | 48.63 | 822.2 | 1 | 37.61 | 263.3 | 3 | 13.5Ø | 271.5 | 3 | 13.89 |
| Total Zooplankton | 4138.3 | | | 2186.3 | | | 1951.1 | | | 1953.9 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 61.6 | 7 | 1.99 | 85.6 | 6.5 | 3.61 | 9.5 | 8.5 | Ø.49 | Ø.Ø | 14.5 | Ø.ØØ |
| PODON POLYPHEMOIDES | 14.2 | 9.5 | Ø.46 | 23.8 | 9 | 1.ØØ | 3.2 | 14 | Ø.16 | Ø.Ø | 14.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 151.5 | 6 | 4.91 | 85.6 | 6.5 | 3.61 | 97.9 | 4 | 5.Ø5 | 145.2 | 4 | 6.82 |
| ACARTIA SPP.(COPEPODITES) | 374.1 | 3 | 12.12 | 228.1 | 3 | 9.62 | 1Ø41.7 | 1 | 53.75 | 1Ø44.8 | 1 | 49.11 |
| CORYCAEUS ANGLICUS | 23.7 | 8 | Ø.77 | 8Ø.8 | 8 | 3.41 | 56.8 | 6 | 2.93 | 94.7 | 5 | 4.45 |
| EUTERPINA ACUTIFRONS | 4.7 | 13 | Ø.15 | Ø.Ø | 13.5 | Ø.ØØ | 6.3 | 11.5 | Ø.33 | 9.5 | 9 | Ø.45 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.5 | 11.5 | Ø.31 | 4.8 | 11 | Ø.2Ø | 6.3 | 11.5 | Ø.33 | 3.2 | 11.5 | Ø.15 |
| OITHONA OCULATA | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 15 | Ø.ØØ | 3.2 | 11.5 | Ø.15 |
| PARACALANUS PARVUS | 26Ø.4 | 4 | 8.44 | 175.9 | 4 | 7.41 | 53.7 | 7 | 2.77 | 44.2 | 7 | 2.Ø8 |
| PARACALANUS PARVUS(COPEPODITES) | 1Ø98.5 | 1 | 35.58 | 1Ø21.9 | 1 | 43.Ø9 | 236.7 | 3 | 12.21 | 173.6 | 3 | 8.16 |
| OTHER COPEPODS | 241.5 | 5 | 7.82 | 152.1 | 5 | 6.41 | 69.4 | 5 | 3.58 | 78.9 | 6 | 3.71 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | 6.3 | 11.5 | Ø.33 | 3.2 | 11.5 | Ø.15 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 14.2 | 9.5 | Ø.46 | 9.5 | 1Ø | Ø.4Ø | 9.5 | 8.5 | Ø.49 | 3.2 | 11.5 | Ø.15 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 9.5 | 11.5 | Ø.31 | Ø.Ø | 13.5 | Ø.ØØ | 6.3 | 11.5 | Ø.33 | 15.8 | 8 | Ø.74 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 823.9 | 2 | 26.69 | 5Ø3.8 | 2 | 21.24 | 334.6 | 2 | 17.26 | 5Ø8.2 | 2 | 23.89 |
| Total Zooplankton | 3087.1 | | | 2371.7 | | | 1938.1 | | | 2127.5 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1Ø7.4 | 6 | 1.76 | 96.9 | 7 | 1.17 | Ø.Ø | 1Ø.5 | Ø.ØØ | 74.Ø | 8 | 1.4Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 48.8 | 11 | Ø.8Ø | 38.8 | 1Ø.5 | Ø.47 | 266.7 | 7 | 3.92 | 369.8 | 6 | 6.98 |
| ACARTIA SPP.(COPEPODITES) | 78.1 | 9 | 1.28 | 58.1 | 8.5 | Ø.7Ø | 611.1 | 5 | 8.99 | 288.5 | 7 | 5.45 |
| CORYCAEUS ANGLICUS | 341.8 | 5 | 5.59 | 135.7 | 5.5 | 1.64 | 511.1 | 6 | 7.52 | 399.4 | 5 | 7.54 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 97.7 | 7 | 1.6Ø | 38.8 | 1Ø.5 | Ø.47 | 55.6 | 9 | Ø.82 | Ø.Ø | 11 | Ø.ØØ |
| PARACALANUS PARVUS | 1435.5 | 2 | 23.48 | 248Ø.6 | 2 | 29.91 | 1288.9 | 3 | 18.95 | 1479.3 | 1 | 27.93 |
| PARACALANUS PARVUS(COPEPODITES) | 1Ø74.2 | 3 | 17.57 | 2558.1 | 1 | 3Ø.84 | 1433.3 | 2 | 21.Ø8 | 895.Ø | 3 | 16.9Ø |
| OTHER COPEPODS | 527.3 | 4 | 8.63 | 717.1 | 4 | 8.64 | 1477.8 | 1 | 21.73 | 939.3 | 2 | 17.74 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 87.9 | 8 | 1.44 | 135.7 | 5.5 | 1.64 | Ø.Ø | 1Ø.5 | Ø.ØØ | 59.2 | 9 | 1.12 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 58.6 | 1Ø | Ø.96 | 58.1 | 8.5 | Ø.7Ø | 77.8 | 8 | 1.14 | 51.8 | 1Ø | Ø.98 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2255.9 | 1 | 36.9Ø | 1976.7 | 3 | 23.83 | 1Ø77.8 | 4 | 15.85 | 739.6 | 4 | 13.97 |
| Total Zooplankton | 6113.3 | | | 8294.6 | | | 6800.0 | | | 5295.9 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCEPA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 17Ø.2 | 5 | 6.26 | 428.Ø | 6 | 5.77 | 233.Ø | 8 | 2.97 | 134.9 | 7 | 3.49 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 19.5 | 9 | Ø.72 | 48.6 | 9 | Ø.66 | 288.5 | 7 | 3.68 | 155.3 | 8 | 2.93 |
| ACARTIA SPP.(COPEPODITES) | 82.7 | 7 | 3.Ø4 | 2Ø4.3 | 8 | 2.75 | 1575.4 | 3 | 2Ø.Ø8 | 739.6 | 2 | 13.95 |
| CORYCAEUS ANGLICUS | 68.1 | 8 | 2.5Ø | 35Ø.2 | 7 | 4.72 | 499.3 | 6 | 6.36 | 451.2 | 5 | 8.51 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 12 | Ø.ØØ | 29.2 | 1Ø | Ø.39 | 11.1 | 1Ø.5 | Ø.14 | 22.2 | 11.5 | Ø.42 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 7.4 | 13 | Ø.14 |
| PARACALANUS PARVUS | 126.5 | 6 | 4.65 | 486.4 | 5 | 6.55 | 543.6 | 5 | 6.93 | 414.2 | 6 | 7.81 |
| PARACALANUS PARVUS(COPEPODITES) | 549.6 | 2 | 2Ø.21 | 2Ø33.1 | 1 | 27.39 | 2241.1 | 1 | 28.57 | 19ØØ.9 | 1 | 35.84 |
| OTHER COPEPODS | 466.9 | 3.5 | 17.17 | 758.8 | 4 | 1Ø.22 | 687.9 | 4 | 8.77 | 65Ø.9 | 3 | 12.27 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 22.2 | 11.5 | Ø.42 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 466.9 | 3.5 | 17.17 | 1235.4 | 3 | 16.64 | 77.7 | 9 | Ø.99 | 88.8 | 9 | 1.67 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.9 | 1Ø | Ø.18 | Ø.Ø | 12 | Ø.ØØ | 11.1 | 1Ø.5 | Ø.14 | 59.2 | 1Ø | 1.12 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 763.6 | 1 | 28.Ø9 | 1848.2 | 2 | 24.9Ø | 1675.3 | 2 | 21.36 | 6Ø6.5 | 4 | 11.44 |
| Total Zooplankton | 2718.9 | | | 7422.2 | | | 7843.9 | | | 5303.3 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1Ø7.4 | 6 | 3.61 | 254.4 | 6 | 4.89 | 21Ø.5 | 8 | 3.46 | 113.6 | 1Ø | 1.88 |
| PODON POLYPHEMOIDES | 4.9 | 11.5 | Ø.16 | 7.3 | 11.5 | Ø.14 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 34.2 | 9 | 1.15 | 29.1 | 9 | Ø.56 | 121.9 | 9 | 2.ØØ | 151.5 | 8.5 | 2.51 |
| ACARTIA SPP.(COPEPODITES) | 2ØØ.2 | 4 | 6.73 | 159.9 | 7 | 3.Ø7 | 642.5 | 3 | 1Ø.56 | 893.9 | 2 | 14.82 |
| CORYCAEUS ANGLICUS | 83.Ø | 7 | 2.79 | 79.9 | 8 | 1.54 | 398.8 | 6 | 6.56 | 34Ø.9 | 6 | 5.65 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 4.9 | 11.5 | Ø.16 | 7.3 | 11.5 | Ø.14 | 22.2 | 12 | Ø.36 | 3Ø.3 | 11 | Ø.5Ø |
| PARACALANUS PARVUS | 141.6 | 5 | 4.76 | 472.4 | 3 | 9.Ø8 | 625.9 | 4 | 1Ø.29 | 4Ø1.5 | 5 | 6.66 |
| PARACALANUS PARVUS(COPEPODITES) | 1362.3 | 1 | 45.81 | 2325.6 | 1 | 44.69 | 2354.1 | 1 | 38.71 | 2318.2 | 1 | 38.44 |
| OTHER COPEPODS | 317.4 | 3 | 1Ø.67 | 436.Ø | 4 | 8.38 | 62Ø.4 | 5 | 1Ø.2Ø | 628.8 | 4 | 1Ø.43 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 55.4 | 11 | Ø.91 | 22.7 | 12 | Ø.38 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 43.9 | 8 | 1.48 | 341.6 | 5 | 6.56 | 221.6 | 7 | 3.64 | 151.5 | 8.5 | 2.51 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 29.3 | 1Ø | Ø.99 | 14.5 | 1Ø | Ø.28 | 66.5 | 1Ø | 1.Ø9 | 159.1 | 7 | 2.64 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 644.5 | 2 | 21.67 | 1Ø75.6 | 2 | 2Ø.67 | 742.2 | 2 | 12.2Ø | 818.2 | 3 | 13.57 |
| Total Zooplankton | 2973.6 | | | 5203.5 | | | 6082.0 | | | 6030.3 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 9, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 2Ø4.3 | 7 | 1.92 | 363.4 | 5 | 3.39 | 99.9 | 9 | 1.61 | 158.5 | 8 | 2.99 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 218.9 | 6 | 2.Ø5 | 72.7 | 8.5 | Ø.68 | 532.5 | 5 | 8.6Ø | 497.1 | 5 | 9.39 |
| ACARTIA SPP.(COPEPODITES) | Ø.Ø | 11.5 | Ø.ØØ | 43.6 | 1Ø | Ø.41 | 343.9 | 7 | 5.56 | 36Ø.2 | 7 | 6.8Ø |
| CORYCAEUS ANGLICUS | 58.4 | 8 | Ø.55 | 145.3 | 6 | 1.36 | 743.3 | 4 | 12.Ø1 | 648.4 | 3 | 12.24 |
| EUTERPINA ACUTIFRONS | 14.6 | 1Ø | Ø.14 | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ |
| PARACALANUS PARVUS | 1532.1 | 4 | 14.38 | 1482.6 | 4 | 13.84 | 432.7 | 6 | 6.99 | 4Ø3.5 | 6 | 7.62 |
| PARACALANUS PARVUS(COPEPODITES) | 3779.2 | 1 | 35.48 | 43Ø2.3 | 1 | 4Ø.16 | 18Ø8.4 | 1 | 29.21 | 1361.7 | 1 | 25.71 |
| OTHER COPEPODS | 1853.1 | 3 | 17.4Ø | 19Ø4.1 | 3 | 17.77 | 1Ø87.3 | 2 | 17.56 | 1Ø51.9 | 2 | 19.86 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 364.8 | 5 | 3.42 | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 29.2 | 9 | Ø.27 | 72.7 | 8.5 | Ø.68 | 44.4 | 1Ø | Ø.72 | 36.Ø | 1Ø | Ø.68 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 11.5 | Ø.ØØ | 116.3 | 7 | 1.Ø9 | 166.4 | 8 | 2.69 | 151.3 | 9 | 2.86 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2597.3 | 2 | 24.38 | 22Ø9.3 | 2 | 2Ø.62 | 932.Ø | 3 | 15.Ø5 | 626.8 | 4 | 11.84 |
| Total Zooplankton | 10651.8 | | | 10712.2 | | | 6190.8 | | | 5295.4 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 7.8 | 8 | 1.04 | 3.7 | 9.5 | 0.83 | 0.0 | 13 | 0.00 | 0.0 | 13.5 | 0.00 |
| PODON POLYPHEMOIDES | 3.0 | 12 | 0.40 | 3.0 | 12 | 0.69 | 0.0 | 13 | 0.00 | 0.0 | 13.5 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 12.0 | 7 | 1.60 | 11.6 | 6 | 2.63 | 303.0 | 7 | 4.68 | 699.5 | 7 | 5.04 |
| ACARTIA SPP.(COPEPODITES) | 490.4 | 1 | 65.22 | 253.7 | 1 | 57.62 | 2628.8 | 1 | 40.63 | 3393.8 | 2 | 24.46 |
| CORYCAEUS ANGLICUS | 3.6 | 11 | 0.48 | 0.6 | 14.5 | 0.14 | 0.0 | 13 | 0.00 | 0.0 | 13.5 | 0.00 |
| EUTERPINA ACUTIFRONS | 0.0 | 14.5 | 0.00 | 3.0 | 12 | 0.69 | 0.0 | 13 | 0.00 | 38.9 | 11 | 0.28 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 17.5 | 5 | 2.32 | 5.5 | 8 | 1.25 | 90.9 | 8 | 1.41 | 64.8 | 10 | 0.47 |
| OITHONA OCULATA | 7.2 | 9 | 0.96 | 24.4 | 4 | 5.54 | 1060.6 | 2 | 16.39 | 3406.7 | 1 | 24.56 |
| PARACALANUS PARVUS | 32.5 | 4 | 4.33 | 9.8 | 7 | 2.22 | 643.9 | 4 | 9.95 | 1243.5 | 4.5 | 8.96 |
| PARACALANUS PARVUS(COPEPODITES) | 91.0 | 2 | 12.10 | 67.1 | 2 | 15.24 | 803.0 | 3 | 12.41 | 2862.7 | 3 | 20.63 |
| OTHER COPEPODS | 15.1 | 6 | 2.00 | 12.8 | 5 | 2.91 | 401.5 | 6 | 6.21 | 738.3 | 6 | 5.32 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14.5 | 0.00 | 0.6 | 14.5 | 0.14 | 0.0 | 13 | 0.00 | 0.0 | 13.5 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1.2 | 13 | 0.16 | 3.0 | 12 | 0.69 | 60.6 | 9 | 0.94 | 103.6 | 8 | 0.75 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.8 | 10 | 0.64 | 3.7 | 9.5 | 0.83 | 22.7 | 10 | 0.35 | 77.7 | 9 | 0.56 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 65.7 | 3 | 8.73 | 37.8 | 3 | 8.59 | 454.5 | 5 | 7.03 | 1243.5 | 4.5 | 8.96 |
| Total Zooplankton | 751.8 | | | 440.2 | | | 6469.7 | | | 13873.1 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 50.5 | 9 | 1.66 | 75.8 | 8 | 2.00 | 22.7 | 11 | 0.54 | 15.2 | 12.5 | 0.33 |
| PODON POLYPHEMOIDES | 6.3 | 13 | 0.21 | 0.0 | 14.5 | 0.00 | 0.0 | 14.5 | 0.00 | 15.2 | 12.5 | 0.33 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 132.6 | 6 | 4.35 | 143.9 | 7 | 3.80 | 651.5 | 3 | 15.44 | 522.7 | 4 | 11.39 |
| ACARTIA SPP.(COPEPODITES) | 432.4 | 4 | 14.20 | 500.0 | 3 | 13.19 | 1143.9 | 1 | 27.11 | 1575.8 | 1 | 34.32 |
| CORYCAEUS ANGLICUS | 97.9 | 8 | 3.21 | 45.5 | 10 | 1.20 | 113.6 | 8 | 2.69 | 136.4 | 8.5 | 2.97 |
| EUTERPINA ACUTIFRONS | 0.0 | 14.5 | 0.00 | 0.0 | 14.5 | 0.00 | 60.6 | 10 | 1.44 | 45.5 | 11 | 0.99 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 25.3 | 12 | 0.83 | 3.8 | 13 | 0.10 | 15.2 | 12.5 | 0.36 | 68.2 | 10 | 1.49 |
| OITHONA OCULATA | 44.2 | 10.5 | 1.45 | 37.9 | 11 | 1.00 | 810.6 | 2 | 19.21 | 666.7 | 2 | 14.52 |
| PARACALANUS PARVUS | 116.8 | 7 | 3.83 | 200.8 | 6 | 5.29 | 68.2 | 9 | 1.62 | 136.4 | 8.5 | 2.97 |
| PARACALANUS PARVUS(COPEPODITES) | 918.6 | 1 | 30.16 | 1178.0 | 1 | 31.07 | 325.8 | 6 | 7.72 | 227.3 | 6 | 4.95 |
| OTHER COPEPODS | 483.0 | 2 | 15.85 | 420.5 | 4 | 11.09 | 363.6 | 5 | 8.62 | 530.3 | 3 | 11.55 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14.5 | 0.00 | 7.6 | 12 | 0.20 | 15.2 | 12.5 | 0.36 | 7.6 | 14.5 | 0.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 44.2 | 10.5 | 1.45 | 56.8 | 9 | 1.50 | 0.0 | 14.5 | 0.00 | 7.6 | 14.5 | 0.17 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 214.6 | 5 | 7.05 | 303.0 | 5 | 7.99 | 204.5 | 7 | 4.85 | 204.5 | 7 | 4.46 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 479.8 | 3 | 15.75 | 818.2 | 2 | 21.58 | 424.2 | 4 | 10.05 | 431.8 | 5 | 9.41 |
| Total Zooplankton | 3046.1 | | | 3791.7 | | | 4219.7 | | | 4590.9 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 57.2 | 7 | 1.27 | 11.4 | 9 | 0.27 | 7.6 | 14 | 0.21 | 0.0 | 15 | 0.00 |
| PODON POLYPHEMOIDES | 0.0 | 13 | 0.00 | 3.8 | 11.5 | 0.08 | 22.7 | 9.5 | 0.62 | 22.7 | 11.5 | 0.36 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 777.4 | 2 | 17.32 | 878.8 | 2 | 20.71 | 348.5 | 3 | 9.51 | 712.1 | 2 | 11.19 |
| ACARTIA SPP.(COPEPODITES) | 2282.8 | 1 | 50.85 | 1878.8 | 1 | 44.29 | 2143.9 | 1 | 58.53 | 3856.1 | 1 | 60.60 |
| CORYCAEUS ANGLICUS | 0.0 | 13 | 0.00 | 3.8 | 11.5 | 0.08 | 22.7 | 9.5 | 0.62 | 22.7 | 11.5 | 0.36 |
| EUTERPINA ACUTIFRONS | 0.0 | 13 | 0.00 | 0.0 | 14.5 | 0.00 | 18.9 | 11.5 | 0.52 | 37.9 | 10 | 0.60 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 11.4 | 8.5 | 0.25 | 22.7 | 8 | 0.54 | 75.8 | 8 | 2.07 | 60.6 | 9 | 0.95 |
| OITHONA OCULATA | 7.6 | 10 | 0.17 | 3.8 | 11.5 | 0.08 | 18.9 | 11.5 | 0.52 | 181.8 | 6 | 2.86 |
| PARACALANUS PARVUS | 320.1 | 4 | 7.13 | 363.6 | 4 | 8.57 | 121.2 | 6 | 3.31 | 265.2 | 5 | 4.17 |
| PARACALANUS PARVUS(COPEPODITES) | 480.2 | 3 | 10.70 | 526.5 | 3 | 12.41 | 185.6 | 5 | 5.07 | 90.9 | 7.5 | 1.43 |
| OTHER COPEPODS | 285.8 | 5 | 6.37 | 246.2 | 6 | 5.80 | 204.5 | 4 | 5.58 | 613.6 | 3 | 9.64 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 11.4 | 8.5 | 0.25 | 0.0 | 14.5 | 0.00 | 11.4 | 13 | 0.31 | 7.6 | 13.5 | 0.12 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 0.0 | 13 | 0.00 | 26.5 | 7 | 0.62 | 0.0 | 15 | 0.00 | 7.6 | 13.5 | 0.12 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 0.0 | 13 | 0.00 | 3.8 | 11.5 | 0.08 | 113.6 | 7 | 3.10 | 90.9 | 7.5 | 1.43 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 255.3 | 6 | 5.69 | 272.7 | 5 | 6.43 | 367.4 | 2 | 10.03 | 393.9 | 4 | 6.19 |
| Total Zooplankton | 4489.3 | | | 4242.4 | | | 3662.9 | | | 6363.6 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 70.3 | 8 | 3.00 | 94.0 | 8.5 | 3.26 | 2.5 | 14.5 | 0.21 | 2.4 | 10 | 0.18 |
| PODON POLYPHEMOIDES | 0.0 | 14.5 | 0.00 | 4.8 | 14 | 0.17 | 12.3 | 9 | 1.03 | 0.0 | 13 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 283.6 | 4 | 12.10 | 279.5 | 4 | 9.71 | 66.3 | 7 | 5.56 | 161.4 | 3 | 12.16 |
| ACARTIA SPP.(COPEPODITES) | 373.3 | 3 | 15.93 | 657.8 | 2 | 22.85 | 279.8 | 2 | 23.46 | 448.2 | 1 | 33.76 |
| CORYCAEUS ANGLICUS | 17.0 | 11 | 0.72 | 16.9 | 10.5 | 0.59 | 19.6 | 8 | 1.65 | 7.2 | 9 | 0.54 |
| EUTERPINA ACUTIFRONS | 4.8 | 13 | 0.21 | 7.2 | 13 | 0.25 | 2.5 | 14.5 | 0.21 | 9.6 | 8 | 0.73 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 244.8 | 5 | 10.44 | 224.1 | 5 | 7.78 | 4.9 | 12.5 | 0.41 | 24.1 | 7 | 1.81 |
| OITHONA OCULATA | 17.0 | 11 | 0.72 | 14.5 | 12 | 0.50 | 7.4 | 10.5 | 0.62 | 31.3 | 6 | 2.36 |
| PARACALANUS PARVUS | 484.8 | 1 | 20.68 | 453.0 | 3 | 15.73 | 189.0 | 3 | 15.84 | 426.5 | 2 | 32.12 |
| PARACALANUS PARVUS(COPEPODITES) | 177.0 | 6 | 7.55 | 216.9 | 6 | 7.53 | 78.5 | 6 | 6.58 | 113.3 | 4 | 8.53 |
| OTHER COPEPODS | 126.1 | 7 | 5.38 | 110.8 | 7 | 3.85 | 100.6 | 5 | 8.44 | 103.6 | 5 | 7.80 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14.5 | 0.00 | 0.0 | 15 | 0.00 | 7.4 | 10.5 | 0.62 | 0.0 | 13 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17.0 | 11 | 0.72 | 16.9 | 10.5 | 0.59 | 4.9 | 12.5 | 0.41 | 0.0 | 13 | 0.00 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 46.1 | 9 | 1.96 | 94.0 | 8.5 | 3.26 | 105.5 | 4 | 8.85 | 0.0 | 13 | 0.00 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 482.4 | 2 | 20.58 | 689.2 | 1 | 23.93 | 311.7 | 1 | 26.13 | 0.0 | 13 | 0.00 |
| Total Zooplankton | 2344.2 | | | 2879.5 | | | 1192.6 | | | 1686.7 | | |

PLANKTON STATION 8:ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 M | | | | | | 5-10 M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 72.5 | 7 | 3.24 | 59.3 | 6 | 4.91 | 9.2 | 7 | 2.07 | 32.3 | 6 | 3.86 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 97.5 | 6 | 4.36 | 27.2 | 8 | 2.25 | 12.3 | 6 | 2.76 | 12.4 | 8 | 1.48 |
| ACARTIA SPP.(COPEPODITES) | 230.0 | 4 | 10.29 | 288.9 | 1 | 23.93 | 157.1 | 1 | 35.36 | 101.9 | 4 | 12.17 |
| CORYCAEUS ANGLICUS | 5.0 | 11.5 | 0.22 | 12.3 | 10 | 1.02 | 6.7 | 8 | 1.52 | 7.5 | 10 | 0.89 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 5.0 | 11.5 | 0.22 | 9.9 | 12 | 0.82 | 1.8 | 10 | 0.41 | 12.4 | 8 | 1.48 |
| OITHONA OCULATA | 22.5 | 9 | 1.01 | 12.3 | 10 | 1.02 | 1.2 | 11 | 0.28 | 2.5 | 13 | 0.30 |
| PARACALANUS PARVUS | 157.5 | 5 | 7.05 | 37.0 | 7 | 3.07 | 28.2 | 4 | 6.35 | 124.2 | 3 | 14.84 |
| PARACALANUS PARVUS(COPEPODITES) | 380.0 | 3 | 17.00 | 256.8 | 3 | 21.27 | 138.7 | 2 | 31.22 | 305.6 | 1 | 36.50 |
| OTHER COPEPODS | 807.5 | 1 | 36.13 | 148.1 | 4 | 12.27 | 17.8 | 5 | 4.01 | 59.6 | 5 | 7.12 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.5 | 13 | 0.11 | 7.4 | 13 | 0.61 | 0.0 | 13 | 0.00 | 5.0 | 11.5 | 0.59 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17.5 | 10 | 0.78 | 12.3 | 10 | 1.02 | 3.1 | 9 | 0.69 | 12.4 | 8 | 1.48 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 32.5 | 8 | 1.45 | 71.6 | 5 | 5.93 | 0.6 | 12 | 0.14 | 5.0 | 11.5 | 0.59 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 405.0 | 2 | 18.12 | 264.2 | 2 | 21.88 | 67.5 | 3 | 15.19 | 156.5 | 2 | 18.69 |
| Total Zooplankton | 2235.0 | | | 1207.4 | | | 444.2 | | | 837.3 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 595.9 | 6 | 6.43 | 466.9 | 7 | 4.75 | 155.4 | 4.5 | 8.41 | 125.6 | 7 | 5.40 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 363.4 | 8 | 3.92 | 569.1 | 5.5 | 5.79 | 97.2 | 7 | 5.25 | 254.5 | 4 | 10.94 |
| ACARTIA SPP.(COPEPODITES) | 857.6 | 3 | 9.25 | 1502.9 | 3 | 15.30 | 369.2 | 2 | 19.96 | 773.2 | 1 | 33.24 |
| CORYCAEUS ANGLICUS | 421.5 | 7 | 4.55 | 321.0 | 8 | 3.27 | 126.3 | 6 | 6.83 | 145.0 | 5 | 6.23 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 12.5 | 0.00 | 14.6 | 12 | 0.15 | 0.0 | 12.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| OITHONA OCULATA | 0.0 | 12.5 | 0.00 | 14.6 | 12 | 0.15 | 0.0 | 12.5 | 0.00 | 0.0 | 12.5 | 0.00 |
| PARACALANUS PARVUS | 784.9 | 5 | 8.46 | 744.2 | 4 | 7.58 | 64.8 | 9 | 3.50 | 74.1 | 8.5 | 3.19 |
| PARACALANUS PARVUS(COPEPODITES) | 3008.7 | 1 | 32.45 | 3253.9 | 1 | 33.14 | 304.4 | 3 | 16.46 | 376.9 | 2 | 16.20 |
| OTHER COPEPODS | 814.0 | 4 | 8.78 | 569.1 | 5.5 | 5.79 | 155.4 | 4.5 | 8.41 | 128.9 | 6 | 5.54 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 14.5 | 11 | 0.16 | 14.6 | 12 | 0.15 | 6.5 | 11 | 0.35 | 19.3 | 11 | 0.83 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 130.8 | 9 | 1.41 | 233.5 | 9 | 2.38 | 81.0 | 8 | 4.38 | 38.7 | 10 | 1.66 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 101.7 | 10 | 1.10 | 87.5 | 10 | 0.89 | 45.3 | 10 | 2.45 | 74.1 | 8.5 | 3.19 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2180.2 | 2 | 23.51 | 2028.2 | 2 | 20.65 | 443.7 | 1 | 23.99 | 315.7 | 3 | 13.57 |
| Total Zooplankton | 4596.5 | | | 9820.0 | | | 1849.1 | | | 2326.0 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 285.2 | 5 | 6.81 | 242.4 | 5 | 5.55 | 97.9 | 8 | 3.68 | 0.0 | 13.5 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 670.2 | 3 | 16.01 | 577.5 | 3 | 13.21 | 511.4 | 2 | 19.22 | 82.1 | 6 | 2.44 |
| ACARTIA SPP.(COPEPODITES) | 242.4 | 6 | 5.79 | 178.2 | 6 | 4.08 | 356.7 | 4 | 13.40 | 694.4 | 2 | 20.64 |
| CORYCAEUS ANGLICUS | 92.7 | 9 | 2.21 | 106.9 | 9 | 2.45 | 85.2 | 9 | 3.20 | 18.9 | 10 | 0.56 |
| EUTERPINA ACUTIFRONS | 0.0 | 12.5 | 0.00 | 7.1 | 11 | 0.16 | 3.2 | 13 | 0.12 | 18.9 | 10 | 0.56 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 0.0 | 12.5 | 0.00 | 0.0 | 13 | 0.00 | 6.3 | 10.5 | 0.24 | 0.0 | 13.5 | 0.00 |
| OITHONA OCULATA | 0.0 | 12.5 | 0.00 | 0.0 | 13 | 0.00 | 6.3 | 10.5 | 0.24 | 75.8 | 7 | 2.25 |
| PARACALANUS PARVUS | 128.3 | 8 | 3.07 | 128.3 | 8 | 2.94 | 142.0 | 7 | 5.34 | 101.0 | 5 | 3.00 |
| PARACALANUS PARVUS(COPEPODITES) | 991.0 | 2 | 23.68 | 1190.6 | 2 | 27.24 | 606.1 | 1 | 22.78 | 246.2 | 3 | 7.32 |
| OTHER COPEPODS | 406.4 | 4 | 9.71 | 506.2 | 4 | 11.58 | 230.4 | 5 | 8.66 | 1868.7 | 1 | 55.53 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 12.5 | 0.00 | 0.0 | 13 | 0.00 | 3.2 | 13 | 0.12 | 18.9 | 10 | 0.56 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 35.6 | 10 | 0.85 | 64.2 | 10 | 1.47 | 3.2 | 13 | 0.12 | 6.3 | 12 | 0.19 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 221.0 | 7 | 5.28 | 171.1 | 7 | 3.92 | 173.6 | 6 | 6.52 | 63.1 | 8 | 1.88 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1112.2 | 1 | 26.58 | 1197.7 | 1 | 27.41 | 435.6 | 3 | 16.37 | 170.5 | 4 | 5.07 |
| Total Zooplankton | 4184.9 | | | 4370.2 | | | 2661.0 | | | 3364.9 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 312.5 | 5 | 5.98 | 377.9 | 4 | 7.09 | 69.4 | 8 | 1.55 | 0.0 | 13 | 0.00 |
| PODON POLYPHEMOIDES | 12.7 | 12 | 0.24 | 57.0 | 10 | 1.07 | 0.0 | 13.5 | 0.00 | 0.0 | 13 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 228.0 | 6.5 | 4.37 | 256.7 | 7 | 4.81 | 214.6 | 7 | 4.80 | 186.6 | 7 | 5.11 |
| ACARTIA SPP.(COPEPODITES) | 793.9 | 3 | 15.20 | 663.0 | 3 | 12.43 | 1369.9 | 1 | 30.61 | 1156.7 | 1 | 31.69 |
| CORYCAEUS ANGLICUS | 181.6 | 8 | 3.48 | 213.9 | 8 | 4.01 | 284.1 | 5 | 6.35 | 230.1 | 6 | 6.30 |
| EUTERPINA ACUTIFRONS | 0.0 | 14.5 | 0.00 | 7.1 | 13.5 | 0.13 | 18.9 | 11 | 0.42 | 24.9 | 9 | 0.68 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 12.7 | 12 | 0.24 | 7.1 | 13.5 | 0.13 | 0.0 | 13.5 | 0.00 | 6.2 | 10 | 0.17 |
| OITHONA OCULATA | 0.0 | 14.5 | 0.00 | 7.1 | 13.5 | 0.13 | 0.0 | 13.5 | 0.00 | 0.0 | 13 | 0.00 |
| PARACALANUS PARVUS | 485.6 | 4 | 9.30 | 327.9 | 6 | 6.15 | 252.5 | 6 | 5.64 | 292.3 | 5 | 8.01 |
| PARACALANUS PARVUS(COPEPODITES) | 2035.5 | 1 | 38.97 | 1654.0 | 1 | 31.02 | 1130.1 | 2 | 25.25 | 908.0 | 2 | 24.87 |
| OTHER COPEPODS | 228.0 | 6.5 | 4.37 | 356.5 | 5 | 6.68 | 353.5 | 4 | 7.90 | 360.7 | 4 | 9.88 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 12.7 | 12 | 0.24 | 7.1 | 13.5 | 0.13 | 0.0 | 13.5 | 0.00 | 0.0 | 13 | 0.00 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 59.1 | 9 | 1.13 | 42.8 | 11 | 0.80 | 31.6 | 9.5 | 0.71 | 0.0 | 13 | 0.00 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 29.6 | 10 | 0.57 | 78.4 | 9 | 1.47 | 31.6 | 9.5 | 0.71 | 118.2 | 8 | 3.24 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 831.9 | 2 | 15.93 | 1276.1 | 2 | 23.93 | 719.7 | 3 | 16.08 | 366.9 | 3 | 10.05 |
| Total Zooplankton | 5223.8 | | | 5332.7 | | | 4476.0 | | | 3650.5 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 168.7 | 4.5 | 6.17 | 134.1 | 5 | 6.51 | 119.9 | 9 | 3.06 | 6.3 | 13 | 0.33 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 166.3 | 6 | 6.09 | 91.0 | 6.5 | 4.42 | 542.9 | 3 | 13.85 | 145.2 | 5 | 7.54 |
| ACARTIA SPP.(COPEPODITES) | 106.9 | 7 | 3.91 | 47.9 | 10 | 2.33 | 126.3 | 8 | 3.22 | 75.8 | 8 | 3.93 |
| CORYCAEUS ANGLICUS | 35.6 | 9 | 1.30 | 62.3 | 8.5 | 3.02 | 195.7 | 6 | 4.99 | 164.1 | 3.5 | 8.52 |
| EUTERPINA ACUTIFRONS | 4.8 | 13 | 0.17 | 4.8 | 12 | 0.23 | 18.9 | 14 | 0.48 | 25.3 | 10 | 1.31 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 16.6 | 11 | 0.61 | 19.2 | 11 | 0.93 | 44.2 | 12 | 1.13 | 9.5 | 12 | 0.49 |
| OITHONA OCULATA | 4.8 | 13 | 0.17 | 0.0 | 13.5 | 0.00 | 56.8 | 10 | 1.45 | 69.4 | 9 | 3.61 |
| PARACALANUS PARVUS | 437.3 | 2 | 16.00 | 282.6 | 3 | 13.72 | 833.3 | 2 | 21.26 | 789.1 | 1 | 40.98 |
| PARACALANUS PARVUS(COPEPODITES) | 168.7 | 4.5 | 6.17 | 177.2 | 4 | 8.60 | 322.0 | 5 | 8.21 | 262.0 | 2 | 13.61 |
| OTHER COPEPODS | 297.1 | 3 | 10.87 | 316.1 | 2 | 15.35 | 460.9 | 4 | 11.76 | 110.5 | 6 | 5.74 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 4.8 | 13 | 0.17 | 0.0 | 13.5 | 0.00 | 31.6 | 13 | 0.81 | 15.8 | 11 | 0.82 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 59.4 | 8 | 2.17 | 91.0 | 6.5 | 4.42 | 50.5 | 11 | 1.29 | 3.2 | 14 | 0.16 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 30.9 | 10 | 1.13 | 62.3 | 8.5 | 3.02 | 164.1 | 7 | 4.19 | 85.2 | 7 | 4.43 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1231.0 | 1 | 45.04 | 771.1 | 1 | 37.44 | 953.3 | 1 | 24.32 | 164.1 | 3.5 | 8.52 |
| Total Zooplankton | 2732.9 | | | 2059.4 | | | 3920.5 | | | 1925.5 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 327.9 | 6 | 4.84 | 152.7 | 8 | 1.79 | 37.9 | 9.5 | 1.02 | 12.7 | 12.5 | 0.42 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 442.0 | 5 | 6.53 | 543.9 | 6 | 6.38 | 473.5 | 3 | 12.80 | 691.6 | 2 | 22.71 |
| ACARTIA SPP.(COPEPODITES) | 1055.1 | 2 | 15.58 | 925.6 | 3 | 10.86 | 1313.1 | 1 | 35.49 | 996.2 | 1 | 32.71 |
| CORYCAEUS ANGLICUS | 256.7 | 7 | 3.79 | 124.0 | 9.5 | 1.46 | 145.2 | 6 | 3.92 | 95.2 | 7.5 | 3.13 |
| EUTERPINA ACUTIFRONS | 42.8 | 11 | 0.63 | 0.0 | 13.5 | 0.00 | 25.3 | 12.5 | 0.68 | 25.4 | 11 | 0.83 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 99.8 | 9 | 1.47 | 286.3 | 7 | 3.36 | 37.9 | 9.5 | 1.02 | 31.7 | 10 | 1.04 |
| OITHONA OCULATA | 0.0 | 13.5 | 0.00 | 66.8 | 11 | 0.78 | 63.1 | 8 | 1.71 | 76.1 | 9 | 2.50 |
| PARACALANUS PARVUS | 513.3 | 4 | 7.58 | 620.2 | 5 | 7.28 | 126.3 | 7 | 3.41 | 139.6 | 5 | 4.58 |
| PARACALANUS PARVUS(COPEPODITES) | 2766.2 | 1 | 40.84 | 2729.0 | 1 | 32.03 | 385.1 | 4 | 10.41 | 215.7 | 4 | 7.08 |
| OTHER COPEPODS | 228.1 | 8 | 3.37 | 639.3 | 4 | 7.50 | 227.3 | 5 | 6.14 | 95.2 | 7.5 | 3.13 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 13.5 | 0.00 | 0.0 | 13.5 | 0.00 | 31.6 | 11 | 0.85 | 12.7 | 12.5 | 0.42 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 28.5 | 12 | 0.42 | 38.2 | 12 | 0.45 | 12.6 | 14 | 0.34 | 6.3 | 14 | 0.21 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 57.0 | 10 | 0.84 | 124.0 | 9.5 | 1.46 | 25.3 | 12.5 | 0.68 | 120.6 | 6 | 3.96 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 955.3 | 3 | 14.11 | 2271.0 | 2 | 26.65 | 795.5 | 2 | 21.50 | 526.6 | 3 | 17.29 |
| Total Zooplankton | 6772.8 | | | 8521.0 | | | 3699.5 | | | 3045.7 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 87.2 | 6 | 1.57 | 72.7 | 6 | 1.83 | 0.0 | 11 | 0.00 | 31.2 | 9 | 0.52 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 36.3 | 8.5 | 0.65 | 7.3 | 9.5 | 0.18 | 81.1 | 8 | 1.42 | 270.1 | 7 | 4.54 |
| ACARTIA SPP.(COPEPODITES) | 0.0 | 12 | 0.00 | 14.5 | 8 | 0.37 | 223.0 | 6 | 3.91 | 332.4 | 6 | 5.58 |
| CORYCAEUS ANGLICUS | 138.1 | 5 | 2.48 | 174.4 | 5 | 4.40 | 760.1 | 4 | 13.32 | 623.3 | 5 | 10.47 |
| EUTERPINA ACUTIFRONS | 21.8 | 10 | 0.39 | 0.0 | 11.5 | 0.00 | 0.0 | 11 | 0.00 | 0.0 | 11 | 0.00 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.3 | 11 | 0.13 | 7.3 | 9.5 | 0.18 | 0.0 | 11 | 0.00 | 0.0 | 11 | 0.00 |
| PARACALANUS PARVUS | 1061.0 | 4 | 19.08 | 697.7 | 3 | 17.58 | 1479.7 | 1 | 25.93 | 1423.1 | 1 | 23.91 |
| PARACALANUS PARVUS(COPEPODITES) | 1431.7 | 2 | 25.75 | 617.7 | 4 | 15.57 | 1125.0 | 3 | 19.72 | 945.3 | 3 | 15.88 |
| OTHER COPEPODS | 1126.5 | 3 | 20.26 | 748.5 | 2 | 18.86 | 1246.6 | 2 | 21.85 | 1392.0 | 2 | 23.39 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 50.9 | 7 | 0.92 | 0.0 | 11.5 | 0.00 | 10.1 | 9 | 0.18 | 0.0 | 11 | 0.00 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 36.3 | 8.5 | 0.65 | 43.6 | 7 | 1.10 | 172.3 | 7 | 3.02 | 145.4 | 8 | 2.44 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1562.5 | 1 | 28.10 | 1584.3 | 1 | 39.93 | 608.1 | 5 | 10.66 | 789.5 | 4 | 13.26 |
| Total Zooplankton | 5559.6 | | | 3968.0 | | | 5706.1 | | | 5952.2 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 282.6 | 4 | 6.40 | 118.1 | 7 | 1.79 | 40.5 | 9 | 0.50 | 81.0 | 9 | 1.12 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 89.6 | 7 | 2.03 | 128.0 | 6 | 1.94 | 780.4 | 3 | 9.62 | 475.7 | 7 | 6.57 |
| ACARTIA SPP.(COPEPODITES) | 27.6 | 9 | 0.62 | 9.8 | 11 | 0.15 | 729.7 | 4.5 | 9.00 | 587.0 | 5 | 8.11 |
| CORYCAEUS ANGLICUS | 124.1 | 6 | 2.81 | 147.6 | 5 | 2.24 | 557.4 | 6 | 6.87 | 536.4 | 6 | 7.41 |
| EUTERPINA ACUTIFRONS | 6.9 | 10.5 | 0.16 | 0.0 | 12 | 0.00 | 30.4 | 10 | 0.37 | 10.1 | 11 | 0.14 |
| PARACALANUS PARVUS | 234.4 | 5 | 5.30 | 442.9 | 4 | 6.72 | 456.1 | 7 | 5.62 | 688.3 | 4 | 9.51 |
| PARACALANUS PARVUS(COPEPODITES) | 1675.1 | 1 | 37.91 | 3759.8 | 1 | 57.01 | 3841.2 | 1 | 47.37 | 3168.0 | 1 | 43.78 |
| OTHER COPEPODS | 434.3 | 3 | 9.83 | 551.2 | 3 | 8.36 | 881.8 | 2 | 10.87 | 738.9 | 3 | 10.21 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 12 | 0.00 | 29.5 | 9.5 | 0.45 | 0.0 | 12 | 0.00 | 40.5 | 10 | 0.56 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 82.7 | 8 | 1.87 | 29.5 | 9.5 | 0.45 | 10.1 | 11 | 0.12 | 0.0 | 12 | 0.00 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 6.9 | 10.5 | 0.16 | 88.6 | 8 | 1.34 | 50.7 | 8 | 0.62 | 131.6 | 8 | 1.82 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1454.5 | 2 | 32.92 | 1289.4 | 2 | 19.55 | 729.7 | 4.5 | 9.00 | 779.4 | 2 | 10.77 |
| Total Zooplankton | 4418.7 | | | 6594.5 | | | 8108.1 | | | 7236.8 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 523.3 | 3 | 10.59 | 303.4 | 4 | 6.28 | 76.0 | 7 | 2.38 | 70.9 | 7 | 2.41 |
| PODON POLYPHEMOIDES | 36.3 | 11 | 0.74 | 0.0 | 12.5 | 0.00 | 5.1 | 13.5 | 0.16 | 0.0 | 13.5 | 0.00 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 50.9 | 10 | 1.03 | 31.1 | 10 | 0.64 | 50.7 | 8 | 1.59 | 55.7 | 8.5 | 1.89 |
| ACARTIA SPP.(COPEPODITES) | 261.6 | 6 | 5.29 | 54.5 | 8 | 1.13 | 364.9 | 3 | 11.43 | 283.4 | 4 | 9.64 |
| CORYCAEUS ANGLICUS | 203.5 | 7 | 4.12 | 70.0 | 6.5 | 1.45 | 187.5 | 6 | 5.87 | 217.6 | 6 | 7.40 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 21.8 | 12 | 0.44 | 0.0 | 12.5 | 0.00 | 15.2 | 11 | 0.48 | 20.2 | 11 | 0.69 |
| OITHONA OCULATA | 0.0 | 14 | 0.00 | 0.0 | 12.5 | 0.00 | 5.1 | 13.5 | 0.16 | 0.0 | 13.5 | 0.00 |
| PARACALANUS PARVUS | 312.5 | 5 | 6.32 | 342.3 | 3 | 7.09 | 319.3 | 4 | 10.00 | 430.2 | 2 | 14.63 |
| PARACALANUS PARVUS(COPEPODITES) | 1969.5 | 1 | 39.85 | 2302.9 | 1 | 47.67 | 1454.4 | 1 | 45.56 | 1088.1 | 1 | 37.01 |
| OTHER COPEPODS | 443.3 | 4 | 8.97 | 287.9 | 5 | 5.96 | 248.3 | 5 | 7.78 | 268.2 | 5 | 9.12 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 14.5 | 13 | 0.29 | 0.0 | 12.5 | 0.00 | 10.1 | 12 | 0.32 | 5.1 | 12 | 0.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 58.1 | 9 | 1.18 | 38.9 | 9 | 0.81 | 20.3 | 10 | 0.63 | 40.5 | 10 | 1.38 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 79.9 | 8 | 1.62 | 70.0 | 6.5 | 1.45 | 40.5 | 9 | 1.27 | 55.7 | 8.5 | 1.89 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 966.6 | 2 | 19.56 | 1330.4 | 2 | 27.54 | 395.3 | 2 | 12.38 | 404.9 | 3 | 13.77 |
| Total Zooplankton | 4941.9 | | | 4831.4 | | | 3192.6 | | | 2940.3 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. SEPTEMBER 10, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 503.9 | 5 | 7.21 | 232.6 | 7 | 3.31 | 40.5 | 9.5 | 0.67 | 111.5 | 8 | 1.60 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 271.3 | 6 | 3.88 | 348.8 | 5 | 4.96 | 456.1 | 6 | 7.53 | 628.4 | 6 | 9.01 |
| ACARTIA SPP.(COPEPODITES) | 48.4 | 10 | 0.69 | 29.1 | 11 | 0.41 | 263.5 | 7 | 4.35 | 648.6 | 5 | 9.30 |
| CORYCAEUS ANGLICUS | 193.8 | 7 | 2.77 | 305.2 | 6 | 4.34 | 527.0 | 5 | 8.70 | 587.8 | 7 | 8.43 |
| EUTERPINA ACUTIFRONS | 9.7 | 11 | 0.14 | 43.6 | 10 | 0.62 | 10.1 | 11 | 0.17 | 10.1 | 11.5 | 0.15 |
| PARACALANUS PARVUS | 620.2 | 4 | 8.88 | 654.1 | 4 | 9.30 | 577.7 | 4 | 9.53 | 861.5 | 3 | 12.35 |
| PARACALANUS PARVUS(COPEPODITES) | 2219.0 | 1 | 31.76 | 2776.2 | 1 | 39.46 | 2047.3 | 1 | 33.78 | 2138.5 | 1 | 30.67 |
| OTHER COPEPODS | 1220.9 | 3 | 17.48 | 959.3 | 3 | 13.64 | 1216.2 | 2 | 20.07 | 1165.5 | 2 | 16.72 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 12 | 0.00 | 0.0 | 12 | 0.00 | 0.0 | 12 | 0.00 | 10.1 | 11.5 | 0.15 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 135.7 | 8 | 1.94 | 72.7 | 9 | 1.03 | 40.5 | 9.5 | 0.67 | 20.3 | 10 | 0.29 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 87.2 | 9 | 1.25 | 145.3 | 8 | 2.07 | 60.8 | 8 | 1.00 | 70.9 | 9 | 1.02 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1676.4 | 2 | 23.99 | 1468.0 | 2 | 20.87 | 820.9 | 3 | 13.55 | 719.6 | 4 | 10.32 |
| Total Zooplankton | 6986.4 | | | 7034.9 | | | 6060.8 | | | 6973.0 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 22.9 | 11 | Ø.7Ø | 9.8 | 12 | 1.23 | 7.5 | 13 | Ø.12 | 14.6 | 11 | 1.16 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 274.4 | 3 | 8.43 | 48.2 | 4 | 6.Ø7 | 553.9 | 3 | 9.25 | 65.9 | 4 | 5.21 |
| ACARTIA SPP.(COPEPODITES) | 1554.9 | 1 | 47.78 | 2Ø6.7 | 1 | 26.Ø6 | 2784.4 | 1 | 46.5Ø | 6Ø9.8 | 1 | 48.26 |
| CORYCAEUS ANGLICUS | 114.3 | 6 | 3.51 | 15.2 | 11 | 1.92 | 2Ø2.1 | 8 | 3.38 | 31.7 | 8 | 2.51 |
| EUTERPINA ACUTIFRONS | 15.2 | 12.5 | Ø.47 | Ø.6 | 13.5 | Ø.Ø7 | 7.5 | 13 | Ø.12 | 9.8 | 12.5 | Ø.77 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 228.7 | 4 | 7.Ø3 | 157.9 | 3 | 19.91 | 531.4 | 4 | 8.88 | 117.1 | 3 | 9.27 |
| OITHONA OCULATA | 3Ø.5 | 1Ø | Ø.94 | 31.7 | 6 | 4.ØØ | 2Ø9.6 | 7 | 3.5Ø | 24.4 | 9 | 1.93 |
| PARACALANUS PARVUS | 1Ø6.7 | 7 | 3.28 | 28.7 | 7 | 3.61 | 247.Ø | 6 | 4.13 | 51.2 | 5 | 4.Ø5 |
| PARACALANUS PARVUS(COPEPODITES) | 76.2 | 9 | 2.34 | 18.9 | 1Ø | 2.38 | 276.9 | 5 | 4.63 | 48.8 | 6 | 3.86 |
| OTHER COPEPODS | 91.5 | 8 | 2.81 | 42.7 | 5 | 5.38 | 119.8 | 1Ø | 2.ØØ | 39.Ø | 7 | 3.Ø9 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | Ø.6 | 13.5 | Ø.Ø7 | 7.5 | 13 | Ø.12 | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 15.2 | 12.5 | Ø.47 | 21.3 | 9 | 2.69 | 142.2 | 9 | 2.38 | 22.Ø | 1Ø | 1.74 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 175.3 | 5 | 5.39 | 22.Ø | 8 | 2.77 | 97.3 | 11 | 1.63 | 9.8 | 12.5 | Ø.77 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 548.8 | 2 | 16.86 | 189.Ø | 2 | 23.83 | 8ØØ.9 | 2 | 13.38 | 219.5 | 2 | 17.37 |
| Total Zooplankton | 3254.6 | | | 793.3 | | | 5988.0 | | | 1263.4 | | |

PLANKTON STATION 2: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 79.5 | 6 | 6.32 | 1Ø5.5 | 6.5 | 4.61 | 163.9 | 7 | 6.47 | 53.6 | 1Ø | 1.61 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 84.3 | 4 | 6.7Ø | 142.Ø | 5 | 6.21 | 175.3 | 5.5 | 6.92 | 164.3 | 6 | 4.94 |
| ACARTIA SPP.(COPEPODITES) | 69.9 | 7 | 5.56 | 1Ø5.5 | 6.5 | 4.61 | 221.Ø | 4 | 8.72 | 3Ø3.6 | 3 | 9.12 |
| CORYCAEUS ANGLICUS | 41.Ø | 1Ø | 3.26 | 64.9 | 8.5 | 2.84 | 122.Ø | 9 | 4.81 | 121.4 | 7 | 3.65 |
| EUTERPINA ACUTIFRONS | 2.4 | 12 | Ø.19 | 4.1 | 12 | Ø.18 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 55.4 | 8 | 4.41 | 48.7 | 1Ø | 2.13 | 64.8 | 11 | 2.56 | 42.9 | 11 | 1.29 |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 3.6 | 12.5 | Ø.11 |
| PARACALANUS PARVUS | 48.2 | 9 | 3.83 | 32.5 | 11 | 1.42 | 83.8 | 1Ø | 3.31 | 64.3 | 9 | 1.93 |
| PARACALANUS PARVUS(COPEPODITES) | 86.7 | 3 | 6.9Ø | 146.1 | 4 | 6.38 | 125.8 | 8 | 4.96 | 196.4 | 5 | 5.9Ø |
| OTHER COPEPODS | 137.3 | 2 | 1Ø.92 | 2Ø2.9 | 2 | 8.87 | 251.5 | 2 | 9.92 | 389.3 | 2 | 11.7Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 3.6 | 12.5 | Ø.11 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 19.3 | 11 | 1.53 | 64.9 | 8.5 | 2.84 | 243.9 | 3 | 9.62 | 114.3 | 8 | 3.43 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 81.9 | 5 | 6.51 | 19Ø.7 | 3 | 8.33 | 175.3 | 5.5 | 6.92 | 289.3 | 4 | 8.69 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 551.8 | 1 | 43.87 | 1181.Ø | 1 | 51.6Ø | 9Ø7.Ø | 1 | 35.79 | 1582.1 | 1 | 47.53 |
| Total Zooplankton | 1257.8 | | | 2289.0 | | | 2534.3 | | | 3328.6 | | |

PLANKTON STATION 3: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 83.3 | 1Ø | 2.49 | 9Ø.2 | 6 | 6.42 | 1Ø6.7 | 9 | 4.19 | 78.Ø | 4.5 | 7.69 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 291.7 | 4 | 8.7Ø | 78.Ø | 8 | 5.56 | 243.9 | 4 | 9.58 | 47.6 | 6.5 | 4.69 |
| ACARTIA SPP.(COPEPODITES) | 636.4 | 2 | 18.98 | 2Ø7.3 | 2 | 14.76 | 556.4 | 1 | 21.86 | 92.7 | 3 | 9.13 |
| CORYCAEUS ANGLICUS | 219.7 | 6 | 6.55 | 82.9 | 7 | 5.9Ø | 163.9 | 6 | 6.44 | 47.6 | 6.5 | 4.69 |
| EUTERPINA ACUTIFRONS | 7.6 | 12 | Ø.23 | Ø.Ø | 13 | Ø.ØØ | 11.4 | 12 | Ø.45 | Ø.Ø | 13 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.6 | 12 | Ø.23 | 39.Ø | 1Ø | 2.78 | 15.2 | 11 | Ø.6Ø | 46.3 | 8 | 4.57 |
| OITHONA OCULATA | 7.6 | 12 | Ø.23 | 2.4 | 12 | Ø.17 | 7.6 | 13 | Ø.3Ø | 3.7 | 12 | Ø.36 |
| PARACALANUS PARVUS | 94.7 | 9 | 2.82 | 43.9 | 9 | 3.12 | 26.7 | 1Ø | 1.Ø5 | 14.6 | 11 | 1.44 |
| PARACALANUS PARVUS(COPEPODITES) | 132.6 | 8 | 3.95 | 97.6 | 4 | 6.94 | 16Ø.1 | 7 | 6.29 | 43.9 | 9 | 4.33 |
| OTHER COPEPODS | 564.4 | 3 | 16.84 | 158.5 | 3 | 11.28 | 396.3 | 3 | 15.57 | 15Ø.Ø | 2 | 14.78 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 223.5 | 5 | 6.67 | 36.6 | 11 | 2.6Ø | 125.8 | 8 | 4.94 | 22.Ø | 1Ø | 2.16 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 212.1 | 7 | 6.33 | 92.7 | 5 | 6.6Ø | 2Ø2.Ø | 5 | 7.93 | 78.Ø | 4.5 | 7.69 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 871.2 | 1 | 25.99 | 475.6 | 1 | 33.85 | 529.7 | 2 | 2Ø.81 | 39Ø.2 | 1 | 38.46 |
| Total Zooplankton | 3352.3 | | | 1404.9 | | | 2545.7 | | | 1014.6 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 24.2 | 5 | 11.94 | 41.8 | 4 | 11.82 | 138.Ø | 9 | 3.26 | 49.2 | 9.5 | 1.66 |
| PODON POLYPHEMOIDES | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 13.3 | 7 | 6.57 | 38.8 | 5 | 1Ø.96 | 184.Ø | 6 | 4.35 | 1Ø6.1 | 8 | 3.59 |
| ACARTIA SPP.(COPEPODITES) | 15.2 | 6 | 7.46 | 55.2 | 3 | 15.58 | 552.1 | 2 | 13.Ø6 | 439.4 | 2 | 14.85 |
| CORYCAEUS ANGLICUS | 11.5 | 8 | 5.67 | Ø.6 | 11.5 | Ø.17 | 176.4 | 7 | 4.17 | 117.4 | 6.5 | 3.97 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 14 | Ø.ØØ | Ø.6 | 11.5 | Ø.17 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 1.2 | 11 | Ø.6Ø | 3Ø.9 | 6 | 8.73 | 38.3 | 11 | Ø.91 | 26.5 | 11 | Ø.9Ø |
| OITHONA OCULATA | Ø.6 | 12 | Ø.3Ø | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| PARACALANUS PARVUS | 33.9 | 1 | 16.72 | Ø.Ø | 14 | Ø.ØØ | 111.2 | 1Ø | 2.63 | 49.2 | 9.5 | 1.66 |
| PARACALANUS PARVUS(COPEPODITES) | 32.7 | 2 | 16.12 | 24.8 | 7 | 7.Ø2 | 191.7 | 5 | 4.53 | 117.4 | 6.5 | 3.97 |
| OTHER COPEPODS | 26.7 | 4 | 13.13 | 55.8 | 2 | 15.75 | 4Ø6.4 | 3 | 9.61 | 42Ø.5 | 3 | 14.21 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | 2.4 | 1Ø | Ø.68 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.9 | 9 | 3.88 | 2Ø.6 | 8 | 5.82 | 157.2 | 8 | 3.72 | 128.8 | 5 | 4.35 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 4.2 | 1Ø | 2.Ø9 | 11.5 | 9 | 3.25 | 299.1 | 4 | 7.Ø7 | 155.3 | 4 | 5.25 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 31.5 | 3 | 15.52 | 7Ø.9 | 1 | 2Ø.Ø3 | 1974.7 | 1 | 46.69 | 1348.5 | 1 | 45.58 |
| Total Zooplankton | 203.0 | | | 353.9 | | | 4229.3 | | | 2958.3 | | |

PLANKTON STATION 5: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 97.6 | 4.5 | 7.46 | 133.4 | 5.5 | 6.13 | 64.4 | 9 | 2.47 | 58.5 | 7 | 2.94 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 12.2 | 8 | Ø.93 | 11.4 | 9.5 | Ø.53 | 3.8 | 1Ø.5 | Ø.15 | 14.6 | 1Ø | Ø.74 |
| ACARTIA SPP.(COPEPODITES) | 7.3 | 1Ø | Ø.56 | 3.8 | 11 | Ø.18 | 68.2 | 8 | 2.62 | 51.2 | 8 | 2.58 |
| CORYCAEUS ANGLICUS | 134.1 | 3 | 1Ø.26 | 167.7 | 3 | 7.71 | 151.5 | 4 | 5.81 | 114.6 | 4 | 5.77 |
| EUTERPINA ACUTIFRONS | 4.9 | 11 | Ø.37 | 11.4 | 9.5 | Ø.53 | Ø.Ø | 12.5 | Ø.ØØ | 2.4 | 12 | Ø.12 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.4 | 12 | Ø.19 | Ø.Ø | 12.5 | Ø.ØØ | 3.8 | 1Ø.5 | Ø.15 | Ø.Ø | 13 | Ø.ØØ |
| OITHONA OCULATA | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 4.9 | 11 | Ø.25 |
| PARACALANUS PARVUS | 56.1 | 6.5 | 4.29 | 61.Ø | 7 | 2.8Ø | 72.Ø | 7 | 2.76 | 22.Ø | 9 | 1.1Ø |
| PARACALANUS PARVUS(COPEPODITES) | 97.6 | 4.5 | 7.46 | 133.4 | 5.5 | 6.13 | 128.8 | 5 | 4.94 | 78.Ø | 5 | 3.93 |
| OTHER COPEPODS | 136.6 | 2 | 1Ø.45 | 263.Ø | 2 | 12.Ø8 | 412.9 | 2 | 15.84 | 453.7 | 2 | 22.82 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 9.8 | 9 | Ø.75 | 15.2 | 8 | Ø.7Ø | 125.Ø | 6 | 4.8Ø | 68.3 | 6 | 3.44 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 56.1 | 6.5 | 4.29 | 148.6 | 4 | 6.83 | 257.6 | 3 | 9.88 | 175.6 | 3 | 8.83 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 692.7 | 1 | 52.99 | 1227.1 | 1 | 56.39 | 1318.2 | 1 | 5Ø.58 | 943.9 | 1 | 47.48 |
| Total Zooplankton | 1307.3 | | | 2176.1 | | | 2606.1 | | | 1987.8 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 82.4 | 5 | 4.56 | 87.3 | 5 | 4.99 | 118.9 | 4 | 5.54 | 115.Ø | 5 | 4.18 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 29.1 | 8 | 1.61 | 24.2 | 8 | 1.39 | 7.7 | 1Ø.5 | Ø.36 | 7.7 | 1Ø | Ø.28 |
| ACARTIA SPP.(COPEPODITES) | 4.8 | 1Ø | Ø.27 | 9.7 | 1Ø | Ø.55 | 34.5 | 9 | 1.61 | 15.3 | 9 | Ø.56 |
| CORYCAEUS ANGLICUS | 3Ø5.5 | 2 | 16.89 | 278.8 | 2 | 15.95 | 241.6 | 3 | 11.25 | 256.9 | 3 | 9.33 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 11.5 | Ø.ØØ | 4.8 | 11 | Ø.28 | 7.7 | 1Ø.5 | Ø.36 | Ø.Ø | 11.5 | Ø.ØØ |
| PARACALANUS PARVUS | 118.8 | 4 | 6.57 | 1Ø9.1 | 4 | 6.24 | 69.Ø | 7 | 3.21 | 61.3 | 7 | 2.23 |
| PARACALANUS PARVUS(COPEPODITES) | 63.Ø | 6 | 3.49 | 31.5 | 7 | 1.8Ø | 92.Ø | 5 | 4.29 | 111.2 | 6 | 4.Ø4 |
| OTHER COPEPODS | 128.5 | 3 | 7.1Ø | 111.5 | 3 | 6.38 | 249.2 | 2 | 11.61 | 295.2 | 2 | 1Ø.72 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 11.5 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | 3.8 | 12 | Ø.18 | Ø.Ø | 11.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.8 | 9 | 1.21 | 21.8 | 9 | 1.25 | 61.3 | 8 | 2.86 | 42.2 | 8 | 1.53 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 53.3 | 7 | 2.95 | 6Ø.6 | 6 | 3.47 | 72.9 | 6 | 3.39 | 134.2 | 4 | 4.87 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1ØØ1.2 | 1 | 55.36 | 1ØØ8.5 | 1 | 57.7Ø | 1188.7 | 1 | 55.36 | 1714.Ø | 1 | 62.26 |
| Total Zooplankton | 1808.5 | | | 1747.9 | | | 2147.2 | | | 2753.1 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 72.3 | 5 | 8.56 | 76.8 | 5 | 7.54 | 18.2 | 11.5 | 1.45 | 23.2 | 1Ø | 1.88 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 67.5 | 6 | 7.99 | 75.6 | 6.5 | 7.42 | 7Ø.3 | 6.5 | 5.59 | 59.8 | 7 | 4.85 |
| ACARTIA SPP.(COPEPODITES) | 126.5 | 3 | 14.98 | 1Ø8.5 | 4 | 1Ø.65 | 298.2 | 2 | 23.7Ø | 246.3 | 2 | 2Ø.ØØ |
| CORYCAEUS ANGLICUS | 84.3 | 4 | 9.99 | 113.4 | 3 | 11.12 | 97.Ø | 4 | 7.71 | 73.2 | 5 | 5.94 |
| EUTERPINA ACUTIFRONS | 4.8 | 12 | Ø.57 | 8.5 | 11 | Ø.84 | 8.5 | 13 | Ø.67 | 1.2 | 14 | Ø.Ø9 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 48.2 | 7 | 5.71 | 56.1 | 8 | 5.5Ø | 27.9 | 9 | 2.22 | 32.9 | 9 | 2.67 |
| OITHONA OCULATA | 1.2 | 14 | Ø.14 | Ø.Ø | 14 | Ø.ØØ | 2Ø.6 | 1Ø | 1.64 | 8.5 | 12 | Ø.69 |
| PARACALANUS PARVUS | 8.4 | 11 | 1.ØØ | 3.7 | 12 | Ø.36 | 18.2 | 11.5 | 1.45 | 19.5 | 11 | 1.58 |
| PARACALANUS PARVUS(COPEPODITES) | 27.7 | 1Ø | 3.28 | 24.4 | 1Ø | 2.39 | 52.1 | 8 | 4.14 | 64.6 | 6 | 5.25 |
| OTHER COPEPODS | 144.6 | 2 | 17.12 | 167.1 | 2 | 16.39 | 167.3 | 3 | 13.29 | 243.9 | 3 | 19.8Ø |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 3.6 | 13 | Ø.43 | 1.2 | 13 | Ø.12 | 2.4 | 14 | Ø.19 | 3.7 | 13 | Ø.3Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 32.5 | 9 | 3.85 | 51.2 | 9 | 5.Ø2 | 87.3 | 5 | 6.94 | 54.9 | 8 | 4.46 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 45.8 | 8 | 5.42 | 75.6 | 6.5 | 7.42 | 7Ø.3 | 6.5 | 5.59 | 92.7 | 4 | 7.52 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 177.1 | 1 | 2Ø.97 | 257.3 | 1 | 25.24 | 32Ø.Ø | 1 | 25.43 | 3Ø7.3 | 1 | 24.95 |
| Total Zooplankton | 844.6 | | | 1019.5 | | | 1258.2 | | | 1231.7 | | |

PLANKTON STATION 8: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 28.Ø | 1Ø | 1.59 | 5Ø.9 | 11 | 2.41 | 1Ø4.9 | 11 | 2.28 | 91.5 | 11 | 1.99 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 117.2 | 9 | 6.66 | 144.4 | 6 | 6.83 | 244.8 | 6.5 | 5.32 | 358.2 | 6 | 7.81 |
| ACARTIA SPP.(COPEPODITES) | 275.2 | 2 | 15.63 | 267.5 | 2 | 12.66 | 917.8 | 2 | 19.96 | 724.1 | 2 | 15.78 |
| CORYCAEUS ANGLICUS | 163.1 | 6 | 9.26 | 123.1 | 7 | 5.83 | 236.Ø | 8 | 5.13 | 2Ø5.8 | 8 | 4.49 |
| EUTERPINA ACUTIFRONS | 12.7 | 12 | Ø.72 | 1.2 | 13 | Ø.Ø6 | 61.2 | 12 | 1.33 | 38.1 | 12 | Ø.83 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 173.2 | 5 | 9.84 | 194.1 | 5 | 9.19 | 288.5 | 5 | 6.27 | 396.3 | 5 | 8.64 |
| OITHONA OCULATA | 1Ø.2 | 13 | Ø.58 | 4.7 | 12 | Ø.22 | Ø.Ø | 13 | Ø.ØØ | 7.6 | 13 | Ø.17 |
| PARACALANUS PARVUS | 219.1 | 3 | 12.45 | 228.4 | 4 | 1Ø.81 | 358.4 | 4 | 7.79 | 48Ø.2 | 4 | 1Ø.47 |
| PARACALANUS PARVUS(COPEPODITES) | 178.3 | 4 | 1Ø.13 | 242.6 | 3 | 11.48 | 6Ø3.1 | 3 | 13.12 | 594.5 | 3 | 12.96 |
| OTHER COPEPODS | 127.4 | 7 | 7.24 | 112.4 | 9 | 5.32 | 244.8 | 6.5 | 5.32 | 167.7 | 9 | 3.65 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17.8 | 11 | 1.Ø1 | 69.8 | 1Ø | 3.31 | 174.8 | 9 | 3.8Ø | 137.2 | 1Ø | 2.99 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 119.7 | 8 | 6.8Ø | 121.9 | 8 | 5.77 | 139.9 | 1Ø | 3.Ø4 | 221.Ø | 7 | 4.82 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 318.5 | 1 | 18.Ø9 | 551.5 | 1 | 26.11 | 1223.8 | 1 | 26.62 | 1166.2 | 1 | 25.42 |
| Total Zooplankton | 1760.5 | | | 2112.4 | | | 4597.9 | | | 4588.4 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1Ø7.5 | 6 | 6.13 | 127.Ø | 7 | 7.Ø4 | 19.4 | 11 | Ø.85 | 47.8 | 1Ø | 1.51 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 82.5 | 8 | 4.71 | 7Ø.8 | 9 | 3.92 | 35.6 | 9 | 1.55 | 114.8 | 7.5 | 3.62 |
| ACARTIA SPP.(COPEPODITES) | 235.Ø | 3 | 13.41 | 17Ø.9 | 3 | 9.47 | 32Ø.6 | 4 | 13.94 | 417.7 | 4 | 13.18 |
| CORYCAEUS ANGLICUS | 112.5 | 5 | 6.42 | 141.6 | 5 | 7.85 | 385.4 | 3 | 16.76 | 424.1 | 3 | 13.38 |
| EUTERPINA ACUTIFRONS | 5Ø.Ø | 12 | 2.85 | 12.2 | 13 | Ø.68 | 252.6 | 5 | 1Ø.99 | 2Ø7.3 | 5 | 6.54 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 75.Ø | 1Ø | 4.28 | 136.7 | 6 | 7.58 | 29.1 | 1Ø | 1.27 | 19.1 | 11.5 | Ø.6Ø |
| OITHONA OCULATA | Ø.Ø | 13.5 | Ø.ØØ | 14.6 | 12 | Ø.81 | 9.7 | 13.5 | Ø.42 | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 52.5 | 11 | 3.ØØ | 31.7 | 11 | 1.76 | 55.1 | 7 | 2.39 | 76.5 | 9 | 2.41 |
| PARACALANUS PARVUS(COPEPODITES) | 137.5 | 4 | 7.85 | 166.Ø | 4 | 9.2Ø | 155.4 | 6 | 6.76 | 172.2 | 6 | 5.43 |
| OTHER COPEPODS | 285.Ø | 2 | 16.26 | 332.Ø | 2 | 18.4Ø | 56Ø.2 | 1 | 24.37 | 988.5 | 1 | 31.19 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | 9.7 | 13.5 | Ø.42 | 3.2 | 13 | Ø.1Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1ØØ.Ø | 7 | 5.71 | 1Ø9.9 | 8 | 6.Ø9 | 16.2 | 12 | Ø.7Ø | 19.1 | 11.5 | Ø.6Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 77.5 | 9 | 4.42 | 61.Ø | 1Ø | 3.38 | 51.8 | 8 | 2.25 | 114.8 | 7.5 | 3.62 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 437.5 | 1 | 24.96 | 429.7 | 1 | 23.82 | 398.3 | 2 | 17.32 | 564.4 | 2 | 17.81 |
| Total Zooplankton | 1752.5 | | | 1804.2 | | | 2299.2 | | | 3169.6 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 22.8 | 11 | 1.74 | 38.Ø | 11 | 1.52 | 75.8 | 11 | 2.Ø3 | 6Ø.2 | 1Ø | 2.53 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 62.4 | 6 | 4.77 | 156.8 | 5 | 6.29 | 189.4 | 6.5 | 5.Ø8 | 71.5 | 8.5 | 3.Ø1 |
| ACARTIA SPP.(COPEPODITES) | 43Ø.4 | 1 | 32.91 | 893.5 | 1 | 35.81 | 1Ø98.5 | 1 | 29.47 | 594.9 | 2 | 25.ØØ |
| CORYCAEUS ANGLICUS | 33.5 | 9 | 2.56 | 47.5 | 1Ø | 1.9Ø | 234.8 | 4 | 6.3Ø | 244.7 | 4 | 1Ø.28 |
| EUTERPINA ACUTIFRONS | 12.2 | 12 | Ø.93 | 4.8 | 13 | Ø.19 | 7.6 | 12.5 | Ø.2Ø | 3.8 | 13 | Ø.16 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 127.8 | 3 | 9.77 | 275.7 | 3 | 11.Ø5 | 553.Ø | 3 | 14.84 | 4Ø2.9 | 3 | 16.93 |
| OITHONA OCULATA | 4.6 | 13 | Ø.35 | 9.5 | 12 | Ø.38 | 7.6 | 12.5 | Ø.2Ø | 15.1 | 12 | Ø.63 |
| PARACALANUS PARVUS | 85.2 | 4 | 6.51 | 85.6 | 7 | 3.43 | 136.4 | 8 | 3.66 | 82.8 | 6 | 3.48 |
| PARACALANUS PARVUS(COPEPODITES) | 83.7 | 5 | 6.4Ø | 66.5 | 9 | 2.67 | 189.4 | 6.5 | 5.Ø8 | 71.5 | 8.5 | 3.Ø1 |
| OTHER COPEPODS | 59.3 | 7 | 4.53 | 76.Ø | 8 | 3.Ø5 | 113.6 | 9 | 3.Ø5 | 79.1 | 7 | 3.32 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 48.7 | 8 | 3.72 | 95.1 | 6 | 3.81 | 98.5 | 1Ø | 2.64 | 22.6 | 11 | Ø.95 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 31.9 | 1Ø | 2.44 | 161.6 | 4 | 6.48 | 197.Ø | 5 | 5.28 | 131.8 | 5 | 5.54 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 3Ø5.7 | 2 | 23.37 | 584.6 | 2 | 23.43 | 825.8 | 2 | 22.15 | 598.6 | 1 | 25.16 |
| Total Zooplankton | 1308.0 | | | 2495.2 | | | 3727.3 | | | 2379.5 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 116.4 | 4 | 5.73 | 14.4 | 9.5 | Ø.59 | 18.8 | 11 | Ø.79 | 165.7 | 4 | 4.42 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 33.3 | 8.5 | 1.64 | 14.4 | 9.5 | Ø.59 | 33.9 | 9 | 1.43 | 37.7 | 9 | 1.ØØ |
| ACARTIA SPP.(COPEPODITES) | 57.Ø | 6 | 2.81 | 122.6 | 6 | 5.Ø2 | 6Ø.2 | 8 | 2.54 | 52.7 | 8 | 1.41 |
| CORYCAEUS ANGLICUS | 168.7 | 3 | 8.3Ø | 415.9 | 3 | 17.Ø3 | 489.5 | 3 | 2Ø.63 | 316.3 | 2 | 8.43 |
| EUTERPINA ACUTIFRONS | 2.4 | 11 | Ø.12 | 4.8 | 11 | Ø.2Ø | 26.4 | 1Ø | 1.11 | Ø.Ø | 11.5 | Ø.ØØ |
| PARACALANUS PARVUS | 33.3 | 8.5 | 1.64 | 55.3 | 8 | 2.26 | 135.5 | 5.5 | 5.71 | 6Ø.2 | 7 | 1.61 |
| PARACALANUS PARVUS(COPEPODITES) | 85.6 | 5 | 4.21 | 129.8 | 5 | 5.31 | 135.5 | 5.5 | 5.71 | 15Ø.6 | 5 | 4.Ø2 |
| OTHER COPEPODS | 218.6 | 2 | 1Ø.76 | 567.3 | 2 | 23.23 | 561.Ø | 2 | 23.65 | 267.3 | 3 | 7.13 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12 | Ø.ØØ | 2.4 | 12 | Ø.Ø9 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.4 | 1Ø | 1.Ø5 | 161.1 | 4 | 6.59 | 124.2 | 7 | 5.24 | 18.8 | 1Ø | Ø.5Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 52.3 | 7 | 2.57 | 12Ø.2 | 7 | 4.92 | 2Ø3.3 | 4 | 8.57 | 97.9 | 6 | 2.61 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1242.9 | 1 | 61.17 | 834.1 | 1 | 34.15 | 583.6 | 1 | 24.6Ø | 2582.8 | 1 | 68.88 |
| Total Zooplankton | 2031.8 | | | 2442.3 | | | 2372.0 | | | 3750.0 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978. UNI

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 116.9 | 3 | 5.23 | 125.Ø | 3 | 6.15 | 133.4 | 6.5 | 2.76 | 13Ø.2 | 5.5 | 2.53 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 7.2 | 9 | Ø.32 | Ø.Ø | 12 | Ø.ØØ | 11.4 | 1Ø.5 | Ø.24 | Ø.Ø | 11.5 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 11.9 | 8 | Ø.53 | 14.2 | 7 | Ø.7Ø | 156.2 | 5 | 3.23 | 117.2 | 7 | 2.27 |
| CORYCAEUS ANGLICUS | 5Ø.1 | 5 | 2.24 | 59.Ø | 5 | 2.9Ø | 133.4 | 6.5 | 2.76 | 13Ø.2 | 5.5 | 2.53 |
| EUTERPINA ACUTIFRONS | 4.8 | 1Ø.5 | Ø.21 | 7.1 | 9 | Ø.35 | 76.2 | 8 | 1.57 | 45.6 | 8 | Ø.88 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 13 | Ø.ØØ | 4.7 | 1Ø | Ø.23 | 7.6 | 12 | Ø.16 | Ø.Ø | 11.5 | Ø.ØØ |
| PARACALANUS PARVUS | 4.8 | 1Ø.5 | Ø.21 | Ø.Ø | 12 | Ø.ØØ | 11.4 | 1Ø.5 | Ø.24 | Ø.Ø | 11.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 28.6 | 7 | 1.28 | 11.8 | 8 | Ø.58 | 61.Ø | 9 | 1.26 | 26.Ø | 9 | Ø.51 |
| OTHER COPEPODS | 345.9 | 2 | 15.47 | 377.4 | 2 | 18.56 | 1669.2 | 2 | 34.49 | 1751.3 | 2 | 33.96 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 2.4 | 12 | Ø.11 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 11.5 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 35.8 | 6 | 1.6Ø | 3Ø.7 | 6 | 1.51 | 3Ø8.7 | 3 | 6.38 | 182.3 | 4 | 3.54 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 62.Ø | 4 | 2.77 | 66.Ø | 4 | 3.25 | 243.9 | 4 | 5.Ø4 | 423.2 | 3 | 8.21 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1564.9 | 1 | 7Ø.Ø1 | 1337.3 | 1 | 65.78 | 2Ø27.4 | 1 | 41.89 | 235Ø.3 | 1 | 45.58 |
| Total Zooplankton | 2235.2 | | | 2033.0 | | | 4839.9 | | | 5156.3 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 48.4 | 6 | 3.Ø7 | 31.7 | 6 | 1.64 | 156.2 | 4 | 5.ØØ | 95.2 | 6 | 3.Ø3 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 2.3 | 11 | Ø.15 | 2.4 | 1Ø.5 | Ø.13 | Ø.Ø | 1Ø.5 | Ø.ØØ | 9.5 | 1Ø | Ø.3Ø |
| ACARTIA SPP.(COPEPODITES) | 6.9 | 9 | Ø.44 | 2.4 | 1Ø.5 | Ø.13 | 25.Ø | 8 | Ø.8Ø | 41.2 | 8 | 1.31 |
| CORYCAEUS ANGLICUS | 1Ø6.1 | 3 | 6.72 | 87.9 | 5 | 4.55 | 118.7 | 5.5 | 3.8Ø | 2Ø3.Ø | 3 | 6.47 |
| EUTERPINA ACUTIFRONS | 4.6 | 1Ø | Ø.29 | 17.1 | 7 | Ø.88 | Ø.Ø | 1Ø.5 | Ø.ØØ | 3.2 | 11 | Ø.1Ø |
| PARACALANUS PARVUS | 9.2 | 8 | Ø.58 | 7.3 | 9 | Ø.38 | 12.5 | 9 | Ø.4Ø | 19.Ø | 9 | Ø.61 |
| PARACALANUS PARVUS(COPEPODITES) | 92.3 | 4 | 5.84 | 119.6 | 4 | 6.19 | 5Ø.Ø | 7 | 1.6Ø | 44.4 | 7 | 1.42 |
| OTHER COPEPODS | 159.1 | 2 | 1Ø.Ø7 | 463.9 | 2 | 23.99 | 1Ø81.2 | 2 | 34.6Ø | 948.6 | 2 | 3Ø.23 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 23.1 | 7 | 1.46 | 12.2 | 8 | Ø.63 | 118.7 | 5.5 | 3.8Ø | 133.2 | 5 | 4.25 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 73.8 | 5 | 4.67 | 124.5 | 3 | 6.44 | 175.Ø | 3 | 5.6Ø | 168.1 | 4 | 5.36 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø54.Ø | 1 | 66.72 | 1Ø64.5 | 1 | 55.Ø5 | 1387.5 | 1 | 44.4Ø | 1472.1 | 1 | 46.92 |
| Total Zooplankton | 1579.8 | | | 1933.6 | | | 3125.0 | | | 3137.7 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 53.1 | 4 | 5.48 | 7Ø.9 | 5 | 5.33 | 111.Ø | 4 | 8.45 | 1Ø5.9 | 5 | 7.34 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 12.5 | Ø.ØØ | 5.3 | 9 | Ø.39 | 1Ø.1 | 1Ø | Ø.77 | 7.4 | 1Ø | Ø.51 |
| ACARTIA SPP.(COPEPODITES) | 7.6 | 9 | Ø.78 | 15.8 | 8 | 1.18 | 28.6 | 8 | 2.18 | 32.Ø | 9 | 2.22 |
| CORYCAEUS ANGLICUS | 1ØØ.5 | 3 | 1Ø.37 | 84.Ø | 3 | 6.31 | 131.2 | 3 | 9.99 | 11Ø.9 | 4 | 7.68 |
| EUTERPINA ACUTIFRONS | 9.5 | 8 | Ø.98 | Ø.Ø | 12 | Ø.ØØ | 21.9 | 9 | 1.66 | 56.7 | 6 | 3.92 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 3.8 | 11 | Ø.39 | Ø.Ø | 12 | Ø.ØØ | 5.Ø | 11 | Ø.38 | Ø.Ø | 13 | Ø.ØØ |
| PARACALANUS PARVUS | 5.7 | 1Ø | Ø.59 | Ø.Ø | 12 | Ø.ØØ | 1.7 | 12.5 | Ø.13 | 4.9 | 11 | Ø.34 |
| PARACALANUS PARVUS(COPEPODITES) | 41.7 | 5 | 4.31 | 55.1 | 7 | 4.14 | 32.Ø | 7 | 2.43 | 44.3 | 8 | 3.Ø7 |
| OTHER COPEPODS | 341.2 | 2 | 35.23 | 349.3 | 2 | 26.23 | 477.8 | 1 | 36.36 | 46Ø.7 | 1 | 31.91 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12.5 | Ø.ØØ | 2.6 | 1Ø | Ø.2Ø | 1.7 | 12.5 | Ø.13 | 2.5 | 12 | Ø.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 13.3 | 7 | 1.37 | 78.8 | 4 | 5.92 | 82.4 | 6 | 6.27 | 14Ø.4 | 3 | 9.73 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 36.Ø | 6 | 3.72 | 63.Ø | 6 | 4.73 | 89.2 | 5 | 6.79 | 54.2 | 7 | 3.75 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 356.4 | 1 | 36.79 | 6Ø6.6 | 1 | 45.56 | 321.3 | 2 | 24.46 | 423.8 | 2 | 29.35 |
| Total Zooplankton | 968.7 | | | 1331.4 | | | 1313.9 | | | 1443.8 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978. = 2 AND 3.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 85.6 | 3 | 7.34 | 58.3 | 3 | 4.65 | 116.6 | 3 | 6.Ø6 | 113.9 | 3 | 5.58 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA SPP.(COPEPODITES) | 9.3 | 7 | Ø.79 | 7.9 | 8.5 | Ø.63 | 9.1 | 7 | Ø.47 | 7.9 | 7 | Ø.39 |
| CORYCAEUS ANGLICUS | 27.8 | 4.5 | 2.38 | 31.8 | 5 | 2.54 | 58.3 | 4 | 3.Ø3 | 47.7 | 5 | 2.34 |
| EUTERPINA ACUTIFRONS | 2.3 | 9.5 | Ø.2Ø | Ø.Ø | 1Ø.5 | Ø.ØØ | 1.8 | 8.5 | Ø.Ø9 | Ø.Ø | 9.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 2.3 | 9.5 | Ø.2Ø | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| PARACALANUS PARVUS | 4.6 | 8 | Ø.4Ø | 7.9 | 8.5 | Ø.63 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 27.8 | 4.5 | 2.38 | 15.9 | 6.5 | 1.27 | 1.8 | 8.5 | Ø.Ø9 | Ø.Ø | 9.5 | Ø.ØØ |
| OTHER COPEPODS | 331.Ø | 2 | 28.37 | 4Ø7.8 | 2 | 32.56 | 1133.4 | 1 | 58.9Ø | 1Ø35.5 | 1 | 5Ø.78 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 11 | Ø.ØØ | 15.9 | 6.5 | 1.27 | 43.7 | 6 | 2.27 | 26.5 | 6 | 1.3Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 18.5 | 6 | 1.59 | 45.Ø | 4 | 3.59 | 51.Ø | 5 | 2.65 | 76.8 | 4 | 3.77 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 657.4 | 1 | 56.35 | 662.1 | 1 | 52.85 | 5Ø8.4 | 2 | 26.42 | 73Ø.9 | 2 | 35.84 |
| Total Zooplankton | 1166.7 | | | 1252.6 | | | 1924.2 | | | 2039.2 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 61.8 | 3 | 3.78 | 8.2 | 6 | Ø.71 | 76.Ø | 3 | 4.3Ø | 53.9 | 3 | 3.94 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA SPP.(COPEPODITES) | 4.8 | 8 | Ø.29 | Ø.Ø | 9.5 | Ø.ØØ | 1.6 | 7 | Ø.Ø9 | Ø.Ø | 8.5 | Ø.ØØ |
| CORYCAEUS ANGLICUS | 31.1 | 5 | 1.91 | 3Ø.7 | 3 | 2.68 | 58.5 | 4 | 3.31 | 27.Ø | 4 | 1.97 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 1Ø | Ø.ØØ | 14.7 | 4 | 1.28 | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ |
| PARACALANUS PARVUS | 2.3 | 9 | Ø.14 | 2.Ø | 8 | Ø.18 | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 9.6 | 6 | Ø.59 | Ø.Ø | 9.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 8.5 | Ø.ØØ |
| OTHER COPEPODS | 468.5 | 2 | 28.66 | 29Ø.3 | 2 | 25.34 | 831.6 | 1 | 47.Ø2 | 647.3 | 1 | 47.3Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.2 | 7 | Ø.44 | 6.2 | 7 | Ø.54 | 9.8 | 6 | Ø.55 | 15.2 | 5 | 1.11 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 55.2 | 4 | 3.38 | 12.3 | 5 | 1.Ø7 | 21.Ø | 5 | 1.19 | 11.8 | 6 | Ø.86 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 994.Ø | 1 | 6Ø.81 | 781.Ø | 1 | 68.19 | 769.9 | 2 | 43.54 | 613.1 | 2 | 44.81 |
| Total Zooplankton | 1692.2 | | | 1188.1 | | | 1801.8 | | | 1392.3 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 16, 1978. [illegible]

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 32.8 | 4 | 2.33 | 18.5 | 4 | 4.54 | 124.5 | 3 | 9.28 | 136.6 | 3 | 8.79 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | 1Ø.1 | 8 | Ø.75 | Ø.Ø | 1Ø | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 1Ø.1 | 7 | Ø.72 | 4.Ø | 7 | Ø.99 | 25.2 | 6 | 1.88 | 11.8 | 7 | Ø.76 |
| CORYCAEUS ANGLICUS | 93.2 | 3 | 6.64 | 7.3 | 5 | 1.78 | 62.2 | 4 | 4.64 | 43.9 | 5 | 2.82 |
| EUTERPINA ACUTIFRONS | 2.5 | 9 | Ø.18 | Ø.8 | 1Ø | Ø.2Ø | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| PARACALANUS PARVUS | Ø.Ø | 1Ø.5 | Ø.ØØ | 2.4 | 9 | Ø.59 | 3.4 | 9.5 | Ø.25 | Ø.Ø | 1Ø | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 5.Ø | 8 | Ø.36 | 4.8 | 6 | 1.18 | 3.4 | 9.5 | Ø.25 | 6.7 | 8 | Ø.43 |
| OTHER COPEPODS | 226.8 | 2 | 16.16 | 77.4 | 2 | 18.93 | 435.7 | 2 | 32.5Ø | 334.Ø | 2 | 21.5Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 17.6 | 6 | 1.26 | 3.2 | 8 | Ø.79 | 37.Ø | 5 | 2.76 | 35.4 | 6 | 2.28 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 22.7 | 5 | 1.62 | 19.4 | 3 | 4.73 | 15.1 | 7 | 1.13 | 54.Ø | 4 | 3.47 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 992.9 | 1 | 7Ø.74 | 271.Ø | 1 | 66.27 | 624.2 | 1 | 46.55 | 931.2 | 1 | 59.93 |
| Total Zooplankton | 1403.7 | | | 408.9 | | | 1340.8 | | | 1553.6 | | |

PLANKTON STATION I: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 68.2 | 8.5 | 1.78 | 99.1 | 8 | 1.98 | 75.8 | 8 | 1.Ø4 | 61.1 | 12.5 | Ø.7Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 166.7 | 6.5 | 4.34 | 297.3 | 4 | 5.94 | 84Ø.9 | 2 | 11.6Ø | 927.3 | 3 | 1Ø.61 |
| ACARTIA SPP.(COPEPODITES) | 1333.3 | 1 | 34.71 | 1966.5 | 1 | 39.27 | 3734.8 | 1 | 51.52 | 3811.1 | 1 | 43.59 |
| CORYCAEUS ANGLICUS | 265.2 | 5 | 6.9Ø | 3Ø4.9 | 3 | 6.Ø9 | 681.8 | 3 | 9.4Ø | 275.1 | 9 | 3.15 |
| EUTERPINA ACUTIFRONS | 166.7 | 6.5 | 4.34 | 3Ø.5 | 12 | Ø.61 | 37.9 | 12 | Ø.52 | 61.1 | 12.5 | Ø.7Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 272.7 | 4 | 7.1Ø | 282.Ø | 5 | 5.63 | 56Ø.6 | 5 | 7.73 | 428.Ø | 6 | 4.9Ø |
| OITHONA OCULATA | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 22.7 | 13 | Ø.31 | 682.7 | 4 | 7.81 |
| PARACALANUS PARVUS | 6Ø.6 | 1Ø | 1.58 | 76.2 | 1Ø | 1.52 | 6Ø.6 | 9 | Ø.84 | 285.3 | 8 | 3.26 |
| PARACALANUS PARVUS(COPEPODITES) | 53.Ø | 11 | 1.38 | 122.Ø | 7 | 2.44 | 166.7 | 7 | 2.3Ø | 3Ø5.7 | 7 | 3.5Ø |
| OTHER COPEPODS | 348.5 | 3 | 9.Ø7 | 274.4 | 6 | 5.48 | 325.8 | 6 | 4.49 | 448.4 | 5 | 5.13 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 68.2 | 8.5 | 1.78 | 83.8 | 9 | 1.67 | 53.Ø | 1Ø | Ø.73 | 71.3 | 11 | Ø.82 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 22.7 | 12 | Ø.59 | 61.Ø | 11 | 1.22 | 45.5 | 11 | Ø.63 | 81.5 | 1Ø | Ø.93 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø15.2 | 2 | 26.43 | 141Ø.1 | 2 | 28.16 | 643.9 | 4 | 8.88 | 13Ø4.3 | 2 | 14.92 |
| Total Zooplankton | 3840.9 | | | 5007.6 | | | 7250.0 | | | 8743.2 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 37.9 | 1Ø.5 | 1.73 | 47.6 | 9.5 | 2.52 | 38.1 | 11.5 | 1.23 | 3Ø.5 | 11 | Ø.77 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 117.4 | 6 | 5.37 | 47.6 | 9.5 | 2.52 | 76.2 | 8.5 | 2.46 | 266.8 | 5 | 6.75 |
| ACARTIA SPP.(COPEPODITES) | 276.5 | 2 | 12.65 | 19Ø.4 | 3.5 | 1Ø.Ø7 | 72Ø.3 | 2 | 23.28 | 1566.3 | 1 | 39.63 |
| CORYCAEUS ANGLICUS | 185.6 | 4 | 8.49 | 82.5 | 7 | 4.36 | 171.5 | 5 | 5.54 | 221.Ø | 6 | 5.59 |
| EUTERPINA ACUTIFRONS | 15.2 | 12 | Ø.69 | 9.5 | 12 | Ø.5Ø | 76.2 | 8.5 | 2.46 | 26.7 | 12 | Ø.68 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 87.1 | 7 | 3.99 | 76.1 | 8 | 4.Ø3 | 152.4 | 6 | 4.93 | 95.3 | 8 | 2.41 |
| OITHONA OCULATA | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 15.2 | 13 | Ø.49 | 34.3 | 9.5 | Ø.87 |
| PARACALANUS PARVUS | 79.5 | 8 | 3.64 | 92.Ø | 6 | 4.87 | 1Ø6.7 | 7 | 3.45 | 163.9 | 7 | 4.15 |
| PARACALANUS PARVUS(COPEPODITES) | 178.Ø | 5 | 8.15 | 19Ø.4 | 3.5 | 1Ø.Ø7 | 243.9 | 4 | 7.88 | 339.2 | 4 | 8.58 |
| OTHER COPEPODS | 212.1 | 3 | 9.71 | 225.3 | 2 | 11.91 | 453.5 | 3 | 14.66 | 426.8 | 3 | 1Ø.8Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 37.9 | 1Ø.5 | 1.73 | 34.9 | 11 | 1.85 | 53.4 | 1Ø | 1.72 | 22.9 | 13 | Ø.58 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 75.8 | 9 | 3.47 | 123.7 | 5 | 6.54 | 38.1 | 11.5 | 1.23 | 34.3 | 9.5 | Ø.87 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 882.6 | 1 | 4Ø.38 | 77Ø.9 | 1 | 4Ø.77 | 948.9 | 1 | 3Ø.67 | 724.1 | 2 | 18.32 |
| Total Zooplankton | 2185.6 | | | 1890.9 | | | 3094.5 | | | 3952.0 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 26.7 | 8 | 1.78 | 23.7 | 8 | 2.11 | 118.1 | 6 | 3.58 | 175.3 | 5 | 4.95 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 3.8 | 12.5 | Ø.25 | 9.5 | 9 | Ø.84 | 3Ø.5 | 11 | Ø.92 | 53.4 | 1Ø.5 | 1.51 |
| ACARTIA SPP.(COPEPODITES) | 3Ø.5 | 7 | 2.Ø4 | 2.4 | 11.5 | Ø.21 | 68.6 | 7.5 | 2.Ø8 | 72.4 | 9 | 2.Ø4 |
| CORYCAEUS ANGLICUS | 19.1 | 9.5 | 1.27 | 28.4 | 5 | 2.53 | 167.7 | 4 | 5.Ø7 | 217.2 | 4 | 6.13 |
| EUTERPINA ACUTIFRONS | 3.8 | 12.5 | Ø.25 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 19.1 | 9.5 | 1.27 | 7.1 | 1Ø | Ø.63 | 61.Ø | 1Ø | 1.85 | 91.5 | 8 | 2.58 |
| OITHONA OCULATA | 7.6 | 11 | Ø.51 | 2.4 | 11.5 | Ø.21 | Ø.Ø | 12.5 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ |
| PARACALANUS PARVUS | 68.6 | 3 | 4.58 | 92.3 | 3 | 8.21 | 24Ø.1 | 3 | 7.27 | 274.4 | 3 | 7.74 |
| PARACALANUS PARVUS(COPEPODITES) | 41.9 | 5 | 2.8Ø | 26.Ø | 6.5 | 2.32 | 68.6 | 7.5 | 2.Ø8 | 171.5 | 6 | 4.84 |
| OTHER COPEPODS | 137.2 | 2 | 9.16 | 134.9 | 2 | 12.ØØ | 495.4 | 2 | 14.99 | 518.3 | 2 | 14.62 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 38.1 | 6 | 2.54 | 26.Ø | 6.5 | 2.32 | 64.8 | 9 | 1.96 | 53.4 | 1Ø.5 | 1.51 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 53.4 | 4 | 3.56 | 3Ø.8 | 4 | 2.74 | 141.Ø | 5 | 4.27 | 129.6 | 7 | 3.66 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø48.Ø | 1 | 69.97 | 74Ø.8 | 1 | 65.89 | 1848.3 | 1 | 55.94 | 1787.3 | 1 | 5Ø.43 |
| Total Zooplankton | 1497.7 | | | 1124.3 | | | 3304.1 | | | 3544.2 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 9Ø.2 | 3 | 9.25 | 1ØØ.Ø | 3 | 8.Ø7 | 34.3 | 8 | 1.25 | 49.5 | 7 | 1.53 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 2.4 | 12 | Ø.25 | 6.1 | 1Ø | Ø.49 | 3.8 | 1Ø | Ø.14 | 3.8 | 1Ø | Ø.12 |
| ACARTIA SPP.(COPEPODITES) | 26.8 | 7 | 2.75 | 46.3 | 6 | 3.74 | 57.2 | 4 | 2.Ø8 | 64.8 | 4.5 | 2.ØØ |
| CORYCAEUS ANGLICUS | 65.9 | 4 | 6.75 | 93.9 | 4 | 7.58 | 41.9 | 6 | 1.53 | 57.2 | 6 | 1.77 |
| EUTERPINA ACUTIFRONS | 2.4 | 12 | Ø.25 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 12.2 | 9 | 1.25 | 1.2 | 11.5 | Ø.Ø9 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| OITHONA OCULATA | 2.4 | 12 | Ø.25 | 1.2 | 11.5 | Ø.Ø9 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 9.8 | 1Ø | 1.ØØ | 12.2 | 9 | Ø.98 | 11.4 | 9 | Ø.42 | 19.1 | 9 | Ø.59 |
| PARACALANUS PARVUS(COPEPODITES) | 26.8 | 7 | 2.75 | 28.Ø | 8 | 2.26 | 45.7 | 5 | 1.66 | 72.4 | 3 | 2.24 |
| OTHER COPEPODS | 153.7 | 2 | 15.75 | 2Ø3.7 | 2 | 16.44 | 1577.7 | 1 | 57.42 | 1612.Ø | 1 | 49.88 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 46.3 | 5 | 4.75 | 34.1 | 7 | 2.76 | 64.8 | 3 | 2.36 | 45.7 | 8 | 1.42 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 26.8 | 7 | 2.75 | 48.8 | 5 | 3.94 | 38.1 | 7 | 1.39 | 64.8 | 4.5 | 2.ØØ |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 5Ø9.8 | 1 | 52.25 | 663.4 | 1 | 53.54 | 872.7 | 2 | 31.76 | 1242.4 | 2 | 38.44 |
| Total Zooplankton | 975.6 | | | 1239.0 | | | 2747.7 | | | 3231.7 | | |

PLANKTON STATION 8: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 65.6 | 1Ø | 2.81 | 85.4 | 8 | 3.29 | 66.Ø | 9 | 3.ØØ | 83.8 | 9 | 2.77 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1Ø8.Ø | 5 | 4.62 | 163.Ø | 5 | 6.28 | 62.1 | 1Ø | 2.82 | 261.9 | 3 | 8.65 |
| ACARTIA SPP.(COPEPODITES) | 617.3 | 2 | 26.4Ø | 7Ø2.6 | 2 | 27.Ø6 | 582.3 | 2 | 26.46 | 967.2 | 1 | 31.95 |
| CORYCAEUS ANGLICUS | 227.6 | 3 | 9.74 | 178.6 | 3 | 6.88 | 12Ø.3 | 5 | 5.47 | 195.5 | 4 | 6.46 |
| EUTERPINA ACUTIFRONS | 57.9 | 11 | 2.48 | 62.1 | 11.5 | 2.39 | 77.6 | 7 | 3.53 | 136.2 | 7 | 4.5Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 92.6 | 6 | 3.96 | 139.8 | 6 | 5.38 | 159.2 | 3.5 | 7.23 | 171.1 | 6 | 5.65 |
| OITHONA OCULATA | 23.1 | 13 | Ø.99 | 23.3 | 13 | Ø.9Ø | 27.2 | 12 | 1.23 | 87.3 | 8 | 2.88 |
| PARACALANUS PARVUS | 73.3 | 8 | 3.14 | 62.1 | 11.5 | 2.39 | 73.8 | 8 | 3.35 | 52.4 | 1Ø | 1.73 |
| PARACALANUS PARVUS(COPEPODITES) | 84.9 | 7 | 3.63 | 73.8 | 9 | 2.84 | 1ØØ.9 | 6 | 4.59 | 48.9 | 11.5 | 1.61 |
| OTHER COPEPODS | 131.2 | 4 | 5.61 | 166.9 | 4 | 6.43 | 159.2 | 3.5 | 7.23 | 178.1 | 5 | 5.88 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 14 | Ø.ØØ | 11.6 | 14 | Ø.45 | 3.9 | 14 | Ø.18 | 3.5 | 14 | Ø.12 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 46.3 | 12 | 1.98 | 97.Ø | 7 | 3.74 | 31.1 | 11 | 1.41 | 48.9 | 11.5 | 1.61 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 69.4 | 9 | 2.97 | 66.Ø | 1Ø | 2.54 | 23.3 | 13 | 1.Ø6 | 17.5 | 13 | Ø.58 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 74Ø.7 | 1 | 31.68 | 764.8 | 1 | 29.45 | 714.3 | 1 | 32.45 | 775.1 | 2 | 25.61 |
| Total Zooplankton | 2338.0 | | | 2597.0 | | | 2201.1 | | | 3027.2 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 248.1 | 5 | 6.38 | 1Ø1.7 | 9.5 | 2.52 | 126.3 | 1Ø | 1.76 | 68.Ø | 9 | 1.16 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 627.4 | 2 | 16.14 | 414.2 | 3 | 1Ø.25 | 942.4 | 4 | 13.13 | 689.8 | 4 | 11.74 |
| ACARTIA SPP.(COPEPODITES) | 532.6 | 4 | 13.7Ø | 857.6 | 2 | 21.22 | 17Ø9.8 | 1 | 23.82 | 15Ø5.8 | 1 | 25.62 |
| CORYCAEUS ANGLICUS | 189.7 | 6 | 4.88 | 283.4 | 5 | 7.Ø1 | 476.Ø | 5 | 6.63 | 5Ø5.2 | 6 | 8.6Ø |
| EUTERPINA ACUTIFRONS | 94.8 | 11 | 2.44 | 94.5 | 11 | 2.34 | 34Ø.Ø | 7 | 4.74 | 573.2 | 5 | 9.75 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 21.9 | 12 | Ø.56 | 29.1 | 12 | Ø.72 | 77.7 | 11 | 1.Ø8 | 29.1 | 11 | Ø.5Ø |
| PARACALANUS PARVUS | 182.4 | 7 | 4.69 | 13Ø.8 | 8 | 3.24 | 262.3 | 8 | 3.65 | 174.9 | 8 | 2.98 |
| PARACALANUS PARVUS(COPEPODITES) | 175.1 | 8 | 4.5Ø | 239.8 | 6 | 5.94 | 369.2 | 6 | 5.14 | 242.9 | 7 | 4.13 |
| OTHER COPEPODS | 547.2 | 3 | 14.Ø7 | 37Ø.6 | 4 | 9.17 | 1136.7 | 3 | 15.83 | 1Ø58.9 | 2 | 18.Ø2 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.3 | 13 | Ø.19 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 12.5 | Ø.ØØ | 9.7 | 12.5 | Ø.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1Ø2.1 | 1Ø | 2.63 | 138.1 | 7 | 3.42 | Ø.Ø | 12.5 | Ø.ØØ | 9.7 | 12.5 | Ø.17 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 116.7 | 9 | 3.ØØ | 1Ø1.7 | 9.5 | 2.52 | 145.7 | 9 | 2.Ø3 | 38.9 | 1Ø | Ø.66 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø43.3 | 1 | 26.83 | 1279.1 | 1 | 31.65 | 1593.3 | 2 | 22.19 | 971.5 | 3 | 16.53 |
| Total Zooplankton | 3888.6 | | | 4040.7 | | | 7179.4 | | | 5877.6 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 7.2 | 13 | Ø.15 | 35.5 | 12 | Ø.77 | 37.9 | 12 | Ø.48 | 47.8 | 12 | Ø.63 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 629.8 | 3 | 12.81 | 447.4 | 4 | 9.66 | 994.3 | 3 | 12.7Ø | 899.2 | 2 | 11.91 |
| ACARTIA SPP.(COPEPODITES) | 1445.6 | 1 | 29.4Ø | 13Ø6.8 | 2 | 28.22 | 3295.5 | 1 | 42.Ø8 | 3Ø42.1 | 1 | 4Ø.3Ø |
| CORYCAEUS ANGLICUS | 35Ø.7 | 5 | 7.13 | 319.6 | 5 | 6.9Ø | 625.Ø | 4.5 | 7.98 | 7Ø7.9 | 4 | 9.38 |
| EUTERPINA ACUTIFRONS | 15Ø.3 | 7 | 3.Ø6 | 163.4 | 6 | 3.53 | 142.Ø | 9 | 1.81 | 287.Ø | 8 | 3.8Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 93.Ø | 1Ø | 1.89 | 156.2 | 7 | 3.37 | 397.7 | 6 | 5.Ø8 | 43Ø.5 | 6 | 5.7Ø |
| OITHONA OCULATA | 7.2 | 13 | Ø.15 | 7.1 | 13 | Ø.15 | 18.9 | 13 | Ø.24 | 28.7 | 13 | Ø.38 |
| PARACALANUS PARVUS | 143.1 | 8 | 2.91 | 78.1 | 1Ø | 1.69 | 94.7 | 1Ø | 1.21 | 95.7 | 1Ø | 1.27 |
| PARACALANUS PARVUS(COPEPODITES) | 229.Ø | 6 | 4.66 | 142.Ø | 8 | 3.Ø7 | 293.6 | 7 | 3.75 | 325.3 | 7 | 4.31 |
| OTHER COPEPODS | 522.4 | 4 | 1Ø.63 | 5Ø4.3 | 3 | 1Ø.89 | 625.Ø | 4.5 | 7.98 | 621.8 | 5 | 8.24 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.2 | 13 | Ø.15 | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 5Ø.1 | 11 | 1.Ø2 | 49.7 | 11 | 1.Ø7 | 56.8 | 11 | Ø.73 | 76.5 | 11 | 1.Ø1 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 114.5 | 9 | 2.33 | 99.4 | 9 | 2.15 | 17Ø.5 | 8 | 2.18 | 133.9 | 9 | 1.77 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1166.5 | 2 | 23.73 | 1321.Ø | 1 | 28.53 | 1Ø79.5 | 2 | 13.78 | 851.4 | 3 | 11.28 |
| Total Zooplankton | 4916.5 | | | 4630.7 | | | 7831.4 | | | 7547.8 | | |

PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 31.Ø | 5 | 1.83 | 22.6 | 5 | 1.99 | 92.Ø | 5 | 4.18 | 47.1 | 3 | 3.1Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 9.5 | 9 | Ø.56 | 2.5 | 11 | Ø.22 | 9.5 | 1Ø | Ø.43 | Ø.Ø | 11 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 85.9 | 4 | 5.Ø7 | 8Ø.3 | 4 | 7.Ø6 | 95.2 | 3.5 | 4.32 | 34.5 | 6 | 2.27 |
| CORYCAEUS ANGLICUS | 171.8 | 3 | 1Ø.14 | 135.5 | 3 | 11.92 | 95.2 | 3.5 | 4.32 | 34.5 | 6 | 2.27 |
| EUTERPINA ACUTIFRONS | 7.2 | 11.5 | Ø.42 | 5.Ø | 1Ø | Ø.44 | 3.2 | 11.5 | Ø.14 | Ø.Ø | 11 | Ø.ØØ |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9.5 | 9 | Ø.56 | Ø.Ø | 12 | Ø.ØØ | 3.2 | 11.5 | Ø.14 | 3.1 | 9 | Ø.21 |
| PARACALANUS PARVUS | 14.3 | 6 | Ø.85 | 12.6 | 8.5 | 1.1Ø | 22.2 | 8 | 1.Ø1 | 25.1 | 8 | 1.65 |
| PARACALANUS PARVUS(COPEPODITES) | 11.9 | 7 | Ø.7Ø | 17.6 | 7 | 1.55 | 28.6 | 7 | 1.3Ø | 34.5 | 6 | 2.27 |
| OTHER COPEPODS | 634.5 | 2 | 37.46 | 353.9 | 2 | 31.13 | 666.2 | 2 | 3Ø.26 | 449.1 | 2 | 29.55 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.2 | 11.5 | Ø.42 | 12.6 | 8.5 | 1.1Ø | 19.Ø | 9 | Ø.86 | Ø.Ø | 11 | Ø.ØØ |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 9.5 | 9 | Ø.56 | 2Ø.1 | 6 | 1.77 | 34.9 | 6 | 1.59 | 37.7 | 4 | 2.48 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 7Ø1.3 | 1 | 41.41 | 474.4 | 1 | 41.72 | 1132.6 | 1 | 51.44 | 854.3 | 1 | 56.2Ø |
| Total Zooplankton | 1693.7 | | | 1137.0 | | | 2201.8 | | | 1520.1 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 19.Ø | 4 | Ø.52 | 19.Ø | 4 | Ø.89 | 95.2 | 3 | 2.23 | 76.1 | 4 | 2.84 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 8.5 | Ø.ØØ | 4.8 | 6 | Ø.22 | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 1Ø | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 4.8 | 6 | Ø.13 | 4.8 | 6 | Ø.22 | 31.7 | 7 | Ø.74 | 25.4 | 6 | Ø.95 |
| CORYCAEUS ANGLICUS | 23.8 | 3 | Ø.65 | 33.3 | 3 | 1.56 | 76.1 | 4 | 1.78 | 92.Ø | 3 | 3.43 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | 6.3 | 9 | Ø.15 | 9.5 | 8 | Ø.36 |
| PARACALANUS PARVUS | 9.5 | 5 | Ø.26 | Ø.Ø | 9 | Ø.ØØ | 12.7 | 8 | Ø.3Ø | 6.3 | 9 | Ø.24 |
| OTHER COPEPODS | 166.3 | 2 | 4.58 | 114.1 | 2 | 5.36 | 1256.3 | 2 | 29.38 | 85Ø.3 | 2 | 31.72 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 8.5 | Ø.ØØ | 4.8 | 6 | Ø.22 | 5Ø.8 | 6 | 1.19 | 12.7 | 7 | Ø.47 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | 63.5 | 5 | 1.48 | 34.9 | 5 | 1.3Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 3412.5 | 1 | 93.86 | 1948.7 | 1 | 91.52 | 2684.Ø | 1 | 62.76 | 1573.6 | 1 | 58.7Ø |
| Total Zooplankton | 3635.9 | | | 2129.3 | | | 4276.6 | | | 2680.8 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 76.Ø | 3 | 6.37 | 87.9 | 3 | 6.28 | 5Ø.5 | 3 | 3.7Ø | 82.5 | 5.5 | 3.Ø8 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 11.9 | 1Ø | 1.ØØ | 4.8 | 9.5 | Ø.34 | 6.3 | 8 | Ø.46 | 9.5 | 8 | Ø.36 |
| ACARTIA SPP.(COPEPODITES) | 4Ø.4 | 4.5 | 3.39 | 21.4 | 6 | 1.53 | 31.6 | 4 | 2.31 | 111.Ø | 4 | 4.15 |
| CORYCAEUS ANGLICUS | 4Ø.4 | 4.5 | 3.39 | 47.5 | 4 | 3.4Ø | 22.1 | 6 | 1.62 | 82.5 | 5.5 | 3.Ø8 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | Ø.Ø | 11 | Ø.ØØ | 4.8 | 9.5 | Ø.34 | Ø.Ø | 1Ø | Ø.ØØ | 6.3 | 9 | Ø.24 |
| PARACALANUS PARVUS | 16.6 | 9 | 1.39 | 2.4 | 11 | Ø.17 | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 1Ø.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 28.5 | 6 | 2.39 | 19.Ø | 7.5 | 1.36 | Ø.Ø | 1Ø | Ø.ØØ | Ø.Ø | 1Ø.5 | Ø.ØØ |
| OTHER COPEPODS | 32Ø.8 | 2 | 26.89 | 439.6 | 2 | 31.41 | 782.8 | 1 | 57.41 | 1348.4 | 1 | 5Ø.42 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 21.4 | 7 | 1.79 | 19.Ø | 7.5 | 1.36 | 15.8 | 7 | 1.16 | 31.7 | 7 | 1.19 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 19.Ø | 8 | 1.59 | 4Ø.4 | 5 | 2.89 | 28.4 | 5 | 2.Ø8 | 225.3 | 3 | 8.42 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 617.9 | 1 | 51.79 | 712.9 | 1 | 5Ø.93 | 426.1 | 2 | 31.25 | 777.3 | 2 | 29.Ø6 |
| Total Zooplankton | 1193.0 | | | 1400.0 | | | 1363.6 | | | 2674.5 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 121.1 | 3 | 4.93 | 67.1 | 4 | 3.32 | 6Ø.9 | 5 | 4.ØØ | 54.1 | 5 | 3.46 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | Ø.Ø | 1Ø.5 | Ø.ØØ | 2.6 | 11 | Ø.13 | Ø.Ø | 1Ø.5 | Ø.ØØ | 3.4 | 9 | Ø.22 |
| ACARTIA SPP.(COPEPODITES) | 19.4 | 6.5 | Ø.79 | 7.7 | 8.5 | Ø.38 | 2Ø.3 | 8 | 1.33 | 13.5 | 8 | Ø.87 |
| CORYCAEUS ANGLICUS | 1Ø6.6 | 4 | 4.34 | 93.Ø | 3 | 4.6Ø | 115.Ø | 4 | 7.56 | 81.2 | 3 | 5.19 |
| EUTERPINA ACUTIFRONS | 4.8 | 8.5 | Ø.2Ø | 7.7 | 8.5 | Ø.38 | 162.4 | 3 | 1Ø.67 | 47.4 | 6.5 | 3.Ø3 |
| PARACALANUS PARVUS | Ø.Ø | 1Ø.5 | Ø.ØØ | 5.2 | 1Ø | Ø.26 | Ø.Ø | 1Ø.5 | Ø.ØØ | Ø.Ø | 1Ø.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 4.8 | 8.5 | Ø.2Ø | 2Ø.7 | 6 | 1.Ø2 | 13.5 | 9 | Ø.89 | Ø.Ø | 1Ø.5 | Ø.ØØ |
| OTHER COPEPODS | 281.Ø | 2 | 11.44 | 291.8 | 2 | 14.43 | 575.1 | 1 | 37.78 | 493.9 | 2 | 31.6Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 19.4 | 6.5 | Ø.79 | 12.9 | 7 | Ø.64 | 33.8 | 7 | 2.22 | 57.5 | 4 | 3.68 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 53.3 | 5 | 2.17 | 33.6 | 5 | 1.66 | 44.Ø | 6 | 2.89 | 47.4 | 6.5 | 3.Ø3 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1845.9 | 1 | 75.15 | 1479.9 | 1 | 73.18 | 497.3 | 2 | 32.67 | 764.5 | 1 | 48.92 |
| Total Zooplankton | 2456.4 | | | 2022.2 | | | 1522.3 | | | 1562.9 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 96.9 | 4 | 3.34 | 115.8 | 3 | 4.Ø5 | 5Ø.7 | 7 | 3.27 | 64.2 | 6 | 3.33 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 48.4 | 6 | 1.67 | 67.6 | 6.5 | 2.36 | 74.3 | 5 | 4.8Ø | 89.5 | 5 | 4.65 |
| ACARTIA SPP.(COPEPODITES) | 189.Ø | 3 | 6.51 | 96.5 | 4 | 3.37 | 119.9 | 4 | 7.74 | 153.7 | 3 | 7.98 |
| CORYCAEUS ANGLICUS | 82.4 | 5 | 2.84 | 67.6 | 6.5 | 2.36 | 158.8 | 3 | 1Ø.25 | 136.8 | 4 | 7.11 |
| EUTERPINA ACUTIFRONS | 38.8 | 7 | 1.34 | 4.8 | 12.5 | Ø.17 | 25.3 | 9 | 1.64 | 43.9 | 8 | 2.28 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 14.5 | 9.5 | Ø.5Ø | 9.7 | 11 | Ø.34 | 11.8 | 12 | Ø.76 | 5.1 | 12 | Ø.26 |
| PARACALANUS PARVUS | 4.8 | 11 | Ø.17 | 14.5 | 1Ø | Ø.51 | 13.5 | 11 | Ø.87 | 22.Ø | 1Ø | 1.14 |
| PARACALANUS PARVUS(COPEPODITES) | 14.5 | 9.5 | Ø.5Ø | 77.2 | 5 | 2.7Ø | 22.Ø | 1Ø | 1.42 | 2Ø.3 | 11 | 1.Ø5 |
| OTHER COPEPODS | 615.3 | 2 | 21.2Ø | 54Ø.5 | 2 | 18.89 | 4Ø7.1 | 2 | 26.28 | 466.2 | 2 | 24.21 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 12.5 | Ø.ØØ | 4.8 | 12.5 | Ø.17 | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | Ø.Ø | 12.5 | Ø.ØØ | 19.3 | 9 | Ø.67 | 4Ø.5 | 8 | 2.62 | 25.3 | 9 | 1.32 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 19.4 | 8 | Ø.67 | 62.7 | 8 | 2.19 | 65.9 | 6 | 4.25 | 6Ø.8 | 7 | 3.16 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1778.1 | 1 | 61.27 | 178Ø.9 | 1 | 62.23 | 559.1 | 1 | 36.1Ø | 837.8 | 1 | 43.51 |
| Total Zooplankton | 2902.1 | | | 2862.0 | | | 1549.0 | | | 1925.7 | | |

PLANKTON STATION 16 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978. UNITS

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 33.9 | 3 | 1.14 | 3Ø.1 | 4 | 1.42 | 77.7 | 4 | 3.33 | 51.7 | 4 | 2.1Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 14.5 | 7.5 | Ø.49 | Ø.Ø | 9 | Ø.ØØ | Ø.Ø | 11 | Ø.ØØ | Ø.Ø | 9.5 | Ø.ØØ |
| ACARTIA SPP.(COPEPODITES) | 9.7 | 9.5 | Ø.33 | Ø.Ø | 9 | Ø.ØØ | 3.4 | 9 | Ø.14 | 19.4 | 7 | Ø.79 |
| CORYCAEUS ANGLICUS | 24.2 | 4.5 | Ø.81 | 15.1 | 5 | Ø.71 | 47.3 | 6 | 2.Ø3 | 38.8 | 5 | 1.58 |
| EUTERPINA ACUTIFRONS | 4.8 | 11 | Ø.16 | Ø.Ø | 9 | Ø.ØØ | 3.4 | 9 | Ø.14 | Ø.Ø | 9.5 | Ø.ØØ |
| PARACALANUS PARVUS | 19.4 | 6 | Ø.65 | Ø.Ø | 9 | Ø.ØØ | 3.4 | 9 | Ø.14 | Ø.Ø | 9.5 | Ø.ØØ |
| PARACALANUS PARVUS(COPEPODITES) | 9.7 | 9.5 | Ø.33 | Ø.Ø | 9 | Ø.ØØ | 6.8 | 7 | Ø.29 | Ø.Ø | 9.5 | Ø.ØØ |
| OTHER COPEPODS | 2Ø3.5 | 2 | 6.84 | 471.9 | 2 | 22.22 | 986.5 | 2 | 42.32 | 1Ø83.4 | 2 | 44.Ø2 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 14.5 | 7.5 | Ø.49 | 1Ø.Ø | 6 | Ø.47 | 84.5 | 3 | 3.62 | 35.6 | 6 | 1.45 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 24.2 | 4.5 | Ø.81 | 6Ø.2 | 3 | 2.84 | 67.6 | 5 | 2.9Ø | 9Ø.6 | 3 | 3.68 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2616.3 | 1 | 87.95 | 1536.1 | 1 | 72.34 | 1Ø5Ø.7 | 1 | 45.Ø7 | 1141.7 | 1 | 46.39 |
| Total Zooplankton | 2974.8 | | | 2123.5 | | | 2331.1 | | | 2481.2 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 17, 1978. UNITS

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 117.2 | 3 | 3.88 | 111.4 | 3 | 3.95 | 183.9 | 3 | 11.57 | 184.4 | 3 | 1Ø.39 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA SPP.(COPEPODITES) | 4.9 | 6 | Ø.16 | Ø.Ø | 9 | Ø.ØØ | 15.2 | 7 | Ø.96 | 5.1 | 7.5 | Ø.29 |
| CORYCAEUS ANGLICUS | 9.8 | 5 | Ø.32 | 63.Ø | 4 | 2.23 | 23.6 | 5 | 1.49 | 1Ø.1 | 6 | Ø.57 |
| EUTERPINA ACUTIFRONS | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | 1.7 | 9 | Ø.11 | Ø.Ø | 1Ø | Ø.ØØ |
| PARACALANUS PARVUS | Ø.Ø | 8.5 | Ø.ØØ | Ø.Ø | 9 | Ø.ØØ | 1.7 | 9 | Ø.11 | 3.4 | 9 | Ø.19 |
| PARACALANUS PARVUS(COPEPODITES) | Ø.Ø | 8.5 | Ø.ØØ | 4.8 | 6.5 | Ø.17 | 1.7 | 9 | Ø.11 | 5.1 | 7.5 | Ø.29 |
| OTHER COPEPODS | 366.2 | 2 | 12.14 | 3ØØ.4 | 2 | 1Ø.63 | 479.1 | 2 | 3Ø.15 | 575.1 | 2 | 32.41 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 19.5 | 4 | Ø.65 | 19.4 | 5 | Ø.69 | 65.8 | 4 | 4.14 | 52.4 | 4 | 2.96 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | Ø.Ø | 8.5 | Ø.ØØ | 4.8 | 6.5 | Ø.17 | 21.9 | 6 | 1.38 | 33.8 | 5 | 1.91 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 25ØØ.Ø | 1 | 82.85 | 232Ø.7 | 1 | 82.16 | 794.5 | 1 | 5Ø.ØØ | 9Ø4.9 | 1 | 51.ØØ |
| Total Zooplankton | 3017.6 | | | 2824.6 | | | 1589.1 | | | 1774.4 | | |

PLANKTON STATION 1: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 124.2 | 9 | 3.16 | 182.9 | 1Ø | 3.Ø5 | 143.7 | 1Ø | 2.79 | 145.5 | 1Ø | 2.15 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 218.4 | 7 | 5.56 | 338.4 | 6 | 5.64 | 278.4 | 7.5 | 5.4Ø | 7ØØ.Ø | 4 | 1Ø.34 |
| ACARTIA SPP.(COPEPODITES) | 395.3 | 3 | 1Ø.Ø7 | 4Ø2.4 | 4 | 6.71 | 44Ø.1 | 3 | 8.54 | 936.4 | 3 | 13.83 |
| CORYCAEUS ANGLICUS | 963.9 | 1 | 24.54 | 12Ø7.3 | 2 | 2Ø.12 | 1Ø32.9 | 2 | 2Ø.Ø3 | 1118.2 | 2 | 16.51 |
| EUTERPINA ACUTIFRONS | 116.7 | 11 | 2.97 | Ø.Ø | 13 | Ø.ØØ | 35.9 | 11 | Ø.7Ø | 245.5 | 9 | 3.62 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 9Ø.4 | 12 | 2.3Ø | 1ØØ.6 | 11 | 1.68 | 26.9 | 12 | Ø.52 | 54.5 | 12 | Ø.81 |
| PARACALANUS PARVUS | 195.8 | 8 | 4.99 | 228.7 | 7 | 3.81 | 341.3 | 5 | 6.62 | 29Ø.9 | 8 | 4.3Ø |
| PARACALANUS PARVUS(COPEPODITES) | 12Ø.5 | 1Ø | 3.Ø7 | 219.5 | 8.5 | 3.66 | 278.4 | 7.5 | 5.4Ø | 327.3 | 7 | 4.83 |
| OTHER COPEPODS | 256.Ø | 5 | 6.52 | 5Ø3.Ø | 3 | 8.38 | 4Ø4.2 | 4 | 7.84 | 49Ø.9 | 5 | 7.25 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | 9.1 | 12 | Ø.15 | Ø.Ø | 13 | Ø.ØØ | 9.1 | 13 | Ø.13 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 259.8 | 4 | 6.62 | 384.1 | 5 | 6.4Ø | 296.4 | 6 | 5.75 | 363.6 | 6 | 5.37 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 233.4 | 6 | 5.94 | 219.5 | 8.5 | 3.66 | 152.7 | 9 | 2.96 | 81.8 | 11 | 1.21 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 952.6 | 2 | 24.26 | 22Ø4.3 | 1 | 36.74 | 1724.6 | 1 | 33.45 | 2ØØ9.1 | 1 | 29.66 |
| Total Zooplankton | 3927.0 | | | 6000.0 | | | 5155.7 | | | 6772.7 | | |

PLANKTON STATION 4: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 15.2 | 12 | Ø.35 | 15.2 | 11 | Ø.27 | 9Ø.4 | 12 | Ø.79 | 45.5 | 11.5 | 1.Ø1 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 263.Ø | 5 | 6.Ø7 | 51Ø.7 | 3 | 9.15 | 948.8 | 4 | 8.25 | 568.2 | 3 | 12.56 |
| ACARTIA SPP.(COPEPODITES) | 1661.6 | 1 | 38.35 | 2835.4 | 1 | 5Ø.82 | 5527.1 | 1 | 48.Ø4 | 2227.3 | 1 | 49.25 |
| CORYCAEUS ANGLICUS | 156.2 | 7 | 3.61 | 182.9 | 7 | 3.28 | 828.3 | 5 | 7.2Ø | 287.9 | 4.5 | 6.37 |
| EUTERPINA ACUTIFRONS | 7.6 | 13 | Ø.18 | 7.6 | 12 | Ø.14 | 12Ø.5 | 1Ø.5 | 1.Ø5 | 45.5 | 11.5 | 1.Ø1 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 659.3 | 3 | 15.22 | 464.9 | 4 | 8.33 | 376.5 | 6 | 3.27 | 113.6 | 7 | 2.51 |
| OITHONA OCULATA | 61.Ø | 9 | 1.41 | 53.4 | 1Ø | Ø.96 | 225.9 | 7 | 1.96 | 68.2 | 9 | 1.51 |
| PARACALANUS PARVUS | 11Ø.5 | 8 | 2.55 | 68.6 | 8 | 1.23 | 195.8 | 9 | 1.7Ø | 6Ø.6 | 1Ø | 1.34 |
| PARACALANUS PARVUS(COPEPODITES) | 236.3 | 6 | 5.45 | 19Ø.5 | 6 | 3.42 | 21Ø.8 | 8 | 1.83 | 136.4 | 6 | 3.Ø2 |
| OTHER COPEPODS | 373.5 | 4 | 8.62 | 396.3 | 5 | 7.1Ø | 1Ø24.1 | 3 | 8.9Ø | 287.9 | 4.5 | 6.37 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 3.8 | 14 | Ø.Ø8 | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 34.3 | 11 | Ø.79 | Ø.Ø | 13.5 | Ø.ØØ | 12Ø.5 | 1Ø.5 | 1.Ø5 | 7.6 | 13 | Ø.17 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 45.7 | 1Ø | 1.Ø6 | 61.Ø | 9 | 1.Ø9 | Ø.Ø | 13.5 | Ø.ØØ | 83.3 | 8 | 1.84 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 7Ø5.Ø | 2 | 16.27 | 792.7 | 2 | 14.21 | 1837.3 | 2 | 15.97 | 59Ø.9 | 2 | 13.Ø7 |
| Total Zooplankton | 4333.1 | | | 5579.3 | | | 11506.0 | | | 4522.7 | | |

PLANKTON STATION 6: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 22.9 | 12 | Ø.66 | 63.6 | 1Ø | 1.44 | 27.4 | 12 | Ø.35 | 46.Ø | 1Ø | Ø.81 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 236.3 | 5 | 6.83 | 236.4 | 8 | 5.35 | 932.9 | 3 | 11.83 | 651.8 | 3 | 11.52 |
| ACARTIA SPP.(COPEPODITES) | 8ØØ.3 | 2 | 23.13 | 781.8 | 2 | 17.7Ø | 3539.6 | 1 | 44.9Ø | 2829.8 | 1 | 5Ø.ØØ |
| CORYCAEUS ANGLICUS | 32Ø.1 | 4 | 9.25 | 427.3 | 4 | 9.67 | 512.2 | 5 | 6.5Ø | 337.4 | 5 | 5.96 |
| EUTERPINA ACUTIFRONS | 68.6 | 1Ø | 1.98 | 18.2 | 12 | Ø.41 | 265.2 | 6 | 3.36 | 291.4 | 6 | 5.15 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 411.6 | 3 | 11.89 | 49Ø.9 | 3 | 11.11 | 82.3 | 1Ø | 1.Ø4 | 23.Ø | 11.5 | Ø.41 |
| OITHONA OCULATA | 7.6 | 13 | Ø.22 | Ø.Ø | 13 | Ø.ØØ | 9.1 | 13 | Ø.12 | Ø.Ø | 13 | Ø.ØØ |
| PARACALANUS PARVUS | 144.8 | 8 | 4.19 | 336.4 | 5 | 7.61 | 21Ø.4 | 8 | 2.67 | 99.7 | 9 | 1.76 |
| PARACALANUS PARVUS(COPEPODITES) | 198.2 | 6 | 5.73 | 3ØØ.Ø | 6 | 6.79 | 247.Ø | 7 | 3.13 | 138.Ø | 7 | 2.44 |
| OTHER COPEPODS | 182.9 | 7 | 5.29 | 218.2 | 9 | 4.94 | 53Ø.5 | 4 | 6.73 | 368.1 | 4 | 6.5Ø |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 45.7 | 11 | 1.32 | 36.4 | 11 | Ø.82 | 45.7 | 11 | Ø.58 | 23.Ø | 11.5 | Ø.41 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 137.2 | 9 | 3.96 | 245.5 | 7 | 5.56 | 1ØØ.6 | 9 | 1.28 | 13Ø.4 | 8 | 2.3Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 884.1 | 1 | 25.55 | 1263.6 | 1 | 28.6Ø | 1381.1 | 2 | 17.52 | 72Ø.9 | 2 | 12.74 |
| Total Zooplankton | 3460.4 | | | 4418.2 | | | 7884.1 | | | 5659.5 | | |

PLANKTON STATION 7: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 41.2 | 7 | 3.9Ø | 56.8 | 7.5 | 2.86 | 72.4 | 8 | 1.65 | 53.4 | 9.5 | 1.25 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 26.7 | 1Ø | 2.52 | 45.5 | 9 | 2.29 | 61.Ø | 1Ø | 1.39 | 76.2 | 8 | 1.79 |
| ACARTIA SPP.(COPEPODITES) | 43.6 | 6 | 4.13 | 1Ø6.1 | 4 | 5.34 | 148.6 | 6 | 3.38 | 221.Ø | 5 | 5.19 |
| CORYCAEUS ANGLICUS | 99.4 | 3 | 9.4Ø | 87.1 | 5 | 4.39 | 274.4 | 4 | 6.24 | 255.3 | 4 | 6.ØØ |
| EUTERPINA ACUTIFRONS | 4.8 | 12 | Ø.46 | Ø.Ø | 12 | Ø.ØØ | 45.7 | 11 | 1.Ø4 | 26.7 | 11 | Ø.63 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 17.Ø | 11 | 1.61 | 7.6 | 11 | Ø.38 | 15.2 | 12 | Ø.35 | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 72.7 | 5 | 6.88 | 83.3 | 6 | 4.2Ø | 156.2 | 5 | 3.55 | 167.7 | 6 | 3.94 |
| PARACALANUS PARVUS(COPEPODITES) | 84.8 | 4 | 8.Ø3 | 166.7 | 3 | 8.4Ø | 384.9 | 3 | 8.75 | 445.9 | 3 | 1Ø.47 |
| OTHER COPEPODS | 196.4 | 2 | 18.58 | 299.2 | 2 | 15.Ø8 | 1Ø13.7 | 2 | 23.Ø5 | 884.1 | 2 | 2Ø.77 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 36.4 | 8 | 3.44 | 11.4 | 1Ø | Ø.57 | 68.6 | 9 | 1.56 | 53.4 | 9.5 | 1.25 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 29.1 | 9 | 2.75 | 56.8 | 7.5 | 2.86 | 87.7 | 7 | 1.99 | 133.4 | 7 | 3.13 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 4Ø4.8 | 1 | 38.3Ø | 1Ø64.4 | 1 | 53.63 | 2Ø69.4 | 1 | 47.Ø5 | 1939.8 | 1 | 45.57 |
| Total Zooplankton | 1057.0 | | | 1984.8 | | | 4397.9 | | | 4256.9 | | |

PLANKTON STATION 8: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-5 M | | | | | | 5-1Ø M | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 1Ø2.3 | 9 | 3.13 | 87.1 | 9 | 3.28 | 122.Ø | 8 | 4.Ø6 | 34.3 | 12 | 1.34 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 143.9 | 7 | 4.4Ø | 143.9 | 7 | 5.41 | 1Ø6.7 | 9 | 3.55 | 49.5 | 11 | 1.94 |
| ACARTIA SPP.(COPEPODITES) | 458.3 | 2 | 14.ØØ | 299.2 | 3 | 11.25 | 545.Ø | 2 | 18.12 | 35Ø.6 | 2 | 13.71 |
| CORYCAEUS ANGLICUS | 4Ø1.5 | 3 | 12.27 | 246.2 | 4 | 9.26 | 343.Ø | 4 | 11.41 | 285.8 | 4 | 11.18 |
| EUTERPINA ACUTIFRONS | 15.2 | 12 | Ø.46 | 68.2 | 1Ø | 2.56 | 22.9 | 13 | Ø.76 | 68.6 | 9 | 2.68 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 136.4 | 8 | 4.17 | 34.1 | 11 | 1.28 | 3Ø.5 | 12 | 1.Ø1 | 3Ø.5 | 13 | 1.19 |
| PARACALANUS PARVUS | 18.9 | 11 | Ø.58 | 26.5 | 12 | 1.ØØ | 38.1 | 11 | 1.27 | 152.4 | 7 | 5.96 |
| PARACALANUS PARVUS(COPEPODITES) | 64.4 | 1Ø | 1.97 | 147.7 | 6 | 5.56 | 156.2 | 6 | 5.2Ø | 1Ø2.9 | 8 | 4.Ø2 |
| OTHER COPEPODS | 359.8 | 4 | 11.ØØ | 371.2 | 2 | 13.96 | 434.5 | 3 | 14.45 | 343.Ø | 3 | 13.41 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 7.6 | 13 | Ø.23 | 22.7 | 13 | Ø.85 | 49.5 | 1Ø | 1.65 | 53.4 | 1Ø | 2.Ø9 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 3Ø3.Ø | 5 | 9.26 | 17Ø.5 | 5 | 6.41 | 3Ø1.1 | 5 | 1Ø.Ø1 | 186.7 | 5 | 7.3Ø |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 193.2 | 6 | 5.9Ø | 132.6 | 8 | 4.99 | 133.4 | 7 | 4.44 | 156.2 | 6 | 6.11 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø68.2 | 1 | 32.64 | 9Ø9.1 | 1 | 34.19 | 724.1 | 1 | 24.Ø8 | 743.1 | 1 | 29.Ø6 |
| Total Zooplankton | 3272.7 | | | 2659.1 | | | 3006.9 | | | 2557.2 | | |

PLANKTON STATION 9: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 41.5 | 11 | 2.Ø1 | 31.2 | 11 | 1.16 | 111.9 | 6 | 2.86 | 68.2 | 1Ø | 1.59 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 328.Ø | 4 | 15.92 | 635.9 | 1 | 23.69 | 72Ø.1 | 3 | 18.41 | 479.8 | 5 | 11.21 |
| ACARTIA SPP.(COPEPODITES) | 412.3 | 2 | 2Ø.Ø1 | 536.4 | 3 | 19.98 | 789.Ø | 1 | 2Ø.18 | 879.7 | 2 | 2Ø.55 |
| CORYCAEUS ANGLICUS | 348.8 | 3 | 16.93 | 361.3 | 4 | 13.46 | 6Ø2.5 | 4 | 15.41 | 954.9 | 1 | 22.31 |
| EUTERPINA ACUTIFRONS | 57.4 | 7 | 2.79 | 53.3 | 9 | 1.99 | 65.1 | 1Ø | 1.66 | 81.1 | 9 | 1.89 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 43.9 | 9 | 2.13 | 53.3 | 8 | 1.99 | 51.1 | 12 | 1.31 | 35.1 | 12 | Ø.82 |
| OITHONA OCULATA | 1.7 | 13.5 | Ø.Ø8 | Ø.Ø | 14 | Ø.ØØ | Ø.Ø | 13.5 | Ø.ØØ | Ø.Ø | 14 | Ø.ØØ |
| PARACALANUS PARVUS | 36.9 | 12 | 1.79 | 27.5 | 12 | 1.Ø2 | 92.Ø | 8 | 2.35 | 1Ø9.4 | 7 | 2.56 |
| PARACALANUS PARVUS(COPEPODITES) | 43.1 | 1Ø | 2.Ø9 | 82.3 | 6 | 3.Ø7 | 1Ø3.9 | 7 | 2.66 | 1Ø5.5 | 8 | 2.46 |
| OTHER COPEPODS | 16Ø.4 | 5 | 7.79 | 221.5 | 5 | 8.25 | 479.8 | 5 | 12.27 | 55Ø.2 | 4 | 12.85 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 1.7 | 13.5 | Ø.Ø8 | 4.7 | 13 | Ø.17 | Ø.Ø | 13.5 | Ø.ØØ | 17.9 | 13 | Ø.42 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 66.8 | 6 | 3.24 | 39.5 | 1Ø | 1.47 | 58.9 | 11 | 1.51 | 4Ø.8 | 11 | Ø.95 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 56.2 | 8 | 2.73 | 76.6 | 7 | 2.85 | 81.3 | 9 | 2.Ø8 | 199.2 | 6 | 4.65 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 461.7 | 1 | 22.41 | 56Ø.9 | 2 | 2Ø.9Ø | 755.Ø | 2 | 19.31 | 758.5 | 3 | 17.72 |
| Total Zooplankton | 2495.2 | | | 2929.5 | | | 4283.0 | | | 4659.1 | | |

PLANKTON STATION 10 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 21.6 | 11 | 1.31 | 18.8 | 11 | 1.25 | 127.9 | 7 | 3.24 | 38.5 | 1Ø | 2.17 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 168.3 | 3 | 1Ø.19 | 57.5 | 9 | 3.82 | 438.6 | 4 | 11.12 | 224.2 | 4 | 12.64 |
| ACARTIA SPP.(COPEPODITES) | 145.4 | 4 | 8.8Ø | 75.6 | 6 | 5.Ø2 | 673.2 | 3 | 17.Ø7 | 328.9 | 2 | 18.54 |
| CORYCAEUS ANGLICUS | 19Ø.4 | 2 | 11.53 | 191.2 | 2 | 12.7Ø | 72Ø.3 | 2 | 18.26 | 279.2 | 3 | 15.73 |
| EUTERPINA ACUTIFRONS | 15.3 | 12 | Ø.93 | 14.6 | 12 | Ø.97 | 41.4 | 12 | 1.Ø5 | 26.4 | 12 | 1.49 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 114.1 | 6 | 6.91 | 9Ø.3 | 5 | 6.ØØ | 75.8 | 11 | 1.92 | 44.6 | 8 | 2.52 |
| PARACALANUS PARVUS | 11Ø.9 | 7 | 6.72 | 96.2 | 4 | 6.39 | 92.1 | 1Ø | 2.33 | 43.8 | 9 | 2.47 |
| PARACALANUS PARVUS(COPEPODITES) | 53.1 | 1Ø | 3.22 | 45.Ø | 1Ø | 2.99 | 1Ø9.5 | 8 | 2.78 | 61.2 | 6 | 3.45 |
| OTHER COPEPODS | 138.9 | 5 | 8.41 | 1Ø2.1 | 3 | 6.78 | 276.8 | 5 | 7.Ø2 | 119.5 | 5 | 6.74 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 4.1 | 13 | Ø.25 | Ø.Ø | 13 | Ø.ØØ | 5.7 | 13 | Ø.15 | 2.9 | 13 | Ø.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 86.8 | 8 | 5.26 | 59.2 | 8 | 3.93 | 98.7 | 9 | 2.5Ø | 48.9 | 7 | 2.75 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 74.Ø | 9 | 4.48 | 69.1 | 7 | 4.58 | 16Ø.8 | 6 | 4.Ø8 | 3Ø.2 | 11 | 1.7Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 528.4 | 1 | 32.ØØ | 686.5 | 1 | 45.58 | 1123.4 | 1 | 28.48 | 525.8 | 1 | 29.63 |
| Total Zooplankton | 1996.2 | | | 1810.6 | | | 4330.4 | | | 2127.5 | | |

**PLANKTON STATION 11 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.**

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 62.6 | 10 | 1.14 | 27.9 | 12 | 0.36 | 12.3 | 12.5 | 0.13 | 24.3 | 12 | 0.35 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1153.5 | 2 | 20.93 | 1964.8 | 2 | 25.19 | 525.5 | 7 | 5.57 | 534.0 | 6 | 7.63 |
| ACARTIA SPP.(COPEPODITES) | 1576.5 | 1 | 28.61 | 2364.3 | 1 | 30.31 | 2814.0 | 1 | 29.84 | 1567.6 | 1 | 22.41 |
| CORYCAEUS ANGLICUS | 167.9 | 6 | 3.05 | 246.3 | 6 | 3.16 | 1304.2 | 3 | 13.83 | 970.6 | 3 | 13.88 |
| EUTERPINA ACUTIFRONS | 8.8 | 13 | 0.16 | 18.5 | 13 | 0.24 | 721.4 | 5 | 7.65 | 315.1 | 8 | 4.50 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 825.7 | 4 | 14.98 | 992.7 | 4 | 12.72 | 584.2 | 6 | 6.20 | 814.2 | 4 | 11.64 |
| OITHONA OCULATA | 44.7 | 12 | 0.81 | 90.9 | 10 | 1.16 | 38.1 | 11 | 0.40 | 24.1 | 13 | 0.34 |
| PARACALANUS PARVUS | 106.2 | 8 | 1.93 | 191.2 | 7 | 2.45 | 327.7 | 8 | 3.48 | 327.3 | 7 | 4.68 |
| PARACALANUS PARVUS(COPEPODITES) | 105.6 | 9 | 1.92 | 129.7 | 8 | 1.66 | 225.1 | 9 | 2.39 | 277.9 | 9 | 3.97 |
| OTHER COPEPODS | 239.0 | 5 | 4.34 | 474.1 | 5 | 6.08 | 1037.4 | 4 | 11.00 | 729.1 | 5 | 10.42 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | 0.0 | 14 | 0.00 | 0.0 | 14 | 0.00 | 0.0 | 14 | 0.00 | 11.8 | 14 | 0.17 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 115.5 | 7 | 2.10 | 118.2 | 9 | 1.52 | 12.3 | 12.5 | 0.13 | 36.8 | 11 | 0.53 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 62.1 | 11 | 1.13 | 72.2 | 11 | 0.93 | 63.2 | 10 | 0.67 | 48.2 | 10 | 0.69 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1043.0 | 3 | 18.93 | 1110.2 | 3 | 14.23 | 1764.0 | 2 | 18.71 | 1313.4 | 2 | 18.78 |
| Total Zooplankton | 5759.3 | | | 8146.4 | | | 9841.3 | | | 7309.6 | | |

PLANKTON STATION 12 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 91.9 | 1Ø | 3.33 | 61.5 | 1Ø | 2.33 | 91.4 | 9 | 2.74 | 23.Ø | 12 | Ø.93 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 177.7 | 6 | 6.43 | 169.2 | 6 | 6.4Ø | 158.4 | 6 | 4.75 | 173.3 | 5 | 6.97 |
| ACARTIA SPP.(COPEPODITES) | 272.4 | 3 | 9.86 | 348.5 | 2 | 13.18 | 676.7 | 2 | 2Ø.29 | 6Ø4.2 | 2 | 24.32 |
| CORYCAEUS ANGLICUS | 197.9 | 5 | 7.17 | 213.7 | 3 | 8.Ø8 | 168.Ø | 5 | 5.Ø4 | 181.4 | 4 | 7.3Ø |
| EUTERPINA ACUTIFRONS | 1Ø4.5 | 9 | 3.78 | 21.2 | 12 | Ø.8Ø | 436.8 | 4 | 13.1Ø | 122.2 | 7 | 4.92 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 242.3 | 4 | 8.77 | 164.1 | 7 | 6.21 | 14Ø.4 | 7 | 4.21 | 51.9 | 1Ø | 2.Ø9 |
| PARACALANUS PARVUS | 116.4 | 8 | 4.21 | 151.2 | 8 | 5.72 | 46.4 | 12 | 1.39 | 29.8 | 11 | 1.2Ø |
| PARACALANUS PARVUS(COPEPODITES) | 15Ø.4 | 7 | 5.44 | 2Ø8.9 | 5 | 7.9Ø | 81.3 | 1Ø | 2.44 | 126.9 | 6 | 5.11 |
| OTHER COPEPODS | 273.1 | 2 | 9.89 | 21Ø.4 | 4 | 7.95 | 462.5 | 3 | 13.87 | 259.Ø | 3 | 1Ø.42 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ | 5.9 | 13 | Ø.18 | Ø.Ø | 13 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7Ø.4 | 11 | 2.55 | 91.6 | 9 | 3.46 | 76.9 | 11 | 2.31 | 58.1 | 9 | 2.34 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 24.8 | 12 | Ø.9Ø | 38.9 | 11 | 1.47 | 97.9 | 8 | 2.94 | 8Ø.4 | 8 | 3.24 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1Ø4Ø.6 | 1 | 37.67 | 965.6 | 1 | 36.51 | 891.9 | 1 | 26.75 | 774.7 | 1 | 31.18 |
| Total Zooplankton | 3056.1 | | | 2894.5 | | | 3642.1 | | | 2722.1 | | |

PLANKTON STATION 13 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 63.3 | 6 | 3.89 | 46.7 | 7 | 3.4Ø | 76.8 | 11 | 2.1Ø | 63.5 | 11 | 2.ØØ |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 86.8 | 3 | 5.34 | 121.7 | 2 | 8.86 | 352.1 | 3 | 9.61 | 197.2 | 4 | 6.2Ø |
| ACARTIA SPP.(COPEPODITES) | 35.2 | 9 | 2.16 | 49.2 | 6 | 3.58 | 294.2 | 4 | 8.Ø3 | 165.9 | 5 | 5.21 |
| CORYCAEUS ANGLICUS | 86.5 | 4 | 5.32 | 7Ø.1 | 5 | 5.1Ø | 121.7 | 8 | 3.32 | 63.8 | 1Ø | 2.ØØ |
| EUTERPINA ACUTIFRONS | 7.1 | 12 | Ø.44 | 11.7 | 11 | Ø.85 | 96.Ø | 9 | 2.62 | 7Ø.1 | 9 | 2.2Ø |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 37.2 | 8 | 2.29 | 46.6 | 8 | 3.39 | 19.2 | 12 | Ø.52 | 38.2 | 12 | 1.2Ø |
| PARACALANUS PARVUS | 81.7 | 5 | 5.Ø3 | 84.2 | 4 | 6.13 | 211.6 | 6 | 5.78 | 152.6 | 7 | 4.79 |
| PARACALANUS PARVUS(COPEPODITES) | 16.5 | 1Ø | 1.Ø2 | 35.4 | 9 | 2.58 | 262.7 | 5 | 7.17 | 35Ø.4 | 3 | 11.Ø1 |
| OTHER COPEPODS | 187.3 | 2 | 11.53 | 1Ø5.3 | 3 | 7.66 | 692.1 | 2 | 18.9Ø | 61Ø.6 | 2 | 19.19 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 13.9 | 11 | Ø.86 | 7.Ø | 12 | Ø.51 | 153.5 | 7 | 4.19 | 159.7 | 6 | 5.Ø2 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 46.7 | 7 | 2.88 | 32.8 | 1Ø | 2.38 | 77.Ø | 1Ø | 2.1Ø | 82.7 | 8 | 2.6Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 962.4 | 1 | 59.24 | 763.5 | 1 | 55.56 | 13Ø5.8 | 1 | 35.65 | 1227.4 | 1 | 38.57 |
| Total Zooplankton | 1681.2 | | | 1422.0 | | | 3724.0 | | | 3238.3 | | |

PLANKTON STATION 14 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 139.1 | 4 | 2.92 | 76.3 | 8 | 2.Ø7 | 44.4 | 7 | 1.74 | 77.2 | 5 | 2.63 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 95.8 | 8 | 2.Ø1 | 57.3 | 9 | 1.56 | 32.7 | 8 | 1.28 | 18.7 | 1Ø | Ø.64 |
| ACARTIA SPP.(COPEPODITES) | 81.4 | 9 | 1.71 | 11Ø.4 | 6 | 2.99 | 56.Ø | 5 | 2.2Ø | 44.4 | 7 | 1.51 |
| CORYCAEUS ANGLICUS | 287.2 | 3 | 6.Ø4 | 125.3 | 4 | 3.4Ø | 79.4 | 4 | 3.11 | 112.1 | 4 | 3.81 |
| EUTERPINA ACUTIFRONS | 19.1 | 12 | Ø.4Ø | 11.4 | 11 | Ø.31 | 3Ø.3 | 9 | 1.19 | 21.Ø | 9 | Ø.72 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 19.3 | 11 | Ø.41 | 11.3 | 12 | Ø.31 | 9.3 | 11.5 | Ø.36 | 4.6 | 11 | Ø.16 |
| PARACALANUS PARVUS | 124.6 | 5 | 2.62 | 122.Ø | 5 | 3.31 | 11.7 | 1Ø | Ø.46 | 23.3 | 8 | Ø.79 |
| PARACALANUS PARVUS(COPEPODITES) | 38.3 | 1Ø | Ø.8Ø | 8Ø.Ø | 7 | 2.17 | 9.3 | 11.5 | Ø.36 | 2.3 | 12 | Ø.Ø7 |
| OTHER COPEPODS | 583.4 | 2 | 12.26 | 445.8 | 2 | 12.Ø9 | 726.7 | 2 | 28.49 | 64Ø.2 | 2 | 21.77 |
| CIRRIPEDIA | | | | | | | | | | | | |
| CYPRIS LARVAE | Ø.Ø | 13 | Ø.ØØ | 3.8 | 13 | Ø.1Ø | Ø.Ø | 13 | Ø.ØØ | Ø.Ø | 13 | Ø.ØØ |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 1ØØ.5 | 7 | 2.11 | 159.6 | 3 | 4.33 | 158.7 | 3 | 6.22 | 128.4 | 3 | 4.37 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 11Ø.2 | 6 | 2.32 | 57.1 | 1Ø | 1.55 | 53.8 | 6 | 2.11 | 67.7 | 6 | 2.3Ø |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 3159.5 | 1 | 66.4Ø | 2427.1 | 1 | 65.82 | 1338.4 | 1 | 52.47 | 18ØØ.4 | 1 | 61.23 |
| Total Zooplankton | 4834.6 | | | 3766.5 | | | 2582.4 | | | 2977.4 | | |

PLANKTON STATION 15 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978. UNITS

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 54.1 | 10 | 2.29 | 109.8 | 6 | 2.68 | 85.6 | 9 | 2.97 | 85.9 | 9 | 2.50 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 131.3 | 4 | 5.56 | 104.8 | 7 | 2.56 | 228.6 | 4 | 7.93 | 187.7 | 5 | 5.47 |
| ACARTIA SPP.(COPEPODITES) | 58.5 | 9 | 2.48 | 81.0 | 8 | 1.98 | 102.7 | 7 | 3.57 | 154.7 | 6 | 4.51 |
| CORYCAEUS ANGLICUS | 124.2 | 6 | 5.26 | 166.7 | 3 | 4.07 | 150.9 | 6 | 5.24 | 151.0 | 7 | 4.40 |
| EUTERPINA ACUTIFRONS | 4.8 | 12 | 0.20 | 14.4 | 12 | 0.35 | 252.4 | 3 | 8.76 | 260.2 | 3 | 7.58 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 84.6 | 8 | 3.59 | 37.9 | 11 | 0.93 | 0.0 | 12 | 0.00 | 0.0 | 12 | 0.00 |
| PARACALANUS PARVUS | 190.4 | 3 | 8.07 | 38.1 | 10 | 0.93 | 24.2 | 10 | 0.84 | 24.7 | 10 | 0.72 |
| PARACALANUS PARVUS(COPEPODITES) | 209.0 | 2 | 8.85 | 81.0 | 9 | 1.98 | 12.3 | 11 | 0.43 | 8.3 | 11 | 0.24 |
| OTHER COPEPODS | 124.3 | 5 | 5.26 | 418.7 | 2 | 10.23 | 729.3 | 2 | 25.31 | 603.9 | 2 | 17.59 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 40.3 | 11 | 1.71 | 123.5 | 5 | 3.02 | 195.9 | 5 | 6.80 | 228.3 | 4 | 6.65 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 91.6 | 7 | 3.88 | 128.6 | 4 | 3.14 | 98.3 | 8 | 3.41 | 106.2 | 8 | 3.09 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 1247.8 | 1 | 52.85 | 2787.0 | 1 | 68.12 | 1001.5 | 1 | 34.76 | 1622.3 | 1 | 47.25 |
| Total Zooplankton | 2444.1 | | | 4161.8 | | | 2981.6 | | | 3555.7 | | |

PLANKTON STATION 16: ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978.

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 41.7 | 7 | 1.3Ø | 1Ø2.4 | 5 | 2.67 | 58.2 | 8 | 1.94 | 79.8 | 9 | 3.Ø8 |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 49.8 | 5 | 1.55 | 79.8 | 7 | 2.Ø8 | 89.6 | 7 | 2.98 | 12Ø.9 | 4 | 4.67 |
| ACARTIA SPP.(COPEPODITES) | 15.3 | 9 | Ø.48 | 75.6 | 8 | 1.97 | 89.6 | 6 | 2.98 | 113.2 | 5 | 4.38 |
| CORYCAEUS ANGLICUS | 91.6 | 3 | 2.85 | 12Ø.9 | 4 | 3.15 | 134.3 | 4.5 | 4.47 | 1Ø7.9 | 7 | 4.17 |
| EUTERPINA ACUTIFRONS | 11.5 | 1Ø | Ø.36 | 3.8 | 12 | Ø.Ø9 | 183.8 | 3 | 6.12 | 1Ø8.Ø | 6 | 4.17 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 7.7 | 11 | Ø.24 | 11.5 | 1Ø | Ø.3Ø | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 45.6 | 6 | 1.42 | 11.3 | 11 | Ø.29 | 13.4 | 11 | Ø.45 | 1Ø.3 | 11 | Ø.4Ø |
| PARACALANUS PARVUS(COPEPODITES) | 18.9 | 8 | Ø.59 | 37.8 | 9 | Ø.98 | 15.7 | 1Ø | Ø.52 | 12.9 | 1Ø | Ø.5Ø |
| OTHER COPEPODS | 278.Ø | 2 | 8.65 | 397.8 | 2 | 1Ø.36 | 772.3 | 2 | 25.7Ø | 563.4 | 2 | 21.77 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 7.6 | 12 | Ø.23 | 94.6 | 6 | 2.46 | 134.3 | 4.5 | 4.47 | 149.2 | 3 | 5.77 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 57.1 | 4 | 1.78 | 125.1 | 3 | 3.26 | 58.1 | 9 | 1.93 | 95.1 | 8 | 3.68 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 2588.9 | 1 | 8Ø.56 | 278Ø.Ø | 1 | 72.38 | 1455.5 | 1 | 48.44 | 1227.5 | 1 | 47.43 |
| Total Zooplankton | 3284.0 | | | 3926.4 | | | 3042.1 | | | 2616.4 | | |

PLANKTON STATION 17 ZOOPLANKTON ABUNDANCES EXPRESSED AS NUMBER PER CUBIC METER, RANK ORDER OF ABUNDANCE, AND PERCENTAGE OF TOTAL NUMBER OF INDIVIDUALS IN SAMPLE. NOVEMBER 18, 1978

| TAXA | SAMPLE DEPTH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø-8 M | | | | | | 8-BOTTOM | | | | | |
| | REPLICATE A | | | REPLICATE B | | | REPLICATE A | | | REPLICATE B | | |
| | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % | NO./M3 | RANK | % |
| ARTHROPODA | | | | | | | | | | | | |
| CLADOCERA | | | | | | | | | | | | |
| PENILIA AVIROSTRIS | 157.3 | 3 | 4.71 | 1Ø7.7 | 6 | 4.86 | 55.2 | 8 | 2.75 | 46.1 | 5 | 2.7Ø |
| COPEPODA | | | | | | | | | | | | |
| ACARTIA TONSA | 1Ø7.8 | 4 | 3.22 | 297.1 | 4 | 13.41 | 126.2 | 4 | 6.28 | 69.8 | 4 | 4.Ø9 |
| ACARTIA SPP.(COPEPODITES) | 7Ø.5 | 6 | 2.11 | 4Ø3.7 | 2 | 18.22 | 194.3 | 3 | 9.67 | 97.3 | 3 | 5.7Ø |
| CORYCAEUS ANGLICUS | 44.5 | 9 | 1.33 | 39.2 | 9 | 1.77 | 58.8 | 7 | 2.93 | 21.6 | 7 | 1.27 |
| EUTERPINA ACUTIFRONS | 8.9 | 12 | Ø.27 | 14.Ø | 11 | Ø.63 | 32.1 | 9 | 1.6Ø | 7.9 | 1Ø | Ø.46 |
| LABIDOCERA TRISPINOSA(COPEPODITES) | 23.Ø | 11 | Ø.69 | 13.1 | 12 | Ø.59 | Ø.Ø | 12 | Ø.ØØ | Ø.Ø | 12 | Ø.ØØ |
| PARACALANUS PARVUS | 94.2 | 5 | 2.82 | 17.6 | 1Ø | Ø.79 | 19.1 | 1Ø | Ø.95 | 5.4 | 11 | Ø.32 |
| PARACALANUS PARVUS(COPEPODITES) | 53.2 | 7 | 1.59 | 84.6 | 7 | 3.82 | 6.5 | 11 | Ø.32 | 24.2 | 6 | 1.42 |
| OTHER COPEPODS | 4Ø4.7 | 2 | 12.11 | 4Ø3.2 | 3 | 18.19 | 588.8 | 2 | 29.31 | 525.9 | 2 | 3Ø.78 |
| ECTOPROCTA | | | | | | | | | | | | |
| CYPHONAUTES LARVAE | 26.4 | 1Ø | Ø.79 | 54.5 | 8 | 2.46 | 9Ø.4 | 5 | 4.5Ø | 19.2 | 8 | 1.12 |
| CHAETOGNATHA | | | | | | | | | | | | |
| SAGITTA SPP. | 48.5 | 8 | 1.45 | 125.6 | 5 | 5.67 | 81.Ø | 6 | 4.Ø3 | 16.2 | 9 | Ø.95 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| OTHER PLANKTON TAXA COMBINED | 23Ø4.2 | 1 | 68.92 | 655.6 | 1 | 29.59 | 756.7 | 1 | 37.66 | 874.5 | 1 | 51.19 |
| Total Zooplankton | 3647.9 | | | 2417.6 | | | 2098.0 | | | 1786.1 | | |

Mean* chlorophyll *a* and pheopigment concentrations expressed as milligrams per cubic meter for the plankton survey of March 7 , 1978.

| Program | Survey Date | Station | SAMPLE DEPTH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1m | | | | 8m | | | |
| | | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | |
| | | | a | b** | a | b** | a | b** | a | b** |
| Unit 1 | 3 / 7 / 78 | 1 | 5.30 | | 0.00 | | 0.81 | | 0.32 | |
| | | 2 | 0.80 | | 0.32 | | 0.88 | | 0.13 | |
| | | 3 | 1.35 | | 0.13 | | 0.63 | | 0.18 | |
| | | 4 | 1.20 | | 0.19 | | 0.31 | | 1.01 | |
| | | 5 | 2.12 | | 0.00 | | 0.95 | | 0.13 | |
| | | 6 | 1.50 | | 0.21 | | 1.15 | | 0.17 | |
| | | 7 | 1.87 | | 0.16 | | 1.17 | | 0.22 | |

Mean* chlorophyll *a* and pheopigment concentrations expressed as milligrams per cubic meter for the plankton survey of May 11, 1978.

| Program | Survey Date | Station | SAMPLE DEPTH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1m | | | | 8m | | | |
| | | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | |
| | | | a | b** | a | b** | a | b** | a | b** |
| Unit 1 | 5 /11 /78 | 1 | 0.80 | | 0.01 | | 4.31 | | 0.00 | |
| | | 2 | 0.85 | | 0.07 | | 1.95 | | 0.15 | |
| | | 3 | 1.16 | | 0.15 | | 1.88 | | 0.14 | |
| | | 4 | 0.75 | | 0.07 | | 0.95 | | 0.00 | |
| | | 5 | 0.81 | | 0.07 | | 1.84 | | 0.14 | |
| | | 6 | 0.82 | | 0.12 | | 4.88 | | 0.13 | |
| | | 7 | 1.06 | | 0.19 | | 1.61 | | 0.43 | |

*Mean of three sample aliquots
**No replicate samples were taken

Mean* chlorophyll *a* and pheopigment concentrations expressed as milligrams per cubic meter for the plankton survey of July 1978.

| Program | Survey Date | Station | SAMPLE DEPTH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-5m | | | | 5-10m | | | |
| | | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | |
| | | | a | b | a | b | a | b | a | b |
| Unit 1 | 7/17/78 | 1 | 0.33 | 0.28 | 0.00 | 0.01 | 0.94 | 0.94 | 0.11 | 0.05 |
| | | 2 | 0.25 | 0.23 | 0.00 | 0.05 | 0.20 | 0.20 | 0.04 | 0.04 |
| | | 3 | 0.32 | 0.25 | 0.02 | 0.02 | 0.22 | 0.36 | 0.02 | 0.06 |
| | | 4 | 0.23 | 0.26 | 0.04 | 0.02 | 0.26 | 0.34 | 0.02 | 0.05 |
| | | 5 | 0.31 | 0.27 | 0.06 | 0.03 | 0.32 | 0.73 | 0.00 | 0.08 |
| | | 6 | 0.77 | 0.48 | 0.19 | 0.10 | 0.48 | 0.41 | 0.16 | 0.04 |
| | | 7 | 0.31 | 0.30 | 0.02 | 0.02 | 0.45 | 0.41 | 0.06 | 0.05 |
| | 7/19/78 | 1 | 1.17 | 1.25 | 0.34 | 0.12 | 1.29 | 1.28 | 0.50 | 0.58 |
| | | 4 | 1.95 | 1.77 | 0.03 | 0.11 | 1.64 | 1.84 | 0.22 | 0.38 |
| | | 6 | 1.03 | 1.15 | 0.15 | 0.09 | 1.49 | 2.43 | 0.22 | 0.21 |
| | | 7 | 0.90 | 0.41 | 0.00 | 0.29 | 0.94 | 1.20 | 0.07 | 0.08 |
| | 7/20/78 | 1 | 1.51 | 1.94 | 1.07 | 0.13 | 0.96 | 0.88 | 0.54 | 0.77 |
| | | 4 | 2.54 | 3.15 | 0.00 | 0.00 | 1.79 | 1.48 | 0.18 | 0.00 |
| | | 6 | 2.13 | 1.97 | 0.00 | 0.00 | 2.16 | 2.15 | 0.00 | 0.06 |
| | | 7 | 1.87 | 1.66 | 0.09 | 0.56 | 3.50 | 2.60 | 0.00 | 0.58 |
| | | | 0-8m | | | | 8-Bottom | | | |
| Units 2 & 3 | 7/17/78 | 9 | 0.55 | 0.57 | 0.10 | 0.14 | 1.98 | 1.79 | 0.23 | 0.38 |
| | | 10 | 0.27 | 0.24 | 0.03 | 0.04 | 0.75 | 0.88 | 0.17 | 0.26 |
| | | 11 | 0.41 | 0.42 | 0.05 | 0.04 | 0.78 | 0.77 | 0.27 | 0.30 |
| | | 12 | 0.27 | 0.38 | 0.04 | 0.04 | 2.10 | 2.22 | 0.46 | 0.38 |
| | | 13 | 1.71 | 2.45 | 0.09 | 0.24 | 0.40 | 0.47 | 0.10 | 0.16 |
| | | 14 | 0.27 | 0.20 | 0.00 | 0.03 | 1.75 | 0.70 | 0.36 | 0.10 |
| | | 15 | 0.23 | 0.22 | 0.02 | 0.03 | 0.71 | 0.79 | 0.13 | 0.17 |
| | | 16 | 0.22 | 0.24 | 0.04 | 0.01 | 0.40 | 0.70 | 0.14 | 0.20 |
| | | 17 | 0.14 | 1.03 | 0.03 | 0.26 | 0.70 | 0.23 | 0.13 | 0.00 |
| | 7/19/78 | 9 | 0.56 | 0.44 | 0.07 | 0.02 | 1.01 | 0.94 | 0.29 | 0.22 |
| | | 10 | 1.00 | 1.22 | 0.06 | 0.30 | 1.00 | 0.80 | 0.27 | 0.14 |
| | | 11 | 1.46 | 1.15 | 0.04 | 0.02 | 1.56 | 1.54 | 1.12 | 0.96 |
| | | 12 | 1.55 | 1.55 | 0.00 | 0.07 | 1.76 | 1.71 | 0.66 | 0.60 |
| | | 13 | 0.49 | 0.70 | 0.06 | 0.08 | 1.39 | 1.92 | 0.20 | 0.24 |
| | | 14 | 0.54 | 0.50 | 0.00 | 0.04 | 0.60 | 0.57 | 0.12 | 0.09 |
| | | 15 | 0.49 | 0.40 | 0.01 | 0.08 | 0.73 | 0.66 | 0.14 | 0.09 |
| | | 16 | 0.47 | 0.60 | 0.09 | 0.04 | 1.00 | 0.87 | 0.07 | 0.17 |
| | | 17 | 0.27 | 0.25 | 0.07 | 0.04 | 0.77 | 0.78 | 0.16 | 0.31 |
| | 7/20/78 | 9 | 0.60 | 0.46 | 0.00 | 0.00 | 0.53 | 0.62 | 0.00 | 0.00 |
| | | 10 | 1.58 | 1.72 | 0.00 | 0.00 | 1.08 | 1.08 | 0.32 | 0.32 |
| | | 11 | 1.64 | 1.63 | 0.46 | 0.53 | 1.45 | 0.85 | 0.88 | 1.60 |
| | | 12 | 1.44 | 1.63 | 0.29 | 0.50 | 1.41 | 1.26 | 0.56 | 0.47 |
| | | 13 | 1.03 | 1.47 | 0.60 | 0.25 | 1.25 | 1.11 | 0.62 | 0.55 |
| | | 14 | 0.28 | 0.33 | 0.02 | 0.05 | 0.72 | 0.69 | 0.05 | 0.03 |
| | | 15 | 0.95 | 1.14 | 0.10 | 0.24 | 0.50 | 0.43 | 0.41 | 0.46 |
| | | 16 | 0.55 | 0.54 | 0.48 | 0.50 | 0.51 | 0.53 | 0.62 | 0.16 |
| | | 17 | 0.83 | 0.56 | 0.34 | 0.52 | 1.00 | 0.97 | 0.34 | 0.39 |

*Mean of three sample aliquots

Mean* chlorophyll *a* and pheopigment concentrations expressed as milligrams per cubic meter for the plankton survey of September 1978.

| Program | Survey Date | Station | SAMPLE DEPTH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-5m | | | | 5-10m | | | |
| | | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | |
| | | | a | b | a | b | a | b | a | b |
| Unit 1 | 9/ 8/78 | 1 | 1.46 | 1.65 | 0.66 | 0.69 | 2.24 | 2.30 | 0.83 | 0.64 |
| | | 2 | 1.15 | 1.02 | 0.41 | 0.30 | 1.77 | 2.14 | 0.86 | 0.35 |
| | | 3 | 0.88 | 0.77 | 0.10 | 0.49 | 2.88 | 2.14 | 0.00 | 0.61 |
| | | 4 | 0.67 | 0.51 | 0.22 | 0.01 | 1.91 | 1.62 | 0.00 | 0.04 |
| | | 5 | 0.39 | 0.56 | 0.00 | 0.35 | 0.99 | 1.09 | 0.00 | 0.92 |
| | | 6 | 0.31 | 0.34 | 0.11 | 0.03 | 0.75 | 1.05 | 0.10 | 0.00 |
| | | 7 | 0.57 | 0.64 | 0.25 | 0.22 | 1.95 | 1.56 | 0.20 | 0.23 |
| | | 8 | 3.51 | 3.95 | 0.00 | 0.00 | 6.35 | 5.61 | 0.32 | 1.08 |
| | 9/ 9/78 | 1 | 1.96 | 3.06 | 2.04 | 0.06 | 1.98 | 2.91 | 1.05 | 0.66 |
| | | 4 | 1.10 | 0.86 | 0.19 | 0.41 | 1.60 | 1.07 | 0.91 | 1.15 |
| | | 6 | 0.70 | 1.01 | 1.11 | 0.85 | 1.62 | 1.88 | 0.76 | 1.03 |
| | | 7 | 0.51 | 0.76 | 0.99 | 0.88 | 4.31 | 2.14 | 1.28 | 1.98 |
| | | 8 | 2.70 | 2.91 | 1.02 | 0.62 | 1.99 | 2.02 | 0.46 | 0.44 |
| | 9/10/78 | 1 | 2.52 | 2.52 | 0.66 | 0.63 | 1.90 | 1.85 | 0.56 | 1.12 |
| | | 4 | 2.57 | 2.77 | 0.50 | 0.72 | 2.21 | 2.26 | 0.99 | 0.89 |
| | | 6 | 2.73 | 2.62 | 0.15 | 0.92 | 3.18 | 2.86 | 0.93 | 0.04 |
| | | 7 | 1.40 | 3.81 | 0.23 | 0.14 | 3.52 | 1.69 | 0.11 | 0.26 |
| | | 8 | 1.47 | 1.73 | 0.41 | 0.37 | 1.35 | 1.52 | 0.13 | 0.09 |
| | | | 0-8m | | | | 8-Bottom | | | |
| Units 2 & 3 | 9/ 8/78 | 9 | 1.00 | 0.74 | 0.00 | 0.21 | 1.46 | 1.28 | 0.00 | 0.11 |
| | | 10 | 1.85 | 1.20 | 0.10 | 0.76 | 1.19 | 1.04 | 0.05 | 0.00 |
| | | 11 | 0.61 | 0.60 | 0.00 | 0.00 | 1.54 | 0.78 | 0.32 | 0.47 |
| | | 12 | 0.38 | 0.29 | 0.20 | 0.33 | 0.76 | 0.84 | 0.50 | 0.16 |
| | | 13 | 0.72 | 0.45 | 0.00 | 0.40 | 1.82 | 2.56 | 0.58 | 0.05 |
| | | 14 | 0.70 | 1.46 | 0.88 | 0.00 | 0.71 | 1.04 | 0.35 | 0.06 |
| | | 15 | 0.61 | 0.59 | 0.04 | 0.00 | 0.82 | 0.60 | 0.33 | 0.45 |
| | | 16 | 0.49 | 0.34 | 0.17 | 0.39 | 0.87 | 0.90 | 0.12 | 0.37 |
| | | 17 | 0.44 | 0.47 | 0.19 | 0.12 | 1.30 | 0.93 | 0.41 | 0.57 |
| | 9/ 9/78 | 9 | 2.00 | 2.20 | 0.22 | 0.37 | 1.07 | 1.08 | 0.66 | 0.49 |
| | | 10 | 0.77 | 0.79 | 0.52 | 0.50 | 1.31 | 1.44 | 0.53 | 0.43 |
| | | 11 | 0.57 | 0.54 | 0.29 | 0.01 | 1.44 | 1.27 | 0.15 | 0.38 |
| | | 12 | 0.78 | 0.93 | 0.07 | 0.00 | 1.49 | 1.32 | 0.14 | 0.45 |
| | | 13 | 0.63 | 0.73 | 0.39 | 0.32 | 2.59 | 2.98 | 0.64 | 0.85 |
| | | 14 | 0.89 | 0.77 | 0.00 | 0.28 | 0.88 | 0.77 | 0.29 | 0.32 |
| | | 15 | 0.42 | 0.48 | 0.33 | 0.29 | 0.69 | 1.12 | 0.69 | 0.28 |
| | | 16 | 0.36 | 0.42 | 0.29 | 0.11 | 1.01 | 1.02 | 0.33 | 0.30 |
| | | 17 | 0.49 | 0.52 | 0.31 | 0.22 | 0.86 | 0.96 | 0.46 | 0.34 |
| | 9/10/78 | 9 | 0.83 | 0.96 | 0.36 | 0.15 | 1.21 | 0.71 | 0.75 | 0.93 |
| | | 10 | 1.25 | 0.95 | 0.36 | 0.60 | 1.30 | 1.35 | 0.59 | 0.48 |
| | | 11 | 0.81 | 1.01 | 0.68 | 0.54 | 1.45 | 1.38 | 0.45 | 0.64 |
| | | 12 | 1.02 | 0.84 | 0.00 | 0.11 | 0.83 | 1.42 | 0.03 | 0.14 |
| | | 13 | 1.02 | 0.93 | 0.00 | 0.00 | 2.09 | 3.02 | 0.00 | 0.00 |
| | | 14 | 0.66 | 0.31 | 0.00 | 0.02 | 0.78 | 0.83 | 0.22 | 0.23 |
| | | 15 | 0.63 | 0.58 | 0.02 | 0.04 | 1.17 | 1.23 | 0.11 | 0.34 |
| | | 16 | 0.55 | 0.40 | 0.13 | 0.27 | 1.05 | 0.72 | 0.44 | 0.43 |
| | | 17 | 0.67 | 0.54 | 0.00 | 0.00 | 0.96 | 1.17 | 0.26 | 0.00 |

*Mean of three sample aliquots

Mean* chlorophyll *a* and pheopigment concentrations expressed as milligrams per cubic meter for the plankton survey of November 1978.

| Program | Survey Date | Station | SAMPLE DEPTH | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0-5m | | | | 5-10m | | | |
| | | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | | Chlorophyll *a* ($mg/m^3$) | | Pheopigments ($mg/m^3$) | |
| | | | a | b | a | b | a | b | a | b |
| Unit 1 | 11/16/78 | 1 | 6.03 | 6.21 | 1.50 | 0.50 | 5.02 | 5.28 | 1.01 | 1.03 |
| | | 2 | 4.57 | 4.96 | 1.09 | 1.08 | 4.80 | 5.20 | 1.06 | 0.69 |
| | | 3 | 4.89 | 3.71 | 0.87 | 1.30 | 5.11 | 5.11 | 1.14 | 0.88 |
| | | 4 | 5.34 | 5.10 | 1.41 | 1.38 | 5.31 | 4.71 | 1.54 | 1.49 |
| | | 5 | 4.74 | M | 1.27 | M | 5.49 | 4.42 | 1.43 | 1.04 |
| | | 6 | 4.39 | 4.50 | 0.89 | 0.94 | 5.07 | 4.88 | 1.25 | 0.93 |
| | | 7 | 4.58 | 4.19 | 1.19 | 1.02 | 6.55 | 6.95 | 2.18 | 2.66 |
| | | 8 | 3.21 | 4.00 | 0.80 | 1.47 | 4.19 | 4.71 | 2.07 | 1.66 |
| | 11/17/78 | 1 | 5.69 | 6.83 | 1.63 | 1.74 | 6.60 | 5.88 | 1.62 | 1.87 |
| | | 4 | 4.65 | 4.96 | 1.16 | 1.18 | 4.59 | 4.88 | 1.42 | 0.98 |
| | | 6 | 4.19 | 4.50 | 0.67 | 0.94 | 4.08 | 4.59 | 0.69 | 0.87 |
| | | 7 | 4.23 | 3.96 | 0.59 | 0.75 | 5.92 | 5.17 | 0.95 | 0.95 |
| | | 8 | 4.77 | 6.32 | 1.53 | 1.65 | 6.66 | 7.75 | 2.06 | 2.20 |
| | 11/18/78 | 1 | 8.79 | 8.56 | 1.67 | 2.23 | 9.48 | 8.73 | 1.81 | 1.66 |
| | | 4 | 5.36 | 6.55 | 1.01 | 0.90 | 7.43 | 7.83 | 1.80 | 1.85 |
| | | 6 | 5.94 | 6.80 | 1.59 | 1.48 | 6.87 | 7.90 | 1.58 | 1.70 |
| | | 7 | 5.35 | 5.02 | 0.49 | 0.64 | 6.72 | 5.86 | 2.31 | 1.74 |
| | | 8 | 8.48 | 8.25 | 2.28 | 2.31 | 7.32 | 9.10 | 2.32 | 2.41 |
| | | | 0-8m | | | | 8-Bottom | | | |
| Units 2 & 3 | 11/16/78 | 9 | 4.61 | 3.27 | 1.21 | 0.74 | 4.46 | 4.42 | 1.16 | 1.79 |
| | | 10 | 5.34 | 5.97 | 1.93 | 1.80 | 5.28 | 5.88 | 2.54 | 1.87 |
| | | 11 | 4.26 | 4.54 | 1.00 | 0.56 | 5.58 | M | 1.64 | M |
| | | 12 | 4.08 | 3.50 | 0.86 | 0.96 | 4.19 | 5.16 | 0.90 | 1.17 |
| | | 13 | 3.99 | 4.73 | 0.41 | 0.00 | 5.51 | 5.86 | 1.56 | 1.26 |
| | | 14 | 3.77 | 4.48 | 0.95 | 1.29 | 4.82 | 4.77 | 1.34 | 1.30 |
| | | 15 | 3.26 | 2.39 | 0.95 | 0.54 | 4.23 | 3.89 | 0.57 | 0.71 |
| | | 16 | 3.07 | 3.64 | 0.55 | 0.36 | 3.73 | 4.13 | 0.79 | 0.51 |
| | | 17 | 2.81 | 3.04 | 0.47 | 0.20 | 5.23 | 4.34 | 0.70 | 0.75 |
| | 11/17/78 | 9 | 8.24 | 7.81 | 1.92 | 1.82 | 6.18 | 6.14 | 1.84 | 1.83 |
| | | 10 | 5.63 | 5.51 | 1.49 | 1.36 | 4.88 | 4.96 | 2.09 | 1.54 |
| | | 11 | 3.03 | 3.10 | 0.99 | 0.81 | 5.64 | 4.93 | 0.26 | 0.98 |
| | | 12 | 3.04 | 3.74 | 1.03 | 0.57 | 3.91 | 5.00 | 0.77 | 0.70 |
| | | 13 | 4.17 | 4.32 | 0.79 | 0.27 | 5.95 | 6.45 | 0.70 | 0.89 |
| | | 14 | 5.13 | 3.73 | 0.49 | 0.54 | 4.65 | 5.28 | 0.92 | 0.91 |
| | | 15 | 4.12 | 4.08 | 0.48 | 0.46 | 5.93 | 5.13 | 1.22 | 1.47 |
| | | 16 | 2.45 | 2.71 | 0.59 | 0.50 | 3.20 | 4.19 | 0.49 | 0.83 |
| | | 17 | 2.64 | 2.86 | 0.24 | 0.33 | 3.37 | 3.06 | 0.37 | 0.24 |
| | 11/18/78 | 9 | 8.61 | 7.81 | 2.30 | 2.32 | 7.12 | 8.15 | 2.55 | 2.27 |
| | | 10 | 7.63 | 9.42 | 2.46 | 2.39 | 8.01 | 9.04 | 1.85 | 2.30 |
| | | 11 | 5.78 | 5.72 | 2.04 | 2.35 | 6.40 | 6.66 | 1.83 | 2.51 |
| | | 12 | 5.10 | 5.18 | 1.13 | 1.42 | 7.18 | 8.64 | 2.50 | 1.82 |
| | | 13 | 4.82 | 5.51 | 1.19 | 1.15 | 5.51 | 5.74 | 1.51 | 1.78 |
| | | 14 | 6.09 | 5.17 | 1.23 | 1.00 | 6.49 | 5.40 | 1.58 | 1.52 |
| | | 15 | 6.91 | 6.54 | 0.37 | 1.38 | 8.07 | 8.02 | 1.48 | 1.69 |
| | | 16 | 5.57 | 5.90 | 0.98 | 1.11 | 6.02 | 4.81 | 1.29 | 1.35 |
| | | 17 | 4.09 | 5.62 | 1.05 | 1.49 | 4.57 | 5.18 | 1.12 | 1.74 |

*Mean of three sample aliquots
M = Missing due to loss of sample

Temperature ($^{o}C$) profiles obtained during the plankton survey of March 7, 1978.

| Depth (Meters) | UNIT 1 | | | | | | |
|---|---|---|---|---|---|---|---|
| | STATIONS | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0 | 16.4 | 16.4 | 16.7 | 16.7 | 16.5 | 16.5 | 15.8 |
| 1 | 16.2 | 16.4 | 16.6 | 16.7 | 16.0 | 16.5 | 15.7 |
| 2 | 15.7 | 16.3 | 16.3 | 16.6 | 15.7 | 16.5 | 15.7 |
| 3 | 15.6 | 15.7 | 15.6 | 15.7 | 15.6 | 16.4 | 15.6 |
| 4 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.7 | 15.6 |
| 5 | 15.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.5 |
| 6 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 |
| 7 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 |
| 8 | 15.4 | 15.5 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 |
| 9 | 15.4 | 15.5 | 15.5 | 15.6 | 15.5 | 15.6 | 15.5 |
| 10 | 15.4 | 15.5 | 15.5 | 15.6 | 15.5 | 15.6 | 15.4 |

Temperature ($^{o}C$) profiles obtained during the plankton survey of May 11, 1978.

| Depth (Meters) | UNIT 1 | | | | | | |
|---|---|---|---|---|---|---|---|
| | STATIONS | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0 | 18.2 | 18.5 | 18.4 | 18.5 | 18.0 | 18.5 | 17.9 |
| 1 | 18.2 | 18.4 | 18.4 | 18.4 | 17.7 | 18.5 | 17.6 |
| 2 | 17.8 | 18.4 | 18.2 | 18.3 | 17.6 | 18.4 | 17.6 |
| 3 | 17.8 | 18.2 | 17.9 | 17.9 | 17.6 | 18.1 | 17.5 |
| 4 | 17.7 | 18.0 | 17.9 | 17.6 | 17.5 | 17.8 | 17.2 |
| 5 | 17.7 | 17.9 | 17.8 | 17.5 | 17.5 | 17.7 | 16.4 |
| 6 | 17.6 | 17.8 | 17.8 | 17.5 | 17.4 | 17.6 | 16.4 |
| 7 | 17.6 | 17.7 | 17.4 | 17.5 | 17.3 | 17.4 | 16.2 |
| 8 | 17.5 | 17.6 | 17.2 | 17.5 | 17.0 | 17.4 | 16.0 |
| 9 | 17.5 | 17.6 | 17.2 | 17.5 | 16.8 | 17.3 | 16.0 |
| 10 | 17.1 | 17.5 | 17.2 | 17.4 | 16.0 | 17.2 | 15.6 |

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of July 14 and 17, 1978.

| DEPTH (meters) | UNIT 1 (July 14, 1978) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.5 | 62 | 20.0 | 60 | 20.1 | 62 | 20.4 | 65 | 20.3 | 64 | 20.0 | 60 | 19.6 | 54 |
| 1 | 19.3 | 63 | 19.5 | 60 | 19.8 | 62 | 19.6 | 66 | 19.4 | 65 | 19.6 | 60 | 19.4 | 54 |
| 2 | 19.1 | 60 | 19.4 | 57 | 19.2 | 61 | 19.5 | 64 | 19.4 | 66 | 19.0 | 59 | 19.4 | 54 |
| 3 | 19.1 | 57 | 19.3 | 54 | 19.1 | 59 | 19.4 | 60 | 19.3 | 60 | 18.6 | 54 | 19.3 | 52 |
| 4 | 19.0 | 55 | 19.2 | 51 | 19.1 | 52 | 19.3 | 58 | 18.9 | 53 | 18.2 | 42 | 19.2 | 45 |
| 5 | 18.9 | 50 | 19.1 | 47 | 19.0 | 53 | 19.2 | 52 | 18.9 | 52 | 18.0 | 38 | 19.2 | 40 |
| 6 | 18.7 | 47 | 18.9 | 45 | 19.0 | 51 | 18.9 | 49 | 18.6 | 45 | 18.0 | 34 | 18.7 | 39 |
| 7 | 18.7 | 46 | 18.5 | 43 | 18.9 | 50 | 18.7 | 47 | 18.6 | 49 | 17.8 | 31 | 18.5 | 30 |
| 8 | 18.0 | 20 | 18.4 | 43 | 18.7 | 49 | 18.4 | 42 | 17.5 | 15 | 17.5 | 22 | 18.4 | 18 |
| 9 | 17.2 | 6 | 17.9 | 42 | 18.5 | 47 | 17.9 | 12 | 15.9 | 18 | 17.1 | 15 | 17.8 | 5 |
| 10 | 16.5 | 5 | 17.7 | 32 | 17.4 | 20 | 17.3 | 5 | 14.7 | 5 | 16.1 | 4 | 15.7 | 2 |
| 11 | 15.2 | 0 | | | 15.6 | 6 | | | | | 14.9 | 2 | | |
| 12 | | | | | 15.1 | 0 | | | | | 14.7 | 0 | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
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| 29 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |

| DEPTH (meters) | UNITS 2 & 3 (July 17, 1978) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 19.6 | 53 | 19.8 | 62 | 19.8 | 59 | 19.4 | 59 | 19.9 | 52 | 19.8 | 57 | 20.1 | 61 | 19.7 | 60 | 19.2 | 62 |
| 1 | 19.6 | 52 | 19.7 | 61 | 19.8 | 58 | 19.3 | 59 | 19.8 | 52 | 19.8 | 57 | 19.8 | 62 | 19.6 | 60 | 19.2 | 62 |
| 2 | 19.6 | 52 | 19.6 | 60 | 19.8 | 58 | 19.2 | 58 | 19.7 | 52 | 19.7 | 58 | 19.6 | 63 | 19.2 | 60 | 19.1 | 62 |
| 3 | 19.6 | 52 | 19.6 | 61 | 19.8 | 56 | 19.1 | 57 | 19.5 | 53 | 19.6 | 60 | 19.5 | 63 | 19.0 | 62 | 19.0 | 62 |
| 4 | 19.5 | 52 | 19.5 | 62 | 19.2 | 55 | 18.9 | 55 | 19.5 | 50 | 19.6 | 58 | 19.4 | 63 | 18.8 | 64 | 18.9 | 62 |
| 5 | 19.4 | 50 | 19.5 | 62 | 19.0 | 56 | 18.8 | 53 | 19.2 | 53 | 19.4 | 58 | 19.2 | 64 | 18.6 | 64 | 18.6 | 61 |
| 6 | 18.6 | 40 | 19.4 | 60 | 18.8 | 58 | 18.7 | 49 | 18.9 | 50 | 19.1 | 58 | 19.1 | 63 | 18.4 | 66 | 18.5 | 61 |
| 7 | 18.0 | 43 | 19.2 | 60 | 18.5 | 57 | 14.4 | 46 | 18.4 | 40 | 19.0 | 58 | 19.0 | 63 | 18.0 | 67 | 18.4 | 60 |
| 8 | 17.6 | 24 | 18.6 | 57 | 18.3 | 58 | 18.0 | 39 | 18.2 | 30 | 18.8 | 58 | 18.9 | 64 | 17.8 | 68 | 18.4 | 60 |
| 9 | 16.4 | 18 | 17.9 | 57 | 17.6 | 46 | 16.5 | 23 | 16.8 | 25 | 17.2 | 62 | 18.8 | 63 | 17.8 | 68 | 16.5 | 27 |
| 10 | 15.6 | 15 | 17.4 | 51 | 16.6 | 27 | 15.8 | 16 | 16.1 | 29 | 16.8 | 60 | 18.7 | 63 | 17.4 | 68 | 15.3 | 27 |
| 11 | 15.7 | 17 | 17.0 | 45 | 15.7 | 22 | 14.3 | 10 | 14.4 | 12 | 16.3 | 58 | 17.8 | 66 | 17.3 | 66 | 14.3 | 27 |
| 12 | 14.5 | 12 | 16.6 | 38 | 15.0 | 22 | 13.2 | 10 | 13.5 | 21 | 15.4 | 37 | 17.2 | 65 | 16.8 | 64 | 14.0 | 27 |
| 13 | 13.2 | 3 | 15.2 | 17 | 14.4 | 26 | 12.7 | 9 | 12.6 | 22 | 15.1 | 35 | 17.2 | 62 | 16.4 | 60 | 13.5 | 30 |
| 14 | 12.8 | 0 | 14.1 | 12 | 13.9 | 20 | 12.3 | 8 | 12.2 | 19 | 14.1 | 39 | 15.4 | 44 | 15.2 | 45 | 12.9 | 30 |
| 15 | | | 13.7 | 0 | 13.9 | 18 | 12.3 | 0 | 11.9 | 0 | 13.6 | 47 | 14.3 | 36 | 14.5 | 32 | 11.8 | 50 |
| 16 | | | | | | | | | | | 13.3 | 52 | 13.6 | 33 | 13.9 | 37 | 11.5 | 53 |
| 17 | | | | | | | | | | | 12.8 | 54 | 12.6 | 43 | 13.1 | 44 | 11.3 | 49 |
| 18 | | | | | | | | | | | 12.5 | 52 | 12.3 | 47 | 12.5 | 48 | 11.3 | 48 |
| 19 | | | | | | | | | | | 12.2 | 55 | 12.3 | 49 | 12.3 | 53 | 11.1 | 43 |
| 20 | | | | | | | | | | | 12.2 | 57 | 12.2 | 53 | 12.3 | 55 | 10.9 | 50 |
| 21 | | | | | | | | | | | 12.2 | 57 | 11.7 | 45 | 12.0 | 54 | 10.7 | 53 |
| 22 | | | | | | | | | | | 11.9 | 57 | 11.7 | 54 | 11.9 | 54 | 10.6 | 62 |
| 23 | | | | | | | | | | | 11.8 | 58 | 11.7 | 53 | 11.9 | 52 | 10.6 | 62 |
| 24 | | | | | | | | | | | 11.7 | 54 | 11.7 | 53 | 11.8 | 51 | 10.5 | 62 |
| 25 | | | | | | | | | | | 11.5 | 51 | 11.6 | 48 | 11.7 | 49 | 10.3 | 64 |
| 26 | | | | | | | | | | | 11.1 | 44 | 11.5 | 40 | 11.5 | 49 | 10.2 | 60 |
| 27 | | | | | | | | | | | 10.8 | 42 | 11.0 | 1 | 11.1 | 52 | 10.2 | 56 |
| 28 | | | | | | | | | | | 10.6 | 20 | | | 10.7 | 35 | 10.2 | 48 |
| 29 | | | | | | | | | | | 10.6 | 0 | | | 10.7 | 2 | 10.2 | 0 |
| 30 | | | | | | | | | | | | | | | | | | |

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of July 19, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | |
| | 1 | | 2* | | 3* | | 4 | | 5* | | 6 | | 7 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 19.9 | 15 | | | | | 21.2 | 8 | | | 21.1 | 8 | 20.4 | 16 |
| 1 | 19.9 | 14 | | | | | 21.2 | 8 | | | 21.1 | 4 | 20.3 | 21 |
| 2 | 19.7 | 14 | | | | | 21.2 | 6 | | | 20.8 | 4 | 20.3 | 21 |
| 3 | 18.9 | 10 | | | | | 21.2 | 4 | | | 20.8 | 5 | 20.2 | 20 |
| 4 | 18.7 | 10 | | | | | 20.4 | 4 | | | 20.8 | 6 | 19.7 | 22 |
| 5 | 18.4 | 7 | | | | | 19.7 | 8 | | | 20.4 | 4 | 19.4 | 23 |
| 6 | 17.9 | 5 | | | | | 19.4 | 18 | | | 18.6 | 15 | 18.9 | 27 |
| 7 | 16.8 | 4 | | | | | 18.2 | 16 | | | 17.0 | 25 | 17.6 | 29 |
| 8 | 16.0 | 4 | | | | | 16.5 | 16 | | | 16.5 | 2 | 17.3 | 34 |
| 9 | 16.0 | 4 | | | | | 15.5 | 8 | | | 15.5 | 1 | 16.1 | 12 |
| 10 | 15.5 | 5 | | | | | 14.0 | 5 | | | 15.0 | 2 | 14.6 | 0 |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
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| 30 | | | | | | | | | | | | | | |

| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | | | | | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | | | | |
| 0 | 19.2 | 32 | 20.4 | 15 | 21.3 | 16 | 20.4 | 26 | 19.1 | 31 | 17.8 | 29 | 19.0 | 31 | 19.8 | 25 | 19.0 | 44 | | | | |
| 1 | 19.0 | 37 | 19.9 | 15 | 20.4 | 16 | 20.4 | 26 | 19.1 | 32 | 17.8 | 30 | 18.9 | 35 | 19.6 | 28 | 19.0 | 44 | | | | |
| 2 | 17.5 | 61 | 19.4 | 42 | 20.4 | 18 | 20.4 | 24 | 19.0 | 34 | 17.7 | 50 | 18.8 | 42 | 19.4 | 45 | 18.9 | 46 | | | | |
| 3 | 16.0 | 61 | 19.4 | 42 | 20.4 | 16 | 20.2 | 20 | 18.4 | 38 | 17.6 | 58 | 17.4 | 67 | 18.3 | 63 | 17.4 | 66 | | | | |
| 4 | 15.3 | 65 | 19.2 | 46 | 20.2 | 24 | 19.9 | 14 | 17.4 | 50 | 16.6 | 66 | 17.2 | 68 | 18.0 | 64 | 17.2 | 67 | | | | |
| 5 | 14.5 | 65 | 16.5 | 72 | 19.9 | 24 | 19.2 | 14 | 17.0 | 48 | 16.1 | 69 | 17.2 | 68 | 17.8 | 63 | 17.0 | 67 | | | | |
| 6 | 14.1 | 57 | 16.0 | 65 | 19.4 | 32 | 17.0 | 18 | 16.8 | 46 | 15.8 | 70 | 17.2 | 68 | 17.5 | 64 | 16.5 | 67 | | | | |
| 7 | 13.7 | 54 | 16.0 | 60 | 18.9 | 40 | 16.5 | 26 | 16.0 | 41 | 15.4 | 70 | 17.2 | 69 | 16.5 | 64 | 16.5 | 67 | | | | |
| 8 | 13.5 | 37 | 16.0 | 54 | 16.5 | 44 | 16.0 | 26 | 15.4 | 33 | 14.2 | 69 | 16.9 | 68 | 15.9 | 63 | 16.1 | 66 | | | | |
| 9 | 13.3 | 43 | 15.5 | 52 | 16.0 | 46 | 16.0 | 30 | 15.1 | 29 | 13.6 | 68 | 16.4 | 66 | 15.9 | 63 | 15.4 | 66 | | | | |
| 10 | 12.7 | 30 | 15.1 | 40 | 16.0 | 34 | 15.3 | 8 | 14.3 | 17 | 13.1 | 68 | 15.6 | 67 | 15.1 | 60 | 14.9 | 62 | | | | |
| 11 | 11.3 | 17 | 14.5 | 32 | 15.5 | 21 | 14.5 | 5 | 14.0 | 17 | 12.9 | 68 | 15.0 | 67 | 14.8 | 58 | 14.0 | 60 | | | | |
| 12 | 11.0 | 13 | 13.5 | 32 | 14.5 | 10 | 14.3 | 4 | 13.3 | 8 | 12.5 | 69 | 14.5 | 67 | 14.5 | 56 | 13.3 | 58 | | | | |
| 13 | 10.9 | 10 | 12.9 | 18 | 14.0 | 4 | 13.5 | 2 | 11.8 | 0 | 12.2 | 68 | 13.4 | 63 | 14.3 | 54 | 12.5 | 52 | | | | |
| 14 | 11.3 | 3 | 12.6 | 15 | 14.0 | 2 | 13.5 | 1 | 11.3 | 0 | 11.9 | 63 | 13.3 | 58 | 13.2 | 46 | 11.6 | 52 | | | | |
| 15 | 11.1 | 0 | 12.6 | 2 | 14.0 | 0 | 13.0 | 0 | | | 11.6 | 55 | 13.1 | 54 | 12.7 | 52 | 11.4 | 55 | | | | |
| 16 | | | | | | | | | | | 11.4 | 54 | 12.0 | 54 | 12.6 | 52 | 11.1 | 54 | | | | |
| 17 | | | | | | | | | | | 11.1 | 56 | 11.4 | 62 | 12.3 | 56 | 10.6 | 55 | | | | |
| 18 | | | | | | | | | | | 10.9 | 62 | 11.3 | 58 | 12.0 | 56 | 11.7 | 56 | | | | |
| 19 | | | | | | | | | | | 10.5 | 63 | 11.1 | 47 | 11.9 | 58 | 11.4 | 54 | | | | |
| 20 | | | | | | | | | | | 10.3 | 54 | 10.9 | 43 | 11.8 | 56 | 11.1 | 52 | | | | |
| 21 | | | | | | | | | | | 10.0 | 44 | 10.9 | 52 | 11.8 | 59 | 11.1 | 49 | | | | |
| 22 | | | | | | | | | | | 9.9 | 60 | 10.7 | 49 | 11.8 | 59 | 11.0 | 46 | | | | |
| 23 | | | | | | | | | | | 9.8 | 65 | 10.6 | 43 | 11.7 | 48 | 11.0 | 46 | | | | |
| 24 | | | | | | | | | | | 9.6 | 62 | 10.6 | 40 | 11.4 | 44 | 11.0 | 42 | | | | |
| 25 | | | | | | | | | | | 9.5 | 66 | 10.5 | 36 | 11.0 | 44 | 10.9 | 42 | | | | |
| 26 | | | | | | | | | | | 9.5 | 69 | 10.4 | 36 | 10.9 | 44 | 10.6 | 41 | | | | |
| 27 | | | | | | | | | | | 9.2 | 58 | 10.3 | 36 | 10.7 | 38 | 10.3 | 41 | | | | |
| 28 | | | | | | | | | | | 9.2 | 31 | 10.3 | 0 | 10.7 | 0 | 10.1 | 20 | | | | |
| 29 | | | | | | | | | | | 9.2 | 19 | | | | | 10.1 | 0 | | | | |
| 30 | | | | | | | | | | | 9.2 | 0 | | | | | | | | | | |

*Station not included in program on second day of survey

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of July 20, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | |
| | 1 | | 2* | | 3* | | 4 | | 5* | | 6 | | 7 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 18.4 | 2 | | | | | 19.4 | 4 | | | 19.2 | 7 | 18.9 | 14 |
| 1 | 18.0 | 1 | | | | | 19.4 | 4 | | | 19.2 | 7 | 18.9 | 15 |
| 2 | 17.5 | 1 | | | | | 18.9 | 3 | | | 17.9 | 5 | 18.4 | 16 |
| 3 | 16.5 | 0 | | | | | 18.4 | 10 | | | 17.5 | 4 | 16.7 | 11 |
| 4 | 16.0 | 3 | | | | | 16.5 | 20 | | | 15.3 | 7 | 17.0 | 8 |
| 5 | 15.7 | 4 | | | | | 16.0 | 27 | | | 14.7 | 9 | 14.0 | 8 |
| 6 | 13.7 | 4 | | | | | 15.0 | 21 | | | 14.3 | 3 | 13.5 | 1 |
| 7 | 13.2 | 14 | | | | | 14.5 | 6 | | | 13.7 | 14 | 12.6 | 4 |
| 8 | 12.9 | 19 | | | | | 14.5 | 6 | | | 13.5 | 3 | 12.4 | 4 |
| 9 | 12.4 | 20 | | | | | 14.0 | 6 | | | 12.9 | 1 | 12.4 | 2 |
| 10 | 12.4 | 16 | | | | | 13.5 | 6 | | | 12.4 | 0 | 12.4 | 0 |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | |
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| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 17.2 | 10 | 18.4 | 12 | 19.4 | 8 | 19.8 | 14 | 19.8 | 26 | 17.1 | 53 | 18.2 | 17 | 17.4 | 48 | 18.7 | 26 |
| 1 | 15.8 | 13 | 17.9 | 13 | 19.4 | 8 | 19.2 | 17 | 19.6 | 26 | 16.9 | 53 | 17.5 | 22 | 17.2 | 52 | 17.8 | 32 |
| 2 | 15.0 | 27 | 17.7 | 16 | 18.9 | 11 | 19.0 | 19 | 19.3 | 26 | 16.3 | 71 | 16.7 | 48 | 17.0 | 57 | 17.8 | 45 |
| 3 | 14.5 | 40 | 17.5 | 36 | 17.5 | 36 | 17.5 | 21 | 18.5 | 30 | 15.0 | 81 | 16.3 | 59 | 16.5 | 62 | 17.3 | 56 |
| 4 | 13.4 | 64 | 16.5 | 48 | 14.5 | 34 | 16.5 | 32 | 17.2 | 30 | 13.9 | 81 | 15.7 | 67 | 16.3 | 66 | 17.2 | 58 |
| 5 | 13.2 | 71 | 15.0 | 52 | 15.1 | 29 | 15.9 | 37 | 15.4 | 38 | 13.5 | 82 | 15.4 | 67 | 16.0 | 68 | 15.9 | 64 |
| 6 | 13.1 | 63 | 14.3 | 60 | 14.0 | 27 | 14.8 | 28 | 14.8 | 26 | 12.9 | 81 | 15.2 | 76 | 15.0 | 70 | 15.3 | 66 |
| 7 | 12.6 | 70 | 14.0 | 58 | 13.7 | 23 | 14.5 | 24 | 14.6 | 25 | 12.6 | 71 | 15.0 | 80 | 14.5 | 72 | 14.9 | 64 |
| 8 | 12.2 | 70 | 14.0 | 55 | 13.5 | 20 | 12.8 | 10 | 14.5 | 23 | 12.6 | 68 | 15.0 | 82 | 14.0 | 74 | 14.8 | 64 |
| 9 | 11.8 | 68 | 13.5 | 51 | 13.5 | 27 | 12.3 | 30 | 13.6 | 22 | 12.6 | 66 | 14.8 | 84 | 13.4 | 76 | 13.3 | 70 |
| 10 | 11.5 | 69 | 13.5 | 45 | 13.5 | 23 | 12.0 | 36 | 11.8 | 31 | 12.6 | 66 | 14.0 | 82 | 13.2 | 77 | 13.1 | 68 |
| 11 | 11.1 | 66 | 12.9 | 41 | 12.9 | 26 | 10.7 | 55 | 10.8 | 40 | 12.4 | 68 | 13.7 | 79 | 13.2 | 76 | 13.1 | 68 |
| 12 | 10.9 | 63 | 12.6 | 40 | 12.4 | 33 | 12.1 | 44 | * | 42 | 12.3 | 68 | 13.5 | 76 | 13.1 | 74 | 12.9 | 68 |
| 13 | 11.8 | 54 | 12.4 | 40 | 12.4 | 11 | 11.9 | 16 | 12.2 | 36 | 12.2 | 68 | 13.4 | 75 | 12.9 | 75 | 12.8 | 68 |
| 14 | 11.4 | 42 | 12.2 | 22 | 12.2 | 6 | 11.9 | 0 | 12.2 | 22 | 11.9 | 68 | 13.3 | 75 | 12.8 | 75 | 12.6 | 64 |
| 15 | 11.4 | 0 | 12.2 | 2 | 12.2 | 0 | | | 11.9 | 0 | 11.8 | 67 | 13.3 | 75 | 12.7 | 74 | 12.5 | 56 |
| 16 | | | | | | | | | | | 11.5 | 64 | 13.2 | 77 | 12.7 | 72 | 12.0 | 49 |
| 17 | | | | | | | | | | | 11.4 | 65 | 13.1 | 76 | 12.5 | 66 | 11.4 | 52 |
| 18 | | | | | | | | | | | 11.0 | 62 | 12.5 | 70 | 11.9 | 66 | * | 58 |
| 19 | | | | | | | | | | | 11.9 | 62 | 12.5 | 70 | 11.5 | 56 | * | 57 |
| 20 | | | | | | | | | | | 11.7 | 86 | 12.3 | 74 | 11.1 | 65 | 12.3 | 55 |
| 21 | | | | | | | | | | | 11.6 | 80 | 12.2 | 76 | 11.5 | 68 | 11.9 | 53 |
| 22 | | | | | | | | | | | 11.5 | 76 | 12.0 | 74 | 11.4 | 69 | 11.8 | 52 |
| 23 | | | | | | | | | | | 11.4 | 68 | 11.7 | 74 | 11.4 | 72 | 11.7 | 51 |
| 24 | | | | | | | | | | | 11.4 | 62 | 11.6 | 74 | 11.3 | 68 | 11.6 | 53 |
| 25 | | | | | | | | | | | 11.4 | 61 | 11.5 | 74 | 11.0 | 68 | 11.5 | 54 |
| 26 | | | | | | | | | | | 11.4 | 60 | 11.3 | 69 | 10.7 | 60 | 11.5 | 51 |
| 27 | | | | | | | | | | | 11.3 | 54 | 11.0 | 49 | 10.6 | 53 | 11.4 | 32 |
| 28 | | | | | | | | | | | 10.9 | 20 | 10.9 | 0 | 10.5 | 20 | 11.3 | 28 |
| 29 | | | | | | | | | | | 10.8 | 10 | | | 10.5 | 0 | 11.3 | 27 |
| 30 | | | | | | | | | | | 10.8 | 0 | | | | | 11.3 | 0 |

*Station not included in program on third day of survey

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of September 8, 1978.

| DEPTH (meters) | UNIT 1 Stations 1 °C | 1 %T | 2 °C | 2 %T | 3 °C | 3 %T | 4 °C | 4 %T | 5 °C | 5 %T | 6 °C | 6 %T | 7 °C | 7 %T | 8 °C | 8 %T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 19.9 | 22 | 20.8 | 44 | 21.1 | 48 | 21.5 | 63 | 21.3 | 63 | 21.3 | 60 | 21.3 | 62 | * | 26 |
| 1 | 19.6 | 21 | 20.8 | 45 | 20.8 | 46 | 21.5 | 60 | 21.3 | 64 | 21.5 | 60 | 21.3 | 62 | | 26 |
| 2 | 19.6 | 20 | 20.4 | 44 | 20.8 | 48 | 21.1 | 55 | 21.1 | 59 | 21.3 | 60 | 21.1 | 60 | | 25 |
| 3 | 19.6 | 20 | 20.4 | 42 | 21.0 | 47 | 20.8 | 52 | 20.8 | 58 | 21.1 | 59 | 20.8 | 60 | | 23 |
| 4 | 19.9 | 20 | 20.4 | 37 | 20.4 | 44 | 20.6 | 48 | 20.8 | 55 | 20.8 | 57 | 20.8 | 55 | | 12 |
| 5 | 19.9 | 19 | 20.2 | 37 | 20.4 | 35 | 20.6 | 48 | 20.8 | 54 | 20.6 | 52 | 20.8 | 54 | | 13 |
| 6 | 19.9 | 19 | 20.2 | 37 | 20.2 | 34 | 20.6 | 47 | 20.6 | 54 | 20.4 | 50 | 20.8 | 51 | | 5 |
| 7 | 19.9 | 20 | 20.2 | 34 | 20.2 | 31 | 20.6 | 46 | 20.6 | 47 | 20.4 | 51 | 20.3 | 50 | | 3 |
| 8 | 19.9 | 20 | 19.9 | 33 | 20.0 | 28 | 20.4 | 34 | 20.4 | 40 | 20.4 | 51 | 20.1 | 50 | | 3 |
| 9 | 19.6 | 20 | 18.6 | 33 | 20.0 | 25 | 20.2 | 20 | 20.2 | 23 | 20.4 | 37 | 19.8 | 42 | | 2 |
| 10 | 18.2 | 20 | 18.4 | 15 | 19.6 | 17 | 18.6 | 14 | 19.9 | 18 | 20.2 | 36 | 19.6 | 39 | | 0 |
| 11 | 17.1 | 20 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
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| DEPTH (meters) | UNITS 2 & 3 Stations 9 °C | 9 %T | 10 °C | 10 %T | 11 °C | 11 %T | 12 °C | 12 %T | 13 °C | 13 %T | 14 °C | 14 %T | 15 °C | 15 %T | 16 °C | 16 %T | 17 °C | 17 %T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 18.1 | 22 | 20.4 | 42 | 20.8 | 65 | 21.3 | 63 | * | 47 | * | 28 | * | 63 | * | 60 | * | 56 |
| 1 | 18.1 | 21 | 20.4 | 39 | 20.8 | 65 | 21.5 | 64 | | 47 | | 28 | | 62 | | 59 | | 57 |
| 2 | 18.0 | 21 | 20.2 | 38 | 20.6 | 64 | 21.3 | 66 | | 47 | | 28 | | 66 | | 63 | | 57 |
| 3 | 18.0 | 21 | 19.9 | 37 | 20.6 | 60 | 21.1 | 67 | | 47 | | 28 | | 67 | | 64 | | 56 |
| 4 | 18.0 | 25 | 19.4 | 37 | 20.6 | 58 | 20.8 | 67 | | 50 | | 29 | | 66 | | 64 | | 54 |
| 5 | 17.9 | 24 | 19.4 | 36 | 20.6 | 58 | 20.8 | 67 | | 52 | | 33 | | 66 | | 64 | | 53 |
| 6 | 17.9 | 21 | 19.4 | 28 | 20.6 | 57 | 20.8 | 67 | | 50 | | 38 | | 65 | | 63 | | 52 |
| 7 | 17.8 | 21 | 19.4 | 27 | 20.4 | 56 | 20.8 | 65 | | 50 | | 38 | | 65 | | 63 | | 52 |
| 8 | 17.8 | 19 | 19.4 | 29 | 20.4 | 58 | 20.6 | 63 | | 50 | | 38 | | 64 | | 63 | | 54 |
| 9 | 17.8 | 17 | 18.6 | 32 | 20.4 | 63 | 20.4 | 60 | | 33 | | 38 | | 64 | | 62 | | 57 |
| 10 | 17.5 | 18 | 18.9 | 44 | 20.4 | 64 | 20.4 | 60 | | 31 | | 34 | | 64 | | 62 | | 59 |
| 11 | 16.6 | 38 | 17.9 | 66 | 20.2 | 61 | 20.4 | 63 | | 30 | | 32 | | 65 | | 62 | | 60 |
| 12 | 16.4 | 55 | 17.9 | 62 | 18.2 | 59 | 20.2 | 64 | | 20 | | 33 | | 65 | | 62 | | 60 |
| 13 | 16.0 | 56 | 17.5 | 45 | 17.7 | 33 | 19.9 | 50 | | 18 | | 37 | | 65 | | 61 | | 62 |
| 14 | 15.6 | 0 | 17.5 | 39 | 17.6 | 30 | 19.9 | 37 | | 0 | | 29 | | 66 | | 62 | | 63 |
| 15 | 15.3 | 0 | 17.4 | 25 | 17.4 | 26 | 19.3 | 18 | | 0 | | 24 | | 70 | | 62 | | 63 |
| 16 | | | | | | | | | | | | 60 | | 70 | | 63 | | 64 |
| 17 | | | | | | | | | | | | 60 | | 63 | | 62 | | 63 |
| 18 | | | | | | | | | | | | 60 | | 64 | | 64 | | 62 |
| 19 | | | | | | | | | | | | 64 | | 62 | | 63 | | 62 |
| 20 | | | | | | | | | | | | 68 | | 63 | | 62 | | 61 |
| 21 | | | | | | | | | | | | 69 | | 61 | | 60 | | 60 |
| 22 | | | | | | | | | | | | 70 | | 56 | | 61 | | 56 |
| 23 | | | | | | | | | | | 12.3 | 70 | | 46 | | 62 | | 55 |
| 24 | | | | | | | | | | | 12.2 | 70 | | 42 | | 59 | | 50 |
| 25 | | | | | | | | | | | 12.0 | 68 | | 35 | | 58 | | 38 |
| 26 | | | | | | | | | | | 12.0 | 65 | | 39 | | 50 | | 34 |
| 27 | | | | | | | | | | | 12.0 | 60 | | 26 | | 41 | | 33 |
| 28 | | | | | | | | | | | 11.4 | 54 | | 22 | | 30 | | 36 |
| 29 | | | | | | | | | | | 10.1 | 40 | | 18 | | 25 | | 5 |
| 30 | | | | | | | | | | | 8.5 | 10 | | 0 | | 0 | | 0 |

*Equipment failure

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of September 9, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | |
| | 1 | | 2* | | 3* | | 4 | | 5* | | 6 | | 7 | | 8 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.4 | 17 | | | | | 21.1 | 41 | | | 21.3 | 39 | 21.1 | 55 | 20.3 | 24 |
| 1 | 20.4 | 18 | | | | | 21.1 | 41 | | | 21.3 | 39 | 21.1 | 54 | 20.3 | 22 |
| 2 | 20.4 | 18 | | | | | 20.8 | 47 | | | 21.1 | 40 | 20.8 | 52 | 20.3 | 21 |
| 3 | 20.4 | 17 | | | | | 20.6 | 51 | | | 20.8 | 47 | 20.8 | 51 | 20.3 | 18 |
| 4 | 20.4 | 16 | | | | | 20.6 | 50 | | | 20.8 | 48 | 20.8 | 49 | 19.8 | 14 |
| 5 | 20.4 | 16 | | | | | 20.6 | 48 | | | 20.6 | 47 | 20.6 | 41 | 19.8 | 8 |
| 6 | 20.2 | 16 | | | | | 20.6 | 42 | | | 20.6 | 45 | 20.6 | 37 | 19.6 | 8 |
| 7 | 20.2 | 15 | | | | | 20.2 | 35 | | | 20.6 | 41 | 20.6 | 23 | 19.4 | 6 |
| 8 | 19.4 | 15 | | | | | 19.4 | 18 | | | 20.2 | 38 | 20.6 | 21 | 19.4 | 6 |
| 9 | 19.4 | 16 | | | | | 18.6 | 16 | | | 19.9 | 31 | 20.6 | 11 | 19.4 | 8 |
| 10 | 19.2 | 10 | | | | | 18.6 | 16 | | | 19.9 | 8 | 20.4 | 4 | 19.0 | 6 |
| 11 | | | | | | | | | | | | | | | 19.0 | 0 |
| 12 | | | | | | | | | | | | | | | | |
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| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 16.4 | 30 | 20.4 | 52 | 20.6 | 70 | 20.8 | 66 | 21.3 | 60 | 21.3 | 40 | 20.3 | 70 | 17.7 | 68 | 18.5 | 62 |
| 1 | 15.9 | 30 | 20.4 | 51 | 20.6 | 70 | 20.8 | 66 | 21.3 | 60 | 18.5 | 40 | 19.8 | 70 | 16.8 | 71 | 17.2 | 63 |
| 2 | 15.9 | 32 | 20.4 | 51 | 20.6 | 70 | 20.8 | 66 | 21.1 | 60 | 17.7 | 38 | 19.4 | 68 | 16.6 | 70 | 17.0 | 66 |
| 3 | 15.3 | 32 | 20.4 | 52 | 20.6 | 71 | 20.8 | 67 | 21.1 | 58 | 16.8 | 40 | 16.8 | 68 | 15.9 | 70 | 15.9 | 68 |
| 4 | 15.3 | 26 | 20.4 | 52 | 20.6 | 71 | 20.6 | 69 | 21.1 | 58 | 16.6 | 50 | 16.8 | 70 | 15.9 | 72 | 15.3 | 68 |
| 5 | 14.8 | 24 | 20.4 | 52 | 20.6 | 71 | 20.6 | 70 | 20.8 | 57 | 16.1 | 50 | 15.9 | 70 | 15.7 | 72 | 15.3 | 70 |
| 6 | 14.8 | 22 | 20.4 | 53 | 20.4 | 72 | 20.6 | 70 | 20.6 | 49 | 15.9 | 58 | 15.9 | 68 | 15.3 | 72 | 15.3 | 68 |
| 7 | 14.2 | 20 | 20.2 | 54 | 20.4 | 73 | 20.6 | 70 | 20.4 | 38 | 15.9 | 58 | 15.3 | 68 | 15.0 | 72 | 14.9 | 68 |
| 8 | 13.6 | 20 | 19.6 | 46 | 20.2 | 71 | 20.4 | 66 | 20.2 | 33 | 15.9 | 58 | 14.8 | 66 | 15.0 | 72 | 14.8 | 70 |
| 9 | 13.6 | 20 | 19.6 | 40 | 19.6 | 63 | 20.4 | 65 | 19.5 | 27 | 15.7 | 64 | 14.8 | 68 | 14.8 | 72 | 14.8 | 68 |
| 10 | 13.4 | 22 | 19.2 | 36 | 19.4 | 53 | 20.2 | 60 | 19.4 | 26 | 15.7 | 72 | 14.5 | 68 | 14.8 | 72 | 14.5 | 68 |
| 11 | 12.5 | 30 | 18.2 | 34 | 18.2 | 45 | 20.2 | 52 | 19.4 | 26 | 14.8 | 74 | 14.2 | 70 | 14.5 | 72 | 13.7 | 68 |
| 12 | 11.9 | 30 | 18.2 | 42 | 16.5 | 42 | 19.9 | 45 | 19.2 | 33 | 13.6 | 74 | 14.2 | 72 | 14.2 | 72 | 13.1 | 65 |
| 13 | 11.6 | 45 | 17.0 | 42 | 16.5 | 31 | 18.9 | 35 | 18.4 | 17 | 13.1 | 70 | 13.4 | 72 | 13.6 | 70 | 12.7 | 65 |
| 14 | 11.4 | 10 | 16.1 | 15 | 16.3 | 18 | 18.8 | 14 | 18.0 | 10 | 12.5 | 70 | 13.1 | 72 | 13.1 | 68 | 12.5 | 63 |
| 15 | 11.1 | 0 | 15.8 | 0 | 16.3 | 2 | 18.5 | 0 | 18.0 | 0 | 12.3 | 68 | 12.5 | 70 | 12.5 | 68 | 12.5 | 63 |
| 16 | | | | | | | | | | | 11.9 | 66 | 12.5 | 70 | 12.5 | 66 | 12.4 | 60 |
| 17 | | | | | | | | | | | 11.4 | 64 | 12.5 | 70 | 12.5 | 64 | 11.4 | 50 |
| 18 | | | | | | | | | | | 10.8 | 60 | 12.5 | 70 | 12.5 | 64 | 10.3 | 42 |
| 19 | | | | | | | | | | | 10.3 | 62 | 12.3 | 70 | 12.5 | 62 | 9.8 | 54 |
| 20 | | | | | | | | | | | 10.1 | 60 | 12.3 | 69 | 11.9 | 56 | 8.8 | 60 |
| 21 | | | | | | | | | | | 10.1 | 50 | 11.9 | 69 | 11.1 | 44 | 8.3 | 50 |
| 22 | | | | | | | | | | | 9.2 | 36 | 11.9 | 69 | 10.3 | 35 | 8.3 | 55 |
| 23 | | | | | | | | | | | 8.3 | 52 | 11.9 | 69 | 7.3 | 54 | 7.8 | 56 |
| 24 | | | | | | | | | | | 7.8 | 60 | 11.6 | 69 | 7.3 | 50 | 7.8 | 54 |
| 25 | | | | | | | | | | | 7.8 | 50 | 11.5 | 67 | 7.3 | 46 | 7.5 | 40 |
| 26 | | | | | | | | | | | 7.6 | 44 | 11.4 | 60 | 7.3 | 46 | 7.5 | 38 |
| 27 | | | | | | | | | | | 7.5 | 40 | 10.3 | 38 | 7.3 | 20 | 7.3 | 36 |
| 28 | | | | | | | | | | | 7.5 | 20 | 10.3 | 20 | 7.3 | 0 | 7.3 | 30 |
| 29 | | | | | | | | | | | 7.3 | 10 | 10.3 | 5 | 7.3 | 0 | 7.3 | 2 |
| 30 | | | | | | | | | | | 7.3 | 6 | 10.3 | 0 | 7.3 | 0 | 7.3 | 30 |

*Station not included in program on second day of survey

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of September 10, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | |
| | 1 | | 2* | | 3* | | 4 | | 5* | | 6 | | 7 | | 8 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.4 | 18 | | | | | 20.8 | 24 | | | 20.8 | 20 | 21.3 | 25 | 18.1 | 34 |
| 1 | 20.2 | 18 | | | | | 20.6 | 23 | | | 20.8 | 20 | 21.1 | 25 | 17.7 | 34 |
| 2 | 20.2 | 17 | | | | | 20.6 | 23 | | | 20.8 | 19 | 21.1 | 26 | 16.8 | 30 |
| 3 | 20.2 | 17 | | | | | 20.6 | 26 | | | 20.6 | 19 | 20.8 | 28 | 16.4 | 30 |
| 4 | 20.2 | 16 | | | | | 20.4 | 22 | | | 20.4 | 19 | 20.6 | 34 | 15.9 | 30 |
| 5 | 19.6 | 16 | | | | | 20.2 | 21 | | | 20.2 | 20 | 20.4 | 34 | 15.3 | 32 |
| 6 | 18.9 | 14 | | | | | 19.6 | 22 | | | 19.9 | 20 | 19.6 | 33 | 14.8 | 24 |
| 7 | 18.2 | 16 | | | | | 19.4 | 27 | | | 19.9 | 17 | 19.4 | 27 | 13.6 | 12 |
| 8 | 17.9 | 19 | | | | | 19.2 | 27 | | | 19.3 | 16 | 19.4 | 25 | 12.5 | 2 |
| 9 | 16.3 | 17 | | | | | 19.2 | 25 | | | 18.6 | 16 | 18.6 | 8 | 11.9 | 2 |
| 10 | 16.0 | 9 | | | | | 17.0 | 23 | | | 18.6 | 16 | 18.4 | 7 | 11.4 | 8 |
| 11 | | | | | | | | | | | | | | | | |
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| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.3 | 41 | 20.2 | 29 | 20.8 | 39 | 20.8 | 42 | 21.3 | 38 | 20.8 | 60 | 19.4 | 60 | 20.3 | 66 | 19.4 | 74 |
| 1 | 19.6 | 37 | 20.2 | 29 | 20.6 | 39 | 20.8 | 42 | 21.3 | 38 | 20.3 | 60 | 18.5 | 60 | 19.8 | 66 | 19.4 | 75 |
| 2 | 19.0 | 38 | 20.2 | 41 | 20.6 | 39 | 20.8 | 43 | 21.3 | 42 | 19.4 | 64 | 17.2 | 70 | 19.0 | 68 | 18.4 | 87 |
| 3 | 18.5 | 44 | 20.2 | 41 | 20.6 | 41 | 20.8 | 45 | 20.8 | 44 | 19.1 | 74 | 17.2 | 72 | 18.5 | 68 | 15.9 | 85 |
| 4 | 18.1 | 52 | 20.4 | 45 | 20.6 | 41 | 20.6 | 47 | 20.8 | 45 | 18.6 | 78 | 16.8 | 74 | 18.1 | 72 | 15.9 | 87 |
| 5 | 17.2 | 74 | 20.2 | 45 | 20.4 | 52 | 20.4 | 49 | 20.8 | 45 | 18.5 | 81 | 16.8 | 82 | 17.9 | 76 | 15.7 | 87 |
| 6 | 16.8 | 74 | 20.2 | 59 | 20.2 | 58 | 20.4 | 53 | 20.6 | 45 | 18.1 | 84 | 15.3 | 86 | 17.7 | 80 | 15.7 | 86 |
| 7 | 15.9 | 72 | 20.2 | 48 | 19.6 | 66 | 20.2 | 59 | 20.4 | 47 | 18.1 | 86 | 13.6 | 87 | 16.6 | 87 | 15.7 | 85 |
| 8 | 15.9 | 66 | 20.2 | 34 | 19.4 | 69 | 19.9 | 52 | 19.9 | 36 | 15.9 | 90 | 13.1 | 87 | 15.9 | 90 | 15.3 | 85 |
| 9 | 13.6 | 60 | 19.9 | 30 | 19.2 | 67 | 19.9 | 55 | 19.9 | 33 | 11.9 | 84 | 13.1 | 89 | 15.0 | 90 | 14.2 | 85 |
| 10 | 12.5 | 58 | 19.4 | 26 | 18.9 | 59 | 19.9 | 67 | 19.4 | 31 | 11.9 | 80 | 13.1 | 86 | 14.8 | 90 | 13.6 | 85 |
| 11 | 10.3 | 26 | 19.2 | 22 | 18.4 | 54 | 19.2 | 64 | 18.9 | 33 | 11.9 | 80 | 13.1 | 85 | 14.8 | 90 | 12.5 | 80 |
| 12 | 10.3 | 20 | 19.2 | 20 | 18.2 | 49 | 17.9 | 57 | 17.7 | 24 | 11.9 | 68 | 12.6 | 82 | 13.6 | 88 | 12.5 | 75 |
| 13 | 10.3 | 6 | 17.9 | 12 | 17.9 | 32 | 17.3 | 39 | 17.7 | 20 | 11.6 | 62 | 12.3 | 80 | 13.1 | 87 | 12.5 | 78 |
| 14 | 10.3 | 2 | 17.5 | 10 | 17.7 | 19 | 17.0 | 26 | 17.0 | 16 | 11.9 | 58 | 11.9 | 78 | 12.5 | 84 | 12.3 | 78 |
| 15 | 10.3 | 2 | 17.5 | 0 | 17.1 | 2 | 16.5 | 5 | 17.0 | 8 | 11.4 | 48 | 11.0 | 76 | 11.9 | 84 | 11.9 | 74 |
| 16 | | | | | | | | | | | 10.8 | 50 | 10.8 | 77 | 11.5 | 82 | 11.6 | 72 |
| 17 | | | | | | | | | | | 9.8 | 38 | 10.5 | 76 | 11.4 | 80 | 11.4 | 70 |
| 18 | | | | | | | | | | | 9.3 | 48 | 10.1 | 60 | 11.1 | 76 | 11.1 | 65 |
| 19 | | | | | | | | | | | 8.8 | 64 | 10.1 | 55 | 10.3 | 68 | 10.3 | 62 |
| 20 | | | | | | | | | | | 8.3 | 64 | 9.8 | 55 | 9.3 | 60 | 9.8 | 60 |
| 21 | | | | | | | | | | | 8.3 | 60 | 9.3 | 56 | 8.8 | 68 | 9.3 | 56 |
| 22 | | | | | | | | | | | 7.8 | 58 | 9.3 | 57 | 8.3 | 65 | 9.1 | 58 |
| 23 | | | | | | | | | | | 7.3 | 30 | 8.8 | 56 | 8.3 | 65 | 8.3 | 74 |
| 24 | | | | | | | | | | | 7.3 | 34 | 8.3 | 55 | 8.3 | 67 | 7.8 | 74 |
| 25 | | | | | | | | | | | 7.3 | 34 | 8.3 | 53 | 8.1 | 63 | 7.8 | 70 |
| 26 | | | | | | | | | | | 7.3 | 52 | 8.3 | 53 | 7.8 | 54 | 7.8 | 58 |
| 27 | | | | | | | | | | | 7.3 | 26 | 8.3 | 50 | 7.8 | 50 | 6.9 | 45 |
| 28 | | | | | | | | | | | 7.1 | 4 | 8.2 | 40 | 7.8 | 47 | 6.9 | 42 |
| 29 | | | | | | | | | | | 7.1 | 1 | 8.1 | 2 | 7.8 | 4 | 6.7 | 10 |
| 30 | | | | | | | | | | | 7.1 | 1 | 7.8 | 30 | 7.8 | 2 | 6.7 | 2 |

*Station not included in program on third day of survey

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of November 16, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | |
| | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 16.8 | 59 | 17.7 | 45 | 18.7 | 45 | 18.7 | 45 | 17.7 | 68 | 17.7 | 68 | 17.7 | 67 | 17.6 | 62 |
| 1 | 16.9 | 59 | 17.7 | 50 | 18.7 | 46 | 18.5 | 45 | 17.7 | 68 | 17.7 | 68 | 17.7 | 67 | 17.6 | 60 |
| 2 | 16.9 | 60 | 17.7 | 50 | 18.5 | 47 | 18.2 | 47 | 17.7 | 69 | 17.7 | 68 | 17.7 | 67 | 17.6 | 61 |
| 3 | 17.2 | 60 | 17.2 | 55 | 17.7 | 47 | 18.0 | 55 | 17.7 | 69 | 17.7 | 68 | 17.7 | 59 | 17.5 | 60 |
| 4 | 17.2 | 60 | 17.5 | 60 | 17.7 | 59 | 17.7 | 58 | 17.7 | 68 | 17.7 | 68 | 17.7 | 60 | 17.5 | 60 |
| 5 | 17.2 | 60 | 17.5 | 60 | 17.7 | 63 | 17.7 | 60 | 17.7 | 69 | 17.7 | 67 | 17.7 | 55 | 17.4 | 60 |
| 6 | 17.2 | 61 | 17.5 | 64 | 17.7 | 63 | 17.7 | 61 | 17.7 | 69 | 17.7 | 67 | 17.7 | 55 | 17.4 | 60 |
| 7 | 17.2 | 61 | 17.2 | 67 | 17.5 | 64 | 17.5 | 61 | 17.5 | 69 | 17.7 | 67 | 17.5 | 52 | 17.4 | 59 |
| 8 | 17.2 | 61 | 17.2 | 68 | 17.5 | 64 | 17.5 | 65 | 17.5 | 66 | 17.5 | 67 | 17.5 | 50 | 17.2 | 58 |
| 9 | 17.2 | 61 | 17.2 | 74 | 17.5 | 63 | 17.5 | 65 | 17.5 | 67 | 17.5 | 67 | 17.2 | 50 | 17.2 | 58 |
| 10 | 17.2 | 61 | 17.2 | 74 | 17.2 | 65 | 17.5 | 65 | 17.5 | 68 | 17.5 | 67 | 17.2 | 51 | 17.2 | 58 |
| 11 | 17.2 | 61 | 17.2 | 68 | 17.2 | 66 | 17.5 | 63 | 17.5 | 67 | 17.5 | 67 | 17.2 | 49 | 17.2 | 56 |
| 12 | 17.2 | 61 | 17.2 | 70 | 17.2 | 66 | 17.5 | 64 | 17.5 | 68 | 17.5 | 67 | 17.2 | 49 | 17.2 | 58 |
| 13 | | | | | | | | | | | | | | | 17.1 | 53 |
| 14 | | | | | | | | | | | | | | | | |
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| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 17.7 | 60 | 17.7 | 61 | 18.2 | 65 | 17.7 | 72 | 17.3 | 64 | 17.3 | 54 | 17.3 | 70 | 17.6 | 68 | 17.2 | 67 |
| 1 | 17.6 | 61 | 17.7 | 61 | 17.7 | 65 | 17.7 | 72 | 17.3 | 64 | 17.2 | 58 | 17.3 | 69 | 17.3 | 67 | 17.2 | 67 |
| 2 | 17.6 | 60 | 17.2 | 61 | 17.7 | 66 | 17.7 | 72 | 17.3 | 64 | 17.2 | 61 | 17.2 | 69 | 17.3 | 67 | 17.1 | 67 |
| 3 | 17.5 | 60 | 16.9 | 61 | 17.7 | 68 | 17.2 | 72 | 17.2 | 64 | 17.0 | 60 | 17.1 | 69 | 17.2 | 66 | 17.1 | 67 |
| 4 | 17.4 | 59 | 16.8 | 61 | 17.7 | 69 | 17.2 | 72 | 17.2 | 63 | 17.0 | 60 | 17.1 | 70 | 17.2 | 66 | 17.1 | 67 |
| 5 | 17.4 | 58 | 16.8 | 62 | 17.7 | 67 | 17.2 | 72 | 17.2 | 63 | 17.0 | 60 | 17.0 | 69 | 17.2 | 66 | 17.1 | 66 |
| 6 | 17.3 | 58 | 16.8 | 62 | 17.7 | 69 | 17.2 | 71 | 17.1 | 61 | 17.0 | 60 | 17.0 | 68 | 17.2 | 66 | 17.1 | 66 |
| 7 | 17.3 | 57 | 16.8 | 62 | 17.5 | 68 | 17.5 | 72 | 17.1 | 61 | 17.0 | 60 | 17.0 | 68 | 17.1 | 66 | 17.1 | 66 |
| 8 | 17.2 | 55 | 16.8 | 61 | 17.5 | 68 | 17.5 | 71 | 17.0 | 60 | 17.0 | 60 | 17.0 | 68 | 17.1 | 66 | 17.1 | 66 |
| 9 | 17.1 | 54 | 16.8 | 61 | 17.5 | 68 | 17.5 | 71 | 17.0 | 59 | 16.9 | 60 | 17.0 | 68 | 17.1 | 66 | 17.0 | 66 |
| 10 | 17.0 | 53 | 16.8 | 60 | 17.5 | 68 | 17.5 | 70 | 17.0 | 60 | 16.9 | 60 | 17.0 | 68 | 17.1 | 66 | 17.0 | 66 |
| 11 | 16.9 | 51 | 16.9 | 59 | 17.2 | 68 | 17.5 | 71 | 17.0 | 59 | 16.9 | 60 | 17.0 | 68 | 17.1 | 66 | 17.0 | 66 |
| 12 | 16.8 | 51 | 16.9 | 58 | 17.5 | 68 | 17.5 | 71 | 16.9 | 57 | 16.9 | 60 | 17.0 | 68 | 17.1 | 66 | 16.9 | 66 |
| 13 | 16.6 | 51 | 16.8 | 58 | 17.5 | 68 | 17.2 | 70 | 16.7 | 55 | 16.9 | 60 | 17.0 | 68 | 17.1 | 66 | 16.9 | 66 |
| 14 | 16.6 | 52 | 16.8 | 57 | 17.5 | 69 | 17.2 | 70 | 16.7 | 53 | 16.9 | 60 | 17.1 | 68 | 17.1 | 66 | 16.9 | 66 |
| 15 | 16.6 | 52 | 16.8 | 60 | 17.5 | 69 | 17.2 | 70 | 16.6 | 0 | 16.9 | 61 | 17.1 | 68 | 17.1 | 67 | 16.9 | 66 |
| 16 | | | | | | | | | | | 16.9 | 61 | 17.1 | 68 | 17.1 | 67 | 16.9 | 65 |
| 17 | | | | | | | | | | | 16.9 | 62 | 17.1 | 68 | 17.1 | 67 | 16.9 | 64 |
| 18 | | | | | | | | | | | 16.9 | 62 | 17.1 | 68 | 17.0 | 67 | 16.9 | 64 |
| 19 | | | | | | | | | | | 16.9 | 62 | 17.1 | 69 | 16.9 | 67 | 16.8 | 64 |
| 20 | | | | | | | | | | | 16.9 | 62 | 17.1 | 69 | 16.8 | 67 | 16.8 | 64 |
| 21 | | | | | | | | | | | 16.9 | 62 | 17.0 | 68 | 16.6 | 66 | 16.8 | 64 |
| 22 | | | | | | | | | | | 16.9 | 63 | 16.6 | 68 | 16.6 | 66 | 16.8 | 64 |
| 23 | | | | | | | | | | | 16.9 | 64 | 16.6 | 68 | 16.6 | 66 | 16.8 | 64 |
| 24 | | | | | | | | | | | 16.9 | 64 | 16.5 | 67 | 16.2 | 64 | 16.8 | 64 |
| 25 | | | | | | | | | | | 16.9 | 64 | 16.4 | 66 | 16.1 | 63 | 16.7 | 64 |
| 26 | | | | | | | | | | | 16.9 | 64 | 16.3 | 66 | 15.9 | 63 | 16.6 | 64 |
| 27 | | | | | | | | | | | 16.9 | 65 | 16.2 | 66 | 15.8 | 63 | 16.6 | 64 |
| 28 | | | | | | | | | | | 16.6 | 65 | 16.0 | 68 | 15.1 | 63 | 16.5 | 63 |
| 29 | | | | | | | | | | | 16.6 | 65 | 15.9 | 67 | 15.1 | 64 | 16.3 | 63 |
| 30 | | | | | | | | | | | 16.6 | 63 | 15.5 | 69 | 15.0 | 64 | 15.8 | 61 |

Temperature (°C) and Transmissivity (%T) data collected during the plankton survey of No ember 17, 1978.

| DEPTH (meters) | UNIT 1 Stations 1 °C | 1 %T | 2* °C | 2* %T | 3* °C | 3* %T | 4 °C | 4 %T | 5* °C | 5* %T | 6 °C | 6 %T | 7 °C | 7 %T | 8 °C | 8 %T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 17.2 | 59 | | | | | 17.7 | 68 | | | 17.7 | 66 | 17.7 | 62 | 17.6 | ** |
| 1 | 17.2 | 59 | | | | | 18.2 | 68 | | | 17.7 | 66 | 17.7 | 62 | 17.5 | |
| 2 | 17.2 | 59 | | | | | 17.7 | 68 | | | 17.7 | 66 | 17.7 | 64 | 17.5 | |
| 3 | 17.2 | 60 | | | | | 17.5 | 68 | | | 17.7 | 67 | 17.7 | 67 | 17.5 | |
| 4 | 17.2 | 61 | | | | | 17.5 | 68 | | | 17.5 | 69 | 17.5 | 65 | 17.5 | |
| 5 | 17.5 | 59 | | | | | 17.2 | 68 | | | 17.5 | 69 | 17.5 | 66 | 17.5 | |
| 6 | 17.5 | 62 | | | | | 17.2 | 68 | | | 17.5 | 70 | 17.5 | 67 | 17.5 | |
| 7 | 17.5 | 63 | | | | | 16.9 | 68 | | | 17.5 | 71 | 17.5 | 66 | 17.5 | |
| 8 | 17.5 | 63 | | | | | 16.8 | 68 | | | 17.5 | 71 | 17.5 | 67 | 17.4 | |
| 9 | 17.5 | 63 | | | | | 16.8 | 68 | | | 17.5 | 70 | 17.5 | 69 | 17.4 | |
| 10 | 17.5 | 63 | | | | | 16.8 | 70 | | | 17.2 | 69 | 17.5 | 69 | 17.4 | |
| 11 | 17.5 | 63 | | | | | 16.8 | 70 | | | 17.2 | 69 | 17.5 | 67 | 17.4 | |
| 12 | 17.5 | 63 | | | | | 16.8 | 70 | | | 17.2 | 69 | 17.5 | 67 | 17.4 | |
| 13 | | | | | | | | | | | | | | | 17.3 | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
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| 30 | | | | | | | | | | | | | | | | |

| DEPTH (meters) | UNITS 2 & 3 Stations 9 °C | 9 %T | 10 °C | 10 %T | 11 °C | 11 %T | 12 °C | 12 %T | 13 °C | 13 %T | 14 °C | 14 %T | 15 °C | 15 %T | 16 °C | 16 %T | 17 °C | 17 %T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 17.7 | ** | 17.2 | 65 | 17.5 | 71 | 17.7 | 70 | 17.7 | 73 | 17.7 | ** | 17.9 | ** | 18.2 | ** | 18.1 | ** |
| 1 | 17.7 | | 17.2 | 65 | 17.5 | 71 | 17.7 | 71 | 17.7 | 73 | 17.7 | | 17.9 | | 18.2 | | 18.1 | |
| 2 | 17.6 | | 17.2 | 65 | 17.5 | 71 | 17.7 | 71 | 17.7 | 73 | 17.7 | | 17.8 | | 18.1 | | 18.1 | |
| 3 | 17.6 | | 17.2 | 61 | 17.5 | 71 | 17.7 | 72 | 17.7 | 73 | 17.7 | | 17.7 | | 18.1 | | 17.9 | |
| 4 | 17.6 | | 17.2 | 62 | 17.5 | 71 | 17.7 | 77 | 17.7 | 72 | 17.7 | | 17.7 | | 17.9 | | 17.9 | |
| 5 | 17.6 | | 17.2 | 63 | 17.2 | 71 | 17.5 | 80 | 17.5 | 73 | 17.7 | | 17.6 | | 17.9 | | 17.9 | |
| 6 | 17.6 | | 17.2 | 68 | 17.2 | 72 | 17.5 | 81 | 17.5 | 73 | 17.6 | | 17.6 | | 17.7 | | 17.9 | |
| 7 | 17.6 | | 17.2 | 65 | 17.2 | 71 | 17.5 | 78 | 17.5 | 73 | 17.6 | | 17.6 | | 17.7 | | 17.9 | |
| 8 | 17.5 | | 17.2 | 64 | 17.2 | 71 | 17.5 | 76 | 17.5 | 73 | 17.6 | | 17.5 | | 17.7 | | 17.9 | |
| 9 | 17.5 | | 17.2 | 64 | 16.9 | 71 | 17.5 | 79 | 17.2 | 72 | 17.6 | | 17.5 | | 17.6 | | 17.9 | |
| 10 | 17.5 | | 17.2 | 64 | 16.8 | 71 | 17.5 | 79 | 17.2 | 71 | 17.6 | | 17.5 | | 17.6 | | 17.8 | |
| 11 | 17.4 | | 16.8 | 63 | 16.8 | 71 | 17.5 | 79 | 17.2 | 71 | 17.6 | | 17.5 | | 17.6 | | 17.8 | |
| 12 | 17.4 | | 16.8 | 63 | 16.8 | 71 | 17.2 | 78 | 17.2 | 71 | 17.6 | | 17.5 | | 17.6 | | 17.8 | |
| 13 | 17.4 | | 16.8 | 63 | 16.8 | 71 | 17.2 | 77 | 16.9 | 71 | 17.6 | | 17.4 | | 17.6 | | 17.8 | |
| 14 | 17.4 | | 16.8 | 63 | 16.8 | 71 | 17.2 | 76 | 17.2 | 70 | 17.6 | | 17.4 | | 17.6 | | 17.8 | |
| 15 | 17.3 | | 16.8 | 64 | 16.8 | 71 | 17.2 | 75 | 17.2 | 71 | 17.6 | | 17.3 | | 17.6 | | 17.7 | |
| 16 | | | | | | | | | | | 17.6 | | 17.3 | | 17.6 | | 17.7 | |
| 17 | | | | | | | | | | | 17.6 | | 17.2 | | 17.6 | | 17.7 | |
| 18 | | | | | | | | | | | 17.6 | | 17.2 | | 17.6 | | 17.7 | |
| 19 | | | | | | | | | | | 17.6 | | 17.2 | | 17.5 | | 17.7 | |
| 20 | | | | | | | | | | | 17.6 | | 17.2 | | 17.5 | | 17.7 | |
| 21 | | | | | | | | | | | 17.4 | | 17.2 | | 17.5 | | 17.7 | |
| 22 | | | | | | | | | | | 17.4 | | 17.2 | | 17.5 | | 17.7 | |
| 23 | | | | | | | | | | | 17.3 | | 17.2 | | 17.4 | | 17.7 | |
| 24 | | | | | | | | | | | 17.3 | | 17.1 | | 17.3 | | 17.7 | |
| 25 | | | | | | | | | | | 17.2 | | 16.8 | | 16.5 | | 17.7 | |
| 26 | | | | | | | | | | | 16.3 | | 15.9 | | 16.3 | | 17.6 | |
| 27 | | | | | | | | | | | 16.1 | | 15.5 | | 16.0 | | 16.8 | |
| 28 | | | | | | | | | | | 15.9 | | 15.1 | | 15.8 | | 16.7 | |
| 29 | | | | | | | | | | | 15.6 | | 15.1 | | 15.5 | | 16.3 | |
| 30 | | | | | | | | | | | | | | | | | | |

*Station not included in program on second day of survey
**Equipment failure

Temperature ($^{o}C$) and Transmissivity (%T) data collected during the plankton survey of November 18, 1978.

| DEPTH (meters) | UNIT 1 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | |
| | 1 | | 2* | | 3* | | 4 | | 5* | | 6 | | 7 | | 8 | | | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | | |
| 0 | 16.9 | | | | | | 18.2 | ** | | | 17.2 | ** | 17.5 | ** | 16.9 | 59 | | |
| 1 | 16.9 | | | | | | 17.9 | | | | 17.2 | | 17.5 | | 16.9 | 59 | | |
| 2 | 16.9 | | | | | | 17.7 | | | | 17.2 | | 17.5 | | 16.9 | 59 | | |
| 3 | 16.8 | | | | | | 17.7 | | | | 16.8 | | 17.5 | | 16.8 | 59 | | |
| 4 | 16.8 | | | | | | 17.7 | | | | 16.8 | | 17.5 | | 16.8 | 59 | | |
| 5 | 16.8 | | | | | | 17.5 | | | | 16.8 | | 17.2 | | 16.8 | 59 | | |
| 6 | 16.9 | | | | | | 17.2 | | | | 16.9 | | 17.2 | | 16.8 | 59 | | |
| 7 | 16.8 | | | | | | 16.9 | | | | 16.8 | | 16.9 | | 16.9 | 59 | | |
| 8 | 16.8 | | | | | | 16.9 | | | | 16.8 | | 16.8 | | 16.8 | 59 | | |
| 9 | 16.8 | | | | | | 16.8 | | | | 16.8 | | 16.8 | | 16.8 | 59 | | |
| 10 | 16.9 | | | | | | 16.8 | | | | 16.8 | | 16.8 | | 16.8 | 59 | | |
| 11 | 16.9 | | | | | | 16.8 | | | | 16.8 | | 16.8 | | 16.9 | 59 | | |
| 12 | 16.8 | | | | | | 16.8 | | | | 16.8 | | 16.8 | | 16.9 | 59 | | |
| 13 | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | |
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| 19 | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | |

| DEPTH (meters) | UNITS 2 & 3 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Stations | | | | | | | | | | | | | | | | | |
| | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | | 16 | | 17 | |
| | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 17.2 | | 17.2 | ** | 17.7 | ** | 17.7 | ** | 18.7 | ** | 18.2 | ** | 18.4 | ** | 18.5 | ** | 18.8 | ** |
| 1 | 16.8 | | 17.2 | | 17.7 | | 17.5 | | 18.6 | | 18.1 | | 18.4 | | 18.5 | | 18.8 | |
| 2 | 16.9 | | 17.2 | | 17.5 | | 17.2 | | 18.5 | | 18.0 | | 18.3 | | 18.5 | | 18.8 | |
| 3 | 16.8 | | 16.9 | | 17.2 | | 17.2 | | 18.5 | | 17.8 | | 18.2 | | 18.2 | | 18.8 | |
| 4 | 16.8 | | 16.9 | | 17.2 | | 16.9 | | 18.4 | | 17.8 | | 18.0 | | 18.1 | | 18.7 | |
| 5 | 16.8 | | 16.9 | | 16.8 | | 16.9 | | 18.3 | | 17.7 | | 18.0 | | 18.0 | | 18.7 | |
| 6 | 16.8 | | 16.9 | | 16.8 | | 16.9 | | 18.3 | | 17.7 | | 18.0 | | 18.0 | | 18.7 | |
| 7 | 16.8 | | 16.9 | | 16.8 | | 16.9 | | 18.2 | | 17.6 | | 18.0 | | 18.0 | | 18.7 | |
| 8 | 16.8 | | 16.9 | | 16.8 | | 16.8 | | 18.1 | | 17.6 | | 18.0 | | 18.0 | | 18.7 | |
| 9 | 16.8 | | 16.8 | | 16.8 | | 16.8 | | 18.1 | | 17.6 | | 18.0 | | 18.0 | | 18.7 | |
| 10 | 16.8 | | 16.8 | | 16.8 | | 16.8 | | 18.1 | | 17.6 | | 18.0 | | 18.0 | | 18.7 | |
| 11 | 16.8 | | 16.8 | | 16.8 | | 16.8 | | 18.1 | | 17.6 | | 17.9 | | 17.9 | | 18.7 | |
| 12 | 16.8 | | 16.8 | | 16.6 | | 16.8 | | 18.1 | | 17.6 | | 17.9 | | 17.9 | | 18.7 | |
| 13 | | | | | | | | | 18.1 | | 17.6 | | 17.9 | | 17.8 | | 18.7 | |
| 14 | | | | | | | | | 18.1 | | 17.6 | | 17.9 | | 17.8 | | 18.7 | |
| 15 | | | | | | | | | 17.9 | | 17.6 | | 17.9 | | 17.8 | | 18.7 | |
| 16 | | | | | | | | | 17.1 | | 17.6 | | 17.8 | | 17.8 | | 18.6 | |
| 17 | | | | | | | | | 16.6 | | 17.4 | | 17.8 | | 17.7 | | 17.5 | |
| 18 | | | | | | | | | 16.6 | | 16.6 | | 17.7 | | 17.7 | | 17.1 | |
| 19 | | | | | | | | | | | 16.5 | | 17.7 | | 17.5 | | 16.9 | |
| 20 | | | | | | | | | | | 16.5 | | 17.7 | | 17.3 | | 16.7 | |
| 21 | | | | | | | | | | | 16.5 | | 17.7 | | 17.2 | | 16.7 | |
| 22 | | | | | | | | | | | 16.5 | | 17.6 | | 17.2 | | 16.7 | |
| 23 | | | | | | | | | | | 16.4 | | 17.6 | | 17.2 | | 16.7 | |
| 24 | | | | | | | | | | | 16.3 | | 17.5 | | 17.2 | | 16.6 | |
| 25 | | | | | | | | | | | 16.1 | | 17.5 | | 17.1 | | 16.6 | |
| 26 | | | | | | | | | | | 16.1 | | 17.2 | | 16.3 | | 16.5 | |
| 27 | | | | | | | | | | | 15.9 | | 16.8 | | 16.2 | | 16.5 | |
| 28 | | | | | | | | | | | 15.8 | | 16.5 | | 16.2 | | 16.4 | |
| 29 | | | | | | | | | | | 15.5 | | 16.4 | | 16.0 | | 16.4 | |
| 30 | | | | | | | | | | | | | | | | | | |

*Station not included in program on third day of survey
**Equipment failure

Gross current velocity expressed as an estimate of the distance traveled during the time interval between set and recovery of a drogue. Direction is magnetic compass heading from the point at which the drogue was deployed.

| Program | Date | Station | Estimated Distance (ft) | Elapsed Time (min) | Speed (knots) | Direction (magnetic) |
|---|---|---|---|---|---|---|
| Unit 1 | 3 / 7 / 78 | 1 | 825 | 39 | 0.21 | 85° |
| | | 2 | DROGUE LOST | | | |
| | | 3 | 1155 | 40 | 0.28 | 90° |
| | | 4 | DROGUE LOST | | | |
| | | 5 | 325 | 40 | 0.20 | 110° |
| | | 6 | DROGUE LOST | | | |
| | | 7 | 120 | 95 | 0.01 | 95° |
| Unit 1 | 5 / 11 / 78 | 1 | 990 | 46 | 0.21 | 280° |
| | | 2 | 500 | 40 | 0.12 | 300° |
| | | 3 | 500 | 42 | 0.12 | 330° |
| | | 4 | 500 | 35 | 0.14 | 45° |
| | | 5 | 2640 | 59 | 0.44 | 330° |
| | | 6 | 300 | 56 | 0.05 | 45° |
| | | 7 | 1320 | 87 | 0.15 | 300° |

Gross current velocity expressed as an estimate of the distance traveled during the time interval between set and recovery of a drogue. Direction is magnetic compass heading from the point at which the drogue was deployed.

| Program | Date | Station | Estimated Distance (ft) | Elapsed Time (min) | Speed (knots) | Direction (magnetic) |
|---|---|---|---|---|---|---|
| Unit 1 | 7/14/78 | 1 | 5280 | 75 | 0.70 | 80° |
| | | 2 | 1500 | 40 | 0.37 | 100° |
| | | 3 | 2640 | 45 | 0.58 | 100° |
| | | 4 | 1000 | 35 | 0.28 | 110° |
| | | 5 | DROGUE LOST | | | |
| | | 6 | 2640 | 40 | 0.65 | 120° |
| | | 7 | 10560 | 125 | 0.83 | 52° |
| | 7/19/78 | 1 | 1980 | 60 | 0.32 | 130° |
| | | 4 | 750 | 33 | 0.22 | 90° |
| | | 6 | 500 | 45 | 0.11 | 170° |
| | | 7 | 990 | 34 | 0.29 | 130° |
| | 7/20/78 | 1 | 300 | 20 | 0.15 | 280° |
| | | 4 | 700 | 62 | 0.11 | 250° |
| | | 6 | 50 | 29 | 0.02 | 150° |
| | | 7 | 25 | 42 | 0.006 | 60° |
| Units 2 & 3 | 7/17/78 | 9 | 660 | 28 | 0.23 | 55° |
| | | 10 | 1320 | 37 | 0.35 | 25° |
| | | 11 | 2640 | 71 | 0.37 | 120° |
| | | 12 | 1760 | 36 | 0.48 | 95° |
| | | 13 | 1320 | 37 | 0.35 | 110° |
| | | 14 | 1980 | 57 | 0.34 | 60° |
| | | 15 | 2640 | 60 | 0.43 | 75° |
| | | 16 | 2640 | 60 | 0.43 | 75° |
| | | 17 | 3960 | 54 | 0.72 | 125° |
| | 7/19/78 | 9 | 1760 | 38 | 0.46 | 150 |
| | | 10 | 3960 | 62 | 0.63 | 120 |
| | | 11 | 2640 | 68 | 0.38 | 90 |
| | | 12 | 750 | 39 | 0.19 | 230 |
| | | 13 | 2640 | 25 | 1.04 | 120 |
| | | 14 | 2640 | 41 | 0.64 | 120 |
| | | 15 | 1760 | 44 | 0.39 | 130 |
| | | 16 | 2640 | 43 | 0.61 | 115 |
| | | 17 | 1760 | 39 | 0.45 | 145 |
| | 7/20/78 | 9 | 1760 | 37 | 0.47 | 130 |
| | | 10 | 500 | 34 | 0.15 | 120 |
| | | 11 | 70 | 33 | 0.02 | 120 |
| | | 12 | 1320 | 33 | 0.39 | 110 |
| | | 13 | 1320 | 28 | 0.47 | 140 |
| | | 14 | 1320 | 37 | 0.35 | 120 |
| | | 15 | 2640 | 45 | 0.58 | 120 |
| | | 16 | 2640 | 44 | 0.59 | 120 |
| | | 17 | 3520 | 45 | 0.77 | 125 |

Gross current velocity expressed as an estimate of the distance traveled during the time interval between set and recovery of a drogue. Direction is magnetic compass heading from the point at which the drogue was deployed.

| Program | Date | Station | Estimated Distance (ft) | Elapsed Time (min) | Speed (knots) | Direction (magnetic) |
|---|---|---|---|---|---|---|
| Unit 1 | 9 / 8 / 78 | 1 | 210 | 51 | 0.04 | 280° |
| | | 2 | 375 | 80 | 0.05 | 0° |
| | | 3 | 150 | 36 | 0.04 | 30° |
| | | 4 | 150 | 40 | 0.04 | 90° |
| | | 5 | 210 | 30 | 0.07 | 30° |
| | | 6 | 150 | 36 | 0.04 | 60° |
| | | 7 | 300 | 26 | 0.10 | 120° |
| | | 8 | 300 | 33 | 0.09 | 0° |
| | 9 / 9 / 78 | 1 | 150 | 46 | 0.03 | 16° |
| | | 4 | 90 | 34 | 0.03 | 6° |
| | | 6 | 105 | 30 | 0.03 | 8° |
| | | 7 | 120 | 30 | 0.04 | 7° |
| | | 8 | 350 | 42 | 0.08 | 185° |
| | 9 /10/ 78 | 1 | 150 | 40 | 0.04 | 20° |
| | | 4 | 195 | 26 | 0.07 | 90° |
| | | 6 | 180 | 30 | 0.06 | 10° |
| | | 7 | 300 | 29 | 0.10 | 110° |
| | | 8 | 900 | 118 | 0.07 | 110° |
| Units 2 & 3 | 9 / 8 / 78 | 9 | 450 | 99 | 0.04 | 265° |
| | | 10 | 300 | 47 | 0.06 | 320° |
| | | 11 | 210 | 42 | 0.05 | 130° |
| | | 12 | 150 | 43 | 0.03 | 60° |
| | | 13 | 600 | 27 | 0.22 | 110° |
| | | 14 | 900 | 61 | 0.15 | 290° |
| | | 15 | 900 | 71 | 0.13 | 350° |
| | | 16 | 900 | 49 | 0.18 | 22° |
| | | 17 | 750 | 62 | 0.12 | 80° |
| | 9 / 9 / 78 | 9 | 900 | 46 | 0.19 | 130° |
| | | 10 | 120 | 37 | 0.03 | 16° |
| | | 11 | 90 | 40 | 0.02 | 90° |
| | | 12 | 225 | 29 | 0.08 | 6° |
| | | 13 | 300 | 31 | 0.10 | 8° |
| | | 14 | 900 | 136 | 0.06 | 5° |
| | | 15 | 3000 | 76 | 0.39 | 65° |
| | | 16 | 2400 | 65 | 0.36 | 60° |
| | | 17 | 1800 | 64 | 0.28 | 100° |
| | 9 /10/ 78 | 9 | 1500 | 40 | 0.37 | 105° |
| | | 10 | 195 | 30 | 0.06 | 12° |
| | | 11 | 180 | 31 | 0.06 | 10° |
| | | 12 | 375 | 35 | 0.11 | 90° |
| | | 13 | 375 | 10 | 0.37 | 10° |
| | | 14 | 3000 | 82 | 0.36 | 130° |
| | | 15 | 3000 | 65 | 0.46 | 110° |
| | | 16 | 3600 | 50 | 0.71 | 105° |
| | | 17 | 3600 | 65 | 0.54 | 110° |

Gross current velocity expressed as an estimate of the distance traveled during the time interval between set and recovery of a drogue. Direction is magnetic compass heading from the point at which the drogue was deployed.

| Program | Date | Station | Estimated Distance (ft) | Elapsed Time (min) | Speed (knots) | Direction (magnetic) |
|---|---|---|---|---|---|---|
| Unit 1 | 11/16/78 | 1 | 75 | 75 | 0.01 | 210° |
| | | 2 | 75 | 30 | 0.02 | 340° |
| | | 3 | 60 | 25 | 0.02 | 15° |
| | | 4 | 120 | 20 | 0.06 | 62° |
| | | 5 | 120 | 57 | 0.02 | 63° |
| | | 6 | 120 | 23 | 0.05 | 70° |
| | | 7 | 240 | 20 | 0.12 | 85° |
| | | 8 | 450 | 28 | 0.16 | 85° |
| | 11/17/78 | 1 | 210 | 20 | 0.10 | 145° |
| | | 4 | 30 | 25 | 0.01 | 225° |
| | | 6 | 120 | 20 | 0.06 | 12° |
| | | 7 | 90 | 20 | 0.04 | 85° |
| | | 8 | 1050 | 61 | 0.17 | 150° |
| | 11/18/78 | 1 | 120 | 25 | 0.05 | 50° |
| | | 4 | 60 | 20 | 0.03 | 245° |
| | | 6 | 30 | 20 | 0.01 | 260° |
| | | 7 | 90 | 20 | 0.04 | 210° |
| | | 8 | 120 | 45 | 0.03 | 145° |
| Units 2 & 3 | 11/16/78 | 9 | 150 | 38 | 0.04 | 180° |
| | | 10 | 75 | 47 | 0.02 | 240° |
| | | 11 | 120 | 32 | 0.04 | 60° |
| | | 12 | 120 | 30 | 0.04 | 65° |
| | | 13 | 675 | 40 | 0.17 | 140° |
| | | 14 | 150 | 45 | 0.03 | 270° |
| | | 15 | 450 | 67 | 0.07 | 65° |
| | | 16 | 450 | 42 | 0.11 | 65° |
| | | 17 | 600 | 40 | 0.15 | 120° |
| | 11/17/78 | 9 | 375 | 18 | 0.21 | 150° |
| | | 10 | 150 | 35 | 0.04 | 200° |
| | | 11 | 225 | 40 | 0.06 | 180° |
| | | 12 | 180 | 30 | 0.06 | 55° |
| | | 13 | 210 | 25 | 0.08 | 90° |
| | | 14 | 375 | 64 | 0.06 | 145° |
| | | 15 | 375 | 42 | 0.09 | 30° |
| | | 16 | 750 | 51 | 0.14 | 80° |
| | | 17 | 825 | 47 | 0.17 | 105° |
| | 11/18/78 | 9 | 150 | 50 | 0.03 | 130° |
| | | 10 | 120 | 25 | 0.05 | 130° |
| | | 11 | 120 | 30 | 0.04 | 128° |
| | | 12 | 60 | 30 | 0.02 | 260° |
| | | 13 | 450 | 31 | 0.14 | 60° |
| | | 14 | 225 | 44 | 0.05 | 175° |
| | | 15 | 750 | 47 | 0.16 | 120° |
| | | 16 | 1050 | 53 | 0.20 | 130° |
| | | 17 | 1050 | 49 | 0.21 | 105° |

Weather* information gathered during the ETS and PMP plankton surveys.

| SURVEY DATE | PERCENT CLOUD COVER | SEA/SWELL | | WIND | |
|---|---|---|---|---|---|
| | | Height (ft) | Direction (from) | Speed (knots) | Direction (from) |
| March 7 | 0-50 | 4-5 | SW | 0-15 | SW |
| May 11 | 0-100 | 1-2 | SW | 0-5 | SW |
| July 14 | 0 | 1 | SW | 1-2 | SW |
| July 17 | 10-100 | 2-7 | SW-W | 0-7 | SW |
| July 19 | 0-100 | 1-5 | SW | 0-14 | W-NW |
| July 20 | 0-100 | 1-3 | W-NW | 0-8 | W-NW |
| September 8 | 0-3 | 0.5-2 | SW-NW | 0-3 | S-W |
| September 9 | 0-85 | 0-2 | NW | 0-8 | S-W |
| September 10 | 2-50 | 2-4 | W-NW | 0-12 | SW-NW |
| November 16 | 0 | 0-1 | NW-SW | 0-5 | NE-SW |
| November 17 | 0 | 0-3 | NW-SW | 0-3 | NE-SW |
| November 18 | 0 | 0-1 | NW-SW | 0-2 | SW-SE |

*Daily Range

Sampling periods of each station during the March and May 1978 plankton surveys.

| STATION | MARCH 7 | | MAY 11 | |
|---|---|---|---|---|
| | ARRIVAL | DEPARTURE | ARRIVAL | DEPARTURE |
| 1 | 1143 | 1225 | 1158 | 1245 |
| 2 | 1500 | 1552 | 1358 | 1445 |
| 3 | 1234 | 1320 | 1303 | 1350 |
| 4 | 1428 | 1452 | 1500 | 1543 |
| 5 | 1043 | 1125 | 1030 | 1136 |
| 6 | 1330 | 1410 | 1600 | 1700 |
| 7 | 0848 | 1025 | 0842 | 1017 |

Sampling periods of each station during the July 1978 plankton survey.

| STATION | JULY 14 ARRIVAL | JULY 14 DEPARTURE | JULY 19 ARRIVAL | JULY 19 DEPARTURE | JULY 20 ARRIVAL | JULY 20 DEPARTURE |
|---|---|---|---|---|---|---|
| 1 | 1130 | 1246 | 0745 | 0855 | 0800 | 0816 |
| 2 | 1245 | 1320 | 1022 | 1046 | 0914 | 0935 |
| 3 | 1306 | 1352 | 1054 | 1120 | 0942 | 1029 |
| 4 | 1345 | 1415 | 1252 | 1322 | 1115 | 1216 |
| 5 | 1115 | 1215 | 1335 | 1419 | 1227 | 1249 |
| 6 | 1430 | 1515 | 1515 | 1600 | 1302 | 1330 |
| 7 | 0845 | 1045 | 1440 | 1516 | 1342 | 1424 |
| 8* | JULY 17 | | | | | |
| 9 | 1333 | 1405 | 0750 | 0845 | 0745 | 0835 |
| 10 | 1238 | 1315 | 0908 | 1010 | 0829 | 0902 |
| 11 | 0815 | 0930 | 1133 | 1240 | 1032 | 1100 |
| 12 | 1602 | 1640 | 1418 | 1450 | 1336 | 1410 |
| 13 | 1652 | 1733 | 1344 | 1320 | 1441 | 1520 |
| 14 | 1422 | 1522 | 0852 | 0940 | 0847 | 0929 |
| 15 | 1120 | 1215 | 1020 | 1110 | 0946 | 1035 |
| 16 | 0949 | 1057 | 1122 | 1210 | 1116 | 1210 |
| 17 | 1746 | 1839 | 1235 | 1315 | 1334 | 1422 |

*Station 8 not established at time of this survey.

Sampling periods of each station during the September 1978 plankton survey.

| STATION | SEPTEMBER 8 | | SEPTEMBER 9 | | SEPTEMBER 10 | |
|---|---|---|---|---|---|---|
| | ARRIVAL | DEPARTURE | ARRIVAL | DEPARTURE | ARRIVAL | DEPARTURE |
| 1 | 0837 | 0943 | 0805 | 0850 | 0810 | 0845 |
| 2 | 1100 | 1215 | * | * | * | * |
| 3 | 1224 | 1255 | * | * | * | * |
| 4 | 1415 | 1450 | 1050 | 1122 | 1025 | 1047 |
| 5 | 1509 | 1538 | * | * | * | * |
| 6 | 1704 | 1730 | 1134 | 1200 | 1115 | 1140 |
| 7 | 1812 | 1843 | 1300 | 1326 | 1301 | 1327 |
| 8 | 1328 | 1404 | 0807 | 0849 | 0805 | 1000 |
| 9 | 0815 | 0954 | 0904 | 0948 | 1010 | 1045 |
| 10 | 0952 | 1041 | 0901 | 0935 | 0855 | 0920 |
| 11 | 1312 | 1356 | 0954 | 1030 | 0943 | 1010 |
| 12 | 1616 | 1655 | 1209 | 1237 | 1200 | 1229 |
| 13 | 1720 | 1805 | 1334 | 1440 | 1340 | 1345 |
| 14 | 1009 | 1114 | 0958 | 1215 | 1105 | 1225 |
| 15 | 1148 | 1308 | 1246 | 1402 | 1245 | 1350 |
| 16 | 1432 | 1525 | 1429 | 1534 | 1415 | 1500 |
| 17 | 1606 | 1711 | 1556 | 1655 | 1530 | 1624 |

*Stations not sampled on these dates.

Sampling periods of each station during the November 1978 plankton survey.

| STATION | NOVEMBER 16 | | NOVEMBER 17 | | NOVMEBER 18 | |
|---|---|---|---|---|---|---|
| | ARRIVAL | DEPARTURE | ARRIVAL | DEPARTURE | ARRIVAL | DEPARTURE |
| 1 | 0845 | 1010 | 0810 | 0830 | 0930 | 0955 |
| 2 | 1130 | 1202 | * | * | * | * |
| 3 | 1205 | 1230 | * | * | * | * |
| 4 | 1240 | 1300 | 1020 | 1045 | 1125 | 1145 |
| 5 | 1350 | 1447 | * | * | * | * |
| 6 | 1504 | 1530 | 1100 | 1120 | 1200 | 1220 |
| 7 | 1552 | 1610 | 1215 | 1235 | 1310 | 1330 |
| 8 | 0835 | 1030 | 0816 | 0925 | 0800 | 0825 |
| 9 | 1035 | 1119 | 0935 | 0959 | 0825 | 0915 |
| 10 | 1025 | 1112 | 0840 | 0915 | 1000 | 1025 |
| 11 | 1313 | 1342 | 0930 | 1010 | 1050 | 1120 |
| 12 | 1430 | 1500 | 1130 | 1200 | 1230 | 1300 |
| 13 | 1519 | 1610 | 1240 | 1305 | 0904 | 0940 |
| 14 | 1130 | 1220 | 1015 | 1122 | 1306 | 1400 |
| 15 | 1242 | 1356 | 1142 | 1229 | 1133 | 1225 |
| 16 | 1406 | 1500 | 1240 | 1345 | 1007 | 1105 |
| 17 | 1623 | 1717 | 1400 | 1502 | 0851 | 0956 |

*Stations not sampled on these dates.

# III. FISH - RECEIVING WATERS

This program was designed to determine the nature, extent, and significance of the effects of SONGS Units 1, 2, and 3 operations on the species composition, distribution and abundance of juvenile and adult fish offshore SONGS. This single program meets the requirements of both the ETS and PMP.

## A. METHODS

A detailed description of station locations and field methodology is given in ETS Fish Survey Procedures (SCE R&D/LCMR, Procedures EMP 25-5-35) and PMP Fish Survey Procedures (SCE R&D/LCMR, Procedures N-1-1/79). A general review of these procedures is given below.

### 1. GILL NETS

A total of 14 gill net stations are arrayed between an upcoast (San Mateo Pt. - Zones 3A, 3B) reference area, an area directly offshore of SONGS Units 1, 2, and 3 (SONGS - Zones 0A, 0B), and a downcoast (Don Light - Zone 6) reference area (Figure III-1). Each gill net station consists of a replicate pair of Marinovich experimental monofilament gill nets measuring 45.7 m long, 1.8 m deep, and containing six 7.6-m panels with the following bar mesh sizes: 22 mm, 25 mm, 38 mm, 46 mm, 53 mm, and 76 mm. All nets are set on the bottom over cobble for 24 h and are oriented perpendicular to the shoreline. Eight of the 14 stations (Stations 1, 2, 3, 6, 7, 8, 11, and 12) are located on the 9-m (30-ft) isobath. The remaining six stations (4, 5, 9, 10, 13, and 14) are located on the 14-m (45-ft) isobath. Twelve of the 14 station pairs are grouped in pairs (4 replicate nets/zone). Exceptions to this allocation are represented by Station 3 which is located within 50 m of the SONGS Unit 1 discharge and by Station 6 which is set approximately 2 km downcoast of Station pair 7 and 8.

2. OTTER TRAWLS

Otter trawl samples are collected at nine stations at depths of 6.1 m, 12.2 m, and 18.3 m (20, 40, and 60 ft) in Zones 6, 2A, 0B, 3A, and 5 (Figure III-1). A 24-ft semi-balloon otter trawl is utilized to take two sequential replicate 5-minute trawls at each station on two consecutive days during daylight hours (18 trawls/day or 36 trawls/survey). Trawl samples are collected within the same 24 hr period that gill nets are being fished. Trawl stations are located over sandy bottom in the same general region as gill nets. The stations are positioned to assess the effects of the SONGS Unit 1 discharge, as well as, provide baseline data for assessing the operational effects of Units 2 and 3.

3. GILL NET AND OTTER TRAWL LABORATORY

All fishes collected in each of the gill net and otter trawl samples are identified, enumerated and visually inspected for diseases and parasites. A group of fish taxa (select species) have been chosen for intensive study because of their numerical dominance in SONGS Unit 1 impingement samples, their numerical abundance offshore SONGS, and/or because of their value to sport and commercial fishing activities offshore SONGS Unit 1. These species include:

| | |
|---|---|
| *Seriphus politus* | - Queenfish |
| *Genyonemus lineatus* | - White Croaker |
| *Roncador stearnsii* | - Spotfin Croaker |
| *Cynoscion nobilis* | - White Seabass |
| *Hyperprosopon argenteum* | - Walleye Surfperch |
| *Phanerodon furcatus* | - White Surfperch |
| *Paralabrax clathratus* | - Kelp Bass |
| *Paralabrax nebulifer* | - Barred Sand Bass |
| *Paralabrax maculatofasciatus* | - Spotted Sand Bass |
| *Paralichthys californicus* | - California Halibut |

Select species are identified, enumerated, measured, and sexed. Standard length (tip of the snout to the end of the vertebral column) of a maximum of 125 individuals from each net are measured. The sex of a maximum of 50 individuals per

select species from each net is determined by observing the gonad or by observing the external sex characteristics evident in some species. Sexes are classified as male, female, or indeterminate. The indeterminate category contains animals which are sexually immature, have recently spawned, or have indistinguishable gonads because of rapid decay or mechanical damage.

In addition to the preceeding methods, which are utilized for the combined Units 1, 2, and 3 program, certain additional length and sex data are taken to maintain compliance with the Unit 1 ETS at some stations. The ETS requires that all fish from the six nets near the Unit 1 discharge (Zone 0A) and the six nets at the downcoast inshore reference area (Zone 6) be measured and that resident species be subsampled for sex composition.

Temperature-transmissivity profiles are conducted once daily for the two days of the survey at each 9-m and 14-m gill net (cluster of 4) station. Data are taken at 1 m depth intervals from the surface to the bottom.

## B. RESULTS

Abundance data tables, length frequency histograms, and tables summarizing the sex composition of fish taxa collected during 1978 follow. In certain instances fish surveys were conducted to satisfy certain regulatory requirements as well as answer specific questions regarding sampling design criteria. A brief synopsis of these surveys is as follows.

### 1. SURVEY SYNOPSIS

a. NPDES Survey - March 15-16, 1978: The objective of this survey was to satisfy NPDES monitoring requirements for SONGS Unit 1 and to evaluate San Mateo Point and Don Light areas as potential otter trawling reference areas for the PMP program. Otter trawling was conducted at three stations located offshore of San Mateo Point, SONGS, and Don Light at 20, 40, and 65-ft

depths using a 7.6 m (24 ft) Marinovich semi-balloon otter trawl. The three stations within each area correspond to those trawling stations shown in Figure III-1.

b. Survey of March 30-31, 1978: The objectives of this survey were to develop a statistically valid and logistically efficient sampling strategy for SONGS Units 2 and 3 PMP and to serve as the first quarterly nekton survey for the existing ETS Unit 1 program. Otter trawling was conducted to evaluate the number of replicates necessary to achieve various levels of sampling precision in estimating the abundance of select species and evaluate variability of otter trawl catches with respect to depth and diel periodicity. Gill nets set for 4-hour intervals were utilized to evaluate the effect of net orientation to the coastline on catch and evaluate the effect of gill net catches with respect to depths and diel periodicity. Gill nets set for 24 hours evaluated the number of replicate gill nets necessary to achieve various levels of sampling precision in estimating the abundance of select species, and San Mateo Point as a potential reference area.

c. Surveys June 14-15, August 15-16, October 11-12, December 12-13, 1978: These surveys were conducted to fulfill the objectives set forth by the ETS and PMP fish programs. Gill nets and otter trawls were used in these surveys, as described in the previous methods section.

2. DATA PRESENTATION

Data presentation for these surveys will be organized as follows.

a. NPDES Survey March 15-16, 1978: A table summarizing trawling direction, time of trawl, engine speed, boat speed, and depth is presented. Abundance of all taxa collected will be presented by area and depth. Length frequency histograms by area and depth for two replicate trawls per depth for

*Seriphus politus* and *Genyonemus lineatus* will be followed by length frequency listings for additional select species. Histograms were constructed for *S. politus* and *G. lineatus* primarily because of their numerical dominance in trawl catches. Sex composition by area and depth for select species are also tabulated.

b. Survey of March 30-31, 1978: The species composition and numerical abundance of all taxa captured will be presented by method of collection. Abundance of all fishes caught in gill nets will be presented by the duration of time the gill net was set. Data from gill nets set for 24 hr will appear first followed by gill nets set for 4 hr. The 4 hr gill nets are arranged by the time of day they were fished, i.e., mid-day, afternoon-evening, and night. The 4 hr gill nets were designed to fish a specific 4 hr period; however, additional time was required to retrieve, pick, and reset these nets therefore times mentioned in the captions will exceed 4 hours since they reflect the total time period over which all nets were fished. Storm activity on the evening of March 30, 1978 prevented the retrieval and resetting of eight 4-hr nets; therefore, a table encompassing the period these nets were set is presented. Following gill net data abundances of all species caught in otter trawls are presented by depth. These abundance tables will be followed by 24-hr gill net and otter trawl species composition and abundance tables for June, August, October, and December surveys.

Length frequency data will be presented by two methods. The first method employs length frequency histograms while the second method simply lists length frequency information. Length frequency data will be organized into blocks with histograms for select species presented for all surveys preceeding the listings of all other species collected by survey. Length frequency data will be grouped by sampling method, area, and depth. Depths on otter trawl length frequency listings are denoted by the following code system T-1, 2, 3, 4-20, 40,60. This code specifies the sampling method (otter trawl, T), the replicate

number (1, 2, 3, or 4) and the depth (20, 40, or 60 ft) at which the trawl was taken.

Length frequency distribution histograms and listings for June, August, October, and December surveys are based upon four replicate 24-hour gill nets per depth and surveillance area and four replicate otter trawls per depth and area.

Sex composition data are also tabulated in blocks. Sex composition tables correspond to gear type, survey date, and depth.

The presentation of select species information is emphasized primarily because of the numerical abundance of these species in receiving water and impingement samples and because of their importance as sport and/or commercial fishing resources.

Temperature and transmissivity data collected during these surveys is also presented along with auxiliary observations.

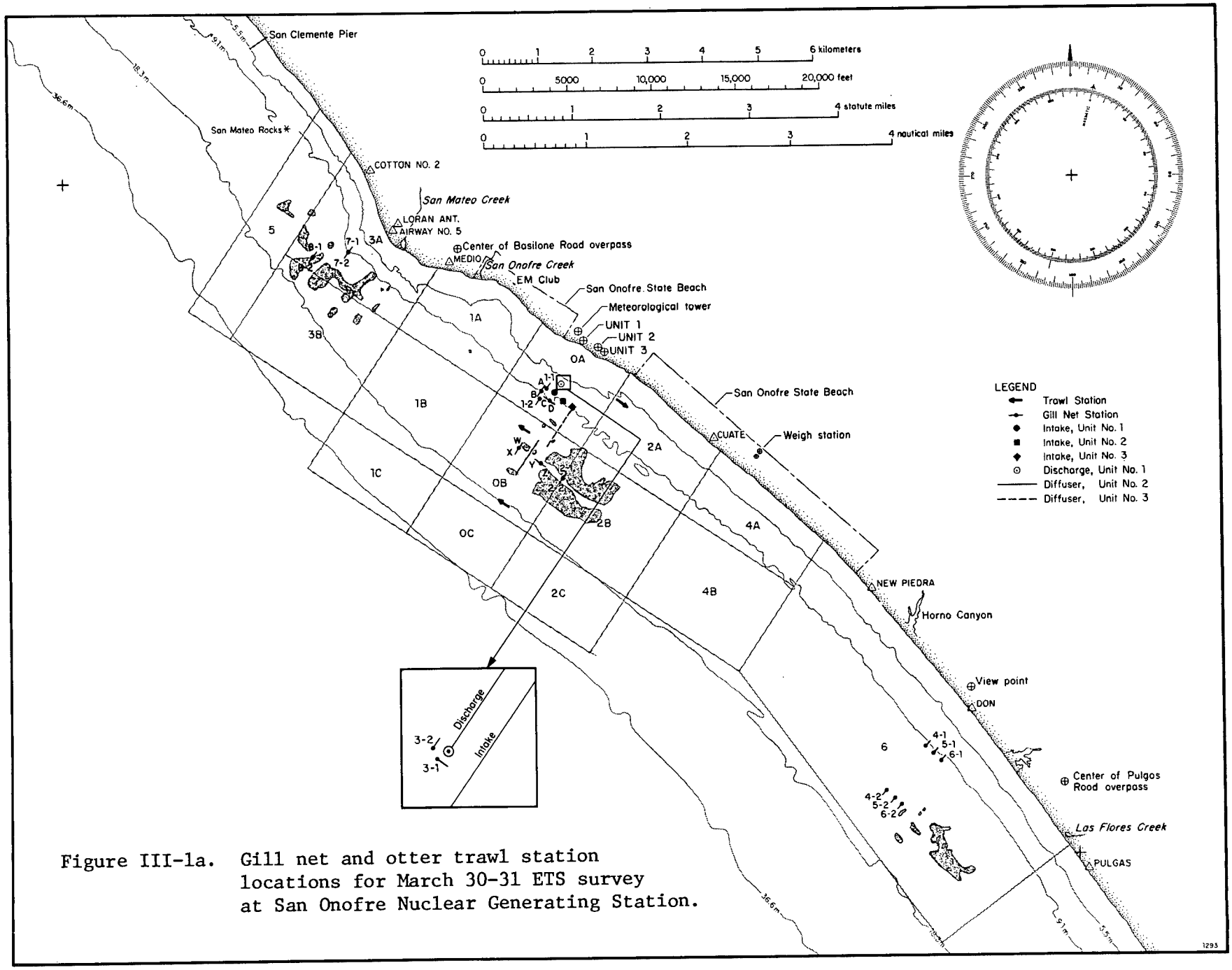



Figure III-1a. Gill net and otter trawl station locations for March 30-31 ETS survey at San Onofre Nuclear Generating Station.

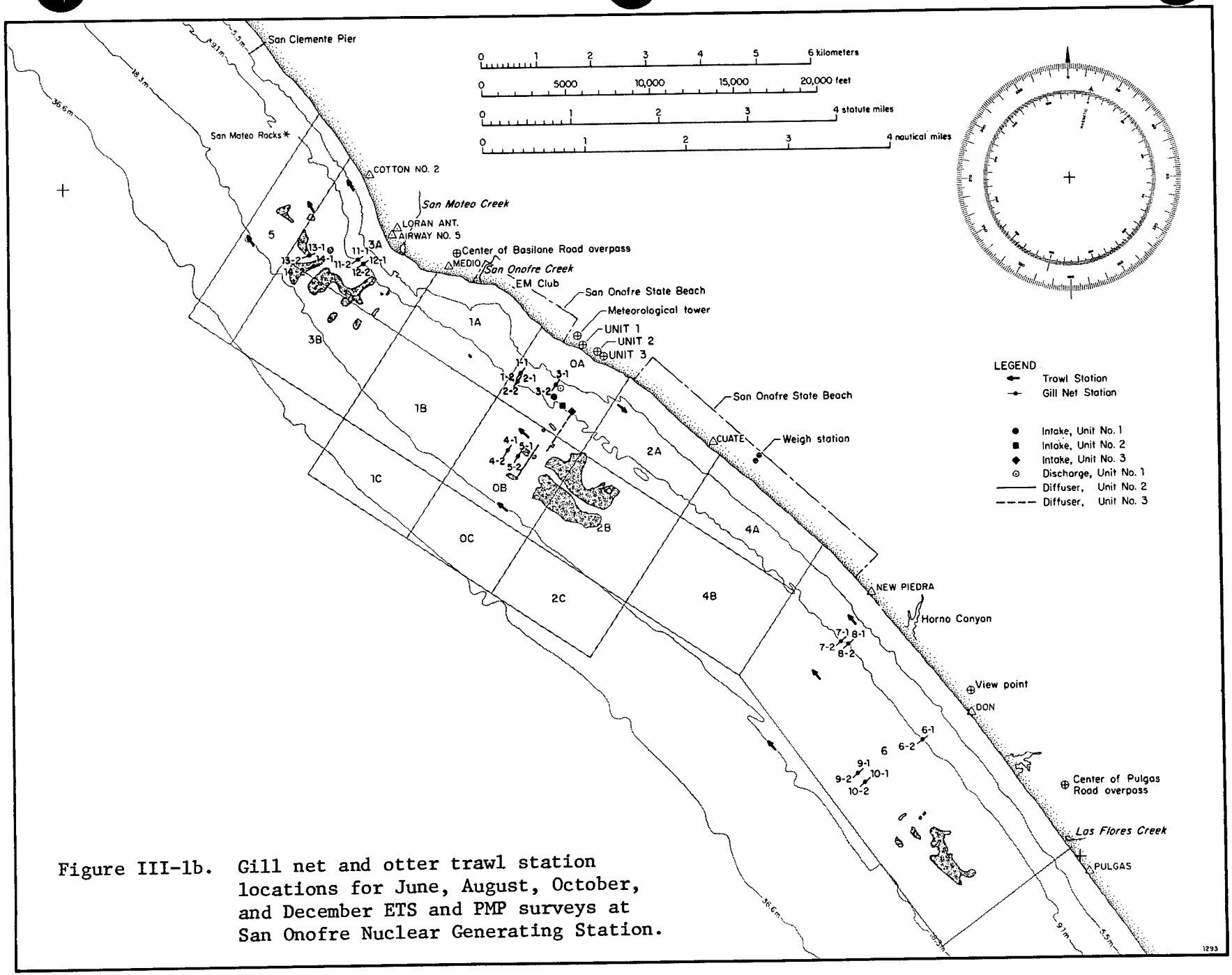



Figure III-1b. Gill net and otter trawl station locations for June, August, October, and December ETS and PMP surveys at San Onofre Nuclear Generating Station.

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Two Replicate Otter Trawls at 20, 40 and 60 Feet Offshore San Mateo Point on March 15, 1978.

| TAXA | T-R | Trawl Depth 20' REPLICATE 1 | 20' REPLICATE 2 | 40' REPLICATE 1 | 40' REPLICATE 2 | 60' REPLICATE 1 | 60' REPLICATE 2 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | |
| DASYATIDAE | | | | | | | | |
| UROLOPHUS HALLERI | T | - | - | - | - | - | - | Ø |
| ENGRAULIDAE | | | | | | | | |
| ANCHOA COMPRESSA | T | - | - | - | - | 5 | - | 5 |
| ENGRAULIS MORDAX | T | - | - | 1 | 18 | - | - | 19 |
| SYNODONTIDAE | | | | | | | | |
| SYNODUS LUCIOCEPS | T | 6 | - | - | - | - | - | 6 |
| SYNGNATHIDAE | | | | | | | | |
| SYNGNATHUS CALIFORNIENSIS | T | - | - | - | 2 | - | - | 2 |
| SERRANIDAE | | | | | | | | |
| PARALABRAX CLATHRATUS | R | - | - | - | 1 | - | - | 1 |
| SCIAENIDAE | | | | | | | | |
| GENYONEMUS LINEATUS | T | 27 | 29 | 142 | 42 | 22 | 3 | 265 |
| MENTICIRRHUS UNDULATUS | T | - | - | - | 2 | 4 | 1 | 7 |
| SERIPHUS POLITUS | R | 1 | - | 12 | 92 | 13 | 4 | 122 |
| UMBRINA RONCADOR | T | - | - | - | - | - | 2 | 2 |
| EMBIOTOCIDAE | | | | | | | | |
| CYMATOGASTER AGGREGATA | R | - | 2 | - | - | - | - | 2 |
| EMBIOTOCA JACKSONI | R | - | - | - | - | 1 | - | 1 |
| HYPERPROSOPON ARGENTEUM | R | 1 | 6 | - | - | 4 | 5 | 16 |
| PHANERODON FURCATUS | R | - | 7 | 1 | - | - | 2 | 1Ø |
| BOTHIDAE | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | 6 | - | - | 1 | 8 | 15 | 3Ø |
| PARALICHTHYS CALIFORNICUS | T | 1 | - | - | - | - | - | 1 |
| XYSTREURYS LIOLEPIS | T | 1 | 1 | - | - | - | - | 2 |
| PLEURONECTIDAE | | | | | | | | |
| HYPSOPSETTA GUTTULATA | T | 2 | - | - | - | - | - | 2 |
| PLEURONICHTHYS VERTICALIS | T | 1Ø | - | - | - | - | - | 1Ø |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Two Replicate Otter Trawls at 20, 40 and 60 Feet Offshore SONGS on March 15-16, 1978.

| TAXA | T-R | Trawl Depth 20' REPLICATE 1 | 20' REPLICATE 2 | 40' REPLICATE 1 | 40' REPLICATE 2 | 60' REPLICATE 1 | 60' REPLICATE 2 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | |
| PLATYRHINIDAE | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | T | - | - | - | 1 | - | - | 1 |
| ENGRAULIDAE | | | | | | | | |
| ANCHOA COMPRESSA | T | - | - | - | - | - | 1 | 1 |
| ENGRAULIS MORDAX | T | - | - | 2 | - | - | - | 2 |
| SYNODONTIDAE | | | | | | | | |
| SYNODUS LUCIOCEPS | T | - | - | - | - | 1 | - | 1 |
| OPHIDIIDAE | | | | | | | | |
| CHILARA TAYLORI | R | - | - | - | - | - | 1 | 1 |
| OTOPHIDIUM SCRIPPSI | R | - | - | 2 | 2 | - | - | 4 |
| SYNGNATHIDAE | | | | | | | | |
| SYNGNATHUS CALIFORNIENSIS | T | 1 | - | 5 | 7 | 1 | 2 | 16 |
| SERRANIDAE | | | | | | | | |
| PARALABRAX CLATHRATUS | R | 1 | - | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | |
| CHEILOTREMA SATURNUM | R | - | - | - | - | - | 1 | 1 |
| GENYONEMUS LINEATUS | T | 90 | 26 | 50 | 77 | 4 | 20 | 267 |
| MENTICIRRHUS UNDULATUS | T | - | - | - | 1 | - | 2 | 3 |
| RONCADOR STEARNSII | T | - | - | - | - | 4 | 5 | 9 |
| SERIPHUS POLITUS | R | 3 | - | 108 | 20 | 1 | 35 | 167 |
| UMBRINA RONCADOR | T | - | - | - | - | 2 | 2 | 4 |
| EMBIOTOCIDAE | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | R | - | - | - | - | 1 | 7 | 8 |
| BRACHYISTIUS FRENATUS | R | - | - | - | - | - | 10 | 10 |
| CYMATOGASTER AGGREGATA | R | 1 | 7 | - | - | - | - | 8 |
| HYPERPROSOPON ARGENTEUM | R | 1 | 1 | 1 | - | 1 | 7 | 11 |
| PHANERODON FURCATUS | R | 2 | 2 | - | - | 7 | - | 11 |
| CLINIDAE | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | - | - | - | - | 1 | 1 |
| BLENNIIDAE | | | | | | | | |
| HYPSOBLENNIUS GILBERTI | R | - | - | - | - | - | 1 | 1 |
| BOTHIDAE | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | 14 | 1 | 1 | 9 | - | - | 25 |
| PARALICHTHYS CALIFORNICUS | T | - | - | - | - | 1 | - | 1 |
| PLEURONECTIDAE | | | | | | | | |
| HYPSOPSETTA GUTTULATA | T | 1 | - | - | - | - | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Replicate Otter Trawls at 20, 40 and 60 Feet Offshore Don Light on March 16, 1978.

| TAXA | T-R | Trawl Depth 20' REPLICATE 1 | 20' REPLICATE 2 | 40' REPLICATE 1 | 40' REPLICATE 2 | 60' REPLICATE 1 | 60' REPLICATE 2 | TOTAL |
|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | |
| RAJIDAE | | | | | | | | |
| RAJA INORNATA | T | 1 | - | - | - | - | - | 1 |
| ENGRAULIDAE | | | | | | | | |
| ENGRAULIS MORDAX | T | 1 | 1 | - | - | 1 | 10 | 13 |
| SYNODONTIDAE | | | | | | | | |
| SYNODUS LUCIOCEPS | T | - | - | - | 1 | 1 | - | 2 |
| OPHIDIIDAE | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | R | 1 | 2 | - | - | - | 2 | 5 |
| SYNGNATHIDAE | | | | | | | | |
| SYNGNATHUS CALIFORNIENSIS | T | 1 | 6 | - | - | - | 6 | 13 |
| SCIAENIDAE | | | | | | | | |
| GENYONEMUS LINEATUS | T | 77 | 76 | 24 | 130 | 6 | 44 | 357 |
| MENTICIRRHUS UNDULATUS | T | - | - | - | - | 1 | 6 | 7 |
| SERIPHUS POLITUS | R | 6 | 8 | 35 | 99 | 2 | 14 | 164 |
| EMBIOTOCIDAE | | | | | | | | |
| CYMATOGASTER AGGREGATA | R | 1 | 3 | - | - | 1 | - | 5 |
| EMBIOTOCA JACKSONI | R | - | - | - | - | 1 | - | 1 |
| HYPERPROSOPON ARGENTEUM | R | 1 | - | 1 | - | 2 | 1 | 5 |
| PHANERODON FURCATUS | R | 1 | - | - | - | - | - | 1 |
| CLINIDAE | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | - | - | - | 1 | - | 1 |
| BOTHIDAE | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | - | 6 | - | 4 | 3 | 8 | 21 |
| CITHARICHTHYS XANTHOSTIGMA | T | - | - | 6 | - | - | - | 6 |
| PLEURONECTIDAE | | | | | | | | |
| HYPSOPSETTA GUTTULATA | T | - | - | 1 | - | - | 1 | 2 |
| PLEURONICHTHYS VERTICALIS | T | 3 | 1 | 1 | 1 | - | - | 6 |

Net Deployment and Recovery Data for Otter Trawls Fished Offshore San Mateo Point, San Onofre and Don Light on March 15-16, 1978.

| Trawl Location | Date | Station/Replicate | Direction | Time | | Engine (RPM) | Boat Speed (kt) | Depth (ft) |
|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | | | |
| San Mateo Point | 3/15 | 1A | 300° | 0906 | 0911 | 950 | 2.5 | 65 |
| | 3/15 | 1B | 300° | 0943 | 0948 | 875 | 2.4 | 65 |
| | 3/15 | 2A | 300° | 1037 | 1042 | 900 | 1.7 | 38 |
| | 3/15 | 2B | 300° | 1116 | 1121 | 875 | 2.5 | 38 |
| | 3/15 | 3A | 300° | 1200 | 1205 | 900 | 2.5 | 20 |
| | 3/15 | 3B | 300° | 1222 | 1227 | 875 | 2.4 | 20 |
| San Onofre | 3/15 | 1A | 300° | 1309 | 1314 | 900 | 2.5 | 65 |
| | 3/15 | 1B | 300° | 1337 | 1342 | 900 | 2.4 | 65 |
| | 3/15 | 2A | 300° | 1418 | 1423 | 900 | 2.4 | 38 |
| | 3/15 | 2B | 300° | 1516 | 1521 | 900 | 2.7 | 38 |
| | 3/16 | 3A | 300° | 1348 | 1353 | 900 | 2.5 | 20 |
| | 3/16 | 3B | 110° | 1413 | 1418 | 900 | 2.5 | 20 |
| Don Light | 3/16 | 1A | 300° | 0919 | 0924 | 925 | 2.5 | 65 |
| | 3/16 | 1B | 300° | 0957 | 1002 | 950 | 2.5 | 65 |
| | 3/16 | 2A | 300° | 1058 | 1103 | 900 | 2.4 | 43 |
| | 3/16 | 2B | 300° | 1124 | 1129 | 900 | 2.5 | 40 |
| | 3/16 | 3A | 300° | 1202 | 1207 | 850 | 2.0 | 20 |
| | 3/16 | 3B | 300° | 1232 | 1237 | 900 | 2.6 | 23 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Replicate 24 Hour Gill Nets from the SONGS, Don Light and San Mateo Point Areas on March 30-31, 1978.

| TAXA | T-R | SONGS | | | | | | DON LIGHT | | | | | | SMP | | | | NO. OF FISH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATION 1 | | STATION 2 | | STATION 3 | | STATION 4 | | STATION 5 | | STATION 6 | | STATION 7 | | STATION 8 | | | | |
| | | REPLICATE 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | SONGS | DL | SMP |
| | | 30' | 30' | 45' | 45' | 30' | 30' | 30' | 45' | 30' | 45' | 30' | 45' | 30' | 30' | 45' | 45' | | | |
| CHORDATA | | | | | | | | | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | | | | | | | | | |
| HETERODONTUS FRANCISCI | T | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| CARCHARHINIDAE | | | | | | | | | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | T | 2 | 3 | 1 | - | 2 | 1 | - | - | - | - | - | - | - | 1 | 2 | - | 9 | 0 | 3 |
| MUSTELUS HENLEI | T | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| TRIAKIS SEMIFASCIATA | T | 15 | 5 | - | - | - | 1 | - | - | - | - | - | - | 1 | - | 1 | 1 | 21 | 0 | 3 |
| SPHYRNIDAE | | | | | | | | | | | | | | | | | | | | |
| SPHYRNA ZYGAENA | T | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| DASYATIDAE | | | | | | | | | | | | | | | | | | | | |
| UROLOPHUS HALLERI | T | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | 2 | 0 | 0 |
| SYNODONTIDAE | | | | | | | | | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | T | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | 0 | 1 | 0 |
| ATHERINIDAE | | | | | | | | | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | T | 1 | - | - | - | - | - | 2 | - | 1 | - | 3 | - | 2 | - | - | - | 1 | 6 | 2 |
| SERRANIDAE | | | | | | | | | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | R | - | 1 | 1 | 3 | - | - | 1 | - | 2 | 2 | - | - | - | 1 | 1 | 2 | 5 | 5 | 4 |
| PARALABRAX MACULATOFASCIATUS | R | - | - | - | - | - | 1 | - | 2 | 1 | - | - | - | - | - | - | - | 1 | 3 | 0 |
| PARALABRAX NEBULIFER | R | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | R | - | 1 | - | - | - | - | - | - | 1 | - | 1 | - | - | - | - | - | 1 | 2 | 0 |
| HAEMULON CALIFORNIENSIS | R | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| SCIAENIDAE | | | | | | | | | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | R | 1 | 1 | 3 | 1 | - | 1 | - | 3 | 5 | - | - | - | - | 2 | 1 | 1 | 7 | 8 | 4 |
| CYNOSCION NOBILIS | T | 2 | 1 | 4 | 2 | 2 | 4 | - | - | - | - | - | - | 1 | 1 | 3 | 1 | 15 | 0 | 6 |
| GENYONEMUS LINEATUS | T | 3 | 1 | 28 | 14 | 22 | 13 | 1 | 28 | 8 | 21 | 11 | 14 | 6 | 1 | 49 | 1 | 81 | 83 | 57 |
| MENTICIRRHUS UNDULATUS | T | 6 | 2 | 3 | 1 | 12 | 2 | 3 | 1 | 3 | - | - | 4 | 3 | 1 | 3 | - | 26 | 11 | 7 |
| RONCADOR STEARNSII | T | 1 | 8 | 1 | - | 3 | 39 | - | - | - | - | 1 | - | 2 | 2 | - | - | 52 | 1 | 4 |
| SERIPHUS POLITUS | R | 3 | 4 | 11 | 34 | 5 | 4 | 16 | 52 | 12 | 24 | 13 | 57 | 31 | 11 | 36 | - | 61 | 176 | 78 |
| UMBRINA RONCADOR | T | - | 1 | - | - | 3 | 28 | - | - | - | - | - | - | - | - | - | - | 32 | 0 | 0 |
| GERRELLIDAE | | | | | | | | | | | | | | | | | | | | |
| GERRELLA NIGRICANS | R | 12 | 8 | 2 | - | - | - | - | - | 1 | - | - | 1 | - | 10 | - | 1 | 22 | 2 | 11 |
| SCORPIDIDAE | | | | | | | | | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | R | - | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | | | | | |
| BRACHYISTIUS FRENATUS | R | 1 | - | - | - | 3 | - | 2 | 1 | 1 | 1 | 3 | - | - | - | 2 | - | 4 | 8 | 2 |
| DAMALICHTHYS VACCA | R | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - | - | 1 | 1 | 0 |
| HYSTEROCARPUS JACKSONI | R | - | - | - | 4 | - | - | - | 1 | - | - | - | 1 | - | - | - | 1 | 4 | 2 | 1 |
| HYPERPROSOPON ARGENTEUM | R | 2 | 1 | 2 | - | 46 | 7 | - | - | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 1 | 58 | 10 | 10 |
| PHANERODON FURCATUS | R | - | - | 1 | 2 | - | - | - | 1 | - | - | 2 | 1 | 1 | - | 5 | 1 | 3 | 4 | 7 |
| POMACENTRIDAE | | | | | | | | | | | | | | | | | | | | |
| CHROMIS PUNCTIPINNIS | R | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 121 | 0 | 0 | 121 |

| TAXA | T-R | SONGS | | | | | | DON LIGHT | | | | | | SMP | | | | NO. OF FISH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STATION 1 | | STATION 2 | | STATION 3 | | STATION 4 | | STATION 5 | | STATION 6 | | STATION 7 | | STATION 8 | | | | |
| | | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | SONGS | DL | SMP |
| | | 30' | 30' | 45' | 45' | 30' | 30' | 30' | 45' | 30' | 45' | 30' | 45' | 30' | 30' | 45' | 45' | | | |
| CHORDATA | | | | | | | | | | | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | R | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 0 | 0 |
| PIMELOMETOPON PULCHRUM | R | - | - | - | 2 | - | - | - | - | - | - | 1 | - | - | - | - | - | 2 | 1 | 0 |
| CLINIDAE | | | | | | | | | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 0 | 0 |
| SCORPAENIDAE | | | | | | | | | | | | | | | | | | | | |
| SEBASTES AURICULATUS | R | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | 0 | 2 | 0 |
| SEBASTES CARNATUS | R | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| SEBASTES SERRANOIDES | R | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | 0 | 0 | 7 |
| HEXAGRAMMIDAE | | | | | | | | | | | | | | | | | | | | |
| OXYLEBIUS PICTUS | T | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | 1 |
| BOTHIDAE | | | | | | | | | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 0 | 0 | 1 |
| PARALICHTHYS CALIFORNICUS | T | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 0 | 1 | 0 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Gill Nets Fished for 4 hours Offshore San Onofre Nuclear Generating Station During the Interval from 0830h to 1435h on March 30, 1978.

| TAXA | T-R | Station and Orientation | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 30 feet | | | | 45 feet | | | | |
| | | A | B | C | D | W | X | Y | Z | |
| | | Perpend. | | Parallel | | Perpend. | | Parallel | | |
| CHORDATA | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | T | 1 | 4 | - | - | - | - | - | - | 5 |
| TRIAKIS SEMIFASCIATA | T | 1 | - | 4 | - | - | - | - | - | 5 |
| SERRANIDAE | | | | | | | | | | |
| PARALABRAX NEBULIFER | R | - | 1 | - | - | - | - | 1 | - | 2 |
| PRISTIPOMATIDAE | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | R | - | - | 1 | - | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | | |
| CHEILOTREMA SATURNUM | R | - | 1 | - | - | - | - | - | - | 1 |
| CYNOSCION NOBILIS | T | 3 | - | 1 | - | 1 | - | - | - | 5 |
| GENYONEMUS LINEATUS | T | - | - | - | - | 1 | - | 2 | 2 | 5 |
| MENTICIRRHUS UNDULATUS | T | - | - | 1 | - | - | 1 | - | - | 2 |
| RONCADOR STEARNSII | T | - | - | - | - | 3 | 1 | - | - | 4 |
| SERIPHUS POLITUS | R | - | - | 2 | 5 | - | 2 | 3 | 2 | 14 |
| UMBRINA RONCADOR | T | 1 | - | - | - | - | - | - | - | 1 |
| EMBIOTOCIDAE | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | R | - | 1 | 1 | - | - | - | - | - | 2 |
| BRACHYISTIUS FRENATUS | R | - | 3 | 2 | 1 | - | - | - | - | 6 |
| DAMALICHTHYS VACCA | R | - | 1 | - | - | - | - | - | - | 1 |
| EMBIOTOCA JACKSONI | R | - | - | - | - | - | - | 2 | - | 2 |
| HYPERPROSOPON ARGENTEUM | R | - | - | 5 | - | - | 2 | - | 2 | 9 |
| RHACOCHILUS TOXOTES | R | - | 1 | - | - | - | - | - | - | 1 |
| BOTHIDAE | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | T | - | 1 | - | - | - | - | - | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Gill Nets Fished for 4 hours Offshore San Onofre Nuclear Genering Station During the Interval from 1435h to 2049h on March 30, 1978.

| TAXA | T-R | Station and Orientation | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 30 feet | | | | 45 feet | | | | |
| | | A | B | C | D | W | X | Y | Z | |
| | | Perpend. | | Parallel | | Perpend. | | Parallel | | |
| CHORDATA | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | T | 1 | - | 1 | - | - | - | - | - | 2 |
| TRIAKIS SEMIFASCIATA | T | 1 | 2 | - | - | - | - | - | - | 3 |
| SERRANIDAE | | | | | | | | | | |
| PARALABRAX CLATHRATUS | R | - | - | - | - | - | 1 | - | 1 | 2 |
| PRISTIPOMATIDAE | | | | | | | | | | |
| XENISTIUS CALIFORNIENSIS | R | - | - | - | - | 1 | 1 | 1 | - | 3 |
| SCIAENIDAE | | | | | | | | | | |
| CHEILOTREMA SATURNUM | R | 1 | - | 1 | 1 | 3 | 4 | - | - | 10 |
| CYNOSCION NOBILIS | T | 1 | 1 | 2 | 1 | - | - | 1 | 2 | 8 |
| GENYONEMUS LINEATUS | T | - | - | - | 1 | 2 | 13 | 13 | 12 | 41 |
| MENTICIRRHUS UNDULATUS | T | 1 | - | 1 | 2 | - | 2 | - | - | 6 |
| RONCADOR STEARNSII | T | 1 | 16 | 9 | 1 | - | - | - | - | 27 |
| SERIPHUS POLITUS | R | 5 | 4 | 5 | 4 | 20 | 32 | 33 | 40 | 143 |
| GIRELLIDAE | | | | | | | | | | |
| GIRELLA NIGRICANS | R | 11 | - | 6 | - | - | - | - | - | 17 |
| EMBIOTOCIDAE | | | | | | | | | | |
| BRACHYISTIUS FRENATUS | R | - | 1 | 2 | 1 | - | - | - | - | 4 |
| HYPERPROSOPON ARGENTEUM | R | 3 | 1 | - | 1 | - | 1 | - | 1 | 7 |
| PHANERODON FURCATUS | R | - | - | - | - | - | - | - | 2 | 2 |
| SPHYRAENIDAE | | | | | | | | | | |
| SPHYRAENA ARGENTEA | T | - | - | - | - | - | 2 | - | - | 2 |
| CLINIDAE | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | - | 1 | - | - | - | - | - | 1 |
| SCORPAENIDAE | | | | | | | | | | |
| SCORPAENA GUTTATA | R | - | - | 1 | - | - | - | - | - | 1 |
| SEBASTES AURICULATUS | R | 1 | - | - | - | - | - | - | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Gill Nets Fished for 4 hours Offshore San Onofre Nuclear Generating Station During the Interval from 2050h to 0920h March 30-31, 1978.

| TAXA | T-R | Station and Orientation | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 30 feet | | | | 45 feet | | | | |
| | | A | B | C | D | W | X | Y | Z | |
| | | Perpend. | | Parallel | | Perpend. | | Parallel | | |
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| HETERODONTUS FRANCISCI | T | 1 | - | 1 | - | - | - | - | - | 2 |
| CARCHARHINIDAE | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | T | 1 | 2 | - | - | 1 | - | - | - | 4 |
| TRIAKIS SEMIFASCIATA | T | 1 | 1 | 6 | - | - | - | - | - | 8 |
| ATHERINIDAE | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | T | - | - | 1 | 3 | - | - | - | - | 4 |
| SERRANIDAE | | | | | | | | | | |
| PARALABRAX MACULATOFASCIATUS | R | - | - | - | - | - | - | 1 | - | 1 |
| PARALABRAX NEBULIFER | R | - | - | - | - | 1 | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | | |
| CHEILOTREMA SATURNUM | R | - | 1 | 1 | - | - | 1 | 1 | - | 4 |
| CYNOSCION NOBILIS | T | 1 | - | - | 2 | 1 | - | - | - | 4 |
| GENYONEMUS LINEATUS | T | - | - | 2 | 6 | 16 | 30 | 56 | - | 110 |
| MENTICIRRHUS UNDULATUS | T | - | - | 1 | 2 | 1 | - | 2 | - | 6 |
| RONCADOR STEARNSII | T | - | 2 | 5 | - | - | - | - | - | 7 |
| SERIPHUS POLITUS | R | 1 | 4 | 9 | 5 | 7 | 7 | 27 | - | 60 |
| GIRELLIDAE | | | | | | | | | | |
| GIRELLA NIGRICANS | R | 2 | 1 | 9 | - | - | - | - | - | 12 |
| EMBIOTOCIDAE | | | | | | | | | | |
| BRACHYISTIUS FRENATUS | R | - | 1 | - | - | - | - | - | - | 1 |
| DAMALICHTHYS VACCA | R | - | - | - | - | - | 1 | - | - | 1 |
| EMBIOTOCA JACKSONI | R | 1 | - | - | - | 2 | - | - | - | 3 |
| HYPERPROSOPON ARGENTEUM | R | - | 1 | 2 | 3 | 4 | - | - | - | 10 |
| HYPSURUS CARYI | R | - | 1 | - | - | - | - | - | - | 1 |
| RHACOCHILUS TOXOTES | R | - | 1 | - | - | 2 | - | - | - | 3 |
| CLINIDAE | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | 1 | 1 | - | - | - | - | - | - | 2 |
| SCORPAENIDAE | | | | | | | | | | |
| SCORPAENA GUTTATA | R | - | - | - | - | - | 1 | - | - | 1 |
| BOTHIDAE | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | T | - | - | - | - | - | - | 1 | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Replicate Otter Trawls at 20 Feet, Offshore San Onofre Nuclear Generating Station - March 30-31, 1978.

| TAXA | T-R | TRAWL NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | STARTING TIME OF TRAWL | | | | | | | | |
| | | 1053 | 1130 | 1524 | 1556 | 1823 | 1841 | 2136 | 2056 | |
| CHORDATA | | | | | | | | | | |
| PLATYRHINIDAE | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | T | - | - | - | - | - | 1 | - | - | 1 |
| DASYATIDAE | | | | | | | | | | |
| UROLOPHUS HALLERI | T | - | - | 1 | 1 | 1 | 1 | 1 | - | 5 |
| MYLIOBATIDAE | | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | T | - | - | - | 1 | - | 1 | - | - | 2 |
| ENGRAULIDAE | | | | | | | | | | |
| ENGRAULIS MORDAX | T | - | 1 | 3 | 1 | 1 | 1 | 2 | 2 | 11 |
| OPHIDIIDAE | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | R | 1 | 1 | - | - | - | 2 | 3 | 7 | 14 |
| ATHERINIDAE | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | T | 1 | - | - | - | 2 | - | - | - | 3 |
| SYNGNATHIDAE | | | | | | | | | | |
| SYNGNATHUS SPP. | T | 1 | 2 | - | 2 | - | 4 | 1 | - | 10 |
| SCIAENIDAE | | | | | | | | | | |
| GENYONEMUS LINEATUS | T | 64 | 71 | 55 | 44 | 29 | 44 | 51 | 30 | 388 |
| MENTICIRRHUS UNDULATUS | T | - | 1 | - | 6 | 1 | 1 | 2 | 1 | 12 |
| SERIPHUS POLITUS | R | 211 | 211 | 24 | 99 | 77 | 67 | 12 | 16 | 717 |
| EMBIOTOCIDAE | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | R | - | - | 1 | - | - | - | - | - | 1 |
| BRACHYISTIUS FRENATUS | R | 1 | - | 1 | 1 | - | - | - | - | 3 |
| HYPERPROSOPON ARGENTEUM | R | 1 | 2 | 4 | 6 | 3 | 1 | - | - | 17 |
| PHANERODON FURCATUS | R | - | - | - | - | - | 1 | - | 1 | 2 |
| CLINIDAE | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | - | - | - | 1 | - | - | 2 | 3 |
| STROMATEIDAE | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | R | - | - | - | - | - | 2 | 3 | 3 | 8 |
| BOTHIDAE | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | - | - | 1 | 3 | - | 1 | 1 | 1 | 7 |
| CYNOGLOSSIDAE | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | T | - | - | - | - | 1 | - | - | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Replicate Otter Trawls at 40 Feet, Offshore San Onofre Nuclear Generating Station on March 30-31, 1978.

| TAXA | T-R | TRAWL NUMBER 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | | STARTING TIME OF TRAWL | | | | | | | |
| | | 1230 | 1253 | 1518 | 1636 | 1950 | 2007 | 0033 | |
| CHORDATA | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | |
| RHINOBATOS PRODUCTUS | T | - | 3 | - | - | - | - | - | 3 |
| PLATYRHINIDAE | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | T | 1 | - | 1 | 1 | 1 | - | - | 4 |
| RAJIDAE | | | | | | | | | |
| RAJA INORNATA | T | - | - | - | - | - | - | 1 | 1 |
| DASYATIDAE | | | | | | | | | |
| UROLOPHUS HALLERI | T | 2 | 2 | - | 1 | - | - | - | 5 |
| MYLIOBATIDAE | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | T | - | 1 | - | - | - | - | 2 | 3 |
| ENGRAULIDAE | | | | | | | | | |
| ENGRAULIS MORDAX | T | 1 | - | - | - | - | 1 | - | 2 |
| OPHIDIIDAE | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | R | - | - | - | - | 7 | 9 | 1 | 17 |
| SYNGNATHIDAE | | | | | | | | | |
| SYNGNATHUS SPP. | T | - | - | - | 1 | - | - | - | 1 |
| PRISTIPOMATIDAE | | | | | | | | | |
| XENISTIUS CALIFORNIENSIS | R | - | 1 | - | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | |
| GENYONEMUS LINEATUS | T | 80 | 78 | 38 | 60 | 46 | 25 | 37 | 364 |
| MENTICIRRHUS UNDULATUS | T | - | - | - | 1 | - | - | - | 1 |
| SERIPHUS POLITUS | R | 39 | 56 | 43 | 51 | 17 | 21 | 35 | 262 |
| EMBIOTOCIDAE | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | R | 1 | 1 | - | - | - | - | - | 2 |
| BRACHYISTIUS FRENATUS | R | 1 | - | 1 | - | 1 | - | - | 3 |
| EMBIOTOCA JACKSONI | R | 1 | - | - | - | - | - | - | 1 |
| HYPERPROSOPON ARGENTEUM | R | 1 | 4 | - | 1 | - | - | - | 6 |
| PHANERODON FURCATUS | R | 1 | 2 | - | - | - | - | 1 | 4 |
| CLINIDAE | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | R | - | 1 | - | - | - | - | - | 1 |
| STROMATEIDAE | | | | | | | | | |
| PEPRILUS SIMILLIMUS | R | - | - | - | 2 | 4 | 5 | 9 | 20 |
| BOTHIDAE | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | T | 3 | - | 2 | 3 | 1 | 1 | 1 | 11 |
| PARALICHTHYS CALIFORNICUS | T | - | 5 | 2 | - | 1 | 1 | - | 9 |
| PLEURONECTIDAE | | | | | | | | | |
| PLEURONICHTHYS RITTERI | T | 2 | - | - | - | - | 1 | - | 3 |
| PLEURONICHTHYS VERTICALIS | T | - | - | - | - | 1 | - | - | 1 |

Species Composition and Numerical Abundance of Resident (R) and Transitory (T) Fish Collected in Replicate Otter Trawls at 60 Feet, Offshore San Onofre Nuclear Generating Station on March 30-31, 1978.

| TAXA | T-R | TRAWL NUMBER 1 | 2 | 3 | 4 | 5 | 6 | Total |
|---|---|---|---|---|---|---|---|---|
| | | STARTING TIME OF TRAWL | | | | | | |
| | | 1327 | 1452 | 1700 | 1723 | 2032 | 2055 | |
| CHORDATA | | | | | | | | |
| RHINOBATIDAE | | | | | | | | |
| RHINOBATOS PRODUCTUS | T | 2 | 1 | - | - | - | - | 3 |
| DASYATIDAE | | | | | | | | |
| UROLOPHUS HALLERI | T | - | 1 | - | - | - | - | 1 |
| SYNODONTIDAE | | | | | | | | |
| SYNODUS LUCIOCEPS | T | 3 | 1 | - | 1 | - | 1 | 6 |
| OPHIDIIDAE | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | R | - | - | - | - | 17 | 6 | 23 |
| SCIAENIDAE | | | | | | | | |
| GENYONEMUS LINEATUS | T | 117 | 8 | - | - | 12 | 9 | 146 |
| MENTICIRRHUS UNDULATUS | T | 2 | - | - | - | - | - | 2 |
| SERIPHUS POLITUS | R | 13 | - | 3 | - | 2 | 4 | 22 |
| EMBIOTOCIDAE | | | | | | | | |
| CYMATOGASTER AGGREGATA | R | 2 | - | 1 | - | 1 | - | 4 |
| STROMATEIDAE | | | | | | | | |
| PEPRILUS SIMILLIMUS | R | - | - | 1 | - | - | - | 1 |
| SCORPAENIDAE | | | | | | | | |
| SCORPAENA GUTTATA | R | - | - | - | - | - | 1 | 1 |
| BOTHIDAE | | | | | | | | |
| CITHARICHTHYS SPP. | T | 1 | - | 1 | 3 | 2 | - | 7 |
| CITHARICHTHYS STIGMAEUS | T | 7 | 13 | 7 | 10 | 11 | 17 | 65 |
| PARALICHTHYS CALIFORNICUS | T | - | - | - | 1 | 2 | 2 | 5 |
| XYSTREURYS LIOLEPIS | T | - | - | - | - | - | 1 | 1 |
| PLEURONECTIDAE | | | | | | | | |
| PLEURONICHTHYS RITTERI | T | 1 | - | 2 | 3 | - | - | 6 |
| PLEURONICHTHYS VERTICALIS | T | 5 | 6 | 12 | - | 6 | 9 | 38 |
| CYNOGLOSSIDAE | | | | | | | | |
| SYMPHURUS ATRICAUDA | T | - | 1 | - | - | - | - | 1 |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on June 14-15, 1978.

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SMP (ZONE 3A) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | | | | | |
| HETERODONTUS FRANCISCI | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | 6 | 4 | 1 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| MUSTELUS HENLEI | - | - | - | - | 2 | - | - | - | - | - | - | - | 1 | 1 | 2 | - |
| TRIAKIS SEMIFASCIATA | 2 | 3 | - | 1 | - | 1 | - | - | - | - | - | - | 3 | - | - | - |
| SPHYRNIDAE | | | | | | | | | | | | | | | | |
| SPHYRNA ZYGAENA | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | | | | | | | |
| PORICHTHYS NOTATUS | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - | - |
| ATHERINIDAE | | | | | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | 2 | - | - | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - |
| PARALABRAX MACULATOFASCIATUS | - | 2 | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| PARALABRAX NEBULIFER | 1 | 1 | - | - | - | - | - | - | - | 2 | - | 1 | - | - | - | 1 |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | 1 | - | - | - | - | - | - | - | - | 2 | - | - | - | - | - | - |
| XENISTIUS CALIFORNIENSIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | - | - | 1 | 3 | - | 1 | - | - | - | - | - | - | 9 | 2 | - | - |
| CYNOSCION NOBILIS | - | 1 | 8 | - | 1 | 1 | - | - | 1 | - | 1 | - | 1 | - | 2 | - |
| GENYONEMUS LINEATUS | - | - | - | 2 | 19 | 5 | 3 | 5 | 4 | 4 | 14 | 9 | - | - | 12 | 7 |
| MENTICIRRHUS UNDULATUS | 2 | 3 | - | 3 | 2 | 3 | 3 | 2 | 6 | 1 | - | - | 3 | 1 | - | - |
| RONCADOR STEARNSII | 9 | 7 | 16 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | 1 | - |
| SERIPHUS POLITUS | 8 | 15 | 11 | 25 | 27 | 18 | 10 | 13 | 27 | 12 | 16 | 15 | 6 | 32 | 29 | 65 |
| UMBRINA RONCADOR | - | 6 | 5 | 1 | 37 | 2 | - | - | - | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | | | | | | | |
| GIRELLA NIGRICANS | - | - | - | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - |
| KYPHOSIDAE | | | | | | | | | | | | | | | | |
| HERMOSILLA AZUREA | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| DAMALICHTHYS VACCA | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | - | - |
| EMBIOTOCA JACKSONI | - | - | - | - | 1 | - | - | - | - | - | - | 1 | 1 | - | - | - |
| HYPERPROSOPON ARGENTEUM | 3 | 2 | - | 3 | 3 | - | - | - | - | 1 | - | 2 | 5 | 10 | - | 4 |
| PHANERODON FURCATUS | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| RHACOCHILUS TOXOTES | - | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| POMACENTRIDAE | | | | | | | | | | | | | | | | |
| HYPSYPOPS RUBICUNDUS | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on June 14-15, 1978 (Continued).

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SMP (ZONE 3A) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | - | 2 | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - |
| PIMELOMETOPON PULCHRUM | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| SPHYRAENIDAE | | | | | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | - | 1 | 1 | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - |
| SCORPAENIDAE | | | | | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | - | - | - | - | 1 | 1 | - | 1 | - | - | - |
| SEBASTES RASTRELLIGER | 1 | - | - | - | - | - | - | - | - | - | - | - | 2 | - | - | - |
| COTTIDAE | | | | | | | | | | | | | | | | |
| SCORPAENICHTHYS MARMORATUS | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - |
| PLEURONECTIDAE | | | | | | | | | | | | | | | | |
| PLEURONICHTHYS RITTERI | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on June 14-15, 1970.

| TAXA | SONGS (ZONE OB) | | | | DON LIGHT (ZONE 6) | | | | SMP (ZONE 3B) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | - | - | - | 1 | - | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | - | 1 | - | - | - | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | 1 | - | 2 | - | - | 2 | 3 | - | 1 | 7 |
| PARALABRAX MACULATOFASCIATUS | - | - | - | - | 1 | - | - | - | - | - | - | - |
| PARALABRAX NEBULIFER | - | - | - | 2 | 1 | - | - | - | - | - | - | - |
| CARANGIDAE | | | | | | | | | | | | |
| TRACHURUS SYMMETRICUS | - | - | - | - | - | - | - | - | - | 9 | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| XENISTIUS CALIFORNIENSIS | - | - | - | 1 | - | - | - | - | - | - | 1 | - |
| SCIAENIDAE | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | 4 | - | 1 | - | 1 | - | - | - | - | - | - | 1 |
| GENYONEMUS LINEATUS | 5 | 6 | 3 | 1 | 19 | 11 | 6 | 5 | 18 | - | 4 | 1 |
| MENTICIRRHUS UNDULATUS | - | - | 2 | 2 | 2 | 1 | 2 | - | 1 | - | 1 | - |
| RONCADOR STEARNSII | 2 | - | - | - | 1 | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 16 | 7 | 15 | 6 | 34 | 17 | 30 | 3 | 13 | 6 | 36 | 6 |
| GIRELLIDAE | | | | | | | | | | | | |
| GIRELLA NIGRICANS | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SCORPIDIDAE | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | - | - | - | - | - | - | - | - | - | - | - | 28 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | - | - | - | - | - | 1 | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 1 | - | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | - | - | - | 3 | 1 | - | - | - | - | - | - | - |
| EMBIOTOCA JACKSONI | - | 1 | 3 | - | 1 | - | - | - | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | 2 | - | 13 | 4 | 4 | - | - | - | - | - | 3 | - |
| PHANERODON FURCATUS | 5 | 2 | 3 | 1 | 5 | 1 | - | - | - | - | - | 8 |
| RHACOCHILUS TOXOTES | - | - | - | 1 | - | - | - | - | - | - | - | - |
| POMACENTRIDAE | | | | | | | | | | | | |
| CHROMIS PUNCTIPINNIS | - | - | - | - | - | - | - | - | - | - | - | 2 |
| LABRIDAE | | | | | | | | | | | | |
| OXYJULIS CALIFORNICA | - | - | - | - | - | - | - | - | - | - | 1 | 10 |
| PIMELOMETOPON PULCHRUM | - | - | - | 1 | 1 | - | - | - | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | 2 | - | - | 1 | - | - | - | - | - | - | - | - |
| SCOMBRIDAE | | | | | | | | | | | | |
| SARDA CHILIENSIS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | 2 | - | - | - | - | 1 | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on June 14-15, 1978 (continued).

| TAXA | SONGS (ZONE OB) | | | | DON LIGHT (ZONE 6) | | | | SMP (ZONE 3B) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| SCORPAENIDAE | | | | | | | | | | | | |
| SEBASTES SPP. | - | - | - | - | - | - | - | - | - | - | - | 1 |
| HEXAGRAMMIDAE | | | | | | | | | | | | |
| OXYLEBIUS PICTUS | - | - | - | - | - | - | - | - | - | - | - | 2 |
| BOTHIDAE | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | 1 | - | - | - | 1 | - | - | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Mateo Point at 20, 40, and 60 feet on June 14-15, 1978. Replicates 1 and 2 were collected on June 14 and replicates 3 and 4 on June 15, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| TRAWL START TIME | 1150 | 1205 | 1048 | 1102 | 1224 | 1239 | 1117 | 1127 | 1302 | 1322 | 1211 | 1300 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | - | - | 1 | 6 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | - | 1 | - | - | 1 | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | - | - | - | - | 1 | - | - | - | 2 | - | 1 | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ENGRAULIS MORDAX | 154 | 3 | - | - | 103 | 61 | 1 | 57 | 9 | 33 | 22 | 267 |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | - | 2 | 1 | - |
| BATRACHOIDIDAE | | | | | | | | | | | | |
| PORICHTHYS NOTATUS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | - | - | 1 | - | - | - | - | - | - | - | 1 | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX NEBULIFER | - | - | - | - | - | - | - | - | 1 | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 3 | 24 | - | - | 53 | 61 | 89 | 87 | 11 | 3 | 99 | 39 |
| SERIPHUS POLITUS | 294 | 511 | 15 | 1 | 17 | 15 | 39 | 105 | - | - | 15 | 2 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | 3 | 4 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 1 | - | - | - | - | 5 | - | 5 |
| HYPERPROSOPON ARGENTEUM | - | 7 | - | - | 1 | 4 | - | - | 6 | 6 | 3 | 4 |
| PHANERODON FURCATUS | 3 | 1 | 13 | 13 | 2 | 13 | 8 | 9 | 2 | 10 | 20 | 4 |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | 13 | 25 | - | - | 1 | - | 1 | - | 3 | - | 10 | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | 1 | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 2 | 2 | - | - | - | 2 | 3 | 5 | 3 | 8 | 14 | 20 |
| CITHARICHTHYS XANTHOSTIGMA | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| PARALICHTHYS CALIFORNICUS | - | 1 | - | - | 1 | - | 1 | 2 | 1 | - | 6 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | - | - | - | - | 2 | - | 2 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | 1 | - | - | - | - | - | - | - | - | 1 |
| PLEURONICHTHYS RITTERI | - | 2 | - | - | - | - | - | - | 1 | 1 | 1 | - |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | - | - | 9 | 2 | 6 | 5 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | - | - | - | - | - | - | - | - | 2 | 2 | 1 | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Onofre at 20, 40, and 60 feet on June 14-15, 1978. Replicates 1 and 2 were collected on June 14 and replicates 3 and 4 on June 15, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 1412 | 1426 | 1352 | 1410 | 1549 | 1608 | 1527 | 1606 | 1458 | 1518 | 1435 | 1454 |
| CHORDATA | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | 1 | 1 | - | 1 | - | - | 1 | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | - | - | 2 | - | 1 | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ENGRAULIS MORDAX | 29 | 31 | 9 | - | - | 3 | 4 | 2 | 30 | - | - | - |
| OPHIDIIDAE | | | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | 1 | - | - | - | - | - | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | - | - | 5 | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | - | - | 5 | - | 1 | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX NEBULIFER | - | - | - | - | 1 | - | - | - | - | - | - | - |
| CARANGIDAE | | | | | | | | | | | | |
| VOMER DECLIVIFRONS | 1 | - | - | - | - | - | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 53 | 3 | 1 | 5 | 189 | 245 | 71 | 82 | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 2 | - | - | - | - | - | - | - | - | - | - | - |
| RONCADOR STEARNSII | - | - | - | - | - | - | 2 | - | - | - | - | - |
| SERIPHUS POLITUS | 158 | 110 | 294 | 354 | 15 | 19 | 15 | 1 | 7 | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 1 | - | - | 2 | - | 1 | - | 1 | - | - | - | - |
| BRACHYISTIUS FRENATUS | - | - | - | 1 | - | - | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | - | 1 | - | - | - | - | - | 1 | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | 3 | - | 1 | - | - | 2 | 2 | - | - | - | - |
| PHANERODON FURCATUS | 4 | - | - | - | 9 | 9 | 13 | 9 | - | - | - | - |
| RHACOCHILUS TOXOTES | - | - | - | - | 1 | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | - | - | - | - | 6 | 2 | 4 | 2 | 4 | 4 | 6 | 16 |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | 5 | 3 | - | 2 | 1 | 1 | - | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | 1 | - | - | - | 4 | 1 | 4 | 2 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | - | - | - | - | 4 | 1 | 1 | 3 |
| PLEURONICHTHYS RITTERI | - | - | - | - | 2 | - | - | 1 | - | - | - | 2 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | 1 | - | 3 | 3 | 2 | 1 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | - | - | - | - | 2 | 1 | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore Don Light at 20, 40, and 60 feet on June 14-15, 1978. Replicates 1 and 2 were collected on June 14 and replicates 3 and 4 on June 15, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 0902 | 0923 | 0800 | 0819 | 0941 | 0957 | 0840 | 0856 | 1013 | 1038 | 0944 | 1011 |
| **CHORDATA** | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | - | - | - | 2 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 1 | - | - | - | - | 2 | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 1 | 1 | - | - | - | 1 | - | - | 1 | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ENGRAULIS MORDAX | 139 | 1 | 68 | 26 | 33 | 5 | 56 | 2 | 101 | 130 | 15 | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | 4 | 2 | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | | | |
| PORICHTHYS NOTATUS | - | - | - | - | 1 | 1 | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | - | 3 | 3 | 1 | 1 | - | 1 | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 1 | 1 | 74 | 19 | 152 | 209 | 76 | 109 | 23 | 30 | 82 | 17 |
| MENTICIRRHUS UNDULATUS | 10 | 5 | 11 | 2 | 1 | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 54 | 216 | 107 | 134 | 16 | 7 | 30 | 21 | - | - | 21 | 25 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 3 | 1 | 5 | 1 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | 1 | - | - | - | - | - | - | - | 1 | - | - |
| EMBIOTOCA JACKSONI | - | - | - | - | - | - | - | 1 | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | 2 | - | 8 | - | - | 2 | 3 | - | - | 1 | 4 | - |
| PHANERODON FURCATUS | 2 | 1 | - | 5 | 2 | - | 6 | 2 | 1 | 12 | 2 | 2 |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | - | 1 | - | - | - | - | - | - | 1 |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | 1 | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS SPP. | - | - | - | - | - | 1 | - | - | - | - | - | - |
| CITHARICHTHYS STIGMAEUS | 7 | 3 | 5 | 2 | - | - | - | - | 6 | 1 | 2 | - |
| PARALICHTHYS CALIFORNICUS | 2 | 1 | - | - | 1 | 1 | 1 | - | 4 | 7 | 2 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | - | - | - | - | 1 | 1 | - | - |
| PLEURONICHTHYS RITTERI | - | - | 1 | - | - | - | - | - | - | - | 2 | - |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | - | - | 4 | - | 4 | 2 |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on August 15-16, 1978.

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | | | | | |
| HETERODONTUS FRANCISCI | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| ALOPIIDAE | | | | | | | | | | | | | | | | |
| ALOPIAS VULPINUS | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 |
| CARCHARHINIDAE | | | | | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | 2 | 2 | 1 | 1 | - | - | - | - | 1 | - | 1 | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | 1 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 1 | - |
| BATRACHOIDIDAE | | | | | | | | | | | | | | | | |
| PORICHTHYS MYRIASTER | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SERRANIDAE | | | | | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - |
| PARALABRAX NEBULIFER | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | - | 1 | - | - | - | - | - | - | - | 1 | - | - | 3 | 3 | - | - |
| CYNOSCION NOBILIS | 2 | 1 | 1 | - | 2 | 2 | - | - | - | - | - | - | - | - | - | - |
| GENYONEMUS LINEATUS | 2 | - | 4 | 21 | 24 | 29 | 5 | 3 | 16 | 9 | 17 | 27 | 1 | 1 | 14 | 24 |
| MENTICIRRHUS UNDULATUS | - | - | - | 1 | 1 | - | 2 | 1 | 3 | 1 | - | 1 | 2 | - | 1 | - |
| RONCADOR STEARNSII | - | 1 | - | - | - | - | - | - | 4 | - | - | - | 1 | - | - | - |
| SERIPHUS POLITUS | 20 | 13 | 16 | 30 | 20 | 35 | - | 41 | 44 | 51 | 36 | 37 | 6 | 2 | 46 | 47 |
| UMBRINA RONCADOR | 2 | - | - | 1 | 3 | - | - | - | - | - | - | - | 6 | 1 | - | - |
| GIRELLIDAE | | | | | | | | | | | | | | | | |
| GIRELLA NIGRICANS | - | - | - | 2 | - | - | - | - | - | - | - | - | 5 | 1 | - | - |
| KYPHOSIDAE | | | | | | | | | | | | | | | | |
| HERMOSILLA AZUREA | 1 | - | - | - | - | - | - | - | - | - | - | - | 12 | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| BRACHYISTIUS FRENATUS | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| DAMALICHTHYS VACCA | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| EMBIOTOCA JACKSONI | 1 | 1 | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | 2 | 1 | 3 | 3 | 2 | 4 | - | - | - | 1 | - | 7 | 2 | 3 | - | - |
| PHANERODON FURCATUS | - | - | - | - | - | - | - | - | - | 4 | - | 1 | 1 | 1 | - | - |
| RHACOCHILUS TOXOTES | 1 | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - |
| LABRIDAE | | | | | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | 1 | - | 2 | - | - | - | - | - | - | - | - | - | 3 | 1 | - | - |
| PIMELOMETOPON PULCHRUM | - | - | 1 | - | - | - | - | - | - | 1 | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on August 15-16, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| CLINIDAE | | | | | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | - | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| SCOMBRIDAE | | | | | | | | | | | | | | | | |
| SARDA CHILIENSIS | 1 | - | 2 | 2 | 1 | 1 | 4 | 1 | - | 4 | 3 | - | - | - | 4 | - |
| STROMATEIDAE | | | | | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | 1 | - | 1 | 5 | - | - | 8 | 1 | - | - | - | - | - | - | - | 3 |
| SCORPAENIDAE | | | | | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | 1 |
| SEBASTES RASTRELLIGER | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on August 15-16, 1978.

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | 1 | - | - | - | - | - | - | - | - | - | 1 | - |
| PRIONACE GLAUCA | - | - | 1 | - | - | - | - | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | - | - | - | - | - | - | - | - | - | - | 2 | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | 1 | - | - | 1 | 1 | 2 | - | - | - | 2 |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | 4 | - | 1 | - | 1 | - | - | - | 1 | 2 | - |
| PARALABRAX MACULATOFASCIATUS | - | - | - | - | - | 3 | - | - | - | - | - | - |
| PARALABRAX NEBULIFER | - | - | 1 | - | - | - | - | - | 1 | 2 | - | 2 |
| BRANCHIOSTEGIDAE | | | | | | | | | | | | |
| CAULOLATILUS PRINCEPS | - | - | - | - | - | - | - | - | - | - | 2 | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| XENISTIUS CALIFORNIENSIS | - | - | 1 | - | - | - | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | - | - | 1 | - | - | - | - | - | - | - | 6 | 1 |
| CYNOSCION NOBILIS | - | - | - | - | - | - | - | - | 1 | - | - | - |
| GENYONEMUS LINEATUS | 1 | 2 | 3 | 3 | 64 | 52 | 52 | 106 | 22 | - | - | 3 |
| MENTICIRRHUS UNDULATUS | - | - | - | - | 1 | 1 | 2 | 3 | 2 | - | - | - |
| RONCADOR STEARNSII | - | - | 1 | 1 | - | - | - | 2 | - | - | - | - |
| SERIPHUS POLITUS | 5 | 16 | 22 | 15 | 36 | 15 | 22 | 38 | 29 | 9 | 4 | 6 |
| SCORPIDIDAE | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | 1 | - | - | - | - | - | - | - | - | 8 | 4 | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| CYMATOGASTER AGGREGATA | - | - | 1 | - | - | 2 | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | 2 | 1 | - | 1 | - | - | - | - | - | 1 | 2 | 1 |
| EMBIOTOCA JACKSONI | 7 | 2 | - | 2 | 1 | - | - | - | - | 1 | 2 | 2 |
| HYPERPROSOPON ARGENTEUM | 1 | 1 | 3 | 5 | 1 | 5 | 3 | - | 6 | 3 | 12 | 14 |
| PHANERODON FURCATUS | 4 | 7 | 6 | 6 | 1 | 21 | 2 | - | 4 | 5 | 3 | 8 |
| RHACOCHILUS TOXOTES | 4 | - | - | - | - | - | - | - | - | 1 | 6 | 2 |
| POMACENTRIDAE | | | | | | | | | | | | |
| CHROMIS PUNCTIPINNIS | - | - | - | - | - | - | - | - | - | 14 | 2 | - |
| LABRIDAE | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | - | 1 | 1 | 2 | - | - | - | - | - | 1 | 17 | 2 |
| OXYJULIS CALIFORNICA | - | 2 | 1 | - | - | - | - | - | - | - | - | - |
| PIMELOMETOPON PULCHRUM | 1 | 1 | - | - | - | - | - | - | - | 1 | 4 | - |
| SPHYRAENIDAE | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | 1 | - | - | - | - | - | 1 | - | 2 | - | - | 1 |
| CLINIDAE | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | 2 | - | - | - | - | - | - | - | - | - | - | - |
| SCOMBRIDAE | | | | | | | | | | | | |
| SARDA CHILIENSIS | - | - | - | - | 2 | - | - | - | 1 | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on August 15-16, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | - | - | - | - | - | 7 | - | - | 1 |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | 2 | - | - | - | - | - | - |
| SEBASTES ATROVIRENS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| SEBASTES CARNATUS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| SEBASTES SERRANOIDES | - | - | 1 | - | - | - | - | - | - | 1 | - | - |
| COTTIDAE | | | | | | | | | | | | |
| SCORPAENICHTHYS MARMORATUS | - | - | - | - | - | - | - | - | 1 | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | 1 | 1 | - | - | - | - | - | - | - | 1 |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Mateo Point at 20, 40, and 60 feet on August 15-16, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2* | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| TRAWL START TIME | 1013 | 1035 | 1057 | 1112 | 1105 | 1140 | 1133 | 1228 | 1201 | 1309 | 1253 | 1313 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | 2 | 1 | - | - | - | 1 | - | - | - | - |
| MUSTELUS HENLEI | 1 | - | - | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | 2 | 6 | 1 | 5 | - | - | 2 | 1 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | 1 | 2 | 3 | 2 | - | 5 | 6 | - | - | 1 | - |
| TORPEDINIDAE | | | | | | | | | | | | |
| TORPEDO CALIFORNICA | - | - | - | - | - | - | - | - | 1 | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 1 | 7 | - | - | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 56 | - | 123 | 122 | 386 | 738 | 1188 | 1148 | 42 | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | 1 | - | - | 3 | 5 | 2 | 6 |
| ATHERINIDAE | | | | | | | | | | | | |
| LEURESTHES TENUIS | - | 1 | - | 5 | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | - | - | 2 | - | - | - | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | - | 42 | 4 | 10 | 2 | 4 | 3 | 1 | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 1 | 4 | - | 2 | - | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 291 | 1680 | 199 | 316 | 4 | 3 | 4 | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 1 | 3 | - | - | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | 2 | - | - | - | 3 | 5 | 1 | - | - | - | - |
| DAMALICHTHYS VACCA | - | - | - | - | - | - | - | 1 | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | 3 | - | - | 4 | 5 | 2 | 5 | 3 | - | - | 6 | - |
| PHANERODON FURCATUS | 3 | - | 2 | 2 | 9 | 2 | 3 | 4 | - | - | 1 | - |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | 1 | 2 | - | - | - | - | - | 2 | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 3 | 2 | 6 | - | 7 | 13 | 6 | 6 | 22 | 20 | 17 | 21 |
| CITHARICHTHYS XANTHOSTIGMA | - | - | - | - | - | - | - | - | 1 | 3 | 3 | 10 |
| HIPPOGLOSSINA STOMATA | - | - | - | - | - | - | - | - | 1 | - | - | - |
| PARALICHTHYS CALIFORNICUS | 5 | 4 | 4 | - | 3 | 2 | 1 | 2 | 1 | 1 | 2 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | 1 | - | 2 | - | - | 1 | - |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | - | - | - | - | - | 1 | 1 | - |
| PAROPHRYS VETULUS | - | - | - | - | - | - | - | - | 1 | - | 1 | - |
| PLEURONICHTHYS DECURRENS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| PLEURONICHTHYS RITTERI | - | 1 | 3 | 1 | 1 | - | - | - | 2 | 1 | - | 3 |
| PLEURONICHTHYS VERTICALIS | 1 | - | - | - | - | 1 | - | 1 | 6 | 2 | - | 8 |

*Trawl line scope 15:1 rather than 5:1.

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Onofre at 20, 40, and 60 feet on August 15-16, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 1357 | 1409 | 1352 | 1411 | 1544 | 1603 | 1539 | 1614 | 1455 | 1522 | 1455 | 1513 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | 1 | 1 | - | 1 | - | - | - | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | - | 3 | - | - | 1 | - | - | - | - |
| RAJIDAE | | | | | | | | | | | | |
| RAJA INORNATA | - | - | - | - | - | - | - | - | - | - | - | 1 |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 1 | - | - | 1 | - | - | - | - | - | - | - | - |
| GYMNURIDAE | | | | | | | | | | | | |
| GYMNURA MARMORATA | - | 1 | - | - | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | - | - | - | - | - | - | - | 1 | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 4 | 16 | - | - | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 347 | 70 | 34 | 44 | 2563 | 957 | - | 15 | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | 1 | 3 | 1 | - |
| ATHERINIDAE | | | | | | | | | | | | |
| LEURESTHES TENUIS | 10 | - | - | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 1 | 1 | 4 | 2 | - | - | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 16 | 135 | 25 | 149 | 22 | 49 | - | 60 | 1 | - | - | - |
| MENTICIRRHUS UNDULATUS | 5 | 4 | 1 | 2 | - | 1 | - | - | - | - | - | - |
| SERIPHUS POLITUS | 261 | 347 | 593 | 67 | 8 | 14 | 23 | 44 | 1 | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 2 | - | 7 | 3 | - | - | - | - | - | - | - | - |
| BRACHYISTIUS FRENATUS | - | - | - | 6 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | 1 | - | 8 | 1 | 1 | 4 | - | - | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | 3 | 1 | 15 | - | 4 | 5 | - | 1 | - | - | - | - |
| PHANERODON FURCATUS | 24 | 8 | 51 | - | - | - | 95 | - | 2 | - | - | - |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | 14 | - | 1 | 5 | - | - | - | - | - | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SEBASTES PAUCISPINIS | - | - | - | 1 | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | - | 2 | 1 | - | 9 | 10 | 11 | 2 | 5 | 3 | 8 | 5 |
| PARALICHTHYS CALIFORNICUS | - | 1 | 1 | - | 1 | 1 | - | - | - | - | 1 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | - | - | - | - | 1 | - | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Onofre at 20, 40, and 60 feet on August 15-16, 1978. (continued)

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| CHORDATA | | | | | | | | | | | | |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | - | - | - | - | - | - | - | 1 |
| PAROPHRYS VETULUS | - | - | - | - | - | - | - | - | - | - | - | 2 |
| PLEURONICHTHYS RITTERI | - | - | - | - | - | - | - | - | - | - | 1 | - |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | 1 | - | 4 | 9 | 4 | 6 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | - | - | - | - | - | - | - | 1 | - | - | - | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore Don Light at 20, 40, and 60 feet on August 15-16, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| TRAWL START TIME | 0736 | 0806 | 0822 | 0839 | 0831 | 0850 | 0902 | 0920 | 0913 | 0933 | 0941 | 1001 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | 1 | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | 4 | - | - | 2 | - | - | 1 | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 2 | 4 | 1 | 4 | 1 | - | 4 | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 3 | - | - | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ENGRAULIS MORDAX | - | 143 | 59 | 119 | 999 | 901 | 958 | 807 | 5 | 3 | 7 | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | 1 | - | 1 | 1 | - | 2 | - |
| OPHIDIIDAE | | | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | - | 1 | - | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 5 | 10 | 5 | 2 | - | - | 1 | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 425 | 165 | 412 | 176 | - | 111 | 70 | 7 | - | - | 11 | 4 |
| MENTICIRRHUS UNDULATUS | 1 | 1 | 3 | 2 | - | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 147 | 165 | 61 | 92 | 3 | - | 3 | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | 1 | - | - | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 1 | 3 | - | 1 | - | - | 2 | 3 |
| HYPERPROSOPON ARGENTEUM | - | 1 | 1 | - | - | - | - | - | - | - | - | 2 |
| PHANERODON FURCATUS | - | 1 | 1 | 1 | - | 6 | 10 | 12 | 3 | 1 | - | 5 |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | 3 | 1 | - | 4 | - | - | - | - | - | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | 1 | - | 1 | - | - | - | - | - |
| SEBASTES PAUCISPINIS | 3 | 17 | 8 | 6 | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 5 | 6 | 6 | 5 | 3 | 13 | 8 | 23 | 9 | 8 | 8 | 6 |
| CITHARICHTHYS XANTHOSTIGMA | - | - | - | - | - | - | - | - | 2 | - | - | - |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | - | 3 | 2 | 4 | 1 | - | 1 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| PLEURONECTIDAE | | | | | | | | | | | | |
| PAROPHRYS VETULUS | - | - | - | - | - | - | - | - | - | 1 | - | 5 |
| PLEURONICHTHYS DECURRENS | - | - | - | - | - | - | - | 1 | - | - | - | - |
| PLEURONICHTHYS RITTERI | - | - | - | - | - | - | - | - | - | 1 | 1 | 2 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | 2 | 1 | 3 | 3 | 6 | 2 | 5 | 2 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | - | - | - | - | - | - | - | 1 | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on October 11-12, 1978.

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | | | | | |
| HETERODONTUS FRANCISCI | - | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | 3 | 4 | 2 | - | 1 | - | 1 | - | - | 1 | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | 8 | - | - | 1 | - | - | 1 | 2 | - | - | - | - | 5 | 4 | - | - |
| SYNODONTIDAE | | | | | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| OPHIDIIDAE | | | | | | | | | | | | | | | | |
| CHILARA TAYLORI | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| ATHERINIDAE | | | | | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | - | - | - | - | - | 2 | 2 | 2 | - | 5 | 1 | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | 4 | 3 | 2 |
| PARALABRAX NEBULIFER | 1 | 3 | - | - | 1 | 1 | 2 | - | 4 | 3 | - | - | 2 | 6 | 3 | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| SCIAENIDAE | | | | | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 | 9 | 2 | - |
| CYNOSCION NOBILIS | 2 | 8 | - | - | 1 | 1 | - | - | - | 2 | 3 | - | 4 | 1 | 1 | 2 |
| GENYONEMUS LINEATUS | 4 | 1 | 5 | 2 | 12 | 4 | 5 | 12 | 21 | 9 | 8 | 9 | - | - | 5 | 2 |
| MENTICIRRHUS UNDULATUS | - | 2 | 4 | - | 4 | 5 | 2 | 5 | 5 | 2 | 3 | 2 | - | 2 | 1 | 1 |
| RONCADOR STEARNSII | - | 1 | - | - | 1 | 6 | - | - | - | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 43 | 43 | 63 | 10 | 55 | 43 | 37 | 27 | 49 | 38 | 66 | 66 | 28 | 2 | 10 | 16 |
| UMBRINA RONCADOR | - | - | - | - | 2 | - | - | - | - | - | - | - | 15 | - | 7 | - |
| GIRELLIDAE | | | | | | | | | | | | | | | | |
| GIRELLA NIGRICANS | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| SCORPIDIDAE | | | | | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | - | - | - | - | 5 | 2 | 1 | - | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | 1 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 | - | - |
| EMBIOTOCA JACKSONI | 1 | 1 | - | - | - | - | 1 | - | - | - | - | - | 8 | 4 | 1 | - |
| HYPERPROSOPON ARGENTEUM | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | - | 2 |
| PHANERODON FURCATUS | - | 2 | 1 | - | - | - | - | 1 | 1 | 2 | - | 1 | 1 | 1 | 3 | - |
| RHACOCHILUS TOXOTES | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| LABRIDAE | | | | | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 | 1 | - |
| PIMELOMETOPON PULCHRUM | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 7 | - | - |
| SPHYRAENIDAE | | | | | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 1 |
| CLINIDAE | | | | | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on October 11-12, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| SCOMBRIDAE | | | | | | | | | | | | | | | | |
| SARDA CHILIENSIS | - | - | 1 | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | - | - | - | - | - | - | 3 | 3 | 3 | - | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| SEBASTES AURICULATUS | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| SEBASTES RASTRELLIGER | 1 | - | - | - | - | - | - | - | - | - | - | 1 | 2 | - | - | - |
| COTTIDAE | | | | | | | | | | | | | | | | |
| LEPTOCOTTUS ARMATUS | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on October 11-12, 1978.

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | 1 | - | - | - | - | - | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | 1 | - | 1 | - | - | - | - | - | 2 | 2 | - | - |
| SQUALIDAE | | | | | | | | | | | | |
| SQUALUS ACANTHIAS | - | - | 1 | - | - | - | - | - | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| OPHIDIIDAE | | | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | - | 1 | - | - | - | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | 1 | - | 1 | - | - | 3 | 1 | 2 | 2 | - |
| PARALABRAX MACULATOFASCIATUS | - | - | - | - | - | - | - | 2 | - | - | - | - |
| PARALABRAX NEBULIFER | 1 | - | 1 | 3 | 4 | 4 | - | 1 | 4 | 4 | 5 | 1 |
| BRANCHIOSTEGIDAE | | | | | | | | | | | | |
| CAULOLATILUS PRINCEPS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | - | - | - | - | - | - | - | - | - | 5 | 5 | - |
| XENISTIUS CALIFORNIENSIS | 2 | 1 | - | - | 1 | 3 | 3 | 1 | 1 | 2 | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | 4 | 5 | - | - | - | - | - | 1 | 2 | 4 | - | - |
| CYNOSCION NOBILIS | - | - | - | - | - | 1 | - | - | 3 | - | - | - |
| GENYONEMUS LINEATUS | - | 1 | 20 | 25 | 39 | 22 | 31 | 44 | 2 | 3 | - | 4 |
| MENTICIRRHUS UNDULATUS | - | - | 1 | 2 | 3 | 3 | 5 | 2 | - | - | - | - |
| RONCADOR STEARNSII | - | - | - | 1 | - | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 16 | 7 | 21 | 13 | 46 | 30 | 24 | 44 | 28 | 15 | 24 | 33 |
| GIRELLIDAE | | | | | | | | | | | | |
| GIRELLA NIGRICANS | - | - | - | - | - | - | - | - | - | 3 | - | - |
| SCORPIDIDAE | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | 2 | 1 | 2 | 2 | - | - | - | - | - | 33 | 1 | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| BRACHYISTIUS FRENATUS | - | - | - | - | - | - | - | - | - | - | 4 | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | - | - | - | - | - | - | - | 1 |
| DAMALICHTHYS VACCA | 1 | - | - | 1 | - | - | - | - | 2 | 2 | 1 | - |
| EMBIOTOCA JACKSONI | - | - | - | 1 | 4 | - | - | 1 | 6 | 6 | 1 | - |
| HYPERPROSOPON ARGENTEUM | 2 | 2 | 7 | 3 | 1 | - | 2 | 5 | 6 | 2 | 5 | 16 |
| HYPSURUS CARYI | 1 | - | - | - | - | - | - | - | - | - | - | - |
| PHANERODON FURCATUS | 6 | 5 | 3 | 7 | 16 | 2 | 1 | 5 | 4 | 2 | - | 6 |
| RHACOCHILUS TOXOTES | 1 | 1 | - | - | - | - | - | - | 4 | 4 | 1 | - |
| POMACENTRIDAE | | | | | | | | | | | | |
| CHROMIS PUNCTIPINNIS | - | - | - | - | - | - | - | - | - | 3 | - | - |
| LABRIDAE | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | 1 | - | - | 1 | - | - | - | - | 1 | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on October 11-12, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | | | |
| OXYJULIS CALIFORNICA | - | - | - | - | - | - | - | - | 1 | - | - | - |
| PIMELOMETOPON PULCHRUM | - | - | - | - | 1 | - | - | - | 1 | 1 | - | - |
| SPHYRAENIDAE | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | - | - | - | - | - | - | - | - | 1 | 1 | - | - |
| CLINIDAE | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | - | - | - | - | - | - | - | - | - | 2 | - | - |
| SCOMBRIDAE | | | | | | | | | | | | |
| SARDA CHILIENSIS | - | - | - | - | 1 | - | 3 | - | - | - | - | - |
| SCOMBER JAPONICUS | - | - | - | - | 1 | - | 1 | - | 1 | - | - | - |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | - | - | - | 1 | 1 | - | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SEBASTES PAUCISPINIS | - | - | 1 | 1 | - | - | 1 | - | - | - | - | - |
| SEBASTES RASTRELLIGER | - | 1 | - | - | - | - | - | - | - | 1 | - | - |
| SEBASTES SERRANOIDES | - | 2 | - | 1 | - | - | - | - | - | 2 | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | - | 1 | - | 1 | - | - | - | 1 |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Mateo Point at 20, 40, and 60 feet on October 11-12, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 1047 | 1106 | 1323 | 1308 | 1125 | 1144 | 1340 | 1353 | 1208 | 1228 | 1414 | 1431 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | 1 | - | - | 2 | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | 1 | - | - | 5 | - | 1 | - | 1 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 3 | 3 | - | 2 | 1 | - | - | 1 | - | - | - | - |
| RAJIDAE | | | | | | | | | | | | |
| RAJA INORNATA | - | - | - | - | - | - | 1 | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 1 | - | - | - | - | - | - | - | - | - | - | - |
| GYMNURIDAE | | | | | | | | | | | | |
| GYMNURA MARMORATA | 1 | - | - | - | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | - | - | - | - | - | - | 1 | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 65 | 33 | 16 | 47 | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 82 | 204 | 120 | 109 | 42 | 25 | 13 | 29 | 3 | 5 | - | - |
| ATHERINIDAE | | | | | | | | | | | | |
| LEURESTHES TENUIS | - | - | 4 | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 1 | 5 | 1 | 7 | - | 2 | 3 | 5 | - | 1 | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 79 | 66 | 6 | 66 | 35 | 26 | 18 | 10 | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 9 | 1 | 1 | 7 | 1 | - | - | - | - | - | - | - |
| SERIPHUS POLITUS | 189 | 154 | 193 | 161 | 15 | 20 | 11 | 4 | - | - | - | - |
| UMBRINA RONCADOR | - | - | 2 | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 2 | - | 2 | 2 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | - | 1 | - | 2 | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | - | 31 | - | - | 4 | - | 1 | - | - | - | - |
| PHANERODON FURCATUS | 2 | - | 6 | 1 | 1 | 1 | 9 | 13 | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | | | | |
| SPHYRAENA ARGENTEA | 1 | - | - | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | 3 | - | 1 | 2 | 11 | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 5 | 7 | - | 11 | 10 | 6 | 13 | 12 | 1 | 31 | 24 | 12 |
| PARALICHTHYS CALIFORNICUS | 1 | - | 2 | - | - | 1 | - | 1 | 5 | 2 | - | 1 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | 1 | - | - | - | - | - | - | - | 1 | - | - |
| PLEURONICHTHYS RITTERI | - | - | - | 2 | - | - | - | - | - | - | - | - |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | 1 | 1 | - | 6 | 5 | 1 |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Onofre at 20, 40, and 60 feet on October 11-12, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 1314 | 1330 | 1513 | 1536 | 1502 | 1517 | 1636 | 1650 | 1421 | 1438 | 1553 | 1611 |
| CHORDATA | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | 2 | 2 | 1 | 2 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | - | - | - | 2 | 1 | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 21 | 17 | 45 | 22 | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 177 | 401 | 200 | 162 | 4 | 58 | 178 | 48 | 1062 | 90 | 5837 | 720 |
| OPHIDIIDAE | | | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | 1 | - | - | - | - | - | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | | | |
| ATHERINOPS AFFINIS | - | - | - | 1 | - | - | - | - | - | - | - | - |
| LEURESTHES TENUIS | 4 | 27 | - | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 2 | - | 4 | 1 | - | 2 | 3 | 2 | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX NEBULIFER | - | 1 | - | - | - | - | - | 1 | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 20 | 18 | 6 | 21 | 69 | 19 | 97 | 51 | - | 2 | 35 | 95 |
| MENTICIRRHUS UNDULATUS | 2 | - | 4 | - | 1 | - | 2 | 2 | - | - | - | - |
| SERIPHUS POLITUS | 163 | 101 | 168 | 134 | 85 | 8 | 119 | 76 | - | - | 2 | 26 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | 3 | - | 1 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 1 | - | - | - | - | 1 | - | 1 |
| HYPERPROSOPON ARGENTEUM | - | - | - | - | 1 | - | - | - | 8 | 5 | 11 | 23 |
| PHANERODON FURCATUS | - | - | - | - | 9 | 3 | - | - | 9 | 3 | 1 | 5 |
| STROMATEIDAE | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | 2 | - | - | 5 | 2 | 2 | - | 2 | 2 |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 1 | 2 | - | 1 | 8 | 4 | 8 | 12 | 9 | 5 | 6 | 7 |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | - | - | 2 | 1 | - | 1 | 1 | 6 |
| XYSTREURYS LIOLEPIS | - | - | - | - | 1 | 1 | - | - | - | - | - | - |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | 1 | - | - | - | 1 | - | 1 | 2 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | 1 | - | 1 | - | 7 | 2 | 3 | 6 |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore Don Light at 20, 40, and 60 feet on October 11-12, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 0809 | 0827 | 0904 | 0934 | 0854 | 0916 | 1011 | 1034 | 0944 | 1001 | 1115 | 1154 |
| CHORDATA | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | 2 | 1 | - | 1 | - | - | - | 1 |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 1 | - | - | - | - | - | 1 | 3 | 1 | - | - | - |
| RAJIDAE | | | | | | | | | | | | |
| RAJA INORNATA | - | - | - | - | - | - | - | 1 | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 13 | 7 | 7 | - | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 74 | 84 | 141 | 218 | 21 | 571 | 656 | 611 | 314 | 54 | 2394 | 182 |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | 2 | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 4 | 3 | 1 | 2 | - | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| PARALABRAX NEBULIFER | - | - | - | 1 | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| XENISTIUS CALIFORNIENSIS | - | - | - | - | - | 3 | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | - | - | - | 1 | - | - | - | - | - | - | - | - |
| CYNOSCION NOBILIS | 1 | - | - | - | - | - | - | - | - | - | - | - |
| GENYONEMUS LINEATUS | 36 | 83 | 1 | 1 | 35 | 41 | 55 | 48 | 75 | 77 | 34 | 79 |
| MENTICIRRHUS UNDULATUS | 6 | 1 | 1 | - | - | 1 | 3 | 2 | - | - | - | 1 |
| SERIPHUS POLITUS | 58 | 206 | 11 | 1 | 17 | 68 | 60 | 89 | 30 | 32 | 10 | 62 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 3 | - | 5 | 1 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 1 | 3 | 1 | - | 1 | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | - | - | - | 1 | - | - | 1 | 14 | 8 | 10 | 10 |
| MICROMETRUS MINIMUS | - | - | 1 | - | - | - | - | - | - | - | - | - |
| PHANERODON FURCATUS | 1 | - | 10 | 6 | 14 | 12 | - | 1 | 1 | - | 1 | 9 |
| STROMATEIDAE | | | | | | | | | | | | |
| ICICHTHYS LOCKINGTONI | - | - | - | - | - | - | - | - | - | 1 | - | - |
| PEPRILUS SIMILLIMUS | - | - | - | 1 | 15 | 5 | 12 | 4 | - | 1 | - | 1 |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 4 | 4 | - | 5 | 9 | 8 | 4 | 2 | 5 | 2 | - | 2 |
| PARALICHTHYS CALIFORNICUS | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 4 | 2 | 1 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | 1 | 1 | - | - | 3 | - | - | 1 |
| PLEURONICHTHYS COENOSUS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| PLEURONICHTHYS RITTERI | - | - | - | - | - | - | - | - | 3 | 1 | 1 | 2 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | 1 | 1 | - | 1 | 4 | - | 4 |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on December 12-13, 1978.

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | | | | | |
| HETERODONTUS FRANCISCI | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| CARCHARHINIDAE | | | | | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TRIAKIS SEMIFASCIATA | 6 | 1 | - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - |
| SQUATINIDAE | | | | | | | | | | | | | | | | |
| SQUATINA CALIFORNICA | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | 2 | 1 | 3 | 14 | 18 | 19 | 38 | 16 | 6 | 23 | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | | | | | |
| PARALABRAX NEBULIFER | 1 | - | 2 | 2 | - | - | - | 1 | - | 1 | - | - | - | 3 | - | - |
| CARANGIDAE | | | | | | | | | | | | | | | | |
| TRACHURUS SYMMETRICUS | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - | - | 8 | 1 |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | - | - | - | - | - | - | - | - | - | 1 | - | 1 | 3 | - | - | 2 |
| XENISTIUS CALIFORNIENSIS | - | 2 | - | 2 | - | - | - | 1 | - | 1 | 2 | - | - | - | - | 1 |
| SCIAENIDAE | | | | | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | 6 | 15 | 1 | 3 | - | 1 | - | - | - | 2 | - | 3 | 7 | 1 | 3 | 5 |
| CYNOSCION NOBILIS | 7 | 5 | 8 | 2 | - | 4 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| GENYONEMUS LINEATUS | 10 | 2 | 10 | 16 | 15 | 15 | - | 1 | 5 | 1 | 6 | 2 | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 2 | 1 | 5 | 6 | 7 | 3 | - | - | 4 | 3 | 3 | 6 | - | - | 1 | - |
| SERIPHUS POLITUS | 31 | 10 | 1 | 7 | 81 | 22 | - | - | 4 | 4 | - | 2 | - | - | 1 | 9 |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | |
| CYMATOGASTER AGGREGATA | - | 1 | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | - | 3 | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| EMBIOTOCA JACKSONI | 10 | 20 | 1 | - | 1 | - | - | - | - | - | - | - | - | 2 | - | 1 |
| HYPERPROSOPON ARGENTEUM | 9 | 10 | 4 | 4 | 1 | 1 | - | - | 1 | 1 | - | - | - | 2 | 3 | 4 |
| PHANERODON FURCATUS | 20 | 14 | 14 | 6 | 8 | 3 | 1 | 1 | 3 | 3 | 7 | 15 | 3 | 2 | 21 | 23 |
| POMACENTRIDAE | | | | | | | | | | | | | | | | |
| HYPSYPOPS RUBICUNDUS | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| LABRIDAE | | | | | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| PIMELOMETOPON PULCHRUM | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| CLINIDAE | | | | | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - |
| SCOMBRIDAE | | | | | | | | | | | | | | | | |
| SARDA CHILIENSIS | 1 | - | - | - | 2 | 2 | - | - | - | - | - | - | - | - | 3 | - |
| STROMATEIDAE | | | | | | | | | | | | | | | | |
| PEPRILUS SIMILLIMUS | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore SONGS (Zone OA), Don Light (Zone 6), and San Mateo Point (Zone 3A) at 30 feet on December 12-13, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | | | DON LIGHT (ZONE 6) | | | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 1 | | STATION 2 | | STATION 3 | | STATION 6 | | STATION 7 | | STATION 8 | | STATION 11 | | STATION 12 | |
| | REPLICATE | | REPLICATE | | REPLICATE | | REPLICATE | | REPLICATE | | REPLICATE | | REPLICATE | | REPLICATE | |
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| CHORDATA | | | | | | | | | | | | | | | | |
| SCORPAENIDAE | | | | | | | | | | | | | | | | |
| SCORPAENA GUTTATA | 1 | 1 | - | - | 1 | - | - | - | 1 | 2 | 1 | - | 1 | - | - | - |
| SEBASTES RASTRELLIGER | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | | | | | |
| PARALICHTHYS CALIFORNICUS | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - |
| PLEURONECTIDAE | | | | | | | | | | | | | | | | |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on December 12-13, 1978.

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 | REPLICATE 1 | REPLICATE 2 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| TRIAKIS SEMIFASCIATA | - | - | 1 | - | - | - | - | - | - | - | 1 | - |
| OPHIDIIDAE | | | | | | | | | | | | |
| OTOPHIDIUM SCRIPPSI | - | - | - | - | - | - | - | - | - | - | - | 1 |
| ATHERINIDAE | | | | | | | | | | | | |
| ATHERINOPSIS CALIFORNIENSIS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX CLATHRATUS | - | - | 2 | 2 | - | - | - | - | - | 21 | 1 | - |
| PARALABRAX NEBULIFER | 4 | 3 | - | 6 | - | - | - | - | 1 | 2 | 1 | 1 |
| BRANCHIOSTEGIDAE | | | | | | | | | | | | |
| CAULOLATILUS PRINCEPS | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| CARANGIDAE | | | | | | | | | | | | |
| TRACHURUS SYMMETRICUS | - | - | - | - | - | - | - | - | - | 10 | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| ANISOTREMUS DAVIDSONII | 2 | - | - | 1 | - | - | - | - | - | 14 | - | - |
| XENISTIUS CALIFORNIENSIS | - | - | - | 2 | - | - | - | - | 1 | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| CHEILOTREMA SATURNUM | 9 | 1 | 6 | 2 | - | - | - | - | - | 2 | - | - |
| CYNOSCION NOBILIS | 2 | - | 1 | - | - | - | - | - | 1 | 1 | 3 | 2 |
| GENYONEMUS LINEATUS | - | - | 2 | - | - | - | - | - | - | - | - | - |
| MENTICIRRHUS UNDULATUS | - | - | - | - | - | - | - | - | 1 | - | - | - |
| SERIPHUS POLITUS | - | - | 3 | - | - | - | - | - | - | - | 1 | - |
| SCORPIDIDAE | | | | | | | | | | | | |
| MEDIALUNA CALIFORNIENSIS | - | - | - | - | - | - | - | 1 | - | 10 | 2 | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| BRACHYISTIUS FRENATUS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| CYMATOGASTER AGGREGATA | - | 4 | - | - | - | - | - | - | - | - | - | - |
| DAMALICHTHYS VACCA | 2 | - | - | - | - | - | - | - | 2 | - | 3 | - |
| EMBIOTOCA JACKSONI | - | - | 2 | 1 | - | - | - | - | - | 4 | - | - |
| HYPERPROSOPON ARGENTEUM | 1 | - | 1 | 4 | - | - | - | - | - | - | - | - |
| PHANERODON FURCATUS | 46 | - | 27 | 6 | - | - | - | - | 20 | - | 1 | 3 |
| RHACOCHILUS TOXOTES | - | - | - | - | - | - | - | - | - | 1 | - | - |
| POMACENTRIDAE | | | | | | | | | | | | |
| CHROMIS PUNCTIPINNIS | - | - | - | - | - | - | - | - | - | 264 | - | - |
| LABRIDAE | | | | | | | | | | | | |
| HALICHOERES SEMICINCTUS | - | - | 1 | 2 | - | - | - | - | - | - | 2 | - |
| OXYJULIS CALIFORNICA | - | - | - | - | - | - | - | - | - | 1 | - | - |
| PIMELOMETOPON PULCHRUM | - | - | 1 | 1 | - | - | - | - | - | 14 | - | - |
| SCOMBRIDAE | | | | | | | | | | | | |
| SCOMBER JAPONICUS | - | 4 | 3 | - | - | - | 1 | - | 2 | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | 1 | 2 | 2 | - | - | - | 2 | 2 | - | 1 |

Species composition and numerical abundance of fish species collected in replicate gill nets offshore San Onofre, Don Light, and San Mateo Point at 45 feet on December 12-13, 1978. (continued)

| TAXA | SONGS (ZONE OA) | | | | DON LIGHT (ZONE 6) | | | | SAN MATEO POINT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION 4 | | STATION 5 | | STATION 9 | | STATION 10 | | STATION 13 | | STATION 14 | |
| | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 | REPLICATE 1 | 2 |
| CHORDATA | | | | | | | | | | | | |
| SCORPAENIDAE | | | | | | | | | | | | |
| SEBASTES AURICULATUS | - | - | - | - | - | - | - | - | - | 4 | - | - |
| SEBASTES SERRANOIDES | - | - | - | - | - | - | - | - | - | 9 | - | - |
| SEBASTES SERRICEPS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| HEXAGRAMMIDAE | | | | | | | | | | | | |
| OXYLEBIUS PICTUS | - | - | - | - | - | - | - | - | - | 2 | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | - | - | - | - | - | - | 1 | - | - | - | - | - |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | 1 | - | - | - | - | - | - | - | - |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Mateo Point at 20, 40, and 60 feet on December 12-13, 1978.

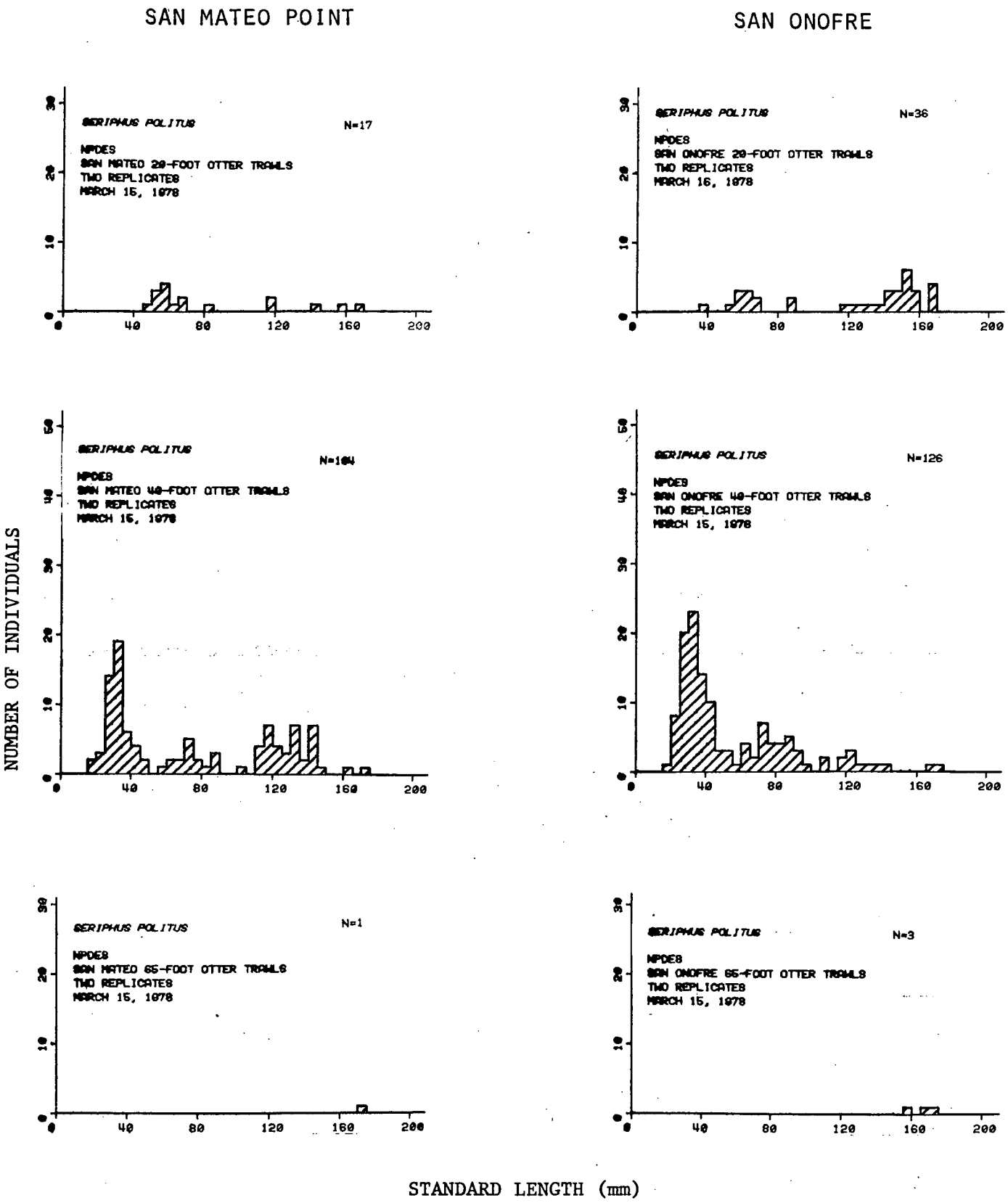
| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 | REPLICATE 1 | REPLICATE 2 | REPLICATE 3 | REPLICATE 4 |
| TRAWL START TIME | 1215 | 1240 | 1051 | 1109 | 1307 | 1327 | 1131 | 1147 | 1348 | 1411 | 1211 | 1244 |
| CHORDATA | | | | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | | | | |
| MUSTELUS CALIFORNICUS | - | - | - | - | 1 | 1 | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | - | 3 | - | 2 | 1 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 1 | 1 | 3 | - | - | - | 3 | - | 2 | 2 | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 1 | 4 | 6 | - | 3 | - | 11 | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | | | |
| MYLIOBATIS CALIFORNICA | - | - | - | - | 1 | - | - | - | 1 | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA DELICATISSIMA | - | - | 1 | 19 | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | - | 38 | 108 | 206 | - | - | 2 | 25 | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | - | - | 3 | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 5 | 10 | 6 | - | 1 | - | 12 | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX MACULATOFASCIATUS | 1 | - | - | - | - | - | - | - | - | - | 1 | - |
| CARANGIDAE | | | | | | | | | | | | |
| TRACHURUS SYMMETRICUS | - | - | - | - | - | - | - | 1 | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | - | - | 1 | - | 7 | 1 | - | - | - | - | - | - |
| MENTICIRRHUS UNDULATUS | - | 14 | 3 | 1 | 3 | 1 | 2 | - | - | - | - | - |
| SERIPHUS POLITUS | 1 | - | - | - | 6 | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | - | - | 3 | - | - | - | 3 | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 3 | 2 | - | 3 | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | - | - | - | - | 2 | - | - | - | - | - | - |
| PHANERODON FURCATUS | 3 | - | - | - | - | 4 | - | 7 | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 6 | 9 | 3 | - | 12 | 21 | 6 | 16 | 22 | 20 | 29 | 32 |
| CITHARICHTHYS XANTHOSTIGMA | - | - | - | - | - | - | - | - | 1 | 1 | 3 | 3 |
| PARALICHTHYS CALIFORNICUS | - | 3 | - | - | 1 | 1 | - | 3 | 1 | 1 | 1 | 2 |
| XYSTREURYS LIOLEPIS | - | 1 | 1 | - | - | - | - | - | 2 | - | - | 1 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | 1 | 1 | - | - | - | 1 | - | - | - | - | - | - |
| PLEURONICHTHYS RITTERI | - | 1 | - | - | - | - | 1 | - | - | - | - | 1 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | - | - | 4 | 2 | 2 | 1 |

Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore San Onofre at 20, 40, and 60 feet on December 12-13, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| TRAWL START TIME | 1456 | 1512 | 1335 | 1416 | 1639 | 1700 | 1518 | 1533 | 1558 | 1617 | 1442 | 1459 |
| CHORDATA | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | 1 | - | - | - | - | - | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | - | - | - | 2 | - | 1 | - | - | - | - | - | - |
| RAJIDAE | | | | | | | | | | | | |
| RAJA INORNATA | - | - | - | - | 1 | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | - | - | - | 1 | 6 | - | - | 1 | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | - | 1 | 2 | 1 | - | - | - | - | - | - | - | - |
| ANCHOA DELICATISSIMA | - | - | 2 | - | - | - | - | - | - | - | - | - |
| ENGRAULIS MORDAX | 277 | 152 | 4 | 1 | - | - | - | - | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | - | - | - | 1 |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | - | 2 | 5 | 2 | - | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | | | |
| PARALABRAX NEBULIFER | - | - | - | - | 1 | - | - | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | - | - | - | - | - | 84 | 6 | 1 | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 3 | 1 | 3 | 1 | - | - | - | - | 1 | - | - | - |
| SERIPHUS POLITUS | 13 | 26 | 2 | 1 | - | 182 | 87 | 4 | - | - | - | - |
| UMBRINA RONCADOR | - | - | 5 | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 2 | 2 | - | 1 | - | - | - | - | - | - | - | - |
| BRACHYISTIUS FRENATUS | - | - | - | 1 | - | - | - | - | - | - | - | - |
| CYMATOGASTER AGGREGATA | - | - | - | - | 6 | 22 | - | 2 | - | - | - | - |
| DAMALICHTHYS VACCA | - | - | 1 | - | - | - | - | - | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | - | 4 | - | 3 | 11 | 1 | - | - | - | - | - |
| PHANERODON FURCATUS | 27 | 23 | 17 | - | 43 | 31 | 2 | 31 | - | - | - | - |
| CLINIDAE | | | | | | | | | | | | |
| HETEROSTICHUS ROSTRATUS | 1 | - | - | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 4 | 5 | 2 | 2 | 16 | 20 | - | 23 | 14 | 21 | 2 | 5 |
| CITHARICHTHYS XANTHOSTIGMA | - | - | - | - | - | - | - | - | 2 | 3 | 3 | 1 |
| PARALICHTHYS CALIFORNICUS | 8 | 7 | - | 2 | 2 | 3 | 2 | 2 | - | - | 1 | - |
| XYSTREURYS LIOLEPIS | - | - | - | - | - | 1 | - | - | 1 | - | 1 | - |
| PLEURONECTIDAE | | | | | | | | | | | | |
| HYPSOPSETTA GUTTULATA | - | - | - | - | - | - | 1 | - | - | - | - | - |
| PLEURONICHTHYS RITTERI | - | - | - | - | - | - | 1 | - | - | - | - | - |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | 3 | - | - | 1 | 4 | 1 | 2 |
| ZANIOLEPIDIDAE | | | | | | | | | | | | |
| ZANIOLEPIS LATIPINNIS | - | - | - | - | - | - | - | - | 1 | - | - | - |

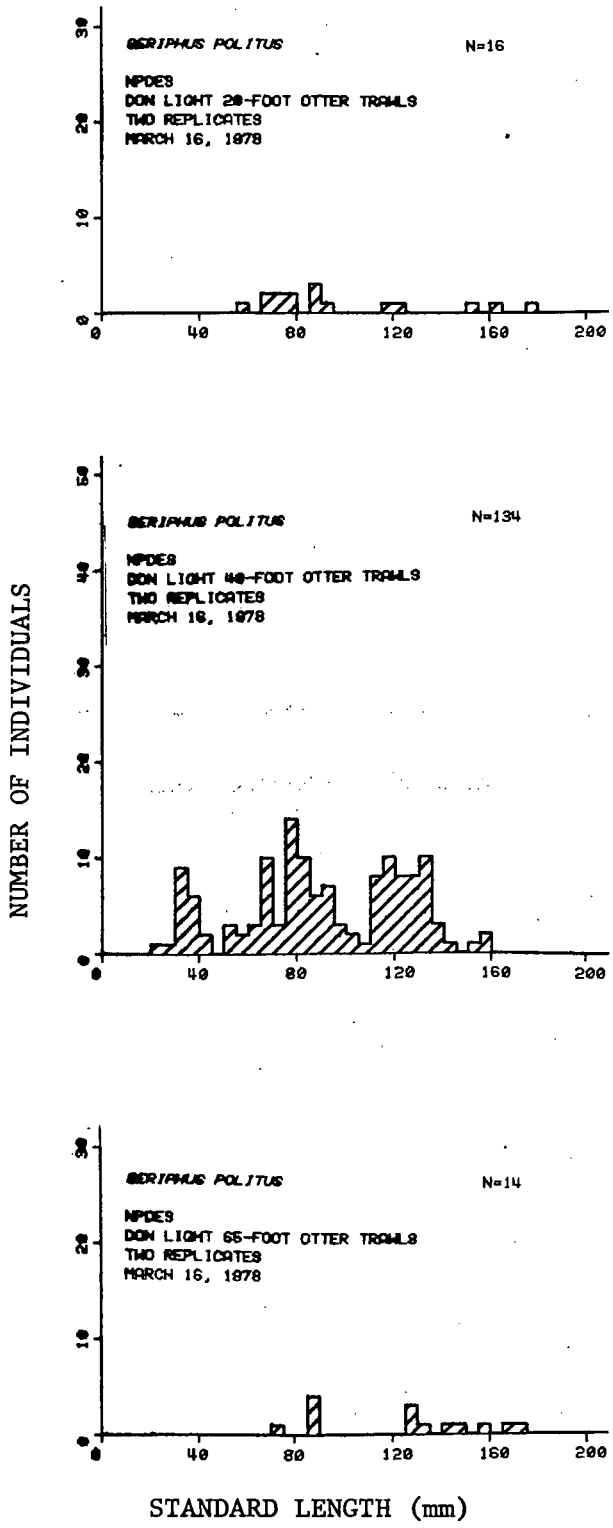
Species composition and numerical abundance of fish species collected in four replicate 5-minute otter trawls conducted offshore Don Light at 20, 40, and 60 feet on December 12-13, 1978.

| TAXA | 20 FEET | | | | 40 FEET | | | | 60 FEET | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 | REPLICATE 1 | 2 | REPLICATE 3 | 4 |
| TRAWL START TIME | 0725 | 0754 | 0803 | 0821 | 0846 | 1005 | 0843 | 0905 | 1109 | 1132 | 0932 | 0955 |
| CHORDATA | | | | | | | | | | | | |
| RHINOBATIDAE | | | | | | | | | | | | |
| RHINOBATOS PRODUCTUS | - | - | - | 1 | - | 1 | 1 | 2 | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | | | |
| PLATYRHINOIDIS TRISERIATA | 5 | - | 4 | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | | | |
| UROLOPHUS HALLERI | 32 | - | 52 | 6 | I | - | 6 | 1 | 1 | - | - | - |
| ENGRAULIDAE | | | | | | | | | | | | |
| ANCHOA COMPRESSA | 1 | - | 12 | 45 | - | - | - | - | - | - | - | - |
| ANCHOA DELICATISSIMA | - | - | 15 | 29 | - | - | 6 | - | - | - | - | - |
| ENGRAULIS MORDAX | 8 | - | 6 | 28 | 15 | - | 4 | - | - | - | - | - |
| SYNODONTIDAE | | | | | | | | | | | | |
| SYNODUS LUCIOCEPS | - | - | - | - | - | - | - | - | - | 1 | - | - |
| BATRACHOIDIDAE | | | | | | | | | | | | |
| PORICHTHYS NOTATUS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| SYNGNATHIDAE | | | | | | | | | | | | |
| SYNGNATHUS SPP. | 2 | 3 | 11 | 2 | - | - | 1 | - | - | - | - | - |
| SCIAENIDAE | | | | | | | | | | | | |
| GENYONEMUS LINEATUS | 1 | 1 | 31 | 24 | - | - | - | - | - | - | - | - |
| MENTICIRRHUS UNDULATUS | 2 | - | 3 | 15 | - | - | 3 | - | - | - | - | - |
| SERIPHUS POLITUS | 17 | - | 121 | 196 | - | - | 6 | - | - | - | - | - |
| UMBRINA RONCADOR | - | 2 | 1 | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| AMPHISTICHUS ARGENTEUS | 7 | - | 8 | - | - | - | - | - | - | - | - | - |
| HYPERPROSOPON ARGENTEUM | - | - | 1 | - | - | - | - | - | - | - | - | - |
| PHANERODON FURCATUS | - | - | 1 | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | | | |
| HYPSOBLENNIUS JENKINSI | - | - | - | - | - | - | 1 | - | - | - | - | - |
| GOBIIDAE | | | | | | | | | | | | |
| LEPIDOGOBIS LEPIDUS | - | - | - | - | - | - | - | 1 | - | - | - | - |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | - | - | - | - | 1 | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | | | |
| CITHARICHTHYS STIGMAEUS | 10 | - | - | - | 12 | 7 | 12 | 11 | 15 | 13 | 12 | 18 |
| PARALICHTHYS CALIFORNICUS | 8 | - | 2 | - | 2 | 3 | 1 | 3 | 7 | 2 | 3 | 5 |
| XYSTREURYS LIOLEPIS | - | - | 1 | - | - | - | - | 1 | 3 | 2 | - | 2 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| PAROPHRYS VETULUS | - | - | - | - | - | - | - | - | - | - | 1 | - |
| PLEURONICHTHYS RITTERI | - | - | - | - | 1 | - | 1 | 2 | 2 | 3 | 1 | 1 |
| PLEURONICHTHYS VERTICALIS | - | - | - | - | - | - | - | - | 1 | 2 | 3 | 8 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| SYMPHURUS ATRICAUDA | - | - | - | - | - | - | - | 1 | - | - | - | - |




Length frequency histograms of *Seriphus politus* collected in two replicate otter trawls at 20, 40, and 65 feet at San Mateo, San Onofre, and Don Light on March 15-16, 1978.

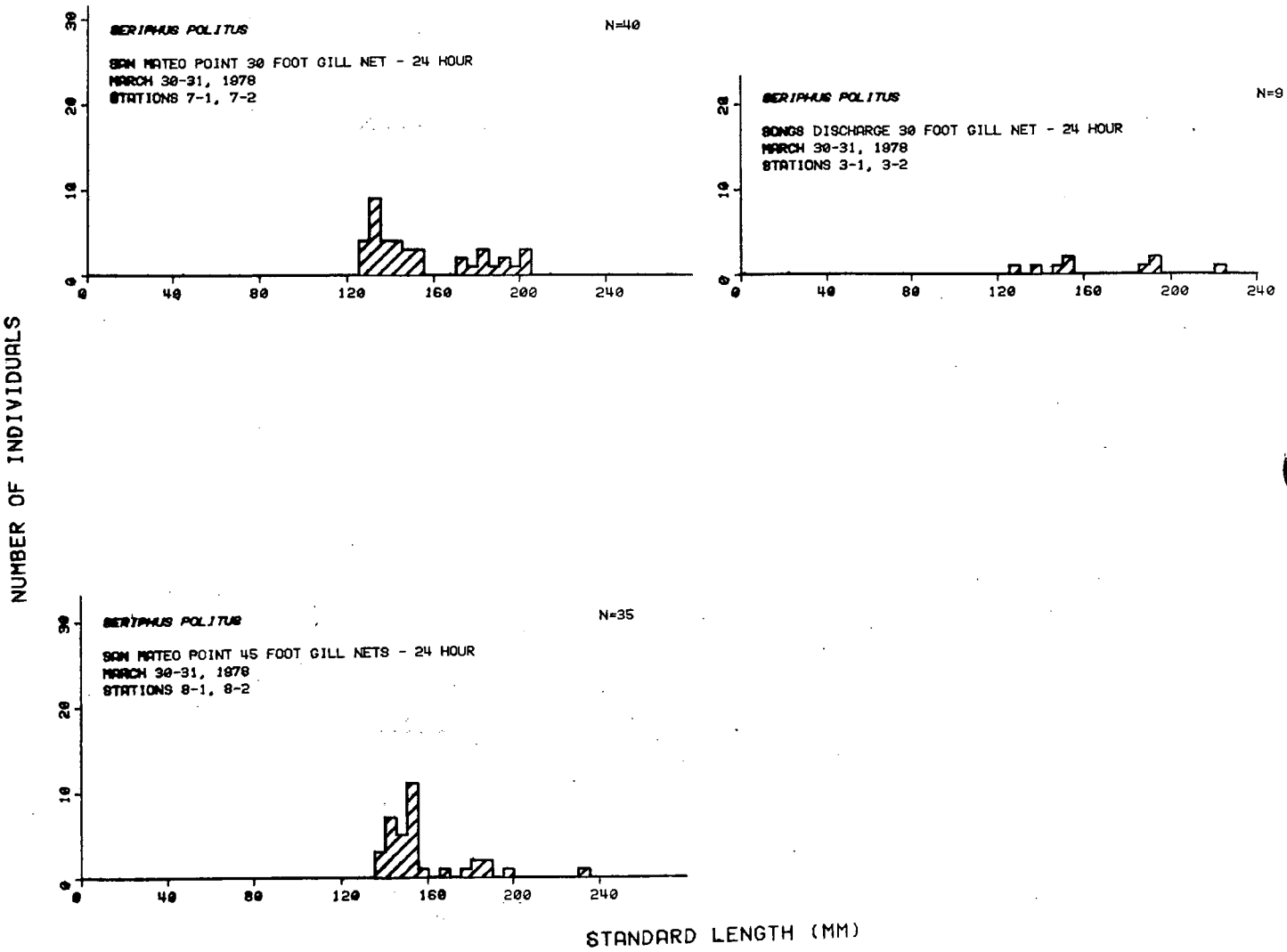
DON LIGHT



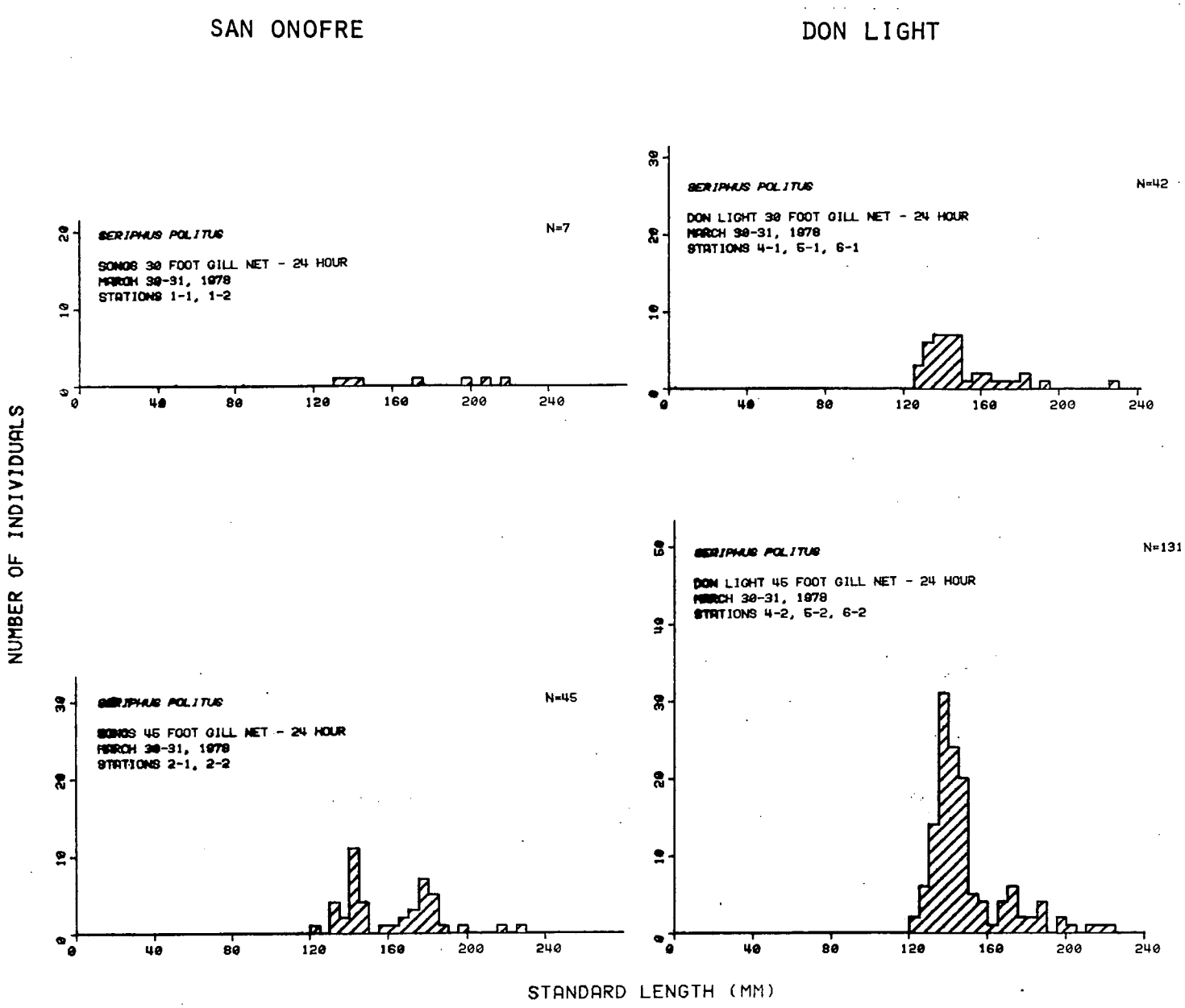

Length frequency histograms of *Seriphus politus* collected on March 15-16, 1978. (Continued)

SAN MATEO POINT

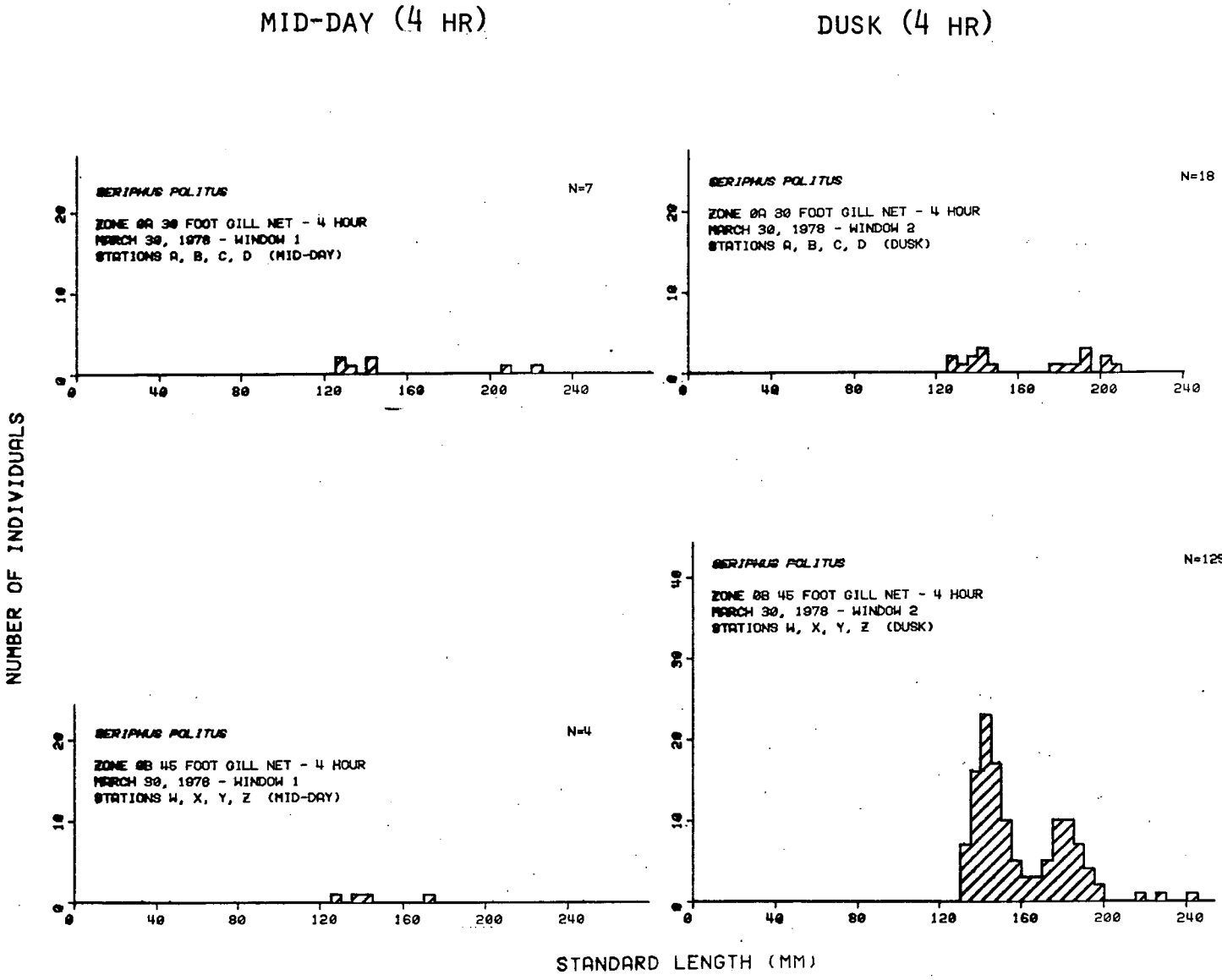
SONGS DISCHARGE




Length frequency histograms of *Seriphus politus* collected in two gill net replicates at 30' and 45' at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on March 30-31, 1978.

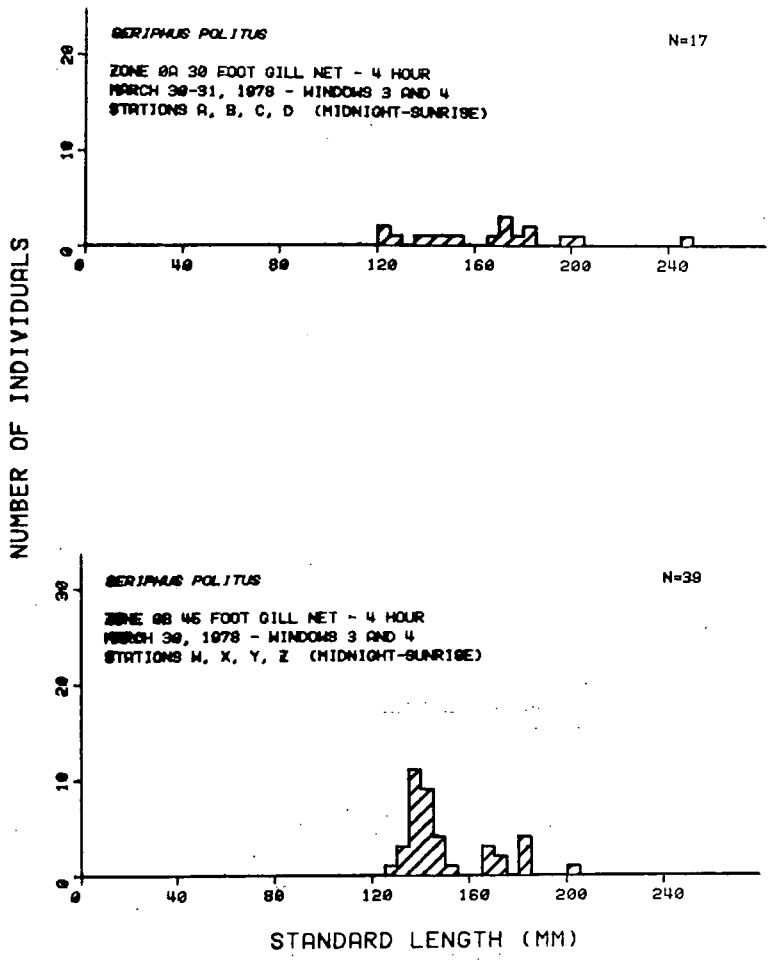



Length frequency histograms of *Seriphus politus* collected on March 30-31, 1978. (continued)



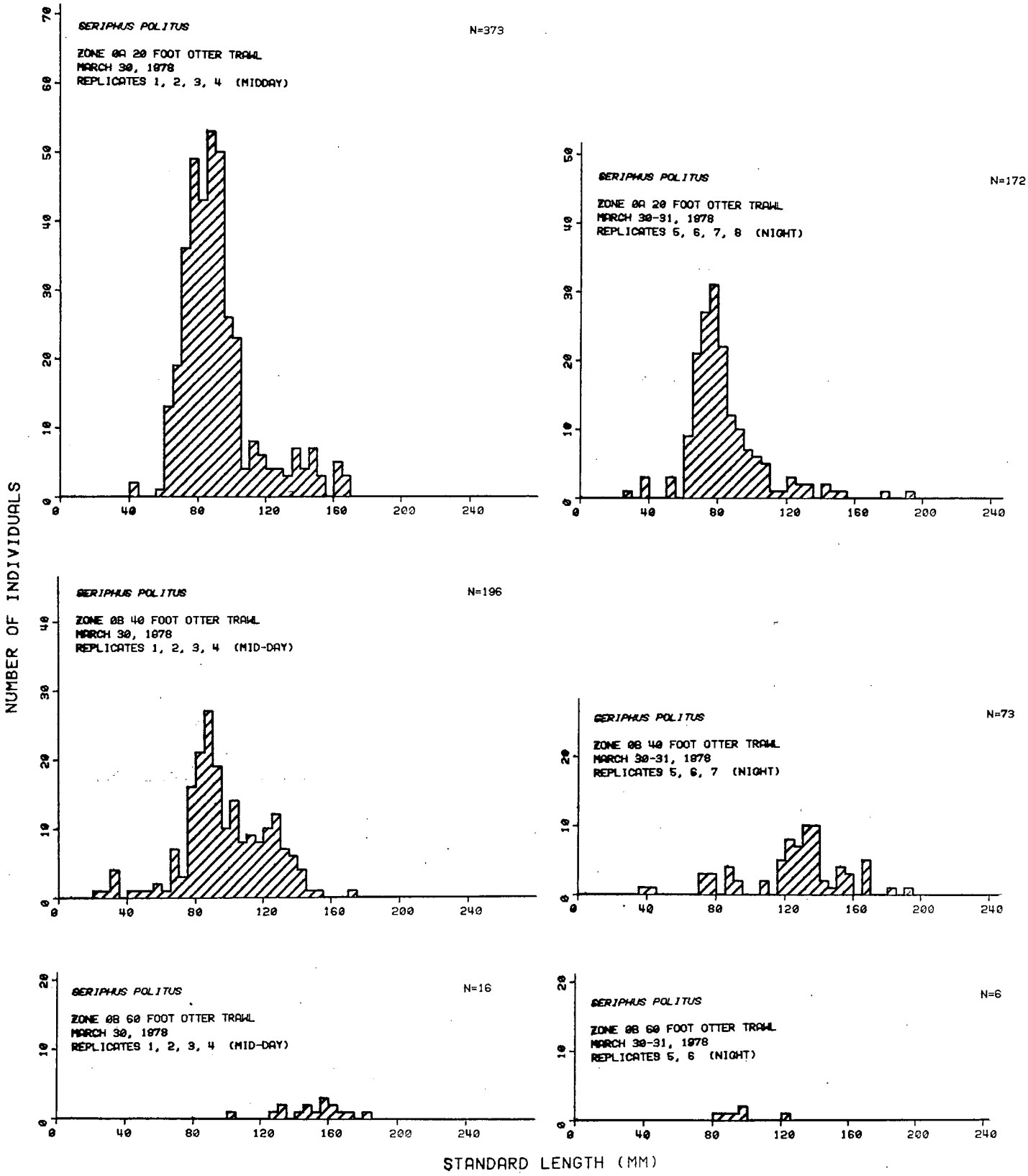

Length frequency histograms of *Seriphus politus* collected in four gill net replicates at 30 and 45 feet at San Onofre (Zones OA, OB) on March 30-31, 1978. Gill nets were set during 4-hour periods at mid-day and dusk. Poor weather conditions precluded the midnight retrieval, the midnight-sunrise set period lasted 8 hours.

MIDNIGHT-SUNRISE (8 HR)




Length frequency histograms of *Seriphus politus* collected on March 30-31, 1978. (continued)

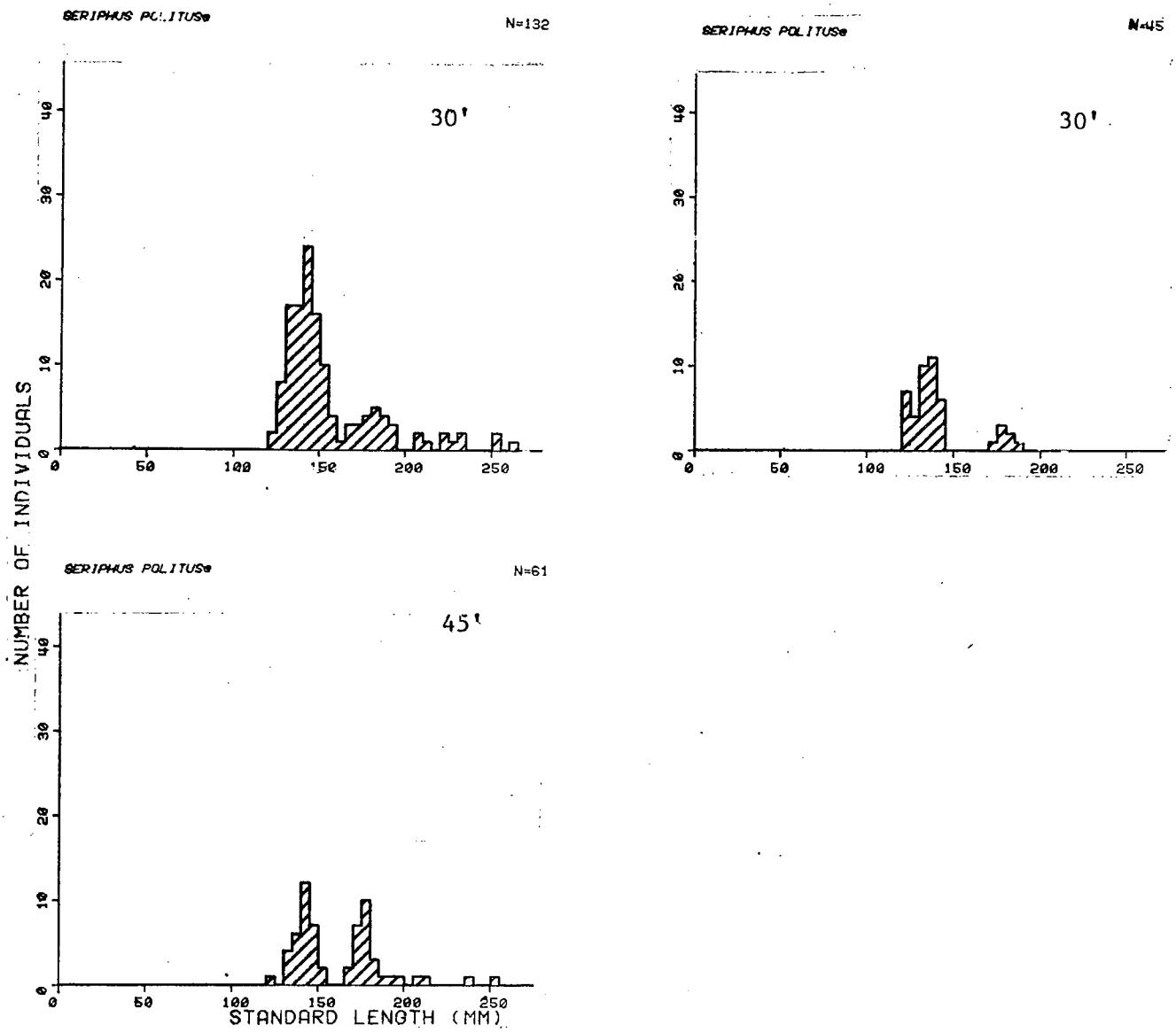
SAN ONOFRE



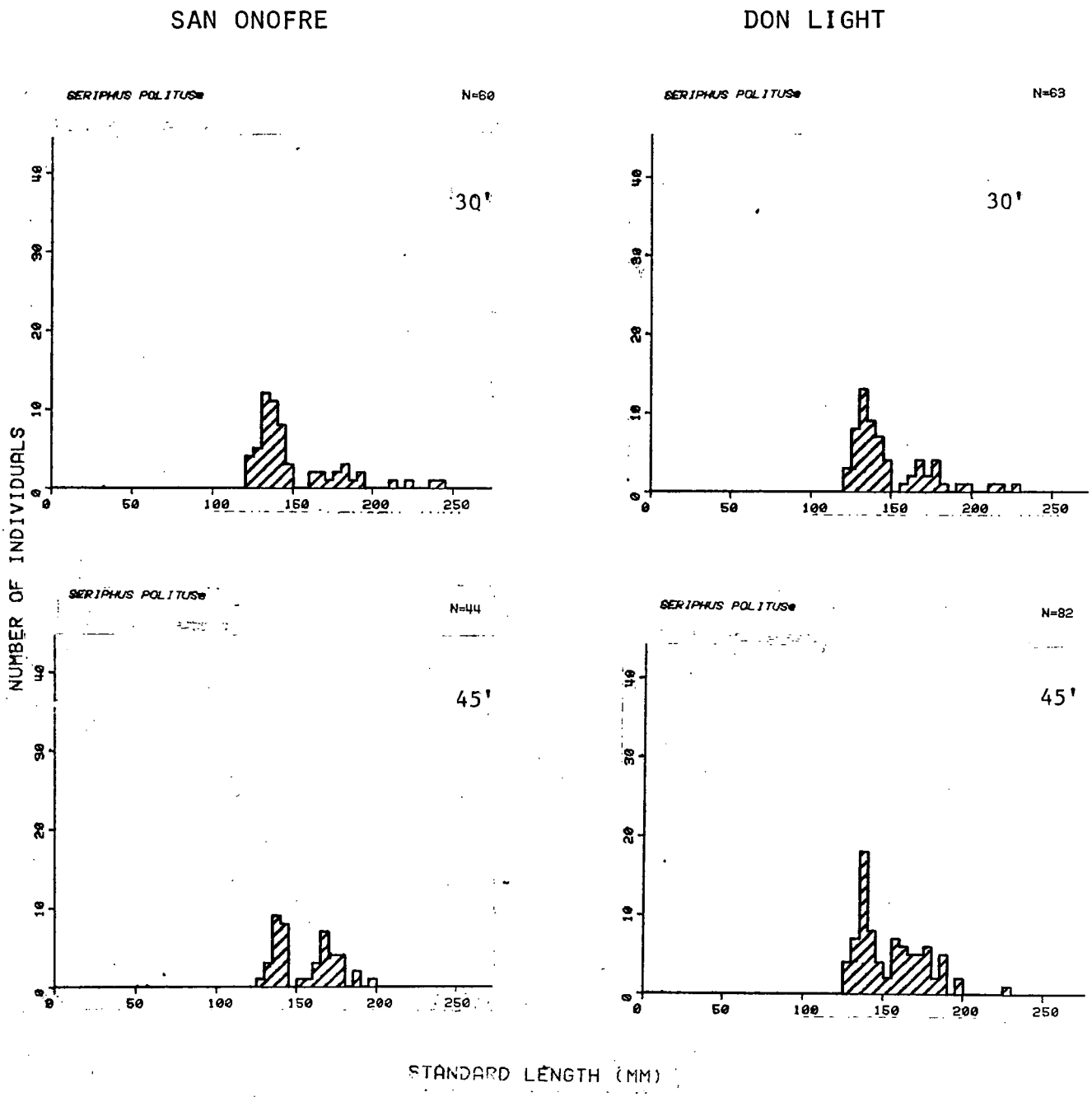

Length frequency histograms of *Seriphus politus* collected in otter trawls at 20, 40, and 60 feet at San Onofre during mid-day and night sampling periods on March 30-31, 1978.

SAN MATEO POINT

SAN ONOFRE UNIT 1 DISCHARGE



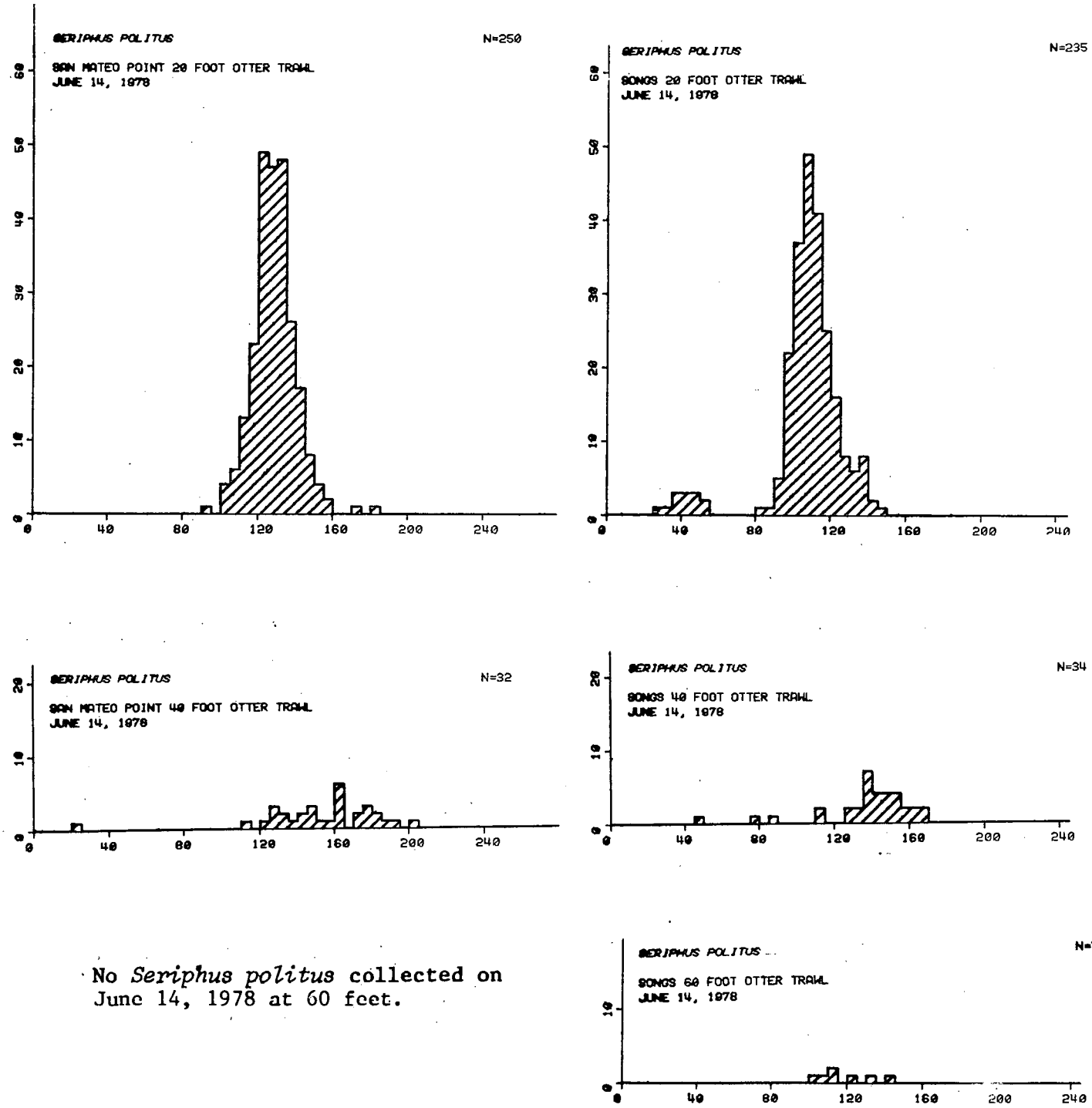

Length frequency histograms of *Seriphus politus* collected in all gill net replicates at 30' and 45' at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on June 14-15, 1978.




Length frequency histogram of *Seriphus politus* collected in gill nets on June 14-15, 1978. (continued)

SAN MATEO POINT

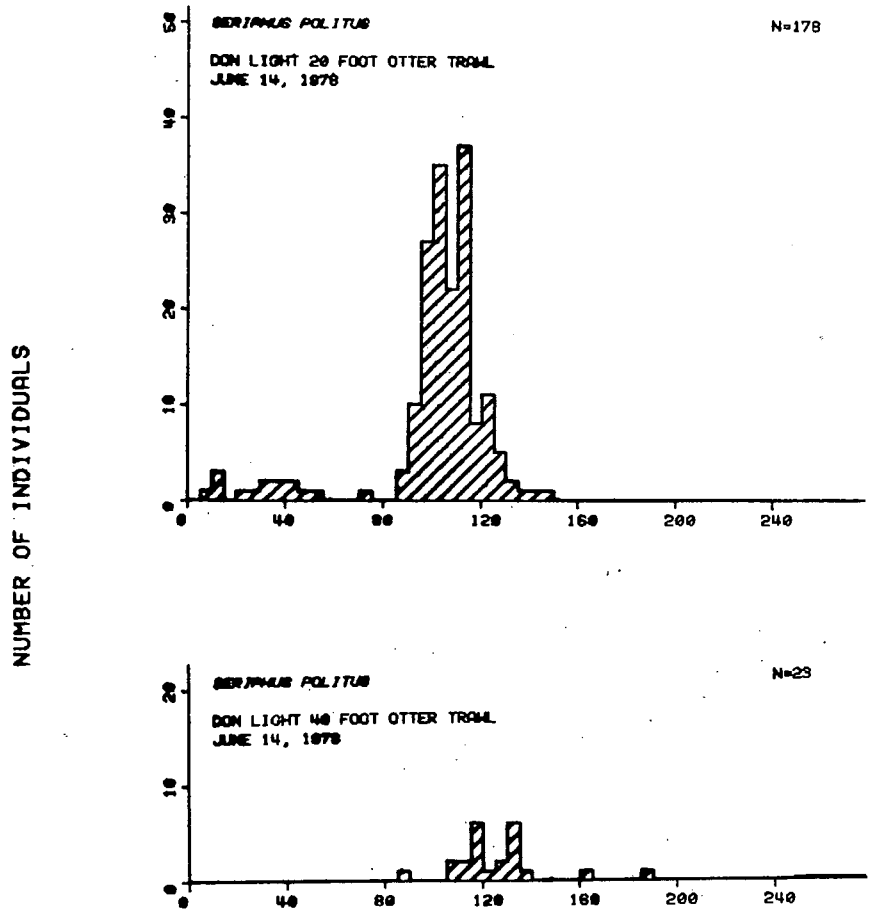
SAN ONOFRE




No *Seriphus politus* collected on June 14, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40, and 60 feet at San Mateo Point, San Onofre, and Don Light on June 14, 1978.

DON LIGHT



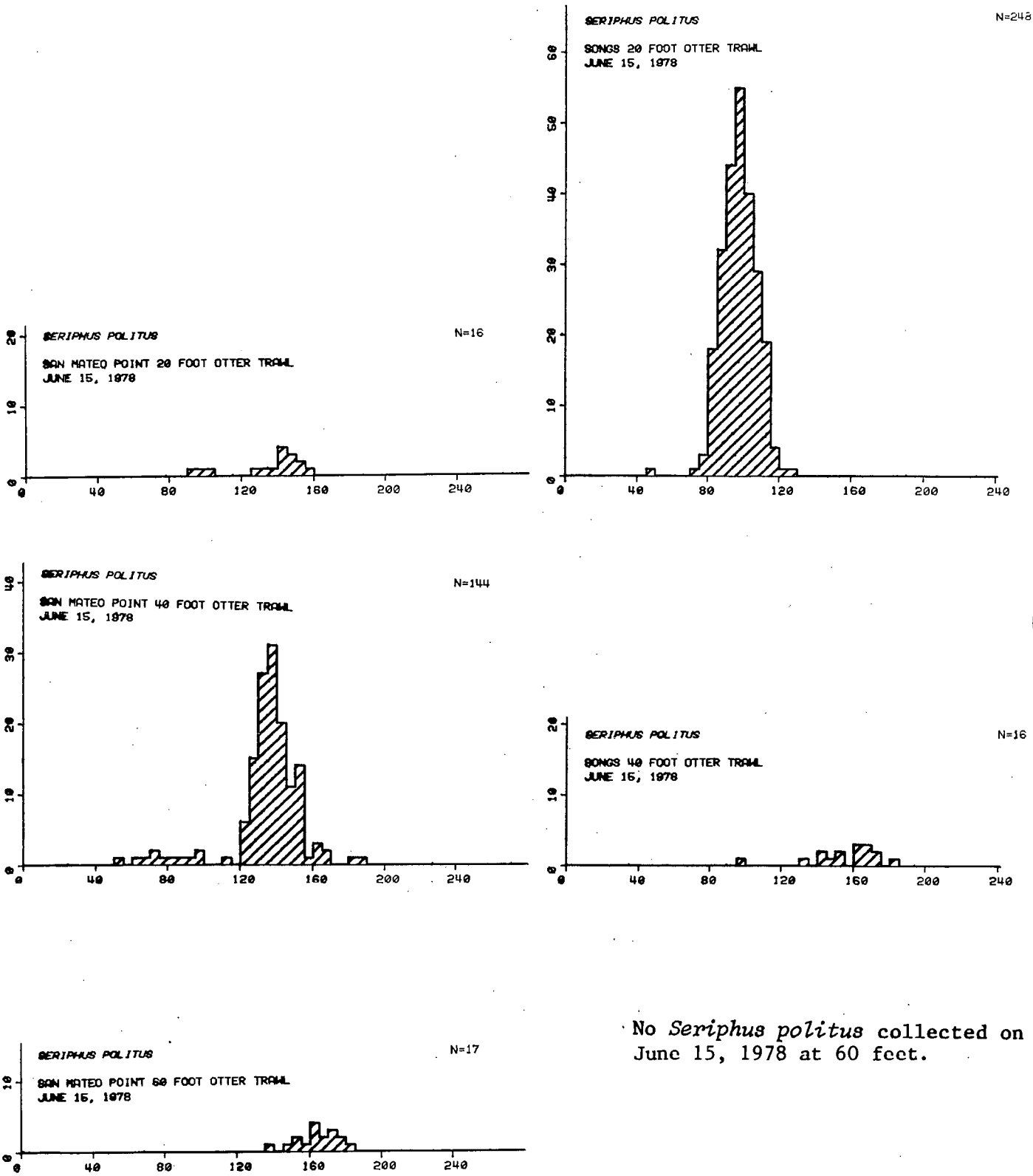

No *Seriphus politus* collected on June 14, 1978 at 60 feet.

STANDARD LENGTH (MM)

Length frequency histograms of *Seriphus politus* collected on June 14, 1978. (continued)

SAN MATEO POINT

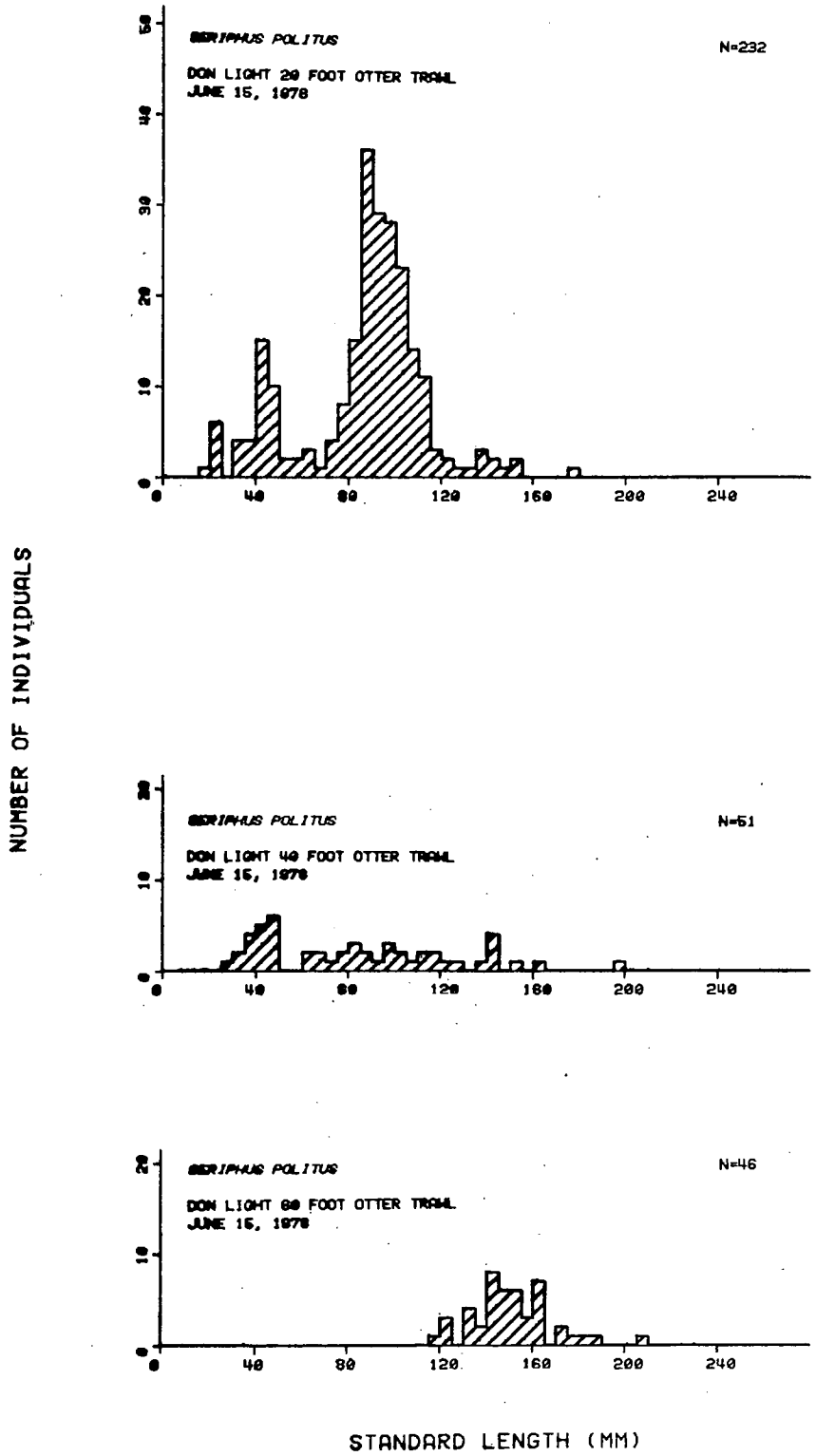
SAN ONOFRE



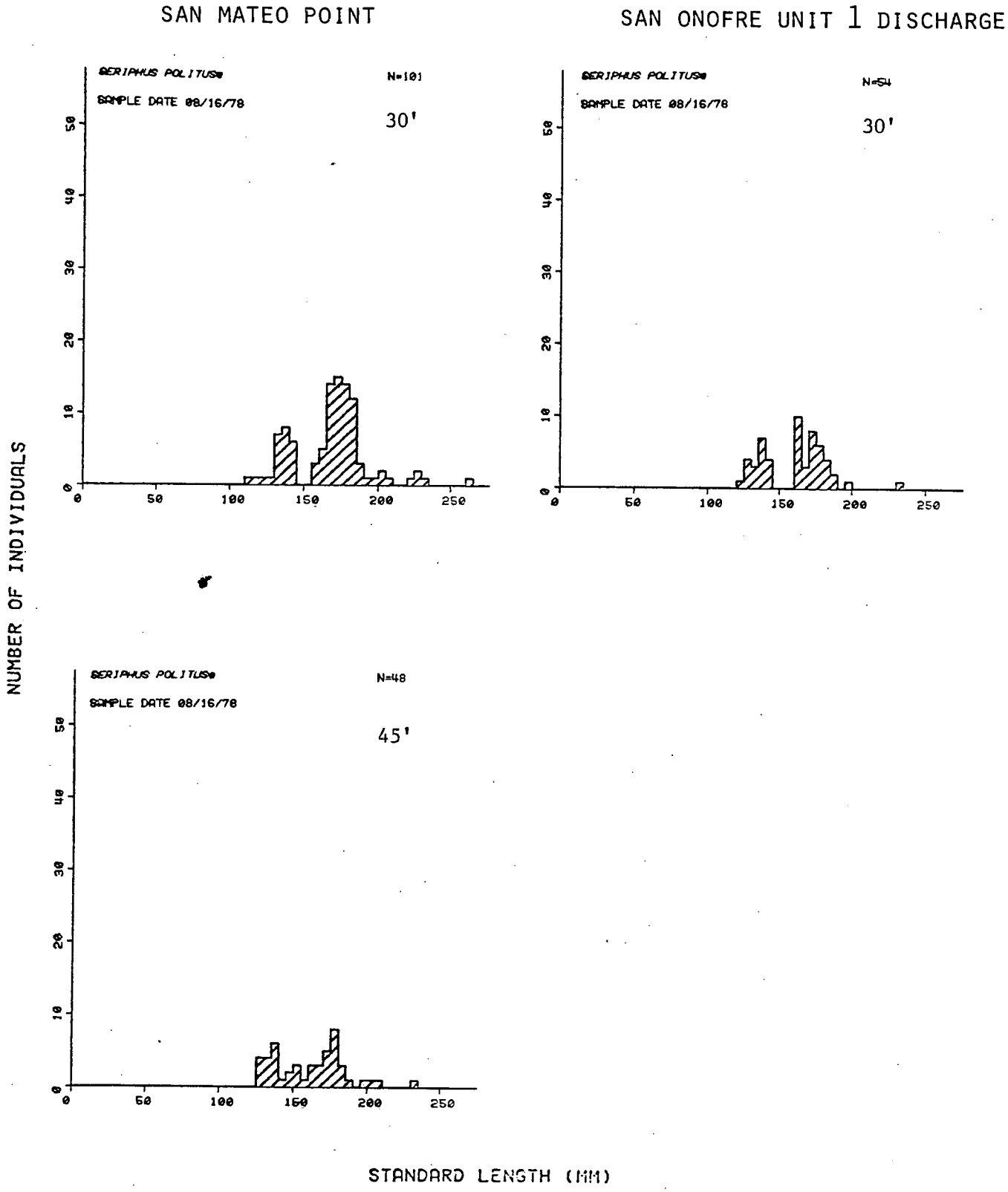

No *Seriphus politus* collected on June 15, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on June 15, 1978.

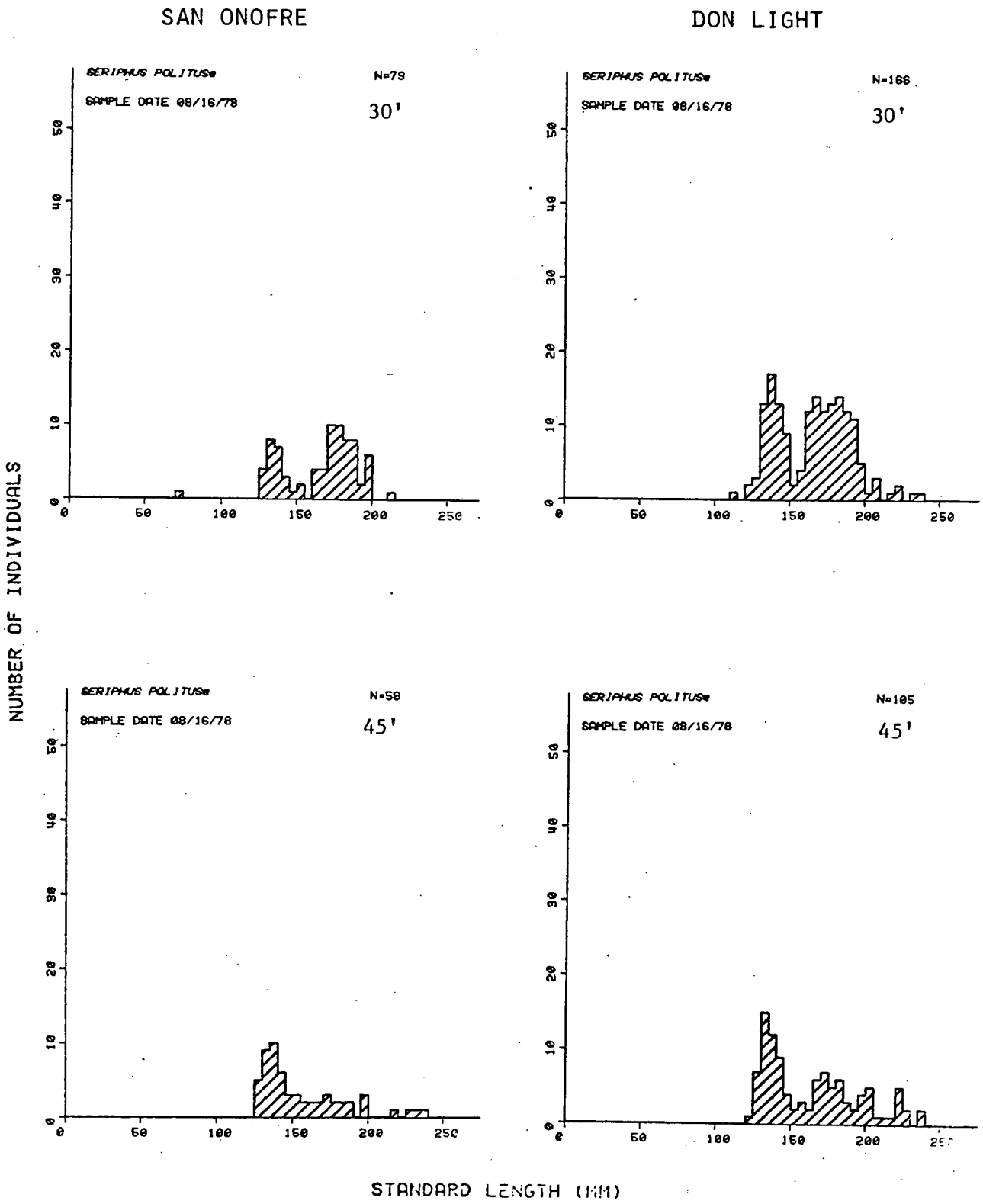
DON LIGHT




Length frequency histograms of *Seriphus politus* collected on June 15, 1978. (continued)



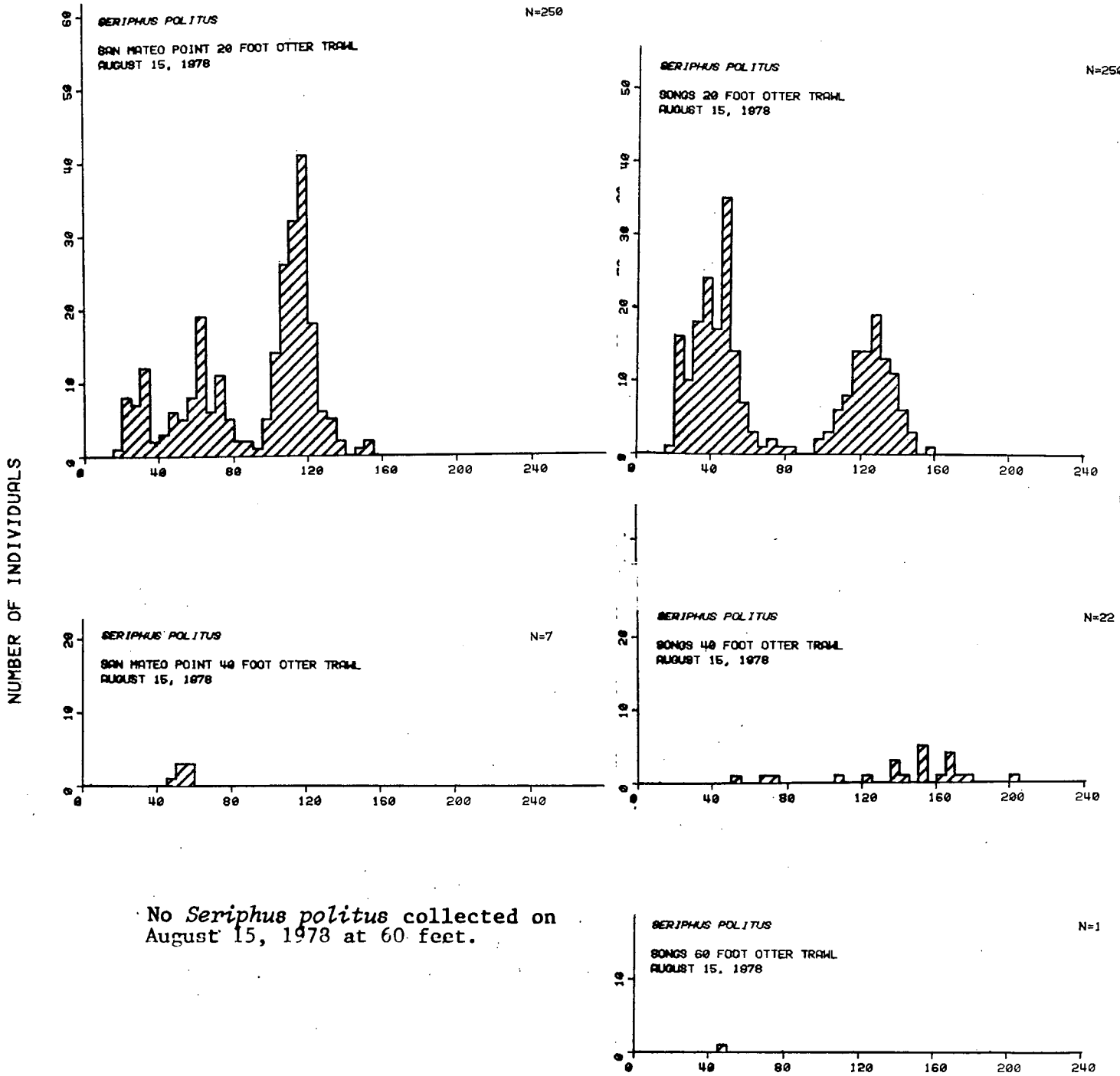

Length frequency histograms of *Seriphus politus* collected in all gill net replicates at 30' and 45' at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on August 15-16, 1978.




Length frequency histograms of *Seriphus politus* collected on August 15-16, 1978. (continued)

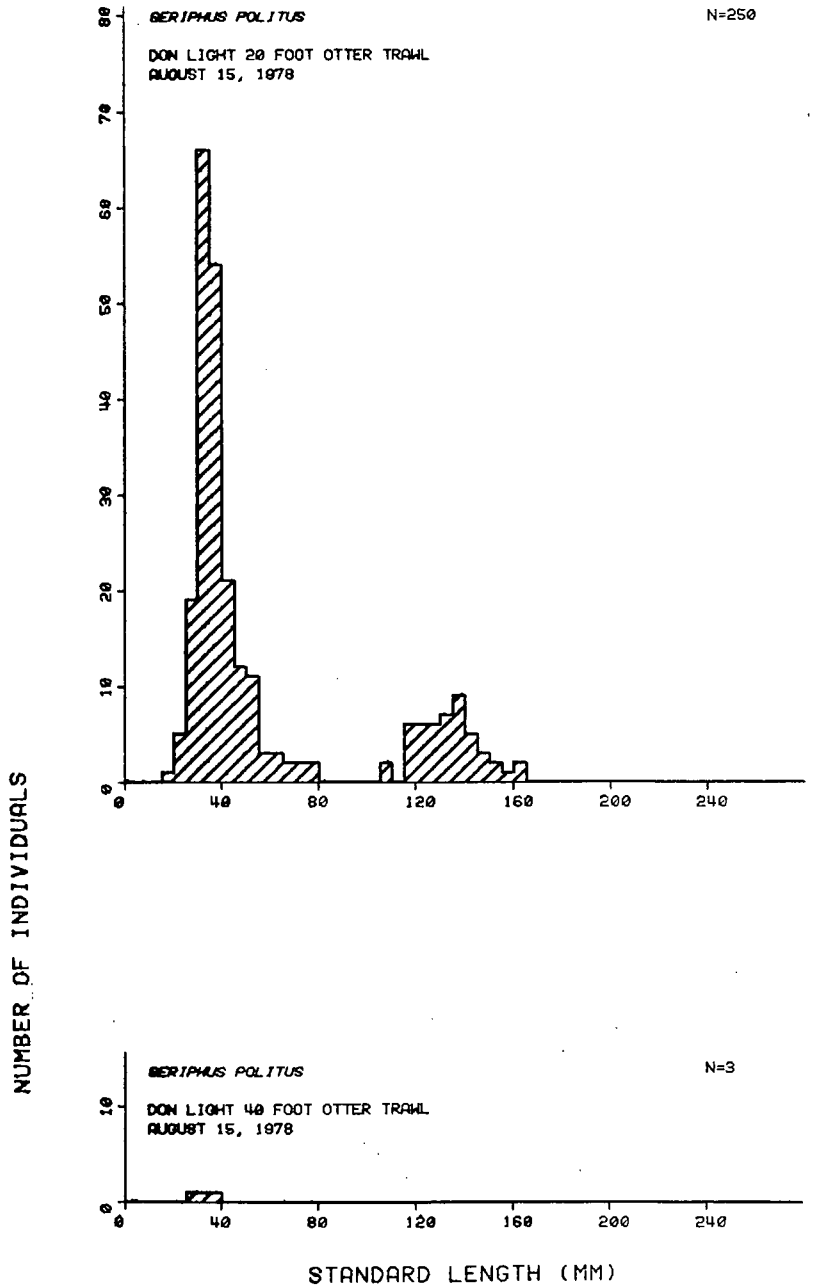
SAN MATEO POINT

SAN ONOFRE




No *Seriphus politus* collected on August 15, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on August 15, 1978.

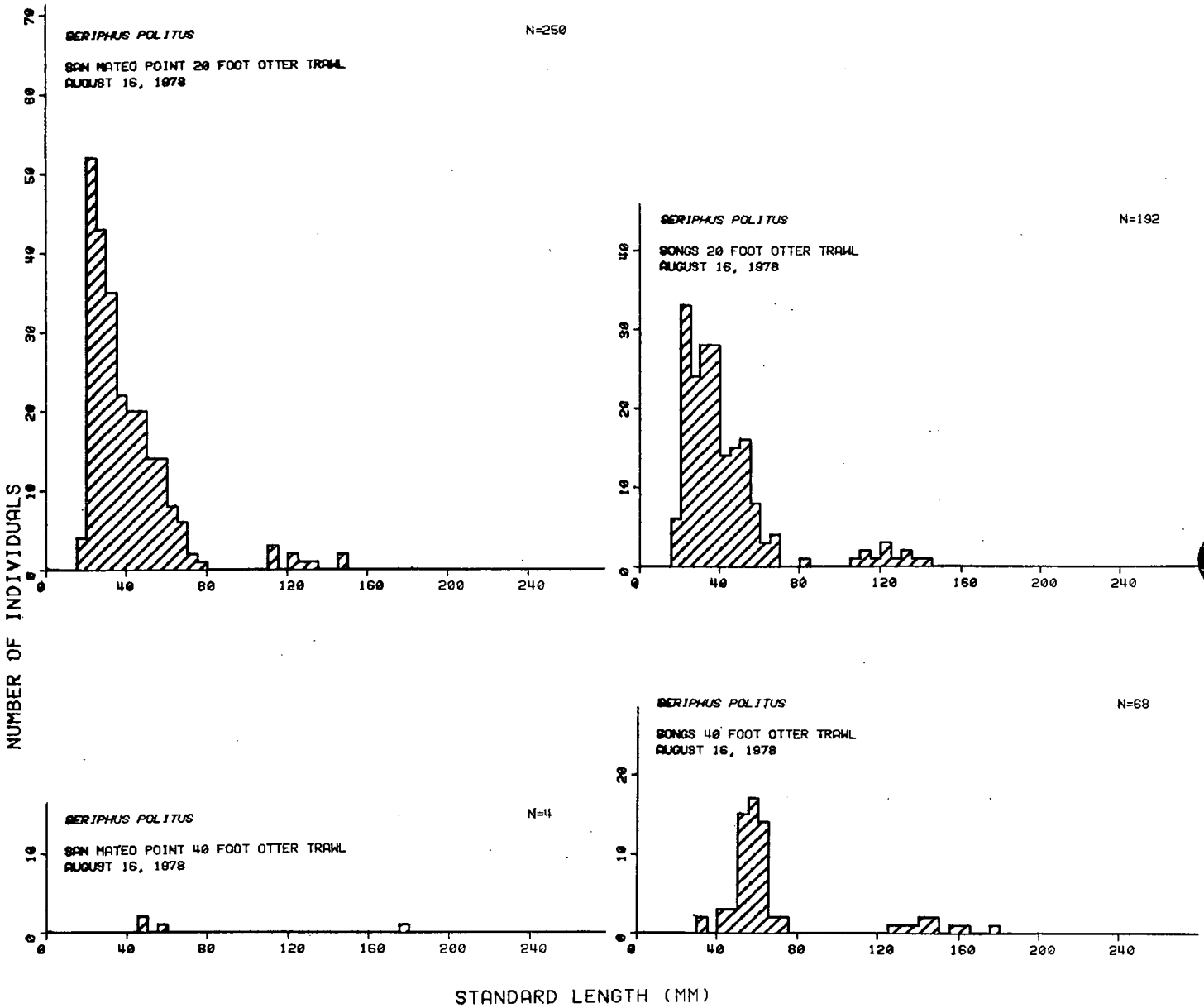



No *Seriphus politus* collected on August 15, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected on August 15, 1978. (continued)

SAN MATEO POINT

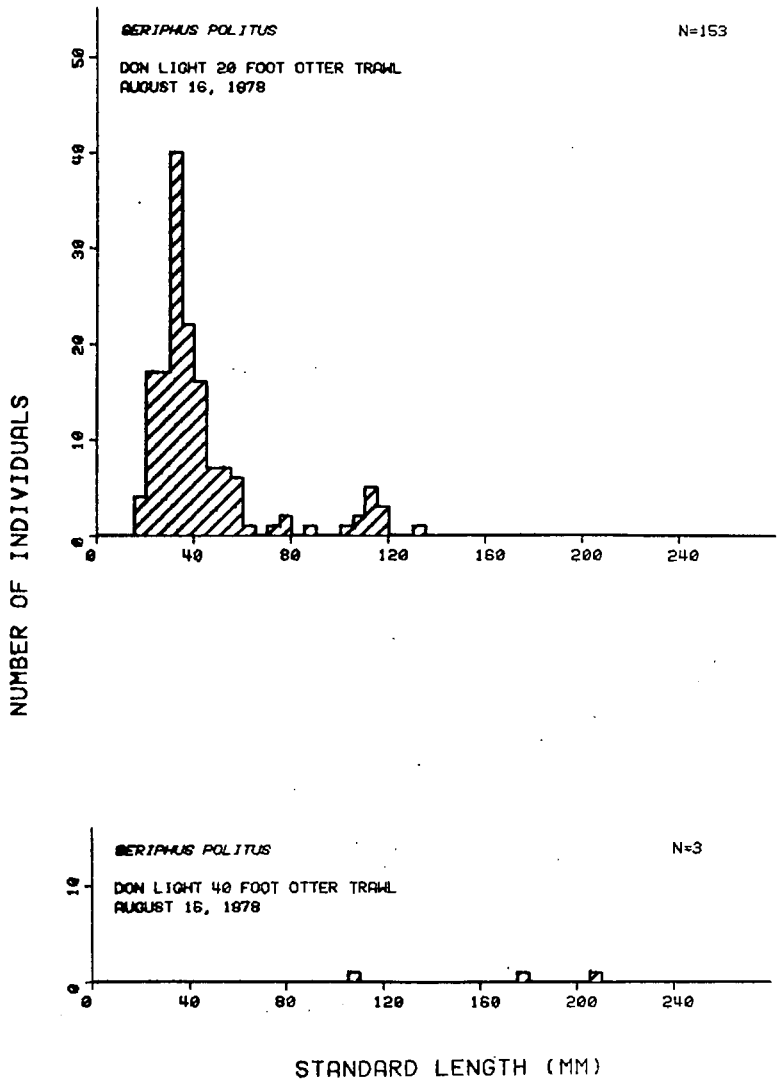
SAN ONOFRE




No *Seriphus politus* collected on August 16, 1978 at 60 feet.

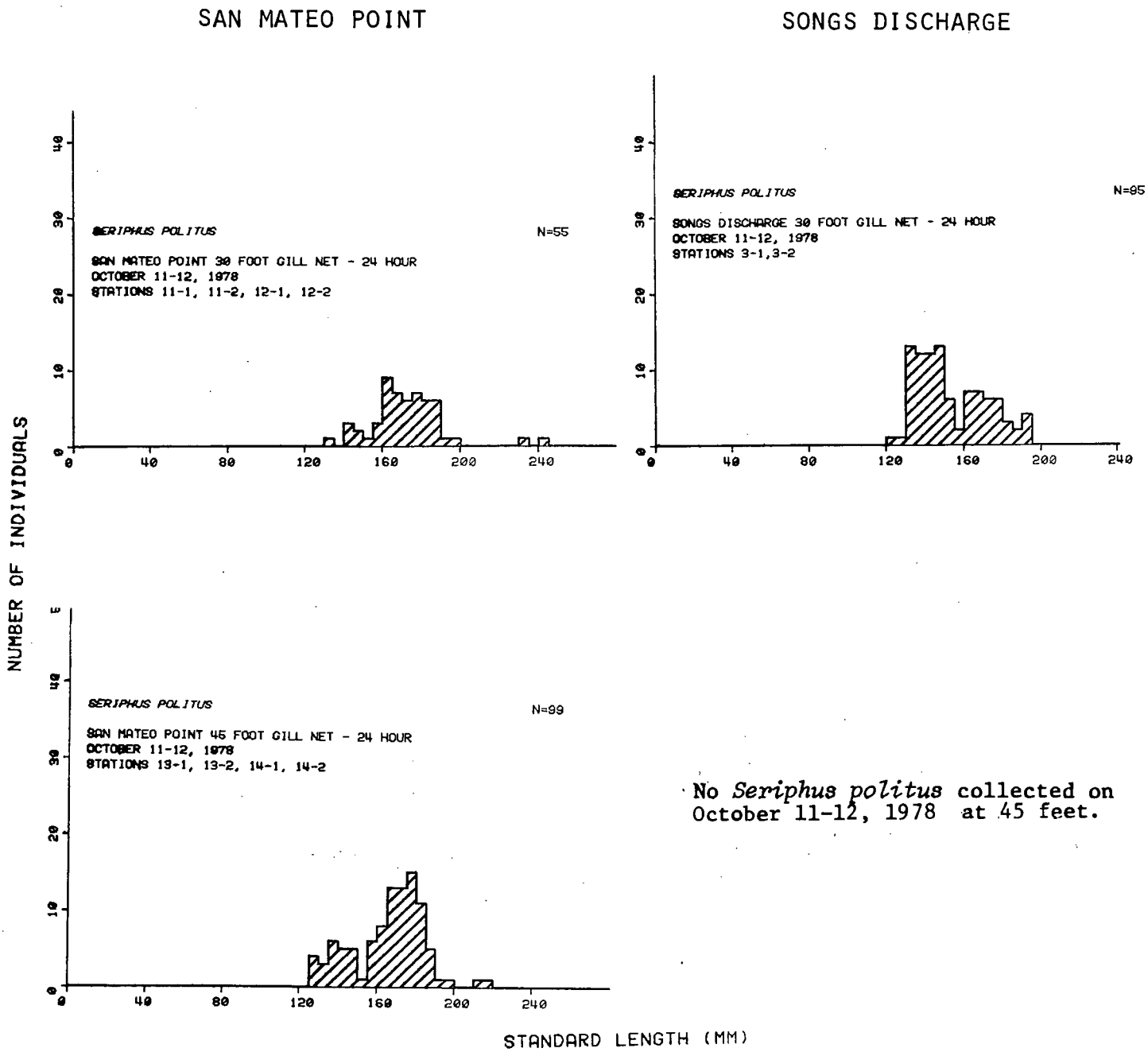
Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on August 16, 1978.

DON LIGHT



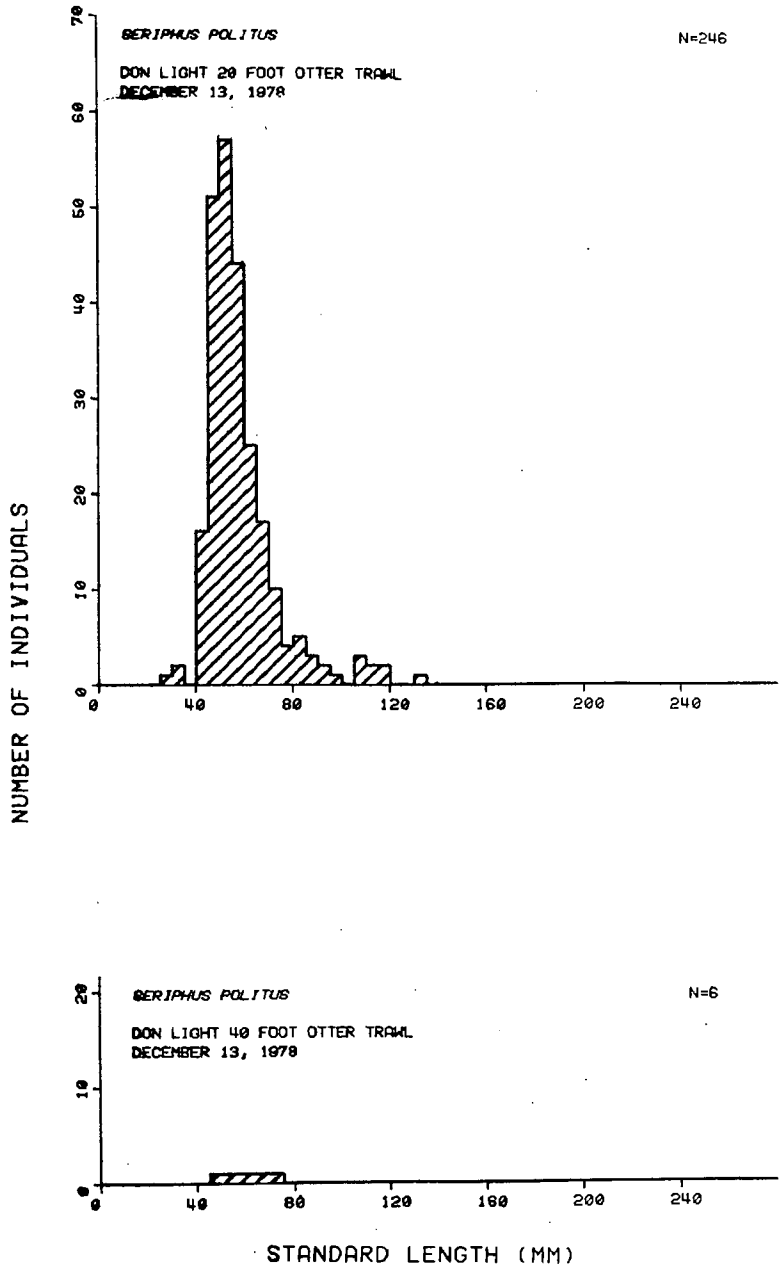

No *Seriphus politus* collected on August 16, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected on August 16, 1978. (continued)



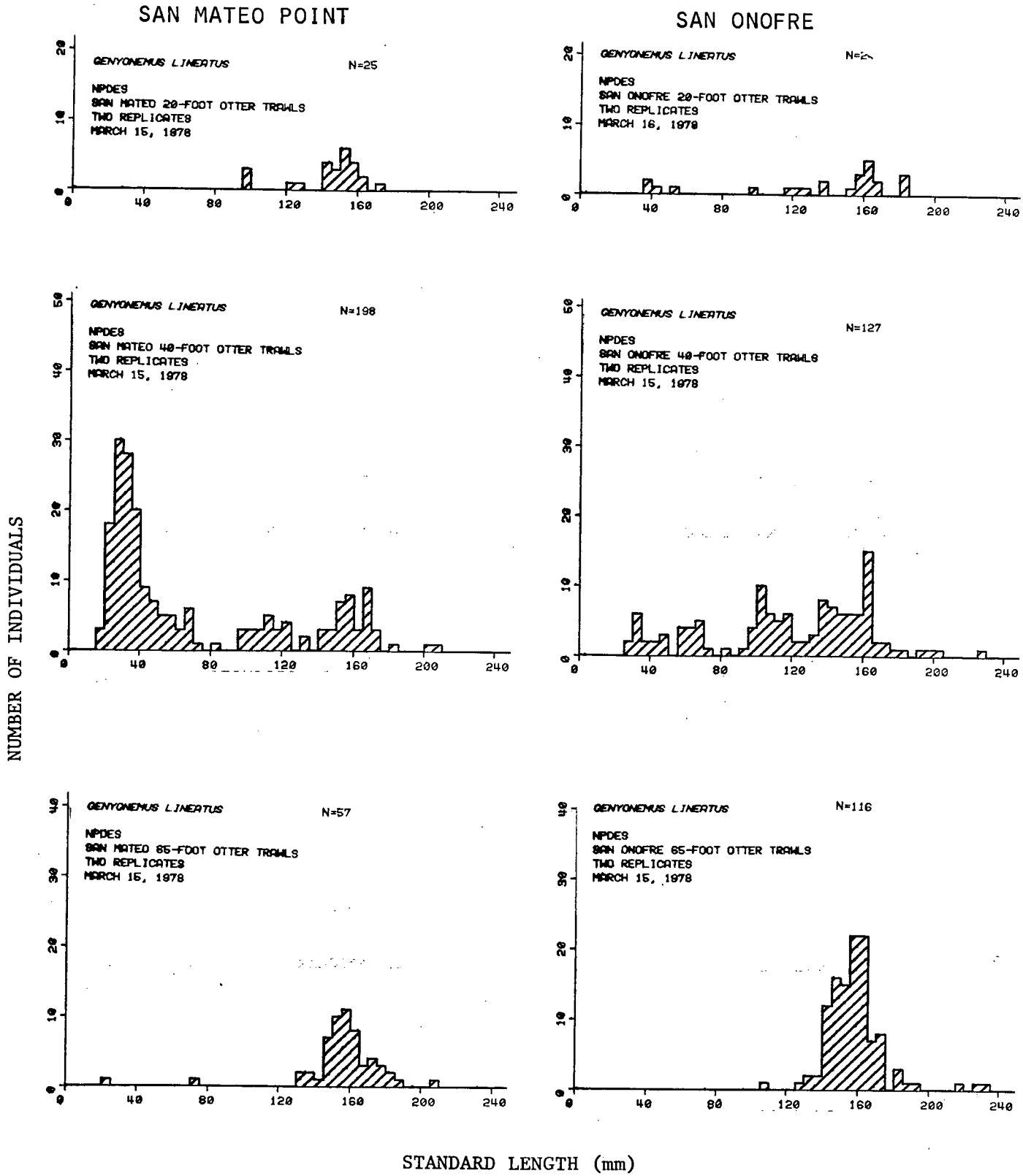

No *Seriphus politus* collected on October 11-12, 1978 at 45 feet.

Length frequency histograms of *Seriphus politus* collected in all gill net replicates at 30' and 45' at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on October 11-12, 1978.



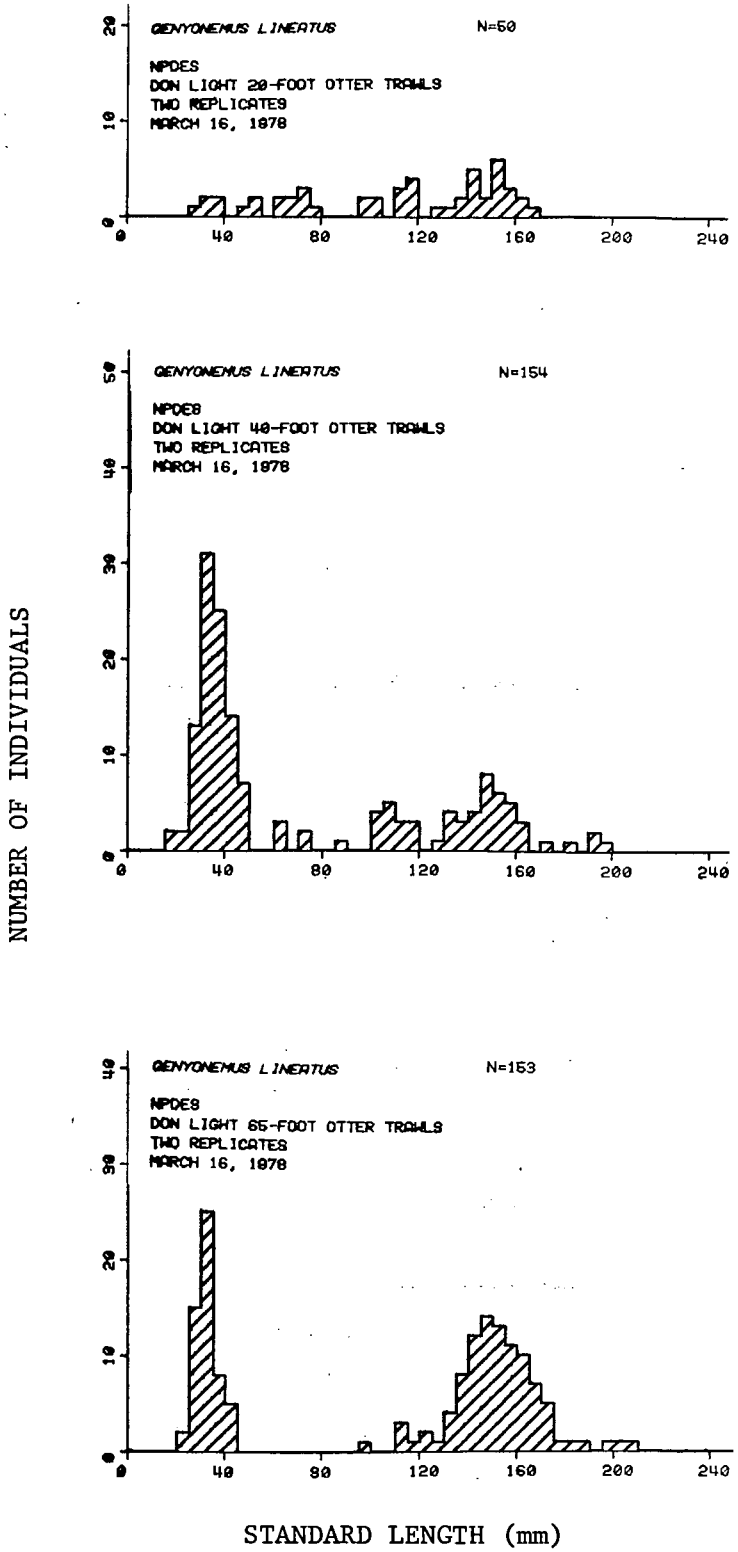

No *Seriphus politus* collected on December 13, 1978 at Don Light 60 feet otter trawl.

Length frequency histograms of *Seriphus politus* collected on December 13, 1978. (continued)




Length frequency histograms of *Genyonemus lineatus* collected in two replicate otter trawls at 20, 40, and 65 feet at San Mateo, San Onofre, and Don Light on March 15-16, 1978.

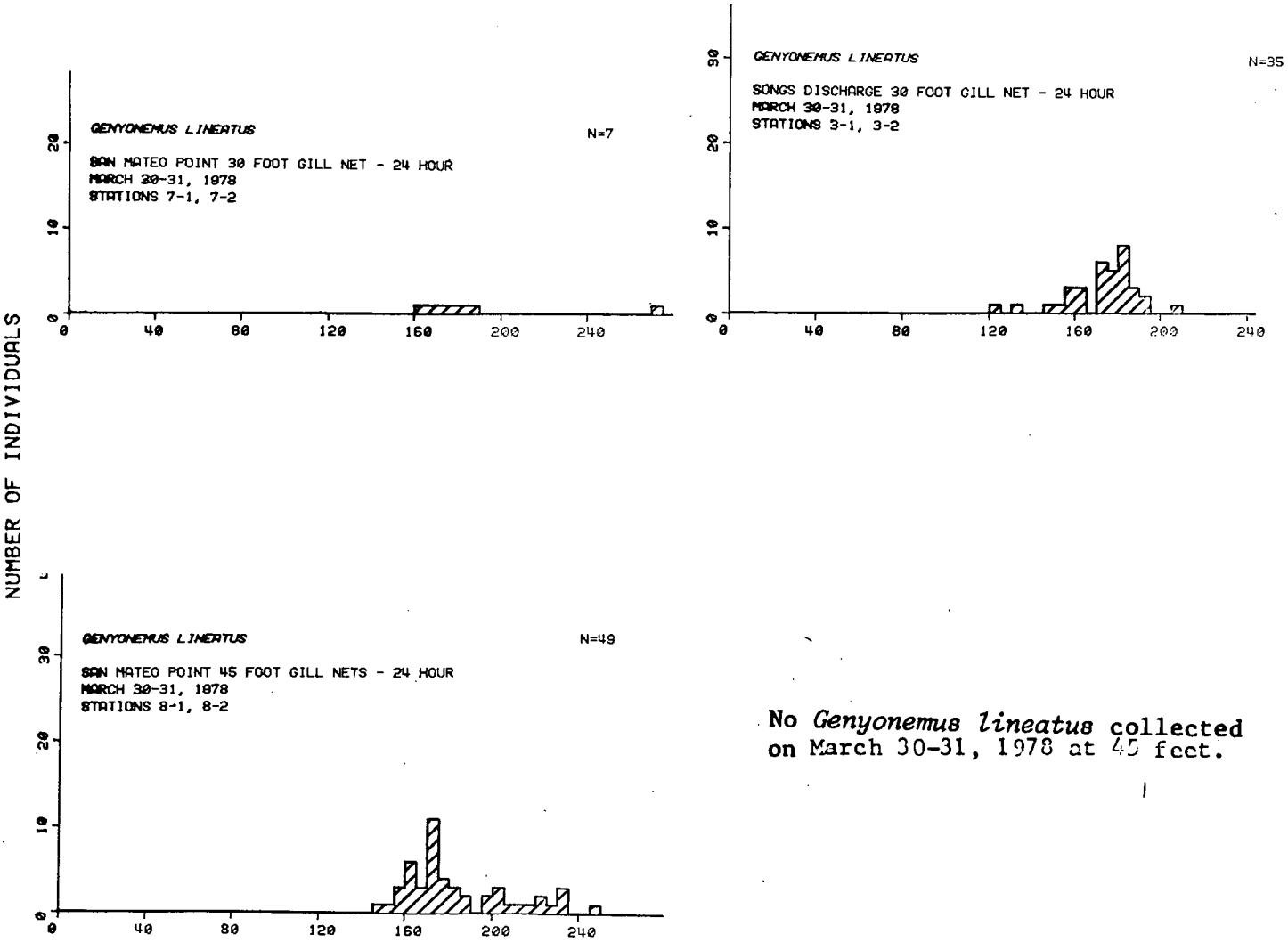
DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected in March 15-16, 1978. (Continued)

SAN MATEO POINT

SONGS DISCHARGE

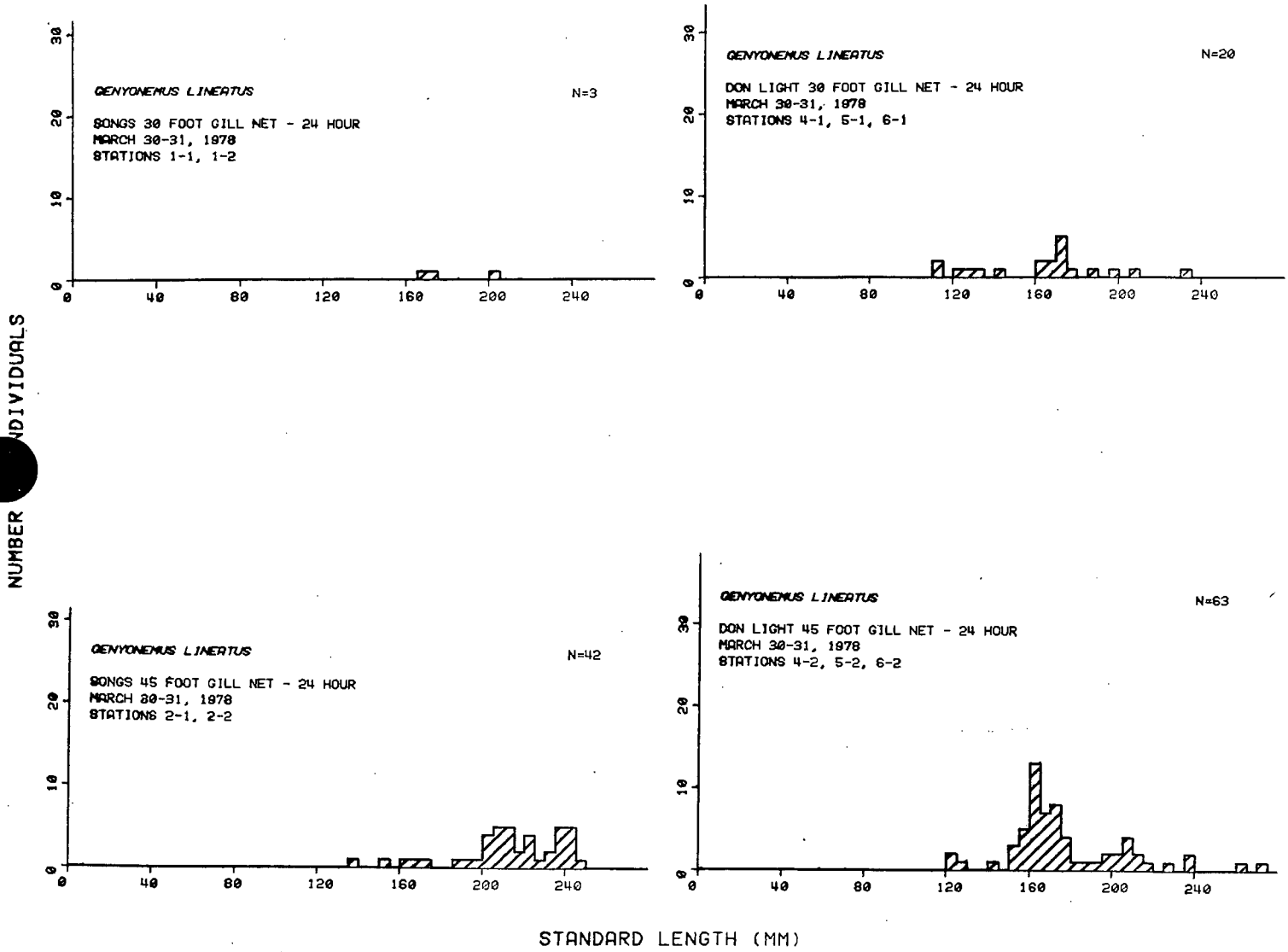



No *Genyonemus lineatus* collected on March 30-31, 1978 at 45 feet.

Length frequency histograms of *Genyonemus lineatus* collected in gill nets at 30 and 45 feet at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on March 30-31, 1978.

SAN ONOFRE

DON LIGHT

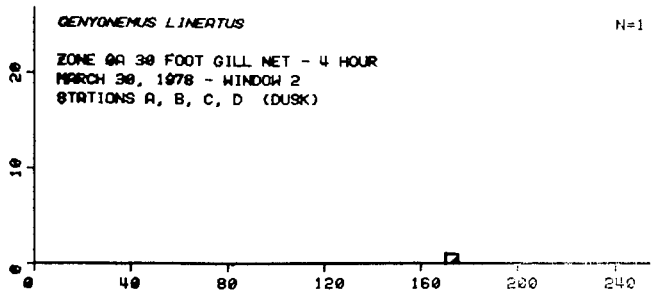



Length frequency histograms of *Genyonemus lineatus* collected on March 30-31, 1978. (continued)

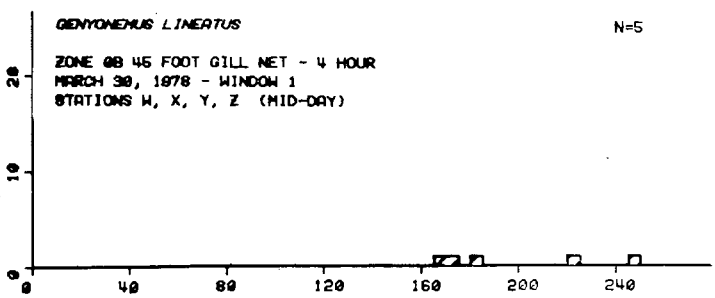
MID-DAY (4 HR)

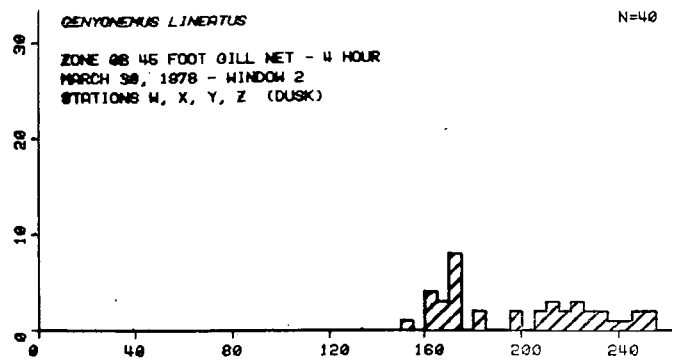
DUSK (4 HR)

No *Genyonemus lineatus* collected on March 30, 1978 at 30 feet, mid-day.




NUMBER OF INDIVIDUALS

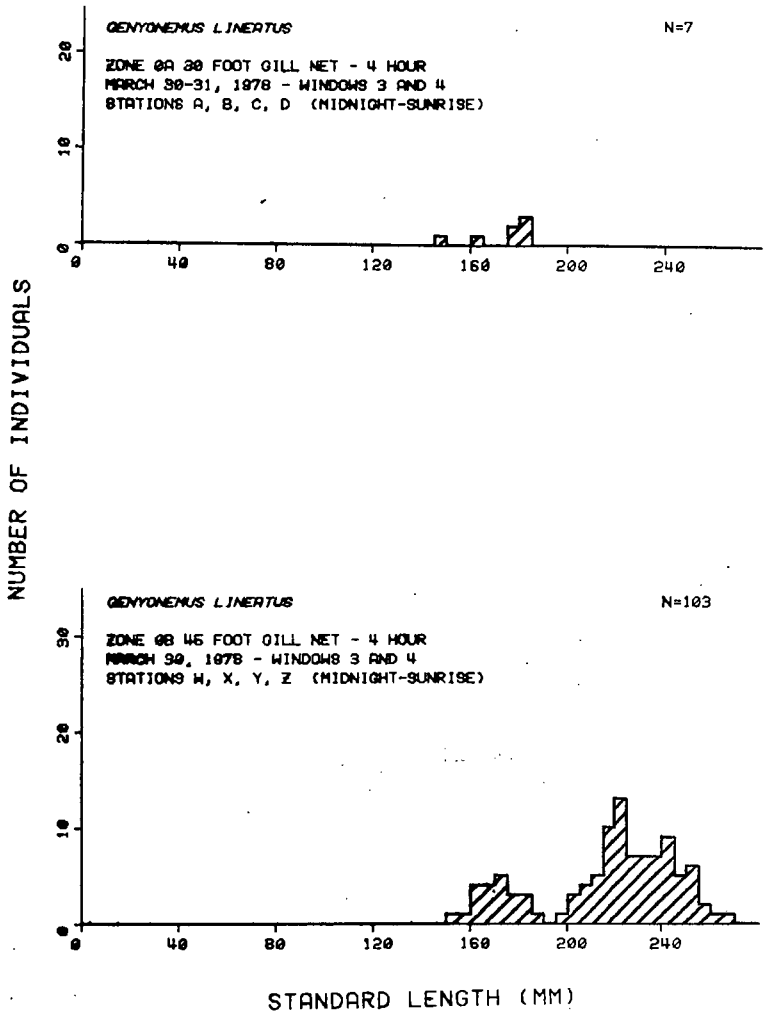



STANDARD LENGTH (MM)

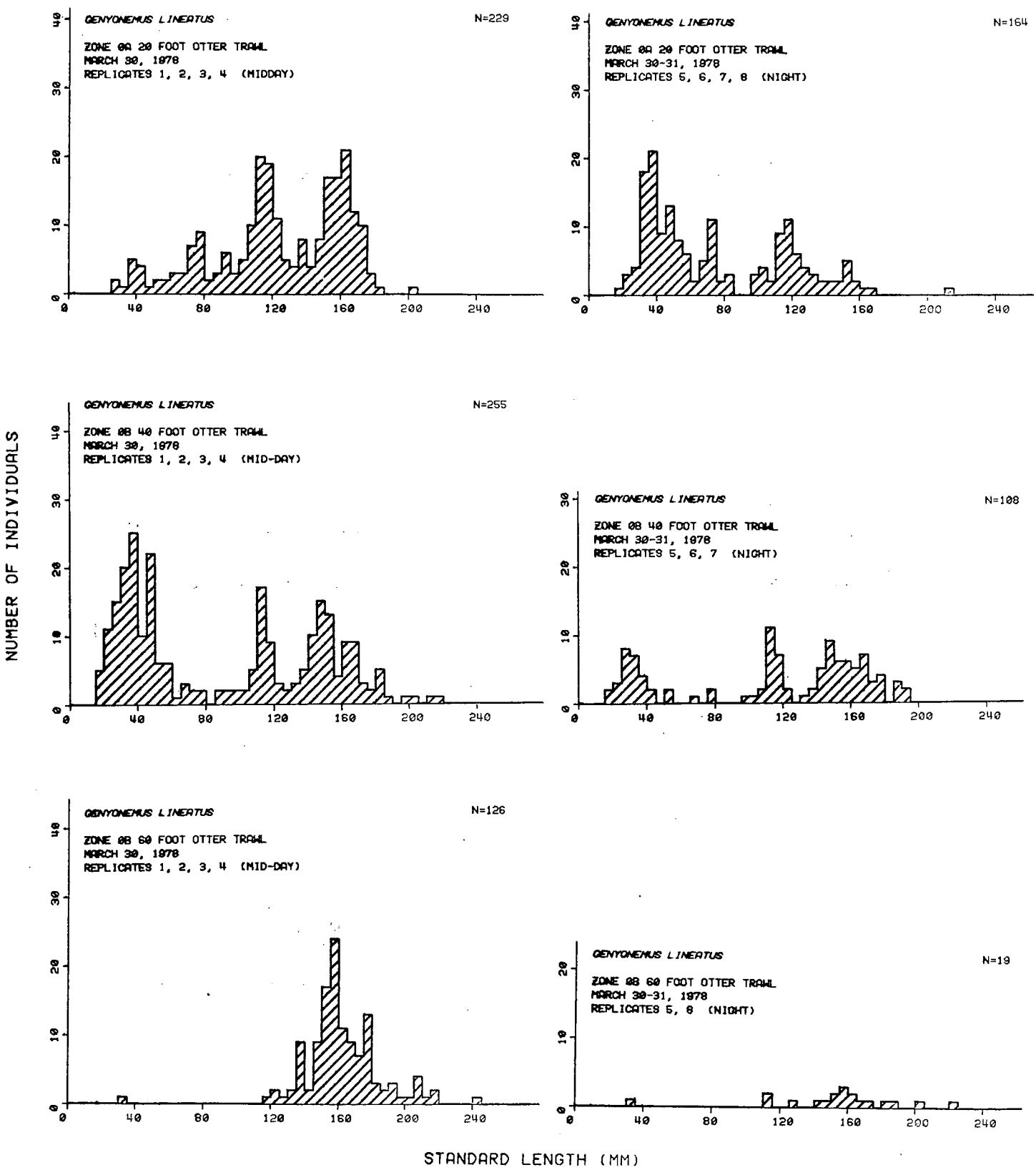
Length frequency histograms of *Genyonemus lineatus* collected in four gill nets at 30 and 45 feet at San Onofre (Zones OA, OB) on March 30-31, 1978. Gill nets were set during 4 hour periods at mid-day and dusk. Poor weather conditions precluded the mid-night retrieval, the midnight-sunrise set period lasted 8 hours.

MIDNIGHT-SUNRISE (8 HR)

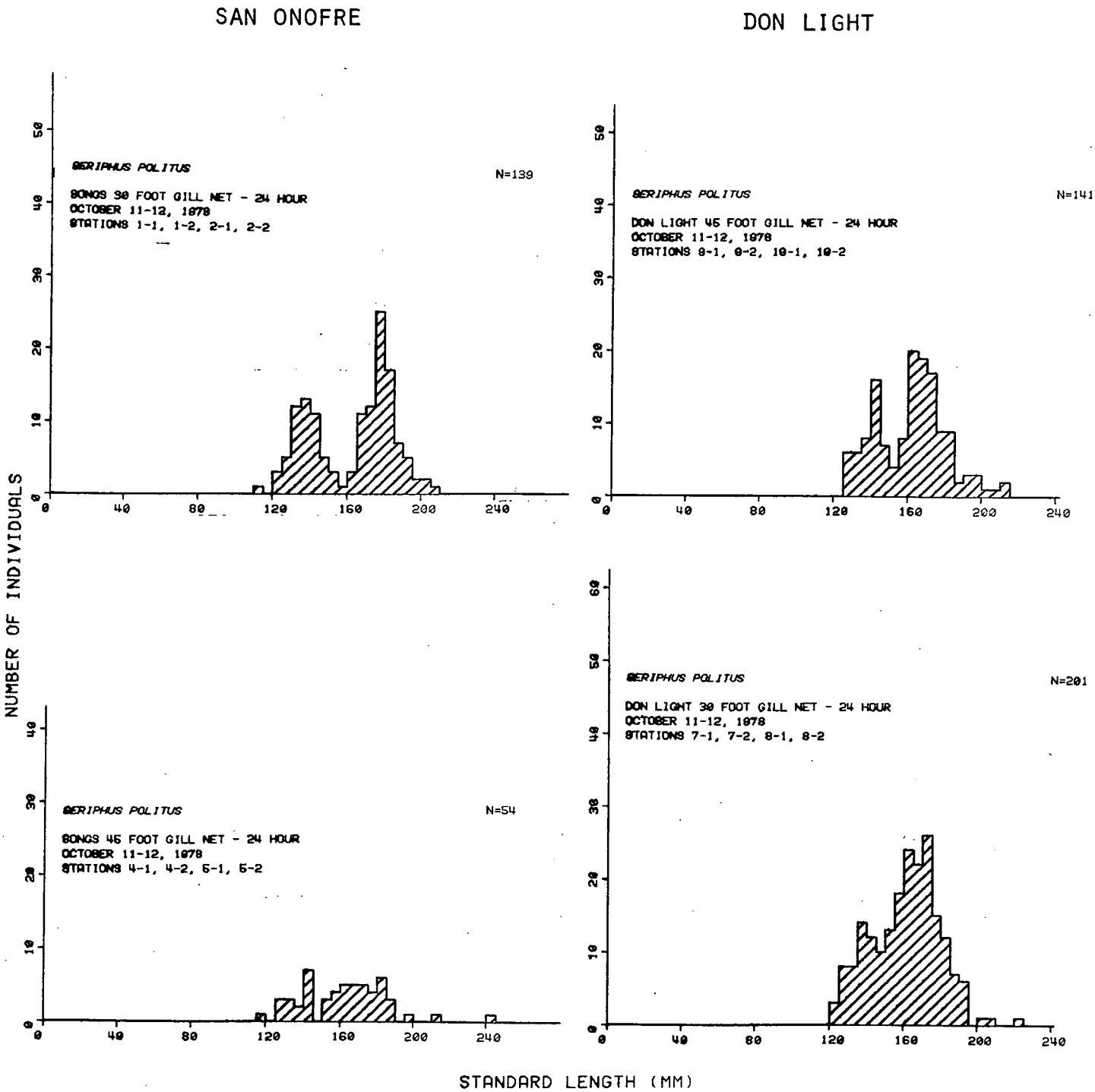



Length frequency histograms of *Genyonemus lineatus* collected on March 30-31, 1978. (continued)

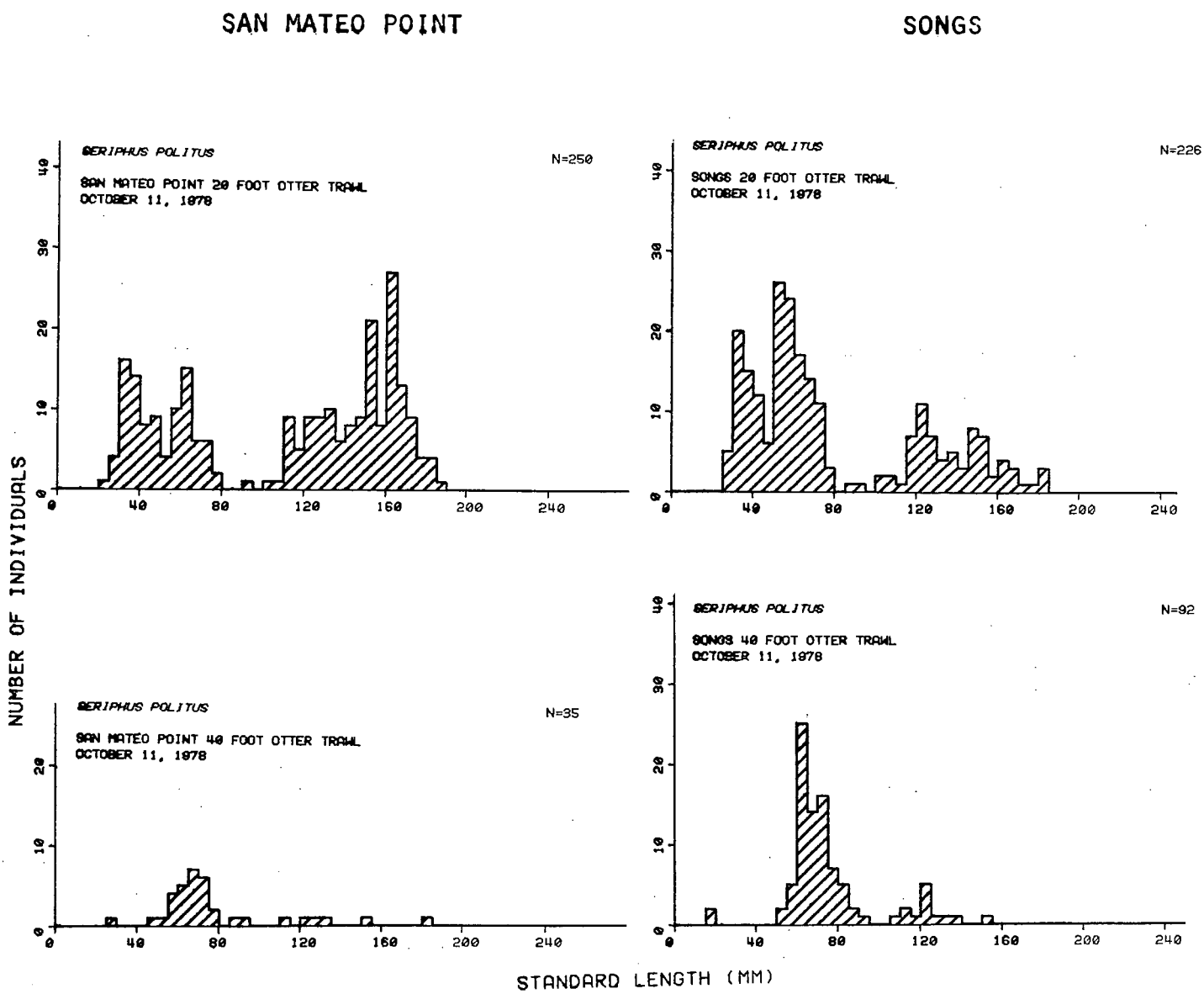
SAN ONOFRE




Length frequency histograms of *Genyonemus lineatus* collected in otter trawls conducted at 20, 40, and 60 feet at San Onofre during mid-day and night sampling periods on March 30-31, 1978.



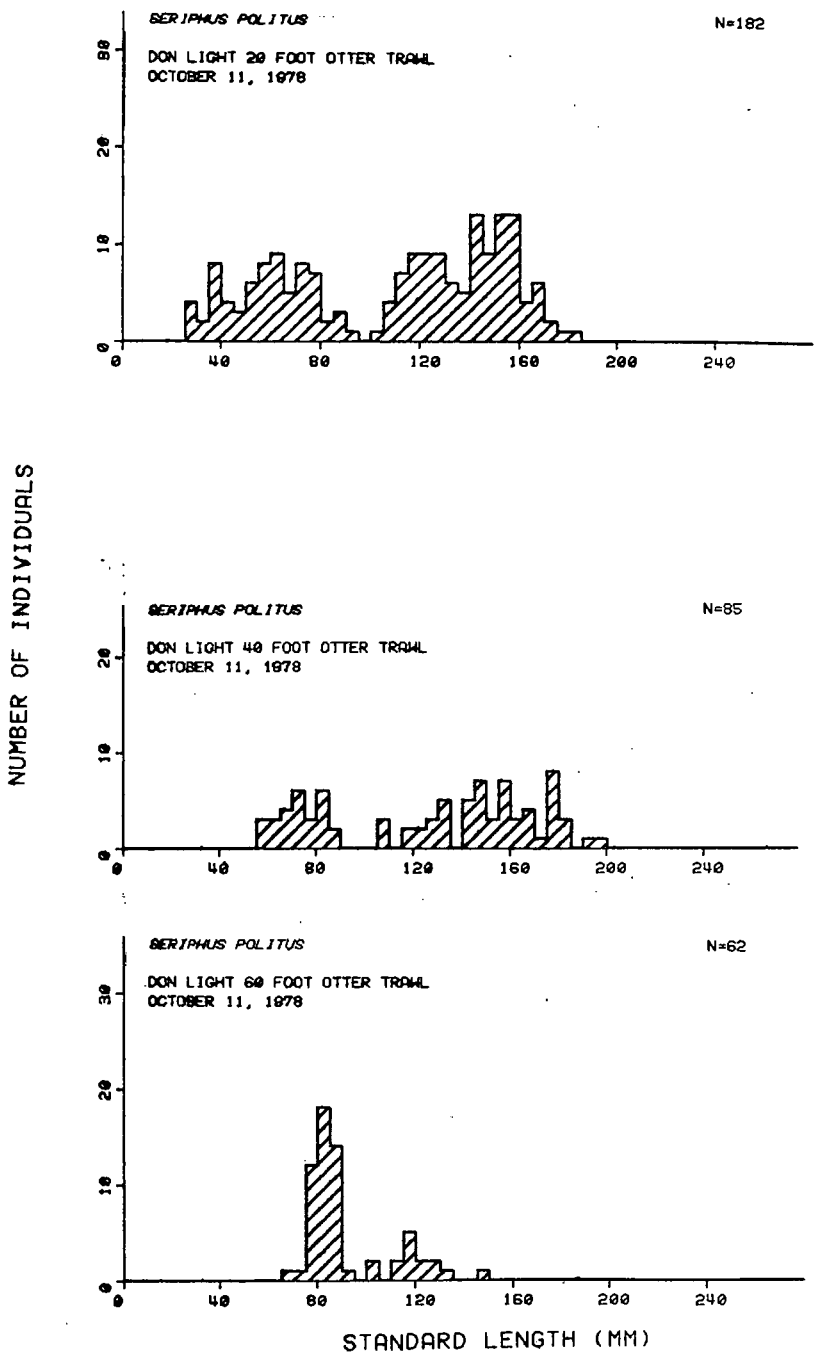

Length frequency histograms of *Seriphus politus* collected on October 11-12, 1978. (continued)




No *Seriphus politus* collected on October 11, 1978 at 60 feet in San Mateo Point and San Onofre otter trawls.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on October 11, 1978.

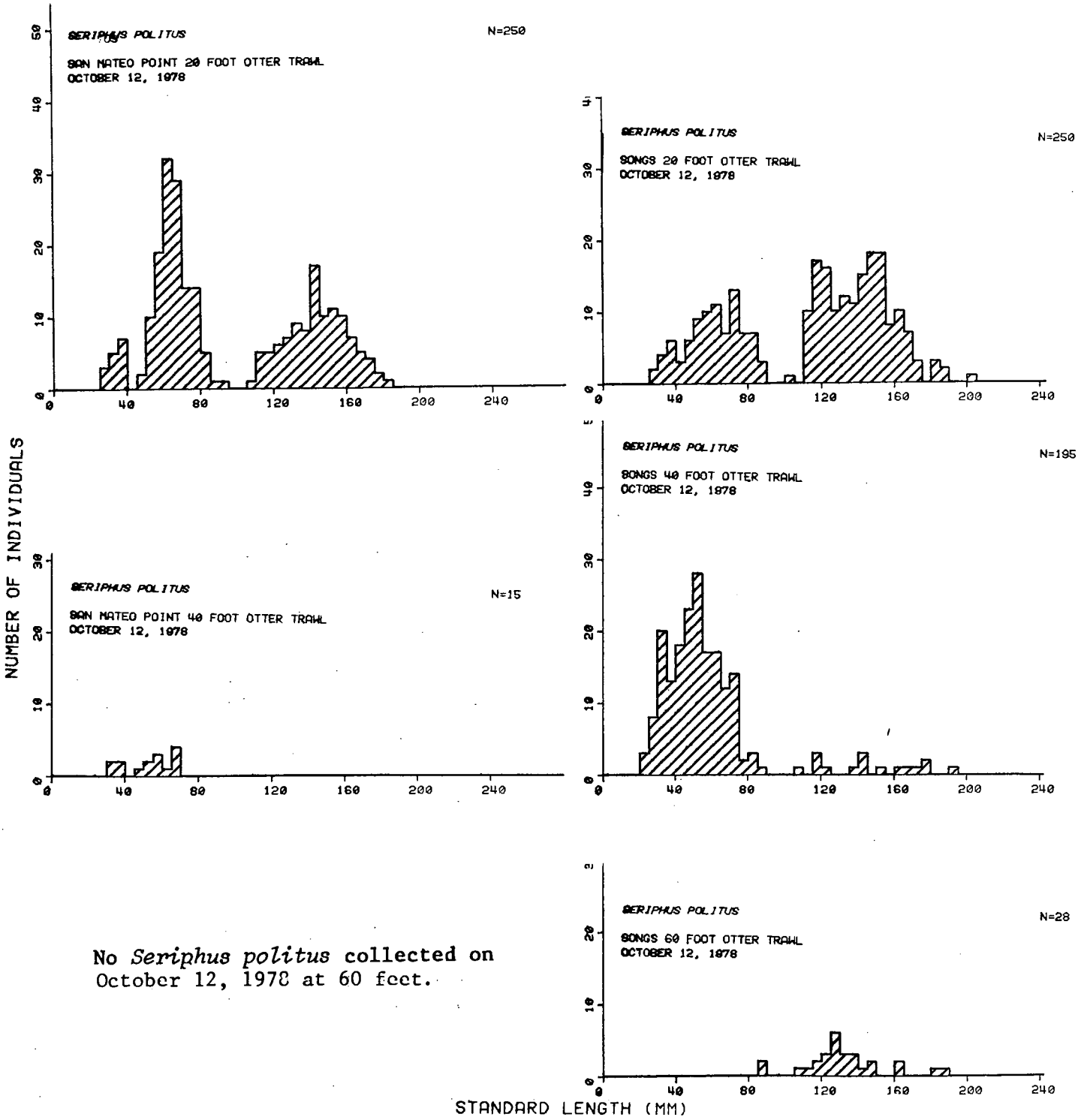
DON LIGHT




Length frequency histograms of *Seriphus politus* collected on October 11, 1978. (continued)

SAN MATEO POINT

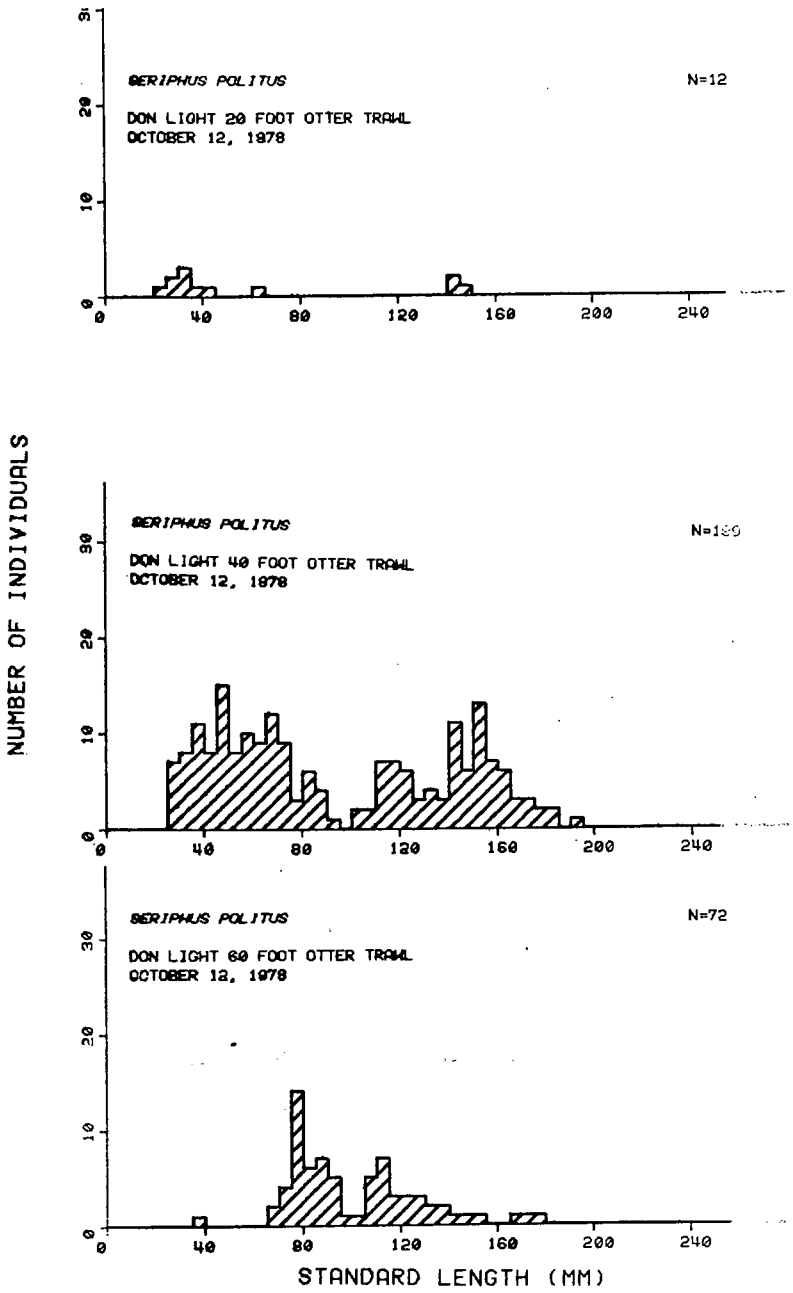
SAN ONOFRE




No *Seriphus politus* collected on October 12, 1978 at 60 feet.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on October 12, 1978.

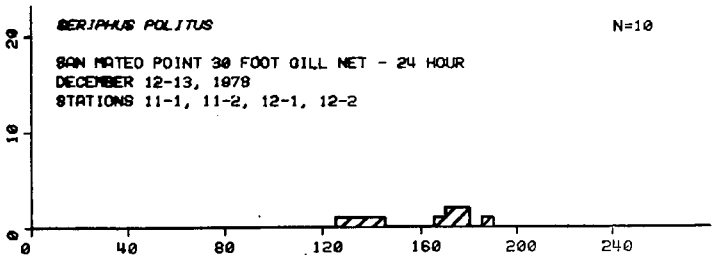
DON LIGHT

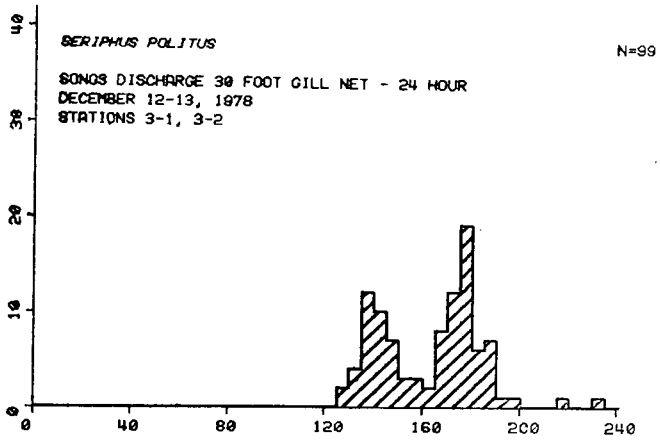



Length frequency histograms of *Seriphus politus* collected on October 12, 1978. (continued)

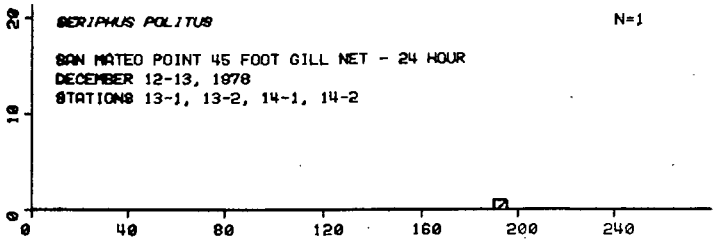
SAN MATEO POINT

SONGS DISCHARGE



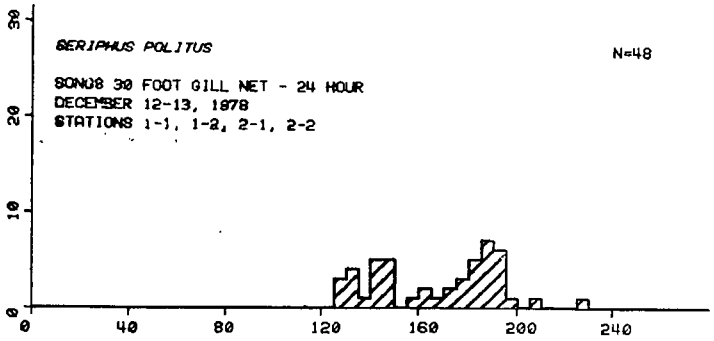

NUMBER OF INDIVIDUALS



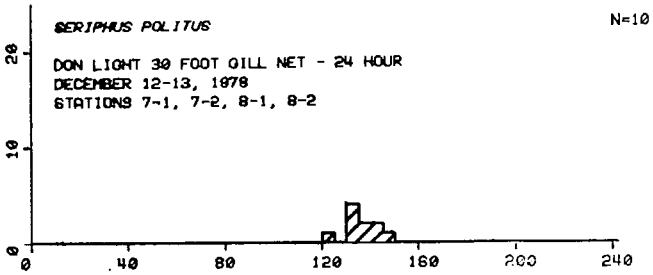

STANDARD LENGTH (MM)

Length frequency histograms of *Seriphus politus* collected in all gill net replicates at 30' and 45' at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on December 12-13, 1978.

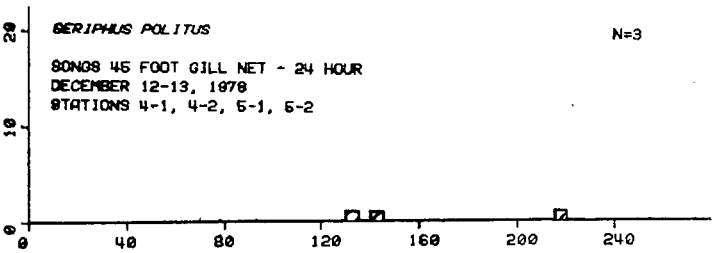
SAN ONOFRE




DON LIGHT



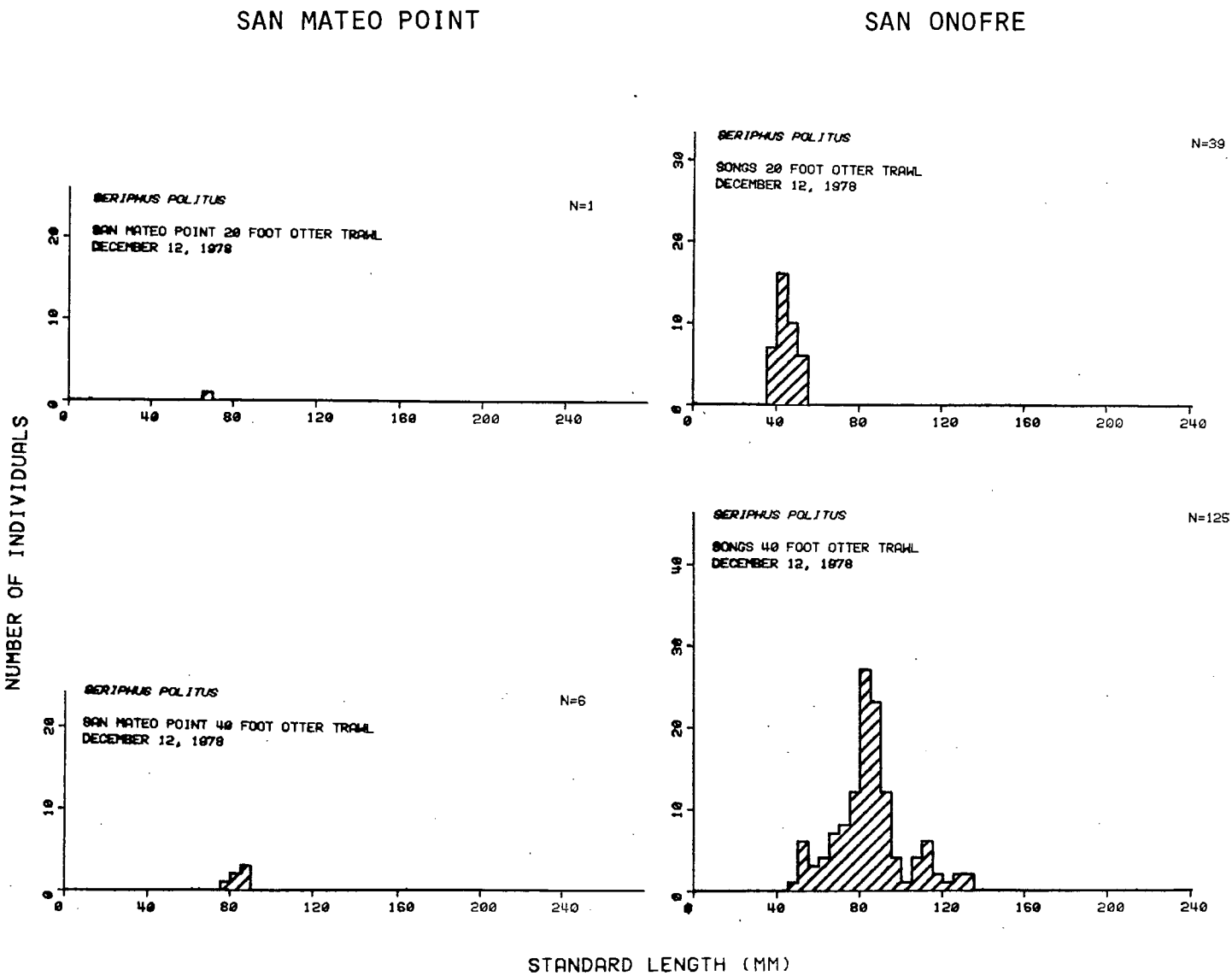

NUMBER OF INDIVIDUALS




No *Seriphus politus* collected on December 12-13, 1978 at 45 feet.

STANDARD LENGTH (MM)

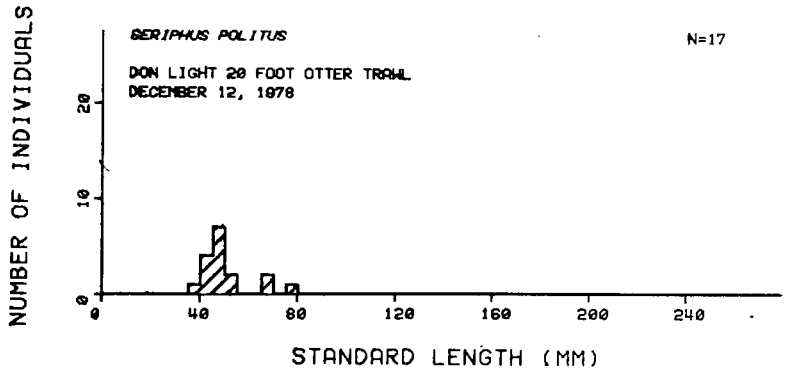
Length frequency histograms of *Seriphus politus* collected on December 12-13, 1978. (continued)




No *Seriphus politus* collected on December 12, 1978 in San Mateo Point and Songs 60 feet otter trawls.

Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on December 12, 1978.

DON LIGHT



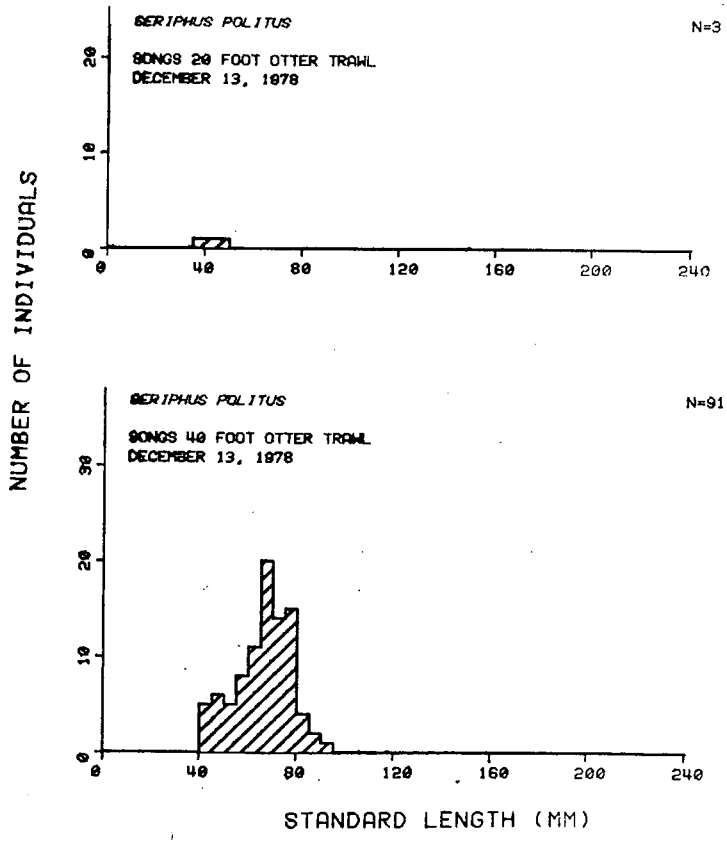

No *Seriphus politus* collected on December 12, 1978 at Don Light 40 feet and 60 feet otter trawls.

Length frequency histograms of *Seriphus politus* collected on December 12, 1978. (continued)

SAN MATEO POINT

SAN ONOFRE

No *Seriphus politus* collected on December 13, 1978 at San Mateo Point 20, 40, and 60 feet otter trawls.

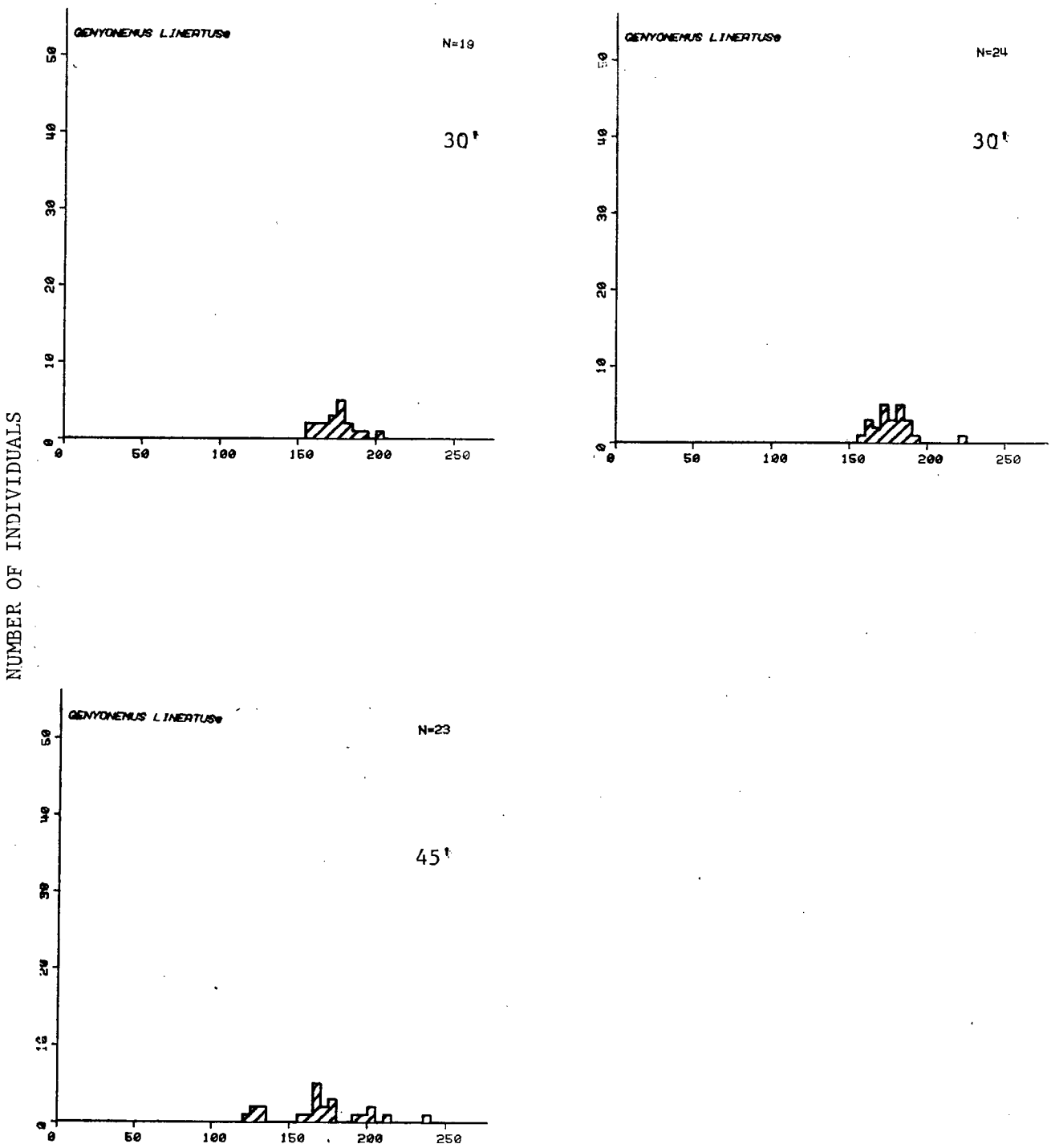



No *Seriphus politus* collected on December 13, 1978 at Songs 60 feet.

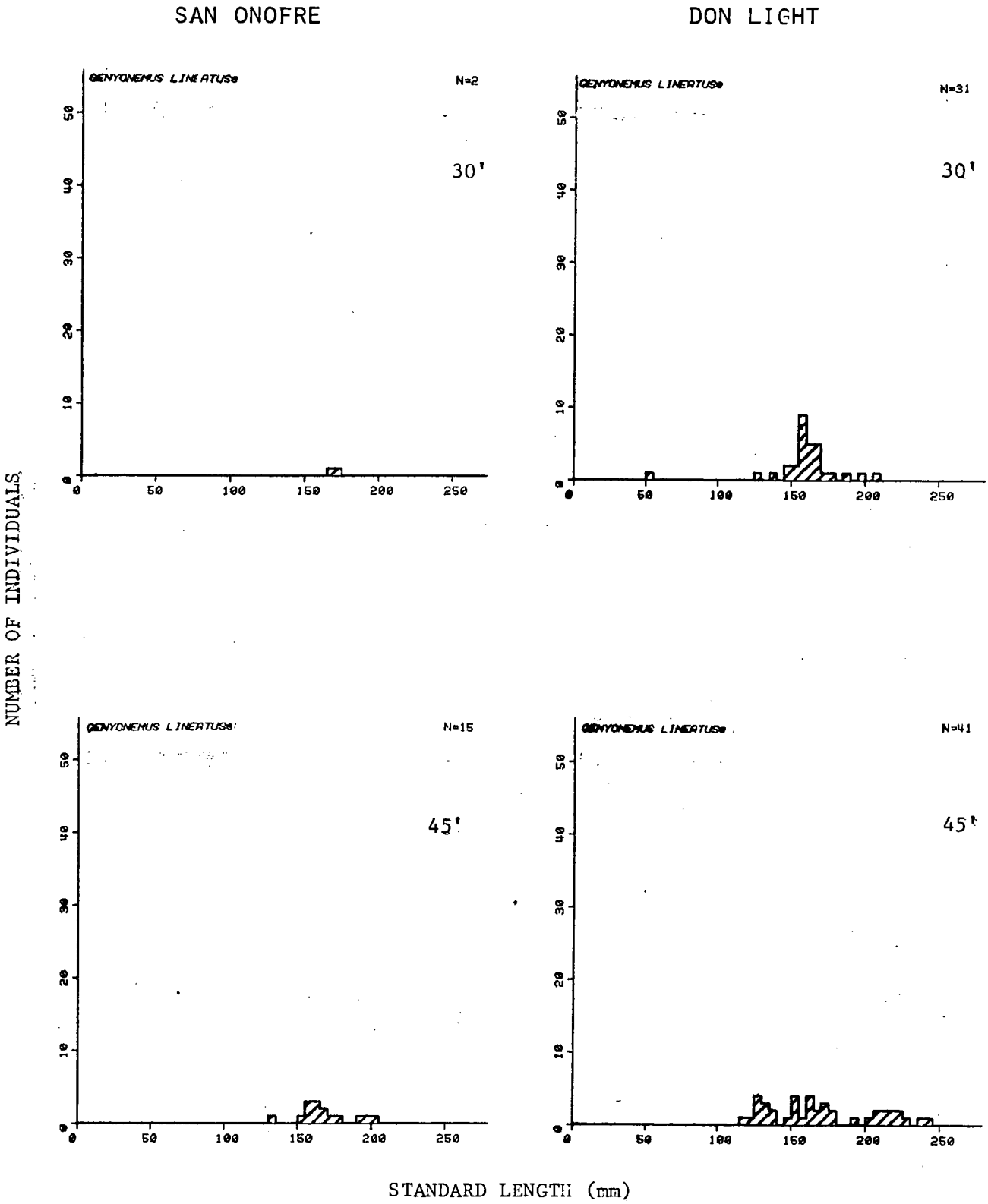
Length frequency histograms of *Seriphus politus* collected in four replicate otter trawls at 20, 40 and 60 feet at San Mateo Point, San Onofre, and Don Light on December 13, 1978.

SAN MATEO POINT

SAN ONOFRE UNIT 1 DISCHARGE



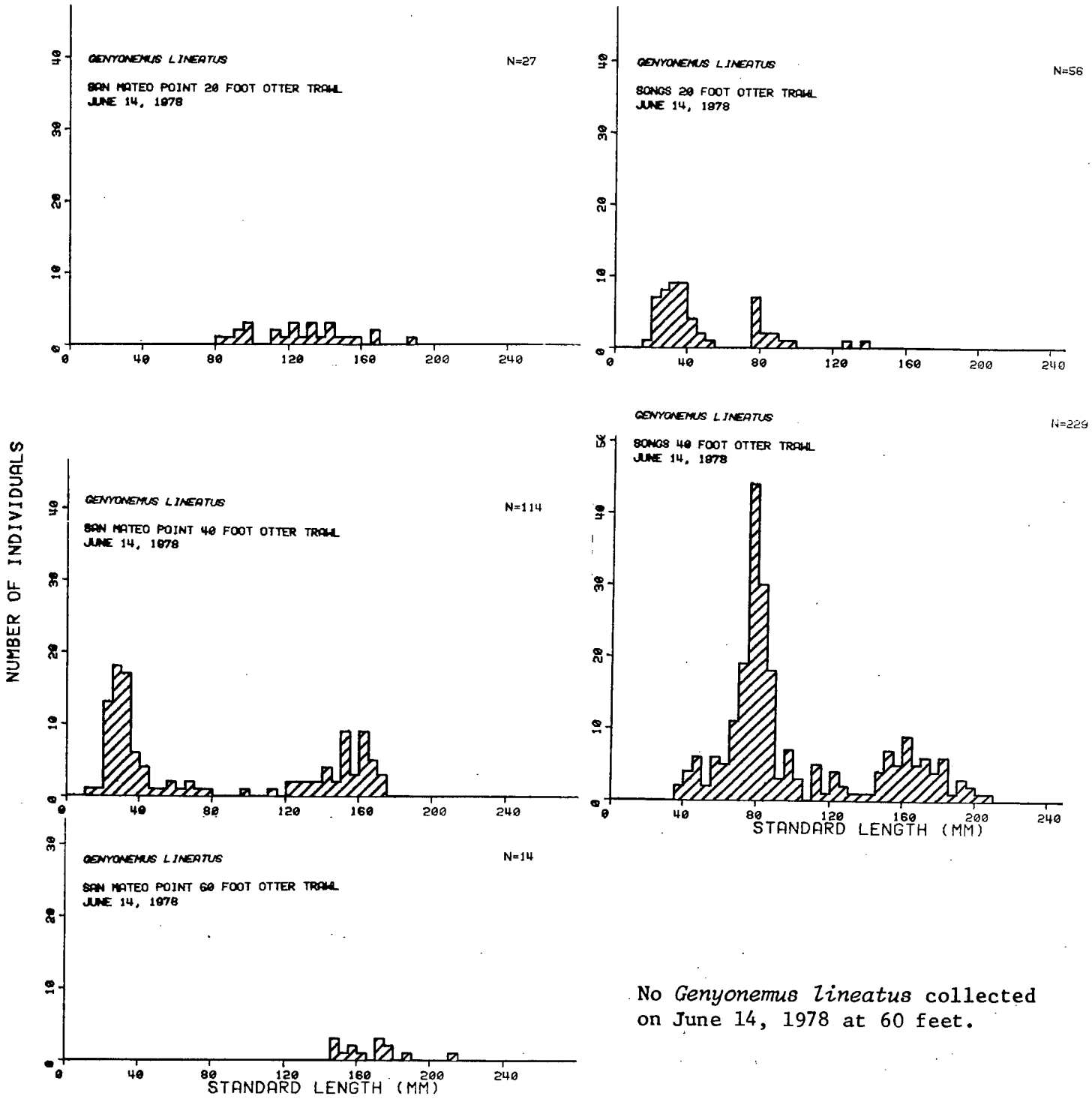

Length frequency histograms of *Genyonemus lineatus* collected in gill nets at 30 and 45 feet at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on June 14-15, 1978.




Length frequency histograms of *Genyonemus lineatus* collected on June 14-15, 1978. (continued)

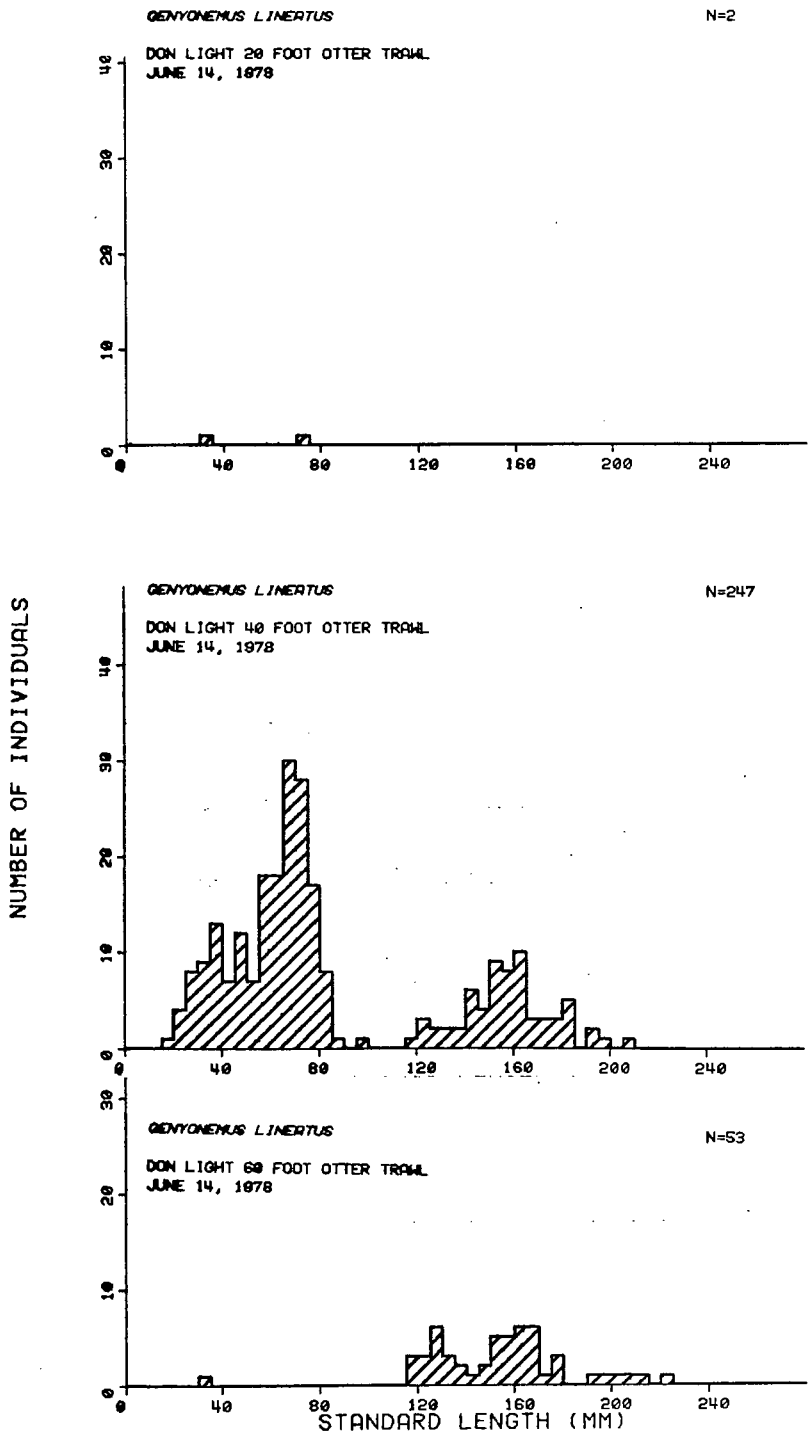
SAN MATEO POINT

SAN ONOFRE




No *Genyonemus lineatus* collected on June 14, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on June 14, 1978.

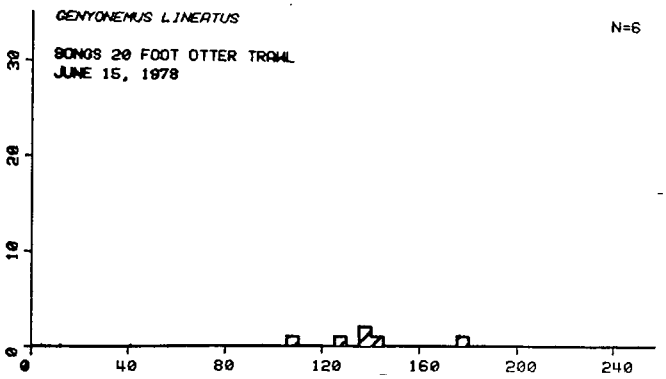



Length frequency histograms of *Genyonemus lineatus* collected on June 14, 1978. (continued)

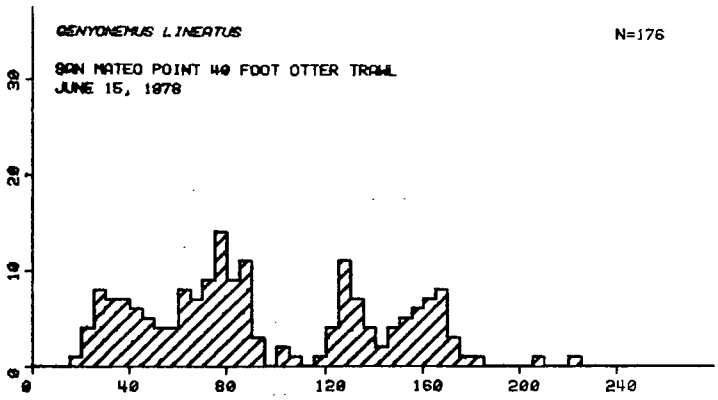
SAN MATEO POINT

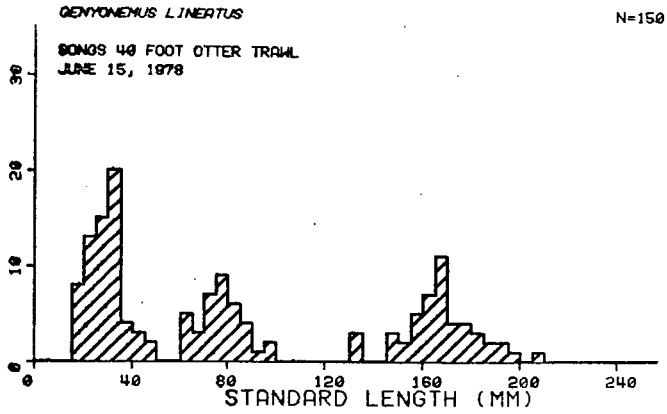
SAN ONOFRE

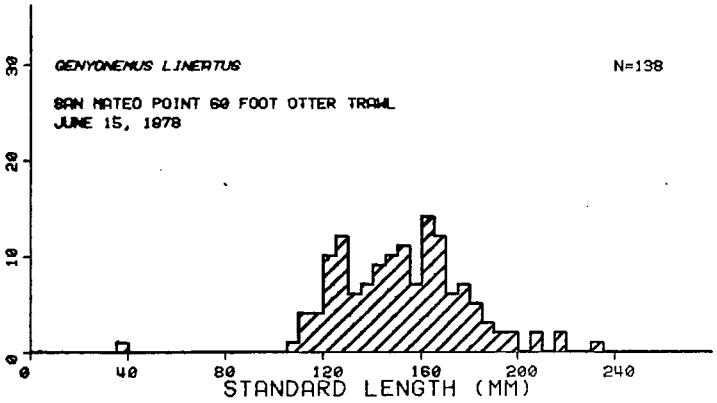
No *Genyonemus lineatus* collected on June 15, 1978 at 20 feet.




NUMBER OF INDIVIDUALS



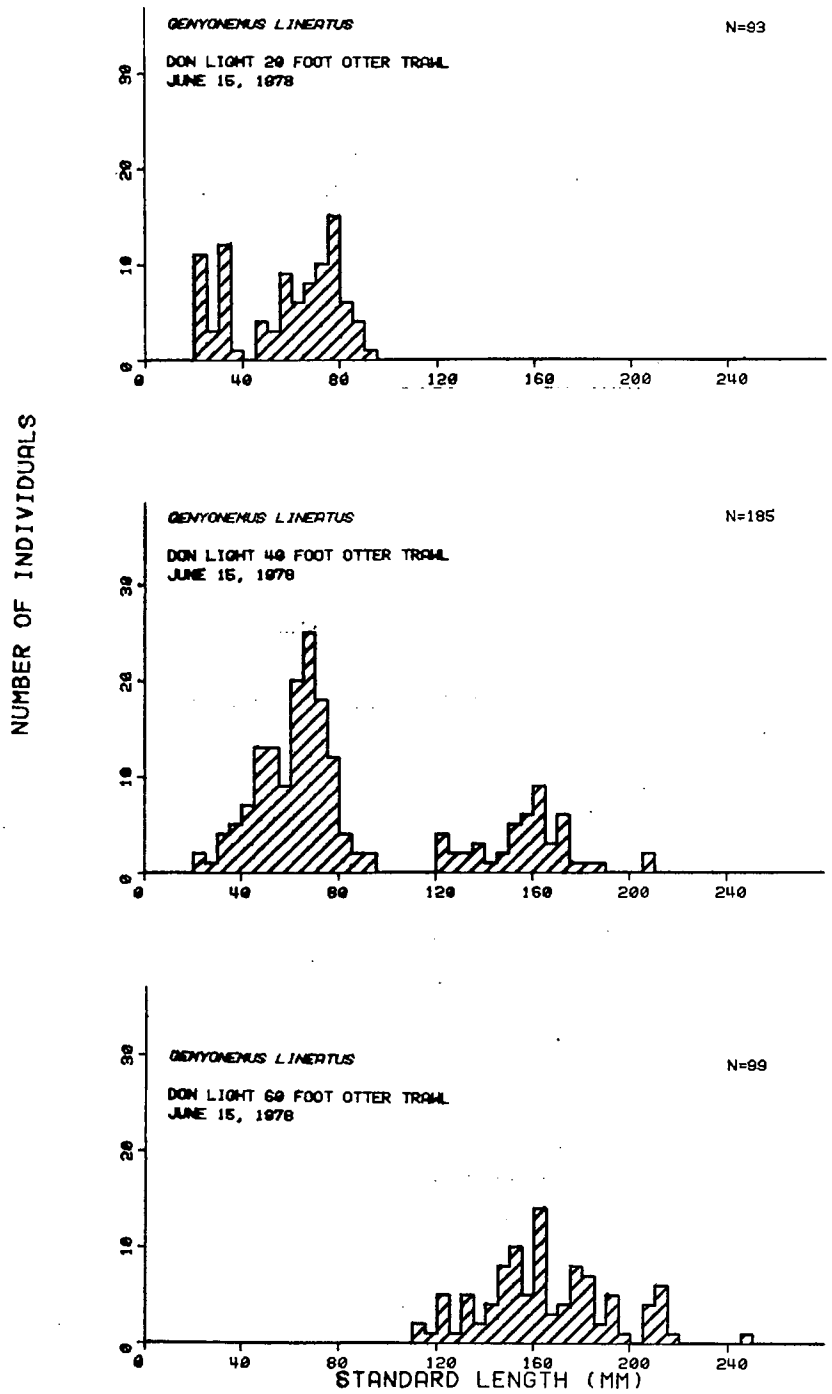



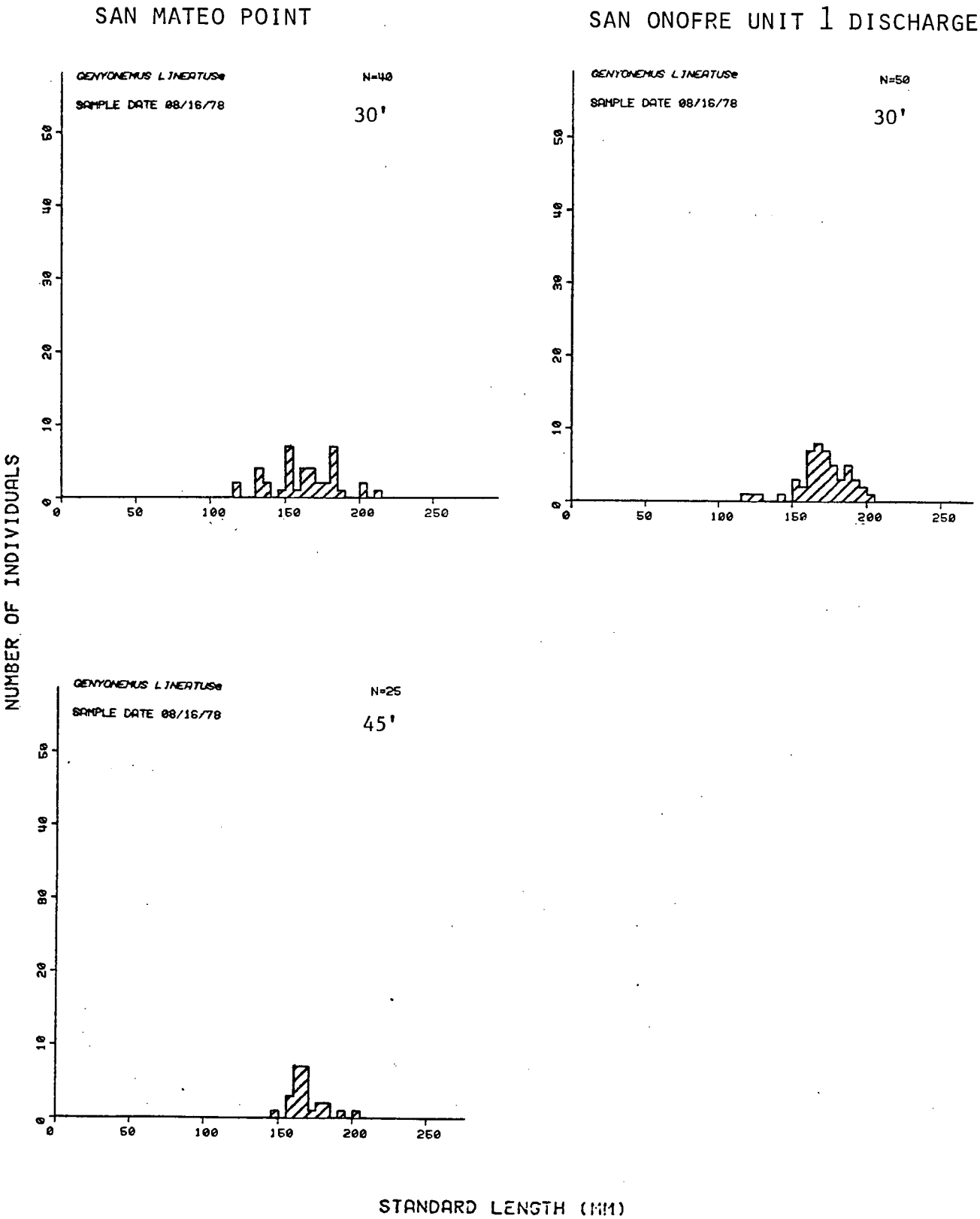

No *Genyonemus lineatus* collected on June 15, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on June 15, 1978.

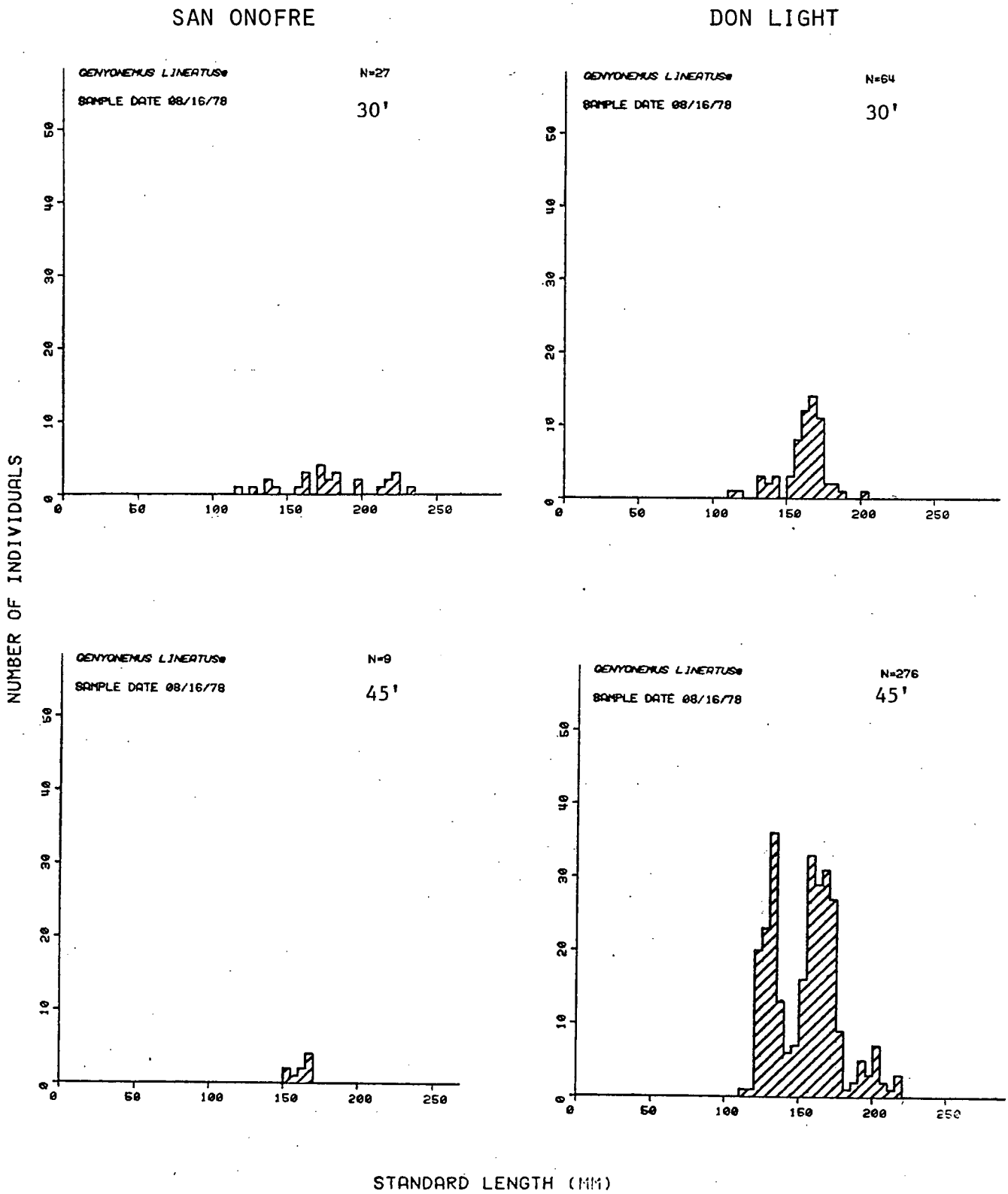
DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected on June 15, 1978. (continued)



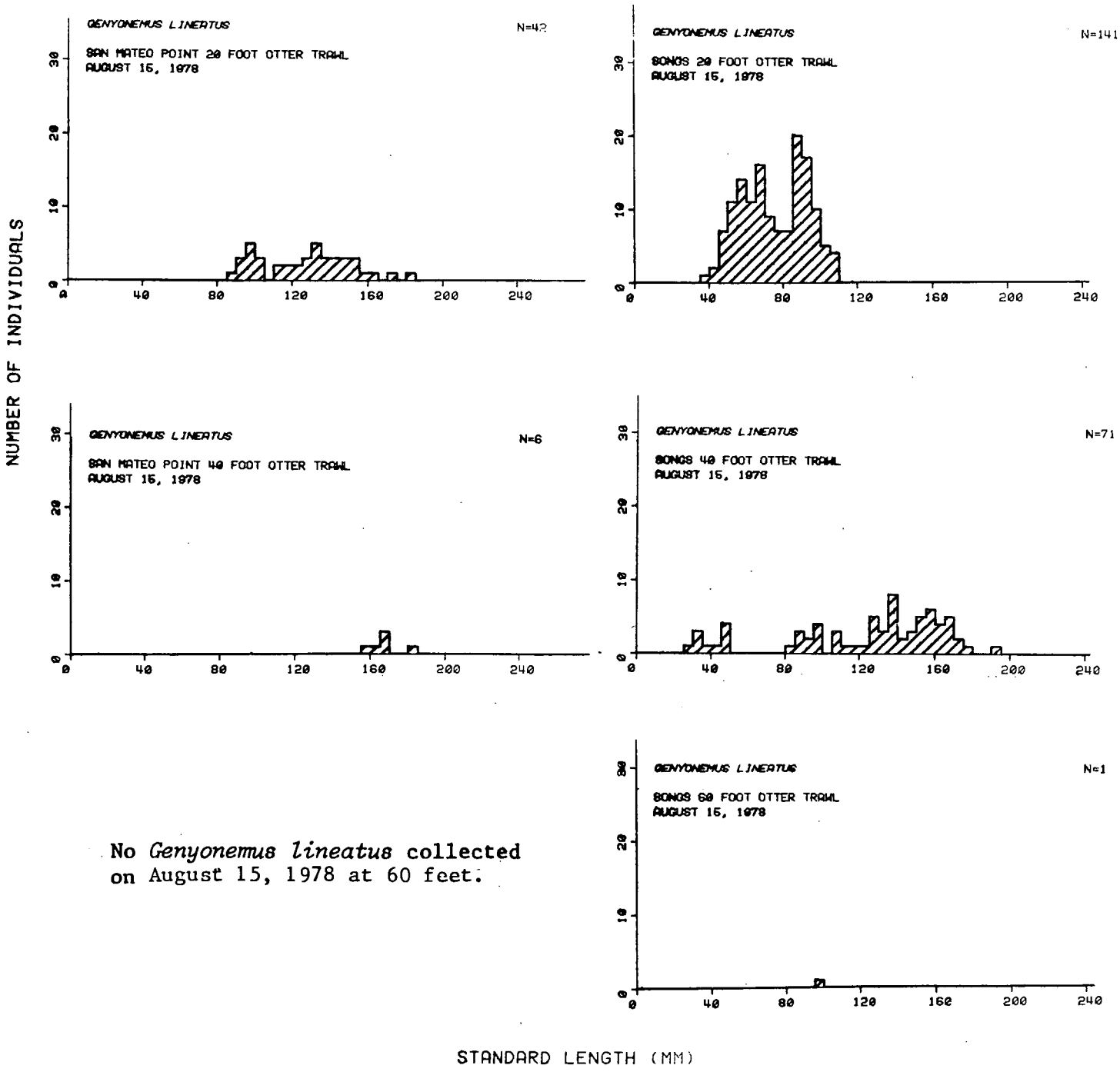

Length frequency histograms of *Genyonemus lineatus* collected in gill nets at 30 and 45 feet at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on August 15-16, 1978.




Length frequency histograms of *Genyonemus lineatus* collected on Auguts 15-16, 1978. (continued)

SAN MATEO POINT

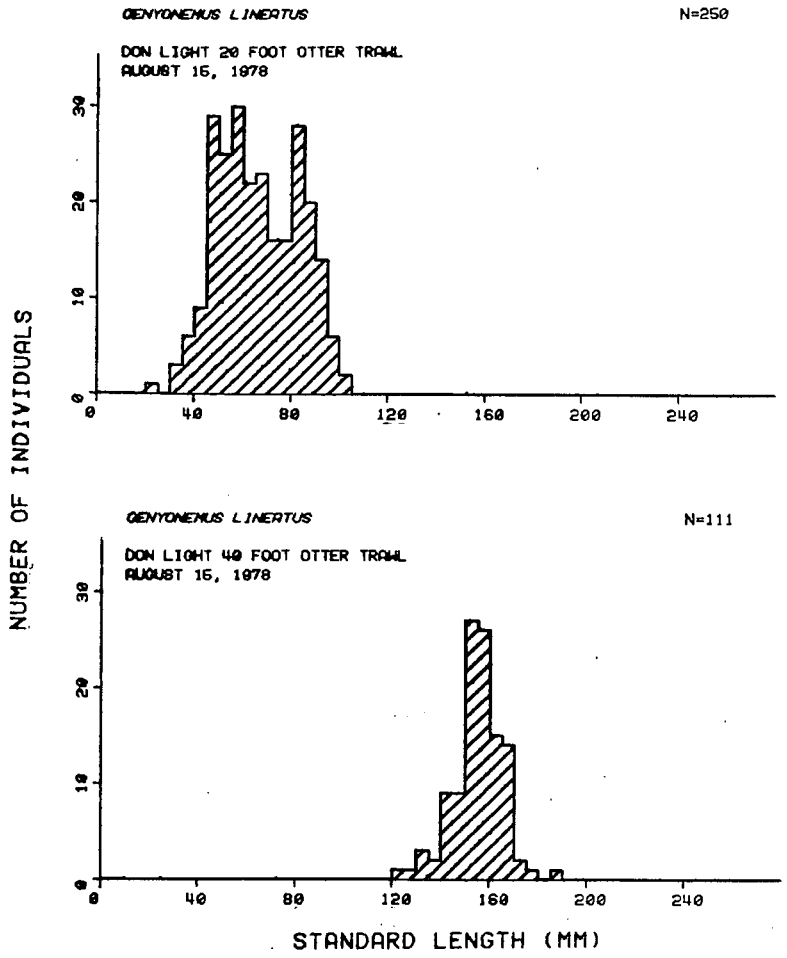
SAN ONOFRE




No *Genyonemus lineatus* collected on August 15, 1978 at 60 feet.

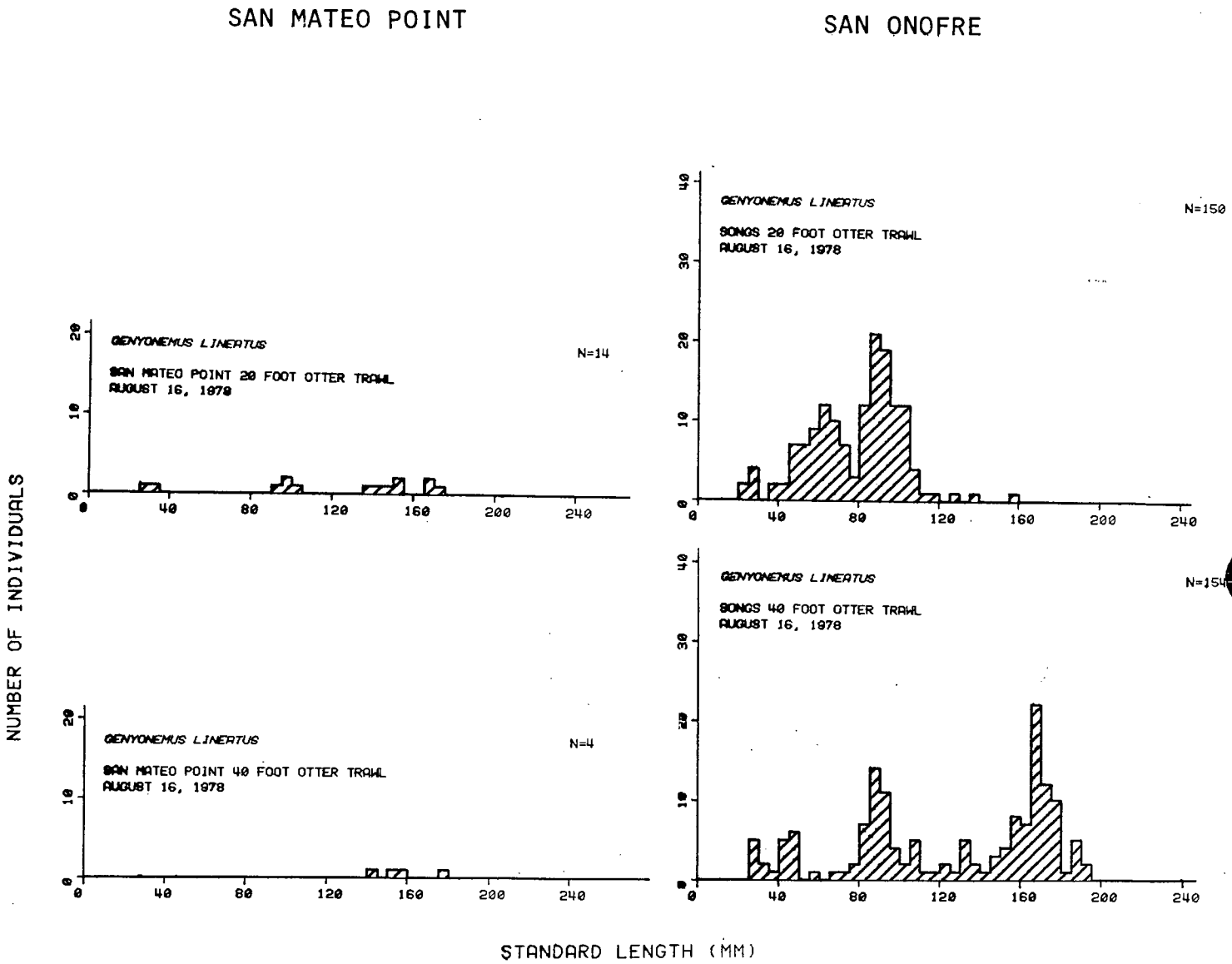
Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on August 15, 1978.

# DON LIGHT




No *Genyonemus lineatus* collected on August 15, 1978 at 60 feet.

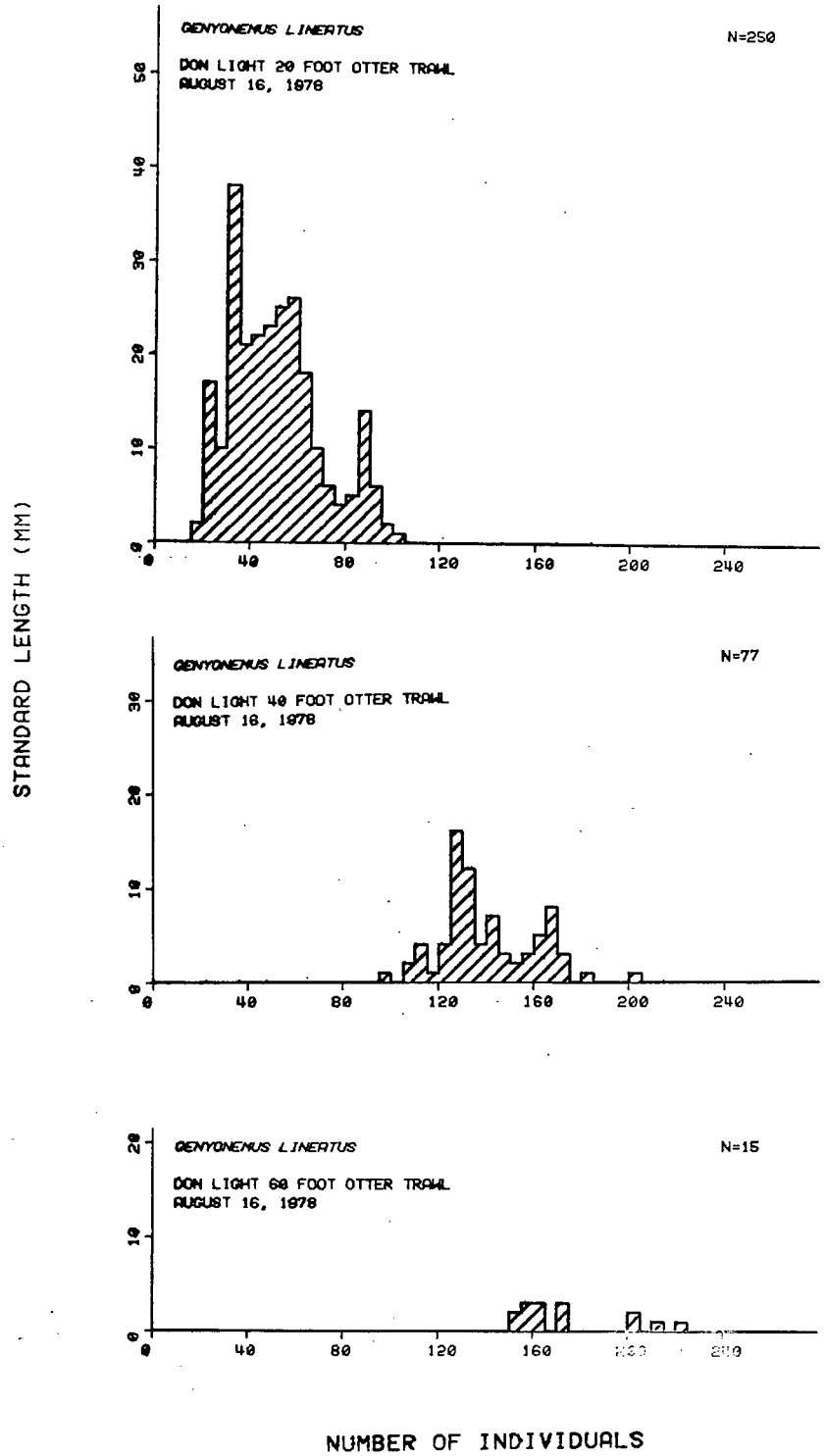
Length frequency histograms of *Genyonemus lineatus* collected on August 15, 1978. (continued)




No *Genyonemus lineatus* collected on August 16, 1978 at 60 feet in San Mateo Point and San Onofre otter trawls.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' in San Mateo Point, San Onofre, and Don Light on August 16, 1978.

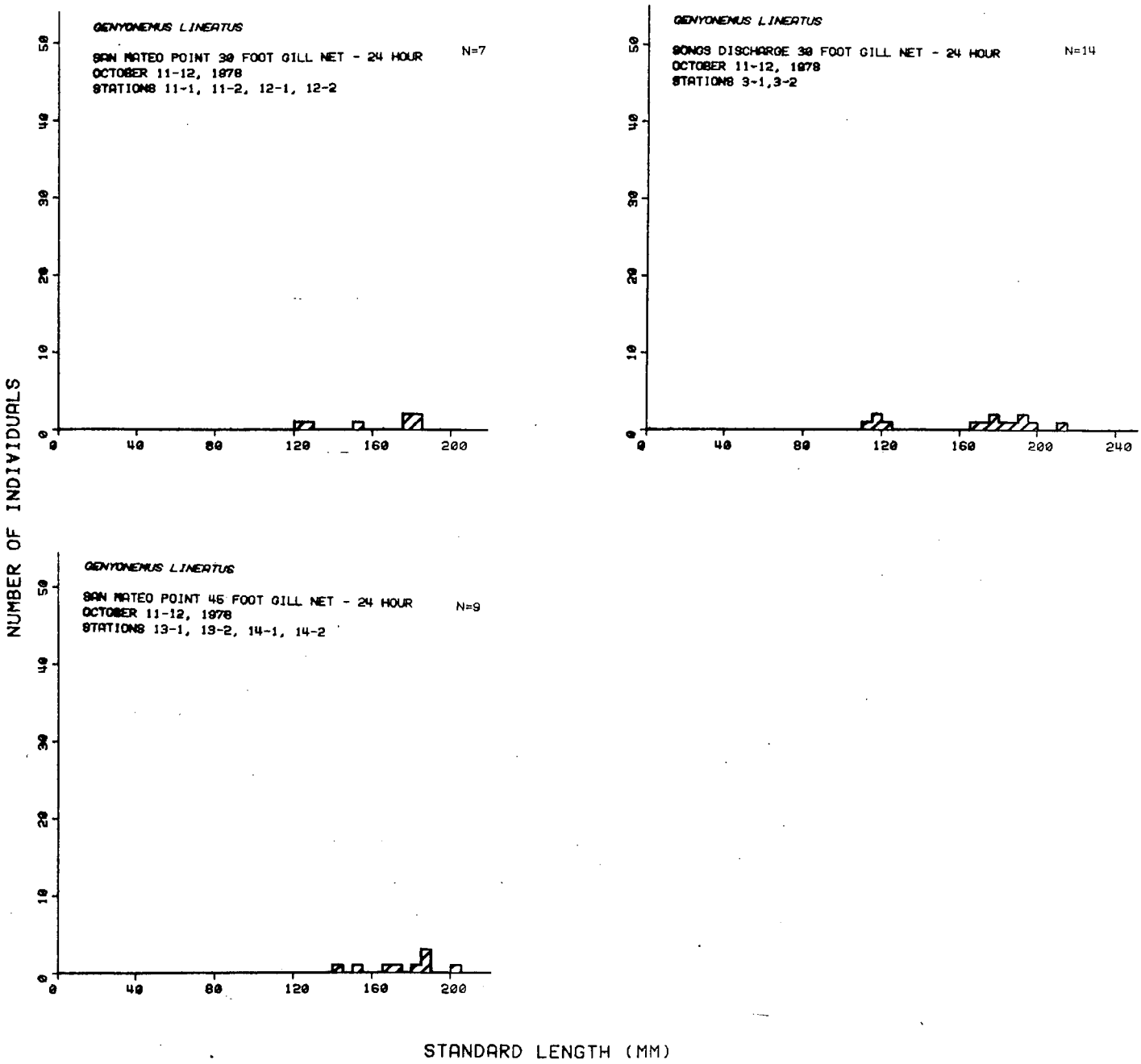
DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected on August 16, 1978. (continued)

SAN MATEO POINT

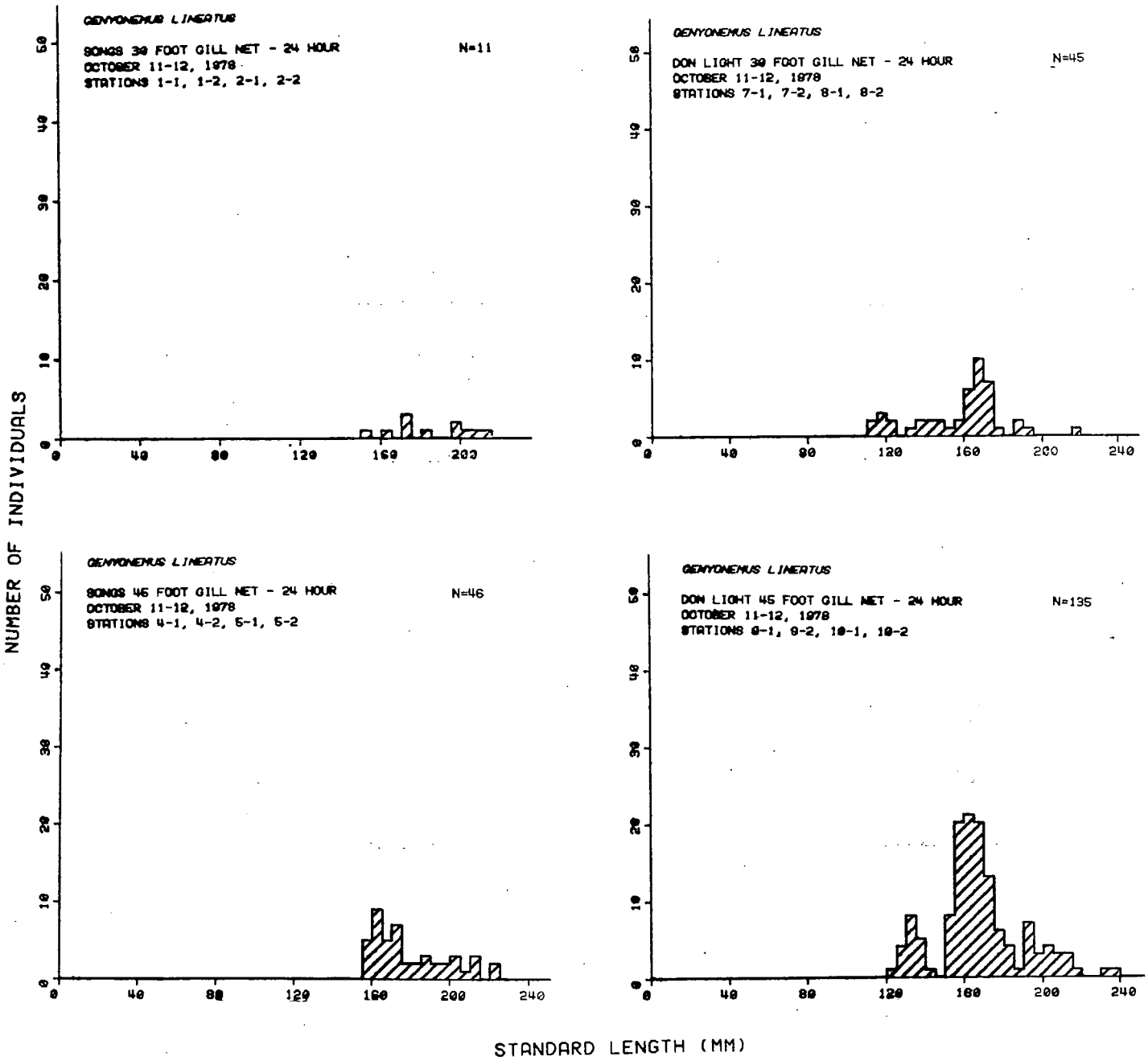
SONGS DISCHARGE




Length frequency histograms of *Genyonemus lineatus* collected in gill nets at 30 and 45 feet at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on October 11-12, 1978.

SAN ONOFRE

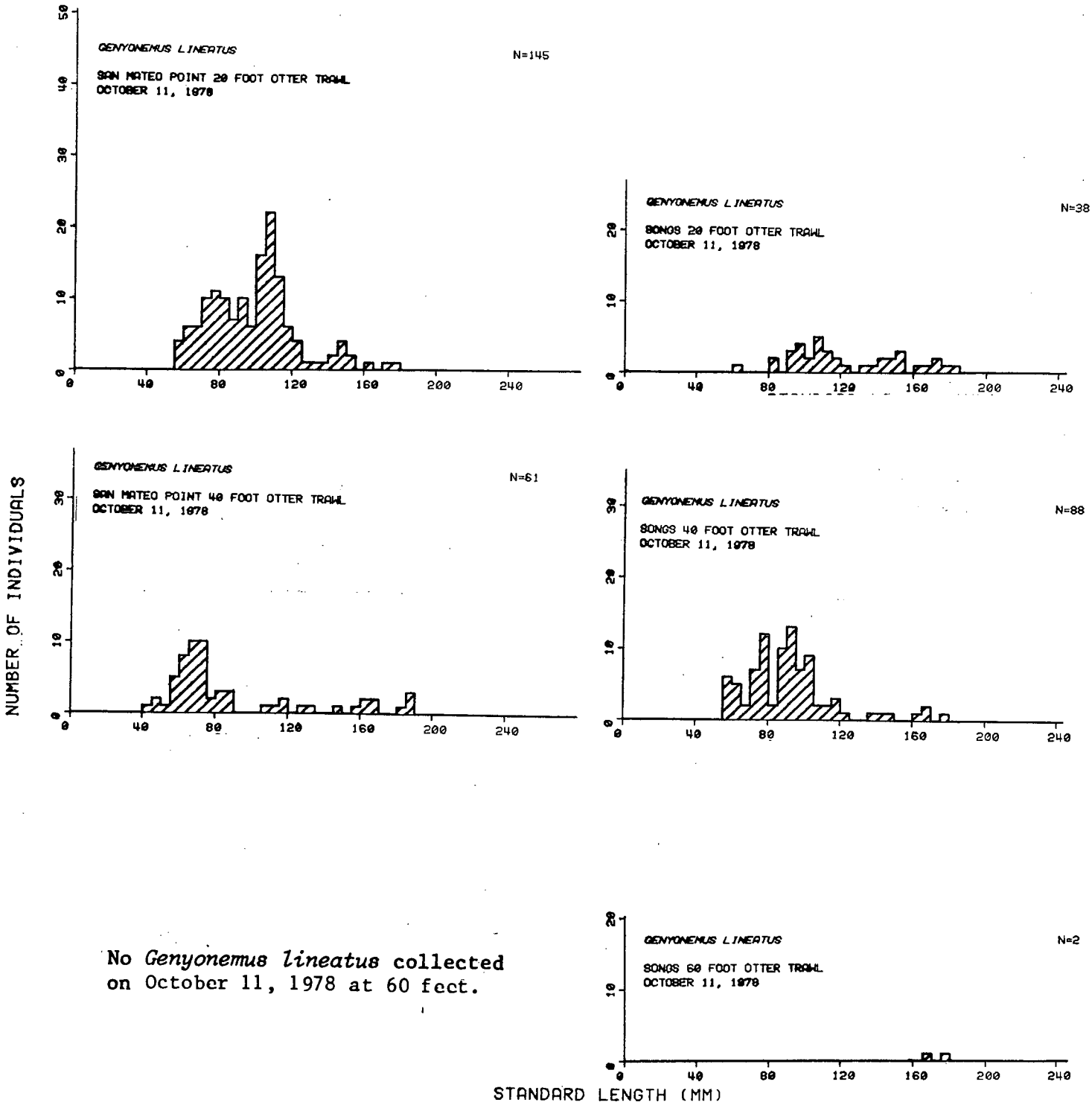
DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected on October 11-12, 1978. (continued)

SAN MATEO POINT

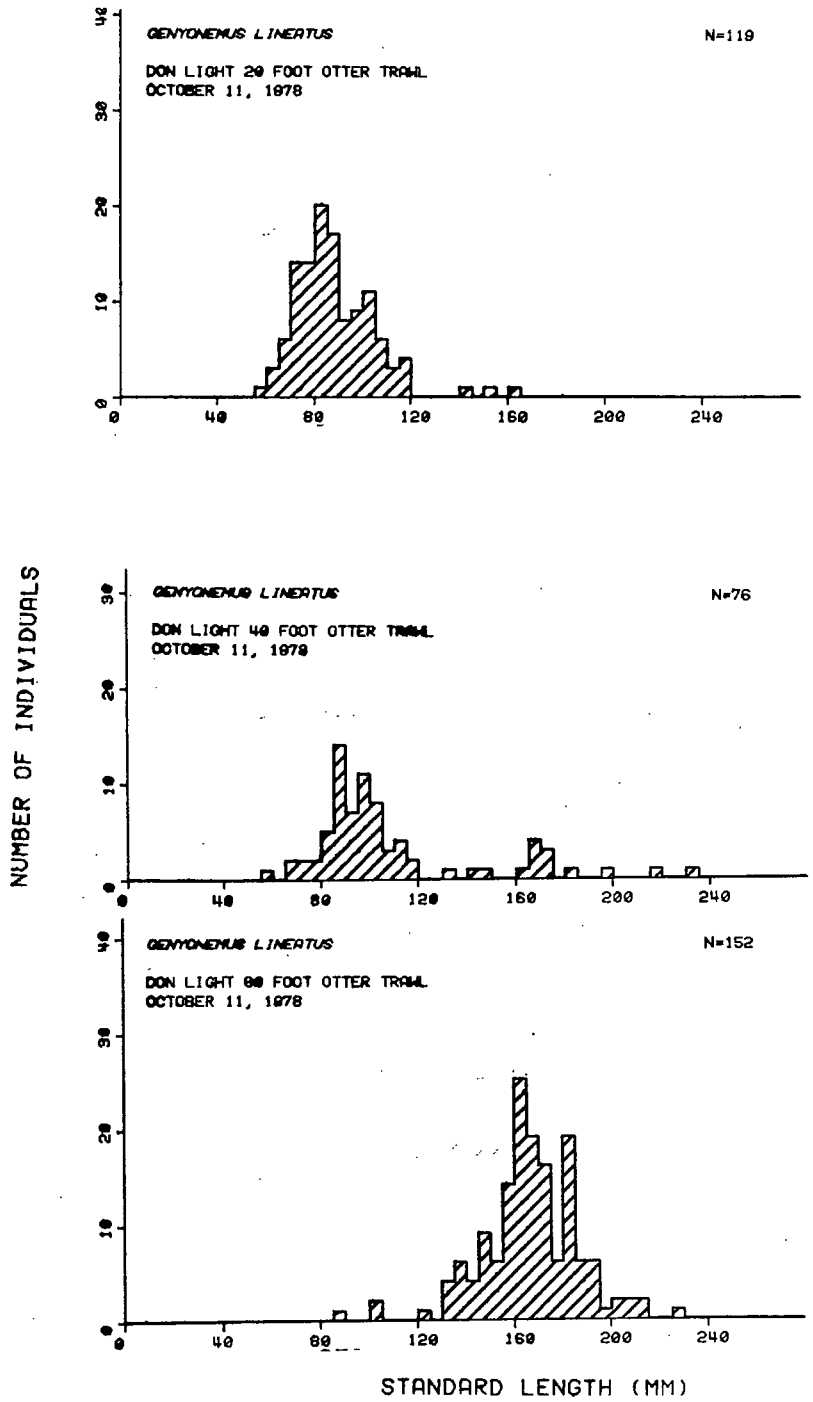
SAN ONOFRE




No *Genyonemus lineatus* collected on October 11, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on October 11, 1978.

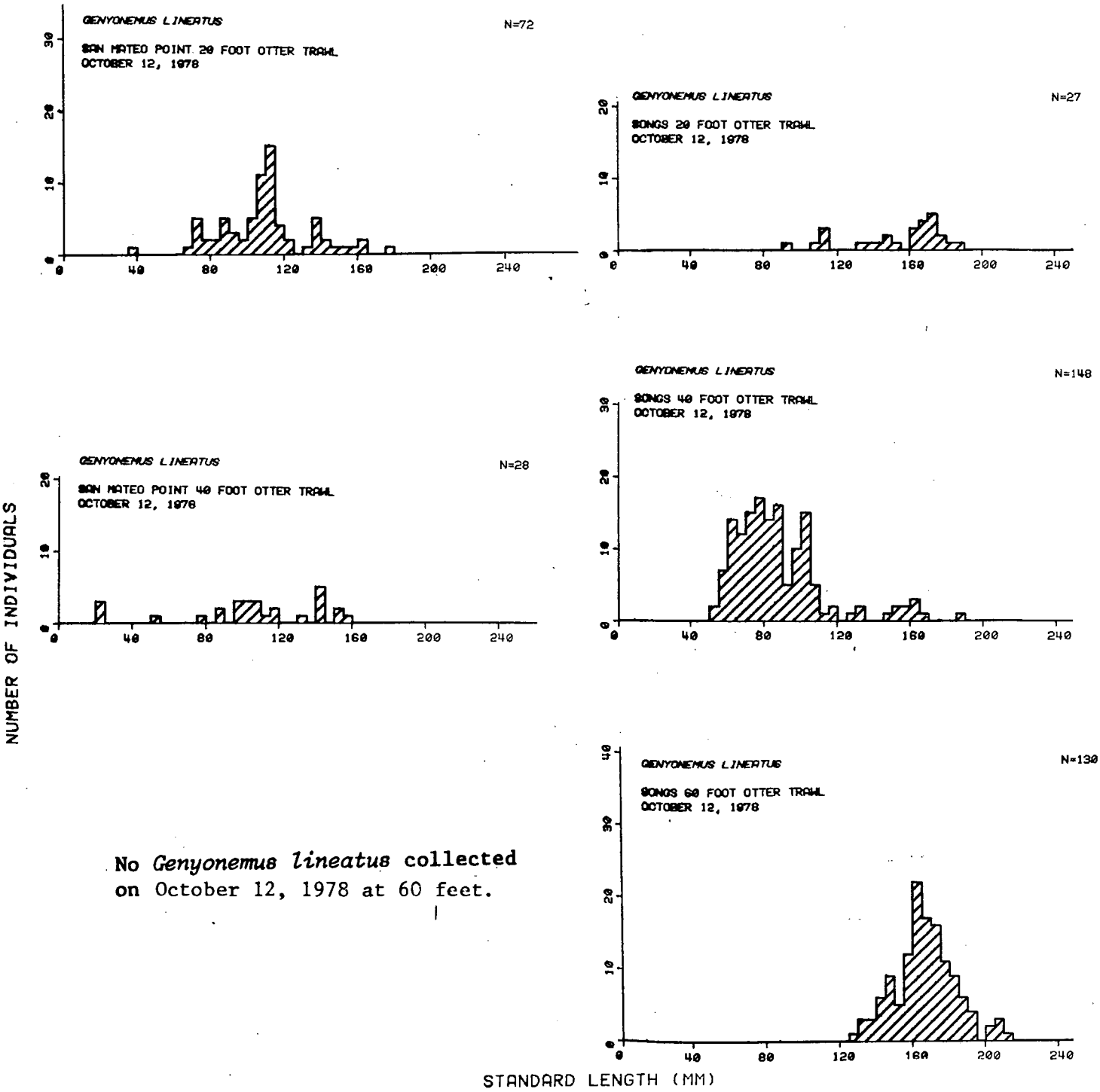
# DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected on October 11, 1978. (continued)

SAN MATEO POINT

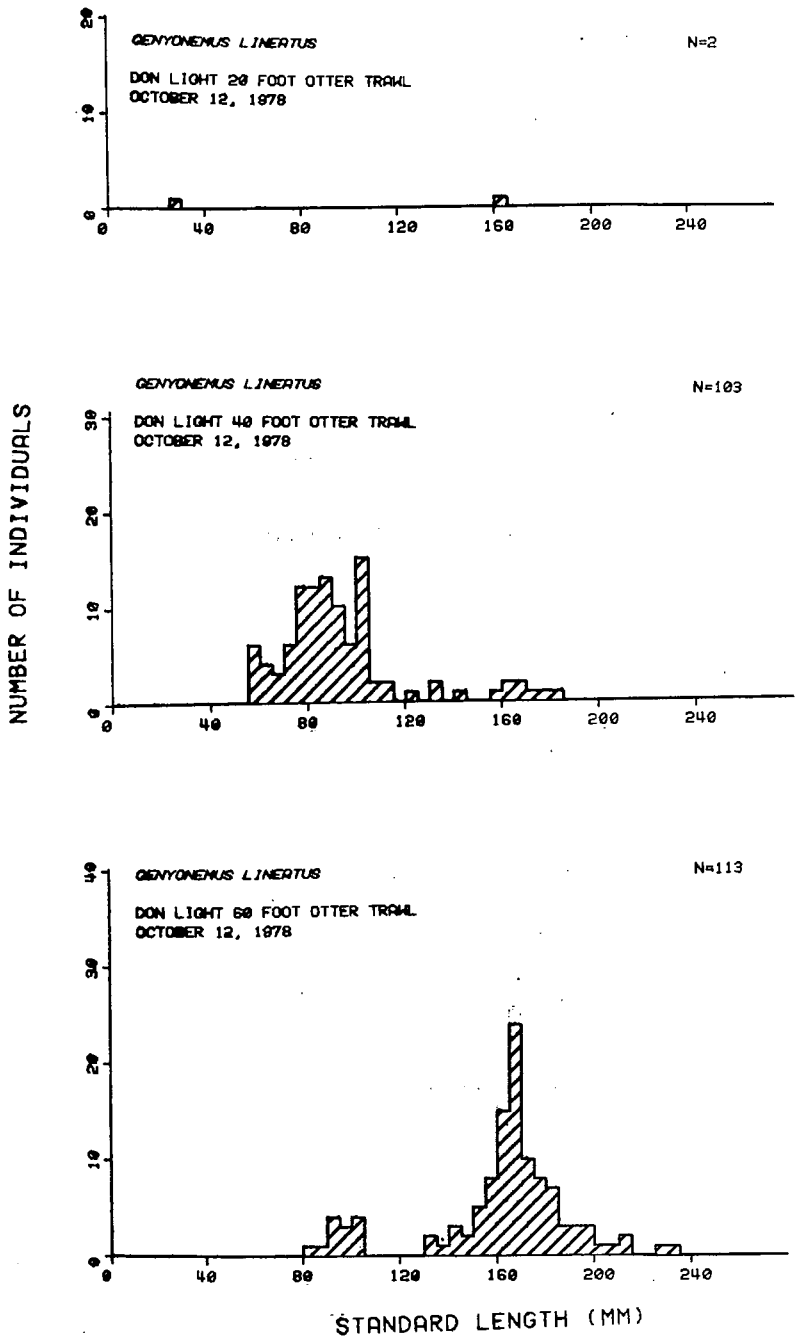
SAN ONOFRE




No *Genyonemus lineatus* collected on October 12, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on October 12, 1978.

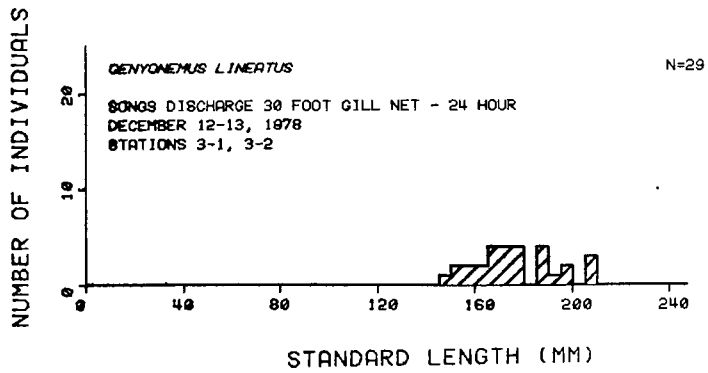
# DON LIGHT




Length frequency histograms of *Genyonemus lineatus* collected on October 12, 1978. (continued)

SAN MATEO POINT

SONGS DISCHARGE

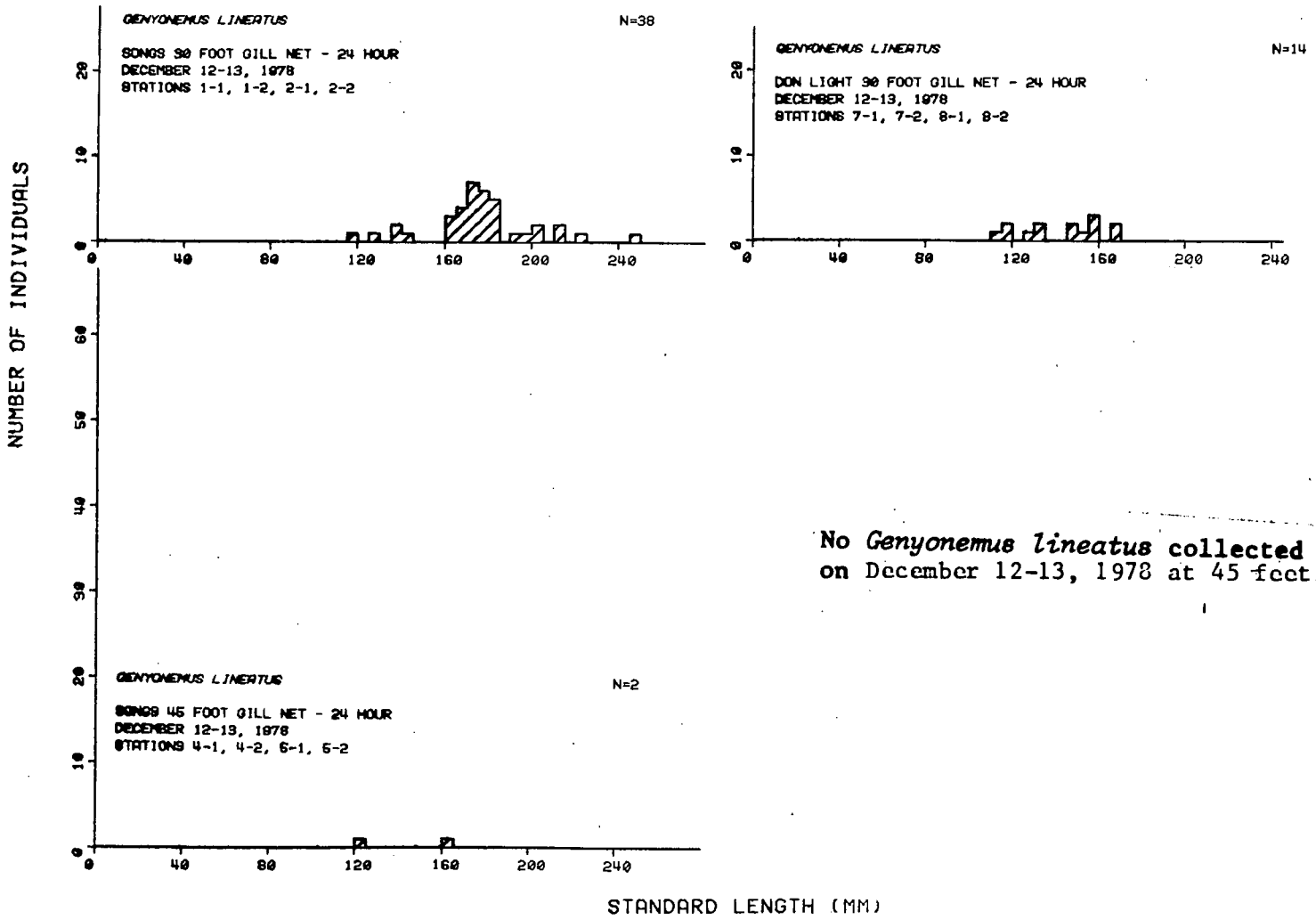



No *Genyonemus lineatus* collected on December 12-13, 1978 at 30 and 45 feet.

Length frequency histograms of *Genyonemus lineatus* collected in gill nets at 30 and 45 feet at San Mateo Point, San Onofre Unit 1 Discharge, San Onofre, and Don Light on December 12-13, 1978.

SAN ONOFRE

DON LIGHT




No *Genyonemus lineatus* collected on December 12-13, 1978 at 45 feet.

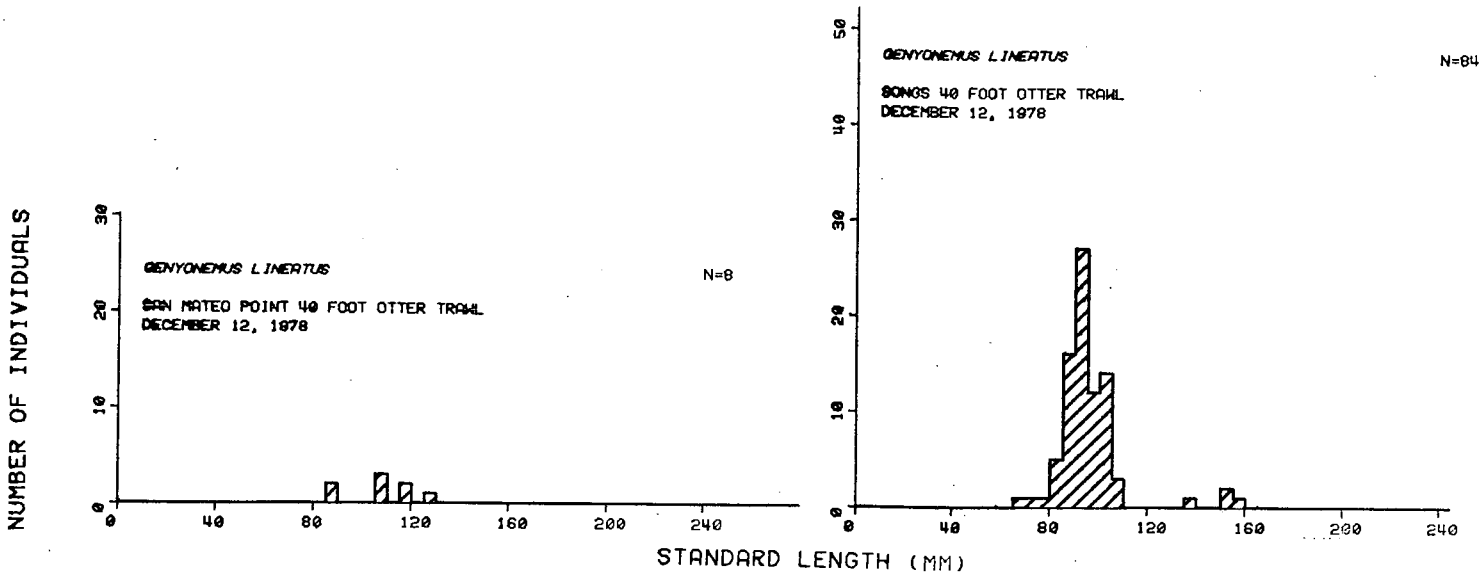
Length frequency histograms of *Genyonemus lineatus* collected on December 12-13, 1978. (continued)

SAN MATEO POINT

SAN ONOFRE

No *Genyonemus lineatus* collected on December 12, 1978 at 20 feet.

No *Genyonemus lineatus* collected on December 12, 1978 at 20 feet

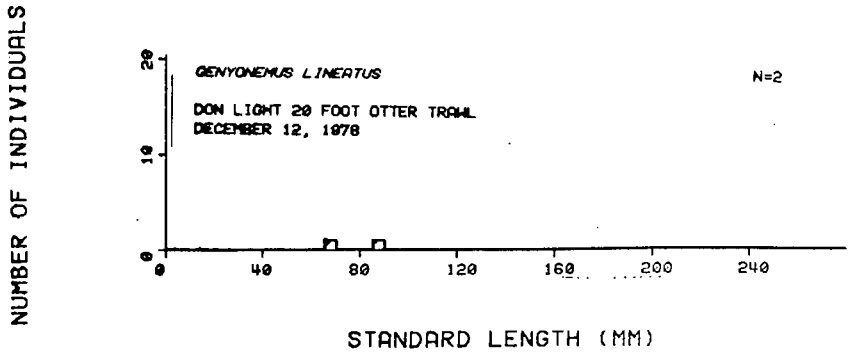



No *Genyonemus lineatus* collected on December 12, 1978 at 60 feet.

No *Genyonemus lineatus* collected on December 12, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on December 12, 1978.

DON LIGHT

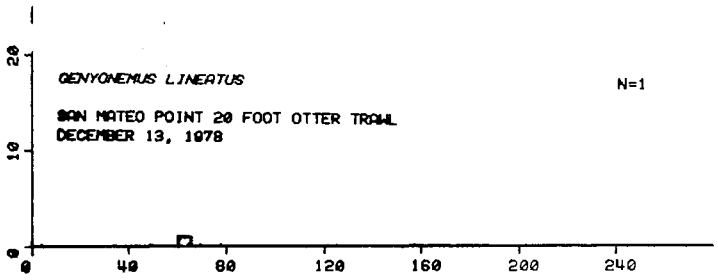



No *Genyonemus lineatus* collected on December 12, 1978 at 40 feet.

No *Genyonemus lineatus* collected on December 12, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected on December 12, 1978. (continued)

SAN MATEO POINT

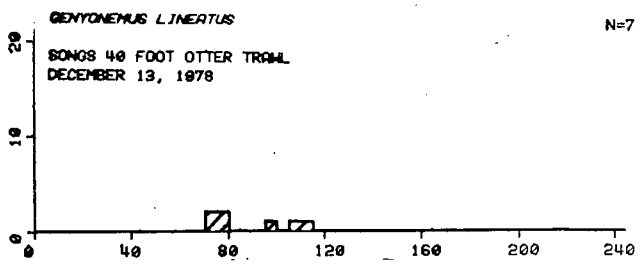



No *Genyonemus lineatus* collected on December 13, 1978 at 40 feet.

No *Genyonemus lineatus* collected on December 13, 1978 at 60 feet.

SAN ONOFRE

No *Genyonemus lineatus* collected on December 13, 1978 at 20 feet.

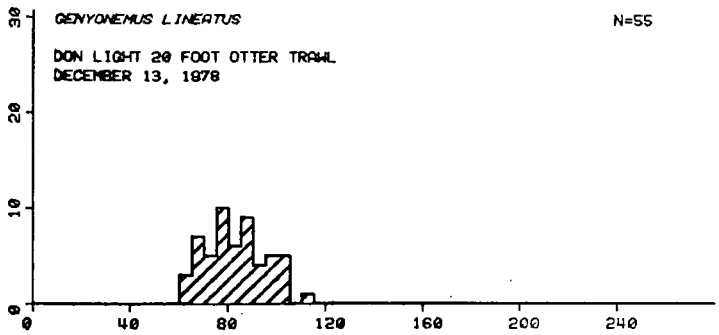



No *Genyonemus lineatus* collected on December 13, 1978 at 60 feet.

NUMBER OF INDIVIDUALS

STANDARD LENGTH (MM)

Length frequency histograms of *Genyonemus lineatus* collected in four replicate otter trawls conducted at 20', 40', and 60' at San Mateo Point, San Onofre, and Don Light on December 13, 1978.




No *Genyonemus lineatus* collected on December 13, 1978 at 40 feet.

No *Genyonemus lineatus* collected on December 13, 1978 at 60 feet.

Length frequency histograms of *Genyonemus lineatus* collected on December 13, 1978. (continued)

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-1 Offshore San Mateo Point on March 15, 1978

```
HYPERPROSOPON ARGENTEUM
     NPDESTE378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  75 MM TO  79 MM   N=   1
          FROM  8Ø MM TO  84 MM   N=   2
          FROM  85 MM TO  89 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-2 Offshore San Mateo Point on March 15, 1978

```
PHANERODON FURCATUS
     NPDESTF378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  8Ø MM TO  84 MM   N=   1
          FROM 13Ø MM TO 134 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTF378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM  75 MM TO  79 MM   N=   1
          FROM  85 MM TO  89 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   2
          FROM 13Ø MM TO 134 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 40-1 Offshore San Mateo Point on March 15, 1978

```
PHANERODON FURCATUS
     NPDESTC378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM  9Ø MM TO  94 MM    N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 40-2 Offshore San Mateo Point on March 15, 1978

```
PARALABRAX CLATHRATUS
     NPDESTD378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 155 MM TO 159 MM    N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 60-1 Offshore San Mateo Point on March 15, 1978

```
PARALICHTHYS CALIFORNICUS
     NPDESTA378
     ZONE CODE- -1      STATION NO.- Ø      TOTAL N-   1
          FROM 185 MM TO 189 MM   N-   1
```

```
PARALICHTHYS CALIFORNICUS
     NPDESTA378
     ZONE CODE- -1      STATION NO.- Ø      TOTAL N-   1
          FROM 185 MM TO 189 MM   N-   1
```

```
HYPERPROSOPON ARGENTEUM
     NPDESTA378
     ZONE CODE- -1      STATION NO.- Ø      TOTAL N-   1
          FROM 12Ø MM TO 124 MM   N-   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 60-2 Offshore San Mateo Point on March 15, 1978

```
PHANERODON FURCATUS
     NPDESTB378
     ZONE CODE- -1      STATION NO.- Ø      TOTAL N-   7
          FROM  75 MM TO  79 MM   N-   1
          FROM  85 MM TO  89 MM   N-   1
          FROM  9Ø MM TO  94 MM   N-   1
          FROM 125 MM TO 129 MM   N-   2
          FROM 145 MM TO 149 MM   N-   2
```

```
HYPERPROSOPON ARGENTEUM
     NPDESTB378
     ZONE CODE- -1      STATION NO.- Ø      TOTAL N-   6
          FROM  95 MM TO  99 MM   N-   1
          FROM 11Ø MM TO 114 MM   N-   1
          FROM 115 MM TO 119 MM   N-   1
          FROM 12Ø MM TO 124 MM   N-   1
          FROM 125 MM TO 129 MM   N-   1
          FROM 13Ø MM TO 134 MM   N-   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-1 Offshore San Onofre on March 15-16, 1978

```
RONCADOR STEARNSII
     NPDESTK378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  9Ø MM TO  94 MM   N=   1
          FROM  95 MM TO  99 MM   N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   2

PHANERODON FURCATUS
     NPDESTK378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   7
          FROM  85 MM TO  89 MM   N=   3
          FROM  9Ø MM TO  94 MM   N=   3
          FROM  95 MM TO  99 MM   N=   1

PARALICHTHYS CALIFORNICUS
     NPDESTK378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 16Ø MM TO 164 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTK378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 14Ø MM TO 144 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-2 Offshore San Onofre on March 15-16, 1978

```
RONCADOR STEARNSII
     NPDESTL378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM  9Ø MM TO  94 MM   N=   2
          FROM  95 MM TO  99 MM   N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
          FROM 21Ø MM TO 214 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTL378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   7
          FROM  4Ø MM TO  44 MM   N=   1
          FROM  85 MM TO  89 MM   N=   4
          FROM 11Ø MM TO 114 MM   N=   1
          FROM 135 MM TO 139 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 40-1 Offshore San Onofre on March 15-16, 1978

```
HYPERPROSOPON ARGENTEUM
     NPDESTI378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 125 MM TO 129 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 60-1 Offshore San Onofre on March 15-16, 1978

```
PARALABRAX CLATHRATUS
     NPDESTG378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 245 MM TO 249 MM   N=   1

PHANERODON FURCATUS
     NPDESTG378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  8Ø MM TO  84 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTG378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 12Ø MM TO 124 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 60-2 Offshore San Onofre on March 15-16, 1978

```
PHANERODON FURCATUS
     NPDESTH378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  8Ø MM TO  84 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTH378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 13Ø MM TO 134 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-1 Offshore Don Light on March 16, 1978

```
HYPERPROSOPON ARGENTEUM
     NPDESTO378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  85 MM TO  89 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 20-2 Offshore Don Light on March 16, 1978

```
HYPERPROSOPON ARGENTEUM
     NPDESTR378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  85 MM TO  89 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 40-1 Offshore Don Light on March 16, 1978

```
HYPERPROSOPON ARGENTEUM
     NPDESTO378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 145 MM TO 149 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in Otter Trawl T 60-1 Offshore Don Light on March 16, 1978

```
PHANERODON FURCATUS
     NPDESTM378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  85 MM TO  89 MM   N=   1

HYPERPROSOPON ARGENTEUM
     NPDESTM378
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 7-2 Offshore San Mateo Point on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 48Ø MM TO 484 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 26Ø MM TO 264 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 145 MM TO 149 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 155 MM TO 159 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 22Ø MM TO 224 MM   N=   1
          FROM 235 MM TO 239 MM   N=   1


PARALABRAX CLATHRATUS
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 29Ø MM TO 294 MM   N=   1


GIRELLA NIGRICANS
     FRU24HGLFR
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   9
          FROM 22Ø MM TO 224 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1
          FROM 31Ø MM TO 314 MM   N=   1
          FROM 32Ø MM TO 324 MM   N=   2
          FROM 335 MM TO 339 MM   N=   1
          FROM 345 MM TO 349 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 8-1 Offshore San Mateo Point on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 69Ø MM TO 694 MM   N=   1
          FROM 73Ø MM TO 734 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 29Ø MM TO 294 MM   N=   1
          FROM 385 MM TO 389 MM   N=   1
          FROM 4Ø5 MM TO 4Ø9 MM   N=   1


TRIAKIS SEMIFASCIATA
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 8ØØ MM TO 8Ø4 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  9Ø MM TO  94 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
          FROM 115 MM TO 119 MM   N=   1
          FROM 13Ø MM TO 134 MM   N=   1

PARALABRAX CLATHRATUS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 415 MM TO 419 MM   N=   1


PHANERODON FURCATUS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM  95 MM TO  99 MM   N=   1
          FROM 155 MM TO 159 MM   N=   1
          FROM 2Ø5 MM TO 2Ø9 MM   N=   1
          FROM 21Ø MM TO 214 MM   N=   1
          FROM 22Ø MM TO 224 MM   N=   1

MENTICIRRHUS UNDULATUS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 27Ø MM TO 274 MM   N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1
          FROM 315 MM TO 319 MM   N=   1


BRACHYISTIUS FRENATUS
     FRU24HGLFS
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  9Ø MM TO  94 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 8-2 Offshore San Mateo Point on March 30-31, 1978.

```
PHANERODON FURCATUS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 155 MM TO 159 MM   N=   1


GIRELLA NIGRICANS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 25Ø MM TO 254 MM   N=   1


EMBIOTOCA JACKSONI
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 145 MM TO 149 MM   N=   1


OXYLEBIUS PICTUS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 13Ø MM TO 134 MM   N=   1


CHROMIS PUNCTIPINNIS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N= 1Ø7
          FROM  95 MM TO  99 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   8
          FROM 1Ø5 MM TO 1Ø9 MM   N=  29
          FROM 11Ø MM TO 114 MM   N=  24
          FROM 115 MM TO 119 MM   N=   7
          FROM 12Ø MM TO 124 MM   N=  11
          FROM 125 MM TO 129 MM   N=   5
          FROM 13Ø MM TO 134 MM   N=  1Ø
          FROM 135 MM TO 139 MM   N=   4
          FROM 14Ø MM TO 144 MM   N=   5
          FROM 145 MM TO 149 MM   N=   2
          FROM 15Ø MM TO 154 MM   N=   1


PARALABRAX CLATHRATUS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 175 MM TO 179 MM   N=   1
          FROM 225 MM TO 229 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 8-2 Offshore San Mateo Point on March 30-31, 1978. (continued)

```
SEBASTES SERRANOIDES
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 135 MM TO 139 MM    N=    1


CYNOSCION NOBILIS
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 395 MM TO 399 MM    N=    1


TRIAKIS SEMIFASCIATA
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 81Ø MM TO 814 MM    N=    1


CHEILOTREMA SATURNUM
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 17Ø MM TO 174 MM    N=    1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFT
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 135 MM TO 139 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 1-1 Offshore San Onofre on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 51Ø MM TO 514 MM   N=   1
          FROM 535 MM TO 539 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 37Ø MM TO 374 MM   N=   1
          FROM 39Ø MM TO 394 MM   N=   1


TRIAKIS SEMIFASCIATA
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  14
          FROM 4ØØ MM TO 4Ø4 MM   N=   2
          FROM 42Ø MM TO 424 MM   N=   1
          FROM 425 MM TO 429 MM   N=   2
          FROM 435 MM TO 439 MM   N=   2
          FROM 445 MM TO 449 MM   N=   1
          FROM 45Ø MM TO 454 MM   N=   1
          FROM 46Ø MM TO 464 MM   N=   1
          FROM 475 MM TO 479 MM   N=   1
          FROM 49Ø MM TO 494 MM   N=   1
          FROM 71Ø MM TO 714 MM   N=   1
          FROM 77Ø MM TO 774 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 19Ø MM TO 194 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 13Ø MM TO 134 MM   N=   1
          FROM 155 MM TO 159 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 34Ø MM TO 344 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 1-1 Offshore San Onofre on March 30-31, 1978. (continued)

```
MENTICIRRHUS UNDULATUS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   6
          FROM 215 MM TO 219 MM   N=   1
          FROM 225 MM TO 229 MM   N=   1
          FROM 285 MM TO 289 MM   N=   1
          FROM 315 MM TO 319 MM   N=   1
          FROM 335 MM TO 339 MM   N=   1
          FROM 45Ø MM TO 454 MM   N=   1


GIRELLA NIGRICANS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   6
          FROM 245 MM TO 249 MM   N=   1
          FROM 26Ø MM TO 264 MM   N=   2
          FROM 31Ø MM TO 314 MM   N=   2
          FROM 315 MM TO 319 MM   N=   1


ATHERINOPSIS CALIFORNIENSIS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 29Ø MM TO 294 MM   N=   1


BRACHYISTIUS FRENATUS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  95 MM TO  99 MM   N=   1


SEBASTES CARNATUS
     FRU24HGLFE
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 175 MM TO 179 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 1-2 Offshore San Onofre on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 485 MM TO 489 MM   N=   1
          FROM 6Ø5 MM TO 6Ø9 MM   N=   1
          FROM 68Ø MM TO 684 MM   N=   1


UMBRINA RONCADOR
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 265 MM TO 269 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 41Ø MM TO 414 MM   N=   1


TRIAKIS SEMIFASCIATA
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM 38Ø MM TO 384 MM   N=   1
          FROM 415 MM TO 419 MM   N=   2
          FROM 445 MM TO 449 MM   N=   1
          FROM 515 MM TO 519 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 195 MM TO 199 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 115 MM TO 119 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   8
          FROM 245 MM TO 249 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1
          FROM 255 MM TO 259 MM   N=   1
          FROM 26Ø MM TO 264 MM   N=   1
          FROM 265 MM TO 269 MM   N=   2
          FROM 275 MM TO 279 MM   N=   1
          FROM 37Ø MM TO 374 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 1-2 Offshore San Onofre on March 30-31, 1978. (continued)

```
PARALABRAX CLATHRATUS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 22Ø MM TO 224 MM    N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 345 MM TO 349 MM    N=   1
          FROM 435 MM TO 439 MM    N=   1


GIRELLA NIGRICANS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   8
          FROM 245 MM TO 249 MM    N=   1
          FROM 26Ø MM TO 264 MM    N=   1
          FROM 265 MM TO 269 MM    N=   1
          FROM 31Ø MM TO 314 MM    N=   1
          FROM 315 MM TO 319 MM    N=   1
          FROM 32Ø MM TO 324 MM    N=   2
          FROM 34Ø MM TO 344 MM    N=   1


XENISTIUS CALIFORNIENSIS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 17Ø MM TO 174 MM    N=   1


ANISOTREMUS DAVIDSONII
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 195 MM TO 199 MM    N=   1


HETEROSTICHUS ROSTRATUS
     FRU24HGLFF
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 295 MM TO 299 MM    N=   1
          FROM 365 MM TO 369 MM    N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 2-1 Offshore San Onofre on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 64Ø MM TO 644 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM 375 MM TO 379 MM   N=   1
          FROM 39Ø MM TO 394 MM   N=   1
          FROM 395 MM TO 399 MM   N=   2


CHEILOTREMA SATURNUM
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 16Ø MM TO 164 MM   N=   1
          FROM 175 MM TO 179 MM   N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  95 MM TO  99 MM   N=   1
          FROM 135 MM TO 139 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 26Ø MM TO 264 MM   N=   1


PARALABRAX CLATHRATUS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 295 MM TO 299 MM   N=   1


PHANERODON FURCATUS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 155 MM TO 159 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 26Ø MM TO 264 MM   N=   1
          FROM 35Ø MM TO 354 MM   N=   1
          FROM 41Ø MM TO 414 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 2-1 Offshore San Onofre on March 30-31, 1978. (continued)

```
GIRELLA NIGRICANS
     FRU24HGLFG
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 26Ø MM TO 264 MM   N=   1
          FROM 33Ø MM TO 334 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 2-2 Offshore San Onofre on March 30-31, 1978.

```
CYNOSCION NOBILIS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 395 MM TO 399 MM   N=   1
          FROM 44Ø MM TO 444 MM   N=   1


DAMALICHTHYS VACCA
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 195 MM TO 199 MM   N=   1


PARALABRAX NEBULIFER
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 32Ø MM TO 324 MM   N=   1
          FROM 385 MM TO 389 MM   N=   1


PARALABRAX CLATHRATUS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 135 MM TO 139 MM   N=   1
          FROM 15Ø MM TO 154 MM   N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   1


PHANERODON FURCATUS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 14Ø MM TO 144 MM   N=   1
          FROM 185 MM TO 189 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 375 MM TO 379 MM   N=   1


HETEROSTICHUS ROSTRATUS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM 195 MM TO 199 MM   N=   1
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 235 MM TO 239 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 2-2 Offshore San Onofre on March 30-31, 1978. (continued)

```
HALICHOERES SEMICINCTUS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 235 MM TO 239 MM   N=   1


PIMELOMETOPON PULCHRUM
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 25Ø MM TO 254 MM   N=   1
          FROM 285 MM TO 289 MM   N=   1


MEDIALUNA CALIFORNIENSIS
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   6
          FROM 195 MM TO 199 MM   N=   2
          FROM 2ØØ MM TO 2Ø4 MM   N=   1
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 235 MM TO 239 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   1


EMBIOTOCA JACKSONI
     FRU24HGLFH
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM 15Ø MM TO 154 MM   N=   1
          FROM 17Ø MM TO 174 MM   N=   1
          FROM 18Ø MM TO 184 MM   N=   2
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 3-1 Offshore San Onofre on March 30-31, 1978.

```
MUSTELUS CALIFORNICUS
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 5ØØ MM TO 5Ø4 MM   N=   1
          FROM 635 MM TO 639 MM   N=   1


UMBRINA RONCADOR
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 175 MM TO 179 MM   N=   1
          FROM 285 MM TO 289 MM   N=   1
          FROM 33Ø MM TO 334 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 27Ø MM TO 274 MM   N=   1
          FROM 4Ø5 MM TO 4Ø9 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  46
          FROM  85 MM TO  89 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1
          FROM  95 MM TO  99 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   3
          FROM 115 MM TO 119 MM   N=   2
          FROM 12Ø MM TO 124 MM   N=  1Ø
          FROM 125 MM TO 129 MM   N=   7
          FROM 13Ø MM TO 134 MM   N=   9
          FROM 135 MM TO 139 MM   N=   4
          FROM 14Ø MM TO 144 MM   N=   6
          FROM 145 MM TO 149 MM   N=   2


RONCADOR STEARNSII
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 22Ø MM TO 224 MM   N=   1
          FROM 245 MM TO 249 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  12
          FROM 235 MM TO 239 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1
          FROM 27Ø MM TO 274 MM   N=   2
          FROM 275 MM TO 279 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   2
          FROM 29Ø MM TO 294 MM   N=   1
          FROM 3ØØ MM TO 3Ø4 MM   N=   1
          FROM 315 MM TO 319 MM   N=   1
          FROM 32Ø MM TO 324 MM   N=   2
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 3-1 Offshore San Onofre on March 30-31, 1978. (continued)

```
BRACHYISTIUS FRENATUS
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM  95 MM TO  99 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   1


UROLOPHUS HALLERI
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 295 MM TO 299 MM   N=   1
          FROM 32Ø MM TO 324 MM   N=   1


HETERODONTUS FRANCISCI
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 43Ø MM TO 434 MM   N=   1


SPHYRNA ZYGAENA
     FRU24HGLFI
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 765 MM TO 769 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 3-2 Offshore San Onofre on March 30-31, 1978.

```
MUSTELUS HENLEI
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1


MUSTELUS CALIFORNICUS
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 5ØØ MM TO 5Ø4 MM   N=   1


UMBRINA RONCADOR
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  28
          FROM 21Ø MM TO 214 MM   N=   1
          FROM 225 MM TO 229 MM   N=   1
          FROM 235 MM TO 239 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   2
          FROM 245 MM TO 249 MM   N=   2
          FROM 255 MM TO 259 MM   N=   1
          FROM 26Ø MM TO 264 MM   N=   3
          FROM 265 MM TO 269 MM   N=   2
          FROM 27Ø MM TO 274 MM   N=   4
          FROM 275 MM TO 279 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1
          FROM 285 MM TO 289 MM   N=   2
          FROM 29Ø MM TO 294 MM   N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   3
          FROM 31Ø MM TO 314 MM   N=   2
          FROM 335 MM TO 339 MM   N=   1


CYNOSCION NOBILIS
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM 38Ø MM TO 384 MM   N=   2
          FROM 385 MM TO 389 MM   N=   1
          FROM 4ØØ MM TO 4Ø4 MM   N=   1


TRIAKIS SEMIFASCIATA
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 355 MM TO 359 MM   N=   1


CHEILOTREMA SATURNUM
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 17Ø MM TO 174 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 3-2 Offshore San Onofre on March 30-31, 1978. (continued)

```
HYPERPROSOPON ARGENTEUM
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   7
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
          FROM 13Ø MM TO 134 MM   N=   3
          FROM 135 MM TO 139 MM   N=   1
          FROM 14Ø MM TO 144 MM   N=   1
          FROM 145 MM TO 149 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  39
          FROM 215 MM TO 219 MM   N=   1
          FROM 22Ø MM TO 224 MM   N=   2
          FROM 225 MM TO 229 MM   N=   1
          FROM 23Ø MM TO 234 MM   N=   3
          FROM 235 MM TO 239 MM   N=   2
          FROM 24Ø MM TO 244 MM   N=   6
          FROM 245 MM TO 249 MM   N=   5
          FROM 25Ø MM TO 254 MM   N=   4
          FROM 255 MM TO 259 MM   N=   5
          FROM 26Ø MM TO 264 MM   N=   2
          FROM 265 MM TO 269 MM   N=   4
          FROM 27Ø MM TO 274 MM   N=   2
          FROM 275 MM TO 279 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 285 MM TO 289 MM   N=   1
          FROM 32Ø MM TO 324 MM   N=   1


PARALABRAX MACULATOFASCIATUS
     FRU24HGLFJ
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 3ØØ MM TO 3Ø4 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 4-1 Offshore Don Light on March 30-31, 1978.

```
BRACHYISTIUS FRENATUS
     FRU24HGLFK
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 12Ø MM TO 124 MM   N=   1
          FROM 125 MM TO 129 MM   N=   1


PARALABRAX CLATHRATUS
     FRU24HGLFK
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 235 MM TO 239 MM   N=   1


MENTICIRRHUS UNDULATUS
     FRU24HGLFK
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 255 MM TO 259 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1


ATHERINOPSIS CALIFORNIENSIS
     FRU24HGLFK
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 235 MM TO 239 MM   N=   1
          FROM 26Ø MM TO 264 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 4-2 Offshore Don Light on March 30-31, 1978.

```
CHEILOTREMA SATURNUM
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 2ØØ MM TO 2Ø4 MM   N=   1
          FROM 2Ø5 MM TO 2Ø9 MM   N=   1
          FROM 21Ø MM TO 214 MM   N=   1

PHANERODON FURCATUS
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 135 MM TO 139 MM   N=   1

MENTICIRRHUS UNDULATUS
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 23Ø MM TO 234 MM   N=   1

BRACHYISTIUS FRENATUS
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 11Ø MM TO 114 MM   N=   1

EMBIOTOCA JACKSONI
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 15Ø MM TO 154 MM   N=   1

PARALABRAX MACULATOFASCIATUS
     FRU24HGLFL
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 265 MM TO 269 MM   N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 5-1 Offshore Don Light on March 30-31, 1978.

**DAMALICHTHYS VACCA**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 16Ø MM TO 164 MM N= 1

**CHEILOTREMA SATURNUM**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 5
FROM 19Ø MM TO 194 MM N= 1
FROM 195 MM TO 199 MM N= 2
FROM 215 MM TO 219 MM N= 1
FROM 23Ø MM TO 234 MM N= 1

**HYPERPROSOPON ARGENTEUM**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 1ØØ MM TO 1Ø4 MM N= 1
FROM 13Ø MM TO 134 MM N= 1

**PARALABRAX CLATHRATUS**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 23Ø MM TO 234 MM N= 1
FROM 245 MM TO 249 MM N= 1

**MENTICIRRHUS UNDULATUS**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 3
FROM 265 MM TO 269 MM N= 1
FROM 28Ø MM TO 284 MM N= 1
FROM 295 MM TO 299 MM N= 1

**GIRELLA NIGRICANS**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 28Ø MM TO 284 MM N= 1

**ATHERINOPSIS CALIFORNIENSIS**

FRU24HGLFM
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 245 MM TO 249 MM N= 1

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 5-1 Offshore Don Light on March 30-31, 1978. (continued)

```
PARALABRAX MACULATOFASCIATUS
     FRU24HGLFM
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 16Ø MM TO 164 MM    N=    1


SEBASTES AURICULATUS
     FRU24HGLFM
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    2
          FROM 135 MM TO 139 MM    N=    1
          FROM 265 MM TO 269 MM    N=    1

BRACHYISTIUS FRENATUS
     FRU24HGLFM
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 125 MM TO 129 MM    N=    1


ANISOTREMUS DAVIDSONII
     FRU24HGLFM
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 265 MM TO 269 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 5-2 Offshore Don Light on March 30-31, 1978.

```
PARALABRAX CLATHRATUS
     FRU24HGLFN
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 21Ø MM TO 214 MM    N=   1
          FROM 215 MM TO 219 MM    N=   1


BRACHYISTIUS FRENATUS
     FRU24HGLFN
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  9Ø MM TO  94 MM    N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFN
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 1ØØ MM TO 1Ø4 MM    N=   2


SYNODUS LUCIOCEPS
     FRU24HGLFN
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 24Ø MM TO 244 MM    N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 6-1 Offshore Don Light on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 325 MM TO 329 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  75 MM TO  79 MM   N=   1
          FROM  85 MM TO  89 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1
          FROM 15Ø MM TO 154 MM   N=   1


RONCADOR STEARNSII
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 24Ø MM TO 244 MM   N=   1


PHANERODON FURCATUS
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 135 MM TO 139 MM   N=   2


ATHERINOPSIS CALIFORNIENSIS
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 215 MM TO 219 MM   N=   2
          FROM 225 MM TO 229 MM   N=   1


BRACHYISTIUS FRENATUS
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM  85 MM TO  89 MM   N=   1
          FROM  95 MM TO  99 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   1


ANISOTREMUS DAVIDSONII
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 33Ø MM TO 334 MM   N=   1


PIMELOMETOPON PULCHRUM
     FRU24HGLFO
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 355 MM TO 359 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 6-2 Offshore Don Light on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRU24HGLFP
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    2
          FROM 12Ø MM TO 124 MM    N=    1
          FROM 135 MM TO 139 MM    N=    1


PHANERODON FURCATUS
     FRU24HGLFP
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 145 MM TO 149 MM    N=    1


MENTICIRRHUS UNDULATUS
     FRU24HGLFP
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    4
          FROM 225 MM TO 229 MM    N=    1
          FROM 24Ø MM TO 244 MM    N=    1
          FROM 25Ø MM TO 254 MM    N=    1
          FROM 275 MM TO 279 MM    N=    1


GIRELLA NIGRICANS
     FRU24HGLFP
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 315 MM TO 319 MM    N=    1


EMBIOTOCA JACKSONI
     FRU24HGLFP
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 18Ø MM TO 184 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 Hour Gill Net 7-1 Offshore San Mateo Point on March 30-31, 1978.

CYNOSCION NOBILIS
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 275 MM TO 279 MM N= 1

TRIAKIS SEMIFASCIATA
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 48Ø MM TO 484 MM N= 1

HYPERPROSOPON ARGENTEUM
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 9Ø MM TO 94 MM N= 1
FROM 125 MM TO 129 MM N= 1

RONCADOR STEARNSII
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 22Ø MM TO 224 MM N= 1
FROM 235 MM TO 239 MM N= 1

PHANERODON FURCATUS
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 9Ø MM TO 94 MM N= 1

MENTICIRRHUS UNDULATUS
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 26Ø MM TO 264 MM N= 1
FROM 29Ø MM TO 294 MM N= 1

ATHERINOPSIS CALIFORNIENSIS
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 26Ø MM TO 264 MM N= 1
FROM 275 MM TO 279 MM N= 1

CITHARICHTHYS STIGMAEUS
FRU24HGLFQ
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 85 MM TO 89 MM N= 1

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net A, Window 1 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFAA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 365 MM TO 369 MM    N=   1
          FROM 39Ø MM TO 394 MM    N=   1
          FROM 43Ø MM TO 434 MM    N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net B, Window 1 Fished
Offshore San Onofre on March 30-31, 1978

```
PARALABRAX NEBULIFER
     FRU4HGLFBA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 235 MM TO 239 MM    N=   1
```

```
PARALICHTHYS CALIFORNICUS
     FRU4HGLFBA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 33Ø MM TO 334 MM    N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net C, Window 1 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFCA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 445 MM TO 449 MM    N=   1
```

```
HYPERPROSOPON ARGENTEUM
     FRU4HGLFCA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM 12Ø MM TO 124 MM    N=   1
          FROM 13Ø MM TO 134 MM    N=   2
          FROM 135 MM TO 139 MM    N=   1
          FROM 145 MM TO 149 MM    N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net D, Window 1 Fished
Offshore San Onofre on March 30-31, 1978

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net W, Window 1 Fished Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFWA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 35Ø MM TO 354 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFWA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 245 MM TO 249 MM   N=   1
          FROM 35Ø MM TO 354 MM   N=   1
          FROM 36Ø MM TO 364 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net X, Window 1 Fished Offshore San Onofre on March 30-31, 1978

```
HYPERPROSOPON ARGENTEUM
     FRU4HGLFXA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
          FROM 11Ø MM TO 114 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFXA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 33Ø MM TO 334 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net Y, Window 1 Fished Offshore San Onofre on March 30-31, 1978

```
PARALABRAX NEBULIFER
     FRU4HGLFYA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 15Ø MM TO 154 MM   N=   1


GENYONEMUS LINEATUS
     FRU4HGLFYA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 165 MM TO 169 MM   N=   1
          FROM 17Ø MM TO 174 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net Z, Window 1 Fished
Offshore San Onofre on March 30-31, 1978

```
HYPERPROSOPON ARGENTEUM
     FRU4HGLFZA
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  95 MM TO  99 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net A, Window 2 Fished Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFAB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 395 MM TO 399 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU4HGLFAB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 125 MM TO 129 MM   N=   2
          FROM 135 MM TO 139 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFAB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 265 MM TO 269 MM   N=   1
```

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net B, Window 2 Fished Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFBB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 395 MM TO 399 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU4HGLFBB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  95 MM TO  99 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFBB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=  16
          FROM 235 MM TO 239 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   2
          FROM 25Ø MM TO 254 MM   N=   4
          FROM 255 MM TO 259 MM   N=   2
          FROM 265 MM TO 269 MM   N=   2
          FROM 275 MM TO 279 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1
          FROM 325 MM TO 329 MM   N=   1
          FROM 34Ø MM TO 344 MM   N=   1
          FROM 35Ø MM TO 354 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net C, Window 2 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFCB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 24Ø MM TO 244 MM   N=   1
          FROM 29Ø MM TO 294 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFCB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   9
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 24Ø MM TO 244 MM   N=   1
          FROM 245 MM TO 249 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   2
          FROM 26Ø MM TO 264 MM   N=   1
          FROM 31Ø MM TO 314 MM   N=   1
          FROM 34Ø MM TO 344 MM   N=   1
          FROM 38Ø MM TO 384 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net D, Window 2 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFDB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 28Ø MM TO 284 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU4HGLFDB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 13Ø MM TO 134 MM   N=   1


RONCADOR STEARNSII
     FRU4HGLFDB
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 24Ø MM TO 244 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 4 Hour Gill Net W, Window 2 Fished
Offshore San Onofre on March 30-31, 1978

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net X, Window 2 Fished Offshore San Onofre on March 30-31, 1978

**HYPERPROSOPON ARGENTEUM**
FRU4HGLFXB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 95 MM TO 99 MM N= 1

PARALABRAX CLATHRATUS
FRU4HGLFXB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 345 MM TO 349 MM N= 1

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net Y, Window 2 Fished Offshore San Onofre on March 30-31, 1978

**CYNOSCION NOBILIS**
FRU4HGLFYB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 265 MM TO 269 MM N= 1

Length Frequency Distributions of Select Species Collected in 4 Hour Gill Net Z, Window 2 Fished Offshore San Onofre on March 30-31, 1978

**CYNOSCION NOBILIS**
FRU4HGLFZB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 245 MM TO 249 MM N= 1
FROM 345 MM TO 349 MM N= 1

**HYPERPROSOPON ARGENTEUM**
FRU4HGLFZB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 135 MM TO 139 MM N= 1

PARALABRAX CLATHRATUS
FRU4HGLFZB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 1
FROM 15Ø MM TO 154 MM N= 1

**PHANERODON FURCATUS**
FRU4HGLFZB
ZONE CODE= -1 STATION NO.= Ø TOTAL N= 2
FROM 19Ø MM TO 194 MM N= 2

Length Frequency Distributions of Select Species Collected in 8 Hour Gill Net A, Window 3-4 Fished Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFAD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 42Ø MM TO 424 MM    N=    1
```

Length Frequency Distributions of Select Species Collected in 8 Hour Gill Net B, Window 3-4 Fished Offshore San Onofre on March 30-31, 1978

```
HYPERPROSOPON ARGENTEUM
     FRU4HGLFBD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    1
          FROM 16Ø MM TO 164 MM    N=    1
```

```
RONCADOR STEARNSII
     FRU4HGLFBD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    2
          FROM 225 MM TO 229 MM    N=    1
          FROM 3Ø5 MM TO 3Ø9 MM    N=    1
```

Length Frequency Distributions of Select Species Collected in 8 Hour Gill Net C, Window 3-4 Fished Offshore San Onofre on March 30-31, 1978

```
HYPERPROSOPON ARGENTEUM
     FRU4HGLFCD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    2
          FROM 12Ø MM TO 124 MM    N=    2
```

```
RONCADOR STEARNSII
     FRU4HGLFCD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=    5
          FROM 23Ø MM TO 234 MM    N=    1
          FROM 245 MM TO 249 MM    N=    3
          FROM 255 MM TO 259 MM    N=    1
```

Length Frequency Distributions of Select Species
Collected in 8 Hour Gill Net D, Window 3-4 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFDD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 21Ø MM TO 214 MM   N=   1
          FROM 26Ø MM TO 264 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU4HGLFDD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM  9Ø MM TO  94 MM   N=   3
```

Length Frequency Distributions of Select Species
Collected in 8 Hour Gill Net W, Window 3-4 Fished
Offshore San Onofre on March 30-31, 1978

```
CYNOSCION NOBILIS
     FRU4HGLFWD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 425 MM TO 429 MM   N=   1


PARALABRAX NEBULIFER
     FRU4HGLFWD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 31Ø MM TO 314 MM   N=   1


HYPERPROSOPON ARGENTEUM
     FRU4HGLFWD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  95 MM TO  99 MM   N=   1
          FROM 155 MM TO 159 MM   N=   2
          FROM 16Ø MM TO 164 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 8 Hour Gill Net X, Window 3-4 Fished
Offshore San Onofre on March 30-31, 1978

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distributions of Select Species
Collected in 8 Hour Gill Net Y, Window 3-4 Fished
Offshore San Onofre on March 30-31, 1978

```
PARALICHTHYS CALIFORNICUS
     FRU4HGLFYD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 36Ø MM TO 364 MM   N=   1
```

```
PARALABRAX MACULATOFASCIATUS
     FRU4HGLFYD
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 29Ø MM TO 294 MM   N=   1
```

Length Frequency Distributions of Select Species
Collected in 8 Hour Gill Net Z, Window 3-4 Fished
Offshore San Onofre on March 30-31, 1978

Net missing at end of survey.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 1-20 Offshore San Onofre on March 30-31, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 2-20 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT2ØLFØ2
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  45 MM TO  49 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 3-20 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT2ØLFØ3
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  2Ø MM TO  24 MM   N=   1
          FROM  4Ø MM TO  44 MM   N=   2
          FROM  45 MM TO  49 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 4-20 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT2ØLFØ4
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   6
          FROM  35 MM TO  39 MM   N=   1
          FROM  4Ø MM TO  44 MM   N=   3
          FROM  45 MM TO  49 MM   N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 5-20 Offshore San Onofre on March 30-31. 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT2ØLFØ5
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM  4Ø MM TO  44 MM   N=   2
          FROM  85 MM TO  89 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 6-20 Offshore San Onofre on March 30-31, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 7-20 Offshore San Onofre on March 30-31, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 8-20 Offshore San Onofre on March 30-31, 1978.

```
PHANERODON FURCATUS
     FRUT2ØLFØ8
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  75 MM TO  79 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 1-40 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT4ØLFØ1
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  95 MM TO  99 MM   N=   1
```

```
PHANERODON FURCATUS
     FRUT4ØLFØ1
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  9Ø MM TO  94 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 2-40 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT4ØLFØ2
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   4
          FROM  95 MM TO  99 MM   N=   2
          FROM 1ØØ MM TO 1Ø4 MM   N=   2
```

```
PHANERODON FURCATUS
     FRUT4ØLFØ2
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM  95 MM TO  99 MM   N=   1
          FROM 155 MM TO 159 MM   N=   1
```

```
PARALICHTHYS CALIFORNICUS
     FRUT4ØLFØ2
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   5
          FROM 21Ø MM TO 214 MM   N=   1
          FROM 27Ø MM TO 274 MM   N=   1
          FROM 285 MM TO 289 MM   N=   1
          FROM 29Ø MM TO 294 MM   N=   1
          FROM 41Ø MM TO 414 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 3-40 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT4ØLFØ3
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 245 MM TO 249 MM   N=   1
          FROM 27Ø MM TO 274 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 4-40 Offshore San Onofre on March 30-31, 1978.

```
HYPERPROSOPON ARGENTEUM
     FRUT4ØLFØ4
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  9Ø MM TO  94 MM   N=   1


PARALICHTHYS CALIFORNICUS
     FRUT4ØLFØ4
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   3
          FROM 295 MM TO 299 MM   N=   1
          FROM 375 MM TO 379 MM   N=   1
          FROM 445 MM TO 449 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 5-40 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT4ØLFØ5
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 22Ø MM TO 224 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 6-40 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT4ØLFØ6
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 25Ø MM TO 254 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 7-40 Offshore San Onofre on March 30-31, 1978.

```
PHANERODON FURCATUS
     FRUT4ØLFØ7
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM  9Ø MM TO  94 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 1-60 Offshore San Onofre on March 30-31, 1978.

```
PHANERODON FURCATUS
     FRUT6ØLFØ1
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   9
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
          FROM 11Ø MM TO 114 MM   N=   1
          FROM 13Ø MM TO 134 MM   N=   2
          FROM 145 MM TO 149 MM   N=   1
          FROM 15Ø MM TO 154 MM   N=   2
          FROM 155 MM TO 159 MM   N=   1
          FROM 165 MM TO 169 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 2-60 Offshore San Onofre on March 30-31, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 3-60 Offshore San Onofre on March 30-31, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Taken in Otter Trawl T 4-60 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT6ØLFØ4
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   1
          FROM 2Ø5 MM TO 2Ø9 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 5-60 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT6ØLFØ5
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 315 MM TO 319 MM   N=   1
          FROM 32Ø MM TO 324 MM   N=   1
```

Length Frequency Distribution of Select Species Taken in Otter Trawl T 6-60 Offshore San Onofre on March 30-31, 1978.

```
PARALICHTHYS CALIFORNICUS
     FRUT6ØLFØ6
     ZONE CODE= -1      STATION NO.= Ø      TOTAL N=   2
          FROM 19Ø MM TO 194 MM   N=   1
          FROM 3ØØ MM TO 3Ø4 MM   N=   1
```

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 11-1 at 30 ft. Offshore San Mateo Point on June 14-15, 1978.

**HYPERPROSOPON ARGENTEUM**
Ø678IUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 5
FROM 11Ø MM TO 114 MM N- 2
FROM 13Ø MM TO 134 MM N- 1
FROM 135 MM TO 139 MM N- 1
FROM 145 MM TO 149 MM N- 1

CYNOSCION NOBILIS
Ø678IUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 4Ø5 MM TO 4Ø9 MM N- 1

PARALABRAX CLATHRATUS
Ø678IUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 175 MM TO 179 MM N- 1

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 11-2 at 30 ft. Offshore San Mateo Point on June 14-15, 1978.

**HYPERPROSOPON ARGENTEUM**
Ø678JUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1Ø
FROM 1Ø5 MM TO 1Ø9 MM N- 2
FROM 11Ø MM TO 114 MM N- 4
FROM 13Ø MM TO 134 MM N- 2
FROM 135 MM TO 139 MM N- 2

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 12-1 at 30 ft. Offshore San Mateo Point on June 14-15, 1978.

**RONCADOR STEARNSII**
Ø678KUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 365 MM TO 369 MM N- 1

CYNOSCION NOBILIS
Ø678KUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 2
FROM 29Ø MM TO 294 MM N- 1
FROM 36Ø MM TO 364 MM N- 1

**PARALICHTHYS CALIFORNICUS**
Ø678KUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 475 MM TO 479 MM N- 1

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 12-2 at 30 ft. Offshore San Mateo Point on June 14-15, 1978.

**HYPERPROSOPON ARGENTEUM**
Ø678LUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 4
FROM 1ØØ MM TO 1Ø4 MM N- 1
FROM 135 MM TO 139 MM N- 3

PARALABRAX NEBULIFER
Ø678LUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 175 MM TO 179 MM N- 1

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 13-1 at 45 ft. Offshore San Mateo Point on June 14-15, 1978.

**PARALABRAX CLATHRATUS**
Ø678MUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 3
FROM 215 MM TO 219 MM N= 2
FROM 27Ø MM TO 274 MM N= 1

PARALICHTHYS CALIFORNICUS
Ø678MUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 35Ø MM TO 354 MM N= 1

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 13-2 at 45 ft. Offshore San Mateo Point on June 14-15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 14-1 at 45 ft. Offshore San Mateo Point on June 14-15, 1978.

**HYPERPROSOPON ARGENTEUM**
Ø678OUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 3
FROM 1ØØ MM TO 1Ø4 MM N= 1
FROM 1Ø5 MM TO 1Ø9 MM N= 2

**PARALABRAX CLATHRATUS**
Ø678OUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 165 MM TO 169 MM N= 1

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 14-2 at 45 ft. Offshore San Mateo Point on June 14-15, 1978.

**PHANERODON FURCATUS**
Ø678PUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 8
FROM 135 MM TO 139 MM N= 1
FROM 145 MM TO 149 MM N= 1
FROM 15Ø MM TO 154 MM N= 4
FROM 155 MM TO 159 MM N= 1
FROM 16Ø MM TO 164 MM N= 1

**PARALABRAX CLATHRATUS**
Ø678PUNI23GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 7
FROM 165 MM TO 169 MM N= 1
FROM 18Ø MM TO 184 MM N= 1
FROM 225 MM TO 229 MM N= 1
FROM 24Ø MM TO 244 MM N= 1
FROM 26Ø MM TO 264 MM N= 1
FROM 275 MM TO 279 MM N= 1
FROM 29Ø MM TO 294 MM N= 1

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-1 at 30 ft. Offshore San Onofre on June 14-15, 1978.

```
PARALABRAX CLATHRATUS
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 19Ø MM TO 194 MM   N=   1
          FROM 215 MM TO 219 MM   N=   1


PARALABRAX NEBULIFER
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 32Ø MM TO 324 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
          FROM 14Ø MM TO 144 MM   N=   1


RONCADOR STEARNSII
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   9
          FROM 255 MM TO 259 MM   N=   1
          FROM 265 MM TO 269 MM   N=   1
          FROM 34Ø MM TO 344 MM   N=   2
          FROM 35Ø MM TO 354 MM   N=   1
          FROM 38Ø MM TO 384 MM   N=   1
          FROM 385 MM TO 389 MM   N=   1
          FROM 39Ø MM TO 394 MM   N=   1
          FROM 44Ø MM TO 444 MM   N=   1


MENTICIRRHUS UNDULATUS
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 465 MM TO 469 MM   N=   1


HETERODONTUS FRANCISCI
     Ø678AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 55Ø MM TO 554 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-2 at 30 ft. Offshore San Onofre on June 14-15, 1978.

```
PARALABRAX NEBULIFER
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 24Ø MM TO 244 MM    N=   1


HYPERPROSOPON ARGENTEUM
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 1Ø5 MM TO 1Ø9 MM    N=   1
          FROM 11Ø MM TO 114 MM    N=   1


RONCADOR STEARNSII
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   7
          FROM 26Ø MM TO 264 MM    N=   1
          FROM 325 MM TO 329 MM    N=   1
          FROM 33Ø MM TO 334 MM    N=   1
          FROM 335 MM TO 339 MM    N=   1
          FROM 34Ø MM TO 344 MM    N=   3


PHANERODON FURCATUS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 15Ø MM TO 154 MM    N=   1


MUSTELUS CALIFORNICUS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM 61Ø MM TO 614 MM    N=   2
          FROM 615 MM TO 619 MM    N=   1
          FROM 68Ø MM TO 684 MM    N=   1


RHACOCHILES TOXOTES
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 295 MM TO 299 MM    N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-2 at 30 ft. Offshore San Onofre on June 14-15, 1978. (continued)

```
TRIAKIS SEMIFASCIATA
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 46Ø MM TO 464 MM    N=    1
          FROM 5ØØ MM TO 5Ø4 MM    N=    1
          FROM 545 MM TO 549 MM    N=    1


UMBRINA RONCADOR
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM 285 MM TO 289 MM    N=    1
          FROM 3ØØ MM TO 3Ø4 MM    N=    1
          FROM 3Ø5 MM TO 3Ø9 MM    N=    2
          FROM 36Ø MM TO 364 MM    N=    1


MENTICIRRHUS UNDULATUS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 275 MM TO 279 MM    N=    1


SPHYRAENA ARGENTEA
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 295 MM TO 299 MM    N=    1


HALICHOERES SEMICINCTUS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 225 MM TO 229 MM    N=    1
          FROM 245 MM TO 249 MM    N=    1


CYNOSCION NOBILIS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 4ØØ MM TO 4Ø4 MM    N=    1

PARALABRAX MACULATOFASCIATUS
     Ø678BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 22Ø MM TO 224 MM    N=    1
          FROM 26Ø MM TO 264 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 2-2 at 30 ft. Offshore San Onofre on June 14-15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 1Ø5 MM TO 1Ø9 MM    N=    2
          FROM 115 MM TO 119 MM    N=    1


RONCADOR STEARNSII
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 33Ø MM TO 334 MM    N=    1
          FROM 355 MM TO 359 MM    N=    1


MUSTELUS CALIFORNICUS
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 635 MM TO 639 MM    N=    1
          FROM 67Ø MM TO 674 MM    N=    1
          FROM 685 MM TO 689 MM    N=    1
          FROM 735 MM TO 739 MM    N=    1

UMBRINA RONCADOR
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 25Ø MM TO 254 MM    N=    1


MENTICIRRHUS UNDULATUS
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 28Ø MM TO 284 MM    N=    1


HETERODONTUS FRANCISCI
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 535 MM TO 539 MM    N=    1


PARALICHTHYS CALIFORNICUS
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 2ØØ MM TO 2Ø4 MM    N=    1


TRIAKIS SEMIFASCIATA
     Ø678DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 5Ø5 MM TO 5Ø9 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 2-1 at 30 ft. Offshore San Onofre on June 14-15, 1978.

RONCADOR STEARNSII
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 17

| | | | | |
|---|---|---|---|---|
| FROM 23Ø MM | TO 234 MM | N= | 1 | |
| FROM 235 MM | TO 239 MM | N= | 3 | |
| FROM 24Ø MM | TO 244 MM | N= | 2 | |
| FROM 31Ø MM | TO 314 MM | N= | 2 | |
| FROM 32Ø MM | TO 324 MM | N= | 2 | |
| FROM 33Ø MM | TO 334 MM | N= | 1 | |
| FROM 34Ø MM | TO 344 MM | N= | 1 | |
| FROM 345 MM | TO 349 MM | N= | 1 | |
| FROM 355 MM | TO 359 MM | N= | 1 | |
| FROM 38Ø MM | TO 384 MM | N= | 1 | |
| FROM 39Ø MM | TO 394 MM | N= | 1 | |
| FROM 415 MM | TO 419 MM | N= | 1 | |

HYPSYPOPS RUBICUNDUS
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | |
|---|---|---|---|---|
| FROM 2Ø5 MM | TO 2Ø9 MM | N= | 1 | |

CHEILOTREMA SATURNUM
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | |
|---|---|---|---|---|
| FROM 2Ø5 MM | TO 2Ø9 MM | N= | 1 | |

UMBRINA RONCADOR
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 5

| | | | | |
|---|---|---|---|---|
| FROM 28Ø MM | TO 284 MM | N= | 1 | |
| FROM 315 MM | TO 319 MM | N= | 1 | |
| FROM 32Ø MM | TO 324 MM | N= | 1 | |
| FROM 325 MM | TO 329 MM | N= | 1 | |
| FROM 365 MM | TO 369 MM | N= | 1 | |

SCORPAENICTHYS MARMORATUS
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | |
|---|---|---|---|---|
| FROM 16Ø MM | TO 164 MM | N= | 1 | |

SPHYRAENA ARGENTEA
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | |
|---|---|---|---|---|
| FROM 29Ø MM | TO 294 MM | N= | 1 | |

CYNOSCION NOBILIS
Ø678CUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 8

| | | | | |
|---|---|---|---|---|
| FROM 245 MM | TO 249 MM | N= | 1 | |
| FROM 25Ø MM | TO 254 MM | N= | 1 | |
| FROM 395 MM | TO 399 MM | N= | 1 | |
| FROM 4ØØ MM | TO 4Ø4 MM | N= | 1 | |
| FROM 41Ø MM | TO 414 MM | N= | 1 | |
| FROM 425 MM | TO 429 MM | N= | 2 | |
| FROM 45Ø MM | TO 454 MM | N= | 1 | |

Length Frequency Distribution of Species Collected in 24 hour Gill Net 3-1 at 30 ft. Offshore San Onofre on June 14-15, 1978.

```
PARALABRAX CLATHRATUS
     Ø678EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 13Ø MM TO 134 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø678EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 1Ø5 MM TO 1Ø9 MM   N=   2
          FROM 11Ø MM TO 114 MM   N=   1


RONCADOR STEARNSII
     Ø678EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 24Ø MM TO 244 MM   N=   1
          FROM 245 MM TO 249 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 3-2 at 30 ft. Offshore San Onofre on June 14-15, 1978.

```
RONCADOR STEARNSII
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 23Ø MM TO 234 MM    N=    1
          FROM 25Ø MM TO 254 MM    N=    1
          FROM 255 MM TO 259 MM    N=    2


CYNOSCION NOBILIS
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 28Ø MM TO 284 MM    N=    1


CHEILOTREMA SATURNUM
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 18Ø MM TO 184 MM    N=    1


UMBRINA RONCADOR
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 225 MM TO 229 MM    N=    1
          FROM 285 MM TO 289 MM    N=    1


MENTICIRRHUS UNDULATUS
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 245 MM TO 249 MM    N=    1
          FROM 25Ø MM TO 254 MM    N=    1
          FROM 255 MM TO 259 MM    N=    1


SPHYRAENA ARGENTEA
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 28Ø MM TO 284 MM    N=    1


SPHYRNA ZYGAENA
     Ø678FUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 835 MM TO 839 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 4-1 at 45 ft. Offshore
San Onofre on June 14-15, 1978.

```
RONCADOR STEARNSII
     Ø678AUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM 315 MM TO 319 MM   N-   1
          FROM 42Ø MM TO 424 MM   N-   1
```

```
PHANERODON FURCATUS
     Ø678AUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   5
          FROM  85 MM TO  89 MM   N-   1
          FROM  9Ø MM TO  94 MM   N-   1
          FROM 14Ø MM TO 144 MM   N-   1
          FROM 15Ø MM TO 154 MM   N-   1
          FROM 175 MM TO 179 MM   N-   1
```

```
HYPERPROSOPON ARGENTEUM
     Ø678AUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM 13Ø MM TO 134 MM   N-   1
          FROM 135 MM TO 139 MM   N-   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 4-2 at 45 ft. Offshore
San Onofre on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678BUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM 15Ø MM TO 154 MM   N-   1
          FROM 165 MM TO 169 MM   N-   1
```

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 5-1 at 45 ft. Offshore San Onofre on June 14-15, 1978.

**PHANERODON FURCATUS**

```
Ø678CUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
     FROM  95 MM TO  99 MM   N=   2
     FROM 13Ø MM TO 134 MM   N=   1
```

**HYPERPROSOPON ARGENTEUM**

```
Ø678CUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  13
     FROM 1ØØ MM TO 1Ø4 MM   N=   4
     FROM 1Ø5 MM TO 1Ø9 MM   N=   2
     FROM 115 MM TO 119 MM   N=   1
     FROM 12Ø MM TO 124 MM   N=   1
     FROM 125 MM TO 129 MM   N=   3
     FROM 13Ø MM TO 134 MM   N=   1
     FROM 19Ø MM TO 194 MM   N=   1
```

**PARALABRAX CLATHRATUS**

```
Ø678CUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
     FROM 415 MM TO 419 MM   N=   1
```

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 5-2 at 45 ft. Offshore San Onofre on June 14-15, 1978.

**PHANERODON FURCATUS**

```
Ø678DUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
     FROM 17Ø MM TO 174 MM   N=   1
```

**HYPERPROSOPON ARGENTEUM**

```
Ø678DUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
     FROM 1Ø5 MM TO 1Ø9 MM   N=   2
     FROM 11Ø MM TO 114 MM   N=   1
     FROM 13Ø MM TO 134 MM   N=   1
```

**PARALABRAX NEBULIFER**

```
Ø678DUNI23GNLF
ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
     FROM 25Ø MM TO 254 MM   N=   1
     FROM 27Ø MM TO 274 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 6-1 at 30 ft. Offshore Las Flores Creek on June 14-15, 1978.

```
GENYONEMUS LINEATUS
     Ø678GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   3
          FROM 16Ø MM TO 164 MM    N-   1
          FROM 17Ø MM TO 174 MM    N-   2


SERIPHUS POLITUS
     Ø678GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-  1Ø
          FROM 1ØØ MM TO 1Ø4 MM    N-   1
          FROM 135 MM TO 139 MM    N-   5
          FROM 14Ø MM TO 144 MM    N-   2
          FROM 145 MM TO 149 MM    N-   1
          FROM 155 MM TO 159 MM    N-   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 6-2 at 30 ft. Offshore Las Flores Creek on June 14-15, 1978.

```
GENYONEMUS LINEATUS
     Ø678HUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   5
          FROM 13Ø MM TO 134 MM    N-   1
          FROM 15Ø MM TO 154 MM    N-   2
          FROM 165 MM TO 169 MM    N-   2


SERIPHUS POLITUS
     Ø678HUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-  13
          FROM 125 MM TO 129 MM    N-   1
          FROM 13Ø MM TO 134 MM    N-   2
          FROM 135 MM TO 139 MM    N-   7
          FROM 14Ø MM TO 144 MM    N-   1
          FROM 155 MM TO 159 MM    N-   1
          FROM 165 MM TO 169 MM    N-   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 7-1 at 30 ft. Offshore Don Light on June 14-15, 1978.

CYNOSCION NOBILIS
Ø678IUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 24Ø MM TO 244 MM N= 1

Length Frequency Distribution of Species Collected in 24 hour Gill Net 7-2 at 30 ft. Offshore Don Light on June 14-15, 1978.

PARALABRAX NEBULIFER
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 28Ø MM TO 284 MM N= 1

HYPERPROSOPON ARGENTEUM
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 11Ø MM TO 114 MM N= 1

ANISOTREMUS DAVIDSONII
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 2
FROM 2ØØ MM TO 2Ø4 MM N= 1
FROM 2Ø5 MM TO 2Ø9 MM N= 1

AMPHISTICUS ARGENTEUS
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 16Ø MM TO 164 MM N= 1

SCORPAENA GUTTATA
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 15Ø MM TO 154 MM N= 1

MENTICIRRHUS UNDULATUS
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 3ØØ MM TO 3Ø4 MM N= 1

PARALABRAX MACULATOFASCIATUS
Ø678JUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 17Ø MM TO 174 MM N= 1

Length Frequency Distribution of Species Collected in 24 hour Gill Net 8-1 at 30 ft. Offshore Don Light on June 14-15, 1978.

```
AMPHISTICUS ARGENTEUS
     Ø678KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 175 MM TO 179 MM    N-    1

SCORPAENA GUTTATA
     Ø678KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 115 MM TO 119 MM    N-    1

CYNOSCION NOBILIS
     Ø678KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 26Ø MM TO 264 MM    N-    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 8-2 at 30 ft. Offshore Don Light on June 14-15, 1978.

```
PARALABRAX NEBULIFER
     Ø678LUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 66Ø MM TO 664 MM    N-    1

HYPERPROSOPON ARGENTEUM
     Ø678LUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    2
          FROM 1Ø5 MM TO 1Ø9 MM    N-    1
          FROM 11Ø MM TO 114 MM    N-    1

EMBIOTOCA JACKSONII
     Ø678LUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 16Ø MM TO 164 MM    N-    1

AMPHISTICUS ARGENTEUS
     Ø678LUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 215 MM TO 219 MM    N-    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 9-1 at 45 ft. Offshore
Don Light on June 14-15, 1978.

```
RONCADOR STEARNSII
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 23Ø MM TO 234 MM    N=    1


PHANERODON FURCATUS
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM  45 MM TO  49 MM    N=    1
          FROM 14Ø MM TO 144 MM    N=    1
          FROM 15Ø MM TO 154 MM    N=    1
          FROM 155 MM TO 159 MM    N=    1
          FROM 17Ø MM TO 174 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 11Ø MM TO 114 MM    N=    1
          FROM 13Ø MM TO 134 MM    N=    1
          FROM 135 MM TO 139 MM    N=    1
          FROM 14Ø MM TO 144 MM    N=    1


PARALABRAX CLATHRATUS
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 26Ø MM TO 264 MM    N=    1
          FROM 335 MM TO 339 MM    N=    1


PARALABRAX MACULATOFASCIATUS
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 21Ø MM TO 214 MM    N=    1
          FROM 245 MM TO 249 MM    N=    1
          FROM 295 MM TO 299 MM    N=    1


PARALABRAX NEBULIFER
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 2ØØ MM TO 2Ø4 MM    N=    1


PARALICHTHYS CALIFORNICUS
     Ø678EUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 335 MM TO 339 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 9-2 at 45 ft. Offshore
Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678FUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 155 MM TO 159 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 10-1 at 45 ft. Offshore
Don Light on June 14-15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 10-2 at 45 ft. Offshore
Don Light on June 14-15, 1978.

```
PARALABRAX CLATHRATUS
     Ø678HUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 21Ø MM TO 214 MM    N=    1
          FROM 225 MM TO 229 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-20 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678ASMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  9Ø MM TO  94 MM    N=    1
          FROM  95 MM TO  99 MM    N=    1
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-20 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678BSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  95 MM TO  99 MM    N=    1

PARALICHTHYS CALIFORNICUS
     Ø678BSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 17Ø MM TO 174 MM    N=    1

HYPERPROSOPON ARGENTEUM
     Ø678BSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    7
          FROM  4Ø MM TO  44 MM    N=    2
          FROM  5Ø MM TO  54 MM    N=    2
          FROM  6Ø MM TO  64 MM    N=    2
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678CSMTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-  13
          FROM  85 MM TO  89 MM   N-   1
          FROM  9Ø MM TO  94 MM   N-   2
          FROM  95 MM TO  99 MM   N-   5
          FROM 1ØØ MM TO 1Ø4 MM   N-   3
          FROM 12Ø MM TO 124 MM   N-   1
          FROM 165 MM TO 169 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 4-20 offshore San Mateo Point on June 14-15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 1-40 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678ESMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  5Ø MM TO  54 MM   N=   1
          FROM  55 MM TO  59 MM   N=   1

HYPERPROSOPON ARGENTEUM
     Ø678ESMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM  6Ø MM TO  64 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-40 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678FSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  13
          FROM  45 MM TO  49 MM   N=   5
          FROM  5Ø MM TO  54 MM   N=   5
          FROM  85 MM TO  89 MM   N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   2

HYPERPROSOPON ARGENTEUM
     Ø678FSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM  45 MM TO  49 MM   N=   1
          FROM  5Ø MM TO  54 MM   N=   1
          FROM  55 MM TO  59 MM   N=   1
          FROM  6Ø MM TO  64 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678GSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   8
          FROM  45 MM TO  49 MM   N=   1
          FROM  5Ø MM TO  54 MM   N=   3
          FROM  55 MM TO  59 MM   N=   3
          FROM 12Ø MM TO 124 MM   N=   1
```

```
PARALICHTHYS CALIFORNICUS
     Ø678GSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 465 MM TO 469 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 4-40 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678HSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   9
          FROM  45 MM TO  49 MM   N=   1
          FROM  5Ø MM TO  54 MM   N=   6
          FROM  55 MM TO  59 MM   N=   1
          FROM  9Ø MM TO  94 MM   N=   1
```

```
PARALICHTHYS CALIFORNICUS
     Ø678HSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 2Ø5 MM TO 2Ø9 MM   N=   1
          FROM 22Ø MM TO 224 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     0678ISMTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   2
          FROM 105 MM TO 109 MM    N=   1
          FROM 110 MM TO 114 MM    N=   1
```

```
PARALICHTHYS CALIFORNICUS
     0678ISMTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   1
          FROM 380 MM TO 384 MM    N=   1
```

```
HYPERPROSOPON ARGENTEUM
     0678ISMTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   6
          FROM 110 MM TO 114 MM    N=   1
          FROM 125 MM TO 129 MM    N=   3
          FROM 130 MM TO 134 MM    N=   1
          FROM 150 MM TO 154 MM    N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore San Mateo Point on June 14-15, 1978.

```
PHANERODON FURCATUS
     0678JSMTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=  10
          FROM  85 MM TO  89 MM    N=   1
          FROM  95 MM TO  99 MM    N=   3
          FROM 100 MM TO 104 MM    N=   2
          FROM 110 MM TO 114 MM    N=   1
          FROM 115 MM TO 119 MM    N=   2
          FROM 145 MM TO 149 MM    N=   1
```

```
HYPERPROSOPON ARGENTEUM
     0678JSMTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   6
          FROM 100 MM TO 104 MM    N=   1
          FROM 110 MM TO 114 MM    N=   2
          FROM 130 MM TO 134 MM    N=   3
```

Length frequency distribution of select species taken in otter trawl T 3-60 offshore San Mateo Point on June 14-15, 1978.

PHANERODON FURCATUS
Ø678KSMTLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 2Ø

| | | | | | |
|---|---|---|---|---|---|
| FROM | 95 MM | TO | 99 MM | N= | 1 |
| FROM | 1ØØ MM | TO | 1Ø4 MM | N= | 4 |
| FROM | 1Ø5 MM | TO | 1Ø9 MM | N= | 1 |
| FROM | 11Ø MM | TO | 114 MM | N= | 4 |
| FROM | 115 MM | TO | 119 MM | N= | 4 |
| FROM | 135 MM | TO | 139 MM | N= | 1 |
| FROM | 145 MM | TO | 149 MM | N= | 3 |
| FROM | 15Ø MM | TO | 154 MM | N= | 1 |
| FROM | 155 MM | TO | 159 MM | N= | 1 |

PARALICHTHYS CALIFORNICUS
Ø678KSMTLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 6

| | | | | | |
|---|---|---|---|---|---|
| FROM | 225 MM | TO | 229 MM | N= | 1 |
| FROM | 24Ø MM | TO | 244 MM | N= | 1 |
| FROM | 255 MM | TO | 259 MM | N= | 1 |
| FROM | 315 MM | TO | 319 MM | N= | 1 |
| FROM | 32Ø MM | TO | 324 MM | N= | 1 |
| FROM | 34Ø MM | TO | 344 MM | N= | 1 |

HYPERPROSOPON ARGENTEUM
Ø678KSMTLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 3

| | | | | | |
|---|---|---|---|---|---|
| FROM | 125 MM | TO | 129 MM | N= | 1 |
| FROM | 135 MM | TO | 139 MM | N= | 1 |
| FROM | 145 MM | TO | 149 MM | N= | 1 |

Length frequency distribution of select species taken in otter trawl T 4-60 offshore San Mateo Point on June 14-15, 1978.

PHANERODON FURCATUS
Ø678LSMTLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 21

| | | | | | |
|---|---|---|---|---|---|
| FROM | 85 MM | TO | 89 MM | N= | 1 |
| FROM | 9Ø MM | TO | 94 MM | N= | 3 |
| FROM | 95 MM | TO | 99 MM | N= | 1 |
| FROM | 1ØØ MM | TO | 1Ø4 MM | N= | 4 |
| FROM | 1Ø5 MM | TO | 1Ø9 MM | N= | 2 |
| FROM | 11Ø MM | TO | 114 MM | N= | 1 |
| FROM | 12Ø MM | TO | 124 MM | N= | 1 |
| FROM | 13Ø MM | TO | 134 MM | N= | 1 |
| FROM | 135 MM | TO | 139 MM | N= | 4 |
| FROM | 15Ø MM | TO | 154 MM | N= | 2 |
| FROM | 165 MM | TO | 169 MM | N= | 1 |

HYPERPROSOPON ARGENTEUM
Ø678LSMTLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 4

| | | | | | |
|---|---|---|---|---|---|
| FROM | 1ØØ MM | TO | 1Ø4 MM | N= | 1 |
| FROM | 1Ø5 MM | TO | 1Ø9 MM | N= | 2 |
| FROM | 125 MM | TO | 129 MM | N= | 1 |

Length frequency distribution of select species taken in otter trawl T 1-20 offshore San Onofre on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678ASOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM  25 MM TO  29 MM   N=   1
          FROM  3Ø MM TO  34 MM   N=   1
          FROM  5Ø MM TO  54 MM   N=   1
          FROM 12Ø MM TO 134 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-20 offshore San Onofre on June 14-15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø678BSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  55 MM TO  59 MM   N=   1
          FROM  6Ø MM TO  64 MM   N=   1
          FROM  65 MM TO  69 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore San Onofre on June 14-15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 4-20 offshore San Onofre on June 14-15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø678DSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  4Ø MM TO  44 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 1-40 offshore San Onofre on June 14-15, 1978

```
        FROM 200 MM TO 204 MM   N=   1
        FROM 205 MM TO 209 MM   N=   1


PARALICHTHYS CALIFORNICUS
     0678ESOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   5
        FROM 240 MM TO 244 MM   N=   1
        FROM 255 MM TO 259 MM   N=   1
        FROM 290 MM TO 294 MM   N=   1
        FROM 305 MM TO 309 MM   N=   1
        FROM 450 MM TO 454 MM   N=   1


PHANERODON FURCATUS
     0678ESOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   9
        FROM  50 MM TO  54 MM   N=   5
        FROM  55 MM TO  59 MM   N=   3
        FROM 150 MM TO 154 MM   N=   1

PARALABRAX NEBULIFER
     0678ESOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   1
        FROM 260 MM TO 264 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-40 offshore San Onofre on June 14-15, 1978.

```
PARALICHTHYS CALIFORNICUS
     0678FSOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   3
        FROM 240 MM TO 244 MM   N=   1
        FROM 250 MM TO 254 MM   N=   1
        FROM 315 MM TO 319 MM   N=   1


PHANERODON FURCATUS
     0678FSOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=   9
        FROM  35 MM TO  39 MM   N=   1
        FROM  50 MM TO  54 MM   N=   4
        FROM  55 MM TO  59 MM   N=   3
        FROM  75 MM TO  79 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore San Onofre on June 14-15, 1978.

```
RONCADOR STEARNSII
     Ø678GSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1
          FROM 33Ø MM TO 334 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø678GSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  7Ø MM TO  74 MM   N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1

PHANERODON FURCATUS
     Ø678GSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  13
          FROM  5Ø MM TO  54 MM   N=   3
          FROM  55 MM TO  59 MM   N=   6
          FROM  6Ø MM TO  64 MM   N=   2
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
          FROM 17Ø MM TO 174 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 4-40 offshore San Onofre on June 14-15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø678HSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  55 MM TO  59 MM   N=   1
          FROM  6Ø MM TO  64 MM   N=   1

PHANERODON FURCATUS
     Ø678HSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   9
          FROM  45 MM TO  49 MM   N=   1
          FROM  5Ø MM TO  54 MM   N=   1
          FROM  55 MM TO  59 MM   N=   6
          FROM  6Ø MM TO  64 MM   N=   1


PARALICHTHYS CALIFORNICUS
     Ø678HSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 23Ø MM TO 234 MM   N=   2
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore San Onofre on June 14-15, 1978.

```
PARALICHTHYS CALIFORNICUS
     0678ISOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=    1
          FROM 390 MM TO 394 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore San Onofre on June 14-15, 1978.

```
PARALICHTHYS CALIFORNICUS
     0678JSOTLF
     ZONE CODE= 10      STATION NO.= 0      TOTAL N=    1
          FROM 200 MM TO 204 MM    N=    1
```

Length frequency distribution of select species taken in otter trawls T 3-60 and 4-60 offshore San Onofre on June 14-15, 1978.

NO SELECT SPECIES COLLECTED IN EITHER REPLICATE.

Length frequency distribution of select species taken in otter trawl T 1-20 offshore Don Light on June 14-15. 1978.

```
PHANERODON FURCATUS
     Ø678ADLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM  3Ø MM TO  34 MM   N-   1
          FROM  5Ø MM TO  54 MM   N-   1

PARALICHTHYS CALIFORNICUS
     Ø678ADLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM 135 MM TO 139 MM   N-   1
          FROM 15Ø MM TO 154 MM   N-   1

HYPERPROSOPON ARGENTEUM
     Ø678ADLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM  45 MM TO  49 MM   N-   2
```

Length frequency distribution of select species taken in otter trawl T 2-20 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678BDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM  55 MM TO  59 MM   N-   1

PARALICHTHYS CALIFORNICUS
     Ø678BDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 15Ø MM TO 154 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore Don Light on June 14-15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø678CDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   8
          FROM  4Ø MM TO  44 MM   N-   4
          FROM  45 MM TO  49 MM   N-   2
          FROM  5Ø MM TO  54 MM   N-   2
```

Length frequency distribution of select species taken in otter trawl T 4-20 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678DDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   5
          FROM  3Ø MM TO  34 MM   N-   1
          FROM  4Ø MM TO  44 MM   N-   3
          FROM  5Ø MM TO  54 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 1-40 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678EDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM  5Ø MM TO  54 MM   N-   1
          FROM  55 MM TO  59 MM   N-   1

PARALICHTHYS CALIFORNICUS
     Ø678EDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 27Ø MM TO 274 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 2-40 offshore Don Light on June 14-15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø678FDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 42Ø MM TO 424 MM   N-   1

HYPERPROSOPON ARGENTEUM
     Ø678FDLTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM  55 MM TO  59 MM   N-   1
          FROM  6Ø MM TO  64 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678GDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    6
          FROM  4Ø MM TO  44 MM    N=    1
          FROM  45 MM TO  49 MM    N=    1
          FROM  5Ø MM TO  54 MM    N=    2
          FROM  55 MM TO  59 MM    N=    1
          FROM  7Ø MM TO  74 MM    N=    1


PARALICHTHYS CALIFORNICUS
     Ø678GDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 345 MM TO 349 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø678GDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  5Ø MM TO  54 MM    N=    1
          FROM  55 MM TO  59 MM    N=    1
          FROM  6Ø MM TO  64 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-40 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678HDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  5Ø MM TO  54 MM    N=    1
          FROM  55 MM TO  59 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678IDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 1Ø5 MM TO 1Ø9 MM   N=   1
```

```
PARALICHTHYS CALIFORNICUS
     Ø678IDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 275 MM TO 279 MM   N=   1
          FROM 325 MM TO 329 MM   N=   1
          FROM 395 MM TO 399 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678JDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  12
          FROM  95 MM TO  99 MM   N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   2
          FROM 1Ø5 MM TO 1Ø9 MM   N=   2
          FROM 11Ø MM TO 114 MM   N=   1
          FROM 14Ø MM TO 144 MM   N=   2
          FROM 145 MM TO 149 MM   N=   1
          FROM 155 MM TO 159 MM   N=   1
          FROM 165 MM TO 169 MM   N=   1
          FROM 175 MM TO 179 MM   N=   1
```

```
PARALICHTHYS CALIFORNICUS
     Ø678JDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   7
          FROM 23Ø MM TO 234 MM   N=   1
          FROM 245 MM TO 249 MM   N=   1
          FROM 25Ø MM TO 254 MM   N=   1
          FROM 28Ø MM TO 284 MM   N=   1
          FROM 325 MM TO 329 MM   N=   1
          FROM 35Ø MM TO 354 MM   N=   1
          FROM 53Ø MM TO 534 MM   N=   1
```

```
HYPERPROSOPON ARGENTEUM
     Ø678JDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 1ØØ MM TO 1Ø4 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-60 offshore Don Light on June 14-15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø678KDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 25Ø MM TO 254 MM    N=    1
          FROM 425 MM TO 429 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø678KDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
          FROM 115 MM TO 119 MM    N=    2
          FROM 12Ø MM TO 124 MM    N=    1


PHANERODON FURCATUS
     Ø678KDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  8Ø MM TO  84 MM    N=    1
          FROM 16Ø MM TO 164 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-60 offshore Don Light on June 14-15, 1978.

```
PHANERODON FURCATUS
     Ø678LDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  9Ø MM TO  94 MM    N=    2
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 11-1 at 30 ft. Offshore San Mateo Pt. on August 15-16, 1978.

```
RONCADOR STEARNSII
     Ø878IUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 345 MM TO 349 MM    N=   1


PARALABRAX CLATHRATUS
     Ø878IUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 24Ø MM TO 244 MM    N=   1


PHANERODON FURCATUS
     Ø878IUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 155 MM TO 159 MM    N=   1


HYPERPROSOPON ARGENTEUM
     Ø878IUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 12Ø MM TO 124 MM    N=   1
          FROM 135 MM TO 139 MM    N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 11-2 at 30 ft. Offshore San Mateo Pt. on August 15-16, 1978.

```
PHANERODON FURCATUS
     Ø878JUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 14Ø MM TO 144 MM    N=   1


HYPERPROSOPON ARGENTEUM
     Ø878JUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM  8Ø MM TO  84 MM    N=   1
          FROM 11Ø MM TO 114 MM    N=   1
          FROM 18Ø MM TO 184 MM    N=   1


PARALABRAX NEBULIFER
     Ø878JUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 245 MM TO 249 MM    N=   1
```

Length Frequency Distribution of Species Collected
in 24 hour Gill Net 12-1 at 30 ft. Offshore San Mateo Pt.
on August 15-16, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Species Collected
in 24 hour Gill Net 12-2 at 30 ft. Offshore San Mateo Pt.
on August 15-16, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 13-1 at 45 ft. Offshore
San Mateo Point on August 15-16, 1978.

```
PHANERODON FURCATUS
     Ø878MUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   4
          FROM 115 MM TO 119 MM   N-   3
          FROM 12Ø MM TO 124 MM   N-   1


HYPERPROSOPON ARGENTEUM
     Ø878MUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   6
          FROM 11Ø MM TO 114 MM   N-   3
          FROM 115 MM TO 119 MM   N-   1
          FROM 135 MM TO 139 MM   N-   1
          FROM 145 MM TO 149 MM   N-   1


CYNOSCION NOBILIS
     Ø878MUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 285 MM TO 289 MM   N-   1


PARALABRAX NEBULIFER
     Ø878MUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 41Ø MM TO 414 MM   N-   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 13-2 at 45 ft. Offshore
San Mateo Point on August 15-16, 1978.

```
PHANERODON FURCATUS
     Ø878NUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM  95 MM TO  99 MM    N=    1
          FROM 14Ø MM TO 144 MM    N=    1
          FROM 15Ø MM TO 154 MM    N=    1
          FROM 155 MM TO 159 MM    N=    2


HYPERPROSOPON ARGENTEUM
     Ø378NUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 12Ø MM TO 124 MM    N=    1
          FROM 13Ø MM TO 134 MM    N=    1
          FROM 14Ø MM TO 144 MM    N=    1


PARALABRAX CLATHRATUS
     Ø878NUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 175 MM TO 179 MM    N=    1


PARALABRAX NEBULIFER
     Ø878NUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 3Ø5 MM TO 3Ø9 MM    N=    1
          FROM 31Ø MM TO 314 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 14-1 at 45 ft. Offshore
San Mateo Point on August 15-16, 1978.

```
PARALABRAX CLATHRATUS
     Ø878OUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 22Ø MM TO 224 MM    N=   1
          FROM 4ØØ MM TO 4Ø4 MM    N=   1


HYPERPROSOPON ARGENTEUM
     Ø878OUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  12
          FROM 125 MM TO 129 MM    N=   1
          FROM 13Ø MM TO 134 MM    N=   5
          FROM 135 MM TO 139 MM    N=   5
          FROM 14Ø MM TO 144 MM    N=   1


PHANERODON FURCATUS
     Ø878OUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM  75 MM TO  79 MM    N=   1
          FROM 155 MM TO 159 MM    N=   1
          FROM 18Ø MM TO 184 MM    N=   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 14-2 at 45 ft. Offshore
San Mateo Point on August 15-16, 1978.

**PHANERODON FURCATUS**

Ø878PUNI23GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 8

| | | | |
|---|---|---|---|
| FROM 11Ø MM TO 114 MM | N= | 1 | |
| FROM 115 MM TO 119 MM | N= | 1 | |
| FROM 15Ø MM TO 154 MM | N= | 1 | |
| FROM 16Ø MM TO 164 MM | N= | 2 | |
| FROM 165 MM TO 169 MM | N= | 2 | |
| FROM 175 MM TO 179 MM | N= | 1 | |

**HYPERPROSOPON ARGENTEUM**

Ø878PUNI23GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 14

| | | |
|---|---|---|
| FROM 11Ø MM TO 114 MM | N= | 1 |
| FROM 12Ø MM TO 124 MM | N= | 1 |
| FROM 125 MM TO 129 MM | N= | 1 |
| FROM 13Ø MM TO 134 MM | N= | 2 |
| FROM 135 MM TO 139 MM | N= | 4 |
| FROM 14Ø MM TO 144 MM | N= | 3 |
| FROM 15Ø MM TO 154 MM | N= | 1 |
| FROM 16Ø MM TO 164 MM | N= | 1 |

**PARALICHTHYS CALIFORNICUS**

Ø878PUNI23GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | |
|---|---|---|
| FROM 34Ø MM TO 344 MM | N= | 1 |

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-1 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
EMBIOTOCA JACKSONII
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 145 MM TO 149 MM   N=   1


DAMALICHTHYS VACCA
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 195 MM TO 199 MM   N=   1


MUSTELUS CALIFORNICUS
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 61Ø MM TO 614 MM   N=   1
          FROM 68Ø MM TO 684 MM   N=   1


TRIAKIS SEMIFASCIATA
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 445 MM TO 449 MM   N=   1


RHACOCHILUS TOXOTES
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 27Ø MM TO 274 MM   N=   1


HERMOSILLA AZUREA
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 295 MM TO 299 MM   N=   1


PEPRILUS SIMILLIMUS
     Ø878AUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 125 MM TO 129 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-1 at 30 ft. Offshore San Onofre on August 15-16, 1978. (continued)

HALICHOERES SEMICINCTUS
Ø878AUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 17Ø MM TO 174 MM N= 1

CYNOSCION NOBILIS
Ø878AUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 2
FROM 26Ø MM TO 264 MM N= 1
FROM 29Ø MM TO 294 MM N= 1

SARDA CHILENSIS
Ø878AUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1
FROM 33Ø MM TO 334 MM N= 1

HYPERPROSOPON ARGENTEUM
Ø878AUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 2
FROM 14Ø MM TO 144 MM N= 1
FROM 15Ø MM TO 154 MM N= 1

UMBRINA RONCADOR
Ø878AUNIT1GNLF
ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 2
FROM 31Ø MM TO 314 MM N= 1
FROM 32Ø MM TO 324 MM N= 1

Length Frequency Distribution of Species Collected in 24 hour Gill Net 1-2 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
EMBIOTOCA JACKSONII
     Ø378BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 135 MM TO 139 MM    N=    1


MUSTELUS CALIFORNICUS
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 52Ø MM TO 524 MM    N=    1
          FROM 57Ø MM TO 574 MM    N=    1


SEBASTES RASTRELLIGER
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 29Ø MM TO 294 MM    N=    1


HETEROSTICHUS ROSTRATUS
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 19Ø MM TO 194 MM    N=    1


CHEILOTREMA SATURNUM
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 195 MM TO 199 MM    N=    1


RONCADOR STEARNSII
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 37Ø MM TO 374 MM    N=    1


CYNOSCION NOBILIS
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 295 MM TO 299 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø878BUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 135 MM TO 139 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 2-1 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 115 MM TO 119 MM    N=   1
          FROM 14Ø MM TO 144 MM    N=   2


SARDA CHILENSIS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 335 MM TO 339 MM    N=   1
          FROM 35Ø MM TO 354 MM    N=   1


CYNOSCION NOBILIS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 32Ø MM TO 324 MM    N=   1


HALICHOERES SEMICINCTUS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 2ØØ MM TO 2Ø4 MM    N=   1
          FROM 21Ø MM TO 214 MM    N=   1


PARALICHTHYS CALIFORNICUS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 5ØØ MM TO 5Ø4 MM    N=   1


PEPRILUS SIMILLIMUS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 13Ø MM TO 134 MM    N=   1


PIMELOMETOPON PULCHRUM
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 29Ø MM TO 294 MM    N=   1


MUSTELUS CALIFORNICUS
     Ø878CUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 735 MM TO 739 MM    N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 2-2 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
UMBRINA RONCADOR
     Ø378DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 28Ø MM TO 284 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  8Ø MM TO  84 MM    N=    1
          FROM  85 MM TO  89 MM    N=    2


SARDA CHILENSIS
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 31Ø MM TO 314 MM    N=    1
          FROM 325 MM TO 329 MM    N=    1

HETERODONTUS FRANCISCI
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 53Ø MM TO 534 MM    N=    1


MENTICIRRHUS UNDULATUS
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 29Ø MM TO 294 MM    N=    1


GIRELLA NIGRICANS
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 29Ø MM TO 294 MM    N=    1
          FROM 315 MM TO 319 MM    N=    1


PEPRILUS SIMILLIMUS
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM 115 MM TO 119 MM    N=    1
          FROM 12Ø MM TO 124 MM    N=    1
          FROM 125 MM TO 129 MM    N=    2
          FROM 13Ø MM TO 134 MM    N=    1


MUSTELUS CALIFORNICUS
     Ø878DUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 57Ø MM TO 574 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 3-1 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
UMBRINA RONCADOR
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 19Ø MM TO 194 MM   N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   1
          FROM 335 MM TO 339 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  8Ø MM TO  84 MM   N=   1
          FROM 135 MM TO 139 MM   N=   1


SARDA CHILENSIS
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 325 MM TO 329 MM   N=   1


CYNOSCION NOBILIS
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 26Ø MM TO 264 MM   N=   1
          FROM 265 MM TO 269 MM   N=   1


MENTICIRRHUS UNDULATUS
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 27Ø MM TO 274 MM   N=   1


TRIAKIS SEMIFASCIATA
     Ø878EUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 32Ø MM TO 324 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 3-2 at 30 ft. Offshore San Onofre on August 15-16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878FUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    4
          FROM  8Ø MM TO  84 MM   N-   2
          FROM  85 MM TO  89 MM   N-   2
```

```
CYNOSCION NOBILIS
     Ø878FUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    2
          FROM 3ØØ MM TO 3Ø4 MM   N-   1
          FROM 325 MM TO 329 MM   N-   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 4-1 at 45 ft. Offshore
San Onofre on August 15-16, 1978.

```
PHANERODON FURCATUS
     Ø878AUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 135 MM TO 139 MM    N=    1
          FROM 15Ø MM TO 154 MM    N=    2
          FROM 165 MM TO 169 MM    N=    1
```

```
HYPERPROSOPON ARGENTEUM
     Ø878AUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  8Ø MM TO  84 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 4-2 at 45 ft. Offshore
San Onofre on August 15-16, 1978.

```
PARALABRAX CLATHRATUS
     Ø878BUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 145 MM TO 149 MM    N=    1
          FROM 155 MM TO 159 MM    N=    2
          FROM 18Ø MM TO 184 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878BUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    7
          FROM 115 MM TO 119 MM    N=    1
          FROM 12Ø MM TO 124 MM    N=    2
          FROM 145 MM TO 149 MM    N=    1
          FROM 15Ø MM TO 154 MM    N=    1
          FROM 16Ø MM TO 164 MM    N=    1
          FROM 165 MM TO 169 MM    N=    1
```

```
HYPERPROSOPON ARGENTEUM
     Ø878BUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 135 MM TO 139 MM    N=    1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 5-1 at 45 ft. Offshore
San Onofre on August 15-16, 1978.

```
RONCADOR STEARNSII
     Ø878CUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 385 MM TO 389 MM   N-   1


PHANERODON FURCATUS
     Ø878CUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   6
          FROM 15Ø MM TO 154 MM   N-   1
          FROM 175 MM TO 179 MM   N-   1
          FROM 18Ø MM TO 184 MM   N-   2
          FROM 185 MM TO 189 MM   N-   1
          FROM 19Ø MM TO 194 MM   N-   1


PARALICHTHYS CALIFORNICUS
     Ø878CUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 32Ø MM TO 324 MM   N-   1


PARALABRAX NEBULIFER
     Ø878CUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM 26Ø MM TO 264 MM   N-   1


HYPERPROSOPON ARGENTEUM
     Ø878CUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   3
          FROM  75 MM TO  79 MM   N-   1
          FROM  9Ø MM TO  94 MM   N-   1
          FROM 14Ø MM TO 144 MM   N-   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 5-2 at 45 ft. Offshore
San Onofre on August 15-16, 1978.

```
RONCADOR STEARNSII
     Ø878DUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 355 MM TO 359 MM    N=    1


PARALABRAX CLATHRATUS
     Ø878DUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 255 MM TO 259 MM    N=    1


PHANERODON FURCATUS
     Ø878DUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    6
          FROM 16Ø MM TO 164 MM    N=    1
          FROM 165 MM TO 169 MM    N=    1
          FROM 17Ø MM TO 174 MM    N=    1
          FROM 18Ø MM TO 184 MM    N=    1
          FROM 185 MM TO 189 MM    N=    1
          FROM 2ØØ MM TO 2Ø4 MM    N=    1

HYPERPROSOPON ARGENTEUM
     Ø878DUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM  8Ø MM TO  84 MM    N=    1
          FROM  85 MM TO  89 MM    N=    1
          FROM 12Ø MM TO 124 MM    N=    2
          FROM 13Ø MM TO 134 MM    N=    1

PARALICHTHYS CALIFORNICUS
     Ø878DUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 645 MM TO 649 MM    N=    1
```

Length Frequency Distribution of Species Collected
in 24 hour Gill Net 6-1 at 30 ft. Offshore Las Flores Creek
on August 15-16, 1978.

```
SERIPHUS POLITUS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-  53
          FROM 12Ø MM TO 124 MM   N-   1
          FROM 125 MM TO 129 MM   N-   4
          FROM 13Ø MM TO 134 MM   N-  11
          FROM 135 MM TO 139 MM   N-  15
          FROM 14Ø MM TO 144 MM   N-   1
          FROM 15Ø MM TO 154 MM   N-   1
          FROM 155 MM TO 159 MM   N-   2
          FROM 16Ø MM TO 164 MM   N-   4
          FROM 17Ø MM TO 174 MM   N-   4
          FROM 175 MM TO 179 MM   N-   2
          FROM 18Ø MM TO 184 MM   N-   5
          FROM 185 MM TO 189 MM   N-   2
          FROM 19Ø MM TO 194 MM   N-   1


SARDA CHILENSIS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   4
          FROM 3Ø5 MM TO 3Ø9 MM   N-   1
          FROM 31Ø MM TO 314 MM   N-   1
          FROM 315 MM TO 319 MM   N-   2


GENYONEMUS LINEATUS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   5
          FROM 115 MM TO 119 MM   N-   1
          FROM 12Ø MM TO 124 MM   N-   2
          FROM 15Ø MM TO 154 MM   N-   1
          FROM 18Ø MM TO 184 MM   N-   1


ALOPIAS VULPINUS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   1
          FROM144Ø MM TO1444 MM   N-   1


MENTICIRRHUS UNDULATUS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   2
          FROM 185 MM TO 189 MM   N-   1
          FROM 19Ø MM TO 194 MM   N-   1


PEPRILUS SIMILLIMUS
     Ø878GUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-   8
          FROM  65 MM TO  69 MM   N-   1
          FROM 12Ø MM TO 124 MM   N-   4
          FROM 125 MM TO 129 MM   N-   2
          FROM 13Ø MM TO 134 MM   N-   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 6-2 at 30 ft. Offshore Las Flores Creek on August 15-16, 1978.

**SERIPHUS POLITUS**

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 43

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 9Ø | MM | TO | 94 | MM | N= | 1 |
| FROM | 95 | MM | TO | 99 | MM | N= | 1 |
| FROM | 12Ø | MM | TO | 124 | MM | N= | 1 |
| FROM | 125 | MM | TO | 129 | MM | N= | 3 |
| FROM | 13Ø | MM | TO | 134 | MM | N= | 4 |
| FROM | 135 | MM | TO | 139 | MM | N= | 5 |
| FROM | 14Ø | MM | TO | 144 | MM | N= | 9 |
| FROM | 145 | MM | TO | 149 | MM | N= | 4 |
| FROM | 15Ø | MM | TO | 154 | MM | N= | 1 |
| FROM | 155 | MM | TO | 159 | MM | N= | 1 |
| FROM | 17Ø | MM | TO | 174 | MM | N= | 3 |
| FROM | 175 | MM | TO | 179 | MM | N= | 3 |
| FROM | 18Ø | MM | TO | 184 | MM | N= | 5 |
| FROM | 195 | MM | TO | 199 | MM | N= | 1 |
| FROM | 2ØØ | MM | TO | 2Ø4 | MM | N= | 1 |

SARDA CHILENSIS

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 34Ø | MM | TO | 344 | MM | N= | 1 |

GENYONEMUS LINEATUS

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 165 | MM | TO | 169 | MM | N= | 1 |
| FROM | 175 | MM | TO | 179 | MM | N= | 1 |
| FROM | 2Ø5 | MM | TO | 2Ø9 | MM | N= | 1 |

MENTICIRRHUS UNDULATUS

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 215 | MM | TO | 219 | MM | N= | 1 |

PEPRILUS SIMILLIMUS

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 14Ø | MM | TO | 144 | MM | N= | 1 |

**RHACOCHILUS TOXOTES**

Ø878HUNIT1GNLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FROM | 29Ø | MM | TO | 294 | MM | N= | 1 |

Length Frequency Distribution of Species Collected in 24 hour Gill Net 7-1 at 30 ft. Offshore Don Light on August 15-16, 1978.

```
MENTICIRRHUS UNDULATUS
     Ø878IUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 17Ø MM TO 174 MM    N=    1
          FROM 245 MM TO 249 MM    N=    1
          FROM 25Ø MM TO 254 MM    N=    1


RONCADOR STEARNSII
     Ø878IUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 215 MM TO 219 MM    N=    1
          FROM 225 MM TO 229 MM    N=    1
          FROM 23Ø MM TO 234 MM    N=    1
          FROM 245 MM TO 249 MM    N=    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 7-2 at 30 ft Offshore Don Light on August 15-16, 1978.

```
SCORPAENA GUTTATA
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 175 MM TO 179 MM   N=   1


MENTICIRRHUS UNDULATUS
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 29Ø MM TO 294 MM   N=   1


PIMELOMETOPON PULCHRUM
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 35Ø MM TO 354 MM   N=   1


EMBIOTOCA JACKSONII
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 175 MM TO 179 MM   N=   2
          FROM 19Ø MM TO 194 MM   N=   1


PHANERODON FURCATUS
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM 15Ø MM TO 154 MM   N=   1
          FROM 155 MM TO 159 MM   N=   1
          FROM 165 MM TO 169 MM   N=   1
          FROM 17Ø MM TO 174 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 14Ø MM TO 144 MM   N=   1


SARDA CHILENSIS
     Ø878JUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 31Ø MM TO 314 MM   N=   1
          FROM 315 MM TO 319 MM   N=   1
          FROM 345 MM TO 349 MM   N=   1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 8-1 at 30 ft. Offshore Don Light on August 15-16, 1978.

```
MUSTELUS CALIFORNICUS
     Ø878KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 325 MM TO 329 MM    N-    1


PORICTHYS MYRIASTER
     Ø878KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 31Ø MM TO 314 MM    N-    1


SARDA CHILENSIS
     Ø878KUNIT1GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    2
          FROM 3Ø5 MM TO 3Ø9 MM    N-    1
          FROM 31Ø MM TO 314 MM    N-    1
```

Length Frequency Distribution of Species Collected in 24 hour Gill Net 8-2 at 30 ft. Offshore Don Light on August 15-16, 1978.

```
MENTICIRRHUS UNDULATUS
     Ø878LUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 315 MM TO 319 MM   N=   1


ANISOTREMA DAVIDSONII
     Ø878LUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 19Ø MM TO 194 MM   N=   1


PARALABRAX CLATHRATUS
     Ø878LUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 185 MM TO 189 MM   N=   1


HYPERPROSOPON ARGENTEUM
     Ø878LUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   7
          FROM 11Ø MM TO 114 MM   N=   2
          FROM 115 MM TO 119 MM   N=   2
          FROM 13Ø MM TO 134 MM   N=   2
          FROM 14Ø MM TO 144 MM   N=   1


PHANERODON FURCATUS
     Ø878LUNIT1GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 15Ø MM TO 154 MM   N=   1
```

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 9-1 at 45 ft. Offshore
Don Light on August 15-16, 1978.

**SARDA CHILENSIS**
Ø878EUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 2
FROM 31Ø MM TO 314 MM N- 1
FROM 32Ø MM TO 324 MM N- 1

**PHANERODON FURCATUS**
Ø878EUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 11Ø MM TO 114 MM N- 1

**HYPERPROSOPON ARGENTEUM**
Ø878EUNI23GNLF
ZONE CODE- 1Ø STATION NO.- Ø TOTAL N- 1
FROM 7Ø MM TO 74 MM N- 1

Length Frequency Distribution of Select Species
Collected in 24 hour Gill Net 9-2 at 45 ft. Offshore
Don Light on August 15-16, 1978.

**PARALABRAX MACULATOFASCIATUS**

```
     Ø878FUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 245 MM TO 249 MM   N=   1
          FROM 27Ø MM TO 274 MM   N=   1
          FROM 275 MM TO 279 MM   N=   1
```

**PARALABRAX CLATHRATUS**

```
     Ø878FUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 34Ø MM TO 344 MM   N=   1
```

**PHANERODON FURCATUS**

```
     Ø878FUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  21
          FROM 115 MM TO 119 MM   N=   4
          FROM 12Ø MM TO 124 MM   N=   1
          FROM 125 MM TO 129 MM   N=   1
          FROM 145 MM TO 149 MM   N=   2
          FROM 15Ø MM TO 154 MM   N=   4
          FROM 155 MM TO 159 MM   N=   1
          FROM 165 MM TO 169 MM   N=   1
          FROM 175 MM TO 179 MM   N=   2
          FROM 18Ø MM TO 184 MM   N=   5
```

**HYPERPROSOPON ARGENTEUM**

```
     Ø878FUNI23GNLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   5
          FROM  75 MM TO  79 MM   N=   1
          FROM  8Ø MM TO  84 MM   N=   1
          FROM 115 MM TO 119 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   2
```

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 10-1 at 45 ft. Offshore Don Light on August 15-16, 1978.

```
PHANERODON FURCATUS
     Ø878GUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    2
          FROM 115 MM TO 119 MM    N-    1
          FROM 17Ø MM TO 174 MM    N-    1
```

```
HYPERPROSOPON ARGENTEUM
     Ø878GUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    3
          FROM 12Ø MM TO 124 MM    N-    1
          FROM 13Ø MM TO 134 MM    N-    2
```

Length Frequency Distribution of Select Species Collected in 24 hour Gill Net 10-2 at 45 ft. Offshore Don Light on August 15-16, 1978.

```
RONCADOR STEARNSII
     Ø878HUNI23GNLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    2
          FROM 21Ø MM TO 214 MM    N-    1
          FROM 31Ø MM TO 314 MM    N-    1
```

Length frequency distribution of select species taken in otter trawl T 1-20 offshore San Mateo Pt. on August 15, 1978.

```
PHANERODON FURCATUS
     Ø878ASMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
          FROM 115 MM TO 119 MM    N=    2
```

```
HYPERPROSOPON ARGENTEUM
     Ø878ASMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  6Ø MM TO  64 MM    N=    2
          FROM  65 MM TO  69 MM    N=    1
```

```
PARALICHTHYS CALIFORNICUS
     Ø878ASMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM 18Ø MM TO 184 MM    N=    2
          FROM 19Ø MM TO 194 MM    N=    2
          FROM 23Ø MM TO 234 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-20 offshore San Mateo Pt. on August 15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878BSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 195 MM TO 199 MM    N=    2
          FROM 21Ø MM TO 214 MM    N=    1
          FROM 215 MM TO 219 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore San Mateo Pt. on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878CSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM 18Ø MM TO 184 MM   N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   2
          FROM 22Ø MM TO 224 MM   N=   1
```

```
PHANERODON FURCATUS
     Ø878CSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  6Ø MM TO  64 MM   N=   1
          FROM  75 MM TO  79 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 4-20 offshore San Mateo Pt. on August 16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878DSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   4
          FROM  6Ø MM TO  64 MM   N=   1
          FROM  65 MM TO  69 MM   N=   1
          FROM  7Ø MM TO  74 MM   N=   2
```

```
PHANERODON FURCATUS
     Ø878DSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM  6Ø MM TO  64 MM   N=   1
          FROM 11Ø MM TO 114 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 1-40 offshore San Mateo Pt. on August 15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878ESMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  9Ø MM TO  94 MM    N=    1
          FROM 215 MM TO 219 MM    N=    1
          FROM 23Ø MM TO 234 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø878ESMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM  7Ø MM TO  74 MM    N=    1
          FROM  75 MM TO  79 MM    N=    1
          FROM  8Ø MM TO  84 MM    N=    2


PHANERODON FURCATUS
     Ø878ESMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    8
          FROM  55 MM TO  59 MM    N=    3
          FROM  6Ø MM TO  64 MM    N=    1
          FROM  65 MM TO  69 MM    N=    1
          FROM  7Ø MM TO  74 MM    N=    2
          FROM 125 MM TO 129 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-40 offshore San Mateo Pt. on August 15, 1978.

**PARALICHTHYS CALIFORNICUS**

```
     Ø878FSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 185 MM TO 189 MM    N=    1
          FROM 45Ø MM TO 454 MM    N=    1
```

**HYPERPROSOPON ARGENTEUM**

```
     Ø878FSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  8Ø MM TO  84 MM    N=    1
          FROM  85 MM TO  89 MM    N=    1
```

**PHANERODON FURCATUS**

```
     Ø878FSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  65 MM TO  69 MM    N=    1
          FROM 13Ø MM TO 134 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore San Mateo Pt. on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878GSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 17Ø MM TO 174 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø878GSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM  7Ø MM TO  74 MM    N=    2
          FROM  8Ø MM TO  84 MM    N=    3


PHANERODON FURCATUS
     Ø878GSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM  5Ø MM TO  54 MM    N=    1
          FROM  6Ø MM TO  64 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-40 offshore San Mateo Pt. on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878HSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 215 MM TO 219 MM    N=    1
          FROM 25Ø MM TO 254 MM    N=    1


HYPERPROSOPON ARGENTEUM
     Ø878HSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM  75 MM TO  79 MM    N=    1
          FROM  85 MM TO  89 MM    N=    1
          FROM 165 MM TO 169 MM    N=    1


PHANERODON FURCATUS
     Ø878HSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM  5Ø MM TO  54 MM    N=    1
          FROM  6Ø MM TO  64 MM    N=    1
          FROM  65 MM TO  69 MM    N=    1
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore San Mateo Pt. on August 15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878ISMTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 43Ø MM TO 434 MM    N-    1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore San Mateo Pt. on August 15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878JSMTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 29Ø MM TO 294 MM    N-    1
```

Length frequency distribution of select species taken in otter trawl T 3-60 offshore San Mateo Pt. on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878KSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 3ØØ MM TO 3Ø4 MM    N=    1
          FROM 37Ø MM TO 374 MM    N=    1
```

```
HYPERPROSOPON ARGENTEUM
     Ø878KSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 13Ø MM TO 134 MM    N=    1
          FROM 135 MM TO 139 MM    N=    1
          FROM 155 MM TO 159 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878KSMTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 16Ø MM TO 164 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-60 offshore San Mateo Pt. on August 16, 1978.

NO SELECT SPECIES COLLECTED.

Length frequency distribution of select species taken in otter trawl T 1-20 offshore San Onofre on August 15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878ASOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM  7Ø MM TO  74 MM   N=   1
          FROM  85 MM TO  89 MM   N=   2

PHANERODON FURCATUS
     Ø878ASOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=  24
          FROM  6Ø MM TO  64 MM   N=   5
          FROM  65 MM TO  69 MM   N=  14
          FROM  7Ø MM TO  74 MM   N=   3
          FROM  75 MM TO  79 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 2-20 offshore San Onofre on August 15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878BSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM  7Ø MM TO  74 MM   N=   1

PARALICHTHYS CALIFORNICUS
     Ø878BSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1
          FROM 2ØØ MM TO 2Ø4 MM   N=   1

PHANERODON FURCATUS
     Ø878BSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   8
          FROM  55 MM TO  59 MM   N=   1
          FROM  65 MM TO  69 MM   N=   2
          FROM  7Ø MM TO  74 MM   N=   3
          FROM  75 MM TO  79 MM   N=   2
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore San Onofre on August 16, 1978.

HYPERPROSOPON ARGENTEUM

Ø878CSOTLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 15

| | | | | | |
|---|---|---|---|---|---|
| FROM | 55 MM | TO | 59 MM | N= | 3 |
| FROM | 6Ø MM | TO | 64 MM | N= | 5 |
| FROM | 65 MM | TO | 69 MM | N= | 3 |
| FROM | 7Ø MM | TO | 74 MM | N= | 1 |
| FROM | 75 MM | TO | 79 MM | N= | 2 |
| FROM | 85 MM | TO | 89 MM | N= | 1 |

PARALICHTHYS CALIFORNICUS

Ø878CSOTLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 1

FROM 115 MM TO 119 MM N= 1

PHANERODON FURCATUS

Ø878CSOTLF

ZONE CODE= 1Ø STATION NO.= Ø TOTAL N= 51

| | | | | | |
|---|---|---|---|---|---|
| FROM | 55 MM | TO | 59 MM | N= | 3 |
| FROM | 6Ø MM | TO | 64 MM | N= | 14 |
| FROM | 65 MM | TO | 69 MM | N= | 18 |
| FROM | 7Ø MM | TO | 74 MM | N= | 7 |
| FROM | 75 MM | TO | 79 MM | N= | 2 |
| FROM | 8Ø MM | TO | 84 MM | N= | 1 |
| FROM | 1ØØ MM | TO | 1Ø4 MM | N= | 1 |
| FROM | 1Ø5 MM | TO | 1Ø9 MM | N= | 1 |
| FROM | 115 MM | TO | 119 MM | N= | 2 |
| FROM | 12Ø MM | TO | 124 MM | N= | 2 |

Length frequency distribution of select species taken in otter trawl T 4-20 offshore San Onofre on August 16, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 1-40 offshore San Onofre on August 15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878ESOTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    4
          FROM  7Ø MM TO  74 MM   N-   1
          FROM  75 MM TO  79 MM   N-   1
          FROM  8Ø MM TO  84 MM   N-   1
          FROM  85 MM TO  89 MM   N-   1
```

---

```
PARALICHTHYS CALIFORNICUS
     Ø878ESOTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 24Ø MM TO 244 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 2-40 offshore San Onofre on August 15, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878FSOTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    5
          FROM  75 MM TO  79 MM   N-   1
          FROM  8Ø MM TO  84 MM   N-   4
```

---

```
PARALICHTHYS CALIFORNICUS
     Ø878FSOTLF
     ZONE CODE- 1Ø      STATION NO.- Ø      TOTAL N-    1
          FROM 2ØØ MM TO 2Ø4 MM   N-   1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore San Onofre on August 16, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 4-40 offshore San Onofre on August 16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878HSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  8Ø MM TO  84 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore San Onofre on August 15, 1978.

```
PHANERODON FURCATUS
     Ø878ISOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 155 MM TO 159 MM    N=    1
          FROM 175 MM TO 179 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore San Onofre on August 15, 1978.

NO SELECT SPECIES COLLECTED.

Length frequency distribution of select species taken in otter trawl T 3-60 offshore San Onofre on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878KSOTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 365 MM TO 369 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-60 offshore San Onofre on August 16, 1978.

NO SELECT SPECIES COLLECTED.

Length frequency distribution of select species taken in otter trawl T 1-20 offshore Don Light on August 15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 2-20 offshore Don Light on August 15, 1978.

**HYPERPROSOPON ARGENTEUM**

```
     Ø878BDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  75 MM TO  79 MM   N=   1
```

**PHANERODON FURCATUS**

```
     Ø878BDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  65 MM TO  69 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-20 offshore Don Light on August 16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878CDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  75 MM TO  79 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878CDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  75 MM TO  79 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-20 offshore Don Light on August 16, 1978.

```
PHANERODON FURCATUS
     Ø878DDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM  65 MM TO  69 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-40 offshore Don Light on August 15, 1978.

No select species other than *Seriphus politus* and *Genyonemus lineatus* collected.

Length frequency distribution of select species taken in otter trawl T 2-40 offshore Don Light on August 15, 1978.

**PARALICHTHYS CALIFORNICUS**

```
     Ø878FDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   3
          FROM 28Ø MM TO 284 MM   N=   1
          FROM 29Ø MM TO 294 MM   N=   1
          FROM 3Ø5 MM TO 3Ø9 MM   N=   1
```

**PHANERODON FURCATUS**

```
     Ø878FDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   2
          FROM 115 MM TO 119 MM   N=   1
          FROM 12Ø MM TO 124 MM   N=   1
```

Length frequency distribution of select species taken in otter trawl T 3-40 offshore Don Light on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878GDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 19Ø MM TO 194 MM    N=    1
          FROM 3Ø5 MM TO 3Ø9 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878GDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   1Ø
          FROM  6Ø MM TO  64 MM    N=    2
          FROM  65 MM TO  69 MM    N=    1
          FROM  7Ø MM TO  74 MM    N=    3
          FROM  75 MM TO  79 MM    N=    2
          FROM 1Ø5 MM TO 1Ø9 MM    N=    1
          FROM 115 MM TO 119 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-40 offshore Don Light on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878HDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    4
          FROM 195 MM TO 199 MM    N=    1
          FROM 295 MM TO 299 MM    N=    1
          FROM 315 MM TO 319 MM    N=    1
          FROM 34Ø MM TO 344 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878HDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=   12
          FROM  55 MM TO  59 MM    N=    2
          FROM  6Ø MM TO  64 MM    N=    3
          FROM  65 MM TO  69 MM    N=    5
          FROM  8Ø MM TO  84 MM    N=    1
          FROM 13Ø MM TO 134 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 1-60 offshore Don Light on August 15, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878IDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 3Ø5 MM TO 339 MM    N=    1
```

```
PHANERODON FURCATUS
     Ø878IDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    3
          FROM 14Ø MM TO 144 MM    N=    1
          FROM 145 MM TO 149 MM    N=    1
          FROM 16Ø MM TO 164 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 2-60 offshore Don Light on August 15, 1978.

```
PHANERODON FURCATUS
     Ø378JDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 165 MM TO 169 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 3-60 offshore Don Light on August 16, 1978.

```
PARALICHTHYS CALIFORNICUS
     Ø878KDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    1
          FROM 34Ø MM TO 344 MM    N=    1
```

Length frequency distribution of select species taken in otter trawl T 4-60 offshore Don Light on August 16, 1978.

```
HYPERPROSOPON ARGENTEUM
     Ø878LDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    2
          FROM 13Ø MM TO 134 MM    N=    1
          FROM 135 MM TO 139 MM    N=    1

PHANERODON FURCATUS
     Ø878LDLTLF
     ZONE CODE= 1Ø      STATION NO.= Ø      TOTAL N=    5
          FROM 11Ø MM TO 114 MM    N=    3
          FROM 12Ø MM TO 124 MM    N=    2
```

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 230 MM TO 234 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 125 MM TO 129 MM N= 1
FROM 435 MM TO 439 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-1

TOTAL NO. OF INDIVIDUALS = 4
FROM 345 MM TO 349 MM N= 1
FROM 360 MM TO 364 MM N= 1
FROM 375 MM TO 379 MM N= 1
FROM 380 MM TO 384 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 105 MM TO 109 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHILARA TAYLORI
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 230 MM TO 234 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 155 MM TO 159 MM N= 1
FROM 160 MM TO 164 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 225 MM TO 229 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 150 MM TO 154 MM N= 1
FROM 160 MM TO 164 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 245 MM TO 249 MM N= 1
FROM 265 MM TO 269 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ANISOTREMUS DAVIDSONII
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 135 MM TO 139 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 9
FROM 155 MM TO 159 MM N= 2
FROM 165 MM TO 169 MM N= 1
FROM 175 MM TO 179 MM N= 2
FROM 185 MM TO 189 MM N= 1
FROM 190 MM TO 194 MM N= 3

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 300 MM TO 304 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
MEDIALUNA CALIFORNIENSIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 185 MM TO 189 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 120 MM TO 124 MM N- 1
FROM 140 MM TO 144 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 160 MM TO 164 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
RHACOCHILUS TOXOTES
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 205 MM TO 209 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 135 MM TO 139 MM N= 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 330 MM TO 334 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
EMBIOTOCA JACKSONI
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 160 MM TO 164 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 200 MM TO 204 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 6
FROM 125 MM TO 129 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 1
FROM 205 MM TO 209 MM N= 1
FROM 290 MM TO 294 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HALICHOERES SEMICINCTUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 210 MM TO 214 MM N= 1
FROM 215 MM TO 219 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 320 MM TO 324 MM N= 1
FROM 330 MM TO 334 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 130 MM TO 134 MM N= 1
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 175 MM TO 179 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 170 MM TO 174 MM N- 1
FROM 210 MM TO 214 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS - 4
FROM 230 MM TO 234 MM N- 1
FROM 265 MM TO 269 MM N- 1
FROM 295 MM TO 299 MM N- 1
FROM 310 MM TO 314 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS - 4
FROM 240 MM TO 244 MM N- 1
FROM 250 MM TO 254 MM N- 1
FROM 315 MM TO 319 MM N- 1
FROM 410 MM TO 414 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS - 3
FROM 360 MM TO 364 MM N- 1
FROM 375 MM TO 379 MM N- 1
FROM 405 MM TO 409 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 115 MM TO 119 MM N- 1
FROM 120 MM TO 124 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS - 6
FROM 110 MM TO 114 MM N- 1
FROM 115 MM TO 119 MM N- 2
FROM 135 MM TO 139 MM N- 2
FROM 145 MM TO 149 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 165 MM TO 169 MM N- 1
FROM 190 MM TO 194 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS - 4
FROM 150 MM TO 154 MM N- 2
FROM 165 MM TO 169 MM N- 2

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 5
FROM 200 MM TO 204 MM N= 1
FROM 220 MM TO 224 MM N= 2
FROM 275 MM TO 279 MM N= 1
FROM 315 MM TO 319 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 5
FROM 110 MM TO 114 MM N= 1
FROM 125 MM TO 129 MM N= 1
FROM 135 MM TO 139 MM N= 2
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 16
FROM 90 MM TO 94 MM N= 1
FROM 95 MM TO 99 MM N= 1
FROM 120 MM TO 124 MM N= 3
FROM 125 MM TO 129 MM N= 3
FROM 130 MM TO 134 MM N= 2
FROM 140 MM TO 144 MM N= 4
FROM 150 MM TO 154 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 115 MM TO 119 MM N= 2
FROM 120 MM TO 124 MM N= 2
FROM 175 MM TO 179 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 280 MM TO 284 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
TRIAKIS SEMIFASCIATA
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 8
FROM 365 MM TO 369 MM N- 1
FROM 380 MM TO 384 MM N- 1
FROM 430 MM TO 434 MM N- 1
FROM 460 MM TO 464 MM N- 1
FROM 510 MM TO 514 MM N- 1
FROM 515 MM TO 519 MM N- 1
FROM 520 MM TO 524 MM N- 1
FROM 670 MM TO 674 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 175 MM TO 179 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 2
FROM 295 MM TO 299 MM N- 1
FROM 465 MM TO 469 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
EMBIOTOCA JACKSONI
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 160 MM TO 164 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 120 MM TO 124 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SEBASTES RASTRELLIGER
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 125 MM TO 129 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SPHYRAENA ARGENTEA
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 400 MM TO 404 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
MUSTELUS CALIFORNICUS
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 3
FROM 510 MM TO 514 MM N- 1
FROM 590 MM TO 594 MM N- 1
FROM 620 MM TO 624 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 3
FROM 170 MM TO 174 MM N- 1
FROM 180 MM TO 184 MM N- 1
FROM 210 MM TO 214 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 8
FROM 315 MM TO 319 MM N= 1
FROM 32Ø MM TO 324 MM N= 1
FROM 33Ø MM TO 334 MM N= 2
FROM 34Ø MM TO 344 MM N= 1
FROM 365 MM TO 369 MM N= 1
FROM 37Ø MM TO 374 MM N= 1
FROM 38Ø MM TO 384 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 315 MM TO 319 MM N= 1
FROM 35Ø MM TO 354 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
RONCADOR STEARNSII
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 24Ø MM TO 244 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
EMBIOTOCA JACKSONI
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 17Ø MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 155 MM TO 159 MM N= 1
FROM 18Ø MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 38Ø MM TO 384 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
MUSTELUS CALIFORNICUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS - 4
FROM 475 MM TO 479 MM N- 1
FROM 48Ø MM TO 484 MM N- 1
FROM 5ØØ MM TO 5Ø4 MM N- 1
FROM 6ØØ MM TO 6Ø4 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
MENTICIRRHUS UNDULATUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS - 4
FROM 9Ø MM TO 94 MM N- 1
FROM 235 MM TO 239 MM N- 2
FROM 3Ø5 MM TO 3Ø9 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 135 MM TO 139 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SARDA CHILIENSIS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 355 MM TO 359 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
MUSTELUS CALIFORNICUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 355 MM TO 359 MM N- 1
FROM 37Ø MM TO 374 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
TRIAKIS SEMIFASCIATA
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 345 MM TO 349 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 17Ø MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 14Ø MM TO 144 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 15Ø MM TO 154 MM N= 1
FROM 295 MM TO 299 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
RONCADOR STEARNSII
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 23Ø MM TO 234 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
UMBRINA RONCADOR
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 185 MM TO 189 MM N= 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HETERODONTUS FRANCISCI
SONGS 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 49Ø MM TO 494 MM N= 1
FROM 52Ø MM TO 524 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MUSTELUS CALIFORNICUS
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 82Ø MM TO 824 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 5
FROM 17Ø MM TO 174 MM N= 1
FROM 225 MM TO 229 MM N= 1
FROM 29Ø MM TO 294 MM N= 1
FROM 335 MM TO 339 MM N= 1
FROM 42Ø MM TO 424 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
RONCADOR STEARNSII
SONGS DISCHARGE 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 235 MM TO 239 MM N= 1
FROM 25Ø MM TO 254 MM N= 2
FROM 26Ø MM TO 264 MM N= 3

San Onofre 45 foot gill nets

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 235 MM TO 239 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 90 MM TO 94 MM N= 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 6
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 160 MM TO 164 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 4-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 135 MM TO 139 MM N= 1
FROM 150 MM TO 154 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 4-2

TOTAL NO. OF INDIVIDUALS = 5
FROM 150 MM TO 154 MM N= 2
FROM 155 MM TO 159 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 285 MM TO 289 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 17Ø MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 7
FROM 8Ø MM TO 84 MM N= 2
FROM 85 MM TO 89 MM N= 2
FROM 9Ø MM TO 94 MM N= 2
FROM 95 MM TO 99 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 155 MM TO 159 MM N= 2
FROM 17Ø MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 2ØØ MM TO 2Ø4 MM N= 1
FROM 225 MM TO 229 MM N= 1
FROM 275 MM TO 279 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
RONCADOR STEARNSII
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 36Ø MM TO 364 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 95 MM TO 99 MM N= 1
FROM 12Ø MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 7
FROM 12Ø MM TO 124 MM N= 1
FROM 155 MM TO 159 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 17Ø MM TO 174 MM N= 2
FROM 175 MM TO 179 MM N= 2

FILE STORAGE CODE - NEKTON78.FM
TRIAKIS SEMIFASCIATA
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 365 MM TO 369 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 2
FROM 225 MM TO 229 MM N= 1
FROM 235 MM TO 239 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-1
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 170 MM TO 174 MM N= 1
FROM 215 MM TO 219 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 2
FROM 165 MM TO 169 MM N= 1
FROM 300 MM TO 304 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
AMPHISTICHUS ARGENTEUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 5
FROM 125 MM TO 129 MM N= 1
FROM 130 MM TO 134 MM N= 2
FROM 150 MM TO 154 MM N= 2

FILE STORAGE CODE - NEKTON78.FM
EMBIOTOCA JACKSONI
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HETEROSTICHUS ROSTRATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-1
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 200 MM TO 204 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
GENYONEMUS LINEATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 5
FROM 160 MM TO 164 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 1
FROM 200 MM TO 204 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
SERIPHUS POLITUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS - 27
FROM 125 MM TO 129 MM N= 1
FROM 130 MM TO 134 MM N= 2
FROM 135 MM TO 139 MM N= 2
FROM 150 MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 4
FROM 160 MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 5
FROM 170 MM TO 174 MM N= 3
FROM 175 MM TO 179 MM N= 5
FROM 180 MM TO 184 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
MUSTELUS CALIFORNICUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-2
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 365 MM TO 369 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRIAKIS SEMIFASCIATA
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 380 MM TO 384 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 235 MM TO 239 MM N= 1
FROM 245 MM TO 249 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 245 MM TO 249 MM N= 2
FROM 255 MM TO 259 MM N= 1
FROM 285 MM TO 289 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
AMPHISTICHUS ARGENTEUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 115 MM TO 119 MM N= 1
FROM 130 MM TO 134 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
LEPTOCOTTUS ARMATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 150 MM TO 154 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
GENYONEMUS LINEATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 10
FROM 120 MM TO 124 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 160 MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 3
FROM 180 MM TO 184 MM N= 1
FROM 190 MM TO 194 MM N= 1
FROM 210 MM TO 214 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SERIPHUS POLITUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-2
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS = 25
FROM 120 MM TO 124 MM N= 1
FROM 135 MM TO 139 MM N= 1
FROM 140 MM TO 144 MM N= 2
FROM 145 MM TO 149 MM N= 2
FROM 150 MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 1
FROM 160 MM TO 164 MM N= 5
FROM 165 MM TO 169 MM N= 3
FROM 170 MM TO 174 MM N= 4
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 2
FROM 185 MM TO 189 MM N= 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 225 MM TO 229 MM N= 1
FROM 240 MM TO 244 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 7-1
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS = 4
FROM 200 MM TO 204 MM N= 1
FROM 250 MM TO 254 MM N= 1
FROM 270 MM TO 274 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 5
FROM 230 MM TO 234 MM N= 1
FROM 240 MM TO 244 MM N= 2
FROM 255 MM TO 259 MM N= 1
FROM 270 MM TO 274 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
AMPHISTICHUS ARGENTEUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SYNODUS LUCIOCEPS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 280 MM TO 284 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 115 MM TO 119 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 7-2
OCTOBER 11-12, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 280 MM TO 284 MM N= 1
FROM 315 MM TO 319 MM N= 1
FROM 395 MM TO 399 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 310 MM TO 314 MM N= 1
FROM 335 MM TO 339 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 310 MM TO 314 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
GIRELLA NIGRICANS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 300 MM TO 304 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 150 MM TO 154 MM N= 2

FILE STORAGE CODE - NEKTON78.FM
SEBASTES AURICULATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 190 MM TO 194 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PEPRILUS SIMILLIMUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS - 3
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 1
FROM 155 MM TO 159 MM N= 1

Don Light 30 foot gill nets. (Continued)

FILE STORAGE CODE - NEKTON78.FM
MUSTELUS CALIFORNICUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 49Ø MM TO 494 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 5
FROM 195 MM TO 199 MM N- 2
FROM 215 MM TO 219 MM N- 1
FROM 22Ø MM TO 224 MM N- 1
FROM 245 MM TO 249 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
CYNOSCION NOBILIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 2
FROM 17Ø MM TO 174 MM N- 1
FROM 285 MM TO 289 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 3
FROM 175 MM TO 179 MM N- 1
FROM 265 MM TO 269 MM N- 1
FROM 29Ø MM TO 294 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PEPRILUS SIMILLIMUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 3
FROM 115 MM TO 119 MM N- 1
FROM 12Ø MM TO 124 MM N- 1
FROM 125 MM TO 129 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 26Ø MM TO 264 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
CHEILOTREMA SATURNUM
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 2ØØ MM TO 2Ø4 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
MENTICIRRHUS UNDULATUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 165 MM TO 169 MM N- 1
FROM 25Ø MM TO 254 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
DAMALICHTHYS VACCA
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 185 MM TO 189 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 15Ø MM TO 154 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SEBASTES RASTRELLIGER
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 175 MM TO 179 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
PEPRILUS SIMILLIMUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 8-2

| | | |
|---|---|---|
| TOTAL NO. OF INDIVIDUALS = | | 3 |
| FROM 12Ø MM TO 124 MM | N= | 1 |
| FROM 125 MM TO 129 MM | N= | 2 |

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX CLATHRATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
CYNOSCION NOBILIS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 360 MM TO 364 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-1

TOTAL NO. OF INDIVIDUALS - 4
FROM 230 MM TO 234 MM N= 2
FROM 250 MM TO 254 MM N= 1
FROM 280 MM TO 284 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 120 MM TO 124 MM N= 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 90 MM TO 94 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-1

TOTAL NO. OF INDIVIDUALS - 16
FROM 120 MM TO 124 MM N= 1
FROM 140 MM TO 144 MM N= 1
FROM 145 MM TO 149 MM N= 1
FROM 150 MM TO 154 MM N= 3
FROM 155 MM TO 159 MM N= 2
FROM 165 MM TO 169 MM N= 2
FROM 170 MM TO 174 MM N= 4
FROM 180 MM TO 184 MM N= 2

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 9-2

TOTAL NO. OF INDIVIDUALS - 4
FROM 185 MM TO 189 MM N= 1
FROM 220 MM TO 224 MM N= 1
FROM 240 MM TO 244 MM N= 1
FROM 270 MM TO 274 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-1

TOTAL NO. OF INDIVIDUALS - 2
FROM 75 MM TO 79 MM N- 1
FROM 8Ø MM TO 84 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-1

TOTAL NO. OF INDIVIDUALS - 1
FROM 115 MM TO 119 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX MACULATOFASCIATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-2

TOTAL NO. OF INDIVIDUALS - 2
FROM 25Ø MM TO 254 MM N- 1
FROM 27Ø MM TO 274 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 36Ø MM TO 364 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-2

TOTAL NO. OF INDIVIDUALS - 5
FROM 8Ø MM TO 84 MM N- 1
FROM 115 MM TO 119 MM N- 1
FROM 12Ø MM TO 124 MM N- 2
FROM 135 MM TO 139 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-2

TOTAL NO. OF INDIVIDUALS - 5
FROM 12Ø MM TO 124 MM N- 1
FROM 15Ø MM TO 154 MM N- 2
FROM 16Ø MM TO 164 MM N- 1
FROM 2ØØ MM TO 2Ø4 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 45 FOOT GILL NET - 24 HOUR
OCTOBER 11-12, 1978
STATION 1Ø-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 3Ø5 MM TO 3Ø9 MM N- 1

San Mateo Point 20 foot otter trawls.

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 70 MM TO 74 MM N- 1
FROM 80 MM TO 84 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 155 MM TO 159 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 31
FROM 65 MM TO 69 MM N- 2
FROM 70 MM TO 74 MM N- 8
FROM 75 MM TO 79 MM N- 9
FROM 80 MM TO 84 MM N- 1
FROM 85 MM TO 89 MM N- 4
FROM 90 MM TO 94 MM N- 2
FROM 110 MM TO 114 MM N- 2
FROM 115 MM TO 119 MM N- 3

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 6
FROM 75 MM TO 79 MM N- 1
FROM 80 MM TO 84 MM N- 3
FROM 90 MM TO 94 MM N- 1
FROM 160 MM TO 164 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 210 MM TO 214 MM N- 1
FROM 230 MM TO 234 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 80 MM TO 84 MM N- 1

San Mateo Point 40 foot otter trawls.

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 150 MM TO 154 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 4
FROM 75 MM TO 79 MM N- 1
FROM 90 MM TO 94 MM N- 3

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 110 MM TO 114 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 305 MM TO 309 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 9
FROM 65 MM TO 69 MM N- 2
FROM 70 MM TO 74 MM N- 3
FROM 75 MM TO 79 MM N- 1
FROM 80 MM TO 84 MM N- 1
FROM 170 MM TO 174 MM N- 1
FROM 175 MM TO 179 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 85 MM TO 89 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 13
FROM 65 MM TO 69 MM N- 2
FROM 70 MM TO 74 MM N- 2
FROM 75 MM TO 79 MM N- 3
FROM 80 MM TO 84 MM N- 3
FROM 85 MM TO 89 MM N- 1
FROM 125 MM TO 129 MM N- 1
FROM 135 MM TO 139 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 245 MM TO 249 MM N- 1

San Mateo Point 60 foot otter trawls.

```
FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS =     5
FROM 235 MM TO 239 MM    N=    1
FROM 245 MM TO 249 MM    N=    1
FROM 260 MM TO 264 MM    N=    2
FROM 290 MM TO 294 MM    N=    1
```

```
FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS =     2
FROM 270 MM TO 274 MM    N=    1
FROM 285 MM TO 289 MM    N=    1
```

```
FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS =     1
FROM 315 MM TO 319 MM    N=    1
```

San Onofre 20 foot otter trawls

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 2Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 145 MM TO 149 MM N- 1

San Onofre 40 foot otter trawls

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 85 MM TO 89 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 9
FROM 65 MM TO 69 MM N- 1
FROM 7Ø MM TO 74 MM N- 1
FROM 75 MM TO 79 MM N- 3
FROM 8Ø MM TO 84 MM N- 1
FROM 9Ø MM TO 94 MM N- 1
FROM 115 MM TO 119 MM N- 1
FROM 18Ø MM TO 184 MM N- 1

San Onofre 40 foot otter trawls

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 23Ø MM TO 234 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 3
FROM 75 MM TO 79 MM N- 1
FROM 9Ø MM TO 94 MM N- 1
FROM 155 MM TO 159 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 125 MM TO 129 MM N- 1
FROM 23Ø MM TO 234 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 4Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 165 MM TO 169 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 60 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 170 MM TO 174 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 60 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 11
FROM 85 MM TO 89 MM N- 2
FROM 90 MM TO 94 MM N- 4
FROM 110 MM TO 114 MM N- 1
FROM 120 MM TO 124 MM N- 3
FROM 185 MM TO 189 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 60 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 270 MM TO 274 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 60 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 23
FROM 80 MM TO 84 MM N- 1
FROM 85 MM TO 89 MM N- 2
FROM 90 MM TO 94 MM N- 4
FROM 95 MM TO 99 MM N- 5
FROM 110 MM TO 114 MM N- 1
FROM 115 MM TO 119 MM N- 3
FROM 120 MM TO 124 MM N- 4
FROM 125 MM TO 129 MM N- 2
FROM 145 MM TO 149 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 8
FROM 115 MM TO 119 MM N- 1
FROM 120 MM TO 124 MM N- 3
FROM 125 MM TO 129 MM N- 1
FROM 130 MM TO 134 MM N- 1
FROM 135 MM TO 139 MM N- 2

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 9
FROM 150 MM TO 154 MM N- 2
FROM 155 MM TO 159 MM N- 1
FROM 160 MM TO 164 MM N- 1
FROM 165 MM TO 169 MM N- 4
FROM 180 MM TO 184 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 5
FROM 120 MM TO 124 MM N- 5

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 3
FROM 120 MM TO 124 MM N- 1
FROM 125 MM TO 129 MM N- 1
FROM 130 MM TO 134 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 60 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 245 MM TO 249 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

| | | |
|---|---|---|
| **TOTAL NO. OF INDIVIDUALS =** | | **5** |
| **FROM 135 MM TO 139 MM** | **N=** | **1** |
| **FROM 15Ø MM TO 154 MM** | **N=** | **1** |
| FROM 16Ø MM TO 164 MM | N= | 1 |
| FROM 17Ø MM TO 174 MM | N= | 1 |
| FROM 175 MM TO 179 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SONGS 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

| | | |
|---|---|---|
| **TOTAL NO. OF INDIVIDUALS =** | | **6** |
| **FROM 24Ø MM TO 244 MM** | **N=** | **1** |
| **FROM 28Ø MM TO 284 MM** | **N=** | **2** |
| FROM 285 MM TO 289 MM | N= | 1 |
| FROM 34Ø MM TO 344 MM | N= | 1 |
| FROM 36Ø MM TO 364 MM | N= | 1 |

Don Light 20 foot otter trawls.

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 40 MM TO 44 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 95 MM TO 99 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 95 MM TO 99 MM N= 1
FROM 150 MM TO 154 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 10
FROM 70 MM TO 74 MM N= 1
FROM 75 MM TO 79 MM N= 4
FROM 80 MM TO 84 MM N= 2
FROM 85 MM TO 89 MM N= 2
FROM 110 MM TO 114 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 175 MM TO 179 MM N= 1
FROM 205 MM TO 209 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 120 MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 6
FROM 70 MM TO 74 MM N= 2
FROM 80 MM TO 84 MM N= 3
FROM 110 MM TO 114 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 20 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 75 MM TO 79 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 14
FROM 65 MM TO 69 MM N= 2
FROM 70 MM TO 74 MM N= 5
FROM 75 MM TO 79 MM N= 3
FROM 80 MM TO 84 MM N= 3
FROM 135 MM TO 139 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 175 MM TO 179 MM N= 1
FROM 285 MM TO 289 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 12
FROM 70 MM TO 74 MM N= 3
FROM 75 MM TO 79 MM N= 5
FROM 80 MM TO 84 MM N= 1
FROM 115 MM TO 119 MM N= 1
FROM 130 MM TO 134 MM N= 1
FROM 150 MM TO 154 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 225 MM TO 229 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 205 MM TO 209 MM N= 1
FROM 255 MM TO 259 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 85 MM TO 89 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 75 MM TO 79 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 40 FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 265 MM TO 269 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 14
FROM 8Ø MM TO 84 MM N- 4
FROM 85 MM TO 89 MM N- 3
FROM 9Ø MM TO 94 MM N- 4
FROM 95 MM TO 99 MM N- 1
FROM 11Ø MM TO 114 MM N- 1
FROM 12Ø MM TO 124 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 85 MM TO 89 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 265 MM TO 269 MM N- 1
FROM 27Ø MM TO 274 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 8
FROM 8Ø MM TO 84 MM N- 1
FROM 85 MM TO 89 MM N- 3
FROM 9Ø MM TO 94 MM N- 4

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 11, 1978

TOTAL NO. OF INDIVIDUALS - 4
FROM 29Ø MM TO 294 MM N- 1
FROM 295 MM TO 299 MM N- 1
FROM 3Ø5 MM TO 3Ø9 MM N- 1
FROM 34Ø MM TO 344 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALABRAX CLATHRATUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 145 MM TO 149 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1Ø
FROM 7Ø MM TO 74 MM N- 1
FROM 8Ø MM TO 84 MM N- 1
FROM 85 MM TO 89 MM N- 4
FROM 9Ø MM TO 94 MM N- 2
FROM 95 MM TO 99 MM N- 1
FROM 115 MM TO 119 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 18Ø MM TO 184 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

TOTAL NO. OF INDIVIDUALS - 2
FROM 26Ø MM TO 264 MM N- 1
FROM 275 MM TO 279 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

| | | | | | | |
|---|---|---|---|---|---|---|
| TOTAL NO. OF INDIVIDUALS - | | | | | | 1Ø |
| FROM | 75 | MM TO | 79 | MM | N= | 1 |
| FROM | 8Ø | MM TO | 84 | MM | N= | 2 |
| FROM | 85 | MM TO | 89 | MM | N= | 3 |
| FROM | 9Ø | MM TO | 94 | MM | N= | 4 |

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

| | | | | | | |
|---|---|---|---|---|---|---|
| TOTAL NO. OF INDIVIDUALS - | | | | | | 9 |
| FROM | 75 | MM TO | 79 | MM | N= | 3 |
| FROM | 8Ø | MM TO | 84 | MM | N= | 3 |
| FROM | 85 | MM TO | 89 | MM | N= | 2 |
| FROM | 16Ø | MM TO | 164 | MM | N= | 1 |

FILE STORAGE CODE - NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
OCTOBER 12, 1978

| | | | | | | |
|---|---|---|---|---|---|---|
| TOTAL NO. OF INDIVIDUALS - | | | | | | 1 |
| FROM | 335 | MM TO | 339 | MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 11-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 7
FROM 155 MM TO 159 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 2
FROM 195 MM TO 199 MM N= 1
FROM 200 MM TO 204 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 11-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 130 MM TO 134 MM N= 2
FROM 190 MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SCORPAENA GUTTATA
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 11-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 240 MM TO 244 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 11-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 11-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 95 MM TO 99 MM N= 1
FROM 145 MM TO 149 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HETERODONTUS FRANCISCI
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 470 MM TO 474 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRIAKIS SEMIFASCIATA
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 530 MM TO 534 MM N= 1
FROM 560 MM TO 564 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 165 MM TO 169 MM N= 1
FROM 235 MM TO 239 MM N= 1
FROM 245 MM TO 249 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 11-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 490 MM TO 494 MM N= 1
FROM 660 MM TO 664 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRIAKIS SEMIFASCIATA
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 820 MM TO 824 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRACHURUS SYMMETRICUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 8
FROM 210 MM TO 214 MM N= 1
FROM 215 MM TO 219 MM N= 2
FROM 220 MM TO 224 MM N= 2
FROM 225 MM TO 229 MM N= 1
FROM 230 MM TO 234 MM N= 1
FROM 270 MM TO 274 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 195 MM TO 199 MM N= 1
FROM 210 MM TO 214 MM N= 1
FROM 220 MM TO 224 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 155 MM TO 159 MM N= 1
FROM 190 MM TO 194 MM N= 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 12-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 85 MM TO 89 MM N= 3

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 12-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 21
FROM 110 MM TO 114 MM N= 1
FROM 115 MM TO 119 MM N= 2
FROM 120 MM TO 124 MM N= 4
FROM 125 MM TO 129 MM N= 2
FROM 130 MM TO 134 MM N= 1
FROM 140 MM TO 144 MM N= 1
FROM 145 MM TO 149 MM N= 2
FROM 155 MM TO 159 MM N= 1
FROM 160 MM TO 164 MM N= 5
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ANISOTREMUS DAVIDSONII
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
XENISTIUS CALIFORNIENSIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 310 MM TO 314 MM N= 1
FROM 360 MM TO 364 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 12-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 5
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 1
FROM 200 MM TO 204 MM N= 1
FROM 205 MM TO 209 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
EMBIOTOCA JACKSONI
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 12-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 12-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 4
FROM 15 MM TO 19 MM N= 1
FROM 85 MM TO 89 MM N= 2
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 30 FOOT GILL NET - 24 HOUR
STATION 12-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 22
FROM 90 MM TO 94 MM N= 1
FROM 120 MM TO 124 MM N= 1
FROM 135 MM TO 139 MM N= 1
FROM 140 MM TO 144 MM N= 2
FROM 145 MM TO 149 MM N= 5
FROM 150 MM TO 154 MM N= 4
FROM 155 MM TO 159 MM N= 2
FROM 160 MM TO 164 MM N= 3
FROM 165 MM TO 169 MM N= 1
FROM 175 MM TO 179 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 17Ø MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 19Ø MM TO 194 MM N= 1
FROM 445 MM TO 449 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 34Ø MM TO 344 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 5ØØ MM TO 5Ø4 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-1

TOTAL NO. OF INDIVIDUALS = 18
FROM 12Ø MM TO 124 MM N= 2
FROM 125 MM TO 129 MM N= 4
FROM 13Ø MM TO 134 MM N= 1
FROM 15Ø MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 2
FROM 16Ø MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 2
FROM 17Ø MM TO 174 MM N= 3
FROM 19Ø MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 13-2

TOTAL NO. OF INDIVIDUALS = 21
FROM 12Ø MM TO 124 MM N= 2
FROM 125 MM TO 129 MM N= 4
FROM 13Ø MM TO 134 MM N= 3
FROM 14Ø MM TO 144 MM N= 1
FROM 145 MM TO 149 MM N= 1
FROM 15Ø MM TO 154 MM N= 2
FROM 155 MM TO 159 MM N= 2
FROM 16Ø MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 1
FROM 17Ø MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 19Ø MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 165 MM TO 169 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 19Ø MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 3
FROM 33Ø MM TO 334 MM N= 1
FROM 445 MM TO 449 MM N= 1
FROM 49Ø MM TO 494 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 19Ø MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 54Ø MM TO 544 MM N= 1
FROM 555 MM TO 559 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 14-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 185 MM TO 189 MM N= 1
FROM 19Ø MM TO 194 MM N= 1
FROM 2ØØ MM TO 2Ø4 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
MUSTELUS CALIFORNICUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 490 MM TO 494 MM N= 1
FROM 830 MM TO 834 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRIAKIS SEMIFASCIATA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 6
FROM 360 MM TO 364 MM N= 1
FROM 375 MM TO 379 MM N= 1
FROM 380 MM TO 384 MM N= 2
FROM 390 MM TO 394 MM N= 1
FROM 400 MM TO 404 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 210 MM TO 214 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 7
FROM 235 MM TO 239 MM N= 1
FROM 240 MM TO 244 MM N= 1
FROM 255 MM TO 259 MM N= 1
FROM 265 MM TO 269 MM N= 1
FROM 320 MM TO 324 MM N= 1
FROM 325 MM TO 329 MM N= 1
FROM 370 MM TO 374 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 6
FROM 135 MM TO 139 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
EMBIOTOCA JACKSONI
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 10
FROM 95 MM TO 99 MM N= 1
FROM 100 MM TO 104 MM N= 1
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 2
FROM 130 MM TO 134 MM N= 3
FROM 160 MM TO 164 MM N= 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 8
FROM 80 MM TO 84 MM N= 1
FROM 110 MM TO 114 MM N= 1
FROM 115 MM TO 119 MM N= 6

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 20
FROM 80 MM TO 84 MM N= 1
FROM 90 MM TO 94 MM N= 1
FROM 105 MM TO 109 MM N= 1
FROM 120 MM TO 124 MM N= 2
FROM 125 MM TO 129 MM N= 1
FROM 130 MM TO 134 MM N= 1
FROM 135 MM TO 139 MM N= 2
FROM 145 MM TO 149 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 3
FROM 165 MM TO 169 MM N= 3
FROM 170 MM TO 174 MM N= 2
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SCORPAENA GUTTATA
SONGS 30 FOOT GILL NET - 24 HOUR
STATION 1-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SEBASTES RASTRELLIGER
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 140 MM TO 144 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRIAKIS SEMIFASCIATA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 500 MM TO 504 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 260 MM TO 264 MM N= 1
FROM 270 MM TO 274 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRACHURUS SYMMETRICUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 270 MM TO 274 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
XENISTIUS CALIFORNIENSIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 120 MM TO 124 MM N= 1
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 5
FROM 205 MM TO 209 MM N= 1
FROM 240 MM TO 244 MM N= 1
FROM 300 MM TO 304 MM N= 1
FROM 350 MM TO 354 MM N= 1
FROM 360 MM TO 364 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 15
FROM 140 MM TO 144 MM N= 1
FROM 150 MM TO 154 MM N= 2
FROM 165 MM TO 169 MM N= 2
FROM 175 MM TO 179 MM N= 3
FROM 180 MM TO 184 MM N= 1
FROM 185 MM TO 189 MM N= 2
FROM 190 MM TO 194 MM N= 3
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYMATOGASTER AGGREGATA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 90 MM TO 94 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
DAMALICHTHYS VACCA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
EMBIOTOCA JACKSONI
SONGS 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 2Ø
FROM 1ØØ MM TO 1Ø4 MM N- 1
FROM 125 MM TO 129 MM N- 4
FROM 13Ø MM TO 134 MM N- 2
FROM 135 MM TO 139 MM N- 5
FROM 14Ø MM TO 144 MM N- 3
FROM 15Ø MM TO 154 MM N- 3
FROM 155 MM TO 159 MM N- 1
FROM 17Ø MM TO 174 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 1Ø
FROM 8Ø MM TO 84 MM N- 1
FROM 85 MM TO 89 MM N- 1
FROM 9Ø MM TO 94 MM N- 1
FROM 11Ø MM TO 114 MM N- 1
FROM 115 MM TO 119 MM N- 3
FROM 12Ø MM TO 124 MM N- 2
FROM 145 MM TO 149 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 14
FROM 1ØØ MM TO 1Ø4 MM N- 1
FROM 12Ø MM TO 124 MM N- 2
FROM 125 MM TO 129 MM N- 2
FROM 16Ø MM TO 164 MM N- 2
FROM 165 MM TO 169 MM N- 1
FROM 17Ø MM TO 174 MM N- 4
FROM 175 MM TO 179 MM N- 1
FROM 185 MM TO 189 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
HALICHOERES SEMICINCTUS
SONGS 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 1-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 18Ø MM TO 184 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SCORPAENA GUTTATA
SONGS 3Ø FOOT GILL NET - 24 HOUR
STATION 1-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 15Ø MM TO 154 MM N- 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 240 MM TO 244 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 215 MM TO 219 MM N= 1
FROM 240 MM TO 244 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS = 8
FROM 145 MM TO 149 MM N= 1
FROM 160 MM TO 164 MM N= 1
FROM 185 MM TO 189 MM N= 1
FROM 190 MM TO 194 MM N= 1
FROM 220 MM TO 224 MM N= 1
FROM 230 MM TO 234 MM N= 1
FROM 245 MM TO 249 MM N= 1
FROM 340 MM TO 344 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS = 4
FROM 80 MM TO 84 MM N= 2
FROM 90 MM TO 94 MM N= 1
FROM 110 MM TO 114 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-1

TOTAL NO. OF INDIVIDUALS = 14
FROM 80 MM TO 84 MM N= 2
FROM 85 MM TO 89 MM N= 1
FROM 115 MM TO 119 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 155 MM TO 159 MM N= 3
FROM 160 MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 1
FROM 170 MM TO 174 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 180 MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 225 MM TO 229 MM N= 1
FROM 245 MM TO 249 MM N= 1
FROM 265 MM TO 269 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 150 MM TO 154 MM N= 1
FROM 175 MM TO 179 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
XENISTIUS CALIFORNIENSIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 125 MM TO 129 MM N= 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 185 MM TO 189 MM N= 1
FROM 205 MM TO 209 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 140 MM TO 144 MM N= 1
FROM 175 MM TO 179 MM N= 1
FROM 185 MM TO 189 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYMATOGASTER AGGREGATA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 85 MM TO 89 MM N= 2
FROM 100 MM TO 104 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 80 MM TO 84 MM N= 3
FROM 115 MM TO 119 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 85 MM TO 89 MM N= 1
FROM 115 MM TO 119 MM N= 1
FROM 120 MM TO 124 MM N= 1
FROM 150 MM TO 154 MM N= 2
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PEPRILUS SIMILLIMUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 2-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 80 MM TO 84 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
SONGS DISCHARGE 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 14
FROM 170 MM TO 174 MM N= 2
FROM 175 MM TO 179 MM N= 2
FROM 180 MM TO 184 MM N= 1
FROM 185 MM TO 189 MM N= 5
FROM 190 MM TO 194 MM N= 2
FROM 200 MM TO 204 MM N= 1
FROM 205 MM TO 209 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
DAMALICHTHYS VACCA
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 195 MM TO 199 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
EMBIOTOCA JACKSONI
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 110 MM TO 114 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-1

TOTAL NO. OF INDIVIDUALS = 8
FROM 125 MM TO 129 MM N= 1
FROM 150 MM TO 154 MM N= 2
FROM 155 MM TO 159 MM N= 1
FROM 160 MM TO 164 MM N= 1
FROM 165 MM TO 169 MM N= 2
FROM 180 MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SCORPAENA GUTTATA
SONGS 30 FOOT GILL NET - 24 HOUR
STATION 3-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 190 MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
SONGS DISCHARGE 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 17
FROM 210 MM TO 214 MM N= 1
FROM 225 MM TO 229 MM N= 3
FROM 230 MM TO 234 MM N= 1
FROM 235 MM TO 239 MM N= 1
FROM 240 MM TO 244 MM N= 3
FROM 250 MM TO 254 MM N= 1
FROM 255 MM TO 259 MM N= 2
FROM 260 MM TO 264 MM N= 2
FROM 270 MM TO 274 MM N= 1
FROM 275 MM TO 279 MM N= 1
FROM 750 MM TO 754 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 185 MM TO 189 MM N= 1
FROM 195 MM TO 199 MM N= 1
FROM 200 MM TO 204 MM N= 1
FROM 230 MM TO 234 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEILOTREMA SATURNUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 185 MM TO 189 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 3-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 85 MM TO 89 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
SONGS 30 FOOT GILL NET - 24 HOUR
STATION 3-2
DECEMBER 12-13, 1978

| | | |
|---|---|---|
| TOTAL NO. OF INDIVIDUALS - | | 3 |
| FROM 125 MM TO 129 MM | N- | 2 |
| FROM 160 MM TO 164 MM | N- | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 4
FROM 155 MM TO 159 MM N= 1
FROM 160 MM TO 164 MM N= 2
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 4-2

TOTAL NO. OF INDIVIDUALS = 3
FROM 155 MM TO 159 MM N= 1
FROM 250 MM TO 254 MM N= 1
FROM 300 MM TO 304 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 305 MM TO 309 MM N= 1
FROM 320 MM TO 324 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 120 MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 4-1

TOTAL NO. OF INDIVIDUALS = 46
FROM 110 MM TO 114 MM N= 4
FROM 115 MM TO 119 MM N= 3
FROM 120 MM TO 124 MM N= 8
FROM 125 MM TO 129 MM N= 8
FROM 130 MM TO 134 MM N= 4
FROM 145 MM TO 149 MM N= 2
FROM 150 MM TO 154 MM N= 3
FROM 155 MM TO 159 MM N= 3
FROM 160 MM TO 164 MM N= 3
FROM 165 MM TO 169 MM N= 4
FROM 175 MM TO 179 MM N= 2
FROM 185 MM TO 189 MM N= 1
FROM 190 MM TO 194 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 2
FROM 110 MM TO 114 MM N= 1
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CYNOSCION NOBILIS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 210 MM TO 214 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 135 MM TO 139 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-1

TOTAL NO. OF INDIVIDUALS = 27
FROM 115 MM TO 119 MM N= 1
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 1
FROM 145 MM TO 149 MM N= 2
FROM 150 MM TO 154 MM N= 2
FROM 155 MM TO 159 MM N= 6
FROM 160 MM TO 164 MM N= 2
FROM 165 MM TO 169 MM N= 1
FROM 170 MM TO 174 MM N= 3
FROM 175 MM TO 179 MM N= 6
FROM 180 MM TO 184 MM N= 1
FROM 215 MM TO 219 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX CLATHRATUS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 125 MM TO 129 MM N= 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 145 MM TO 149 MM N= 1
FROM 150 MM TO 154 MM N= 1
FROM 165 MM TO 169 MM N= 1
FROM 180 MM TO 184 MM N= 1
FROM 190 MM TO 194 MM N= 1
FROM 310 MM TO 314 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 80 MM TO 84 MM N= 2
FROM 85 MM TO 89 MM N= 1
FROM 125 MM TO 129 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SONGS 45 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 5-2

TOTAL NO. OF INDIVIDUALS = 6
FROM 85 MM TO 89 MM N= 1
FROM 120 MM TO 124 MM N= 1
FROM 125 MM TO 129 MM N= 2
FROM 145 MM TO 149 MM N= 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 6-1

TOTAL NO. OF INDIVIDUALS = 19

| | | |
|---|---|---|
| FROM 170 MM TO 174 MM | N= | 1 |
| FROM 215 MM TO 219 MM | N= | 2 |
| FROM 220 MM TO 224 MM | N= | 1 |
| FROM 225 MM TO 229 MM | N= | 2 |
| FROM 235 MM TO 239 MM | N= | 2 |
| FROM 240 MM TO 244 MM | N= | 1 |
| FROM 250 MM TO 254 MM | N= | 2 |
| FROM 260 MM TO 264 MM | N= | 2 |
| FROM 265 MM TO 269 MM | N= | 1 |
| FROM 270 MM TO 274 MM | N= | 1 |
| FROM 280 MM TO 284 MM | N= | 2 |
| FROM 310 MM TO 314 MM | N= | 1 |
| FROM 320 MM TO 324 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 170 MM TO 174 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 6-2

TOTAL NO. OF INDIVIDUALS = 38

| | | |
|---|---|---|
| FROM 180 MM TO 184 MM | N= | 3 |
| FROM 185 MM TO 189 MM | N= | 1 |
| FROM 195 MM TO 199 MM | N= | 1 |
| FROM 200 MM TO 204 MM | N= | 1 |
| FROM 210 MM TO 214 MM | N= | 2 |
| FROM 220 MM TO 224 MM | N= | 2 |
| FROM 225 MM TO 229 MM | N= | 2 |
| FROM 230 MM TO 234 MM | N= | 2 |
| FROM 235 MM TO 239 MM | N= | 3 |
| FROM 240 MM TO 244 MM | N= | 3 |
| FROM 245 MM TO 249 MM | N= | 4 |
| FROM 250 MM TO 254 MM | N= | 1 |
| FROM 255 MM TO 259 MM | N= | 4 |
| FROM 260 MM TO 264 MM | N= | 3 |
| FROM 265 MM TO 269 MM | N= | 1 |
| FROM 270 MM TO 274 MM | N= | 1 |
| FROM 275 MM TO 279 MM | N= | 2 |
| FROM 280 MM TO 284 MM | N= | 1 |
| FROM 285 MM TO 289 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 120 MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
GENYONEMUS LINEATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 130 MM TO 134 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 6-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 165 MM TO 169 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 16
FROM 17Ø MM TO 174 MM N= 1
FROM 18Ø MM TO 184 MM N= 1
FROM 185 MM TO 189 MM N= 2
FROM 19Ø MM TO 194 MM N= 2
FROM 2ØØ MM TO 2Ø4 MM N= 1
FROM 22Ø MM TO 224 MM N= 1
FROM 225 MM TO 229 MM N= 1
FROM 23Ø MM TO 234 MM N= 1
FROM 24Ø MM TO 244 MM N= 2
FROM 25Ø MM TO 254 MM N= 2
FROM 275 MM TO 279 MM N= 1
FROM 295 MM TO 299 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SYNODUS LUCIOCEPS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 275 MM TO 279 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-1

TOTAL NO. OF INDIVIDUALS = 1
FROM 1ØØ MM TO 1Ø4 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
STATION 7-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 145 MM TO 149 MM N= 2
FROM 155 MM TO 159 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SCORPAENA GUTTATA
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
STATION 7-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 225 MM TO 229 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SQUATINA CALIFORNICA
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM1Ø3Ø MM TO1Ø34 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 4
FROM 22Ø MM TO 224 MM N= 1
FROM 245 MM TO 249 MM N= 1
FROM 25Ø MM TO 254 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
STATION 7-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 255 MM TO 259 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
TRACHURUS SYMMETRICUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 23Ø MM TO 234 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
ANISOTREMUS DAVIDSONII
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 21Ø MM TO 214 MM N= 1

Don Light 30 foot gill nets. (Continued)

FILE STORAGE CODE = NEKTON78.FM
XENISTIUS CALIFORNIENSIS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 12Ø MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
CHEIROTREMA SATURNUM
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 185 MM TO 189 MM N= 1
FROM 2ØØ MM TO 2Ø4 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
STATION 7-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 155 MM TO 159 MM N= 1
FROM 17Ø MM TO 174 MM N= 1
FROM 18Ø MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 1
FROM 115 MM TO 119 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
SCORPAENA GUTTATA
DON LIGHT 3Ø FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 7-2

TOTAL NO. OF INDIVIDUALS = 2
FROM 11Ø MM TO 114 MM N= 1
FROM 14Ø MM TO 144 MM N= 1

FILE STORAGE CODE - NEKTON78.FM
ATHERINOPSIS CALIFORNIENSIS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 8-1

TOTAL NO. OF INDIVIDUALS - 23
FROM 175 MM TO 179 MM N- 1
FROM 185 MM TO 189 MM N- 3
FROM 190 MM TO 194 MM N- 1
FROM 210 MM TO 214 MM N- 1
FROM 230 MM TO 234 MM N- 1
FROM 235 MM TO 239 MM N- 1
FROM 240 MM TO 244 MM N- 4
FROM 245 MM TO 249 MM N- 2
FROM 250 MM TO 254 MM N- 3
FROM 260 MM TO 264 MM N- 1
FROM 265 MM TO 269 MM N- 1
FROM 270 MM TO 274 MM N- 3
FROM 275 MM TO 279 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 8-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS - 7
FROM 120 MM TO 124 MM N- 1
FROM 150 MM TO 154 MM N- 1
FROM 165 MM TO 169 MM N- 2
FROM 175 MM TO 179 MM N- 1
FROM 180 MM TO 184 MM N- 1
FROM 195 MM TO 199 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
SCORPAENA GUTTATA
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 8-1
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS - 1
FROM 185 MM TO 189 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
CHEILOTREMA SATURNUM
DON LIGHT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 3
FROM 180 MM TO 184 MM N- 1
FROM 190 MM TO 194 MM N- 1
FROM 200 MM TO 204 MM N- 1

FILE STORAGE CODE - NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 30 FOOT GILL NET - 24 HOUR
STATION 8-2
DECEMBER 12-13, 1978

TOTAL NO. OF INDIVIDUALS - 15
FROM 145 MM TO 149 MM N- 1
FROM 150 MM TO 154 MM N- 2
FROM 155 MM TO 159 MM N- 3
FROM 160 MM TO 164 MM N- 3
FROM 165 MM TO 169 MM N- 3
FROM 170 MM TO 174 MM N- 3

FILE STORAGE CODE - NEKTON78.FM
PIMELOMETOPON PULCHRUM
DON LIGHT 30 FOOT GILL NET - 24 HOUR
DECEMBER 12-13, 1978
STATION 8-2

TOTAL NO. OF INDIVIDUALS - 1
FROM 245 MM TO 249 MM N- 1

Length Frequency Distribution of Select Species Collected in 24-hour Gill Nets 9-1, 9-2, 10-1, 10-2 at Don Light 45 feet on December 12-13, 1978.

NO SELECT SPECIES CAUGHT

San Mateo Point 20 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX MACULATOFASCIATUS
SAN MATEO POINT 2Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 45 MM TO 49 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 2Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 7Ø MM TO 74 MM N= 1
FROM 85 MM TO 89 MM N= 1
FROM 95 MM TO 99 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 2Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 175 MM TO 179 MM N= 1
FROM 22Ø MM TO 224 MM N= 1
FROM 255 MM TO 259 MM N= 1

San Mateo Point 40 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 25Ø MM TO 254 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 95 MM TO 99 MM N= 1
FROM 12Ø MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 4
FROM 8Ø MM TO 84 MM N= 2
FROM 85 MM TO 89 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 29Ø MM TO 294 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 7
FROM 7Ø MM TO 74 MM N= 1
FROM 75 MM TO 79 MM N= 4
FROM 8Ø MM TO 84 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 11Ø MM TO 114 MM N= 1
FROM 2ØØ MM TO 2Ø4 MM N= 1
FROM 265 MM TO 269 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 245 MM TO 249 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 295 MM TO 299 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX MACULATOFASCIATUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 160 MM TO 164 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 330 MM TO 334 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN MATEO POINT 60 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 205 MM TO 209 MM N= 1
FROM 270 MM TO 274 MM N= 1

San Onofre 20 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 27

| | | | | | |
|---|---|---|---|---|---|
| FROM | 75 MM | TO | 79 MM | N= | 6 |
| FROM | 80 MM | TO | 84 MM | N= | 3 |
| FROM | 85 MM | TO | 89 MM | N= | 6 |
| FROM | 90 MM | TO | 94 MM | N= | 3 |
| FROM | 95 MM | TO | 99 MM | N | 6 |
| FROM | 125 MM | TO | 129 MM | N= | 3 |

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 8

| | | | | | |
|---|---|---|---|---|---|
| FROM | 170 MM | TO | 174 MM | N= | 1 |
| FROM | 205 MM | TO | 209 MM | N= | 1 |
| FROM | 230 MM | TO | 234 MM | N= | 2 |
| FROM | 240 MM | TO | 244 MM | N= | 1 |
| FROM | 260 MM | TO | 264 MM | N= | 1 |
| FROM | 275 MM | TO | 279 MM | N= | 1 |
| FROM | 380 MM | TO | 384 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 23

| | | | | | |
|---|---|---|---|---|---|
| FROM | 65 MM | TO | 69 MM | N= | 1 |
| FROM | 70 MM | TO | 74 MM | N= | 3 |
| FROM | 75 MM | TO | 79 MM | N= | 5 |
| FROM | 80 MM | TO | 84 MM | N= | 3 |
| FROM | 85 MM | TO | 89 MM | N= | 9 |
| FROM | 90 MM | TO | 94 MM | N= | 1 |
| FROM | 95 MM | TO | 99 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 7

| | | | | | |
|---|---|---|---|---|---|
| FROM | 155 MM | TO | 159 MM | N= | 1 |
| FROM | 180 MM | TO | 184 MM | N= | 1 |
| FROM | 190 MM | TO | 194 MM | N= | 1 |
| FROM | 200 MM | TO | 204 MM | N= | 1 |
| FROM | 230 MM | TO | 234 MM | N= | 2 |
| FROM | 265 MM | TO | 269 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 17

| | | | | | |
|---|---|---|---|---|---|
| FROM | 70 MM | TO | 74 MM | N= | 3 |
| FROM | 75 MM | TO | 79 MM | N= | 6 |
| FROM | 80 MM | TO | 84 MM | N= | 2 |
| FROM | 85 MM | TO | 89 MM | N= | 2 |
| FROM | 90 MM | TO | 94 MM | N= | 4 |

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 4

| | | | | | |
|---|---|---|---|---|---|
| FROM | 85 MM | TO | 89 MM | N= | 2 |
| FROM | 95 MM | TO | 99 MM | N= | 1 |
| FROM | 125 MM | TO | 129 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 20 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2

| | | | | | |
|---|---|---|---|---|---|
| FROM | 190 MM | TO | 194 MM | N= | 1 |
| FROM | 225 MM | TO | 229 MM | N= | 1 |

FILE STORAGE CODE = NEKTON78.FM
PARALABRAX NEBULIFER
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 180 MM TO 184 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DECEMBER 12, 1978
SAN ONOFRE 40 FOOT OTTER TRAWL

TOTAL NO. OF INDIVIDUALS = 3
FROM 90 MM TO 94 MM N= 2
FROM 115 MM TO 119 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 43
FROM 70 MM TO 74 MM N= 3
FROM 75 MM TO 79 MM N= 19
FROM 80 MM TO 84 MM N= 12
FROM 85 MM TO 89 MM N= 5
FROM 90 MM TO 94 MM N= 3
FROM 110 MM TO 114 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 285 MM TO 289 MM N= 1
FROM 380 MM TO 384 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 11
FROM 80 MM TO 84 MM N= 4
FROM 85 MM TO 89 MM N= 2
FROM 90 MM TO 94 MM N= 3
FROM 95 MM TO 99 MM N= 1
FROM 145 MM TO 149 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 31
FROM 70 MM TO 74 MM N= 3
FROM 75 MM TO 79 MM N= 8
FROM 80 MM TO 84 MM N= 11
FROM 85 MM TO 89 MM N= 6
FROM 90 MM TO 94 MM N= 1
FROM 95 MM TO 99 MM N= 1
FROM 115 MM TO 119 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 270 MM TO 274 MM N= 1
FROM 275 MM TO 279 MM N= 1
FROM 295 MM TO 299 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 85 MM TO 89 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 40 FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 75 MM TO 79 MM N= 2

San Onofre 40 foot otter trawls. (Continued)

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 23Ø MM TO 234 MM N= 1
FROM 245 MM TO 249 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
SAN ONOFRE 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 31
FROM 7Ø MM TO 74 MM N= 2
FROM 75 MM TO 79 MM N= 11
FROM 8Ø MM TO 84 MM N= 13
FROM 85 MM TO 89 MM N= 2
FROM 9Ø MM TO 94 MM N= 1
FROM 115 MM TO 119 MM N= 1
FROM 12Ø MM TO 124 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 28Ø MM TO 284 MM N= 1
FROM 285 MM TO 289 MM N= 1

San Onofre 60 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
SAN ONOFRE 6Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 3ØØ MM TO 3Ø4 MM N= 1

Don Light 20 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 2Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 8
FROM 165 MM TO 169 MM N= 1
FROM 18Ø MM TO 184 MM N= 1
FROM 195 MM TO 199 MM N= 1
FROM 2Ø5 MM TO 2Ø9 MM N= 1
FROM 22Ø MM TO 224 MM N= 1
FROM 225 MM TO 229 MM N= 1
FROM 24Ø MM TO 244 MM N= 2

FILE STORAGE CODE = NEKTON78.FM
HYPERPROSOPON ARGENTEUM
DON LIGHT 2Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 85 MM TO 89 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PHANERODON FURCATUS
DON LIGHT 2Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 75 MM TO 79 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 2Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 125 MM TO 129 MM N= 1
FROM 165 MM TO 169 MM N= 1

Don Light 40 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 26Ø MM TO 264 MM N= 1
FROM 3Ø5 MM TO 3Ø9 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 4Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 33Ø MM TO 334 MM N= 1
FROM 415 MM TO 419 MM N= 1
FROM 42Ø MM TO 424 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 1
FROM 25Ø MM TO 254 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 4Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 235 MM TO 239 MM N= 1
FROM 295 MM TO 299 MM N= 1
FROM 3Ø5 MM TO 3Ø9 MM N= 1

Don Light 60 foot otter trawls

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 7
FROM 28Ø MM TO 284 MM N= 1
FROM 29Ø MM TO 294 MM N= 1
FROM 33Ø MM TO 334 MM N= 1
FROM 34Ø MM TO 344 MM N= 1
FROM 375 MM TO 379 MM N= 1
FROM 4Ø5 MM TO 4Ø9 MM N= 1
FROM 515 MM TO 519 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
DECEMBER 12, 1978

TOTAL NO. OF INDIVIDUALS = 2
FROM 295 MM TO 299 MM N= 1
FROM 36Ø MM TO 364 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 3
FROM 36Ø MM TO 364 MM N= 1
FROM 4ØØ MM TO 4Ø4 MM N= 1
FROM 415 MM TO 419 MM N= 1

FILE STORAGE CODE = NEKTON78.FM
PARALICHTHYS CALIFORNICUS
DON LIGHT 6Ø FOOT OTTER TRAWL
DECEMBER 13, 1978

TOTAL NO. OF INDIVIDUALS = 5
FROM 25Ø MM TO 254 MM N= 1
FROM 295 MM TO 299 MM N= 1
FROM 3Ø5 MM TO 3Ø9 MM N= 1
FROM 32Ø MM TO 324 MM N= 1
FROM 41Ø MM TO 414 MM N= 1

Sex Composition (Male-M, Female-F, Indeterminant-I) of Select Species Collected in Otter Trawls Taken Offshore San Mateo Point, San Onofre and Don Light on March 15-16, 1978.

| Select Species | Depth | 20 ft | | | | | | 40 ft | | | | | | 60 ft | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Replicate | A | | | B | | | A | | | B | | | A | | | B | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| | | | | | | | | | | SAN MATEO POINT | | | | | | | | | |
| *Seriphus politus* | | – | 1 | – | – | – | – | 7 | – | 5 | 19 | 11 | 62 | – | 3 | 10 | – | 2 | 2 |
| *Genyonemus lineatus* | | 15 | 11 | 1 | 17 | 11 | 1 | 10 | 13 | 119 | 7 | 18 | 17 | 3 | 16 | 3 | – | 3 | – |
| *Hyperprosopon argenteum* | | 1 | – | – | 4 | 2 | – | – | – | – | – | – | – | – | – | 4 | 3 | – | 2 |
| *Phanerodon furcatus* | | – | – | – | – | 4 | 3 | – | 1 | – | – | – | – | – | – | – | – | 1 | 1 |
| | | | | | | | | | | SAN ONOFRE | | | | | | | | | |
| *Seriphus politus* | | – | 3 | – | – | – | – | 5 | 2 | 101 | 1 | 3 | 16 | – | 1 | – | 1 | 21 | 13 |
| *Genyonemus lineatus.* | | 68 | 22 | – | 19 | 6 | 1 | 6 | 23 | 21 | 4 | 40 | 33 | – | 4 | – | 2 | 14 | 4 |
| *Hyperprosopon argenteum* | | 1 | – | – | – | 1 | – | – | – | 1 | – | – | – | – | 1 | – | 1 | 5 | 1 |
| *Phanerodon furcatus* | | – | – | 2 | – | – | 2 | – | – | – | – | – | – | – | 7 | – | – | – | – |
| | | | | | | | | | | DON LIGHT | | | | | | | | | |
| *Seriphus politus* | | 2 | 2 | 2 | – | 5 | 3 | 19 | 1 | 15 | 31 | 1 | 67 | – | 1 | 1 | – | 4 | 10 |
| *Genyonemus lineatus* | | 22 | 9 | 46 | 46 | 16 | 14 | 5 | 10 | 9 | 15 | 16 | 99 | – | 5 | 1 | 8 | 17 | 19 |
| *Hyperprosopon argenteum* | | – | 1 | – | – | – | – | – | 1 | – | – | – | – | 1 | 1 | – | – | 1 | – |
| *Phanerodon furcatus* | | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |

Sex Composition (Male-M, Female-F, Indeterminate-I) of Resident Nekton Species Collected in 24 Hour Gill Nets at San Mateo Point on March 30-31, 1978.

| Species | Depth | 30 ft | | | | | | 45 ft | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Number | 7-1 | | | 7-2 | | | 8-1 | | | 8-2 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I |
| SARRANIDAE | | | | | | | | | | | | | |
| *Paralabrax clathratus* | | | | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| SCIAENIDAE | | | | | | | | | | | | | |
| *Cheilotrema saturnum* | | | | | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| *Cynoscion nobilis* | | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 |
| *Genyonemus lineatus* | | 1 | 1 | 4 | 0 | 1 | 0 | 15 | 23 | 10 | 0 | 0 | 1 |
| *Roncador stearnsii* | | 2 | 0 | 0 | 2 | 0 | 0 | | | | | | |
| *Seriphus politus* | | 12 | 15 | 4 | 6 | 2 | 3 | 17 | 15 | 4 | | | |
| GIRELLIDAE | | | | | | | | | | | | | |
| *Girella nigricans* | | | | | 6 | 3 | 1 | | | | 1 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | | | | |
| *Brachyistius frenatus* | | | | | | | | 0 | 0 | 2 | | | |
| *Embiotoca jacksoni* | | | | | | | | | | | 0 | 0 | 1 |
| *Hyperprosopon argenteum* | | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 |
| *Phanerodon furcatus* | | 0 | 1 | 0 | | | | 3 | 0 | 2 | 0 | 0 | 1 |
| POMACENTRIDAE | | | | | | | | | | | | | |
| *Chromis punctipinnis* | | | | | | | | | | | 0 | 0 | 50 |
| SCORPAENIDAE | | | | | | | | | | | | | |
| *Sebastes serranoides* | | | | | | | | | | | 4 | 0 | 3 |

Sex Composition (Male-M, Female-F, Indeterminate-I) of Resident Nekton Species Collected in 24 Hour Gill Nets at San Onofre on March 30-31, 1978.

| Species | Depth | 30 ft | | | | | | 45 ft | | | | | | 30 ft - Thermal Plume | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Number | 1-1 | | | 1-2 | | | 2-1 | | | 2-2 | | | 3-1 | | | 3-2 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| SERRANIDAE | | | | | | | | | | | | | | | | | | | |
| *Paralabrax clathratus* | | | | | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | | | | | | |
| *Paralabrax maculatofasciatus* | | | | | | | | | | | | | | | | | 0 | 0 | 1 |
| *Paralabrax nebulifer* | | | | | | | | | | | 0 | 0 | 2 | | | | | | |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | | | | |
| *Anisotremus davidsonii* | | | | | 1 | 0 | 0 | | | | | | | | | | | | |
| *Xenistius californiensis* | | | | | 0 | 0 | 1 | | | | | | | | | | | | |
| SCIAENIDAE | | | | | | | | | | | | | | | | | | | |
| *Cheilotrema saturnum* | | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | | | | 0 | 0 | 1 |
| *Cynoscion nobilis* | | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 0 |
| *Genyonemus lineatus* | | 0 | 2 | 0 | 0 | 1 | 0 | 18 | 9 | 1 | 10 | 3 | 1 | 4 | 9 | 9 | 1 | 9 | 3 |
| *Roncador stearnsii* | | 1 | 0 | 0 | 6 | 2 | 0 | 1 | 0 | 0 | | | | 3 | 0 | 0 | 31 | 4 | 4 |
| *Seriphus politus* | | 3 | 0 | 0 | 0 | 2 | 2 | 6 | 4 | 1 | 20 | 12 | 2 | 0 | 5 | 0 | 0 | 2 | 2 |
| GIRELLIDAE | | | | | | | | | | | | | | | | | | | |
| *Girella nigricans* | | 5 | 2 | 0 | 0 | 2 | 6 | 2 | 0 | 0 | | | | | | | | | |
| SCORPIDIDAE | | | | | | | | | | | | | | | | | | | |
| *Medialuna californiensis* | | | | | | | | | | | 2 | 2 | 2 | | | | | | |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | | | | |
| *Brachyistius frenatus* | | 0 | 1 | 0 | | | | | | | | | | 0 | 3 | 0 | | | |
| *Damalichthys vacca* | | | | | | | | | | | 0 | 1 | 0 | | | | | | |
| *Embiotoca jacksoni* | | | | | | | | | | | 0 | 4 | 0 | | | | | | |
| *Hyperprosopon argenteum* | | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | | | | 23 | 23 | 0 | 1 | 6 | 0 |
| *Phanerodon furcatus* | | | | | 0 | 0 | 1 | | | | 0 | 2 | 0 | | | | | | |
| LABRIDAE | | | | | | | | | | | | | | | | | | | |
| *Halichoeres semicinctus* | | | | | | | | | | | 2 | 0 | 0 | | | | | | |
| *Pimelometopon pulchrum* | | | | | | | | | | | 0 | 2 | 0 | | | | | | |
| CLINIDAE | | | | | | | | | | | | | | | | | | | |
| *Heterostichus rostratus* | | | | | 0 | 1 | 1 | | | | 3 | 1 | 0 | | | | | | |
| SCORPAENIDAE | | | | | | | | | | | | | | | | | | | |
| *Sebastes carnatus* | | 0 | 0 | 1 | | | | | | | | | | | | | | | |

Sex Composition (Male-M, Female-F, Indeterminate-I) of Resident Nekton Species Collected in 24 Hour Gill Nets at Don Light on March 30-31, 1978.

| Species | Depth | 30 ft | | | 45 ft | | | 30 ft | | | 45 ft | | | 30 ft | | | 45 ft | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Number | 4-1 | | | 4-2 | | | 5-1 | | | 5-2 | | | 6-1 | | | 6-2 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| SERRANIDAE | | | | | | | | | | | | | | | | | | | |
| *Paralabrax clathratus* | | 0 | 0 | 1 | | | | 0 | 0 | 2 | 1 | 0 | 1 | | | | | | |
| *Paralabrax maculatofasciatus* | | | | | 0 | 0 | 2 | 0 | 0 | 1 | | | | | | | | | |
| PRISTIPOMATIDAE | | | | | | | | | | | | | | | | | | | |
| *Anisotremus davidsonii* | | | | | | | | 0 | 0 | 1 | | | | 0 | 0 | 1 | | | |
| SCIAENIDAE | | | | | | | | | | | | | | | | | | | |
| *Cheilotrema saturnum* | | | | | 3 | 0 | 0 | 3 | 1 | 1 | | | | | | | | | |
| *Genyonemus lineatus* | | 0 | 0 | 1 | 2 | 17 | 9 | 1 | 4 | 3 | 5 | 16 | 0 | 3 | 5 | 3 | 2 | 10 | 2 |
| *Roncador stearnsii* | | | | | | | | | | | | | | 1 | 0 | 0 | | | |
| *Seriphus politus* | | 4 | 11 | 3 | 23 | 11 | 16 | 2 | 8 | 2 | 16 | 8 | 0 | 3 | 7 | 3 | 29 | 15 | 6 |
| GIRELLIDAE | | | | | | | | | | | | | | | | | | | |
| *Girella nigricans* | | | | | | | | 0 | 1 | 0 | | | | | | | 1 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | | | | | | | | | | |
| *Brachyistius frenatus* | | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | | | |
| *Damalichthys vacca* | | | | | | | | 0 | 1 | 0 | | | | | | | | | |
| *Embiotoca jacksoni* | | | | | 0 | 1 | 0 | | | | | | | | | | 1 | 0 | 0 |
| *Hyperprosopon argenteum* | | | | | | | | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 1 | 1 | 0 |
| *Phanerodon furcatus* | | | | | 0 | 1 | 0 | | | | | | | 0 | 0 | 2 | 0 | 1 | 0 |
| LABRIDAE | | | | | | | | | | | | | | | | | | | |
| *Pimelometopon pulchrum* | | | | | | | | | | | | | | 1 | 0 | 0 | | | |
| SCORPAENIDAE | | | | | | | | | | | | | | | | | | | |
| *Sebastes auriculatus* | | | | | | | | 0 | 1 | 1 | | | | | | | | | |

Sex Composition (Male-M , Female-F, Indeterminate-I) of Select Species Collected in 4 Hour Gill Nets Fished Offshore San Onofre Nuclear Generating Station on March 30-31, 1978.

| Select Species | Depth | 30 ft | | | | | | | | | | | | 45 ft | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Letter | A | | | B | | | C | | | D | | | W | | | X | | | Y | | | Z | | |
| | Fishing Window* | 1** | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Cynoscion nobilis* | | 3 | - | - | - | - | - | 1 | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | | - | - | - | - | - | - | 2 | - | - | 2 | 3 | - | - | - | - | - | 1 | 1 | 2 | 1 | - | - | - | - |
| *Genyonemus lineatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | 2 | - | 1 | 1 | - |
| *Roncador stearnsi* | | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | 1 | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | | - | - | - | - | - | - | 1 | 4 | - | - | - | - | - | - | - | - | 1 | 1 | - | - | - | 1 | 1 | - |
| *Phanerodon furcatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - |
| *P. maculatofasciatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Select Species | Depth | 30 ft | | | | | | | | | | | | 45 ft | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Letter | A | | | B | | | A | | | B | | | A | | | B | | | A | | | B | | |
| | Fishing Window | 2*** | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Cynoscion nobilis* | | 1 | - | - | 1 | - | - | 1 | - | 1 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | 1 |
| *Seriphus politus* | | 1 | 3 | 1 | 1 | 3 | - | - | 5 | - | 1 | 3 | - | 17 | 3 | - | 23 | 9 | - | 24 | 9 | - | 38 | 2 | - |
| *Genyonemus lineatus* | | - | - | - | - | - | - | - | - | - | - | 1 | - | 1 | 1 | - | 7 | 6 | - | 6 | 7 | - | 7 | 5 | - |
| *Roncador stearnsi* | | 1 | - | - | 15 | 1 | - | 8 | 1 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | | - | 3 | - | - | 1 | - | - | - | - | 1 | - | - | - | - | - | - | 1 | - | - | - | - | - | 1 | - |
| *Phanerodon furcatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | - | - |
| *Paralabrax clathratus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | 1 |
| *P. nebulifer* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Select Species | Depth | 30 ft | | | | | | | | | | | | 45 ft | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Net Letter | A | | | B | | | C | | | D | | | W | | | X | | | Y | | | Z | | |
| | Fishing Window | 3/4**** | | | 3/4 | | | 3/4 | | | 3/4 | | | 3/4 | | | 3/4 | | | 3/4 | | | 3/4 | | |
| | Sex | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Cynoscion nobilis* | | 1 | - | - | - | - | - | - | - | - | 2 | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | | - | 1 | - | 2 | 2 | - | 1 | 6 | - | - | 5 | - | 6 | 1 | - | 2 | 5 | - | 13 | 12 | 2 | - | - | - |
| *Genyonemus lineatus* | | - | - | - | - | - | - | 1 | 1 | - | 1 | 4 | - | 8 | 8 | - | 16 | 14 | - | 27 | 23 | - | - | - | - |
| *Roncador stearnsi* | | - | - | - | 2 | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | | - | - | - | - | 1 | - | 1 | 1 | - | 3 | - | - | 2 | 2 | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - |
| *Paralichthys californicus* | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |

*A fishing window refers to a four hour period corresponding 1000-1400h, 1600-2000h, 2200-0200h and 0400-0800h such that dawn, dusk, midday and midnight were centered on these four hour intervals.

**Nets fished a four hour period during the interval between 0830h to 1435h.

***Nets fished a four hour period during the interval between 1435 to 2049h.

****Nets fished an eight hour period during the interval between 2050 to 0920h.

Sex Composition (Male-M, Female-F, Indeterminate-I) of Select Species Collected in Otter Trawls Offshore San Onofre Nuclear Generating Station at 20, 40 and 60 Feet on March 30-31, 1978.

| Select Species | T-1-20 | | | T-2-20 | | | T-3-20 | | | T-4-20 | | | T-5-20 | | | T-6-20 | | | T-7-20 | | | T-8-20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Genyonemus lineatus* | 5 | 39 | 6 | 7 | 23 | 20 | 1 | 30 | 19 | 5 | 22 | 12 | 8 | 6 | 15 | 2 | 14 | 34 | 2 | 8 | 40 | 3 | 5 | 22 |
| *Seriphus politus* | 3 | 24 | 23 | 21 | 16 | 13 | - | 3 | 21 | - | 1 | 49 | 7 | 17 | 31 | - | 4 | 46 | - | 1 | 11 | 2 | 1 | 13 |
| *Hyperprosopon argenteum* | - | - | - | - | 1 | 1 | - | - | 4 | - | - | 6 | - | 2 | 1 | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - |
| | T-1-40 | | | T-2-40 | | | T-3-40 | | | T-4-40 | | | T-5-40 | | | T-6-40 | | | T-7-40 | | | T-8-40 | | |
| *Genyonemus lineatus* | 6 | 16 | 28 | 6 | 7 | 37 | 1 | 7 | 29 | 11 | 16 | 23 | 3 | 13 | 30 | 9 | 5 | 7 | 10 | 23 | 4 | * | * | * |
| *Seriphus politus* | 11 | 3 | 25 | 10 | 2 | 38 | 10 | 5 | 28 | 20 | 5 | 25 | 11 | 3 | 3 | 6 | 7 | 12 | 28 | 5 | 2 | * | * | * |
| *Brachyistius frenatus* | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | * |
| *Embiotoca jacksoni* | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | * |
| *Hyperprosopon argenteum* | - | - | 1 | 3 | 1 | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - | - | * | * | * |
| *Phanerodon furcatus* | - | - | 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | * | * | * |
| | T-1-60 | | | T-2-60 | | | T-3-60 | | | T-4-60 | | | T-5-60 | | | T-6-60 | | | T-7-60 | | | T-8-60 | | |
| *Genyonemus lineatus* | 34 | 15 | 1 | 7 | 1 | - | - | - | - | ** | ** | ** | 5 | 5 | - | 5 | 2 | 2 | * | * | * | * | * | * |
| *Seriphus politus* | 5 | 8 | - | - | - | - | 3 | - | - | ** | ** | ** | 2 | - | - | 1 | - | 3 | * | * | * | * | * | * |
| *Phanerodon furcatus* | 1 | 8 | - | - | - | - | - | - | - | ** | ** | ** | - | - | - | - | - | - | * | * | * | * | * | * |

*Trawl lost
**No sexed species

Sex composition (Male-M, Female-F, Indeterminate-I) of resident nekton species collected in 24 hour gill nets set at a depth of 30' near or adjacent to the San Onofre Nuclear Generating Station on June 14-15, 1978.

| SURVEILLANCE ZONE | SAN ONOFRE | | | | | | | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | | | | | | | SAN MATEO POINT | | | | | | | | | | | |
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| STATION NUMBER | 1 | | | | | | 2 | | | | | | 3 | | | | | | 6 | | | | | | 7 | | | | | | 8 | | | | | | 11 | | | | | | 12 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - |
| *Paralabrax maculatofasciatus* | - | - | - | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | 1 | 0 | 0 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 |
| *Cynoscion nobilis* | - | - | - | 1 | 0 | 0 | 1 | 5 | 2 | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | - | - | - | 1 | 0 | 0 | - | - | - | 0 | 2 | 0 | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | - | - | - | 0 | 0 | 2 | 3 | 6 | 1 | 4 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 2 | 2 | 1 | 3 | 0 | 1 | 6 | 7 | 5 | 2 | 2 | - | - | - | - | - | - | 3 | 6 | 3 | 3 | 3 | 1 |
| *Roncador stearnsii* | 9 | 0 | 0 | 7 | 0 | 0 | 6 | 1 | 3 | 1 | 1 | 0 | 2 | 1 | 0 | 3 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - |
| *Seriphus politus* | 2 | 6 | 0 | 6 | 2 | 2 | 4 | 4 | 2 | 3 | 7 | 0 | 4 | 5 | 1 | 3 | 5 | 2 | 2 | 8 | 0 | 0 | 10 | 0 | 3 | 6 | 1 | 1 | 9 | 0 | 1 | 9 | 1 | 5 | 7 | 0 | 2 | 4 | 0 | 10 | 22 | 0 | 13 | 16 | 0 | 29 | 21 | 0 |
| *Hyperprosopon argenteum* | 0 | 2 | 1 | 0 | 0 | 2 | - | - | - | 2 | 1 | 0 | 0 | 3 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 2 | 0 | 0 | 2 | 3 | 0 | 5 | 5 | 0 | - | - | - | 3 | 1 | 0 |
| *Phanerodon furcatus* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | 1 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - |
| *Anisotremus davidsonii* | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cheilotrema saturnum* | - | - | - | - | - | - | 1 | 0 | 0 | 0 | 0 | 0 | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Amphistichus argenteus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Embiotoca jacksoni* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Rhacochilus toxotes* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Halichoeres semicinctus* | - | - | - | 1 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Sarpsanx gattata* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cebatus castrelliger* | 0 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in 24 hour gill nets set at a depth of 45' near or adjacent to the San Onofre Nuclear Generating Station on June 14-15, 1978.

| SURVEILLANCE ZONE | SAN ONOFRE | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | SAN MATEO POINT | | | | | | | | | | | |
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| STATION NUMBER | 4 | | | | | | 5 | | | | | | 9 | | | | | | 10 | | | | | | 13 | | | | | | 14 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | 2 | 0 | 0 | - | - | - | - | - | - | 0 | 2 | 0 | 0 | 3 | 0 | - | - | - | 0 | 1 | 0 | 1 | 5 | 1 |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 5 | 0 | 0 | 3 | 3 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 10 | 8 | 1 | 4 | 4 | 3 | 1 | 1 | 4 | 2 | 1 | 2 | 4 | 11 | 3 | - | - | - | 0 | 3 | 1 | 0 | 1 | 0 |
| *Roncador stearnsii* | 0 | 2 | 0 | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 11 | 5 | 0 | 5 | 2 | 0 | 11 | 2 | 2 | 5 | 1 | 0 | 20 | 12 | 0 | 7 | 10 | 0 | 10 | 19 | 1 | 1 | 1 | 1 | 6 | 7 | 0 | 4 | 2 | 0 | 14 | 22 | 0 | 2 | 4 | 0 |
| *Hyperprosopon argenteum* | 2 | 0 | 0 | - | - | - | 6 | 0 | 7 | 1 | 3 | 0 | 3 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 0 | - | - | - |
| *Phanerodon furcatus* | 2 | 1 | 2 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 2 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured and sexed.

Note: In several cases individuals of resident species were returned to the water alive and not sexed.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Mateo Point surveillance zone on June 14-15, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SM-T-20 | | | | | | | | | | | | SM-T-40 | | | | | | | | | | | | SM-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 0 | 3 | 5 | 5 | 14 | - | - | - | - | - | - | 3 | 4 | 43 | 15 | 15 | 20 | 17 | 4 | 29 | 10 | 12 | 28 | 5 | 6 | 0 | 0 | 0 | 3 | 35 | 7 | 8 | 13 | 8 | 18 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 36 | 14 | - | 37 | 12 | 1 | 5 | 10 | 0 | 0 | 1 | 0 | 2 | 15 | 0 | 5 | 9 | 1 | 17 | 11 | 11 | 33 | 17 | 0 | - | - | - | - | - | - | 0 | 15 | 0 | 0 | 2 | 0 |
| *Hyperprosopon argenteum* | - | - | - | 0 | 1 | 6 | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 4 | - | - | - | - | - | - | 3 | 3 | 0 | 3 | 3 | 0 | 0 | 3 | 0 | 0 | 1 | 3 |
| *Phanerodon furcatus* | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 13 | - | - | - | 0 | 0 | 2 | 0 | 2 | 11 | 0 | 1 | 7 | 0 | 1 | 8 | 0 | 0 | 2 | 1 | 3 | 6 | 2 | 18 | 0 | 4 | 0 | 17 |
| *Paralichthys californicus* | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | 0 | 0 | 6 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ..... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Onofre surveillance zone on June 14-15, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SO-T-20 | | | | | | | | | | | | SO-T-40 | | | | | | | | | | | | SO-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 1 | 1 | 48 | 0 | 0 | 3 | 0 | 1 | 0 | 3 | 1 | 1 | 6 | 4 | 40 | 19 | 9 | 22 | 6 | 13 | 31 | 8 | 5 | 37 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 8 | 6 | 36 | 27 | 23 | 0 | 0 | 0 | 50 | 4 | 2 | 44 | 2 | 13 | 0 | 4 | 11 | 4 | 2 | 12 | 1 | 0 | 1 | 0 | 4 | 3 | 0 | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | 0 | 0 | 3 | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | 0 | 1 | 1 | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 0 | 4 | - | - | - | - | - | - | - | - | - | 0 | 1 | 8 | 0 | 0 | 9 | 1 | 1 | 11 | 0 | 0 | 9 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 5 | 0 | 0 | 3 | - | - | - | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ..... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at Don Light surveillance zone on June 14-15, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | DL-T-20 | | | | | | | | | | | | DL-T-40 | | | | | | | | | | | | DL-T-60 | | | | | | | | | | | |
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| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 0 | 1 | 0 | 0 | 1 | 7 | 0 | 43 | 0 | 0 | 19 | 6 | 4 | 40 | 10 | 6 | 34 | 15 | 10 | 25 | 11 | 1 | 38 | 14 | 4 | 5 | 3 | 10 | 17 | 23 | 14 | 13 | 7 | 2 | 8 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 6 | 1 | 42 | 30 | 16 | 4 | 11 | 21 | 18 | 21 | 11 | 18 | 1 | 8 | 7 | 4 | 3 | 0 | 4 | 3 | 23 | 2 | 0 | 19 | - | - | - | - | - | - | 12 | 9 | 0 | 9 | 16 | 0 |
| *Hyperprosopon argenteum* | 0 | 0 | 2 | - | - | - | 0 | 0 | 8 | - | - | - | - | - | - | 0 | 0 | 2 | 0 | 0 | 3 | - | - | - | - | - | - | 1 | 0 | 0 | 2 | 2 | 0 | - | - | - |
| *Phanerodon furcatus* | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | 0 | 0 | 5 | 0 | 0 | 2 | - | - | - | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 5 | 5 | 0 | 0 | 2 | 0 | 0 | 2 |
| *Paralichthys californicus* | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 2 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ..... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of resident nekton species collected in 24 hour gill nets set at a depth of 30' near or adjacent to the San Onofre Nuclear Generating Station on August 15-16, 1978.

| SURVEILLANCE ZONE | SAN ONOFRE | | | | | | | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | | | | | | | SAN MATEO POINT | | | | | | | | | | | |
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| STATION NUMBER | 1 | | | | | | 2 | | | | | | 3 | | | | | | 6 | | | | | | 7 | | | | | | 8 | | | | | | 11 | | | | | | 12 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | - | - | - | - | - | - |
| *Genyonemus lineatus* | 2 | 0 | 0 | - | - | - | 0 | 3 | 1 | 6 | 4 | 0 | * | * | * | * | * | * | 1 | 2 | 2 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | 0 | 0 | 1 | 0 | 1 | 0 | 7 | 5 | 2 | 10 | 3 | 11 |
| *Roncador stearnsii* | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | * | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 2 | 8 | 0 | 2 | 8 | 0 | 3 | 7 | 0 | 3 | 7 | 0 | 1 | 9 | 0 | 6 | 4 | 0 | 4 | 6 | 0 | 4 | 6 | 0 | 3 | 7 | 0 | 2 | 8 | 0 | 3 | 6 | 1 | 1 | 9 | 0 | 0 | 4 | 2 | 1 | 1 | 0 | 11 | 34 | 1 | 12 | 33 | 1 |
| *Hyperprosopon argenteum* | 0 | 2 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 4 | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 2 | 5 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | - | - | - | - | - | - |
| *Phanerodon furcatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 2 | 0 | - | - | - | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | - | - | - | - | - | - |
| *Porichthys myriaster* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Anisotremus davidsonii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cheilotrema saturnum* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Girella nigricans* | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hermosilla azurea* | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Amphistichus argenteus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Damalichthys vacca* | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Embiotoca jacksoni* | 0 | 1 | 0 | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 3 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Rhacochilus toxotes* | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Halichoeres semicinctus* | 1 | 0 | 0 | - | - | - | 1 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Peprilus simillimus* | 0 | 1 | 0 | - | - | - | 1 | 0 | 0 | 2 | 3 | 0 | - | - | - | - | - | - | 2 | 5 | 1 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Scorpaena guttata* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in 24 hour gill nets set at a depth of 45' near or adjacent to the San Onofre Nuclear Generating Station on August 15-16, 1978.

| SURVEILLANCE ZONE | SAN ONOFRE | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | SAN MATEO POINT | | | | | | | | | | | |
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| STATION NUMBER | 4 | | | | | | 5 | | | | | | 9 | | | | | | 10 | | | | | | 13 | | | | | | 14 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | 0 | 1 | 3 | - | - | - | 1 | 0 | 0 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 1 | 1 | 0 | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | 1 | 1 | 0 | - | - | - | 2 | 0 | 0 |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 2 | 1 | 0 | 19 | 15 | 16 | 23 | 6 | 21 | 23 | 17 | 10 | 14 | 17 | 19 | 8 | 7 | 7 | - | - | - | - | - | - | 1 | 2 | 0 |
| *Roncador stearnsii* | - | - | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | 2 | - |
| *Seriphus politus* | 2 | 3 | 0 | 9 | 7 | 0 | 8 | 14 | 0 | 7 | 8 | 0 | 16 | 19 | 1 | 3 | 11 | 2 | 7 | 10 | 0 | 4 | 34 | 0 | 12 | 17 | 0 | 1 | 8 | 0 | 2 | 1 | 1 | 3 | 3 | 0 |
| *Hyperprosopon argenteum* | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 2 | 0 | 0 | 1 | 1 | 4 | 0 | 1 | 2 | 0 | - | - | - | 5 | 1 | 0 | 1 | 2 | 0 | 5 | 7 | 0 | 8 | 6 | 0 |
| *Phanerodon furcatus* | 3 | 1 | 0 | 2 | 5 | 0 | 5 | 1 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 3 | 18 | 0 | 1 | 1 | 0 | - | - | - | 1 | 3 | 0 | 2 | 2 | 1 | 1 | 1 | 1 | 0 | 7 | 1 |
| *Paralichthys californicus* | - | - | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ..... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Mateo Point surveillance zone on August 15-16, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SM-T-20 | | | | | | | | | | | | SM-T-40 | | | | | | | | | | | | SM-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | - | - | - | 13 | 11 | 18 | 1 | 0 | 3 | 0 | 0 | 10 | 1 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 16 | 16 | 18 | 10 | 7 | 33 | 1 | 2 | 47 | 0 | 0 | 50 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 1 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | 0 | 0 | 3 | - | - | - | - | - | - | 0 | 0 | 4 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 2 | - | - | - | - | - | - | 2 | 1 | 3 | - | - | - |
| *Phanerodon furcatus* | 0 | 3 | 0 | - | - | - | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 8 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 4 | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - |
| *Paralichthys californicus* | 0 | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 4 | - | - | - | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ..... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Onofre surveillance zone on August 15-16, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SO-T-20 | | | | | | | | | | | | SO-T-40 | | | | | | | | | | | | SO-T-60 | | | | | | | | | | | |
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| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 0 | 16 | 1 | 1 | 48 | 0 | 0 | 25 | 0 | 0 | 50 | 9 | 4 | 9 | 15 | 11 | 23 | 0 | 0 | 50 | 4 | 6 | 40 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 24 | 16 | 10 | 1 | 2 | 47 | 3 | 3 | 44 | 0 | 3 | 47 | 5 | 1 | 2 | 5 | 8 | 1 | 2 | 4 | 17 | 2 | 2 | 41 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 15 | - | - | - | 0 | 0 | 4 | 3 | 2 | 0 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 1 | 23 | 0 | 0 | 8 | 0 | 0 | 50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at Don Light surveillance zone on August 15-16, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | DL-T-20 | | | | | | | | | | | | DL-T-40 | | | | | | | | | | | | DL-T-60 | | | | | | | | | | | |
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| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | - | - | - | 29 | 17 | 4 | 16 | 2 | 32 | 2 | 1 | 4 | - | - | - | - | - | - | 4 | 2 | 5 | 2 | 0 | 2 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 3 | 1 | 46 | 15 | 7 | 28 | 3 | 1 | 46 | 2 | 0 | 48 | 0 | 0 | 3 | - | - | - | 1 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 |
| *Phanerodon furcatus* | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | 0 | 2 | 4 | 0 | 2 | 8 | 1 | 0 | 11 | 2 | 1 | 0 | 1 | 0 | 0 | - | - | - | 0 | 5 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | - | - | - | 1 | 0 | 0 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of resident nekton species collected in 24 hour gill nets set at a depth of 30' near or adjacent to the San Onofre Nuclear Generating Station on October 11-12, 1978.

| SURVEILLANCE ZONE | SAN MATEO POINT | | | | | | | | | | | | SAN ONOFRE | | | | | | | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION NUMBER | 11 | | | | | | 12 | | | | | | 1 | | | | | | 2 | | | | | | 3 | | | | | | 6 | | | | | | 7 | | | | | | 8 | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | 1 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 1 | 1 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | 1 | 0 | 1 | 1 | 1 | 4 | 0 | 1 | 2 | - | - | - | 0 | 1 | 0 | 2 | 0 | 1 | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | - | - | - | 1 | 3 | 0 | 2 | 1 | 0 | - | - | - | - | - | - |
| *Cynoscion nobilis* | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | * | * | * | - | - | - | - | - | - | 0 | 0 | 1 | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | 2 | 0 | 1 | 0 | 2 | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | 1 | 3 | 1 | 0 | 1 | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 1 | 3 | 5 | 4 | 0 | 1 | 3 | 0 | 5 | 0 | 3 | 6 | 3 | 5 | 12 | 4 | 1 | 6 | 2 | 2 | 5 | 1 | 3 | 5 | 1 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | * | * | * | - | - | - | - | - | - | 1 | 0 | 0 | 0 | 0 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 5 | 21 | 2 | 0 | 2 | 0 | 2 | 7 | 1 | 5 | 8 | 3 | 15 | 21 | 7 | 17 | 15 | 4 | 24 | 22 | 4 | 1 | 6 | 3 | 17 | 17 | 16 | 11 | 20 | 12 | 16 | 11 | 10 | 15 | 7 | 3 | 13 | 27 | 9 | 12 | 17 | 9 | 32 | 11 | 7 | 38 | 12 | 0 |
| *Hyperprosopon argenteum* | - | - | - | 0 | 2 | 0 | - | - | - | 2 | 0 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | - | - | - | - | - | - | 2 | 0 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | - | - | - | 1 | 0 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Embiotoca jacksoni* | * | * | * | * | * | * | 1 | 0 | 0 | - | - | - | 1 | 0 | 0 | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| *Damalichthys vacca* | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| *Girella nigricans* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - |
| *Peprilus simillimus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 2 | 1 | 0 | 1 | 2 | 0 | 0 | 3 |
| *Cheilotrema saturnum* | * | * | * | 4 | 3 | 2 | 0 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 |
| *Rhacochilus toxotes* | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Chilara taylori* | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Medialuna californiensis* | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Anisotremus davidsonii* | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Halichoeres semicinctus* | * | * | * | * | * | * | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Sebastes auriculatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, .... Indicates the number of individuals of that sex captured.

* Measured but not sexed, in compliance with ETS-PEM specifications.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in 24 hour gill nets set at a depth of 45' near or adjacent to the San Onofre Nuclear Generating Station on October 11-12, 1978.

| SURVEILLANCE ZONE | SAN MATEO POINT | | | | | | | | | | | | SAN ONOFRE | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION NUMBER | 13 | | | | | | 14 | | | | | | 4 | | | | | | 5 | | | | | | 9 | | | | | | 10 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | 2 | 1 | 0 |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 |
| *P. nebulifer* | 0 | 1 | 3 | 1 | 2 | 1 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | - | - | - | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 0 | 1 | 2 | 1 | - | - | - | 1 | 0 | 0 |
| *Cynoscion nobilis* | 2 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 2 | 0 | 1 | 2 | 0 | - | - | - | 1 | 3 | 0 | - | - | - | 0 | 1 | 0 | 6 | 11 | 3 | 16 | 9 | 0 | 17 | 22 | 0 | 15 | 7 | 0 | 10 | 21 | 0 | 22 | 21 | 0 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 8 | 10 | 10 | 8 | 6 | 1 | 3 | 12 | 9 | 4 | 18 | 11 | 6 | 9 | 1 | 5 | 2 | 0 | 4 | 13 | 4 | 6 | 5 | 2 | 20 | 15 | 11 | 25 | 3 | 2 | 11 | 12 | 1 | 24 | 13 | 6 |
| *Hyperprosopon argenteum* | 3 | 3 | 0 | 1 | 1 | 0 | 4 | 1 | 0 | 8 | 8 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 3 | 4 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | - | - | - | 0 | 0 | 2 | 3 | 2 | 0 |
| *Phanerodon furcatus* | 1 | 3 | 0 | 2 | 0 | 0 | - | - | - | 2 | 4 | 0 | 5 | 1 | 0 | 2 | 3 | 0 | 2 | 1 | 0 | 5 | 2 | 0 | 9 | 7 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 3 | 2 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 1 | 0 | 0 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ····· Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Mateo Point surveillance zone on October 11-12, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SM-T-20 | | | | | | | | | | | | SM-T-40 | | | | | | | | | | | | SM-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 8 | 4 | 38 | 10 | 8 | 32 | 3 | 0 | 3 | 4 | 9 | 37 | 3 | 4 | 28 | 1 | 7 | 18 | 3 | 2 | 13 | 1 | 2 | 7 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 14 | 20 | 16 | 12 | 13 | 25 | 9 | 8 | 33 | 6 | 11 | 33 | 1 | 1 | 13 | 2 | 1 | 17 | 0 | 0 | 11 | 0 | 0 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | 3 | 5 | 23 | - | - | - | - | - | - | 2 | 2 | 0 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 0 | 2 | - | - | - | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 7 | 3 | 0 | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | 0 | 0 | 1 | - | - | - | 0 | 0 | 2 | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 2 | - | - | - | 0 | 0 | 1 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Onofre surveillance zone on October 11-12, 1978 at dpeths of 20, 40, and 60 feet.

| TRAWL NUMBER | SO-T-20 | | | | | | | | | | | | SO-T-40 | | | | | | | | | | | | SO-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 3 | 5 | 12 | 3 | 6 | 9 | 3 | 3 | 0 | 3 | 14 | 4 | 2 | 7 | 41 | 1 | 2 | 16 | 2 | 8 | 40 | 5 | 2 | 43 | - | - | - | 1 | 1 | 0 | 23 | 8 | 4 | 36 | 9 | 5 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 9 | 10 | 31 | 8 | 11 | 31 | 17 | 10 | 23 | 20 | 11 | 19 | 9 | 2 | 39 | 0 | 0 | 7 | 3 | 6 | 41 | 1 | 1 | 48 | - | - | - | - | - | - | 1 | 0 | 1 | 8 | 9 | 9 |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | 3 | 5 | 0 | 3 | 2 | 0 | 3 | 8 | 0 | 9 | 14 | 0 |
| *Phanerodon furcatus* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 3 | 6 | 1 | 2 | 0 | - | - | - | - | - | - | 6 | 3 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 3 | 2 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 6 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at Don Light surveillance zone on October 11-12, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | DL-T-20 | | | | | | | | | | | | DL-T-40 | | | | | | | | | | | | DL-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 4 | 2 | 30 | 4 | 8 | 38 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 6 | 26 | 10 | 6 | 25 | 6 | 3 | 41 | 0 | 0 | 48 | 25 | 24 | 3 | 34 | 12 | 4 | 13 | 10 | 11 | 0 | 0 | 50 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 6 | 21 | 23 | 18 | 13 | 19 | 1 | 2 | 8 | 0 | 0 | 1 | 0 | 2 | 15 | 27 | 10 | 13 | 9 | 5 | 36 | 0 | 0 | 50 | 5 | 2 | 23 | 1 | 2 | 29 | 3 | 3 | 4 | 8 | 7 | 35 |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | 0 | 0 | 1 | 7 | 7 | 0 | 5 | 3 | 0 | 5 | 4 | 1 | 7 | 3 | 0 |
| *Phanerodon furcatus* | 0 | 1 | 0 | - | - | - | 0 | 1 | 9 | 0 | 1 | 5 | 0 | 1 | 13 | 0 | 12 | 0 | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | 0 | 1 | 0 | 1 | 0 | 8 |
| *Paralichthys californicus* | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 2 | 1 | 0 | 0 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of resident nekton species collected in 24 hour gill nets set at a depth of 30' near or adjacent to the San Onofre Nuclear Generating Station on December 12-13, 1978.

| | SAN MATEO POINT | | | | | | | | | | | | SAN ONOFRE | | | | | | | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION NUMBER | 11 | | | | | | 12 | | | | | | 1 | | | | | | 2 | | | | | | 3 | | | | | | 6 | | | | | | 7 | | | | | | 8 | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | 0 | 0 | 3 | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 0 | 2 | 0 | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | - | - | - |
| *Cynoscion nobilis* | - | - | - | 1 | 1 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 1 | 6 | 0 | 1 | 4 | 0 | 4 | 3 | 1 | 0 | 0 | 2 | - | - | - | 0 | 3 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 4 | 1 | 0 | 2 | 0 | 5 | 3 | 2 | 5 | 11 | 0 | 2 | 13 | 0 | 3 | 11 | 0 | - | - | - | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 2 | 2 | 2 | 1 | 1 | 0 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | - | - | - | - | - | - | 0 | 1 | 0 | 2 | 7 | 0 | 5 | 23 | 2 | 2 | 8 | 0 | 0 | 0 | 1 | 0 | 5 | 2 | 5 | 40 | 5 | 1 | 16 | 4 | - | - | - | - | - | - | 0 | 2 | 2 | 0 | 2 | 2 | - | - | - | 0 | 1 | 1 |
| *Hyperprosopon argenteum* | - | - | - | 0 | 1 | 1 | 0 | 0 | 3 | 3 | 1 | 0 | 4 | 4 | 0 | 3 | 4 | 3 | 0 | 1 | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | - | - | - | - | - | - | 0 | 1 | 0 | 0 | 1 | 0 | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 3 | 0 | 2 | 0 | 0 | 10 | 11 | 0 | 14 | 8 | 1 | 12 | 6 | 2 | 12 | 2 | 0 | 9 | 2 | 3 | 3 | 3 | 0 | 5 | 3 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 5 | 2 | 0 | 8 | 7 | 0 |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Embiotoca jacksoni* | - | - | - | * | * | * | - | - | - | 0 | 1 | 0 | 2 | 8 | 0 | 11 | 9 | 0 | 0 | 0 | 1 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cheilotrema saturnum* | 3 | 4 | 0 | * | * | * | 1 | 2 | 0 | 1 | 4 | 0 | 2 | 1 | 3 | 10 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 | - | - | - | 1 | 2 | 0 |
| *Scorpaena guttata* | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - |
| *Damalichthys vacca* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 | 0 | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Halichoeres semicinctus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Xenistius californiensis* | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 1 | 1 | - | - | - | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 0 | 1 | 0 | 0 | 2 | - | - | - |
| *Cymatogaster aggregata* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | 1 | 0 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Anisotremus davidsonii* | 1 | 1 | 1 | - | - | - | - | - | - | 0 | 0 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | 0 | 1 | 0 |
| *Pimelometopon pulchrum* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 |
| *Heterostichus rostratus* | - | - | - | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

* Measured but not sexed, in compliance with ETS-PEM specifications.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in 24 hour gill nets set at a depth of 45' near or adjacent to the San Onofre Nuclear Generating Station on December 12-13, 1978.

| SURVEILLANCE ZONE | SAN MATEO POINT | | | | | | | | | | | | SAN ONOFRE | | | | | | | | | | | | DON LIGHT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION NUMBER | 13 | | | | | | 14 | | | | | | 4 | | | | | | 5 | | | | | | 9 | | | | | | 10 | | | | | |
| REPLICATE NET NUMBER | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | | 1 | | | 2 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | 5 | 3 | 13 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | 0 | 0 | 2 | 0 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 2 | 1 | - | - | - | 0 | 2 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 0 | 1 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | 1 | 2 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 0 | 0 | - | - | - | 1 | 0 | 0 | 1 | 0 | 3 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 5 | 13 | 0 | - | - | - | 0 | 1 | 0 | 1 | 2 | 0 | 18 | 28 | 0 | - | - | - | 15 | 12 | 0 | 4 | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ····· Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Mateo Point surveillance zone on December 12-13, 1978 at dpeths of 20, 40, and 60 feet.

| TRAWL NUMBER | SM-T-20 | | | | | | | | | | | | SM-T-40 | | | | | | | | | | | | SM-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | 0 | 0 | 7 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | 0 | 0 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0 | 3 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 4 | - | - | - | 0 | 0 | 7 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | - | - | - | 0 | 0 | 3 | - | - | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 1 | - | - | - | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at San Onofre surveillance zone on December 12-13, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | SO-T-20 | | | | | | | | | | | | SO-T-40 | | | | | | | | | | | | SO-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | 3 | 47 | 0 | 0 | 6 | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 0 | 0 | 13 | 0 | 0 | 26 | 0 | 0 | 2 | 0 | 0 | 1 | - | - | - | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | 2 | 2 | 0 | - | - | - | 3 | 0 | 0 | 5 | 6 | 0 | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 3 | 0 | 24 | 0 | 0 | 23 | 0 | 0 | 17 | - | - | - | 0 | 1 | 42 | 0 | 1 | 30 | 0 | 0 | 2 | 0 | 2 | 29 | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | 0 | 0 | 8 | 0 | 0 | 7 | - | - | - | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 2 | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Sex composition (Male-M, Female-F, Indeterminate-I) of selected nekton species collected in daily, replicate, 5 minute otter trawls over a 48 hour period at Don Light surveillance zone on December 12-13, 1978 at depths of 20, 40, and 60 feet.

| TRAWL NUMBER | DL-T- 20 | | | | | | | | | | | | DL-T-40 | | | | | | | | | | | | DL-T-60 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REPLICATE NUMBER | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | | 1 | | | 2 | | | 3 | | | 4 | | |
| SPECIES | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I | M | F | I |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *P. nebulifer* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 31 | 0 | 0 | 24 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 0 | 0 | 17 | - | - | - | 0 | 0 | 50 | 0 | 3 | 47 | - | - | - | - | - | - | 0 | 0 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Hyperprosopon argenteum* | - | - | - | - | - | - | 0 | 1 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | - | - | - | - | - | - | 0 | 0 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | 0 | 0 | 8 | - | - | - | 0 | 0 | 2 | - | - | - | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 7 | 0 | 0 | 2 | 1 | 0 | 2 | 4 | 0 | 1 |

- Indicates that no individuals of that species were captured.

0, 1, 2, ... Indicates the number of individuals of that sex captured.

Temperature (°C) and Transmissivity (%T) profiles and approximate time of day obtained during the Fish-Receiving Water survey of March 30-31, 1978.

TEMPERATURE °C

| | SAN MATEO POINT | | | | SONGS | | | | | | DON LIGHT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Station: | 7 | | 8 | | 3 | | 1 | | 2 | | 4 | 5 | 6 | 4 | 5 | 6 |
| Time: | 0930 | 0942 | 1030 | 1040 | 0800 | 0830 | 0803 | 0815 | 0835 | 0845 | 1105 | 1122 | 1157 | 1228 | 1250 | 1310 |
| Station depths | 30' | 30' | 45' | 45' | 30D' | 30D'* | 30' | 30' | 45' | 45' | 30' | 30' | 30' | 45' | 45' | 45' |
| Surface | 17.1 | 16.8 | 17.2 | 16.8 | 18.8 | 19.9 | 16.4 | 16.1 | 15.9 | 16.1 | 17.2 | 17.0 | 17.0 | 16.8 | 16.8 | 16.8 |
| Mid-Water | 16.5 | 16.5 | 16.6 | 16.5 | 16.8 | 16.9 | 16.4 | 16.0 | 15.6 | 15.8 | 16.8 | 16.9 | 16.9 | 16.6 | 15.7 | 16.7 |
| Bottom | 16.5 | 15.9 | 15.9 | 15.6 | 16.2 | 16.8 | 15.9 | 15.8 | 15.1 | 15.5 | 16.1 | 16.2 | 16.3 | 15.3 | 15.3 | 15.3 |

PERCENT TRANSMISSION

| | SAN MATEO POINT | | | | SONGS | | | | | | DON LIGHT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Station depths | 30' | 30' | 45' | 45' | 30D' | 30D' | 30' | 30' | 45' | 45' | 30' | 30' | 30' | 45' | 45' | 45' |
| Surface | 7 | 7 | 74 | 74 | 3 | 11 | 4 | 5 | 64 | 64 | 23 | 21 | 26 | 51 | 58 | 53 |
| Mid-Water | 25 | 40 | 73 | 73 | 30 | 5 | 6 | 20 | 71 | 70 | 31 | 31 | 40 | 67 | 69 | 45 |
| Bottom | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*30D' station located near SONGS Unit 1 discharge.

Temperature (°C) and Transmissivity (%T) profiles and the approximate time of day obtained during the Fish-Receiving Water survey of June 14-15, 1978.

| | SAN MATEO POINT | | | | | | | | SAN ONOFRE | | | | | | | | DON LIGHT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: | 6/14/78 | | | | 6/15/78 | | | | 6/14/78 | | | | 6/15/78 | | | | 6/14/78 | | | | 6/15/78 | | | |
| Time: | 1350 | | 1340 | | 1415 | | 1430 | | 1520 | | 1535 | | 1505 | | 1525 | | 1555 | | 1610 | | 1545 | | 1600 | |
| Sta depth | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | |
| Depth(m) | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.8 | 37 | 20.7 | 64 | 19.6 | 70 | 19.8 | 73 | 20.3 | 42 | 20.0 | 54 | 19.7 | 20 | 19.6 | 52 | 20.3 | 46 | 19.8 | 49 | 19.6 | 40 | 19.8 | 50 |
| 1 | 20.3 | 36 | 20.5 | 64 | 19.6 | 71 | 19.7 | 75 | 20.2 | 42 | 19.9 | 54 | 19.6 | 18 | 19.6 | 51 | 20.2 | 47 | 19.8 | 50 | 19.6 | 40 | 19.8 | 50 |
| 2 | 19.8 | 30 | 20.3 | 64 | 19.6 | 71 | 19.3 | 74 | 19.4 | 42 | 19.8 | 54 | 19.5 | 15 | 19.4 | 51 | 20.2 | 47 | 19.8 | 50 | 19.4 | 38 | 19.7 | 49 |
| 3 | 19.2 | 24 | 20.0 | 50 | 19.5 | 70 | 19.1 | 73 | 19.2 | 44 | 19.5 | 51 | 19.2 | 32 | 19.3 | 49 | 19.9 | 46 | 19.6 | 50 | 19.0 | 30 | 19.6 | 49 |
| 4 | 18.1 | 11 | 19.7 | 48 | 19.2 | 64 | 19.0 | 72 | 18.4 | 24 | 19.2 | 49 | 19.0 | 36 | 19.0 | 44 | 19.7 | 46 | 19.3 | 48 | 18.5 | 24 | 19.5 | 48 |
| 5 | 18.0 | 10 | 19.4 | 45 | 19.1 | 62 | 19.0 | 71 | 17.7 | 12 | 18.7 | 54 | 18.7 | 20 | 18.8 | 36 | 19.5 | 44 | 18.7 | 46 | 18.3 | 22 | 19.5 | 48 |
| 6 | 17.8 | 10 | 19.4 | 42 | 19.0 | 59 | 19.0 | 68 | 17.0 | 30 | 18.5 | 52 | 18.1 | 6 | 18.5 | 30 | 19.2 | 37 | 18.4 | 42 | 17.8 | 19 | 19.1 | 47 |
| 7 | 17.2 | 10 | 19.1 | 40 | 18.9 | 54 | 19.0 | 63 | 16.3 | 43 | 17.2 | 52 | 17.2 | 3 | 18.3 | 23 | 18.8 | 13 | 17.7 | 36 | 17.2 | 6 | 19.0 | 46 |
| 8 | 16.3 | 9 | 18.8 | 40 | 18.7 | 42 | 18.8 | 58 | 16.0 | 28 | 16.6 | 43 | 17.1 | 3 | 17.9 | 20 | 18.1 | 7 | 17.8 | 35 | 16.2 | 3 | 18.5 | 40 |
| 9 | 15.7 | 4 | 18.5 | 40 | 18.6 | 22 | 16.8 | 21 | 15.8 | 10 | 16.0 | 28 | 15.0 | 1 | 17.2 | 10 | 17.4 | 2 | 17.5 | 30 | 15.4 | 8 | 17.9 | 39 |
| 10 | 15.5 | 4 | 17.0 | 42 | 18.4 | 15 | 15.9 | 20 | 15.6 | 6 | 15.1 | 25 | 15.0 | 1 | 16.3 | 28 | 17.3 | 1 | 17.4 | 29 | 15.3 | 5 | 17.2 | 28 |
| 11 | | | 16.8 | 42 | | | 15.1 | 18 | | | 14.5 | 24 | | | 15.9 | 22 | | | 15.6 | 23 | | | 16.6 | 22 |
| 12 | | | 15.8 | 42 | | | 15.0 | 12 | | | 14.5 | 20 | | | 15.4 | 32 | | | 14.6 | 11 | | | 16.1 | 21 |
| 13 | | | 15.4 | 30 | | | 14.9 | 8 | | | 14.5 | 16 | | | 14.2 | 30 | | | 14.4 | 4 | | | 14.6 | 18 |
| 14 | | | 14.3 | 15 | | | 14.9 | 3 | | | 14.5 | 16 | | | 14.1 | 10 | | | 14.1 | 2 | | | 13.9 | 26 |
| 15 | | | | | | | | | | | | | | | | | | | 13.7 | 1 | | | 13.7 | 5 |

Temperature (°C) and Transmissivity (%T) profiles and the approximate time of day obtained during the Fish-Receiving Water survey of August 15-16, 1978.

| | SAN MATEO POINT | | | | | | | | SAN ONOFRE | | | | | | | | DON LIGHT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: | 8/15/78 | | | | 8/16/78 | | | | 8/15/78 | | | | 8/16/78 | | | | 8/15/78 | | | | 8/16/78 | | | |
| Time: | 1425 | | 1410 | | 1445 | | 1430 | | 1525 | | 1545 | | 1600 | | 1615 | | 1600 | | 1620 | | 1650 | | 1705 | |
| Sta depth | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | |
| Depth (m) | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T | °C | %T |
| 0 | 20.8 | 46 | 20.8 | 48 | 19.0 | 30 | 19.4 | 40 | 20.9 | 40 | 21.1 | 48 | 18.5 | 8 | 19.4 | 40 | 20.0 | 12 | 20.2 | 32 | 17.7 | 10 | 18.5 | 34 |
| 1 | 20.8 | 46 | 20.7 | 48 | 19.0 | 38 | 19.2 | 42 | 20.8 | 41 | 21.1 | 50 | 18.5 | 6 | 19.4 | 42 | 19.8 | 12 | 20.2 | 32 | 17.7 | 10 | 18.5 | 36 |
| 2 | 20.8 | 46 | 20.6 | 48 | 19.0 | 29 | 19.2 | 41 | 20.7 | 41 | 21.0 | 50 | 17.7 | 5 | 19.4 | 42 | 19.7 | 12 | 20.0 | 32 | 17.2 | 10 | 18.5 | 36 |
| 3 | 20.8 | 46 | 20.6 | 48 | 18.5 | 27 | 19.0 | 40 | 20.4 | 37 | 20.8 | 49 | 17.2 | 4 | 19.4 | 36 | 19.3 | 14 | 20.0 | 31 | 15.3 | 22 | 18.1 | 36 |
| 4 | 20.7 | 46 | 20.4 | 47 | 18.5 | 24 | 18.5 | 38 | 19.8 | 26 | 20.3 | 46 | 16.8 | 4 | 19.0 | 34 | 18.8 | 18 | 20.0 | 31 | 14.7 | 32 | 18.1 | 36 |
| 5 | 20.4 | 43 | 20.3 | 46 | 18.5 | 21 | 18.5 | 36 | 19.4 | 20 | 19.8 | 38 | 16.4 | 4 | 18.1 | 27 | 17.8 | 20 | 19.7 | 31 | 14.2 | 20 | 18.1 | 36 |
| 6 | 20.2 | 38 | 19.6 | 38 | 18.1 | 16 | 18.1 | 36 | 19.1 | 14 | 19.0 | 28 | 15.9 | 4 | 18.1 | 20 | 16.8 | 30 | 19.2 | 32 | 13.6 | 12 | 17.7 | 36 |
| 7 | 19.9 | 31 | 19.1 | 34 | 15.9 | 20 | 17.7 | 36 | 18.7 | 7 | 18.5 | 15 | 15.3 | 8 | 17.2 | 18 | 16.5 | 33 | 18.3 | 38 | 13.6 | 6 | 17.2 | 42 |
| 8 | 19.0 | 25 | 18.9 | 34 | 14.7 | 22 | 17.2 | 42 | 15.8 | 2 | 16.5 | 38 | 13.6 | 24 | 16.8 | 26 | 16.1 | 10 | 16.5 | 51 | 13.0 | 5 | 16.4 | 44 |
| 9 | 16.6 | 10 | 18.0 | 31 | 14.2 | 4 | 16.8 | 44 | 15.3 | 0 | 15.3 | 40 | 13.6 | 10 | 15.9 | 38 | 15.5 | 6 | 15.8 | 56 | 13.0 | 3 | 14.7 | 56 |
| 10 | 15.2 | 4 | 15.3 | 20 | 13.6 | 2 | 15.9 | 50 | 15.3 | 0 | 14.7 | 42 | 13.1 | 2 | 14.2 | 40 | 14.4 | 3 | 15.4 | 48 | 13.0 | 3 | 14.7 | 60 |
| 11 | | | 14.4 | 21 | | | 15.3 | 50 | | | 14.4 | 26 | | | 13.6 | 28 | | | 15.1 | 55 | | | 14.2 | 58 |
| 12 | | | 14.2 | 22 | | | 13.6 | 38 | | | 14.1 | 30 | | | 12.5 | 20 | | | 14.9 | 54 | | | 13.6 | 48 |
| 13 | | | 14.1 | 20 | | | 13.6 | 20 | | | 13.6 | 7 | | | 12.5 | 8 | | | 14.5 | 42 | | | 13.0 | 34 |
| 14 | | | | | | | 13.6 | 4 | * | | 13.5 | 5 | | | 12.5 | 0 | | | 13.7 | 15 | | | 12.5 | 20 |

*Transmissometer wrapped in kelp at bottom.

Temperature ($^{o}C$) and Transmissivity (%T) profiles and the approximate time of day obtained during the Fish-Receiving Water survey of October 11-12, 1978.

| | SAN MATEO POINT | | | | | | | | SAN ONOFRE | | | | | | | | DON LIGHT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: | 10/11/78 | | | | 10/12/78 | | | | 10/11/78 | | | | 10/12/78 | | | | 10/11/78 | | | | 10/12/78 | | | |
| Time: | 1435 | | 1415 | | 1450 | | 1430 | | 1550 | | 1605 | | 1600 | | 1615 | | 1635 | | 1650 | | 1630 | | 1645 | |
| Sta depth | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | |
| Depth (m) | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T |
| 0 | 19.8 | 58 | 19.8 | 56 | 21.1 | 62 | 17.6 | 68 | 19.2 | 40 | 19.6 | 36 | 18.7 | 40 | 18.7 | 55 | 18.4 | 18 | 18.9 | 29 | 17.4 | 18 | 17.9 | 27 |
| 1 | 19.8 | 55 | 19.8 | 61 | 20.2 | 58 | 17.2 | 66 | 18.9 | 40 | 19.5 | 40 | 18.4 | 34 | 18.1 | 50 | 18.2 | 18 | 18.7 | 28 | 17.2 | 13 | 17.8 | 26 |
| 2 | 19.8 | 54 | 19.7 | 61 | 19.9 | 50 | 17.2 | 61 | 18.6 | 36 | 19.4 | 39 | 18.1 | 36 | 17.9 | 44 | 18.1 | 18 | 18.6 | 28 | 16.8 | 8 | 17.6 | 26 |
| 3 | 19.6 | 53 | 19.6 | 59 | 19.6 | 47 | 17.0 | 57 | 18.2 | 33 | 18.6 | 34 | 17.4 | 26 | 17.5 | 41 | 18.1 | 18 | 18.4 | 30 | 16.4 | 3 | 17.4 | 26 |
| 4 | 19.3 | 51 | 19.4 | 54 | 19.3 | 42 | 17.0 | 54 | 18.1 | 28 | 18.4 | 32 | 16.8 | 20 | 17.1 | 36 | 17.9 | 15 | 18.0 | 31 | 15.9 | 3 | 17.1 | 26 |
| 5 | 18.9 | 51 | 19.3 | 54 | 18.7 | 35 | 16.9 | 51 | 17.6 | 22 | 18.0 | 32 | 15.6 | 6 | 16.8 | 33 | 17.4 | 12 | 17.8 | 37 | 15.6 | 3 | 16.6 | 26 |
| 6 | 18.5 | 47 | 18.6 | 51 | 18.5 | 32 | 16.9 | 50 | 17.4 | 18 | 17.6 | 28 | 15.1 | 2 | 16.6 | 25 | 17.2 | 9 | 17.3 | 40 | 15.3 | 5 | 15.7 | 28 |
| 7 | 18.5 | 43 | 18.5 | 49 | 18.2 | 29 | 16.7 | 46 | 17.0 | 16 | 17.2 | 26 | 13.8 | 0 | 16.1 | 22 | 17.0 | 8 | 17.2 | 40 | 15.1 | 16 | 14.6 | 40 |
| 8 | 18.3 | 40 | 18.1 | 49 | 18.0 | 27 | 16.6 | 42 | 16.8 | 12 | 16.7 | 23 | 13.8 | 0 | 15.7 | 14 | 16.8 | 4 | 17.0 | 40 | 14.9 | 8 | 14.2 | 36 |
| 9 | 18.0 | 36 | 17.9 | 50 | 17.9 | 26 | 16.6 | 42 | 15.7 | 6 | 15.8 | 23 | 13.8 | 0 | 15.5 | 8 | 14.6 | 4 | 16.8 | 37 | 14.6 | 4 | 14.1 | 34 |
| 10 | 17.4 | 30 | 17.6 | 50 | 16.6 | 8 | 16.6 | 40 | 14.4 | 6 | 15.5 | 26 | 13.8 | 0 | 14.9 | 4 | 16.1 | 2 | 16.6 | 32 | 14.4 | 0 | 14.0 | 34 |
| 11 | | | 17.1 | 49 | | | 16.1 | 39 | | | 15.3 | 29 | | | 14.4 | 4 | | | 16.4 | 30 | | | 13.8 | 30 |
| 12 | | | 16.8 | 48 | | | 15.7 | 39 | | | 15.3 | 29 | | | 12.7 | 0 | | | 16.1 | 22 | | | 13.8 | 30 |
| 13 | | | 16.6 | 48 | | | 15.8 | 38 | | | 13.6 | 26 | | | 12.3 | 0 | | | 15.7 | 20 | | | 13.7 | 25 |
| 14 | | | 16.1 | 48 | | | 15.5 | 36 | | | 13.3 | 18 | | | 12.3 | 0 | | | 15.5 | 16 | | | 13.3 | 15 |
| 15 | | | | | | | | | | | | | | | | | | | | | | | 13.1 | 0 |

Temperature ($^{o}C$) and Transmissivity (%T) profiles and the approximate time of day obtained during the Fish-Receiving Water survey of December 12-13, 1978.

| | SAN MATEO POINT | | | | | | | | SAN ONOFRE | | | | | | | | DON LIGHT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: | 12/12/78 | | | | 12/13/78 | | | | 12/12/78 | | | | 12/13/78 | | | | 12/12/78 | | | | 12/13/78 | | | |
| Time: | 1255 | | 1240 | | 1315 | | 1300 | | 1340 | | 1400 | | 1330 | | 1400 | | 1415 | | 1430 | | 1430 | | 1500 | |
| Sta depth | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | | 30' | | 45' | |
| Depth (m) | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T | $^{o}C$ | %T |
| 0 | 13.7 | 30 | 13.3 | 56 | 13.9 | 32 | 13.8 | 43 | 14.5 | 16 | 13.6 | 33 | 14.5 | 25 | 13.8 | 48 | 13.5 | 42 | 13.5 | 55 | 13.5 | 35 | 13.8 | 51 |
| 1 | 13.6 | 31 | 13.3 | 55 | 13.8 | 32 | 13.8 | 42 | 14.2 | 16 | 13.6 | 33 | 13.5 | 31 | 13.7 | 47 | 13.5 | 39 | 13.3 | 52 | 13.5 | 35 | 13.7 | 45 |
| 2 | 13.3 | 24 | 13.3 | 55 | 13.7 | 32 | 13.7 | 41 | 13.5 | 21 | 13.6 | 33 | 13.3 | 31 | 13.3 | 40 | 13.3 | 36 | 13.3 | 50 | 13.3 | 34 | 13.3 | 43 |
| 3 | 13.3 | 26 | 13.2 | 55 | 13.6 | 32 | 13.7 | 40 | 13.3 | 21 | 13.3 | 34 | 13.1 | 31 | 13.3 | 39 | 13.2 | 30 | 13.3 | 49 | 13.2 | 36 | 13.3 | 43 |
| 4 | 13.2 | 26 | 13.1 | 55 | 13.3 | 31 | 13.6 | 37 | 13.3 | 18 | 13.3 | 33 | 13.1 | 30 | 13.2 | 40 | 13.2 | 26 | 13.3 | 48 | 13.1 | 34 | 12.9 | 42 |
| 5 | 13.2 | 29 | 13.1 | 54 | 13.3 | 30 | 13.5 | 39 | 13.3 | 15 | 13.3 | 34 | 13.1 | 23 | 13.1 | 40 | 13.2 | 23 | 13.2 | 48 | 13.1 | 30 | 12.9 | 37 |
| 6 | 13.2 | 29 | 13.0 | 54 | 13.2 | 24 | 13.3 | 38 | 13.3 | 15 | 13.2 | 34 | 13.1 | 12 | 13.1 | 38 | 13.2 | 20 | 13.2 | 46 | 13.0 | 26 | 12.9 | 35 |
| 7 | 13.1 | 29 | 13.0 | 54 | 13.2 | 24 | 13.3 | 35 | 13.3 | 15 | 13.2 | 34 | 13.1 | 12 | 13.0 | 36 | 13.2 | 19 | 13.2 | 46 | 13.0 | 20 | 12.9 | 31 |
| 8 | 13.1 | 28 | 13.0 | 54 | 13.2 | 18 | 13.3 | 35 | 13.3 | 4 | 13.2 | 33 | 13.1 | 4 | 12.9 | 35 | 13.2 | 16 | 13.1 | 47 | 13.0 | 12 | 12.9 | 30 |
| 9 | 13.1 | 27 | 12.9 | 55 | 13.2 | 10 | 13.2 | 38 | | | 13.2 | 32 | | | 12.9 | 36 | 13.2 | 2 | 13.1 | 47 | 13.0 | 2 | 12.9 | 28 |
| 10 | 13.1 | 24 | 12.9 | 45 | 13.1 | 6 | 13.1 | 38 | | | 13.2 | 31 | | | 12.9 | 34 | | | 13.1 | 44 | | | 12.9 | 20 |
| 11 | | | 12.9 | 42 | | | 13.1 | 32 | | | 13.2 | 28 | | | 12.9 | 29 | | | 13.0 | 45 | | | 12.9 | 20 |
| 12 | | | 12.9 | 41 | | | 13.1 | 30 | | | 13.1 | 18 | | | 12.9 | 20 | | | 13.0 | 30 | | | 12.9 | 20 |
| 13 | | | 12.9 | 42 | | | 13.1 | 30 | | | | | | | | | | | 13.0 | 10 | | | | |
| 14 | | | 12.9 | 30 | | | 13.1 | 24 | | | | | | | | | | | | | | | | |

# IV. FISH - IMPINGEMENT

The impingement study was conducted in compliance with ETS Section 3.1.2.a.(2) (Heat Treatment) and ETS Section 4.2 (Normal Operation) to provide data on the fish impinged by SONGS Unit 1.

## A. METHODS

A detailed description of impingement sampling methods is given in ETS procedures for both normal operation (SCE R&D Procedures EMP 25-5-25) and heat treatments (SCE R&D Procedures EMP 25-5-58). A general review is presented below.

### 1. NORMAL OPERATION

Samples are collected at least weekly during normal flow operations. These samples are based upon a period of 24 h of continuous operations. Abundance data collected on an operational period less than 24 h long will be standardized to a 24 h operational period.

The data collected consists of the total taxa, number of individuals per taxa, and the aggregate weight per taxa of fish impinged on the traveling screens and bar rakes during the sampling period. Standard length for a maximum of 125 indivduals per select species and sex for a maximum of 50 individuals per select species are also determined.

### 2. HEAT TREATMENT

During each heat treatment, fish collected by traveling screens and bar rakes were identified, enumerated, weighed and measured. Data collected is the same as described for normal operation sampling.

## B. RESULTS

Fish impingement data collected during 1978 were obtained from seven heat treatment, and 81 normal operation samples. Data collected

are presented in the following tables. The number of individuals and aggregate weight per taxa are summarized for each normal operation collection date. Length frequency distribution for select species, including *Seriphus politus*, *Genyonemus lineatus*, *Phanerodon furcatus*, and *Hyperprosopon argenteum* are summarized in histograms for collections made during normal operating conditions between heat treatments. Sex determination for *S. politus*, *G. lineatus*, *P. furcatus*, and *H. argenteum* is summarized in tabular form for normal flow periods between heat treatments. Abundance and weight of all species and length-frequency and sex data for the above select species are summarized and presented for each heat treatment period. These select species were chosen because of their historical importance in impingement samples, and because they were sufficiently abundant to allow meaningful comparisons of length-frequency distributions and sex ratios.

AGGREGATE NUMBER( NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | |
| *Heterodontus francisci* | | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| CARCHARHINIDAE | | | | | | | | | |
| *Mustelus californicus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Triakis semifasciata* | | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø |
| SQUALIDAE | | | | | | | | | |
| *Squalus acanthias* | | 4 | Ø | Ø | 2 | 13 | 1 | 3 | 4 |
| SQUATINIDAE | | | | | | | | | |
| *Squatina californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| RHINOBATIDAE | | | | | | | | | |
| *Rhinobatos productus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| PLATYRHINIDAE | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 2 | Ø | 5 | 3 | 7 | Ø | 3 | 4 |
| TORPEDINIDAE | | | | | | | | | |
| *Torpedo californica* | | 1 | 2 | 3 | Ø | 1 | 1 | 1 | 1 |
| RAJIDAE | | | | | | | | | |
| *Raja binoculata* | | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø |
| *Raja inornata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| DASYATIDAE | | | | | | | | | |
| *Urolophus halleri* | | 3 | 2 | 7 | 18 | 19 | 3 | 4 | 4Ø |
| GYMNURIDAE | | | | | | | | | |
| *Gymnura marmorata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MYLIOBATIDAE | | | | | | | | | |
| *Myliobatis californica* | | Ø | Ø | 1 | 1 | 1 | Ø | Ø | Ø |
| ACIPENSERIDAE | | | | | | | | | |
| *Acipenser transmontanus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MURAENIDAE | | | | | | | | | |
| *Gymnothorax mordax* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| OPHICHTHIDAE | | | | | | | | | |
| *Ophichthus zophochir* | | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø |
| ENGRAULIDAE | | | | | | | | | |
| *Anchoa compressa* | | 18 | 3 | 15 | 19 | Ø | 3 | 17 | 26 |
| *Engraulis mordax* | | 6 | 1 | 5Ø | 1Ø3 | 57 | Ø | 14 | 4 |
| SYNODONTIDAE | | | | | | | | | |
| *Synodus lucioceps* | | 1 | Ø | Ø | 4 | 1 | Ø | Ø | 1 |
| BATRACHOIDIDAE | | | | | | | | | |
| *Porichthys myriaster* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Porichthys notatus* | | 1 | Ø | Ø | 2 | 2 | Ø | Ø | Ø |
| OPHIDIIDAE | | | | | | | | | |
| *Chilara taylori* | | Ø | Ø | Ø | 1 | 2 | Ø | 1 | 4 |
| *Otophidium scrippsi* | | Ø | Ø | Ø | 2 | 4 | Ø | 2 | 6 |
| ATHERINIDAE | | | | | | | | | |
| *Atherinops affinis* | | 2 | Ø | 7 | 9 | 12 | 2 | 16 | 2 |
| *Atherinopsis californiensis* | | 23 | Ø | 28 | 9 | 72 | 8 | 27 | 42 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | | 42 | 0 | 3 | 0 | 2 | 0 | 27 | 4 |
| Atherinid,unident. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| *Syngnathus* spp. | | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Paralabrax nebulifer* | | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 6 |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonti* | | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 14 |
| *Xenistius californiensis* | | 2 | 1 | 0 | 6 | 3 | 0 | 2 | 0 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | | 0 | 1 | 1 | 3 | 1 | 0 | 2 | 4 |
| *Cynoscion nobilis* | | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 |
| *Genyonemus lineatus* | | 9 | 1 | 0 | 22 | 149 | 2 | 3 | 474 |
| *Menticirrhus undulatus* | | 0 | 0 | 0 | 8 | 20 | 2 | 2 | 28 |
| *Roncador stearnsii* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| *Seriphus politus* | | 623 | 305 | 2330 | 1424 | 2186 | 76 | 1142 | 2426 |
| *Umbrina roncador* | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | | 0 | 0 | 2 | 6 | 1 | 0 | 1 | 0 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | | 0 | 0 | 0 | 1 | 2 | 0 | 1 | 14 |
| *Brachyistius frenatus* | | 3 | 1 | 1 | 36 | 6 | 2 | 1 | 4 |
| *Cymatogaster aggregata* | | 10 | 0 | 4 | 38 | 64 | 2 | 10 | 14 |
| *Damalichthys vacca* | | 0 | 0 | 2 | 11 | 6 | 0 | 0 | 2 |
| *Embiotoca jacksoni* | | 0 | 1 | 0 | 3 | 4 | 1 | 2 | 8 |
| *Hyperprosopon argenteum* | | 51 | 149 | 296 | 353 | 281 | 34 | 150 | 364 |
| *Micrometrus minimus* | | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | | 18 | 2 | 8 | 83 | 102 | 4 | 2 | 30 |
| *Rhacochilus toxotes* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | | 2 | 1 | 0 | 6 | 0 | 0 | 3 | 4 |
| *Hypsypops rubicundus* | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | |
| LABRIDAE | | | | | | | | |
| *Halichoeres semicinctus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 |
| *Oxyjulis californica* | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pimelometopon pulchrum* | Ø | Ø | 1 | 2 | 2 | Ø | 1 | 11 |
| SPHYRAENIDAE | | | | | | | | |
| *Sphyraena argentea* | Ø | Ø | Ø | Ø | 2 | Ø | Ø | Ø |
| CLINIDAE | | | | | | | | |
| *Gibbonsia elegans* | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø |
| *Gibbonsia montereyensis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Heterostichus rostratus* | 2 | 1 | 9 | 1Ø | 1Ø | Ø | 6 | 24 |
| *Neoclinus uninotatus* | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø |
| BLENNIIDAE | | | | | | | | |
| *Hypsoblennius gilberti* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| STROMATEIDAE | | | | | | | | |
| *Peprilus simillimus* | Ø | Ø | 7 | Ø | 1 | Ø | Ø | Ø |
| SCORPAENIDAE | | | | | | | | |
| *Scorpaena guttata* | 8 | Ø | 5 | 1Ø | 13 | Ø | 5 | 3Ø |
| *Sebastes auriculatus* | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| *Sebastes mystinus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes paucispinis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes rastrelliger* | Ø | Ø | Ø | 3 | Ø | Ø | Ø | 4 |
| *Sebastes serranoides* | Ø | Ø | Ø | 5 | 2 | Ø | Ø | Ø |
| HEXAGRAMMIDAE | | | | | | | | |
| *Oxylebius pictus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| COTTIDAE | | | | | | | | |
| *Scorpaenichthys marmoratus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BOTHIDAE | | | | | | | | |
| *Citharichthys stigmaeus* | 3 | Ø | 3 | 21 | 23 | Ø | 9 | 62 |
| *Paralichthys californicus* | 1 | Ø | 6 | 22 | 7 | Ø | 7 | 22 |
| PLEURONECTIDAE | | | | | | | | |
| *Hypsopsetta guttulata* | 1 | Ø | 1 | 3 | 6 | Ø | 1 | Ø |
| *Parophrys vetulus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys coenosus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys ritteri* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys verticalis* | Ø | Ø | 4 | Ø | Ø | Ø | Ø | Ø |
| CYNOGLOSSIDAE | | | | | | | | |
| *Symphurus atricauda* | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| ALBULIDAE | | | | | | | | |
| *Albula vulpes* | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø |
| Total | 839 | 471 | 28Ø5 | 2264 | 3Ø94 | 141 | 1474 | 3717 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Triakis semifasciata* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | 0 | 11 | 0 | 0 | 28 | 5 | 1 | 0 | 1 |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 8 | 1 | 3 | 3 | 4 | 4 | 3 | 1 | 1 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 0 | 5 | 0 | 4 | 0 | 4 | 4 | 2 | 0 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Raja inornata* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 44 | 29 | 8 | 25 | 0 | 49 | 30 | 24 | 18 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | 4 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | 7 | 5 | 5 | 3 | 13 | 4 | 6 | 2 | 2 |
| *Engraulis mordax* | | 4 | 14 | 25 | 26 | 6 | 18 | 8 | 18 | 14 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | 3 | 1 | 0 | 1 | 0 | 2 | 1 | 2 | 0 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| *Porichthys notatus* | | 0 | 1 | 0 | 2 | 0 | 1 | 3 | 6 | 3 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | 1 | 0 | 0 | 0 | 1 | 4 | 2 | 0 | 1 |
| *Otophidium scrippsi* | | 3 | 1 | 2 | 0 | 5 | 10 | 2 | 0 | 0 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 1 | 3 | 1 | 3 | 18 | 2 | 2 | 0 | 0 |
| *Atherinopsis californiensis* | | 34 | 282 | 116 | 58 | 34 | 273 | 237 | 101 | 71 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | 2 | 0 | 0 | 0 | 25 | 6 | 25 | 0 | 10 |
| Atherinid, unident. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| *Syngnathus* spp. | | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 5 | 0 |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | | 0 | 1 | 1 | 0 | 0 | 6 | 0 | 0 | 0 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax nebulifer* | | 10 | 12 | 4 | 0 | 30 | 16 | 4 | 0 | 2 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 6 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| *Xenistius californiensis* | | 3 | 13 | 5 | 10 | 0 | 4 | 1 | 11 | 17 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| *Cynoscion nobilis* | | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| *Genyonemus lineatus* | | 246 | 273 | 61 | 15 | 64 | 183 | 62 | 42 | 26 |
| *Menticirrhus undulatus* | | 4 | 3 | 5 | 3 | 29 | 40 | 9 | 1 | 10 |
| *Roncador stearnsii* | | 51 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Seriphus politus* | | 2846 | 2793 | 2641 | 1558 | 568 | 2315 | 2348 | 2500 | 0 |
| *Umbrina roncador* | | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | 2 | 7 | 0 | 0 | 1 | 2 | 2 | 1 | 0 |
| *Brachyistius frenatus* | | 6 | 49 | 29 | 28 | 10 | 62 | 45 | 16 | 23 |
| *Cymatogaster aggregata* | | 40 | 51 | 23 | 6 | 5 | 10 | 26 | 18 | 6 |
| *Damalichthys vacca* | | 1 | 5 | 3 | 0 | 1 | 0 | 1 | 1 | 1 |
| *Embiotoca jacksoni* | | 15 | 25 | 3 | 1 | 0 | 8 | 1 | 2 | 3 |
| *Hyperprosopon argenteum* | | 592 | 1338 | 161 | 59 | 166 | 540 | 295 | 178 | 0 |
| *Micrometrus minimus* | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | | 88 | 112 | 22 | 19 | 12 | 44 | 51 | 63 | 41 |
| *Rhacochilus toxotes* | | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| *Hypsypops rubicundus* | | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Oxyjulis californica* | | 1 | 2 | 0 | 0 | 4 | 8 | 7 | 4 | 6 |
| *Pimelometopon pulchrum* | | 7 | 1 | 0 | 0 | 4 | 1 | 0 | 1 | 1 |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gibbonsia montereyensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Heterostichus rostratus* | | 5 | 3 | 12 | 7 | 14 | 18 | 1 | 16 | 13 |
| *Neoclinus uninotatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 1 | 299 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 35 | 25 | 4 | 8 | 16 | 58 | 26 | 16 | 31 |
| *Sebastes auriculatus* | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Sebastes mystinus* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes paucispinis* | | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes rastrelliger* | | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 3 |
| *Sebastes serranoides* | | 0 | 5 | 2 | 1 | 3 | 12 | 3 | 2 | 4 |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | 49 | 3 | 2 | 0 | 13 | 24 | 7 | 1 | 0 |
| *Paralichthys californicus* | | 7 | 3 | 4 | 0 | 8 | 8 | 8 | 4 | 2 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | 3 | 1 | 1 | 0 | 4 | 8 | 4 | 0 | 1 |
| *Parophrys vetulus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys coenosus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Pleuronichthys ritteri* | | 0 | 22 | 4 | 9 | 2 | 6 | 9 | 8 | 3 |
| *Pleuronichthys verticalis* | | 4 | 0 | 3 | 0 | 2 | 8 | 1 | 1 | 0 |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 4150 | 5129 | 3156 | 1855 | 1102 | 3783 | 3247 | 3051 | 619 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Triakis semifasciata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | 1 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 1 | Ø | Ø | Ø | 2 | Ø | Ø | 1 | Ø |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | Ø | Ø | Ø | Ø | 3 | 1 | Ø | 2 | 3 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Raja inornata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 18 | 8 | 6 | 17 | 2Ø | 11 | 8 | 23 | 46 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | 1 | Ø | Ø | Ø | Ø | 2 | 1 | 4 | Ø |
| *Engraulis mordax* | | 1 | 1 | 6 | 3 | 2 | 6 | 2 | 19 | 38 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | Ø | Ø | Ø | Ø | 1 | Ø | 1 | 1 | 1 |
| *Porichthys notatus* | | 1 | Ø | Ø | Ø | Ø | 3 | 9 | 1Ø | 21 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | Ø | Ø | 3 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Otophidium scrippsi* | | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | 2 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 1 | 2 | 1 | Ø | 5 | 42 | 8 | 16 | 2 |
| *Atherinopsis californiensis* | | 15 | 9 | 3 | 1 | 2Ø | 44 | 25 | 2 | 1 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | Ø | 2 | Ø | Ø | 1 | Ø | 6 | Ø | Ø |
| Atherinid, unident. | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | Ø | 3 | Ø | Ø | Ø | Ø | Ø | 2 | 1 |
| *Syngnathus* spp. | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Paralabrax clathratus* | 1 | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| *Paralabrax maculatofasciatus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Paralabrax nebulifer* | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | Ø | Ø | Ø | Ø | 14 | 1 | Ø | Ø | Ø |
| *Xenistius californiensis* | 8 | 1 | 1 | 6 | 13 | 29 | 27 | 22 | 19 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Cynoscion nobilis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Genyonemus lineatus* | 2 | Ø | Ø | Ø | 3 | 1Ø | 1 | 14 | 19 |
| *Menticirrhus undulatus* | 1 | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| *Roncador stearnsii* | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| *Seriphus politus* | 1ØØ2 | 4Ø3 | 399 | Ø | 1192 | 1412 | 956 | 4Ø51 | 5983 |
| *Umbrina roncador* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | 1 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| *Brachyistius frenatus* | 17 | 13 | 36 | 2Ø | 79 | 53 | 89 | 22 | 13 |
| *Cymatogaster aggregata* | 6 | 1 | 3 | Ø | 2 | 9 | 8 | 7 | 11 |
| *Damalichthys vacca* | Ø | Ø | Ø | 1 | Ø | 2 | Ø | 2 | 1 |
| *Embiotoca jacksoni* | Ø | Ø | 3 | Ø | 3 | 1 | 2 | 26 | 1Ø |
| *Hyperprosopon argenteum* | 58 | 42 | 36 | Ø | 2ØØ | 135 | 162 | 133 | 136 |
| *Micrometrus minimus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Phanerodon furcatus* | 9 | 2 | 13 | 9 | 47 | 26 | 11 | 41 | 71 |
| *Rhacochilus toxotes* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 7 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Hypsypops rubicundus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Oxyjulis californica* | | 3 | 1 | Ø | 1 | 4 | 1 | Ø | 2 | 2 |
| *Pimelometopon pulchrum* | | Ø | Ø | 1 | 1 | 1 | Ø | 1 | Ø | Ø |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Gibbonsia montereyensis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Heterostichus rostratus* | | 3 | 2 | 3 | 4 | 5 | 6 | 1Ø | 3 | 3 |
| *Neoclinus uninotatus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 251 | 28 | 28 | 2 | 15 | 213 | 52 | 221 | 74 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 9 | 6 | 15 | 9 | 9 | 9 | 8 | 8 | 8 |
| *Sebastes auriculatus* | | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes mystinus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes paucispinis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes rastrelliger* | | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø |
| *Sebastes serranoides* | | Ø | Ø | Ø | Ø | 3 | 1 | 1 | Ø | Ø |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | 1 |
| *Paralichthys californicus* | | Ø | 1 | 1 | Ø | Ø | Ø | Ø | 3 | 3 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | Ø | Ø | Ø | 1 | 1 | Ø | Ø | Ø | 2 |
| *Parophrys vetulus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys coenosus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys ritteri* | | 2 | Ø | 1 | 1 | Ø | Ø | Ø | Ø | 1 |
| *Pleuronichthys verticalis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| Total | | 1412 | 527 | 56Ø | 77 | 1651 | 2Ø18 | 1388 | 4636 | 6488 |

AGGREGATE NUMBER( NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 | 1 |
| *Triakis semifasciata* | | 2 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 1 | 2 | Ø | 2 | Ø | Ø | 1 | 3 | Ø |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 1 | Ø | Ø | Ø | 1 | Ø | Ø | 1 | Ø |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 2 | 3 | 2 | Ø | Ø | 2 | 3 | 3 | Ø |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Raja inornata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 34 | 17 | 14 | 17 | 13 | 8 | 12 | 11 | 5 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø |
| *Engraulis mordax* | | 42 | 5 | 5 | 39 | 28 | 29 | 19 | 25 | 4 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 3 | 5 | 1 | 2 | 1 | Ø | 1 | 1 | Ø |
| *Porichthys notatus* | | 41 | 39 | 59 | 69 | 24 | 13 | 11 | 32 | 1 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø |
| *Otophidium scrippsi* | | 2 | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 8 | Ø | Ø | 5 | 5 | 3 | 29 | Ø | Ø |
| *Atherinopsis californiensis* | | 2 | 1 | Ø | Ø | 6 | 2 | 3 | Ø | Ø |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atherinid,unident. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| *Syngnathus* spp. | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax nebulifer* | | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Xenistius californiensis* | | 32 | 7 | 39 | 18 | 95 | 13 | 25 | 85 | 5 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 |
| *Cynoscion nobilis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Genyonemus lineatus* | | 47 | 14 | 6 | 101 | 317 | 127 | 1097 | 1154 | 11 |
| *Menticirrhus undulatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 1 |
| *Roncador stearnsii* | | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 |
| *Seriphus politus* | | 3733 | 2337 | 5258 | 5036 | 7648 | 0 | 0 | 0 | 307 |
| *Umbrina roncador* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | 1 | 6 | 0 | 1 | 1 | 0 | 7 | 1 | 0 |
| *Brachyistius frenatus* | | 18 | 0 | 25 | 20 | 34 | 37 | 7 | 10 | 14 |
| *Cymatogaster aggregata* | | 37 | 32 | 20 | 32 | 18 | 10 | 8 | 6 | 0 |
| *Damalichthys vacca* | | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 0 |
| *Embiotoca jacksoni* | | 21 | 12 | 10 | 12 | 18 | 12 | 18 | 15 | 6 |
| *Hyperprosopon argenteum* | | 176 | 22 | 40 | 78 | 201 | 0 | 0 | 0 | 45 |
| *Micrometrus minimus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | | 49 | 32 | 36 | 39 | 132 | 67 | 43 | 44 | 15 |
| *Rhacochilus toxotes* | | 1 | 5 | 1 | 0 | 7 | 2 | 3 | 6 | 1 |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Hypsypops rubicundus* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| LABRIDAE | | | | | | | | | |
| *Halichoeres semicinctus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Oxyjulis californica* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø |
| *Pimelometopon pulchrum* | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SPHYRAENIDAE | | | | | | | | | |
| *Sphyraena argentea* | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø |
| CLINIDAE | | | | | | | | | |
| *Gibbonsia elegans* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Gibbonsia montereyensis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Heterostichus rostratus* | 3 | 1 | 1 | 4 | 1 | Ø | 4 | 4 | 1 |
| *Neoclinus uninotatus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | 1Ø3 | 537 | 79 | 414 | 288 | 149 | Ø | 2 | 5 |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | 8 | Ø | 3 | 7 | 6 | 6 | 7 | 4 | 3 |
| *Sebastes auriculatus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes mystinus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes paucispinis* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes rastrelliger* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes serranoides* | 2 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| HEXAGRAMMIDAE | | | | | | | | | |
| *Oxylebius pictus* | Ø | Ø | 1 | Ø | Ø | Ø | 1 | Ø | Ø |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Paralichthys californicus* | 2 | 4 | Ø | 2 | 1 | Ø | I | 2 | Ø |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | Ø | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Parophrys vetulus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys coenosus* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys ritteri* | Ø | Ø | 2 | 1 | 2 | Ø | Ø | Ø | Ø |
| *Pleuronichthys verticalis* | 1 | 1 | Ø | Ø | Ø | Ø | 1 | Ø | 1 |
| CYNOGLOSSIDAE | | | | | | | | | |
| *Symphurus atricauda* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ALBULIDAE | | | | | | | | | |
| *Albula vulpes* | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| Total | 438Ø | 3Ø87 | 56Ø4 | 59Ø9 | 885Ø | 48Ø | 1319 | 1423 | 432 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 1 | 2 | 2 | 0 | 3 | 0 | 2 | 2 | 0 |
| *Triakis semifasciata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Raja inornata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 3 | 4 | 7 | 1 | 0 | 2 | 4 | 2 | 1 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Engraulis mordax* | | 1 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 55 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 1 |
| *Porichthys notatus* | | 20 | 23 | 79 | 7 | 65 | 38 | 14 | 12 | 6 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Otophidium scrippsi* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Atherinopsis californiensis* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atherinid, unident. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Syngnathus* spp. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 2 | 0 |
| *Paralabrax maculatofasciatus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax nebulifer* | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 |
| *Xenistius californiensis* | 3 | 0 | 9 | 0 | 2 | 0 | 4 | 10 | 1 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| *Cynoscion nobilis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Genyonemus lineatus* | 24 | 2 | 20 | 3 | 20 | 2 | 8 | 7 | 65 |
| *Menticirrhus undulatus* | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 3 | 0 |
| *Roncador stearnsii* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| *Seriphus politus* | 0 | 127 | 0 | 39 | 0 | 0 | 837 | 790 | 661 |
| *Umbrina roncador* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | 0 | 0 | 10 | 0 | 0 | 0 | 1 | 2 | 8 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Brachyistius frenatus* | 10 | 4 | 8 | 0 | 1 | 0 | 2 | 6 | 1 |
| *Cymatogaster aggregata* | 0 | 1 | 6 | 0 | 0 | 0 | 3 | 3 | 8 |
| *Damalichthys vacca* | 0 | 1 | 6 | 0 | 1 | 0 | 0 | 3 | 0 |
| *Embiotoca jacksoni* | 2 | 2 | 33 | 1 | 3 | 0 | 0 | 1 | 1 |
| *Hyperprosopon argenteum* | 0 | 85 | 0 | 3 | 0 | 0 | 170 | 73 | 168 |
| *Micrometrus minimus* | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | 20 | 9 | 54 | 2 | 2 | 2 | 31 | 27 | 69 |
| *Rhacochilus toxotes* | 1 | 0 | 1 | 0 | 3 | 0 | 4 | 1 | 7 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Hypsypops rubicundus* | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| LABRIDAE | | | | | | | | | |
| *Halichoeres semicinctus* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Oxyjulis californica* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pimelometopon pulchrum* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPHYRAENIDAE | | | | | | | | | |
| *Sphyraena argentea* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| CLINIDAE | | | | | | | | | |
| *Gibbonsia elegans* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gibbonsia montereyensis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Heterostichus rostratus* | 2 | 1 | 3 | 0 | 1 | 8 | 1 | 3 | 0 |
| *Neoclinus uninotatus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | 0 | 2 | 4 | 0 | 0 | 1 | 2 | 0 | 2 |
| *Sebastes auriculatus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes mystinus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes paucispinis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes rastrelliger* | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes serranoides* | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| HEXAGRAMMIDAE | | | | | | | | | |
| *Oxylebius pictus* | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralichthys californicus* | 2 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 1 |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Parophrys vetulus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys coenosus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys ritteri* | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys verticalis* | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| CYNOGLOSSIDAE | | | | | | | | | |
| *Symphurus atricauda* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ALBULIDAE | | | | | | | | | |
| *Albula vulpes* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 106 | 267 | 268 | 57 | 109 | 56 | 1091 | 956 | 1072 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | Ø | 1 | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| *Triakis semifasciata* | | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 1 | 1 | 1 | 1 | Ø | Ø | Ø | Ø | 1 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | Ø | 3 | 2 | 1 | 1 | Ø | Ø | Ø | Ø |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Raja inornata* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 3 | 2 | 1 | 2 | 5 | 1 | 1 | 1 | 1 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | Ø | 1 | 1 | Ø | Ø | Ø | Ø | 1 | Ø |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | Ø | Ø | 1 | Ø | 3 | 2 | Ø | 1 | Ø |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zaphochir* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Engraulis mordax* | | 88 | 25 | 17 | 53 | 54 | 16 | 18 | 1 | 2 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 2 | Ø | 1 | 2 | Ø | 2 | Ø | Ø | Ø |
| *Porichthys notatus* | | 14 | 1 | 3Ø | 1 | 1 | Ø | Ø | Ø | Ø |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Otophidium scrippsi* | | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | Ø | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Atherinopsis californiensis* | | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| Atherinid, unident. | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Syngnathus* spp. | | Ø | Ø | Ø | 1 | 2 | Ø | 1 | 1 | Ø |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Paralabrax clathratus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 | 2 |
| *Paralabrax maculatofasciatus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Paralabrax nebulifer* | | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | Ø | Ø | Ø | 2 | Ø | Ø | Ø | 1 | Ø |
| *Xenistius californiensis* | | Ø | 1 | 2 | 2 | 3 | 6Ø | 1 | 3 | Ø |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | 1 | 1 | Ø | 1 | Ø | 1 | Ø | Ø | 1 |
| *Cynoscion nobilis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 |
| *Genyonemus lineatus* | | 119 | 35Ø | 914 | 29 | 231 | 76 | 2 | 16 | 7 |
| *Menticirrhus undulatus* | | Ø | 1 | Ø | Ø | Ø | 3 | Ø | 2 | Ø |
| *Roncador stearnsii* | | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Seriphus politus* | | 1963 | 1334 | 2512 | 15ØØ | 1994 | Ø | Ø | 441 | 151 |
| *Umbrina roncador* | | Ø | Ø | Ø | 1 | 1 | 5 | Ø | Ø | Ø |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | Ø | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Brachyistius frenatus* | | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 4 | 1 |
| *Cymatogaster aggregata* | | 7 | 3 | 7 | 15 | 24 | 23 | 3 | 6 | 4 |
| *Damalichthys vacca* | | 1 | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø |
| *Embiotoca jacksoni* | | Ø | 1 | 1 | 4 | 1 | 2 | Ø | Ø | Ø |
| *Hyperprosopon argenteum* | | 129 | 86 | 123 | 8Ø | 78 | Ø | Ø | 48 | 37 |
| *Micrometrus minimus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Phanerodon furcatus* | | 33 | 146 | 88 | 52 | 69 | 84 | 1Ø | 2Ø | 11 |
| *Rhacochilus toxotes* | | 5 | Ø | 9 | 6 | 5 | Ø | 1 | 1 | 1 |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Hypsypops rubicundus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Oxyjulis californica* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pimelometopon pulchrum* | | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Gibbonsia montereyensis* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Heterostichus rostratus* | | 2 | 2 | 2 | 1 | Ø | 1 | 1 | 1 | 1 |
| *Neoclinus uninotatus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 11 | 4 | 7 | 42 | 27 | 4 | Ø | 24 | 19 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 2 | 1 | Ø | Ø | 1 | Ø | Ø | Ø | 1 |
| *Sebastes auriculatus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes mystinus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes paucispinis* | | 1 | 1 | Ø | Ø | Ø | 1 | Ø | 6 | 4 |
| *Sebastes rastrelliger* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Sebastes serranoides* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø |
| *Paralichthys californicus* | | 1 | Ø | Ø | 2 | 1 | Ø | Ø | Ø | 1 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | Ø | 2 | Ø | Ø | 1 | Ø | Ø | 1 | Ø |
| *Parophrys vetulus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys coenosus* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys ritteri* | | Ø | Ø | 2 | Ø | Ø | Ø | Ø | Ø | Ø |
| *Pleuronichthys verticalis* | | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø |
| Total | | 2388 | 1976 | 3726 | 1799 | 25Ø5 | 284 | 43 | 581 | 247 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 12 |
| *Triakis semifasciata* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 6 | 1 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Raja inornata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 3 | 2 | 5 | 0 | 0 | 5 | 2 | 6 | 7 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *Engraulis mordax* | | 13 | 21 | 63 | 277 | 200 | 50 | 60 | 38 | 467 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 1 | 3 | 7 | 0 | 0 | 0 | 0 | 3 | 6 |
| *Porichthys notatus* | | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 4 | 2 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Otophidium scrippsi* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Atherinopsis californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atherinid, unident. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Syngnathus* spp. | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | 0 | 0 | 4 | 6 | 1 | 0 | 0 | 0 | 0 |
| *Paralabrax maculatofasciatus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax nebulifer* | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 4 |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Xenistius californiensis* | 60 | 1 | 362 | 15 | 13 | 4 | 8 | 40 | 217 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cynoscion nobilis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| *Genyonemus lineatus* | 11 | 10 | 503 | 10 | 17 | 12 | 73 | 2837 | 8649 |
| *Menticirrhus undulatus* | 0 | 0 | 15 | 0 | 3 | 1 | 2 | 3 | 1 |
| *Roncador stearnsii* | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 9 | 3 |
| *Seriphus politus* | 914 | 802 | 0 | 1165 | 2254 | 820 | 1020 | 2889 | 4910 |
| *Umbrina roncador* | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 0 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | 0 | 0 | 288 | 0 | 0 | 0 | 0 | 3 | 0 |
| *Brachyistius frenatus* | 3 | 2 | 4 | 6 | 0 | 1 | 1 | 1 | 0 |
| *Cymatogaster aggregata* | 34 | 34 | 16 | 0 | 13 | 24 | 43 | 18 | 28 |
| *Damalichthys vacca* | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 1 |
| *Embiotoca jacksoni* | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 3 | 0 |
| *Hyperprosopon argenteum* | 158 | 129 | 0 | 21 | 33 | 68 | 67 | 408 | 528 |
| *Micrometrus minimus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | 20 | 44 | 70 | 7 | 10 | 37 | 41 | 112 | 122 |
| *Rhacochilus toxotes* | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 1 | 2 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Hypsypops rubicundus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Oxyjulis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pimelometopon pulchrum* | | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gibbonsia montereyensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Heterostichus rostratus* | | 0 | 0 | 1 | 1 | 2 | 0 | 3 | 2 | 1 |
| *Neoclinus uninotatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 36 | 103 | 0 | 35 | 20 | 166 | 817 | 308 | 2342 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 2 | 1 | 10 | 2 | 0 | 4 | 1 | 7 | 5 |
| *Sebastes auriculatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes mystinus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes paucispinis* | | 43 | 64 | 19 | 46 | 21 | 35 | 12 | 152 | 51 |
| *Sebastes rastrelliger* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Sebastes serranoides* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralichthys californicus* | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 3 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Parophrys vetulus* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys coenosus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys ritteri* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys verticalis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 1308 | 1225 | 1407 | 1599 | 2589 | 1231 | 2154 | 6891 | 17374 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Triakis semifasciata* | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Raja inornata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 2 | 3 | 5 | 0 | 0 | 0 | 1 | 0 | 1 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | 0 | 0 | 3 | 12 | 4 | 0 | 0 | 2 | 81 |
| *Engraulis mordax* | | 232 | 54 | 98 | 197 | 160 | 4 | 17 | 354 | 47 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Porichthys notatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Otophidium scrippsi* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 |
| *Atherinopsis californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Atherinid, unident. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Syngnathus* spp. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax clathratus* | | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralabrax nebulifer* | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Xenistius californiensis* | | 25 | 22 | 12 | 0 | 0 | 0 | 0 | 0 | 1 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 4 |
| *Cynoscion nobilis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Genyonemus lineatus* | | 32 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 29 |
| *Menticirrhus undulatus* | | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| *Roncador stearnsii* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Seriphus politus* | | 706 | 0 | 256 | 0 | 95 | 26 | 48 | 164 | 1034 |
| *Umbrina roncador* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Brachyistius frenatus* | | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 2 |
| *Cymatogaster aggregata* | | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 7 |
| *Damalichthys vacca* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Embiotoca jacksoni* | | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| *Hyperprosopon argenteum* | | 69 | 0 | 38 | 0 | 5 | 13 | 2 | 7 | 98 |
| *Micrometrus minimus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Phanerodon furcatus* | | 24 | 1 | 2 | 3 | 0 | 0 | 1 | 3 | 3 |
| *Rhacochilus toxotes* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Hypsypops rubicundus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Oxyjulis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pimelometopon pulchrum* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gibbonsia montereyensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Heterostichus rostratus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neoclinus uninotatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 377 | 317 | 85 | 51 | 34 | 0 | 1 | 22 | 57 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 2 | 0 | 15 | 1 | 1 | 0 | 2 | 0 | 1 |
| *Sebastes auriculatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes mystinus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes paucispinis* | | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes rastrelliger* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sebastes serranoides* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paralichthys californicus* | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Parophrys vetulus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys coenosus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys ritteri* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pleuronichthys verticalis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 1511 | 423 | 521 | 272 | 301 | 46 | 74 | 553 | 1377 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | |
| *Heterodontus francisci* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| CARCHARHINIDAE | | | | | | | | | | | | |
| *Mustelus californicus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| *Triakis semifasciata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| SQUALIDAE | | | | | | | | | | | | |
| *Squalus acanthias* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 |
| SQUATINIDAE | | | | | | | | | | | | |
| *Squatina californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| RHINOBATIDAE | | | | | | | | | | | | |
| *Rhinobatos productus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| PLATYRHINIDAE | | | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| TORPEDINIDAE | | | | | | | | | | | | |
| *Torpedo californica* | | 1 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 73 |
| RAJIDAE | | | | | | | | | | | | |
| *Raja binoculata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Raja inornata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| DASYATIDAE | | | | | | | | | | | | |
| *Urolophus halleri* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 694 |
| GYMNURIDAE | | | | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| MYLIOBATIDAE | | | | | | | | | | | | |
| *Myliobatis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| ACIPENSERIDAE | | | | | | | | | | | | |
| *Acipenser transmontanus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| MURAENIDAE | | | | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| OPHICHTHIDAE | | | | | | | | | | | | |
| *Ophichthus zophochir* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| ENGRAULIDAE | | | | | | | | | | | | |
| *Anchoa compressa* | | 2 | 2 | 50 | 26 | 3 | 14 | 8 | 16 | 0 | 0 | 383 |
| *Engraulis mordax* | | 2 | 7 | 8 | 9 | 0 | 16 | 1 | 0 | 0 | 0 | 3373 |
| SYNODONTIDAE | | | | | | | | | | | | |
| *Synodus lucioceps* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| BATRACHOIDIDAE | | | | | | | | | | | | |
| *Porichthys myriaster* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| *Porichthys notatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 676 |
| OPHIDIIDAE | | | | | | | | | | | | |
| *Chilara taylori* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| *Otophidium scrippsi* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| ATHERINIDAE | | | | | | | | | | | | |
| *Atherinops affinis* | | 0 | 0 | 282 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 510 |
| *Atherinopsis californiensis* | | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1557 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | | | |
| *Leuresthes tenuis* | | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 219 |
| Atherinid, unident. | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SYNGNATHIDAE | | | | | | | | | | | | |
| *Syngnathus californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| *Syngnathus* spp. | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| SERRANIDAE | | | | | | | | | | | | |
| *Mycteroperca xenarcha* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Paralabrax clathratus* | | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 51 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Paralabrax nebulifer* | | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 |
| CARANGIDAE | | | | | | | | | | | | |
| *Trachurus symmetricus* | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| PRISTIPOMATIDAE | | | | | | | | | | | | |
| *Anisotremus davidsonii* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| *Xenistius californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1405 |
| SCIAENIDAE | | | | | | | | | | | | |
| *Cheilotrema saturnum* | | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 46 |
| *Cynoscion nobilis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| *Genyonemus lineatus* | | 8 | 0 | 33 | 23 | 82 | 15 | 9 | 0 | 1 | 0 | 18820 |
| *Menticirrhus undulatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 234 |
| *Roncador stearnsii* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| *Seriphus politus* | | 87 | 252 | 321 | 251 | 1760 | 0 | 0 | 68 | 38 | 21 | 100048 |
| *Umbrina roncador* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| GIRELLIDAE | | | | | | | | | | | | |
| *Girella nigricans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| SCORPIDIDAE | | | | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| KYPHOSIDAE | | | | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| EMBIOTOCIDAE | | | | | | | | | | | | |
| *Amphistichus argenteus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 345 |
| *Brachyistius frenatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 902 |
| *Cymatogaster aggregata* | | 0 | 0 | 31 | 4 | 9 | 9 | 1 | 2 | 0 | 0 | 946 |
| *Damalichthys vacca* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 67 |
| *Embiotoca jacksoni* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 316 |
| *Hyperprosopon argenteum* | | 7 | 7 | 67 | 64 | 21 | 0 | 0 | 3 | 3 | 1 | 9368 |
| *Micrometrus minimus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| *Phanerodon furcatus* | | 3 | 3 | 13 | 0 | 4 | 5 | 1 | 1 | 0 | 0 | 2646 |
| *Rhacochilus toxotes* | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 97 |
| POMACENTRIDAE | | | | | | | | | | | | |
| *Chromis punctipinnis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| *Hypsypops rubicundus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | | | |
| *Halichoeres semicinctus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| *Oxyjulis californica* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| *Pimelometopon pulchrum* | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| SPHYRAENIDAE | | | | | | | | | | | | |
| *Sphyraena argentea* | | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 |
| CLINIDAE | | | | | | | | | | | | |
| *Gibbonsia elegans* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Gibbonsia montereyensis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Heterostichus rostratus* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 251 |
| *Neoclinus uninotatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BLENNIIDAE | | | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| STROMATEIDAE | | | | | | | | | | | | |
| *Peprilus simillimus* | | 17 | 11 | 132 | 116 | 0 | 51 | 12 | 6 | 0 | 0 | 8043 |
| SCORPAENIDAE | | | | | | | | | | | | |
| *Scorpaena guttata* | | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 489 |
| *Sebastes auriculatus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| *Sebastes mystinus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Sebastes paucispinis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 462 |
| *Sebastes rastrelliger* | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| *Sebastes serranoides* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| HEXAGRAMMIDAE | | | | | | | | | | | | |
| *Oxylebius pictus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| COTTIDAE | | | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| BOTHIDAE | | | | | | | | | | | | |
| *Citharichthys stigmaeus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224 |
| *Paralichthys californicus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| *Hypsopsetta guttulata* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| *Parophrys vetulus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Pleuronichthys coenosus* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Pleuronichthys ritteri* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| *Pleuronichthys verticalis* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| *Symphurus atricauda* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| ALBULIDAE | | | | | | | | | | | | |
| *Albula vulpes* | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | | 128 | 288 | 1011 | 509 | 1880 | 113 | 38 | 100 | 45 | 25 | 153662 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | + | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | |
| *Mustelus californicus* | | - | - | - | - | - | - | - | - |
| *Triakis semifasciata* | | - | - | - | - | 1.00 | - | - | - |
| SQUALIDAE | | | | | | | | | |
| *Squalus acanthias* | | 15.50 | - | - | 9.75 | 5.10 | 11.75 | 9.00 | 12.00 |
| SQUATINIDAE | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | |
| *Rhinobatos productus* | | - | - | - | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0.75 | - | 4.00 | 2.00 | 2.75 | - | 1.75 | 3.50 |
| TORPEDINIDAE | | | | | | | | | |
| *Torpedo californica* | | 13.00 | 26.00 | 45.00 | - | 6.50 | 40.75 | 12.00 | 12.00 |
| RAJIDAE | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | + | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | |
| *Urolophus halleri* | | 1.50 | 2.00 | 5.75 | 18.25 | 16.75 | 2.50 | 2.00 | 42.50 |
| GYMNURIDAE | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | |
| *Myliobatis californica* | | - | - | 1.50 | 1.50 | 1.00 | - | - | - |
| ACIPENSERIDAE | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | 0.50 | - |
| ENGRAULIDAE | | | | | | | | | |
| *Anchoa compressa* | | 0.50 | + | 1.25 | 0.50 | - | + | 0.50 | 0.50 |
| *Engraulis mordax* | | + | + | 1.25 | 1.75 | 1.00 | - | 0.25 | 0.10 |
| SYNODONTIDAE | | | | | | | | | |
| *Synodus lucioceps* | | 0.25 | - | - | 0.75 | + | - | - | + |
| BATRACHOIDIDAE | | | | | | | | | |
| *Porichthys myriaster* | | - | - | - | - | - | - | - | - |
| *Porichthys notatus* | | + | - | - | 0.50 | 0.25 | - | - | - |
| OPHIDIIDAE | | | | | | | | | |
| *Chilara taylori* | | - | - | - | 0.75 | 0.50 | - | 0.25 | 0.50 |
| *Otophidium scrippsi* | | - | - | - | 0.25 | 0.50 | - | 0.50 | 1.00 |
| ATHERINIDAE | | | | | | | | | |
| *Atherinops affinis* | | 0.25 | - | 0.25 | 0.25 | 0.25 | + | 0.50 | + |
| *Atherinopsis californiensis* | | 5.75 | - | 7.50 | 3.00 | 24.75 | 0.25 | 6.50 | 12.50 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | | 1.50 | - | 0.25 | - | + | - | 0.75 | + |
| Atherinid,unident. | | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | | - | - | - | - | + | - | - | + |
| *Syngnathus* spp. | | - | - | + | - | - | - | + | - |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | - | - | 0.25 | 2.50 | - | - | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | 0.25 | - |
| *Paralabrax nebulifer* | | - | - | - | 0.25 | 0.50 | - | 0.75 | 0.50 |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | 0.25 | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | | + | - | - | 1.00 | 0.25 | - | - | 0.50 |
| *Xenistius californiensis* | | + | + | - | 0.25 | + | - | + | - |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | | - | 0.25 | + | 0.25 | 0.25 | - | 0.75 | 0.75 |
| *Cynoscion nobilis* | | - | - | 1.00 | - | - | - | 0.25 | - |
| *Genyonemus lineatus* | | 3.00 | + | - | 2.25 | 19.00 | 1.00 | 1.50 | 56.00 |
| *Menticirrhus undulatus* | | - | - | - | 2.00 | 11.50 | 1.25 | 1.50 | 5.25 |
| *Roncador stearnsii* | | - | - | - | - | - | - | - | 15.00 |
| *Seriphus politus* | | 40.50 | 7.25 | 151.50 | 73.00 | 76.50 | 3.25 | 68.75 | 158.00 |
| *Umbrina roncador* | | - | - | - | - | 1.25 | - | - | 3.00 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | | - | - | 3.75 | 5.00 | 1.00 | - | 1.75 | - |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | | - | - | - | 0.50 | 1.00 | - | 0.50 | 5.00 |
| *Brachyistius frenatus* | | + | + | 0.25 | 1.25 | 0.25 | + | + | 0.25 |
| *Cymatogaster aggregata* | | 0.25 | - | 0.25 | 1.25 | 1.50 | + | 0.25 | 0.25 |
| *Damalichthys vacca* | | - | - | 1.00 | 0.50 | 4.00 | - | - | 1.00 |
| *Embiotoca jacksoni* | | - | 0.50 | - | 0.75 | 1.00 | 0.50 | 0.50 | 0.75 |
| *Hyperprosopon argenteum* | | 4.00 | 10.50 | 29.00 | 28.25 | 47.00 | 4.00 | 14.00 | 53.00 |
| *Micrometrus minimus* | | - | - | - | 0.25 | - | - | - | - |
| *Phanerodon furcatus* | | 1.00 | + | 0.25 | 5.50 | 10.00 | 0.50 | 0.10 | 1.00 |
| *Rhacochilus toxotes* | | + | - | - | - | - | - | - | 1.00 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | | + | 0.25 | - | 0.50 | - | - | 0.50 | 1.25 |
| *Hypsypops rubicundus* | | - | - | - | - | 0.75 | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 1/ 3 | 1/ 4 | 1/ 9 | 1/19 | 1/26 | 2/ 1 | 2/ 8 | 2/14 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| LABRIDAE | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | 1.ØØ |
| *Oxyjulis californica* | | + | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | | - | - | Ø.25 | Ø.25 | Ø.25 | - | + | 1.ØØ |
| SPHYRAENIDAE | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | Ø.25 | - | - | - |
| CLINIDAE | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | + | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | Ø.25 | Ø.5Ø | 1.5Ø | 1.5Ø | Ø.75 | - | Ø.75 | 3.5Ø |
| *Neoclinus uninotatus* | | - | - | - | - | + | - | - | - |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | | - | - | Ø.5Ø | - | + | - | - | - |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | | Ø.75 | - | 1.ØØ | 1.5Ø | 2.ØØ | - | 1.ØØ | 2.5Ø |
| *Sebastes auriculatus* | | - | - | - | Ø.5Ø | - | - | - | - |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | | - | - | - | 1.5Ø | - | - | - | 3.5Ø |
| *Sebastes serranoides* | | - | - | - | Ø.25 | Ø.25 | - | - | - |
| HEXAGRAMMIDAE | | | | | | | | | |
| *Oxylebius pictus* | | - | - | - | - | - | - | - | - |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | | + | - | + | Ø.5Ø | Ø.5Ø | - | Ø.25 | 1.ØØ |
| *Paralichthys californicus* | | Ø.5Ø | - | 2.5Ø | 4.75 | 4.ØØ | - | 1.25 | 3.ØØ |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | | + | - | Ø.5Ø | 1.ØØ | 7.5Ø | - | + | - |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | | - | - | - | - | - | - | - | - |
| *Pleuronichthys verticalis* | | - | - | 1.ØØ | - | - | - | - | - |
| CYNOGLOSSIDAE | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | + | - | - | - | - |
| ALBULIDAE | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | + | - |
| Total | | 89.25 | 47.25 | 261.ØØ | 174.25 | 254.1Ø | 65.75 | 129.1Ø | 4Ø2.6Ø |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | 0.25 | - | - | 0.25 | - | - | - | - | 0.50 |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | - | 0.50 | - | - | - | - | - | - | - |
| *Triakis semifasciata* | | - | 0.75 | - | - | - | - | - | - | - |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | 23.00 | - | - | 119.00 | 16.25 | 1.75 | - | 1.50 |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | - | 7.50 | 2.00 | 0.75 | - | - | - | - | 0.75 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 3.25 | 0.50 | 3.25 | 4.00 | 2.50 | 3.00 | 3.25 | 0.75 | 1.00 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | - | 60.25 | - | 60.00 | - | 84.25 | 77.00 | 40.75 | - |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | 4.75 | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 37.00 | 23.00 | 7.50 | 24.00 | - | 40.50 | 29.50 | 20.00 | 16.00 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | 2.00 | 5.25 | - | - | 2.50 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | 83.00 | - | 3.00 | - | 3.00 | 3.75 | - | - | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | 22.50 | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | + | 0.25 | 0.10 | 0.10 | + | + | + | + | + |
| *Engraulis mordax* | | + | 0.25 | 0.25 | 0.25 | 0.50 | 0.25 | 0.25 | 0.25 | 0.25 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | 0.25 | 0.10 | - | 0.10 | - | 0.50 | + | 0.25 | - |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | - | - | - | - | 1.50 | 11.25 | - | - | - |
| *Porichthys notatus* | | - | 0.50 | - | 3.00 | - | 0.25 | 0.25 | 1.00 | 0.25 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | 0.25 | - | - | - | + | 0.25 | 0.25 | - | + |
| *Otophidium scrippsi* | | 0.25 | 0.25 | 0.50 | - | 0.50 | 1.25 | 0.25 | - | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | + | 0.10 | 0.10 | 0.25 | 1.00 | + | + | - | - |
| *Atherinopsis californiensis* | | 10.50 | 81.25 | 30.50 | 4.75 | 9.50 | 83.75 | 50.00 | 28.25 | 18.75 |

AGGREGATE WEIGHT (LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | 0.25 | - | - | - | 1.25 | 0.25 | 0.75 | - | 0.25 |
| Atherinid, unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | - | - | - | - | + | - | - | - |
| *Syngnathus* spp. | | - | - | - | 1.00 | - | - | + | + | - |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | 0.25 | 0.25 | - | - | 2.00 | - | - | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | 2.50 | 3.00 | 1.00 | - | 5.00 | 4.25 | 1.00 | - | 0.50 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 0.25 | 2.00 | 0.50 | - | - | + | - | - | - |
| *Xenistius californiensis* | | 0.25 | 0.75 | 0.25 | 0.10 | - | 0.75 | 0.25 | 0.25 | 0.50 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | + | 0.10 | - | - | - | 1.00 | 0.50 | - | - |
| *Cynoscion nobilis* | | 0.25 | 1.00 | - | - | - | 0.50 | 0.25 | - | - |
| *Genyonemus lineatus* | | 27.00 | 37.25 | 8.25 | 3.25 | 6.50 | 24.75 | 8.00 | 4.75 | 2.75 |
| *Menticirrhus undulatus* | | 1.00 | 3.75 | 3.75 | 0.10 | 7.00 | 11.75 | 4.75 | 0.75 | 1.50 |
| *Roncador stearnsii* | | 40.00 | 2.00 | 0.30 | - | - | - | - | - | - |
| *Seriphus politus* | | 185.00 | 145.25 | 158.50 | 77.00 | 25.00 | 111.00 | 108.00 | 110.00 | - |
| *Umbrina roncador* | | 2.50 | 0.50 | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | 2.50 | 2.50 | - | - | - | 2.00 | 1.75 | - | - |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | 0.50 | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | 1.00 | 2.25 | - | - | + | 0.50 | 0.75 | 0.25 | - |
| *Brachyistius frenatus* | | 0.25 | 1.00 | 1.25 | 0.50 | 0.25 | 3.00 | 1.50 | 0.50 | 1.00 |
| *Cymatogaster aggregata* | | 1.00 | 1.25 | 0.50 | 0.25 | + | 0.50 | 1.00 | 0.75 | 0.25 |
| *Damalichthys vacca* | | + | 3.00 | 1.00 | - | 0.25 | - | 0.75 | + | 0.75 |
| *Embiotoca jacksoni* | | 2.00 | 7.50 | 1.25 | 0.10 | - | 1.25 | + | 0.50 | 0.50 |
| *Hyperprosopon argenteum* | | 60.00 | 105.75 | 14.75 | 4.75 | 13.00 | 63.75 | 25.00 | 13.50 | - |
| *Micrometrus minimus* | | + | 0.10 | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 5.00 | 12.00 | 1.50 | 0.50 | 0.75 | 3.75 | 2.75 | 4.75 | 2.25 |
| *Rhacochilus toxotes* | | + | - | - | - | - | - | + | - | + |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | 0.25 | - | 0.10 | 0.50 | - | - | - | - |
| *Hypsypops rubicundus* | | - | - | - | - | - | 1.25 | 1.75 | 0.75 | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/16 | 2/22 | 2/24 | 2/28 | 3/ 8 | 3/10 | 3/13 | 3/15 | 3/17 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | 0.50 | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | | + | 0.25 | - | - | 0.25 | 0.75 | 0.50 | 0.25 | 0.50 |
| *Pimelometopon pulchrum* | | 0.75 | 0.25 | - | - | 0.50 | 3.50 | - | + | + |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | - | - | 0.25 | - | - |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | 0.50 | 0.25 | 2.25 | 0.50 | 1.25 | 1.25 | 0.75 | 1.50 | 0.50 |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | 0.25 | - | - | - | + | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | - | 0.25 | 0.10 | 0.10 | - | - | - | + | 21.00 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 3.00 | 2.00 | 0.50 | 0.60 | 1.75 | 9.00 | 5.25 | 2.75 | 2.25 |
| *Sebastes auriculatus* | | + | - | - | - | 0.25 | - | - | - | - |
| *Sebastes mystinus* | | - | 0.75 | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | 0.25 | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | | - | 0.50 | - | - | - | 1.00 | 0.50 | - | 0.50 |
| *Sebastes serranoides* | | - | 0.25 | 0.10 | 0.10 | + | 0.50 | 0.25 | + | + |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | - | - | - | - | - | + | + | - | - |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | 4.50 | - | - | - | 2.00 |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | 0.75 | 0.10 | 0.10 | - | 0.25 | 0.25 | 0.25 | + | - |
| *Paralichthys californicus* | | 1.00 | 0.25 | 0.50 | - | 1.75 | 1.50 | 1.75 | 0.50 | 0.25 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | 1.25 | 0.25 | 0.50 | - | 2.00 | 6.00 | 1.75 | - | + |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | 0.25 |
| *Pleuronichthys ritteri* | | - | 3.50 | 2.00 | 2.50 | 1.00 | 1.50 | 3.00 | 2.00 | 0.75 |
| *Pleuronichthys verticalis* | | 0.25 | - | 1.00 | - | 1.00 | 4.00 | 0.50 | 0.50 | - |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | 0.25 | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - |
| Total | | 474.25 | 543.50 | 247.30 | 188.90 | 213.50 | 512.00 | 336.00 | 258.00 | 79.75 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | - | - | - | - | - | - | - | - | - |
| *Triakis semifasciata* | | - | - | - | - | - | - | - | - | 0.75 |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | - | - | - | - | - | - | - | 7.00 | 35.00 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0.25 | - | - | - | 1.50 | - | - | 0.75 | - |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | - | - | - | - | 5.30 | 8.50 | - | 19.00 | 44.00 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 17.00 | 9.00 | 5.50 | 15.25 | 19.25 | 10.75 | 8.25 | 21.50 | 37.50 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | - | - | - | - | - | - | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | 2.75 | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | + | - | - | - | - | + | + | + | - |
| *Engraulis mordax* | | + | + | + | + | + | + | + | 0.25 | 0.75 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus luctoceps* | | - | - | - | - | - | - | - | - | 0.25 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | - | - | - | - | 0.50 | - | 0.75 | 1.75 | 0.75 |
| *Porichthys notatus* | | + | - | - | - | - | 0.50 | 1.50 | 0.50 | 1.75 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | 0.75 | - | - | - | - | - | - |
| *Otophidium scrippsi* | | - | - | - | - | 0.25 | - | - | - | 0.50 |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | + | + | + | - | 0.25 | 2.50 | 0.50 | 0.75 | + |
| *Atherinopsis californiensis* | | 3.00 | 1.50 | 0.25 | + | 3.00 | 5.50 | 6.25 | 0.50 | 0.50 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | - | + | - | - | + | - | 0.50 | - | - |
| Atherinid, unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | + | - | - | - | - | - | + | + |
| *Syngnathus* spp. | | - | - | - | - | + | - | - | - | - |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | 0.50 | - | - | - | 0.50 | - | - | - | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | - | + | - | - | - | - | - | - | 0.25 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | - | - | - | - | 0.25 | 0.50 | - | - | - |
| *Xenistius californiensis* | | 0.75 | + | + | + | + | 0.50 | 0.50 | 0.25 | 1.00 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | - | 1.25 | - | - | - | - | - | - | - |
| *Cynoscion nobilis* | | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | | 0.25 | - | - | - | 0.25 | 1.25 | + | 2.00 | 2.75 |
| *Menticirrhus undulatus* | | + | - | - | - | + | - | - | - | - |
| *Roncador stearnsii* | | 0.75 | - | - | - | - | - | - | - | 2.25 |
| *Seriphus politus* | | 59.00 | 20.75 | 19.00 | - | 43.50 | 63.75 | 58.00 | 111.75 | 179.50 |
| *Umbrina roncador* | | - | - | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | - | - | - | - | - | 1.50 | - | - | 1.00 |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | - | - | - | - | - | - | - | - | 0.25 |
| *Brachyistius frenatus* | | 0.50 | 0.50 | 1.50 | 0.75 | 4.25 | 2.50 | 4.25 | 0.50 | 0.50 |
| *Cymatogaster aggregata* | | 0.25 | + | + | - | + | 0.25 | 0.50 | 0.25 | 0.25 |
| *Damalichthys vacca* | | - | - | - | + | - | 1.25 | - | 0.75 | 0.25 |
| *Embiotoca jacksoni* | | - | - | 1.00 | - | 0.75 | 0.25 | + | 0.25 | 0.75 |
| *Hyperprosopon argenteum* | | 5.00 | 2.50 | 3.00 | - | 14.50 | 12.25 | 9.00 | 1.75 | 7.50 |
| *Micrometrus minimus* | | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 0.75 | 0.75 | 0.50 | 1.25 | 6.00 | 0.50 | 0.75 | 1.25 | 2.50 |
| *Rhacochilus toxotes* | | - | - | - | - | - | - | - | - | 0.25 |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | - | - | - | - | - | - | - | - |
| *Hypsypops rubicundus* | | - | - | - | - | - | - | - | - | 1.50 |

AGGREGATE WEIGHT (LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 3/21 | 3/22 | 3/28 | 3/29 | 3/31 | 4/ 4 | 4/ 5 | 4/26 | 4/27 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | | 0.25 | + | - | + | 0.25 | + | - | 0.25 | 0.25 |
| *Pimelometopon pulchrum* | | - | - | 0.25 | 2.25 | 0.25 | - | + | - | - |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | - | - | - | - | - |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | 0.25 | 0.50 | 0.50 | 0.50 | 0.75 | 0.50 | 1.50 | 0.50 | 0.25 |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | + | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 13.75 | 1.50 | 2.25 | 0.25 | 1.00 | 15.25 | 3.25 | 9.75 | 3.25 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 1.00 | 0.75 | 3.50 | 1.00 | 0.75 | 1.00 | 1.50 | 0.75 | 1.25 |
| *Sebastes auriculatus* | | - | - | 0.25 | - | - | - | - | - | - |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | | - | - | - | 0.25 | - | - | - | - | - |
| *Sebastes serranoides* | | - | - | - | - | 0.25 | + | + | - | - |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | - | - | - | - | - | - | - | - | - |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | - | - | - | - | + | - | - | - | + |
| *Paralichthys californicus* | | - | 0.25 | 0.25 | - | - | - | - | 1.00 | 0.75 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | - | - | - | 0.50 | 0.50 | - | - | - | 1.25 |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | | 0.75 | - | 0.50 | 0.50 | - | - | - | - | 0.25 |
| *Pleuronichthys verticalis* | | - | - | - | - | - | - | - | - | - |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - |
| Total | | 104.00 | 39.25 | 39.00 | 22.50 | 106.55 | 129.00 | 97.00 | 183.00 | 329.50 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | - | - | - | - | - | - | - | 5.ØØ | 4.ØØ |
| *Triakis semifasciata* | | Ø.5Ø | - | - | - | - | - | - | - | 5.ØØ |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | 27.5Ø | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | Ø.25 | 1Ø.ØØ | - | 6.ØØ | - | - | 12.ØØ | 11.ØØ | - |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | Ø.25 | - | - | - | 1.5Ø | - | - | 1.ØØ | - |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 45.ØØ | 3Ø.5Ø | 14.ØØ | - | - | 25.ØØ | 48.ØØ | 12Ø.ØØ | - |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 3Ø.ØØ | 16.ØØ | 16.25 | 13.5Ø | 9.75 | 6.ØØ | 1Ø.75 | 17.ØØ | 3.25 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | - | - | - | - | - | - | 111.ØØ |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | - | - | - | + | - | - | - | - | - |
| *Engraulis mordax* | | Ø.5Ø | + | + | Ø.5Ø | Ø.25 | Ø.5Ø | Ø.25 | Ø.25 | Ø.25 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 2.5Ø | Ø.75 | 1.75 | Ø.5Ø | Ø.25 | - | Ø.25 | 1.ØØ | - |
| *Porichthys notatus* | | 3.75 | 2.75 | 5.25 | 6.75 | 2.25 | 1.5Ø | 1.ØØ | 2.1Ø | + |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | Ø.25 | - | - |
| *Otophidium scrippsi* | | Ø.25 | - | - | Ø.25 | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | Ø.25 | - | - | 1.25 | Ø.25 | + | 1.5Ø | - | - |
| *Atherinopsis californiensis* | | Ø.25 | + | - | - | Ø.25 | + | Ø.5Ø | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | - | - | - | - | - | - | - | - | - |
| Atherinid,unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | - | - | + | - | - | - | - | + |
| *Syngnathus* spp. | | - | - | - | - | + | - | - | - | - |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | 44.75 | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | 1.50 | - | - | 2.00 | 0.25 | - | - | - | 0.25 |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | 1.50 | - | - | - | - | - | 1.25 | - | 0.25 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | - | - | - | - | - | - | 0.75 | - | - |
| *Xenistius californiensis* | | 0.50 | 0.50 | 1.25 | 0.50 | 2.75 | 0.25 | 0.75 | 1.50 | + |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | 0.25 | 0.25 | - | 1.25 | - | - | 0.50 | - | - |
| *Cynoscion nobilis* | | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | | 10.00 | 1.50 | 0.25 | 5.75 | 5.00 | 2.50 | 204.00 | 178.50 | 0.75 |
| *Menticirrhus undulatus* | | - | - | - | - | - | - | 3.75 | 8.00 | 1.00 |
| *Roncador stearnsii* | | - | - | - | 1.50 | - | - | 2.00 | 2.25 | - |
| *Seriphus politus* | | 112.00 | 107.50 | 163.00 | 141.00 | 206.50 | - | - | - | 9.00 |
| *Umbrina roncador* | | - | - | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | - | - | - | - | - | - | - | 3.50 | - |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | 1.00 | 0.25 | - | 0.50 | 0.50 | - | 5.00 | 0.25 | - |
| *Brachyistius frenatus* | | 0.25 | - | 1.00 | 0.75 | 1.25 | 1.25 | + | 0.25 | 0.50 |
| *Cymatogaster aggregata* | | 1.25 | 0.75 | 0.75 | 1.25 | 0.50 | 0.25 | 0.25 | 0.50 | - |
| *Damalichthys vacca* | | - | 0.50 | - | - | 0.50 | - | 0.50 | 0.50 | - |
| *Embiotoca jacksoni* | | 3.75 | 0.50 | 1.00 | 0.75 | 0.50 | 3.25 | 2.50 | 1.00 | 1.25 |
| *Hyperprosopon argenteum* | | 12.25 | 0.75 | 1.25 | 2.75 | 5.50 | - | - | - | 0.50 |
| *Micrometrus minimus* | | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 4.25 | 4.00 | 1.75 | 1.50 | 3.25 | 1.00 | 2.00 | 2.50 | 0.50 |
| *Rhacochilus toxotes* | | + | + | + | - | + | + | + | 0.25 | + |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | - | - | - | - | - | - | - | - |
| *Hypsypops rubicundus* | | - | - | - | + | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 4/28 | 5/ 2 | 5/ 3 | 5/ 9 | 5/11 | 5/12 | 5/18 | 5/19 | 5/23 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | | - | - | - | - | - | - | - | + | - |
| *Pimelometopon pulchrum* | | 5.00 | - | - | - | - | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | 0.25 | - | - | - | - | - |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | 0.25 | 0.25 | + | 0.50 | + | - | 1.25 | 0.50 | + |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 3.50 | 31.00 | 4.25 | 21.75 | 13.00 | 5.25 | - | + | + |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 1.50 | - | 0.50 | 0.75 | 0.50 | 1.25 | 1.00 | 1.00 | 0.25 |
| *Sebastes auriculatus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | | - | - | - | - | - | - | - | - | - |
| *Sebastes serranoides* | | + | - | - | - | - | - | - | - | - |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | - | - | + | - | - | - | 0.25 | - | - |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | + | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | | 0.50 | 1.00 | - | 0.50 | 0.25 | - | 0.25 | 0.75 | - |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | - | 0.75 | 0.50 | - | - | - | - | - | - |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | | - | - | 0.50 | 0.25 | 0.25 | - | - | - | - |
| *Pleuronichthys verticalis* | | 0.50 | 0.25 | - | - | - | - | 0.25 | - | 0.50 |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - |
| Total | | 243.25 | 254.50 | 240.75 | 212.25 | 255.00 | 48.00 | 300.75 | 358.60 | 138.25 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | 2.00 | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 4.00 | 10.00 | 4.75 | - | 11.75 | - | 5.75 | 5.25 | - |
| *Triakis semifasciata* | | - | - | - | - | - | - | - | - | - |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | - | - | - | - | - | - | - | 4.00 | - |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | + | - | - | - | - | - | - | - | 0.75 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | 11.00 | - | - | - | 51.75 | - | - | - | 26.00 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 2.50 | 3.25 | 4.75 | 0.50 | - | 2.00 | 3.75 | 1.25 | 1.00 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | 6.00 | - | - | - | - | - | 5.00 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | - | - | - | - | - | - | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | - | - | - | - | - | - | - | - | - |
| *Engraulis mordax* | | + | - | 0.25 | - | + | - | + | + | 0.25 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | - | - | 3.50 | - | - | 1.50 | - | - | 0.50 |
| *Porichthys notatus* | | 0.75 | 2.50 | 5.25 | 0.75 | 4.50 | 2.25 | 1.00 | 1.00 | 0.25 |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | - | - | - |
| *Otophidium scrippsi* | | - | - | 0.75 | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | - | + | - | - | - | - | - | - | - |
| *Atherinopsis californiensis* | | - | 1.00 | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | - | - | - | - | - | - | - | - | - |
| Atherinid, unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | - | - | - | - | - | - | - | - |
| *Syngnathus* spp. | | - | - | - | - | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | - | 1.25 | - | 0.25 | 0.25 | - | 0.50 | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | - | - | 0.25 | - | - | - | - | - | 1.25 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | - | - | 2.75 | - | - | - | - | - | 1.50 |
| *Xenistius californiensis* | | + | - | 0.25 | - | + | - | 0.25 | 0.50 | + |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | - | - | - | - | 0.50 | - | 0.25 | 0.25 | 0.50 |
| *Cynoscion nobilis* | | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | | 0.50 | 0.25 | 0.50 | 0.50 | 0.50 | 0.25 | 0.50 | 0.25 | 1.00 |
| *Menticirrhus undulatus* | | 0.75 | - | 0.50 | - | - | - | 3.25 | 2.75 | - |
| *Roncador stearnsii* | | - | - | - | - | - | - | - | 3.25 | 0.75 |
| *Seriphus politus* | | - | 5.75 | - | 2.00 | - | - | 36.00 | 41.00 | 31.75 |
| *Umbrina roncador* | | - | - | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | - | - | 20.75 | - | - | - | 1.00 | 2.50 | 15.00 |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | - | - | - | - | - | 0.50 |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | - | - | - | - | - | - | - | - | - |
| *Brachyistius frenatus* | | 0.25 | + | 0.25 | - | + | - | + | 0.25 | + |
| *Cymatogaster aggregata* | | - | + | 0.50 | - | - | - | + | 0.25 | 0.25 |
| *Damaltichthys vacca* | | - | + | 2.75 | - | + | - | - | 0.50 | - |
| *Embiotoca jacksoni* | | + | + | 12.00 | 0.25 | 1.25 | - | - | + | 0.25 |
| *Hyperprosopon argenteum* | | - | 125.00 | - | + | - | - | 3.50 | 1.50 | 5.75 |
| *Micrometrus minimus* | | + | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 1.00 | 0.25 | 5.75 | 0.25 | + | + | 1.25 | 1.25 | 1.25 |
| *Rhacochilus toxotes* | | + | - | + | - | + | - | + | + | + |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | - | 0.25 | - | - | - | - | - | + |
| *Hypsypops rubicundus* | | 0.75 | 1.25 | 2.00 | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 5/24 | 6/ 1 | 6/ 2 | 6/ 6 | 6/ 7 | 6/ 8 | 6/13 | 6/14 | 6/20 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| LABRIDAE | | | | | | | | | |
| *Halichoeres semicinctus* | - | - | - | - | - | 0.75 | - | - | - |
| *Oxyjulis californica* | - | - | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | - | - | - | - | - | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | |
| *Sphyraena argentea* | - | - | - | - | - | - | - | 0.25 | - |
| CLINIDAE | | | | | | | | | |
| *Gibbonsia elegans* | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | - | - | - | - | - | - | - | 0.25 | - |
| *Heterostichus rostratus* | 0.50 | + | 0.75 | - | 0.25 | 0.50 | 0.25 | 0.50 | - |
| *Neoclinus uninotatus* | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | + | - | - | - | - | - | - | - | + |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | - | + | 0.75 | - | - | 0.25 | 0.75 | - | 0.50 |
| *Sebastes auriculatus* | - | - | - | - | - | - | - | - | - |
| *Sebastes mystinus* | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | - | - | - | - | - | - | - | - | - |
| *Sebastes rastrelliger* | - | - | 1.75 | - | - | - | - | - | - |
| *Sebastes serranoides* | - | - | - | - | - | - | 0.25 | - | - |
| HEXAGRAMMIDAE | | | | | | | | | |
| *Oxylebius pictus* | - | - | - | 0.25 | - | - | - | - | - |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | 0.50 | 5.50 | 0.50 | - | 0.50 | - | - | 0.25 | 0.25 |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | 0.75 | - | - | - | - | - | - | - | 0.75 |
| *Parophrys vetulus* | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | - | - | 1.00 | - | - | - | - | - | - |
| *Pleuronichthys verticalis* | 0.25 | - | - | - | - | - | + | - | - |
| CYNOGLOSSIDAE | | | | | | | | | |
| *Symphurus atricauda* | - | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | |
| *Albula vulpes* | - | - | - | - | - | - | - | - | - |
| Total | 23.50 | 154.75 | 79.75 | 4.50 | 73.25 | 7.75 | 57.75 | 67.50 | 95.00 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | - | 0.25 | - | - | 2.00 | - | - | - | - |
| *Triakis semifasciata* | | - | - | 15.25 | - | - | - | - | - | - |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 4.00 | 1.00 | 20.00 | 0.50 | - | - | - | - | 6.50 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | - | 5.00 | 3.75 | 1.75 | 1.25 | - | - | - | - |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | - | - | - | - | - | - | - | - | 25.25 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 2.75 | 1.50 | 0.50 | 1.75 | 5.00 | 1.25 | 0.50 | 0.75 | 1.25 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | 0.50 | 3.25 | - | - | - | - | 7.75 | - |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | 23.00 | - | 47.00 | 30.00 | - | 12.50 | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | - | - | - | - | - | - | - | - | - |
| *Engraulis mordax* | | 0.25 | 0.50 | 0.50 | 0.25 | 0.50 | 0.25 | + | + | + |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 1.00 | - | 1.00 | 1.75 | - | 1.50 | - | - | - |
| *Porichthys notatus* | | 1.25 | + | 3.50 | + | + | - | - | - | - |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | - | - | - |
| *Otophidium scrippsi* | | 0.25 | - | - | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | - | 0.25 | + | - | - | - | - | - | - |
| *Atherinopsis californiensis* | | - | 0.25 | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | |
| *Leuresthes tenuis* | - | - | + | - | - | - | - | - | - |
| Atherinid, unident. | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus californiensis* | - | - | - | - | - | - | - | - | - |
| *Syngnathus* spp. | - | - | - | + | + | - | + | + | - |
| SERRANIDAE | | | | | | | | | |
| *Mycteroperca xenarcha* | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | - | - | - | - | - | - | - | 0.75 | + |
| *Paralabrax maculatofasciatus* | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | 1.00 | 0.50 | - | - | - | - | - | - | - |
| CARANGIDAE | | | | | | | | | |
| *Trachurus symmetricus* | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | - | - | - | 1.50 | - | - | - | 0.50 | - |
| *Xenistius californiensis* | - | 0.25 | + | 0.25 | 0.25 | 3.25 | + | 0.25 | - |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | 0.75 | 0.25 | - | 0.50 | - | 0.50 | - | - | 0.25 |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | 0.50 |
| *Genyonemus lineatus* | 3.75 | 19.25 | 37.00 | 0.75 | 7.25 | 3.75 | + | 1.25 | 0.50 |
| *Menticirrhus undulatus* | - | 0.75 | - | - | - | 2.00 | - | 2.00 | - |
| *Roncador stearnsii* | 1.25 | - | - | - | - | - | - | - | - |
| *Seriphus politus* | 108.00 | 112.25 | 123.00 | 76.50 | 85.75 | - | - | 24.25 | 9.25 |
| *Umbrina roncador* | - | - | - | 0.25 | 0.50 | 1.50 | - | - | - |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | - | - | - | - | - | - | - | - | - |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | - | - | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | - | 1.00 | 0.25 | - | - | - | - | - | - |
| *Brachyistius frenatus* | + | + | + | + | + | 0.25 | 0.25 | 0.25 | + |
| *Cymatogaster aggregata* | 0.25 | 0.75 | + | 0.25 | 0.75 | 1.25 | + | + | + |
| *Damalichthys vacca* | 0.75 | - | - | - | - | 0.50 | - | - | - |
| *Embiotoca jacksoni* | - | 0.75 | 0.25 | 1.00 | + | 0.25 | - | - | - |
| *Hyperprosopon argenteum* | 4.25 | 2.25 | 4.00 | 3.00 | 2.75 | - | - | 1.75 | 1.50 |
| *Micrometrus minimus* | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | 0.50 | 1.25 | 3.00 | 0.50 | 1.50 | 3.50 | + | 2.50 | 0.75 |
| *Rhacochilus toxotes* | + | - | + | + | 0.25 | - | + | + | + |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | - | - | - | - | - | - | - | - | - |
| *Hypsypops rubicundus* | - | - | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 6/22 | 6/25 | 6/26 | 7/11 | 7/12 | 7/13 | 7/14 | 7/18 | 7/19 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | | - | - | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | | - | - | - | - | - | - | 0.25 | - | - |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | - | - | - | - | - |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | 0.25 | 0.75 | + | + | - | + | 0.25 | 0.25 | + |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 0.25 | 0.25 | + | 0.75 | 0.50 | + | - | 0.50 | 0.25 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 0.25 | 0.25 | - | - | 0.25 | - | - | - | + |
| *Sebastes auriculatus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | + | + | - | - | - | + | - | + | + |
| *Sebastes rastrelliger* | | - | - | - | - | - | - | - | - | - |
| *Sebastes serranoides* | | - | - | - | - | - | - | - | - | - |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | - | + | - | - | - | - | - | - | - |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | 3.00 | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | - | - | - | - | + | - | - | - | - |
| *Paralichthys californicus* | | 0.50 | - | - | 0.75 | 0.25 | - | - | - | 1.75 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | - | 0.75 | - | - | 0.50 | - | - | 0.25 | - |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | | - | - | 1.25 | - | - | - | - | - | - |
| *Pleuronichthys verticalis* | | - | - | - | - | - | - | 0.25 | - | - |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - |
| Total | | 131.25 | 153.50 | 239.50 | 92.00 | 156.25 | 49.75 | 1.50 | 55.50 | 47.75 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | 3.75 | - | 3.00 | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 0.25 | - | - | - | - | + | - | 7.00 | 9.00 |
| *Triakis semifasciata* | | 3.00 | - | - | - | - | - | - | - | - |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | - | - | 4.00 | 6.50 | - | 7.50 | 8.50 | 34.25 | 3.75 |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | - | - | 6.50 | - | - | - | - | 5.00 | 3.50 |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | - | - | - | 53.00 | - | - | - | - | 8.50 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 2.75 | 1.75 | 5.50 | - | - | 5.25 | 2.00 | 10.25 | 8.00 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | 0.25 | - | - | - | - | 3.00 | 1.00 |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | 49.50 | - | 0.75 | - | - | - | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | - | - | - | - | - | - | + | + | + |
| *Engraulis mordax* | | 0.25 | 0.25 | 0.25 | 2.25 | 2.25 | 0.50 | 1.00 | 0.50 | 8.50 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | 0.50 | - | - | - | - | - | 0.50 |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 0.50 | 2.25 | 5.00 | - | - | - | - | 3.00 | 3.75 |
| *Porichthys notatus* | | - | 0.50 | 0.25 | - | + | - | - | 0.50 | + |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | - | - | - |
| *Otophidium scrippsi* | | - | - | - | - | - | - | - | 0.50 | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | - | - | 0.25 | - | - | - | - | - | - |
| *Atherinopsis californiensis* | | - | - | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | - | - | - | - | - | - | - | - | - |
| Atherinid, unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | + | + | - | - | - | - | - | + |
| *Syngnathus* spp. | | + | - | - | + | - | - | - | - | - |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | - | - | 0.50 | 0.75 | 0.25 | - | - | - | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | - | 0.25 | - | - | - | - | - | 2.00 | 0.50 |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | - | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 0.75 | - | - | - | - | - | - | 1.00 | - |
| *Xenistius californiensis* | | 4.50 | 0.25 | 19.25 | 0.75 | 0.50 | 0.25 | 0.25 | 2.25 | 13.50 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | - | - | 1.50 | - | - | - | - | - | - |
| *Cynoscion nobilis* | | - | - | - | - | - | - | - | 0.75 | 2.00 |
| *Genyonemus lineatus* | | 0.25 | 0.25 | 19.25 | 0.50 | 0.75 | 0.25 | 2.25 | 229.00 | 389.00 |
| *Menticirrhus undulatus* | | - | - | 10.00 | - | 2.00 | 0.25 | 0.75 | 3.00 | 2.00 |
| *Roncador stearnsii* | | - | 2.00 | 3.25 | - | - | - | 0.75 | 15.00 | 4.00 |
| *Seriphus politus* | | 34.75 | 34.50 | - | 78.25 | 142.50 | 58.00 | 56.50 | 142.00 | 243.00 |
| *Umbrina roncador* | | 0.25 | - | 0.50 | - | - | - | - | 2.00 | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | - | - | 7.50 | 1.50 | - | - | - | 2.00 | - |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | - | 0.50 | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | 1.00 | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | - | - | 5.00 | - | - | - | - | 1.50 | - |
| *Brachyistius frenatus* | | 0.25 | 0.25 | 0.25 | 0.25 | - | + | + | + | - |
| *Cymatogaster aggregata* | | 0.50 | 1.00 | 0.25 | - | 0.25 | 0.25 | 1.00 | 0.75 | 0.75 |
| *Damalichthys vacca* | | 0.75 | - | 0.25 | - | - | - | - | 1.50 | + |
| *Embiotoca jacksoni* | | 0.50 | - | 1.00 | 0.25 | - | - | - | 0.75 | - |
| *Hyperprosopon argenteum* | | 3.50 | 4.50 | - | 0.75 | 1.00 | 1.75 | 2.50 | 35.00 | 51.00 |
| *Micrometrus minimus* | | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 0.50 | 0.75 | 3.00 | + | + | 0.75 | 1.00 | 3.25 | 3.75 |
| *Rhacochilus toxotes* | | - | - | 0.25 | - | - | + | - | + | + |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | 0.25 | 0.25 | - | - | - | - | - | - |
| *Hypsypops rubicundus* | | - | - | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA / DATE | 7/26 | 7/27 | 7/28 | 8/ 2 | 8/ 3 | 8/ 9 | 8/10 | 8/21 | 8/22 |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| LABRIDAE | | | | | | | | | |
| *Halichoeres semicinctus* | - | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | - | - | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | - | - | 1.25 | - | - | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | |
| *Sphyraena argentea* | - | - | - | - | - | - | - | - | - |
| CLINIDAE | | | | | | | | | |
| *Gibbonsia elegans* | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | - | - | 0.25 | 0.25 | 0.25 | - | 0.50 | 0.50 | + |
| *Neoclinus uninotatus* | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | 0.50 | 1.75 | - | 0.75 | 0.50 | 2.75 | 20.75 | 5.25 | 42.50 |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | + | + | 2.00 | 0.25 | - | 1.25 | 0.25 | 1.25 | 1.00 |
| *Sebastes auriculatus* | - | - | - | - | - | - | - | - | - |
| *Sebastes mystinus* | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | 1.00 | 1.50 | 0.50 | 1.00 | 0.50 | 1.00 | 0.25 | 5.25 | 1.75 |
| *Sebastes rastrelliger* | - | - | - | - | - | - | + | - | - |
| *Sebastes serranoides* | - | - | - | - | - | - | - | 0.25 | - |
| HEXAGRAMMIDAE | | | | | | | | | |
| *Oxylebius pictus* | - | - | - | - | - | - | - | - | - |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | 0.50 | - | 0.25 | - | - | - | - | 0.75 | 0.75 |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | - | - | - | - | - | - | - | - | - |
| *Parophrys vetulus* | 1.25 | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys verticalis* | - | - | - | - | - | - | - | + | 0.50 |
| CYNOGLOSSIDAE | | | | | | | | | |
| *Symphurus atricauda* | - | - | - | - | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | |
| *Albula vulpes* | - | - | - | - | - | - | - | - | - |
| Total | 57.50 | 55.75 | 148.75 | 150.00 | 151.50 | 79.75 | 98.25 | 519.00 | 802.50 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | - | - | - | - | - |
| CARCHARHINIDAE | | | | | | | | | | |
| *Mustelus californicus* | | 0.75 | - | - | - | - | - | - | - | - |
| *Triakis semifasciata* | | 1.75 | - | 5.00 | - | - | - | - | - | - |
| SQUALIDAE | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - |
| SQUATINIDAE | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - |
| RHINOBATIDAE | | | | | | | | | | |
| *Rhinobatos productus* | | 31.00 | 26.50 | - | - | - | - | - | - | - |
| PLATYRHINIDAE | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | - | - | - | - | - | - | - | - | - |
| TORPEDINIDAE | | | | | | | | | | |
| *Torpedo californica* | | - | - | - | - | - | - | - | - | 12.00 |
| RAJIDAE | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - |
| DASYATIDAE | | | | | | | | | | |
| *Urolophus halleri* | | 2.00 | 3.25 | 5.25 | - | - | - | 0.50 | - | 0.50 |
| GYMNURIDAE | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | - | - | - | - | - |
| MYLIOBATIDAE | | | | | | | | | | |
| *Myliobatis californica* | | - | - | - | - | - | - | - | - | - |
| ACIPENSERIDAE | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - |
| MURAENIDAE | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | - |
| OPHICHTHIDAE | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - |
| ENGRAULIDAE | | | | | | | | | | |
| *Anchoa compressa* | | - | - | 0.25 | + | + | - | - | + | 1.25 |
| *Engraulis mordax* | | 1.50 | 0.25 | 0.75 | 1.50 | 1.25 | + | + | 1.50 | 0.25 |
| SYNODONTIDAE | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | - | - | - | - | - | - | - |
| BATRACHOIDIDAE | | | | | | | | | | |
| *Porichthys myriaster* | | 1.25 | - | - | - | - | - | - | - | - |
| *Porichthys notatus* | | - | - | - | - | - | - | - | - | - |
| OPHIDIIDAE | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | - | - | - |
| *Otophidium scrippsi* | | - | - | - | - | - | - | - | - | - |
| ATHERINIDAE | | | | | | | | | | |
| *Atherinops affinis* | | - | - | - | 0.25 | - | - | - | - | + |
| *Atherinopsis californiensis* | | - | - | - | - | - | - | - | - | - |

AGGREGATE WEIGHT (LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | |
| *Leuresthes tenuis* | | - | - | - | - | - | - | - | - | - |
| Atherinid, unident. | | - | - | - | - | - | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | |
| *Syngnathus californiensis* | | - | - | - | - | - | - | - | - | - |
| *Syngnathus* spp. | | - | - | - | - | - | - | - | - | + |
| SERRANIDAE | | | | | | | | | | |
| *Mycteroperca xenarcha* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax clathratus* | | 0.50 | 0.50 | - | - | + | - | - | - | - |
| *Paralabrax maculatofasciatus* | | - | - | - | - | - | - | - | - | - |
| *Paralabrax nebulifer* | | 0.50 | - | - | - | - | - | - | - | - |
| CARANGIDAE | | | | | | | | | | |
| *Trachurus symmetricus* | | - | - | - | - | - | + | - | - | - |
| PRISTIPOMATIDAE | | | | | | | | | | |
| *Anisotremus davidsonii* | | 0.25 | - | - | - | - | - | - | - | - |
| *Xenistius californiensis* | | 1.50 | 1.50 | 0.75 | - | - | - | - | - | 0.25 |
| SCIAENIDAE | | | | | | | | | | |
| *Cheilotrema saturnum* | | - | - | 0.50 | - | + | - | - | - | 0.25 |
| *Cynoscion nobilis* | | - | - | - | - | - | - | - | - | - |
| *Genyonemus lineatus* | | 2.00 | 1.75 | - | + | - | - | - | - | 1.00 |
| *Menticirrhus undulatus* | | 4.75 | - | 1.00 | - | - | - | - | - | 0.50 |
| *Roncador stearnsii* | | - | - | 1.00 | - | - | - | - | - | - |
| *Seriphus politus* | | 28.00 | - | 12.25 | - | 1.50 | 0.25 | 0.25 | 1.50 | 22.75 |
| *Umbrina roncador* | | - | - | - | - | - | - | - | - | - |
| GIRELLIDAE | | | | | | | | | | |
| *Girella nigricans* | | - | - | - | - | - | - | - | - | - |
| SCORPIDIDAE | | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | - | - | - | - | - | - |
| KYPHOSIDAE | | | | | | | | | | |
| *Hermosilla azurea* | | - | - | - | - | - | - | - | - | - |
| EMBIOTOCIDAE | | | | | | | | | | |
| *Amphistichus argenteus* | | - | - | - | - | - | - | - | - | - |
| *Brachyistius frenatus* | | + | - | + | - | - | + | + | - | 0.25 |
| *Cymatogaster aggregata* | | 0.50 | + | - | - | - | - | - | + | 0.25 |
| *Damalichthys vacca* | | - | - | - | - | - | - | - | - | - |
| *Embiotoca jacksoni* | | - | + | - | 2.00 | - | - | - | - | - |
| *Hyperprosopon argenteum* | | 2.50 | - | 1.50 | - | + | 0.50 | + | 0.50 | 4.75 |
| *Micrometrus minimus* | | - | - | - | - | - | - | - | - | - |
| *Phanerodon furcatus* | | 1.25 | + | 0.25 | 0.25 | - | - | + | 0.25 | 0.25 |
| *Rhacochilus toxotes* | | - | - | - | - | - | - | - | - | - |
| POMACENTRIDAE | | | | | | | | | | |
| *Chromis punctipinnis* | | - | - | - | - | - | - | - | - | - |
| *Hypsypops rubicundus* | | - | - | - | - | - | - | - | - | - |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 8/30 | 9/ 1 | 9/12 | 11/ 8 | 11/ 9 | 11/14 | 11/15 | 11/21 | 11/22 |
|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | - | - |
| *Oxyjulis californica* | | - | - | - | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | | - | - | - | - | - | - | - | - | - |
| SPHYRAENIDAE | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | - | - | - | - | - |
| CLINIDAE | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - |
| *Heterostichus rostratus* | | - | - | - | - | - | - | - | - | - |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | |
| *Hypsoblennius gilberti* | | - | - | - | - | - | - | - | - | - |
| STROMATEIDAE | | | | | | | | | | |
| *Peprilus simillimus* | | 6.25 | 5.00 | 1.75 | 1.00 | 0.50 | - | + | 0.50 | 1.00 |
| SCORPAENIDAE | | | | | | | | | | |
| *Scorpaena guttata* | | 0.25 | - | 2.25 | 0.25 | 0.25 | - | + | - | + |
| *Sebastes auriculatus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - | - |
| *Sebastes paucispinis* | | + | + | + | - | - | - | - | - | - |
| *Sebastes rastrelliger* | | - | - | - | - | - | - | - | - | - |
| *Sebastes serranoides* | | - | - | - | - | - | - | - | - | - |
| HEXAGRAMMIDAE | | | | | | | | | | |
| *Oxylebius pictus* | | - | - | - | - | - | - | - | - | 0.25 |
| COTTIDAE | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | - | - | - | - | - |
| BOTHIDAE | | | | | | | | | | |
| *Citharichthys stigmaeus* | | - | - | - | - | - | - | - | - | - |
| *Paralichthys californicus* | | - | - | - | - | - | 0.50 | - | - | 1.75 |
| PLEURONECTIDAE | | | | | | | | | | |
| *Hypsopsetta guttulata* | | - | - | - | - | - | - | - | - | 0.75 |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys ritteri* | | - | - | - | - | - | - | - | - | - |
| *Pleuronichthys verticalis* | | - | - | - | - | - | - | - | - | - |
| CYNOGLOSSIDAE | | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | 0.25 | - | - | - | - | - |
| ALBULIDAE | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - |
| Total | | 86.50 | 38.75 | 32.50 | 5.50 | 3.50 | 1.25 | 0.75 | 4.25 | 48.00 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

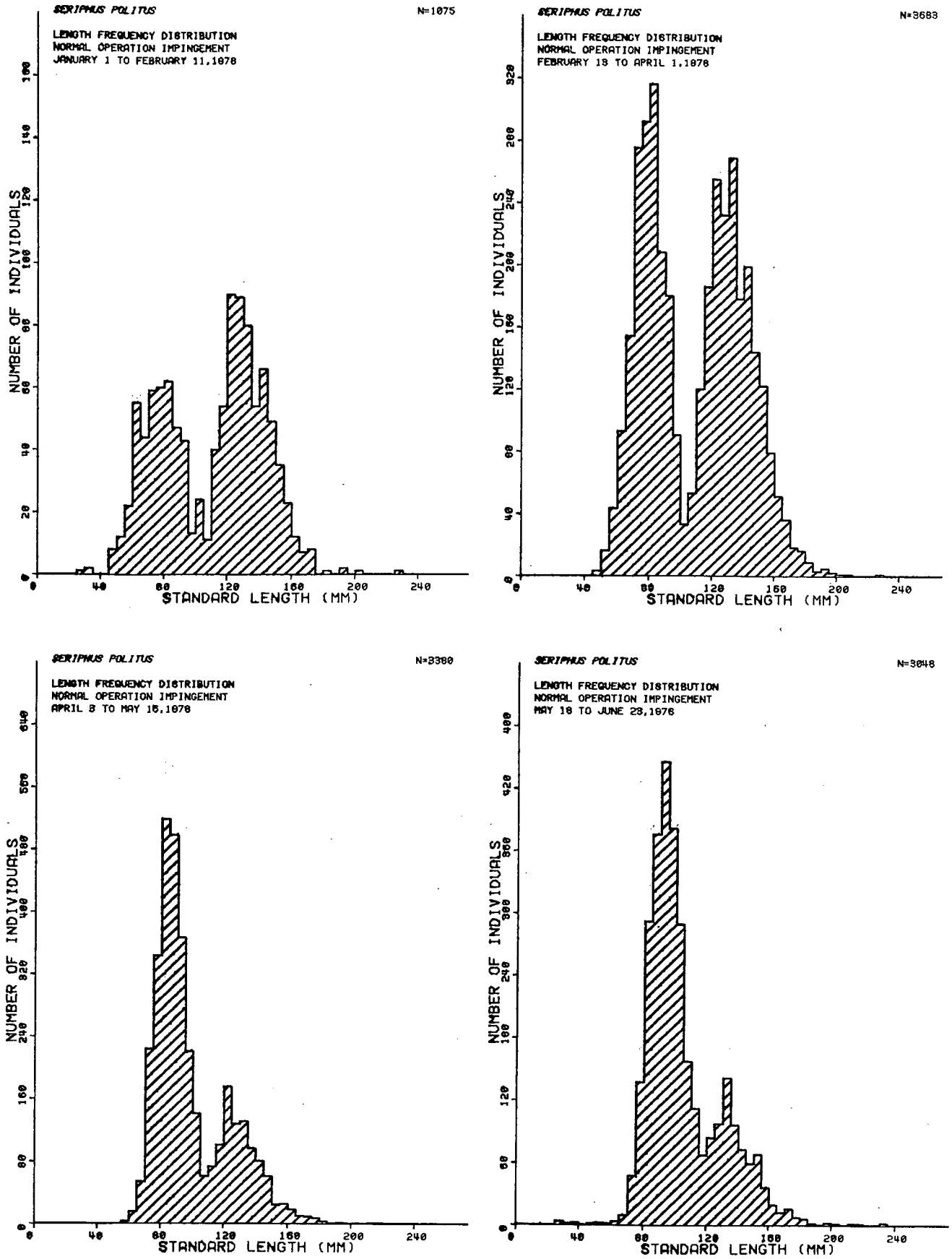
| TAXA / DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | |
| ATHERINIDAE | | | | | | | | | | | |
| *Leuresthes tenuis* | - | - | 4.00 | - | - | - | - | - | - | - | 9.75 |
| Atherinid,unident. | - | - | - | - | - | - | + | - | - | - | - |
| SYNGNATHIDAE | | | | | | | | | | | |
| *Syngnathus californiensis* | - | - | - | - | - | - | - | - | - | - | - |
| *Syngnathus* spp. | - | - | - | - | - | - | - | - | - | - | 1.00 |
| SERRANIDAE | | | | | | | | | | | |
| *Mycteroperca xenarcha* | - | - | - | - | - | - | - | - | - | - | 44.75 |
| *Paralabrax clathratus* | 0.25 | - | - | - | - | - | 0.50 | 0.50 | - | 0.50 | 17.50 |
| *Paralabrax maculatofasciatus* | - | - | - | - | - | - | - | - | - | - | .25 |
| *Paralabrax nebulifer* | - | 0.50 | - | - | - | - | - | - | - | - | 29.25 |
| CARANGIDAE | | | | | | | | | | | |
| *Trachurus symmetricus* | - | - | 0.25 | - | - | - | - | - | - | - | .50 |
| PRISTIPOMATIDAE | | | | | | | | | | | |
| *Anisotremus davidsonii* | - | - | - | - | - | - | - | - | - | - | 14.25 |
| *Xenistius californiensis* | - | - | - | - | - | - | 0.25 | - | - | - | 6.35 |
| SCIAENIDAE | | | | | | | | | | | |
| *Cheilotrema saturnum* | - | - | + | - | - | - | + | - | - | - | 13.35 |
| *Cynoscion nobilis* | - | - | - | - | - | - | - | - | - | - | 6.50 |
| *Genyonemus lineatus* | 0.25 | - | 0.75 | 1.00 | 2.00 | 0.25 | 0.50 | - | + | - | 1348.75 |
| *Menticirrhus undulatus* | - | - | - | - | - | - | - | - | - | - | 104.85 |
| *Roncador stearnsii* | - | - | - | - | - | - | - | - | - | - | 97.30 |
| *Seriphus politus* | 0.50 | 3.50 | 18.75 | 4.00 | 22.00 | - | - | 1.50 | 0.50 | 0.25 | 4355.25 |
| *Umbrina roncador* | - | - | - | - | - | - | - | - | - | - | 12.25 |
| GIRELLIDAE | | | | | | | | | | | |
| *Girella nigricans* | - | - | - | - | - | - | - | - | - | - | 76.50 |
| SCORPIDIDAE | | | | | | | | | | | |
| *Medialuna californiensis* | - | - | - | - | - | - | - | - | - | - | 1.50 |
| KYPHOSIDAE | | | | | | | | | | | |
| *Hermosilla azurea* | - | - | - | - | - | - | - | - | - | - | 1.00 |
| EMBIOTOCIDAE | | | | | | | | | | | |
| *Amphistichus argenteus* | - | - | - | - | - | - | - | - | - | - | 27.25 |
| *Brachyistius frenatus* | - | - | - | - | - | - | - | + | - | - | 34.50 |
| *Cymatogaster aggregata* | - | - | 0.75 | 0.25 | 0.25 | 0.25 | + | + | - | - | 27.50 |
| *Damalichthys vacca* | - | 0.25 | - | - | - | - | - | - | 0.50 | - | 24.25 |
| *Embiotoca jacksoni* | - | - | - | 0.50 | - | - | - | - | - | 0.50 | 56.10 |
| *Hyperprosopon argenteum* | 0.25 | 1.50 | 3.75 | 3.50 | 0.75 | - | - | 0.25 | 0.25 | + | 844.00 |
| *Micrometrus minimus* | - | - | - | - | - | - | - | - | - | - | .35 |
| *Phanerodon furcatus* | + | 0.25 | 0.75 | - | 0.25 | + | + | + | - | - | 132.85 |
| *Rhacochilus toxotes* | - | - | - | - | - | + | - | - | - | | 2.00 |
| POMACENTRIDAE | | | | | | | | | | | |
| *Chromis punctipinnis* | - | - | - | - | - | - | - | - | - | | 4.10 |
| *Hypsypops rubicundus* | - | - | - | - | - | - | - | - | - | | 10.00 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY (CONTINUED)

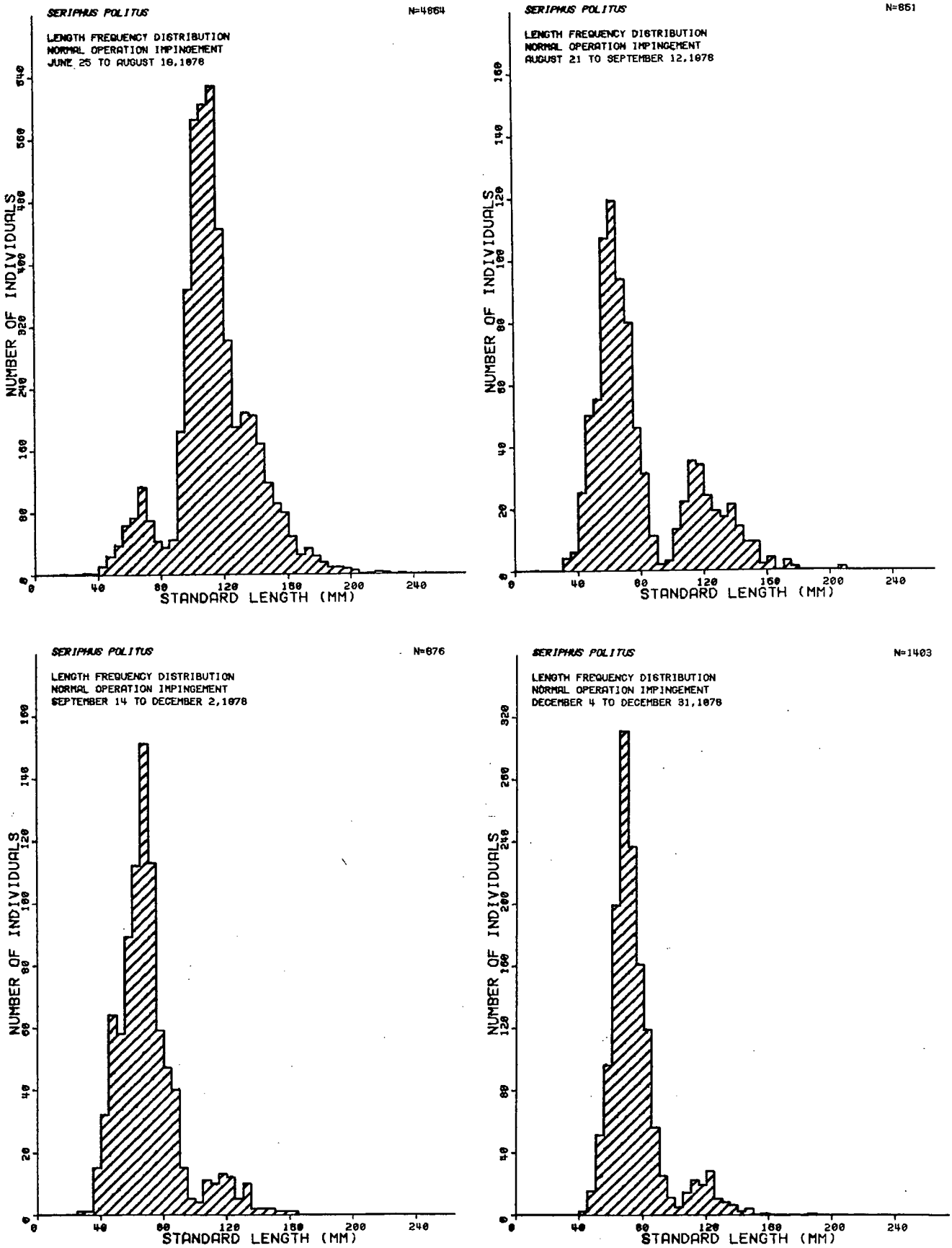
| TAXA | DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| LABRIDAE | | | | | | | | | | | | |
| *Halichoeres semicinctus* | | - | - | - | - | - | - | - | - | - | - | 2.25 |
| *Oxyjulis californica* | | - | - | - | - | - | - | - | - | - | - | 3.50 |
| *Pimelometopon pulchrum* | | - | - | - | - | - | 0.25 | - | - | - | - | 16.25 |
| SPHYRAENIDAE | | | | | | | | | | | | |
| *Sphyraena argentea* | | - | - | - | - | - | - | 0.25 | - | - | - | 1.25 |
| CLINIDAE | | | | | | | | | | | | |
| *Gibbonsia elegans* | | - | - | - | - | - | - | - | - | - | - | - |
| *Gibbonsia montereyensis* | | - | - | - | - | - | - | - | - | - | - | .25 |
| *Heterostichus rostratus* | | - | - | - | + | - | - | - | + | - | - | 31.50 |
| *Neoclinus uninotatus* | | - | - | - | - | - | - | - | - | - | - | - |
| BLENNIIDAE | | | | | | | | | | | | |
| *Hypsoblennius gilberti* | | - | - | - | - | - | - | - | - | - | - | .25 |
| STROMATEIDAE | | | | | | | | | | | | |
| *Peprilus simillimus* | | 0.25 | 0.50 | 2.00 | 2.00 | - | 0.50 | 0.50 | + | - | - | 249.95 |
| SCORPAENIDAE | | | | | | | | | | | | |
| *Scorpaena guttata* | | - | 0.75 | - | - | - | + | - | + | - | - | 66.85 |
| *Sebastes auriculatus* | | - | - | - | - | - | - | - | - | - | - | 1.00 |
| *Sebastes mystinus* | | - | - | - | - | - | - | - | - | - | - | .75 |
| *Sebastes paucispinis* | | - | - | - | - | - | - | - | - | - | - | 13.00 |
| *Sebastes rastrelliger* | | - | - | - | + | - | - | - | - | - | - | 9.50 |
| *Sebastes serranoides* | | - | - | - | - | - | - | - | - | - | - | 2.45 |
| HEXAGRAMMIDAE | | | | | | | | | | | | |
| *Oxylebius pictus* | | - | - | - | - | - | - | - | - | - | - | .75 |
| COTTIDAE | | | | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | - | - | - | - | - | - | - | - | - | - | 9.50 |
| BOTHIDAE | | | | | | | | | | | | |
| *Citharichthys stigmaeus* | | - | - | - | - | - | - | - | - | - | - | 3.95 |
| *Paralichthys californicus* | | - | - | - | - | - | - | - | - | - | - | 44.25 |
| PLEURONECTIDAE | | | | | | | | | | | | |
| *Hypsopsetta guttulata* | | - | - | - | - | - | - | - | - | - | - | 28.00 |
| *Parophrys vetulus* | | - | - | - | - | - | - | - | - | - | - | 1.25 |
| *Pleuronichthys coenosus* | | - | - | - | - | - | - | - | - | - | - | .25 |
| *Pleuronichthys ritteri* | | - | - | - | - | - | - | - | - | - | - | 21.50 |
| *Pleuronichthys verticalis* | | - | - | - | - | - | - | - | - | - | - | 10.75 |
| CYNOGLOSSIDAE | | | | | | | | | | | | |
| *Symphurus atricauda* | | - | - | - | - | - | - | - | - | - | - | .50 |
| ALBULIDAE | | | | | | | | | | | | |
| *Albula vulpes* | | - | - | - | - | - | - | - | - | - | - | - |
| Total | | 28.00 | 30.25 | 112.00 | 13.50 | 34.00 | 1.25 | 2.25 | 2.50 | 28.75 | 12. | 11417.16 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING NORMAL IMPINGEMENT
FROM THE PERIOD JAN 3, 1978 THROUGH DEC 27, 1978 BY SPECIES AND SURVEY

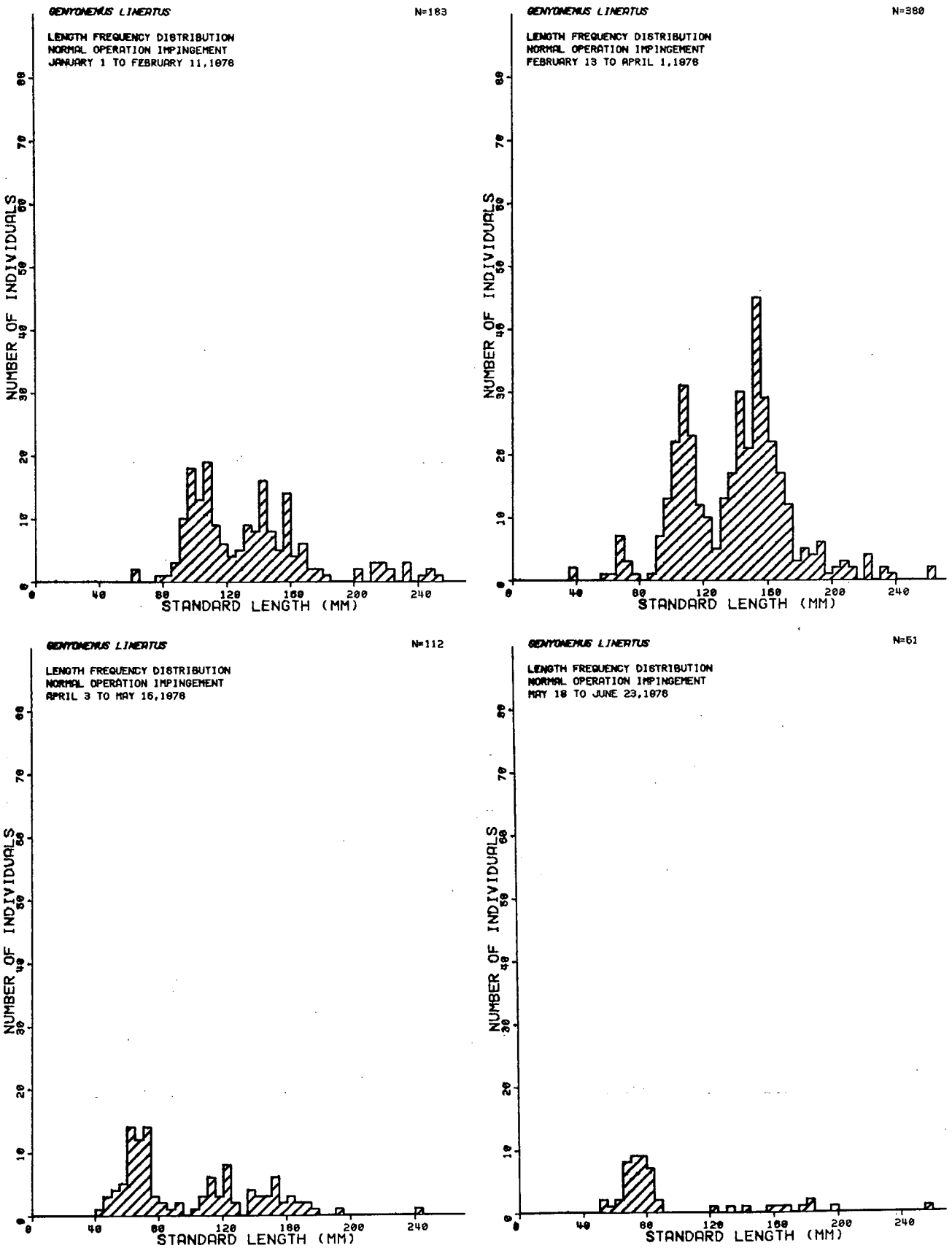
| TAXA | DATE | 11/28 | 11/30 | 12/ 4 | 12/ 5 | 12/12 | 12/13 | 12/14 | 12/21 | 12/26 | 12/27 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| HETERODONTIDAE | | | | | | | | | | | | |
| *Heterodontus francisci* | | - | - | - | - | - | - | - | - | - | - | 9.75 |
| CARCHARHINIDAE | | | | | | | | | | | | |
| *Mustelus californicus* | | - | - | - | - | - | - | - | - | - | - | 70.25 |
| *Triakis semifasciata* | | - | - | - | - | - | - | - | - | - | - | 33.00 |
| SQUALIDAE | | | | | | | | | | | | |
| *Squalus acanthias* | | - | - | - | - | - | - | - | - | - | - | 224.60 |
| SQUATINIDAE | | | | | | | | | | | | |
| *Squatina californica* | | - | - | - | - | - | - | - | - | - | - | 27.50 |
| RHINOBATIDAE | | | | | | | | | | | | |
| *Rhinobatos productus* | | - | - | - | - | - | - | - | - | - | - | 250.25 |
| PLATYRHINIDAE | | | | | | | | | | | | |
| *Platyrhinoidis triseriata* | | - | - | - | - | - | - | - | - | - | - | 69.00 |
| TORPEDINIDAE | | | | | | | | | | | | |
| *Torpedo californica* | | 26.50 | 23.00 | 58.00 | - | 8.75 | - | - | - | 22.00 | 11.00 | 1173.55 |
| RAJIDAE | | | | | | | | | | | | |
| *Raja binoculata* | | - | - | - | - | - | - | - | - | - | - | - |
| *Raja inornata* | | - | - | - | - | - | - | - | - | - | - | 4.75 |
| DASYATIDAE | | | | | | | | | | | | |
| *Urolophus halleri* | | - | - | - | - | - | - | - | - | - | - | 636.50 |
| GYMNURIDAE | | | | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | - | - | - | - | - | - | 36.50 |
| MYLIOBATIDAE | | | | | | | | | | | | |
| *Myliobatis californica* | | - | - | - | - | - | - | - | - | - | - | 370.50 |
| ACIPENSERIDAE | | | | | | | | | | | | |
| *Acipenser transmontanus* | | - | - | - | - | - | - | - | - | - | - | 22.50 |
| MURAENIDAE | | | | | | | | | | | | |
| *Gymnothorax mordax* | | - | - | - | - | - | - | - | - | 5.50 | - | 8.25 |
| OPHICHTHIDAE | | | | | | | | | | | | |
| *Ophichthus zophochir* | | - | - | - | - | - | - | - | - | - | - | .50 |
| ENGRAULIDAE | | | | | | | | | | | | |
| *Anchoa compressa* | | + | + | 0.75 | 0.50 | + | + | 0.25 | 0.25 | - | - | 6.95 |
| *Engraulis mordax* | | + | + | 0.25 | 0.25 | - | + | + | - | - | - | 36.10 |
| SYNODONTIDAE | | | | | | | | | | | | |
| *Synodus lucioceps* | | - | - | - | - | - | - | - | - | - | - | 3.45 |
| BATRACHOIDIDAE | | | | | | | | | | | | |
| *Porichthys myriaster* | | - | - | - | - | - | - | - | - | - | - | 50.00 |
| *Porichthys notatus* | | - | - | - | - | - | - | - | - | - | - | 59.85 |
| OPHIDIIDAE | | | | | | | | | | | | |
| *Chilara taylori* | | - | - | - | - | - | - | - | - | - | - | 3.75 |
| *Otophidium scrippsi* | | - | - | - | - | - | - | - | - | - | - | 8.00 |
| ATHERINIDAE | | | | | | | | | | | | |
| *Atherinops affinis* | | - | - | 21.00 | 1.50 | - | - | - | - | - | - | 33.45 |
| *Atherinopsis californiensis* | | - | - | 1.00 | - | - | - | - | - | - | - | 401.25 |



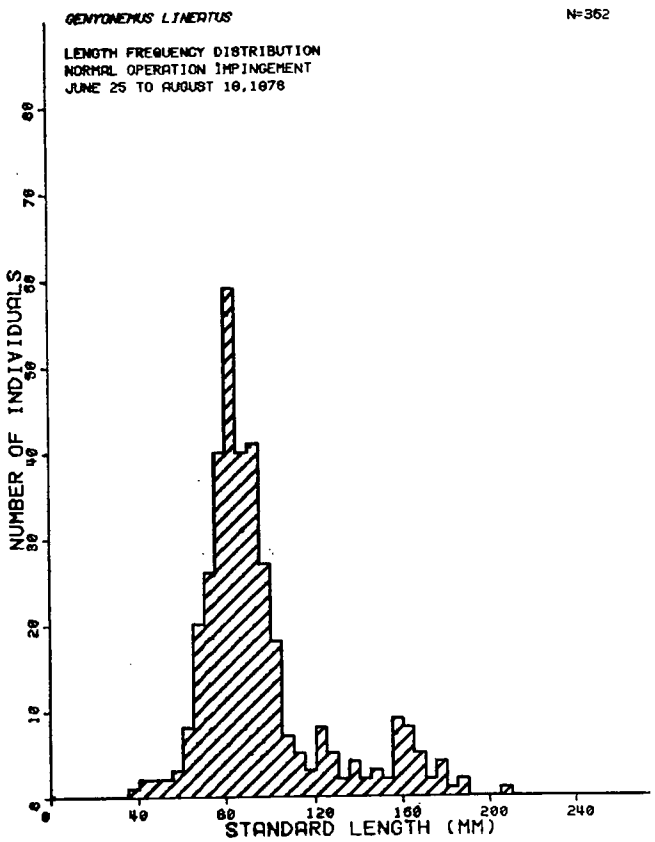

Length frequency histograms of *Seriphus politus* collected during normal operation impingement. The given dates refer to inter-heat-treatment periods.

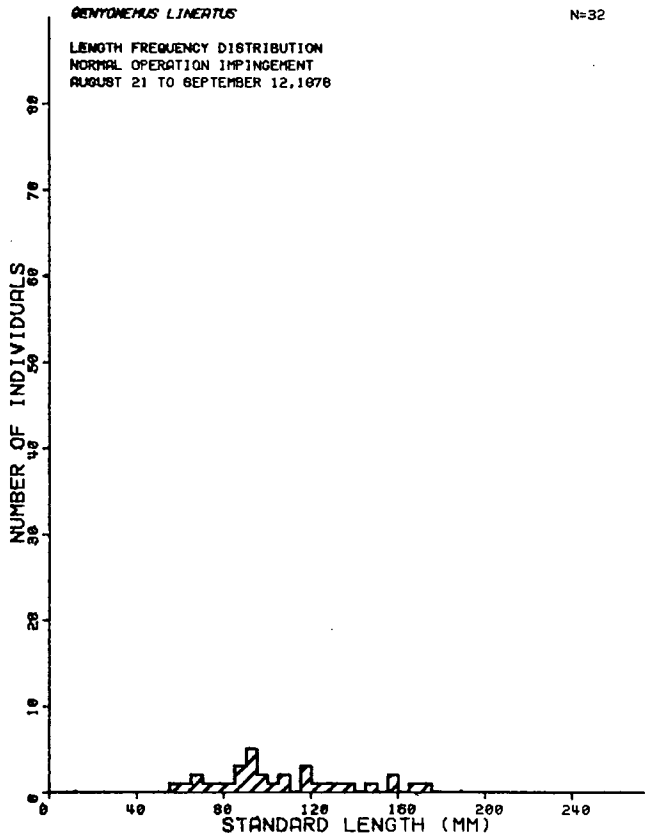


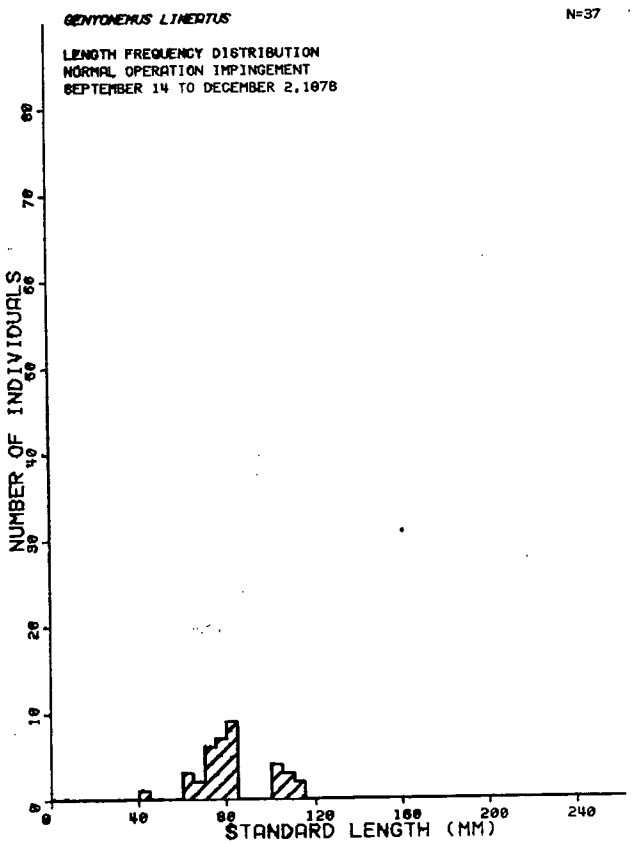

Length frequency histograms of *Seriphus politus* collected during normal operation impingement. (continued)

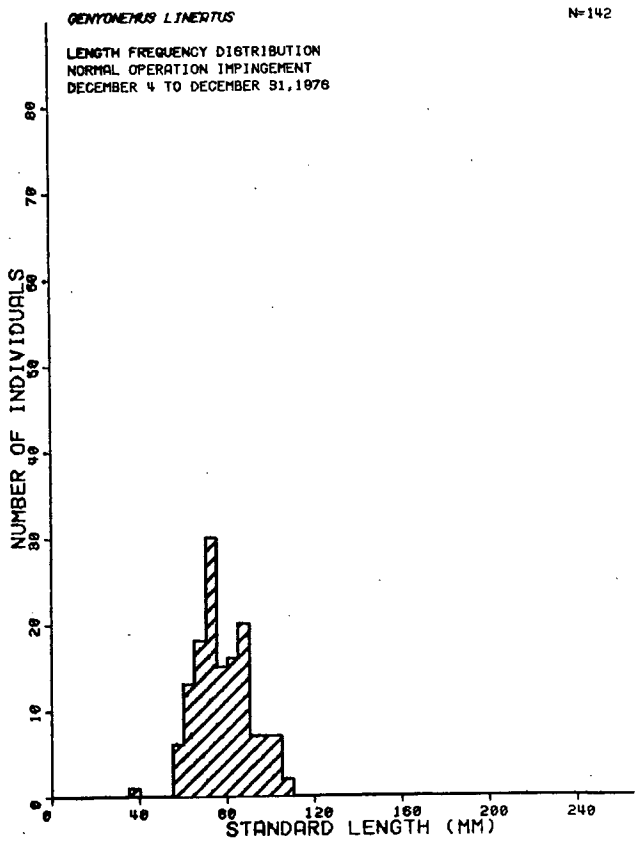



Length frequency histograms of *Genyonemus lineatus* collected during normal operation impingement. The given dates refer to inter-heat-treatment periods.

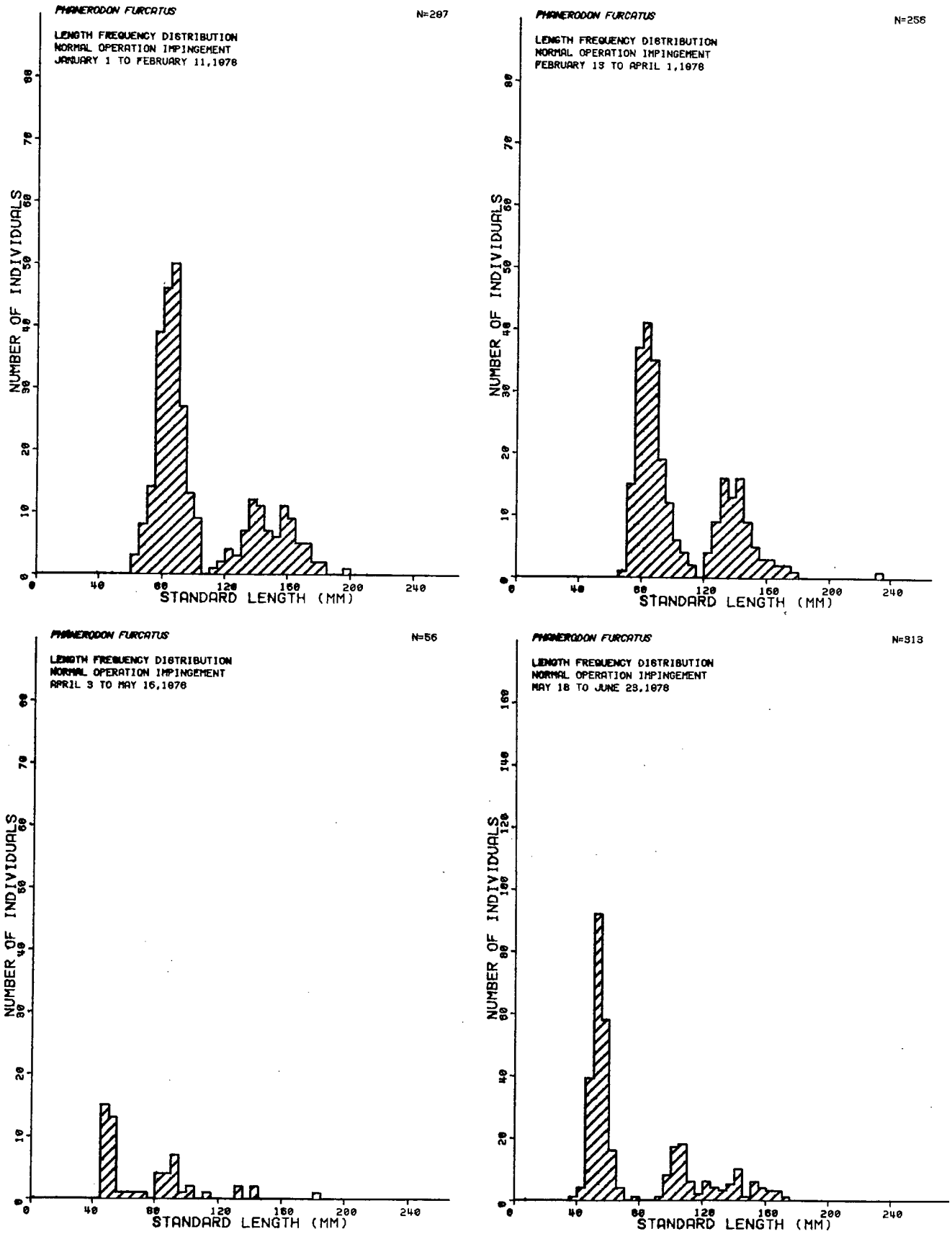


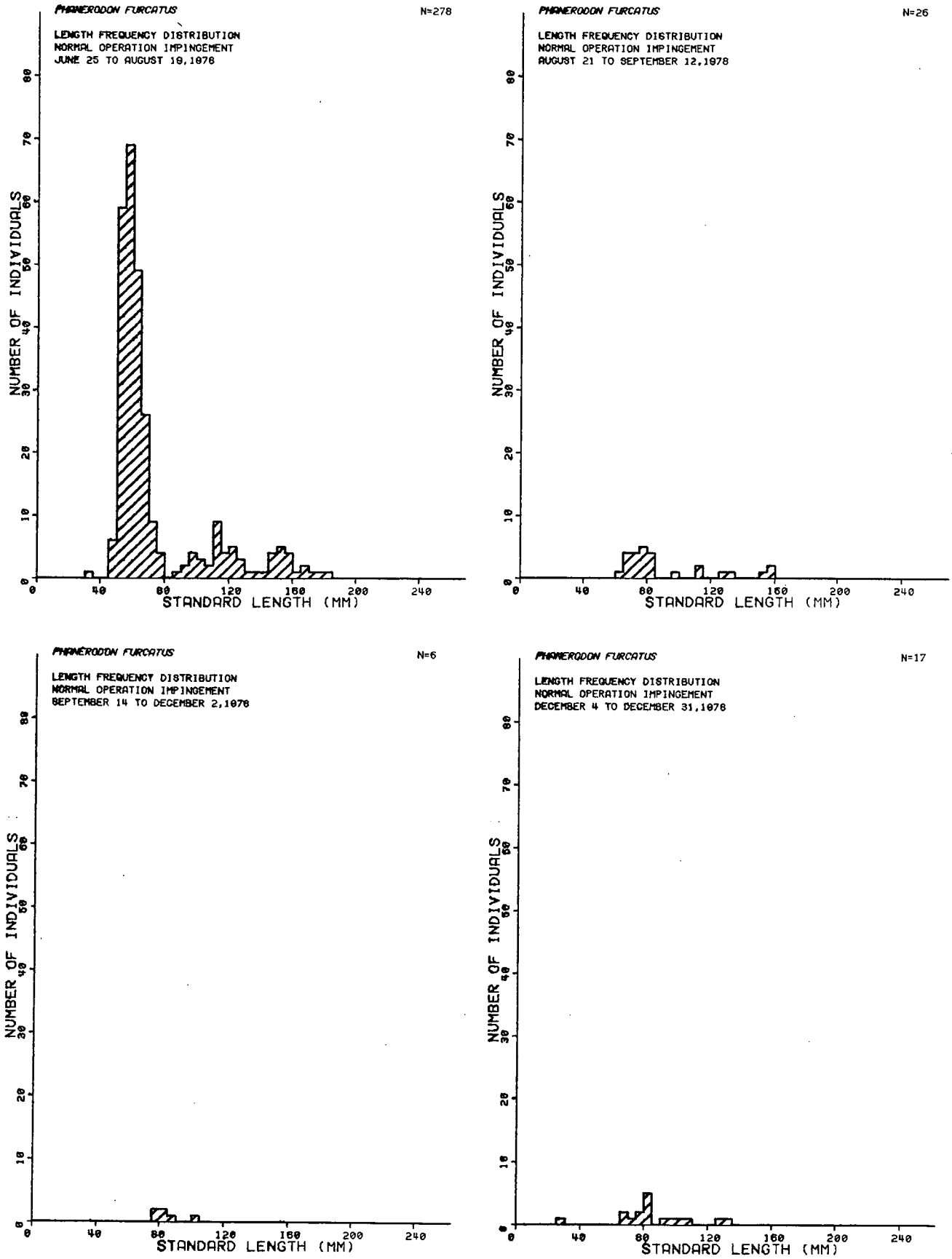



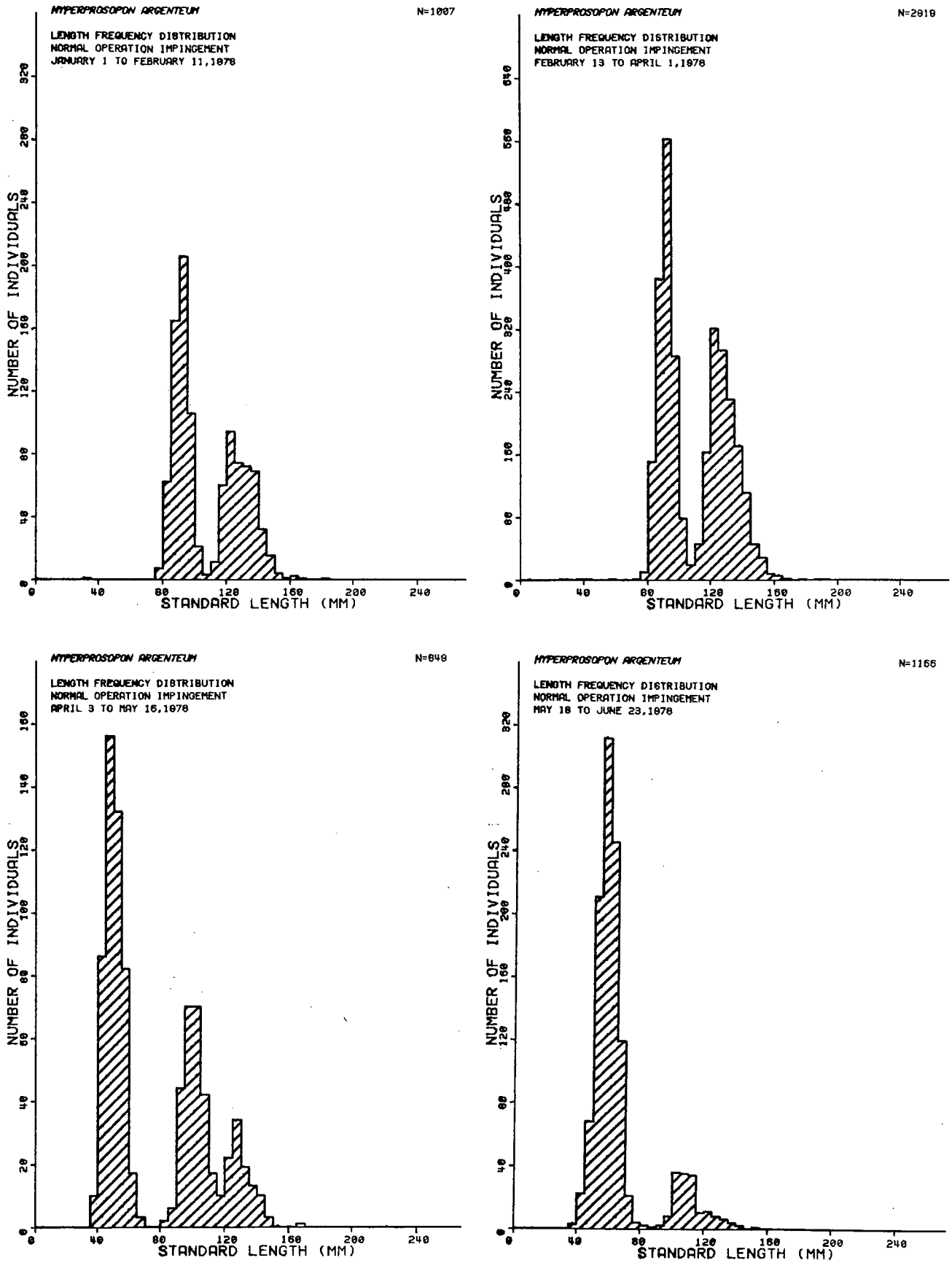

Length frequency histograms of *Genyonemus lineatus* collected during normal operation impingement. (continued)



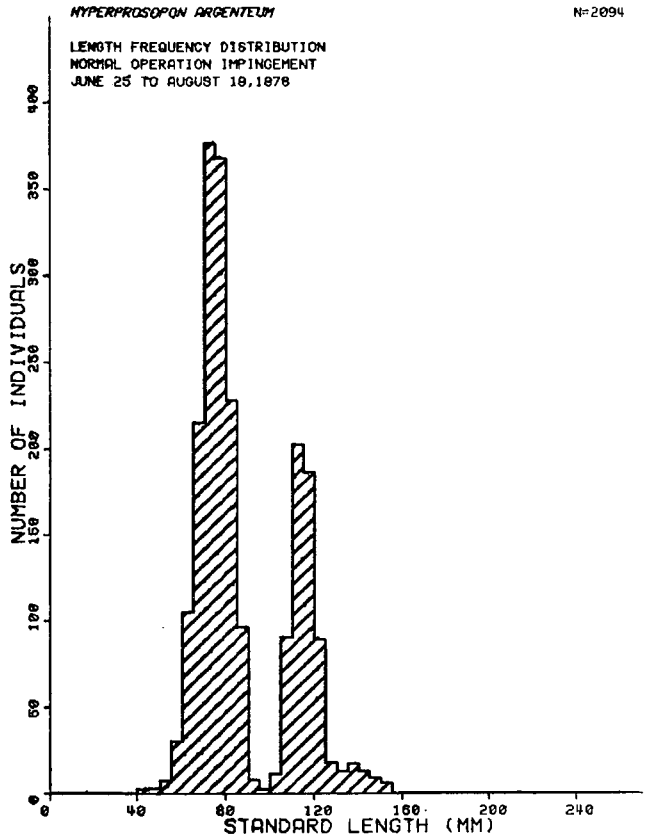

Length frequency histograms of *Phanerodon furcatus* collected during normal operation impingement. The given dates refer to inter-heat-treatment periods.

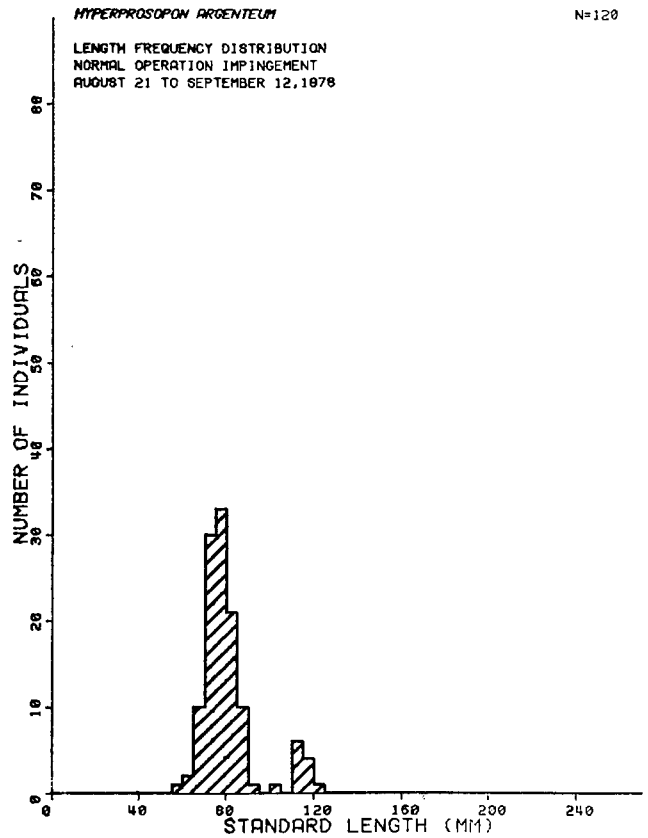


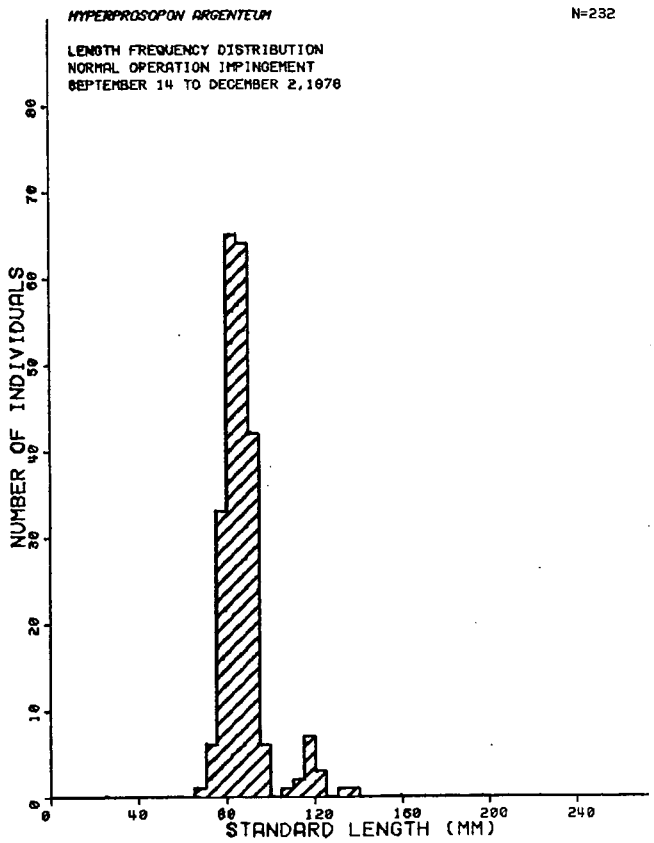

Length frequency histograms of *Phanerodon furcatus* collected during normal operation impingement. (continued)

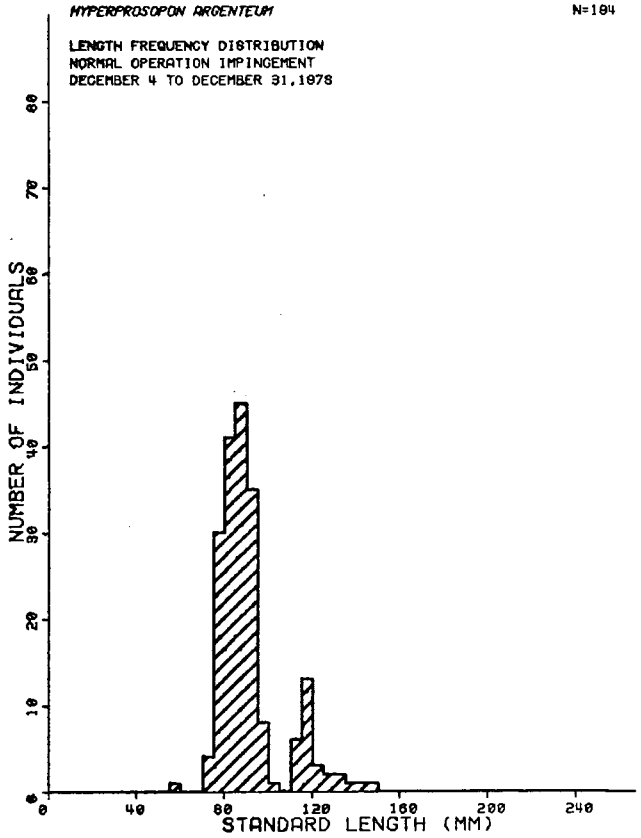



Length frequency histograms of *Hyperprosopon argenteum* collected during normal operation impingement. The given dates refer to inter-heat-treatment periods.




Length frequency histograms of *Hyperprosopon argenteum* collected during normal operation impingement. (continued)

Sex ratio data collected for selected species during normal operation impingement. The given dates refer to inter-heat-treatment periods.

| TAXA | 1/1-2/11 | 2/13-4/1 | 4/3-5/16 | 5/18-6/23 | 6/25-8/19 | 8/21-9/12 | 9/14-12/2 | 12/4-12/31 |
|---|---|---|---|---|---|---|---|---|
| | **MALES** | | | | | | | |
| SCIAENIDAE | | | | | | | | |
| *Genyonemus lineatus* | 14 | 78 | 10 | 1 | 11 | 8 | 0 | 0 |
| *Seriphus politus* | 84 | 832 | 492 | 304 | 389 | 118 | 0 | 0 |
| EMBIOTOCIDAE | | | | | | | | |
| *Hyperprosopon argenteum* | 170 | 1432 | 166 | 77 | 87 | 432 | 128 | 114 |
| *Phanerodon furcatus* | 26 | 30 | 11 | 38 | 6 | 6 | 0 | 0 |
| | **FEMALES** | | | | | | | |
| | 1/1-2/11 | 2/13-4/1 | 4/3-5/6 | 5/18-6/23 | 6/25-8/19 | 8/21-9/12 | 9/14-12/2 | 12/4-12/31 |
| SCIAENIDAE | | | | | | | | |
| *Genyonemus lineatus* | 54 | 191 | 34 | 7 | 15 | 11 | 0 | 0 |
| *Seriphus politus* | 188 | 1062 | 613 | 748 | 1292 | 159 | 0 | 3 |
| EMBIOTOCIDAE | | | | | | | | |
| *Hyperprosopon argenteum* | 159 | 1319 | 196 | 81 | 81 | 551 | 89 | 70 |
| *Phanerodon furcatus* | 70 | 84 | 15 | 61 | 29 | 24 | 6 | 5 |
| | **INDETERMINATE** | | | | | | | |
| | 1/1-2/11 | 2/13-4/1 | 4/3-5/6 | 5/18-6/23 | 6/25-8/19 | 8/21-9/12 | 9/14-12/2 | 12/4-12/31 |
| SCIAENIDAE | | | | | | | | |
| *Genyonemus lineatus* | 16 | 61 | 68 | 36 | 59 | 2 | 8 | 1 |
| *Seriphus politus* | 32 | 1350 | 2032 | 1994 | 2503 | 1089 | 776 | 1242 |
| EMBIOTOCIDAE | | | | | | | | |
| *Hyperprosopon argenteum* | 0 | 1 | 487 | 880 | 1000 | 61 | 15 | 10 |
| *Phanerodon furcatus* | 6 | 102 | 30 | 198 | 48 | 0 | 0 | 1 |

AGGREGATE NUMBER(NO.) OF FISHES TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY

| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | |
| *Mustelus californicus* | | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2.00 |
| SQUALIDAE | | | | | | | | | |
| *Squalus acanthias* | | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5.00 |
| RHINOBATIDAE | | | | | | | | | |
| *Rhinobatos productus* | | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 5.00 |
| PLATYRHINIDAE | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2.00 |
| DASYATIDAE | | | | | | | | | |
| *Dasyatis dipterura* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| *Urolophus halleri* | | 3 | 6 | 7 | 1 | 2 | 19 | 0 | 38.00 |
| GYMNURIDAE | | | | | | | | | |
| *Gymnura marmorata* | | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2.00 |
| MYLIOBATIDAE | | | | | | | | | |
| *Myliobatis californica* | | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4.00 |
| MURAENIDAE | | | | | | | | | |
| *Gymnothorax mordax* | | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 5.00 |
| ENGRAULIDAE | | | | | | | | | |
| *Anchoa compressa* | | 16 | 1 | 1 | 0 | 202 | 9 | 10 | 239.00 |
| *Engraulis mordax* | | 5 | 7 | 3 | 48 | 17 | 26 | 0 | 106.00 |
| SYNODONTIDAE | | | | | | | | | |
| *Synodus lucioceps* | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2.00 |
| BATRACHOIDIDAE | | | | | | | | | |
| *Porichthys notatus* | | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 3.00 |
| OPHIDIIDAE | | | | | | | | | |
| *Otophidium scrippsi* | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2.00 |
| ATHERINIDAE | | | | | | | | | |
| *Atherinops affinis* | | 0 | 10 | 2 | 247 | 24 | 98 | 9 | 390.00 |
| *Atherinopsis californiensis* | | 12 | 136 | 1 | 4 | 0 | 2 | 0 | 155.00 |
| *Leuresthes tenuis* | | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 7.00 |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus* spp. | | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 4.00 |
| SERRANIDAE | | | | | | | | | |
| *Paralabrax clathratus* | | 0 | 0 | 3 | 5 | 5 | 10 | 12 | 35.00 |
| *Paralabrax maculatofasciatus* | | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 4.00 |
| *Paralabrax nebulifer* | | 99 | 127 | 27 | 11 | 37 | 79 | 40 | 420.00 |
| CARANGIDAE | | | | | | | | | |
| *Vomer declivifrons* | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1.0 |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | | 4 | 11 | 34 | 286 | 381 | 266 | 98 | 1080.00 |
| *Xenistius californiensis* | | 0 | 5 | 79 | 10 | 33 | 26 | 0 | 153.00 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | | 17 | 30 | 30 | 47 | 80 | 80 | 43 | 327.00 |
| *Cynoscion nobilis* | | 0 | 2 | 3 | 1 | 6 | 1 | 0 | 13.00 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| SCIAENIDAE | | | | | | | | | |
| *Genyonemus lineatus* | | 3 | 0 | 50 | 100 | 264 | 15 | 6 | 438.00 |
| *Menticirrhus undulatus* | | 2 | 1 | 4 | 0 | 4 | 2 | 0 | 13.00 |
| *Roncador stearnsii* | | 0 | 3 | 17 | 2 | 61 | 877 | 0 | 960.00 |
| *Seriphus politus* | | 142 | 1408 | 1298 | 1410 | 976 | 476 | 59 | 5769.00 |
| *Umbrina roncador* | | 5 | 1 | 1 | 5 | 36 | 111 | 0 | 159.00 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | | 7 | 9 | 10 | 18 | 13 | 1 | 1 | 59.00 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | | 0 | 0 | 0 | 2 | 2 | 0 | 21 | 25.00 |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 5.00 |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | | 0 | 1 | 1 | 5 | 1 | 6 | 0 | 14.00 |
| *Brachyistius frenatus* | | 1 | 65 | 34 | 4 | 4 | 6 | 0 | 114.00 |
| *Cymatogaster aggregata* | | 0 | 2 | 0 | 1 | 16 | 4 | 1 | 24.00 |
| *Damalichthys vacca* | | 0 | 7 | 0 | 9 | 7 | 10 | 15 | 48.00 |
| *Embiotoca jacksoni* | | 4 | 22 | 22 | 11 | 32 | 8 | 7 | 106.00 |
| *Hyperprosopon argenteum* | | 296 | 6039 | 353 | 115 | 2207 | 451 | 9 | 9470.00 |
| *Micrometrus minimus* | | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 4.00 |
| *Phanerodon furcatus* | | 2 | 47 | 25 | 3 | 126 | 46 | 49 | 298.00 |
| *Rhacochilus toxotes* | | 0 | 3 | 2 | 1 | 6 | 2 | 1 | 15.00 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | | 5 | 1 | 2 | 11 | 8 | 16 | 11 | 54.00 |
| *Hypsypops rubicundus* | | 0 | 1 | 4 | 2 | 1 | 1 | 1 | 10.00 |
| LABRIDAE | | | | | | | | | |
| *Oxyjulis californica* | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| *Pimelometopon pulchrum* | | 2 | 4 | 1 | 1 | 5 | 4 | 7 | 24.00 |
| CLINIDAE | | | | | | | | | |
| *Heterostichus rostratus* | | 4 | 7 | 3 | 0 | 0 | 3 | 0 | 17.00 |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 3.00 |
| *Hypsoblennius jenkinsi* | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1.00 |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | | 0 | 680 | 0 | 2 | 373 | 233 | 0 | 1288.00 |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | | 9 | 7 | 0 | 4 | 5 | 68 | 11 | 104.00 |
| *Sebastes auriculatus* | | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 22.00 |
| *Sebastes paucispinis* | | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19.00 |
| *Sebastes rastrelliger* | | 5 | 2 | 6 | 6 | 2 | 7 | 2 | 30.00 |
| *Sebastes serranoides* | | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2.00 |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 2 | 3 | 1 | 1 | 0 | 2 | 1 | 10.00 |

AGGREGATE FISH ABUNDANCE DATA TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY (CONTINUED)

| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| *Paralichthys californicus* | | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 3.00 |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| Total | | 672 | 8656 | 2055 | 2377 | 4970 | 2971 | 415 | 22116.00 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY

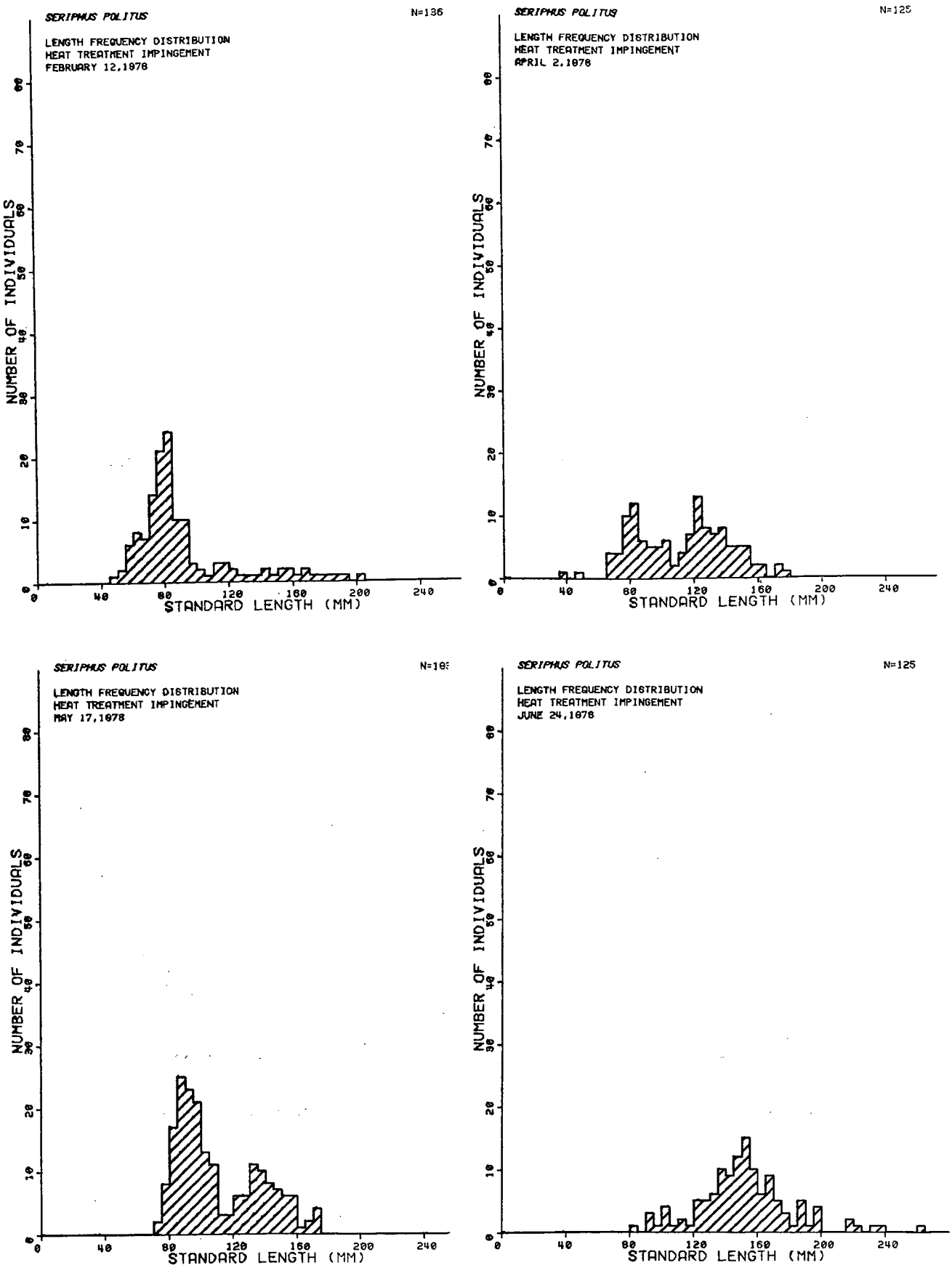
| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| CARCHARHINIDAE | | | | | | | | | |
| *Mustelus californicus* | | - | - | 3.50 | - | - | 0.50 | - | 4.00 |
| SQUALIDAE | | | | | | | | | |
| *Squalus acanthias* | | 21.00 | - | - | - | - | - | - | 21.00 |
| RHINOBATIDAE | | | | | | | | | |
| *Rhinobatos productus* | | - | - | 12.00 | - | 3.00 | 25.50 | - | 40.50 |
| PLATYRHINIDAE | | | | | | | | | |
| *Platyrhinoidis triseriata* | | 0.50 | - | - | - | 0.75 | - | - | 1.25 |
| DASYATIDAE | | | | | | | | | |
| *Dasyatis dipterura* | | 2.00 | - | - | - | - | - | - | 2.00 |
| *Urolophus halleri* | | 4.25 | 7.25 | 5.50 | 0.50 | 2.25 | 17.25 | - | 37.00 |
| GYMNURIDAE | | | | | | | | | |
| *Gymnura marmorata* | | - | - | - | - | 11.50 | - | - | 11.50 |
| MYLIOBATIDAE | | | | | | | | | |
| *Myliobatis californica* | | 82.25 | 5.50 | - | - | - | - | - | 87.75 |
| MURAENIDAE | | | | | | | | | |
| *Gymnothorax mordax* | | - | 3.00 | 7.00 | - | 9.25 | - | - | 19.25 |
| ENGRAULIDAE | | | | | | | | | |
| *Anchoa compressa* | | 0.50 | + | + | - | 9.00 | 0.25 | + | 9.75 |
| *Engraulis mordax* | | + | 0.25 | + | 0.75 | 0.25 | 0.25 | - | 1.50 |
| SYNODONTIDAE | | | | | | | | | |
| *Synodus lucioceps* | | 0.25 | - | - | - | - | - | - | 0.25 |
| BATRACHOIDIDAE | | | | | | | | | |
| *Porichthys notatus* | | - | - | 0.25 | - | 1.00 | - | - | 1.25 |
| OPHIDIIDAE | | | | | | | | | |
| *Otophidium scrippsi* | | 0.25 | - | - | - | - | - | - | 0.25 |
| ATHERINIDAE | | | | | | | | | |
| *Atherinops affinis* | | - | 0.50 | + | 14.00 | 1.25 | 5.25 | 1.25 | 22.25 |
| *Atherinopsis californiensis* | | 3.00 | 29.25 | 0.50 | 1.25 | - | 1.00 | - | 35.00 |
| *Leuresthes tenuis* | | + | 0.25 | + | - | - | - | - | 0.25 |
| SYNGNATHIDAE | | | | | | | | | |
| *Syngnathus* spp. | | + | + | - | - | + | - | - | - |
| SERRANIDAE | | | | | | | | | |
| *Paralabrax clathratus* | | - | - | 3.50 | 2.25 | 4.75 | 1.75 | 5.00 | 17.25 |
| *Paralabrax maculatofasciatus* | | - | - | - | - | 1.00 | 0.25 | 0.75 | 2.00 |
| *Paralabrax nebulifer* | | 31.25 | 31.00 | 10.25 | 6.50 | 24.00 | 22.00 | 9.25 | 134.25 |
| CARANGIDAE | | | | | | | | | |
| *Vomer declivifrons* | | - | - | - | - | 0.25 | - | - | 0.25 |
| PRISTIPOMATIDAE | | | | | | | | | |
| *Anisotremus davidsonii* | | 1.50 | 5.00 | 32.50 | 279.00 | 349.75 | 187.25 | 25.75 | 880.75 |
| *Xenistius californiensis* | | - | 0.25 | 3.25 | 0.50 | 2.00 | 1.50 | - | 7.50 |
| SCIAENIDAE | | | | | | | | | |
| *Cheilotrema saturnum* | | 3.25 | 13.00 | 11.75 | 19.50 | 35.00 | 25.25 | 10.25 | 118.00 |
| *Cynoscion nobilis* | | - | 0.50 | 1.50 | 0.25 | 1.50 | 1.50 | - | 5.25 |

AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY (CONTINUED)

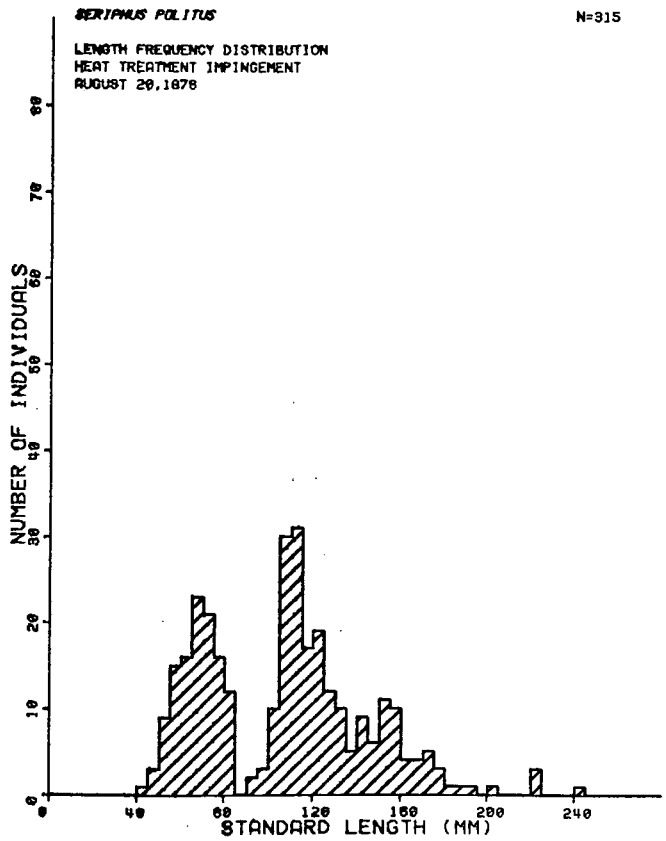
| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| SCIAENIDAE | | | | | | | | | |
| *Genyonemus lineatus* | | 0.50 | - | 9.00 | 23.25 | 18.25 | 4.25 | 0.50 | 55.75 |
| *Menticirrhus undulatus* | | 0.75 | 0.25 | 2.25 | - | 4.50 | 1.50 | - | 9.25 |
| *Roncador stearnsii* | | - | 2.00 | 30.25 | 1.50 | 109.00 | 1704.75 | - | 142.75 |
| *Seriphus politus* | | 7.00 | 79.00 | 61.25 | 156.50 | 68.50 | 19.00 | 3.50 | 394.75 |
| *Umbrina roncador* | | 2.75 | 0.25 | 0.75 | 2.75 | 16.75 | 59.25 | - | 82.50 |
| GIRELLIDAE | | | | | | | | | |
| *Girella nigricans* | | 12.50 | 18.00 | 21.25 | 30.50 | 23.50 | 3.75 | 0.75 | 110.25 |
| SCORPIDIDAE | | | | | | | | | |
| *Medialuna californiensis* | | - | - | - | 1.00 | 1.00 | - | 16.50 | 18.50 |
| KYPHOSIDAE | | | | | | | | | |
| *Hermosilla azurea* | | - | - | 2.75 | 2.00 | 3.00 | - | - | 7.75 |
| EMBIOTOCIDAE | | | | | | | | | |
| *Amphistichus argenteus* | | - | 0.25 | 0.75 | 2.00 | 0.50 | 1.25 | - | 4.75 |
| *Brachyistius frenatus* | | + | 4.50 | 1.25 | 0.25 | 0.25 | 0.50 | - | 6.75 |
| *Cymatogaster aggregata* | | - | + | - | 0.25 | 0.75 | 0.25 | + | 1.25 |
| *Damalichthys vacca* | | - | 4.00 | - | 3.25 | 4.25 | 6.75 | 9.50 | 27.75 |
| *Embiotoca jacksoni* | | 1.25 | 8.25 | 8.50 | 3.75 | 13.50 | 3.50 | 2.25 | 41.00 |
| *Hyperprosopon argenteum* | | 57.25 | 670.00 | 52.25 | 7.75 | 140.50 | 51.00 | 0.75 | 979.50 |
| *Micrometrus minimus* | | 0.25 | - | - | - | + | - | - | 0.25 |
| *Phanerodon furcatus* | | + | 9.50 | 2.75 | 0.25 | 14.50 | 10.50 | 6.50 | 44.00 |
| *Rhacochilus toxotes* | | - | 4.00 | 1.50 | 1.00 | 5.00 | 2.50 | + | 14.00 |
| POMACENTRIDAE | | | | | | | | | |
| *Chromis punctipinnis* | | 0.75 | 0.25 | 0.50 | 1.50 | 1.00 | 1.75 | 1.50 | 7.25 |
| *Hypsypops rubicundus* | | - | 1.00 | 3.00 | 2.00 | 1.00 | 1.50 | 1.00 | 9.50 |
| LABRIDAE | | | | | | | | | |
| *Oxyjulis californica* | | - | + | - | - | - | - | - | - |
| *Pimelometopon pulchrum* | | 0.50 | 1.25 | 0.75 | 6.25 | 1.50 | 6.75 | 7.25 | 24.25 |
| CLINIDAE | | | | | | | | | |
| *Heterostichus rostratus* | | 0.75 | 0.50 | 1.00 | - | - | 0.50 | - | 2.75 |
| BLENNIIDAE | | | | | | | | | |
| *Hypsoblennius gilberti* | | + | - | + | - | - | - | - | - |
| *Hypsoblennius jenkinsi* | | - | - | - | - | - | + | - | - |
| STROMATEIDAE | | | | | | | | | |
| *Peprilus simillimus* | | - | 57.25 | - | + | 6.50 | 5.00 | - | 68.75 |
| SCORPAENIDAE | | | | | | | | | |
| *Scorpaena guttata* | | 2.50 | 1.50 | - | 0.50 | 1.25 | 12.25 | 2.75 | 20.75 |
| *Sebastes auriculatus* | | - | - | 4.25 | - | - | - | - | 4.25 |
| *Sebastes paucispinis* | | - | - | - | - | 0.75 | - | - | 0.75 |
| *Sebastes rastrelliger* | | 1.75 | 0.50 | 1.75 | 2.25 | 1.00 | 1.50 | 1.25 | 10.00 |
| *Sebastes serranoides* | | 0.25 | - | - | - | - | - | - | 0.25 |
| COTTIDAE | | | | | | | | | |
| *Scorpaenichthys marmoratus* | | 0.50 | 3.00 | 0.25 | 0.25 | - | 0.75 | 1.00 | 5.75 |

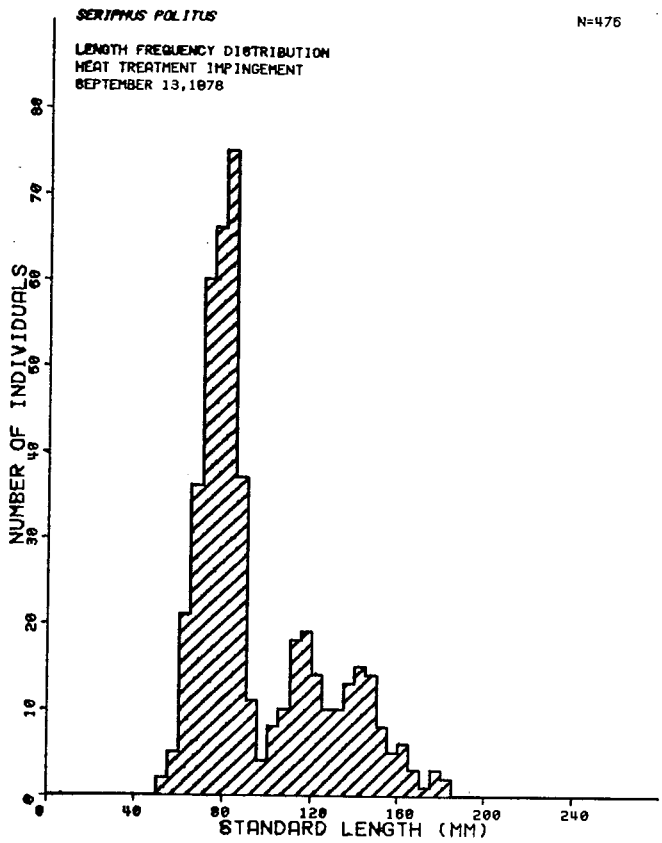
AGGREGATE WEIGHT(LBS) OF FISHES TAKEN DURING HEAT TREATMENT SAMPLES
FROM THE PERIOD FEB 12, 1978 THROUGH DEC 3, 1978 BY SPECIES AND SURVEY (CONTINUED)

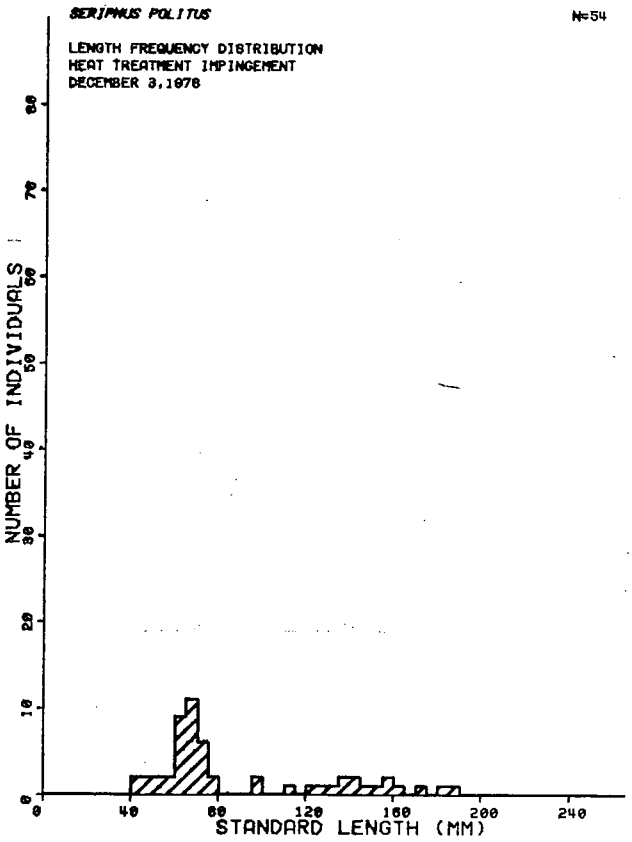
| TAXA | DATE | 2/12 | 4/ 2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/ 3 | TOTAL WEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | |
| BOTHIDAE | | | | | | | | | |
| *Citharichthys stigmaeus* | | + | - | - | - | - | - | - | - |
| *Paralichthys californicus* | | 0.50 | - | - | 0.50 | - | - | - | 1.00 |
| PLEURONECTIDAE | | | | | | | | | |
| *Hypsopsetta guttulata* | | 0.50 | - | - | - | - | - | - | 0.50 |
| Total | | 240.25 | 961.00 | 297.50 | 573.75 | 893.25 | 483.50 | 107.25 | 3556.50 |



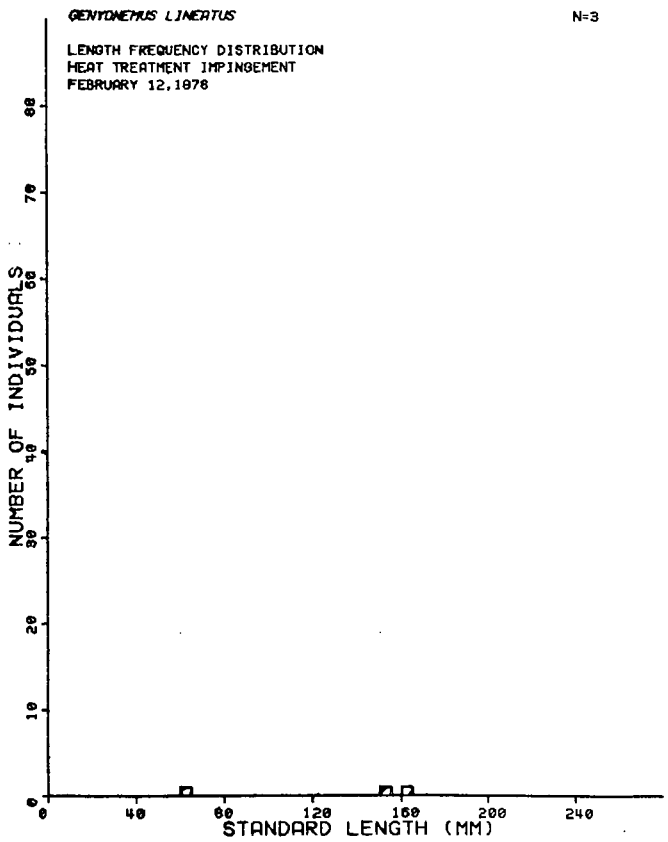

Length frequency histograms of *Seriphus politus* collected during heat treatment impingement.



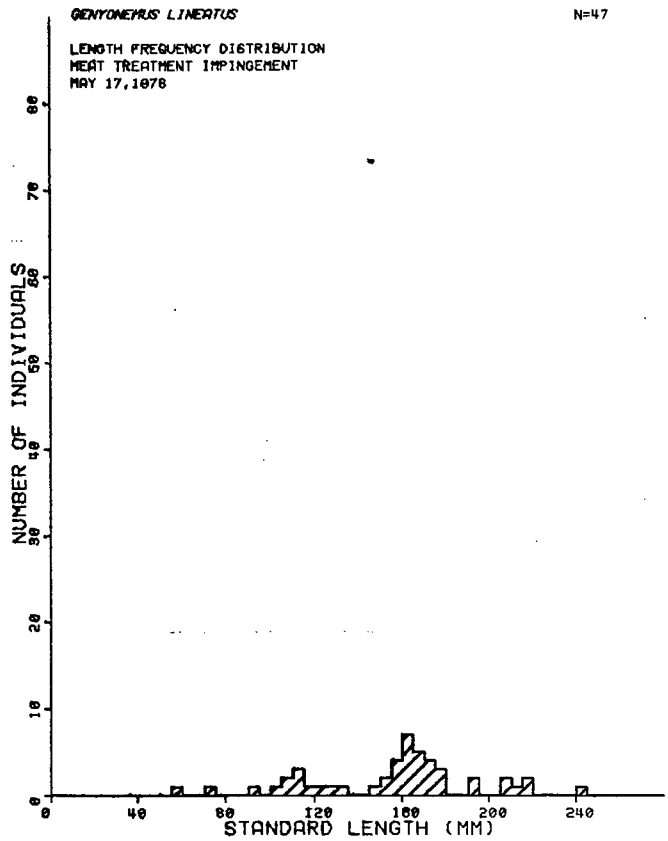



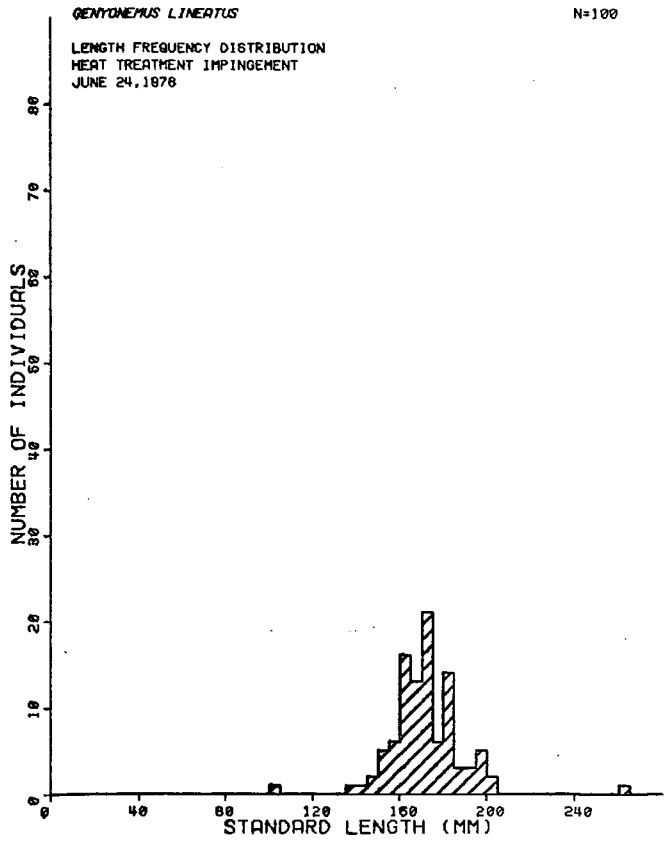




Length frequency histograms of *Seriphus politus* collected during heat treatment impingement. (continued)

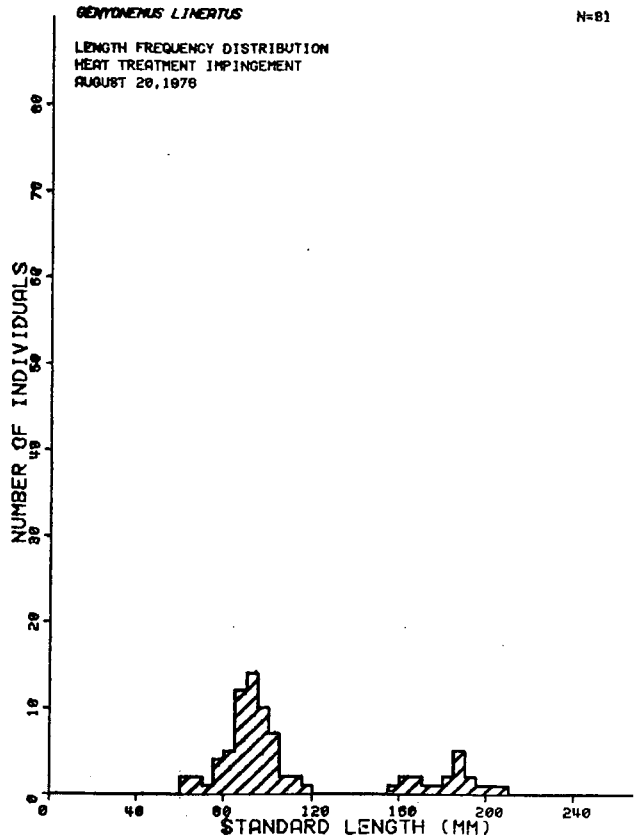


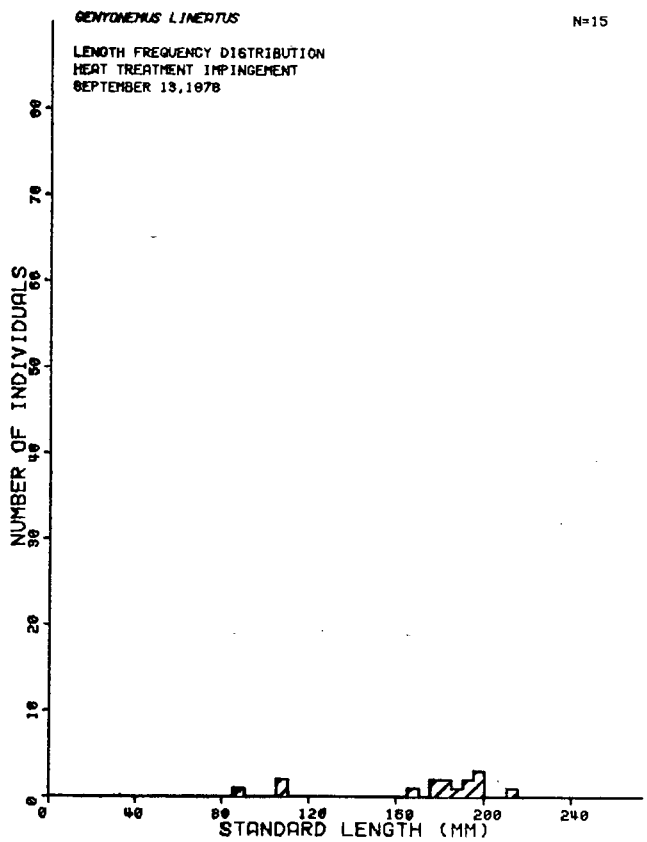

No *Genyonemus lineatus* were caught during April heat treatment

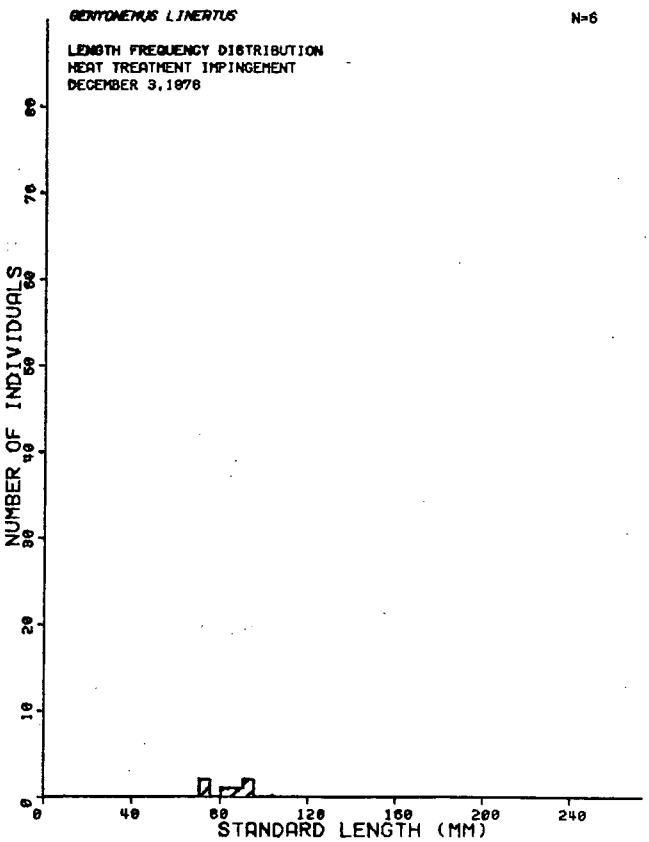


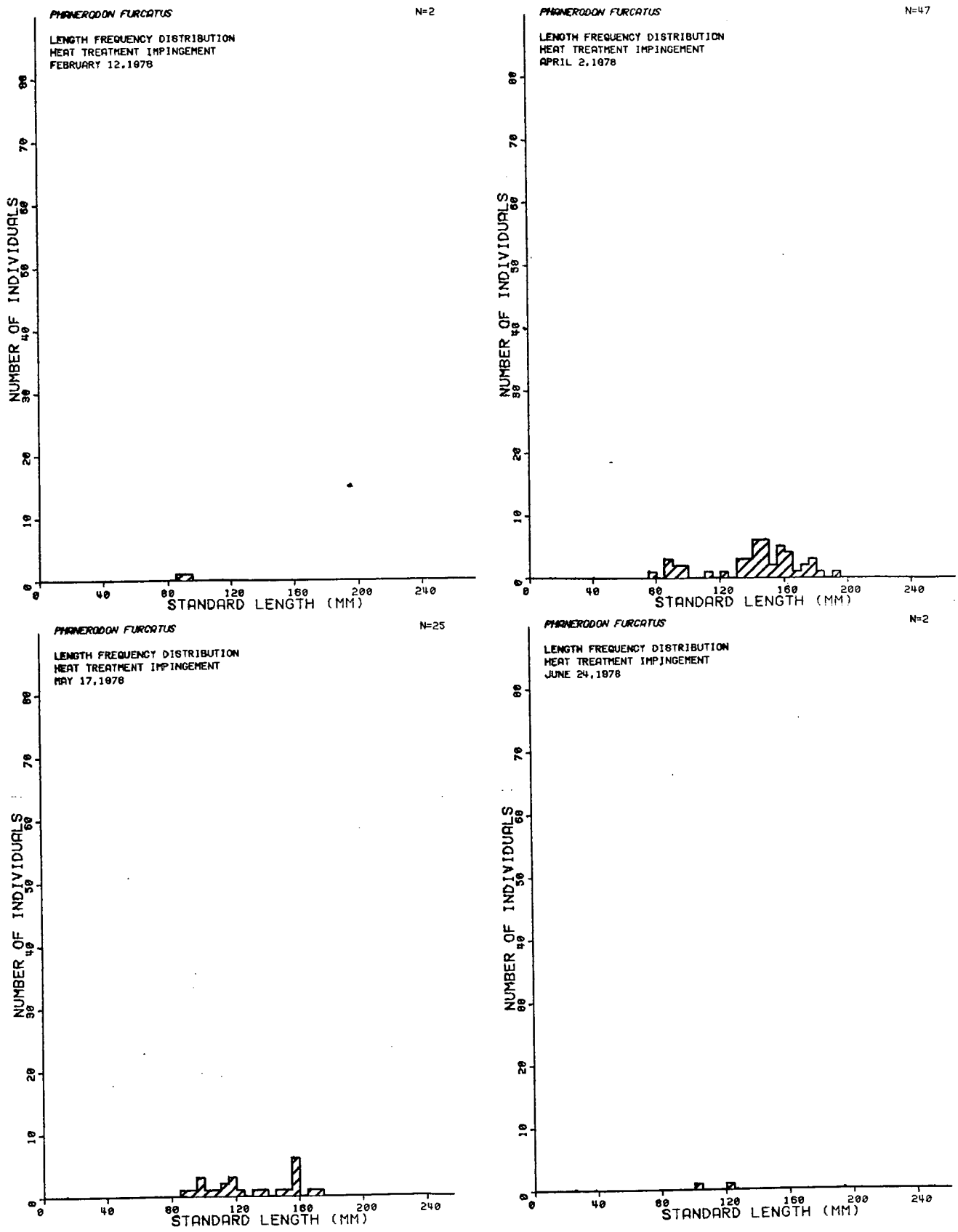

Length frequency histograms of *Genyonemus lineatus* collected during heat treatment impingement.



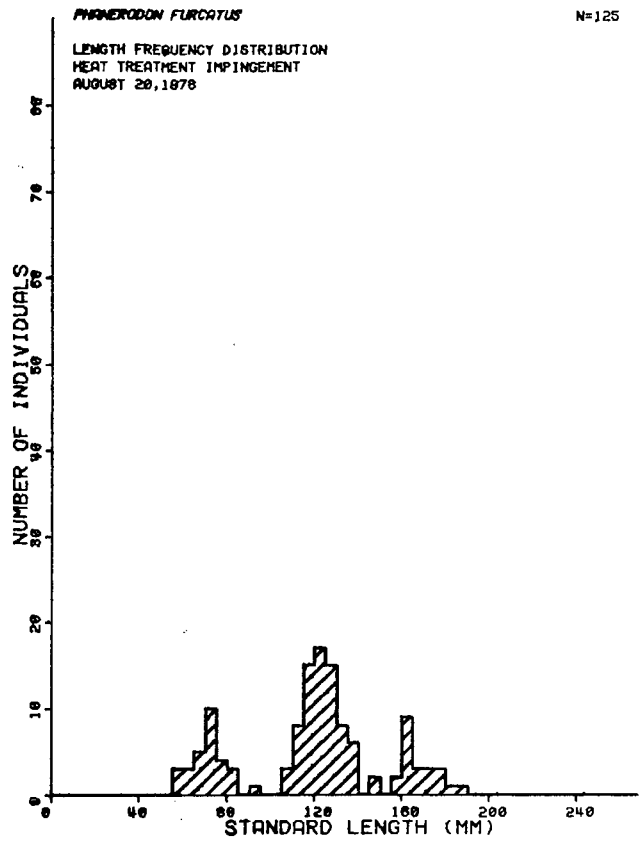



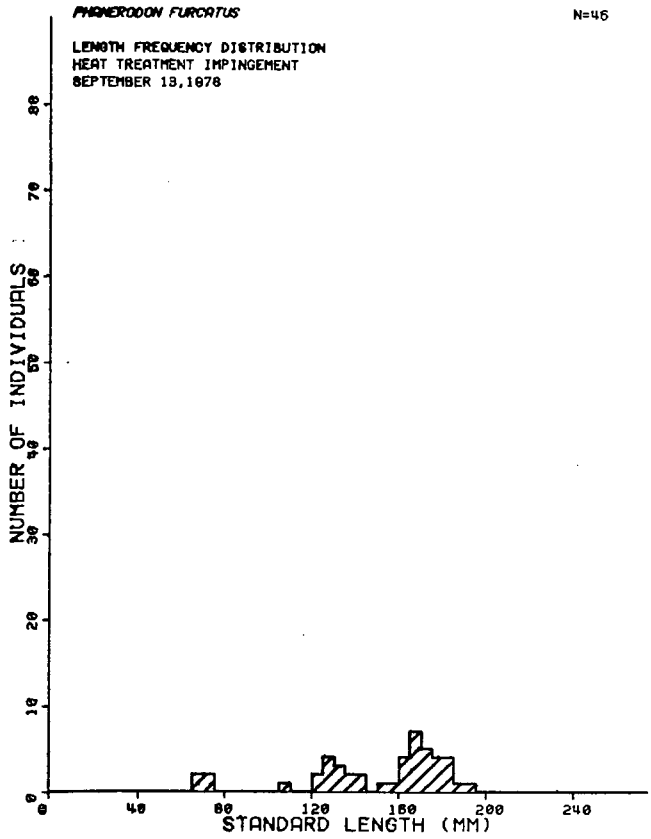



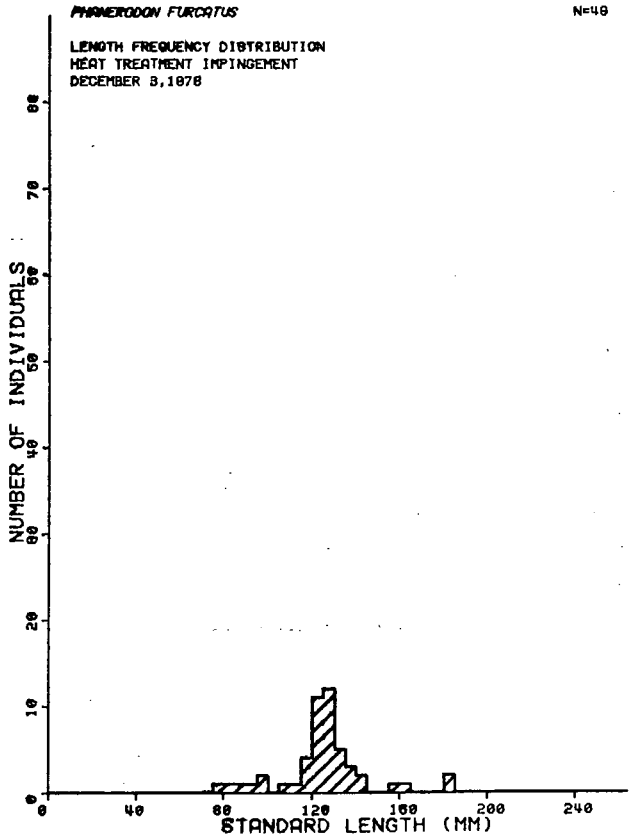

Length frequency histograms of *Genyonemus lineatus* collected during heat treatment inpingement. (continued)



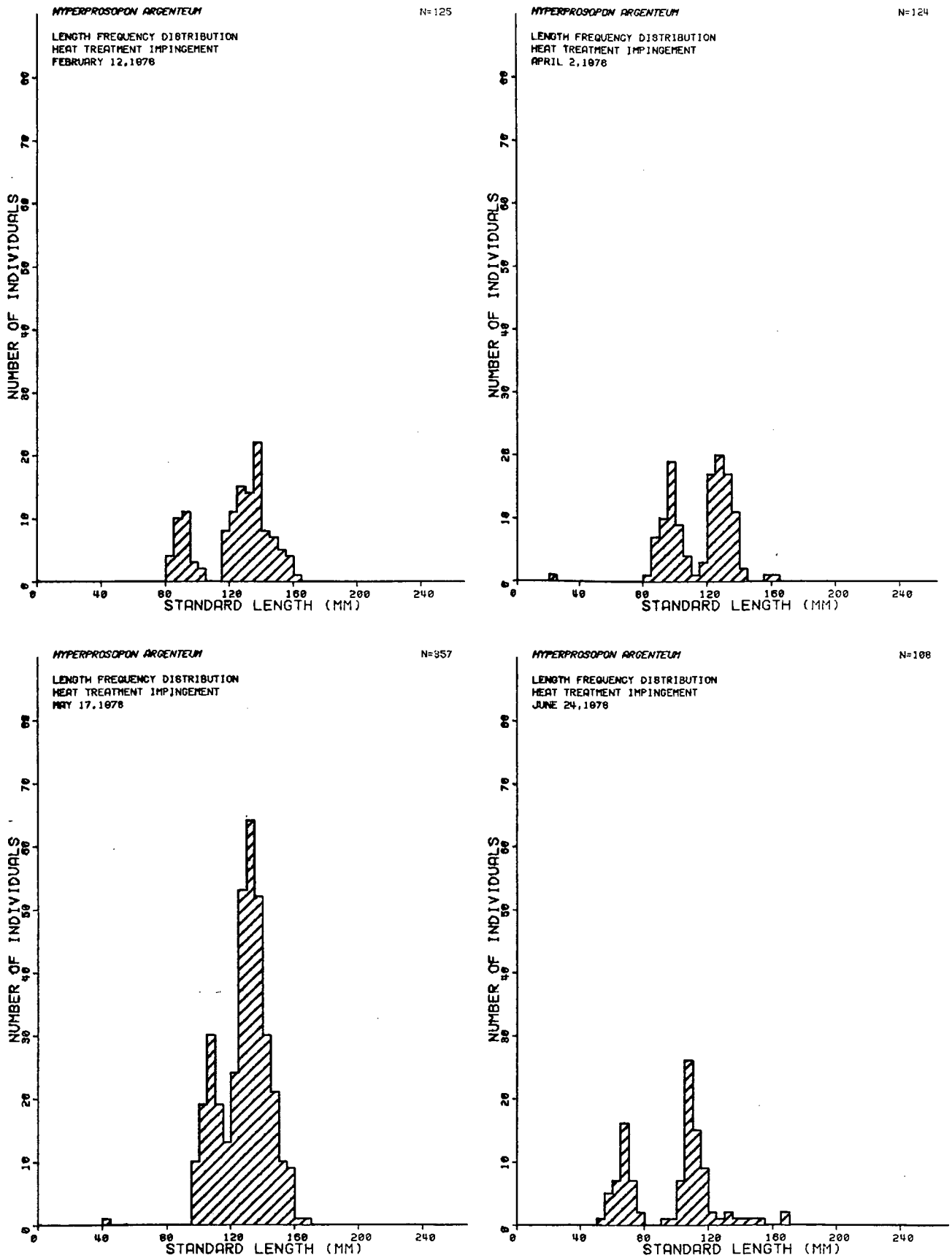

Length frequency histograms of *Phanerodon furcatus* collected during heat treatment impingement.



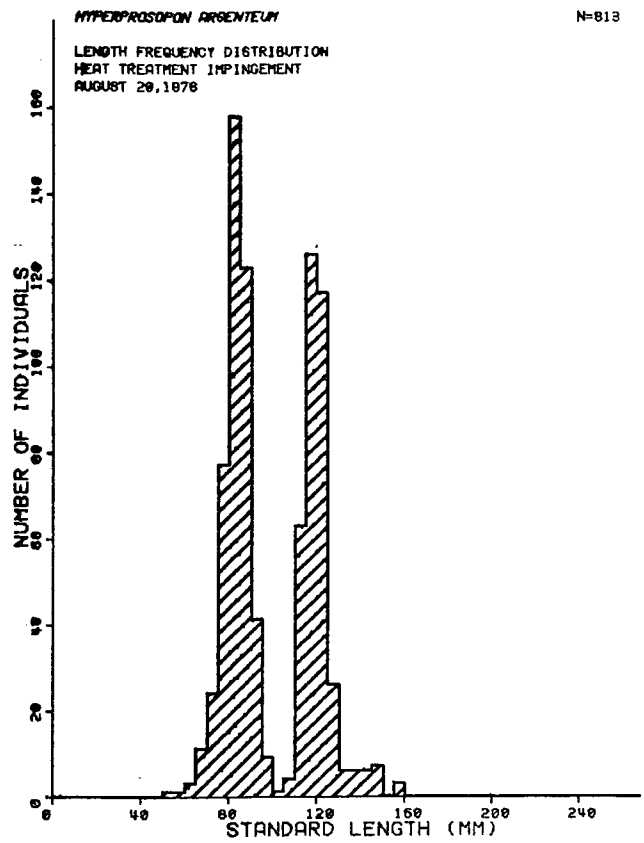



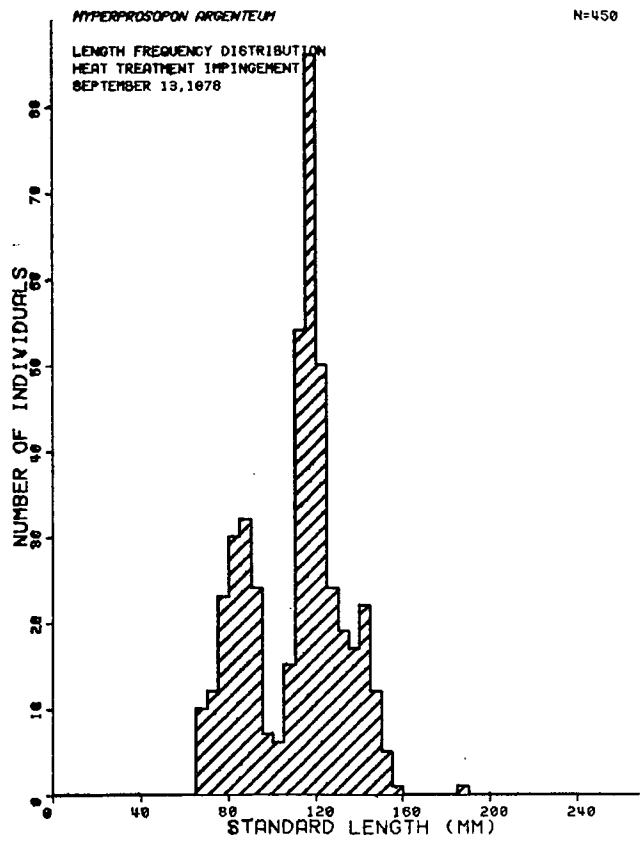



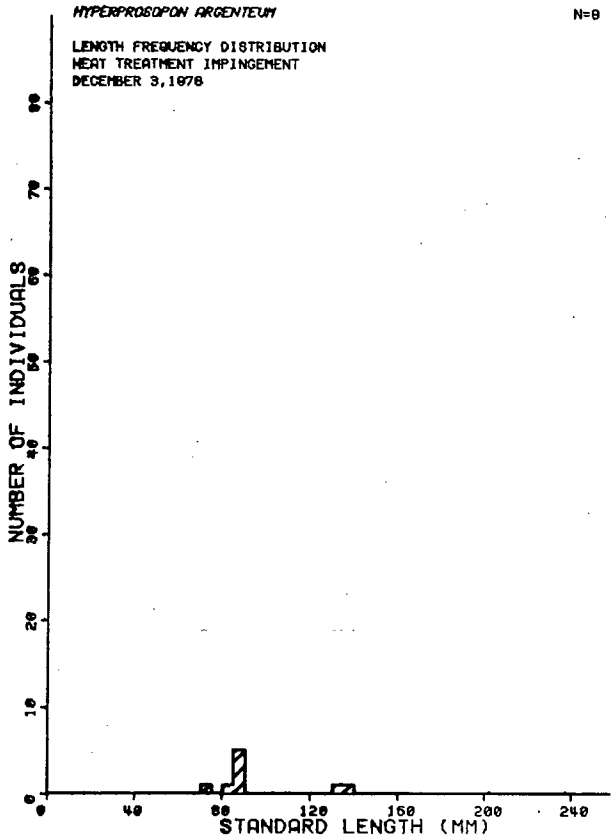

Length frequency histograms of *Phanerodon furcatus* collected during heat treatment impingement. (continued)




Length frequency histograms of *Hyperprosopon argenteum* collected during heat treatment impingement.




Length frequency histograms of *Hyperprosopon argenteum* collected during heat treatment impingement. (continued)

Sex ratio data collected for selected species during heat treatment impingement.

| TAXA | MALES 2/12 | 4/2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/3 |
|---|---|---|---|---|---|---|---|
| SCIAENIDAE | | | | | | | |
| *Genyonemus lineatus* | 0 | 0 | 0 | 0 | 3 | 2 | 0 |
| *Seriphus politus* | 5 | 2 | 16 | 0 | 31 | 17 | 0 |
| EMBIOTOCIDAE | | | | | | | |
| *Hyperprosopon argenteum* | 37 | 5 | 78 | 7 | 307 | 106 | 8 |
| *Phanerodon furcatus* | 0 | 2 | 1 | 0 | 1 | 0 | 14 |

| | FEMALES 2/12 | 4/2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/3 |
|---|---|---|---|---|---|---|---|
| SCIAENIDAE | | | | | | | |
| *Genyonemus lineatus* | 1 | 0 | 0 | 0 | 7 | 5 | 0 |
| *Seriphus politus* | 6 | 8 | 62 | 10 | 88 | 13 | 4 |
| EMBIOTOCIDAE | | | | | | | |
| *Hyperprosopon argenteum* | 67 | 4 | 208 | 3 | 441 | 63 | 1 |
| *Phanerodon furcatus* | 2 | 8 | 13 | 2 | 1 | 15 | 32 |

| | INDETERMINATE 2/12 | 4/2 | 5/17 | 6/24 | 8/20 | 9/13 | 12/3 |
|---|---|---|---|---|---|---|---|
| SCIAENIDAE | | | | | | | |
| *Genyonemus lineatus* | 2 | 0 | 0 | 100 | 71 | 3 | 1 |
| *Seriphus politus* | 124 | 0 | 115 | 115 | 196 | 88 | 50 |
| EMBIOTOCIDAE | | | | | | | |
| *Hyperprosopon argenteum* | 21 | 0 | 4 | 98 | 65 | 15 | 0 |
| *Phanerodon furcatus* | 0 | 0 | 0 | 0 | 0 | 4 | 3 |

# V. FISH - FISHERIES STATISTICS

Unpublished commercial and sportfisheries catch data from the California Department of Fish and Game Statistical Blocks 737, 756, 757, 801, and 802 are obtained each year in fulfillment of ETS section 3.1.2.a (1)B. The methods used in analyzing these data are presented below.

## A. METHODS

Analysis of fisheries statistics is based on California Department of Fish and Game Statistical Block Catch Data for Blocks 737, 756, 757, 801, and 802. Each block covers an area approximately 10 minutes square. Block 756 is contiguous with the portion of the coastline in which SONGS Units 1, 2, and 3 are located. Blocks 757 and 802 are contiguous with Block 756, and Blocks 737 and 801 are contiguous with Block 757 and 802, respectively (Figure IV-1).

Data consists of the taxa and number of individuals per taxa caught by the sportfishing industry as represented by partyboat catch for each of the aforementioned fish blocks. In addition, the number of angler hours and catch/effort for each block is tabulated. Commercial fisheries data consist of the taxa, and total weight of fish caught per taxa in each of the previously mentioned fish blocks. These catch statistics are tabulated and summarized. Results are compared and contrasted between blocks. Sportfishing catch per unit effort are contrasted with previous years.

Data utilized in this analysis is compiled by the California Department of Fish and Game on a yearly basis. This compilation of the data normally requires two to three years, however the Department of Fish and Game is behind schedule; thus the 1976 data which would normally be reported is unavailable at this time. Data will be reported in the analysis report.

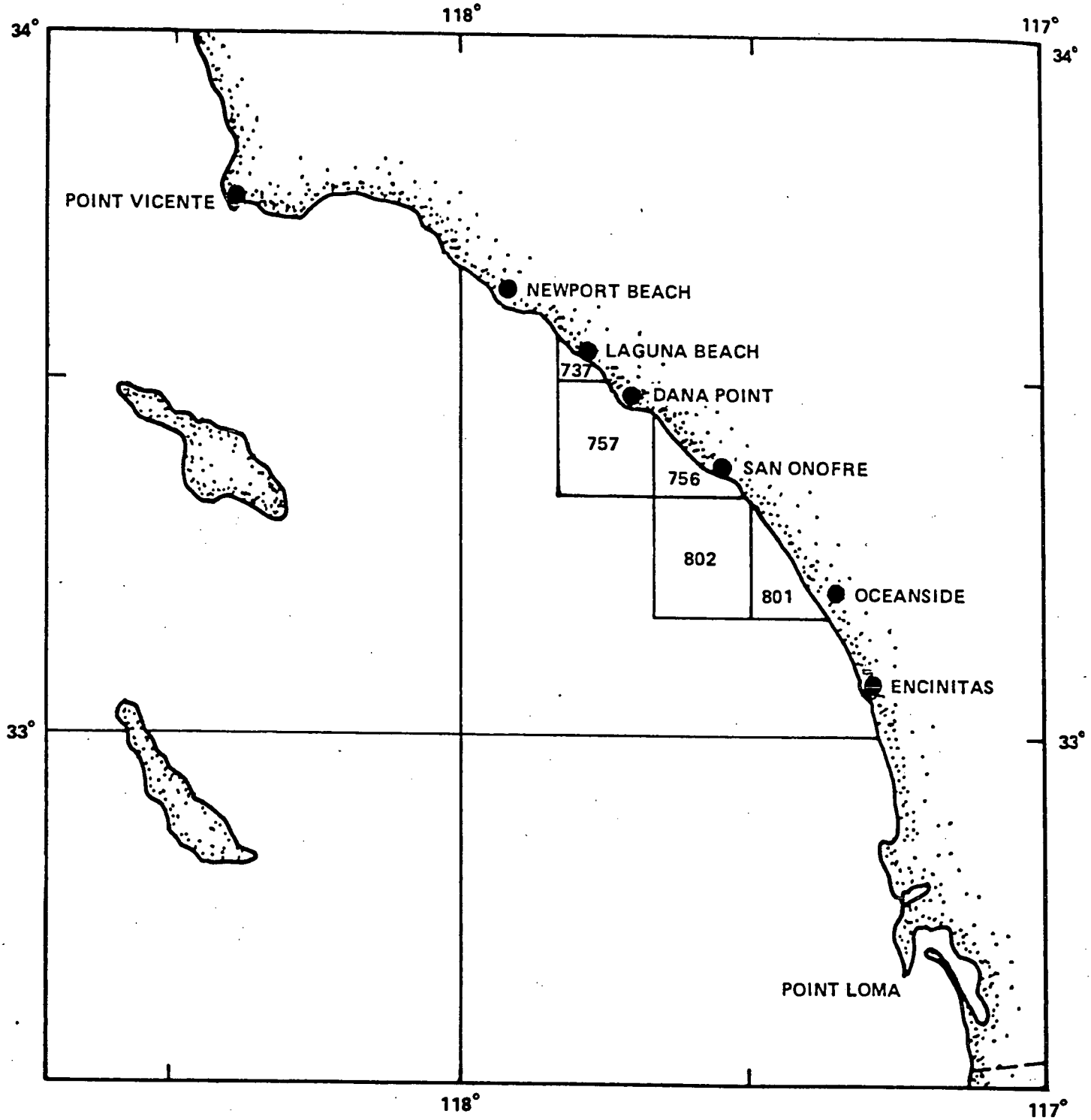



Figure V-1. California Department of Fish and Game catch statistic blocks in the vicinity of San Onofre.

# VI. BENTHOS - ROCK/COBBLE SUBSTRATE, KELP BEDS

## A. ENVIRONMENTAL TECHNICAL SPECIFICATION PROGRAM - UNIT 1

This program was established to assess whether the operation of SONGS 1 has any significant environmental effect on the dominant, field identifiable members of the epibenthic communities of subtidal cobble habitats and the kelp beds in the vicinity of SONGS 1. Benthic diving and infrared kelp surveys are conducted in compliance with ETS Section 3.1.2.a(1)C.1.

### 1. METHODS

A detailed description of station locations and field methodology is given in ETS Benthic Survey Procedures (SCE R&D/LCMR, Procedures EMP 25-5-35). A general review is presented below.

#### a. Benthic Dive Survey, Unit 1

Eleven permanent benthic stations were established in areas of comparable substrates in February 1975, eight along the 10-m depth contour and three in kelp beds (Figure V-1). Stations were marked with permanent surface buoys. Four stations were established in Zone OA near the discharge; five stations were established downcoast in Zone 6 including one in Barn Kelp; and one station each in San Onofre Kelp (Zone 2B) and San Mateo Kelp (Zone 3A). A permanent band transect 10-m in length and 1-m wide was established at each benthic station.

Field identifiable epibenthic macrobiota are surveyed quarterly at each of the permanently marked benthic stations using nondestructive sampling techniques. Conditions permitting, marine biologists identify and enumerate epibenthic macrobiota and make estimates of percent areal coverage of colonial and encrusting taxa in each of 10 1-$m^2$

quadrats at each station and record data on preprinted data sheets. In order to maintain consistency in data recording among biologists, the type of data to be reported for each organism is standardized and indicated on the data sheets. Substrate characteristics of each quadrat are described. Conspicuous taxa which cannot be field identified are collected outside the sampling area and returned to the laboratory for taxonomic classification. General oceanographic observations on surface and bottom water temperatures, visibilities, and surge conditions are also collected.

Additionally, the following information is collected within the band transects at Barn Kelp, San Onofre Kelp, and San Mateo Kelp stations: (1) number of stipes on each individual kelp plant, counted 2-m above the bottom, (2) general conditions of the kelp plants (e.g. frayed fronds), and (3) kelp growth (e.g., new fronds).

Epibenthic macrobiota were surveyed quarterly by diving marine biologists during 1978 on February 1, May 10-25, July 14-August 25, and October 16-26. Persistent nearshore winter storms prevented ten stations from being sampled during the first quarter. During the second quarter only three stations in Zone OA and two kelp stations were sampled due to loss of station transect rebar by sand inundation and/or long range storm-induced station buoy movement. During the third quarter, three stations which could not be relocated after intensive searching efforts were re-established at new locations with similar substrates. These re-established stations included two stations in Zone 6 and the kelp station at Barn Kelp. Subsequently, two stations in Zone OA, three stations in Zone 6 and all kelp stations were sampled during the third and fourth quarterly surveys. The absence of biological data for three stations during the final two quarterly surveys resulted from the fact that these stations were covered with sand.

The stations were located by the presence of rebar; however, the origin and terminus rebar were either covered with sand or missing so that the band transect could not be established with certainty. Further, reconnaissance in the general area surrouding these stations revealed 100 percent sand. A 30-day non-routine report dicussing the data loss has been prepared for submittal to the NRC under separate cover in accordance with ETS Section 5.6.3.

b. Aerial Infrared Kelp Bed Survey

Aerial infrared 35-mm photographs of Barn Kelp, San Onofre Kelp, and San Mateo Kelp beds were taken quarterly to monitor changes in canopy extent and configuration. When possible, flights were conducted under similar weather and sea state conditions to allow reasonable comparisons between survey periods. More precise data are collected for the Units 2 and 3 Construction Monitoring Program using a shipboard electronic positioning system to map the kelp beds. This data is presented in the Construction Monitoring Program report (Volume III) of the Annual Operating Report.

2. RESULTS

Data collected during 1978 ETS Benthic surveys are presented in the following tables. Tables of benthic taxa composition abundance at every station sampled are presented. Data type in these tables is indicated by P (percent-cover data) or N (enumerated data). Diver measured temperatures, visibilities, and surge conditions are presented in tabular form for each survey.

## B. PREOPERATIONAL MONITORING PROGRAM - UNITS 2 AND 3

The objective of this study is to provide baseline data for use in determining the nature, extent and significance of the effects of Units 2 and 3 on the species composition, distribution, and abundance of the

epibenthic biota associated with the cobble/sand habitat.

Preoperational benthic monitoring surveys are conducted in compliance with specifications set forth by the Nuclear Regulatory Commission on July 6, 1978, for the San Onofre Nuclear Generating Station, Units 2 and 3.

1. METHODS

A detailed description of station locations and field methodology is given in PMP Benthic Survey Procedures (SCE R&D/LCMR, Procedures B-1-1/79). A general review is presented below.

Ten permanent benthic stations were established in areas of comparable substrates in June and July of 1978, all along the 15-m isobath (Figure V-1). Stations were established in pairs and marked with permanent surface buoys. Sampling stations include two stations each located in Zones 3B, OB, and 6 and four stations located in Zone 2B. Each permanent benthic station consists of a rectangular 6.0-$m^2$ area (2 m x 3 m).

Diving marine biologists utilize two reference (stationary) lines and one movable sampling line to sample each 6.0-$m^2$ station area with 300 fixed and evenly distributed points. Data collected at each point includes substrate and biological taxa identification. Up to three taxa levels, indicating layering in the community, are recorded. Additionally, four 0.125-$m^2$ square quadrats are randomly located within the 6.0-$m^2$ station area and are sampled with 60 evenly distributed points to elicit small cryptic, clumped, or patchily distributed taxa. Data for both sampling elements (6.0 $m^2$ and 0.125 $m^2$) are recorded by individual biologists on task-specific, waterproof data sheets. Designated solitary or motile taxa not sampled by the point contact technique, but observed to be conspicuous within the sampling area are enumerated. Conspicuous taxa which cannot be field identified are collected outside the sampling area and returned to the laboratory for taxonomic classification. General

oceanographic observations on surface and bottom water temperatures, visibilities, and surge conditions are also collected. Additionally, colonies of the sessile anthozoan *Muricea* are tagged and measured with ancillary data on type of substrate and orientation and location of each colony. To effectively document changing substrate conditions, wide area substrate reconnaissance is conducted at each station pair. This includes the sampling of four 30-meter transects ranging upcoast, downcoast, offshore, and onshore of the station.

The sampling frequency of the PMP benthic surveys is quarterly. This program began in the second half of 1978; therefore, the epibenthic macrobiota were surveyed twice: August 2-9 and October 31-November 8. *Muricea* observations are taken semi-annually. The initial data were taken during the last 1978 survey.

2. RESULTS

Data collected during the 1978 PMP Benthic Surveys are presented in the following tables. Total number of contacts for the five most abundant taxa samples at each 6.0-$m^2$ benthic station and the four 0.125-$m^2$ quadrats are summarized in tables. Means and standard errors are also included in the 0.125-$m^2$ quadrat tables. Tables of total numbers of designated solitary organisms observed at each benthic station are given. The quantiative substrate composition and distribution of biological organisms sampled at each station at Taxa Levels 1, 2, 3, and total occurrences observed at all taxa levels for the 6.0 $m^2$ and 0.125 $m^2$ sampling elements are given in raw data tables. Taxa levels are identified as a result of sampling organisms which occur on top of one another. Taxa level one represents the organisms sampled nearest the substrate with succeeding organisms (taxa levels) sampled above one another. The end result is a three dimensional quantification of all taxa by level of

occurrence. Data gathered in the *Muricea* tagging study are presented as are diver measured, visibilities, and surge conditions.

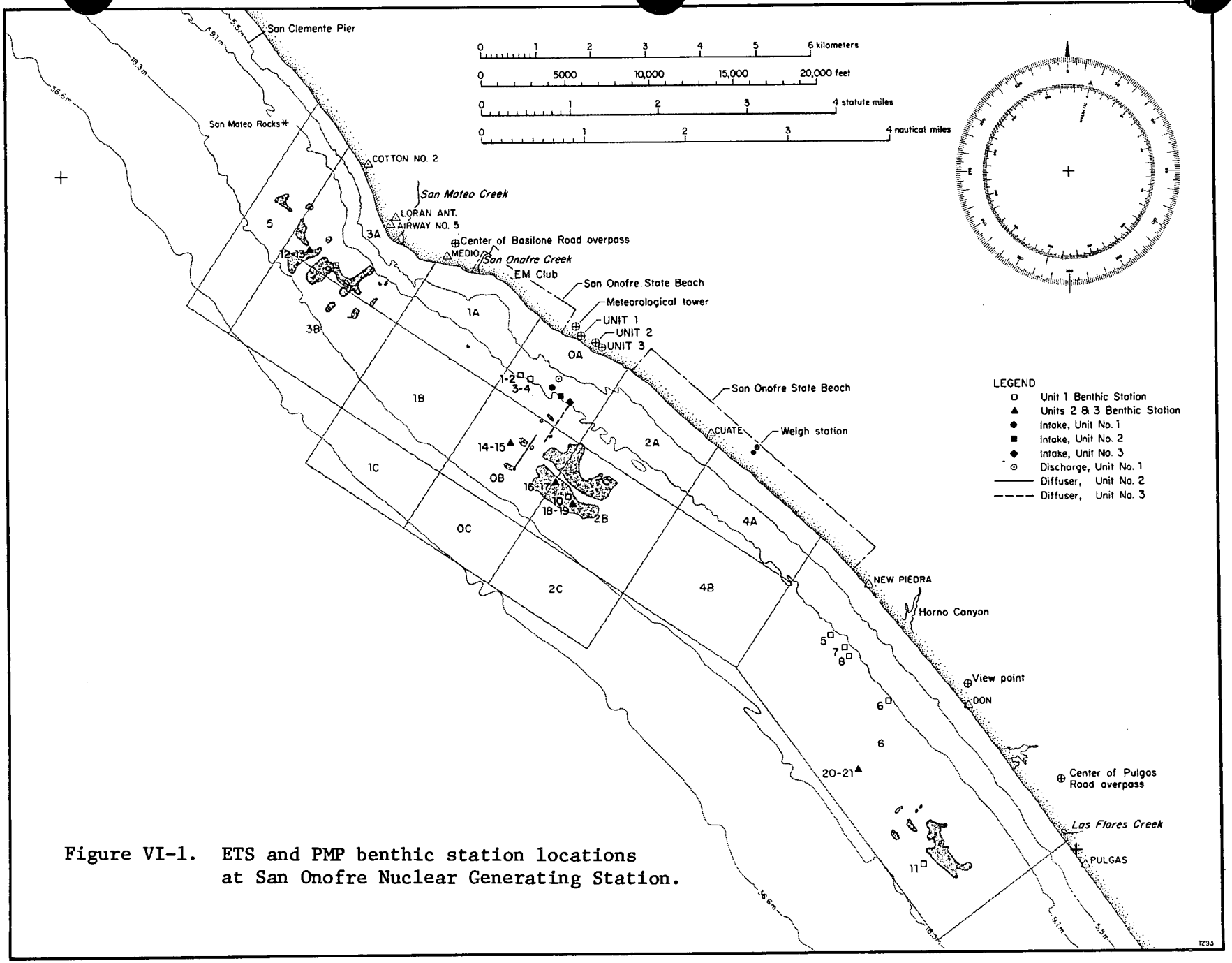



Figure VI-1. ETS and PMP benthic station locations at San Onofre Nuclear Generating Station.

BENTHIC STATION 9*: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF FEBRUARY 1, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 50 | 60 | 40 | 60 | 55 | 60 | 80 | 60 | 44 | 40 | 54.9 |
| BOULDER | P | 30 | 26 | 60 | 35 | 40 | 35 | 15 | 27 | 52 | 40 | 36.0 |
| SAND | P | 20 | 14 | 0 | 5 | 5 | 5 | 5 | 13 | 4 | 20 | 9.1 |
| RELIEF (Maximum in cm) | N | 26 | 29 | 20 | 12 | 25 | 18 | 21 | 16 | 35 | 32 | 23.4 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| MACROCYSTIS SPP. † | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| TAONIA LENNEBACKERAE | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| RHODOPHYTA | | | | | | | | | | | | |
| BOSSIELLA SPP. | P | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.4 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| COELOSEIRA / CHAMPIA | P | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.6 |
| CORALLINA OFFICINALIS VAR. CHILENSIS | P | 0 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 5 | 3 | 1.5 |
| CORALLINA / HALIPTYLON | P | 15 | 8 | 0 | 0 | 1 | 3 | 12 | 12 | 2 | 0 | 5.3 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| JANIA SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 0.6 |
| LITHOTHRIX ASPERGILLUM | P | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0.4 |
| PLATYTHAMNION SPP. | P | 0 | 0 | 1 | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0.7 |
| PTEROCLADIA / GELIDIUM | P | 0 | 3 | 0 | 8 | 2 | 2 | 1 | 4 | 10 | 2 | 3.2 |
| RHODYMENIA SPP. | P | 11 | 10 | 5 | 5 | 6 | 7 | 11 | 6 | 3 | 3 | 6.7 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 7 | 13 | 4 | 15 | 14 | 12 | 12 | 9 | 13 | 13 | 11.2 |
| PARVOSILVOSA | P | 16 | 15 | 25 | 30 | 25 | 20 | 9 | 9 | 18 | 17 | 18.4 |
| RHODOPHYTES, UNIDENT. | P | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0.9 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0.6 |
| LEUCOSOLENIA SPP. | P | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.4 |
| PORIFERANS, UNIDENT. | P | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | 4 | 1.3 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 4 | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 2.9 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA ARTEMISIA | N | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0.3 |
| ASTRANGIA SPP. | P | 1 | 0 | 3 | 1 | 1 | 4 | 0 | 5 | 3 | 2 | 2.0 |
| CORYNACTIS CALIFORNICA | P | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0.5 |
| HALCAMPA DECEMTENTACULATA | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| MURICEA CALIFORNICA | N | 1 | 0 | 3 | 2 | 2 | 0 | 4 | 3 | 2 | 2 | 1.9 |
| MURICEA FRUTICOSA | N | 1 | 1 | 1 | 1 | 2 | 0 | 2 | 1 | 3 | 0 | 1.2 |
| ANTHOZOAN, UNIDENT. | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.2 |

BENTHIC STATION 9, FEBRUARY 1, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLATYHELMINTHES | | | | | | | | | | | | |
| THYSANOZOON SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.2 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 4 | 11 | 0 | 4 | 2 | 4 | 4 | 2 | 0 | 2 | 3.3 |
| DODECACERIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| PHRAGMATOPOMA CALIFORNICA | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 1.3 |
| PHYLLOCHAETOPTERUS SPP. | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.2 |
| PISTA SPP. | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0.3 |
| SALMACINA TRIBRANCHIATA | P | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 3 | 1.1 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 0.8 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.3 |
| SABELLID,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SERPULIDS,UNIDENT. | P | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0.9 |
| SPIRORBIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| TETRACLITA SQUAMOSA | N | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.7 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 2 | 2 | 0 | 0 | 3 | 2 | 6 | 7 | 3 | 3 | 2.8 |
| MOLLUSCA | | | | | | | | | | | | |
| CEPHALOPODA | | | | | | | | | | | | |
| OCTOPUS SPP. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0.2 |
| GASTROPODA | | | | | | | | | | | | |
| HALIOTIS CORRUGATA | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 1 | 6 | 1.3 |
| MITRELLA CARINATA | N | 4 | 4 | 12 | 45 | 15 | 12 | 30 | 0 | 21 | 14 | 15.7 |
| NASSARIUS MENDICUS | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| NASSARIUS SPP. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ROPERIA POULSONI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 4 | 3 | 15 | 3 | 7 | 10 | 3 | 6 | 8 | 12 | 7.1 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 7 | 8 | 1 | 6 | 5 | 15 | 8 | 11 | 17 | 10 | 8.8 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| ASTROMETIS SERTULIFERA | N | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0.7 |
| DERMASTERIAS IMBRICATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| PATIRIA MINIATA | N | 1 | 2 | 2 | 4 | 2 | 3 | 4 | 8 | 1 | 3 | 3.0 |
| PISASTER GIGANTEUS | N | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0.7 |
| OPHIUROIDEA | | | | | | | | | | | | |
| OPHIUROIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| ECHINOIDEA | | | | | | | | | | | | |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 1.1 |

BENTHIC STATION 9, FEBRUARY 1, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECHINODERMATA | | | | | | | | | | | | |
| ECHINOIDEA | | | | | | | | | | | | |
| STRONGYLOCENTROTUS PURPURATUS | N | Ø | Ø | 2 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø.2 |
| HOLOTHUROIDEA | | | | | | | | | | | | |
| PARASTICHOPUS PARVIMENSIS | N | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | Ø | Ø | Ø | Ø | 1 | 2 | 1 | Ø | Ø | 3 | Ø.7 |
| CLAVELINA HUNTSMANI | N | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 | Ø | Ø.2 |
| EUMERDMANIA CLAVIFORMIS | P | 2 | Ø | 3 | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø.6 |
| STYELA MONTEREYENSIS | N | Ø | Ø | 2 | Ø | Ø | 1 | 1 | 2 | 4 | 4 | 1.4 |
| FRIDIDEMNUM / DIDEMNUM | P | 1 | 2 | 1 | Ø | 4 | 7 | 4 | 2 | 10 | 1 | 3.2 |
| ASCIDIANS, UNIDENT. | P | Ø | Ø | Ø | 4 | 2 | 2 | Ø | Ø | Ø | 2 | 1.0 |
| ASCIDIAN F | P | Ø | 1 | 1 | 1 | Ø | Ø | Ø | 1 | Ø | 1 | Ø.5 |
| SOLITARY ASCIDIAN, UNIDENT. | N | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 2 | Ø.2 |

*Station 9 is San Mateo Kelp.

†One *Macrocystis* plant with six stipes extending at least 2m above the bottom was observed in quadrat 10. This kelp plant appeared to be in good condition (e.g. lack of frayed or faded fronds and encrusting organisms).

BENTHIC STATION 1: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF MAY 23, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 85 | 85 | 85 | 85 | 80 | 80 | 75 | 54 | 80 | 70 | 77.9 |
| BOULDER | P | 10 | 10 | 10 | 5 | 10 | 4 | 5 | 6 | 0 | 5 | 6.5 |
| SAND | P | 5 | 5 | 5 | 10 | 10 | 16 | 20 | 44 | 20 | 25 | 16.0 |
| RELIEF (Maximum in cm) | N | 15 | 15 | 10 | 9 | 18 | 5 | 16 | 15 | 6 | 18 | 12.7 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 9 | 9 | 10 | 14 | 7 | 15 | 7 | 9 | 2 | 1 | 8.3 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| BOSSIELLA SPP. | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| BOTRYOCLADIA SPP. | P | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| CORALLINA / HALIPTYLON | P | 1 | 1 | 0 | 0 | 2 | 1 | 2 | 4 | 1 | 2 | 1.4 |
| HILDENBRANDIA PROTOTYPUS | P | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| PTEROCLADIA / GELIDIUM | P | 3 | 0 | 0 | 1 | 3 | 0 | 1 | 1 | 0 | 2 | 1.1 |
| RHODYMENIA SPP. | P | 2 | 0 | 1 | 2 | 30 | 2 | 12 | 3 | 6 | 6 | 6.4 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 15 | 10 | 15 | 16 | 9 | 4 | 8 | 14 | 12 | 15 | 11.8 |
| PARVOSILVOSA | P | 10 | 10 | 5 | 10 | 22 | 12 | 20 | 25 | 10 | 13 | 14.3 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1.4 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PORIFERANS,UNIDENT. | P | 0 | 0 | 1 | 2 | 0 | 2 | 2 | 3 | 2 | 2 | 1.4 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 5 | 1 | 1 | 1 | 8 | 15 | 15 | 3 | 1 | 1 | 5.1 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 0 | 0 | 1 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0.8 |
| MURICEA CALIFORNICA | N | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0.5 |
| ANTHOZOAN,UNIDENT. | N | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0.5 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 3 | 2 | 4 | 4 | 1 | 2 | 0 | 3 | 1 | 2 | 2.2 |
| PHYLLOCHAETOPTERUS PROLIFICA | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SABELLARIA CEMENTARIUM | N | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0.3 |
| SPIOCHAETOPTERUS COSTARUM | N | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0.8 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.3 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 4 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 |

BENTHIC STATION 1, MAY 23, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ARTHROPODA | | | | | | | | | | | | |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.2 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| ASTRAEA UNDOSA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CONUS CALIFORNICUS | N | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 0.5 |
| KELLETIA KELLETII | N | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| MAXWELLIA GEMMA | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| MITRA IDAE | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| MITRELLA CARINATA | N | 3 | 16 | 12 | 4 | 6 | 22 | 15 | 4 | 14 | 7 | 10.3 |
| NASSARIUS SPP. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 0 | 1 | 5 | 9 | 1 | 8 | 10 | 1 | 6 | 4.2 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 10 | 5 | 10 | 0 | 22 | 20 | 15 | 40 | 45 | 35 | 20.2 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 1 | 1 | 0 | 1 | 2 | 3 | 3 | 3 | 1 | 2 | 1.7 |
| OPHIUROIDEA | | | | | | | | | | | | |
| OPHIUROIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.2 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 4 | 0 | 1 | 2 | 1 | 4 | 4 | 2 | 1 | 3 | 2.2 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 0 | 1 | 1 | 3 | 2 | 1 | 2 | 1 | 1 | 1.3 |
| STYELA MONTEREYENSIS | N | 6 | 1 | 3 | 1 | 0 | 6 | 2 | 2 | 1 | 0 | 2.2 |
| TRIDIDEMNUM / DIDEMNUM | P | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ASCIDIAN F | P | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0.4 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0.4 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| GASTROPOD EGG CASES | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 2: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF MAY 15, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 80 | 90 | 80 | 75 | 60 | 94 | 80 | 80 | 90 | 85 | 81.4 |
| BOULDER | P | 10 | 5 | 10 | 20 | 15 | 5 | 15 | 10 | 5 | 10 | 10.5 |
| SAND | P | 10 | 5 | 10 | 5 | 25 | 1 | 5 | 10 | 5 | 5 | 8.1 |
| RELIEF (Maximum in cm) | N | 6 | 8 | 5 | 17 | 10 | 15 | 8 | 0 | 5 | 10 | 8.4 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 3 | 2 | 0 | 0 | 0 | 2 | 6 | 3 | 0 | 2 | 1.8 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.2 |
| BOSSIELLA SPP. | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.2 |
| BOTRYOCLADIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.2 |
| CORALLINA / HALIPTYLON | P | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 2 | 2 | 1 | 0 | 1 | 1 | 3 | 1 | 5 | 1.7 |
| PTEROCLADIA / GELIDIUM | P | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.3 |
| RHODYMENIA SPP. | P | 1 | 0 | 0 | 1 | 5 | 3 | 1 | 1 | 1 | 1 | 1.4 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 15 | 10 | 10 | 15 | 15 | 10 | 18 | 5 | 10 | 15 | 12.3 |
| PARVOSILVOSA | P | 5 | 5 | 1 | 8 | 3 | 10 | 10 | 2 | 1 | 5 | 5.0 |
| RHODOPHYTES, UNIDENT. | P | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0.8 |
| PORIFERA | | | | | | | | | | | | |
| LEUCOSOLENIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 1 | 5 | 1 | 2 | 5 | 5 | 0 | 0 | 1 | 2 | 2.2 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0.4 |
| CORYNACTIS CALIFORNICA | P | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| MURICEA CALIFORNICA | N | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0.8 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 3 | 2 | 4 | 2 | 4 | 0 | 1 | 0 | 0 | 2 | 1.8 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SERPULIDS, UNIDENT. | P | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 2 | 0 | 0 | 1 | 6 | 0 | 0 | 4 | 1.3 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS, UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.2 |

BENTHIC STATION 2, MAY 15, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0.6 |
| MITRELLA CARINATA | N | 5 | 2 | 5 | 3 | 0 | 2 | 3 | 0 | 3 | 2 | 2.5 |
| NASSARIUS MENDICUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| PSEUDOMELATOMA SPP. | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 0 | 0 | 8 | 0 | 2 | 2 | 0 | 1 | 2 | 1.6 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 14 | 21 | 12 | 25 | 15 | 10 | 20 | 10 | 20 | 15 | 16.2 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 0 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 1 | 0.8 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 2 | 3 | 0 | 2 | 1 | 0 | 2 | 0 | 1 | 1 | 1.2 |
| EUMERDMANIA CLAVIFORMIS | P | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0.5 |
| STYELA MONTEREYENSIS | N | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 14 | 2.0 |
| ASCIDIAN F | P | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.4 |
| COLONIAL ASCIDIAN.UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | T | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 3: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF MAY 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| SAND | P | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.0 |
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA CALIFORNICA | N | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0.5 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| ONUPHID,UNIDENT. | N | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0.4 |

BENTHIC STATION 9*: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF MAY 25, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 70 | 75 | 16 | 76 | 35 | 75 | 80 | 85 | 70 | 58 | 64.0 |
| BOULDER | P | 18 | 12 | 80 | 20 | 60 | 20 | 10 | 5 | 25 | 40 | 29.0 |
| SAND | P | 12 | 13 | 4 | 4 | 5 | 5 | 10 | 10 | 5 | 2 | 7.0 |
| RELIEF (Maximum in cm) | N | 32 | 20 | 26 | 35 | 28 | 20 | 15 | 15 | 30 | 35 | 25.6 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 |
| CHLOROPHYTE, UNIDENT. | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.8 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0.3 |
| DICTYOPTERIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| DICTYOTA / PACHYDICTYON | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| MACROCYSTIS SPP. † | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PHAEOPHYTE, UNIDENT. | P | 1 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 1.0 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0.2 |
| BOSSIELLA SPP. | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0.3 |
| BOTRYOCLADIA SPP. | P | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.3 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| COELOSEIRA / CHAMPIA | P | 1 | 1 | 8 | 3 | 10 | 15 | 2 | 3 | 2 | 1 | 4.6 |
| CORALLINA / HALIPTYLON | P | 11 | 5 | 2 | 1 | 1 | 1 | 1 | 4 | 10 | 8 | 4.4 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0.4 |
| LITHOTHRIX ASPERGILLUM | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PLATYTHAMNION SPP. | P | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1.7 |
| PRIONITIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| PTEROCLADIA / GELIDIUM | P | 1 | 1 | 0 | 4 | 1 | 1 | 0 | 1 | 15 | 11 | 3.5 |
| RHODYMENIA SPP. | P | 36 | 24 | 4 | 7 | 20 | 25 | 35 | 28 | 32 | 3 | 21.4 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 2 | 3 | 7 | 10 | 15 | 20 | 10 | 4 | 5 | 2 | 7.8 |
| PARVOSILVOSA | P | 35 | 44 | 40 | 23 | 30 | 40 | 20 | 20 | 30 | 10 | 29.2 |
| RHODOPHYTES, UNIDENT. | P | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1.0 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 1 | 1 | 2 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0.7 |
| PORIFERANS, UNIDENT. | P | 2 | 0 | 2 | 15 | 1 | 1 | 0 | 0 | 1 | 1 | 2.3 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 4 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 3 | 2.0 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 6 | 2 | 3 | 2 | 3 | 2 | 0 | 1 | 1 | 1 | 2.1 |
| CORYNACTIS CALIFORNICA | P | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0.6 |
| MURICEA CALIFORNICA | N | 0 | 1 | 3 | 1 | 2 | 1 | 3 | 1 | 0 | 1 | 1.3 |

BENTHIC STATION 9, MAY 25, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA FRUTICOSA | N | 0 | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0.9 |
| ANTHOZOAN,UNIDENT. | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 4 | 0 | 2 | 1 | 8 | 2 | 1 | 0 | 1 | 2.0 |
| DODECACERIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PHRAGMATOPOMA CALIFORNICA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 |
| SABELLARIA CEMENTARIUM | N | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SALMACINA TRIBRANCHIATA | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.2 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0.3 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| ARTHROPODA | | | | | | | | | | | | |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| PAGURIDS,UNIDENT. | N | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0.4 |
| MOLLUSCA | | | | | | | | | | | | |
| CEPHALOPODA | | | | | | | | | | | | |
| OCTOPUS SPP. | N | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| GASTROPODA | | | | | | | | | | | | |
| HALIOTIS CORRUGATA | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 1 | 1 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 2 | 1.2 |
| MAXWELLIA GEMMA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| MITRELLA CARINATA | N | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 5 | 0 | 0.7 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 6 | 3 | 2 | 3 | 1 | 1 | 1 | 3 | 1 | 3 | 2.4 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 10 | 5 | 12 | 20 | 10 | 15 | 5 | 30 | 4 | 15 | 12.6 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| ASTROMETIS SERTULIFERA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PATIRIA MINIATA | N | 2 | 5 | 5 | 6 | 0 | 0 | 0 | 2 | 3 | 8 | 3.1 |
| PISASTER GIGANTEUS | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.3 |
| ECHINOIDEA | | | | | | | | | | | | |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 1 | 7 | 6 | 2 | 0 | 0 | 0 | 1 | 0 | 1.7 |
| STRONGYLOCENTROTUS PURPURATUS | N | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| HOLOTHUROIDEA | | | | | | | | | | | | |
| PARASTICHOPUS SPP. | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| APLIDIUM SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| CHELYOSOMA PRODUCTUM | N | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.2 |

BENTHIC STATION 9, MAY 25, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CLAVELINA HUNTSMANI | N | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |
| EUHERDMANIA CLAVIFORMIS | P | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| STYELA MONTEREYENSIS | N | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0.6 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 2 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0.6 |
| ASCIDIAN F | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ASCIDIAN G | P | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0.6 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 0 | 1 | 0 | 2 | 1 | 1 | 1 | 2 | 0 | 0 | 0.8 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| COTTIDAE | | | | | | | | | | | | |
| SCORPAENICHTHYS MARMORATUS | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |

*Station 9 is San Mateo Kelp.

†One *Macrocystis* plant with two stipes extending at least 2m above the bottom was observed in quadrat 10. Ten small stipes were also present indicating new growth. This plant appeared to be in good condition (e.g. lack of frayed or faded fronds and encrusting organisms).

BENTHIC STATION 10:* SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF MAY 10, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 20 | 30 | 5 | 15 | 10 | 30 | 10 | 15 | 50 | 20 | 20.5 |
| BOULDER | P | 20 | 0 | 45 | 50 | 30 | 10 | 40 | 15 | 0 | 45 | 25.5 |
| SAND | P | 60 | 70 | 50 | 35 | 60 | 60 | 50 | 70 | 50 | 35 | 54.0 |
| RELIEF (Maximum in cm) | N | 5 | 15 | 15 | 28 | 30 | 10 | 10 | 16 | 15 | 20 | 16.4 |
| RHODOPHYTA | | | | | | | | | | | | |
| HILDENBRANDIA PROTOTYPUS | P | 7 | 5 | 0 | 0 | 0 | 5 | 3 | 3 | 1 | 1 | 2.5 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 30 | 30 | 50 | 30 | 30 | 40 | 62 | 26 | 45 | 60 | 40.3 |
| PARVOSILVOSA | P | 0 | 0 | 18 | 5 | 6 | 0 | 2 | 2 | 0 | 0 | 3.3 |
| RHODOPHYTES, UNIDENT. | P | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0.5 |
| ALGAE AND MARINE GRASSES | | | | | | | | | | | | |
| MACROCYSTIS (HOLDFAST) † | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0.6 |
| PORIFERANS, UNIDENT. | P | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 2 | 5 | 0 | 1 | 0 | 3 | 4 | 7 | 5 | 5 | 3.2 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA ARTEMISIA | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ASTRANGIA SPP. | P | 0 | 2 | 7 | 4 | 3 | 2 | 7 | 6 | 1 | 4 | 3.6 |
| ANTHOZOAN, UNIDENT. | N | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 4 | 4 | 8 | 3 | 3 | 1 | 3 | 9 | 3 | 2 | 4.0 |
| OWENIA COLLARIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| SABELLARIA CEMENTARIUM | N | 0 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 1 | 4 | 1.9 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 2 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0.8 |
| ONUPHID, UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| SERPULIDS, UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0.4 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.2 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS, UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.2 |
| MOLLUSCA | | | | | | | | | | | | |
| POLYPLACOPHORA | | | | | | | | | | | | |
| POLYPLACOPHORAN, UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |

BENTHIC STATION 10, MAY 10, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| KELLETIA KELLETII | N | 0 | 2 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0.8 |
| MITRELLA CARINATA | N | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.4 |
| NASSARIUS MENDICUS | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| NASSARIUS SPP. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PTEROPURPURA FESTIVA | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ROPERIA POULSONI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 0 | 1 | 0 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 0.8 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0.3 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 3 | 3 | 12 | 8 | 3 | 3 | 4 | 5 | 7 | 6 | 5.4 |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.3 |
| STRONGYLOCENTROTUS PURPURATUS | N | 1 | 0 | 0 | 3 | 2 | 1 | 0 | 4 | 0 | 1 | 1.2 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0.3 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| MURICEA(HOLDFAST) | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |

*Station 10 is San Onofre Kelp.
†*Macrocystis* (holdfast) was moribund.

BENTHIC STATION 1: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 14, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 89 | 96 | 92 | 70 | 50 | 80 | 80 | 60 | 40 | 15 | 67.2 |
| BOULDER | P | 10 | 4 | 5 | 0 | 15 | 15 | 5 | 35 | 15 | 15 | 11.9 |
| SAND | P | 1 | 0 | 3 | 30 | 35 | 5 | 15 | 5 | 45 | 70 | 20.9 |
| RELIEF (MAXIMUM IN CM) | N | 8 | 22 | 22 | 6 | 17 | 9 | 7 | 13 | 11 | 4 | 11.9 |
| CHLOROPHYTA | | | | | | | | | | | | |
| CHLOROPHYTE, UNIDENT. | P | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 6 | 7 | 5 | 15 | 4 | 8 | 5 | 4 | 2 | 3 | 5.9 |
| DICTYOTA / PACHYDICTYON | P | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0.3 |
| ECTOCARPALES, UNIDENT. | P | 0 | 1 | 1 | 3 | 0 | 9 | 1 | 10 | 11 | 6 | 4.2 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0.2 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| BOSSIELLA SPP. | P | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0.6 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 0.6 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| COELOSEIRA / CHAMPIA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| CORALLINA OFFICINALIS VAR. CHILENSIS | P | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| CORALLINA / HALIPTYLON | P | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 2 | 1.2 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| PTEROCLADIA / GELIDIUM | P | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 4 | 0 | 6 | 1.5 |
| RHODYMENIA SPP. | P | 2 | 0 | 1 | 3 | 12 | 3 | 2 | 8 | 7 | 8 | 4.6 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 3 | 2 | 1 | 8 | 3 | 3 | 4 | 0 | 3 | 3 | 3.0 |
| CRYPTONEMIA/HALYMENIA/SCHIZYMENIA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| PARVOSILVOSA | P | 2 | 1 | 2 | 22 | 35 | 4 | 13 | 0 | 2 | 2 | 8.3 |
| RHODOPHYTES, UNIDENT. | P | 2 | 1 | 1 | 1 | 1 | 2 | 3 | 0 | 0 | 1 | 1.2 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| LEUCOSOLENIA SPP. | P | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| PORIFERANS, UNIDENT. | P | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 0 | 2 | 2 | 1.5 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA SPP. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ASTRANGIA SPP. | P | 0 | 0 | 1 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0.6 |
| MURICEA CALIFORNICA | N | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0.6 |

BENTHIC STATION 1, JULY 14, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 0 | 1 | 0 | 4 | 0 | 3 | 0 | 0 | 1 | 1 | 1.0 |
| DIOPATRA SPLENDIDISSIMA | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SABELLARIA CEMENTARIUM | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0.3 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 3 | 0 | 0.8 |
| ONUPHID,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0.3 |
| SERPULIDS,UNIDENT. | P | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.5 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| DECAPODA | | | | | | | | | | | | |
| PAGURUS SPP. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PAGURIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 1 | 0 | 0.9 |
| MOLLUSCA | | | | | | | | | | | | |
| POLYPLACOPHORA | | | | | | | | | | | | |
| POLYPLACOPHORAN,UNIDENT. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PELECYPODA | | | | | | | | | | | | |
| PHOLAD,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| GASTROPODA | | | | | | | | | | | | |
| ASTRAEA UNDOSA | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CONUS CALIFORNICUS | N | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.3 |
| HERMISSENDA CRASSICORNIS | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| LAILA COCKERELLI | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| MAXWELLIA GEMMA | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| MITRELLA CARINATA | N | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0.4 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 1 | 0 | 1 | 5 | 1 | 2 | 2 | 2 | 1 | 1.6 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 3 | 2 | 2 | 3 | 15 | 6 | 23 | 6 | 10 | 3 | 7.3 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0.4 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 4 | 4 | 26 | 14 | 21 | 12 | 24 | 0 | 6 | 3 | 11.4 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 5 | 1 | 2 | 1.8 |
| PYURA HAUSTOR | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| STYELA MONTEREYENSIS | N | 4 | 2 | 2 | 3 | 1 | 14 | 6 | 6 | 3 | 4 | 4.5 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0.3 |
| ASCIDIAN F | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 1, JULY 14, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INVERTEBRATES, UNIDENT. GASTROPOD EGG CASES | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0.2 |

BENTHIC STATION 2: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 14, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 62 | 78 | 69 | 65 | 85 | 46 | 70 | 80 | 90 | 60 | 70.5 |
| BOULDER | P | 0 | 0 | 6 | 35 | 15 | 9 | 20 | 10 | 5 | 20 | 12.0 |
| SAND | P | 38 | 22 | 25 | 0 | 0 | 45 | 10 | 10 | 5 | 20 | 17.5 |
| RELIEF (MAXIMUM IN CM) | N | 6 | 8 | 23 | 11 | 6 | 8 | 7 | 8 | 4 | 25 | 10.6 |
| CHLOROPHYTA | | | | | | | | | | | | |
| CHLOROPHYTE,UNIDENT. | P | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0.6 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 3 | 4 | 4 | 0 | 0 | 3 | 2 | 3 | 0 | 3 | 2.2 |
| DICTYOTA / PACHYDICTYON | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.2 |
| ECTOCARPALES,UNIDENT. | P | 42 | 0 | 36 | 1 | 0 | 22 | 0 | 30 | 15 | 12 | 15.8 |
| LAMINOID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 2.0 |
| PHAEOPHYTE,UNIDENT. | P | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0.3 |
| ANISOCLADELLA PACIFICA | P | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.4 |
| BOSSIELLA SPP. | P | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0.4 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 1 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0.7 |
| CORALLINA / HALIPTYLON | P | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 3 | 1.2 |
| PTEROCLADIA / GELIDIUM | P | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0.5 |
| RHODYMENIA SPP. | P | 2 | 2 | 5 | 0 | 1 | 6 | 4 | 4 | 3 | 7 | 3.4 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 7 | 12 | 6 | 5 | 1 | 18 | 12 | 7 | 4 | 18 | 9.0 |
| CRYPTONEMIA/HALYMENIA/SCHIZYMENIA | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0.3 |
| PARVOSILVOSA | P | 3 | 25 | 14 | 2 | 4 | 12 | 10 | 5 | 8 | 6 | 8.9 |
| RHODOPHYTES,UNIDENT. | P | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1.3 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| LEUCOSOLENIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.2 |
| PORIFERANS,UNIDENT. | P | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.6 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 1 | 2 | 5 | 2 | 1 | 3 | 3 | 2 | 4 | 4 | 2.7 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.5 |
| MURICEA CALIFORNICA | N | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 |
| ANTHOZOAN,UNIDENT. | N | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0.6 |

BENTHIC STATION 2, JULY 14, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| SABELLARIA CEMENTARIUM | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.8 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 2 | 0.7 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.5 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0.6 |
| MITRELLA CARINATA | N | 3 | 6 | 0 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 1.4 |
| NUDIBRANCH EGGS | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 10 | 8 | 2 | 0 | 1 | 2 | 1 | 1 | 1 | 2.7 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 3 | 6 | 45 | 1 | 1 | 7 | 7 | 4 | 4 | 6 | 8.4 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 0 | 1 | 2 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 1.0 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 10 | 16 | 2 | 1 | 0 | 17 | 6 | 16 | 6 | 3 | 7.7 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0.7 |
| STYELA MONTEREYENSIS | N | 3 | 1 | 2 | 5 | 1 | 7 | 3 | 0 | 0 | 7 | 2.9 |
| STYELA SPP.(JUV.) | N | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0.7 |
| ASCIDIAN F | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | T | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| GASTROPOD EGG CASES | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 5: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 17, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1.0 |
| BOULDER | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 10 | 5 | 6.1 |
| SAND | P | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 54 | 90 | 85 | 92.9 |
| RELIEF (MAXIMUM IN CM) | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 7 | 6 | 2.5 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS HYPNOIDES | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 2 | 2 | 4.0 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PARVOSILVOSA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| RHODOPHYTES,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| PORIFERA | | | | | | | | | | | | |
| PORIFERANS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA CALIFORNICA | N | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 6 | 1.4 |
| MURICEA FRUTICOSA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 2 | 7 | 5 | 6 | 5 | 5 | 9 | 5 | 2 | 3 | 4.9 |
| OWENIA COLLARIS | N | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.5 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| DECAPODA | | | | | | | | | | | | |
| PAGURUS SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.3 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0.5 |

BENTHIC STATION 5, JULY 17, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| EUHERDMANIA CLAVIFORMIS | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| STYELA MONTEREYENSIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| ASCIDIAN F | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| SCORPAENIDAE | | | | | | | | | | | | |
| SCORPAENA GUTTATA | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| INVERTEBRATES, UNIDENT. | | | | | | | | | | | | |
| INVERTEBRATE EGGS, UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MURICEA(HOLDFAST) | P | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0.5 |

BENTHIC STATION 6: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 24, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 15 | 10 | 20 | 15 | 10 | 20 | 5 | 5 | 10 | 15 | 12.5 |
| BOULDER | P | 25 | 16 | 5 | 30 | 10 | 18 | 25 | 0 | 10 | 20 | 15.9 |
| SAND | P | 20 | 40 | 10 | 55 | 80 | 62 | 70 | 60 | 80 | 85 | 56.2 |
| ROCK SHELF | P | 40 | 34 | 55 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 16.4 |
| RELIEF (MAXIMUM IN CM) | N | 13 | 8 | 9 | 6 | 4 | 10 | 7 | 18 | 14 | 14 | 10.3 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| BRYOPSIS HYPNOIDES | P | 2 | 1 | 4 | 2 | 3 | 1 | 1 | 5 | 4 | 5 | 2.8 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 3 | 9 | 5 | 5 | 3 | 2 | 4 | 5 | 4 | 2 | 4.2 |
| ECTOCARPALES,UNIDENT. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PHAEOPHYTE,UNIDENT. | P | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0.4 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.3 |
| BOSSIELLA SPP. | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.3 |
| BOTRYOCLADIA NEUSHULII | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0.4 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| CORALLINA / HALIPTYLON | P | 3 | 5 | 3 | 2 | 2 | 2 | 2 | 6 | 7 | 2 | 3.4 |
| GIGARTINA SPP. | P | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 0.7 |
| HILDENBRANDIA PROTOTYPUS | P | 2 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0.8 |
| PLOCAMIUM SPP. | P | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 1.0 |
| PRIONITIS SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PTEROCLADIA / GELIDIUM | P | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1.5 |
| RHODYMENIA SPP. | P | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1.4 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 5 | 7 | 2 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 2.5 |
| PARVOSILVOSA | P | 4 | 8 | 24 | 2 | 2 | 3 | 2 | 2 | 5 | 2 | 5.4 |
| RHODOPHYTES,UNIDENT. | P | 3 | 2 | 4 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 2.6 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0.4 |
| PORIFERANS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0.4 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 6 | 2 | 2.0 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA ARTEMISIA | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.3 |
| ASTRANGIA SPP. | P | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0.6 |
| MURICEA CALIFORNICA | N | 0 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0.5 |
| ZAOLUTUS ACTIUS | N | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0.3 |

BENTHIC STATION 6, JULY 24, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOZOAN,UNIDENT. | N | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 5 | 0 | 2 | 1 | 3 | 0 | 0 | 3 | 0 | 1.5 |
| OWENIA COLLARIS | N | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0.3 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0.3 |
| ONUPHID,UNIDENT. | N | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 2 | 0.7 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 14 | 7 | 3 | 3 | 2 | 2 | 2 | 6 | 4 | 4 | 4.7 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CHROMODORIS MACFARLANDI | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.2 |
| KELLETIA KELLETII | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| NUDIBRANCHS,UNIDENT. | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 7 | 12 | 18 | 1 | 1 | 1 | 1 | 3 | 4 | 0 | 4.8 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 3 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 1.8 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 4 | 1 | 0 | 0 | 3 | 3 | 0 | 0 | 2 | 0 | 1.3 |
| CLAVELINA HUNTSMANI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 0 | 2 | 1 | 1 | 2 | 1 | 2 | 2 | 0 | 1.2 |
| MOLGULA SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| STYELA MONTEREYENSIS | N | 3 | 4 | 1 | 2 | 1 | 1 | 0 | 2 | 5 | 0 | 1.9 |
| ASCIDIAN F | P | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0.3 |
| ASCIDIAN G | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 8: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF AUGUST 25, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 60 | 60 | 35 | 15 | 0 | 0 | 5 | 0 | 5 | 0 | 18.0 |
| BOULDER | P | 15 | 15 | 15 | 25 | 65 | 25 | 30 | 40 | 10 | 15 | 25.5 |
| SAND | P | 15 | 20 | 20 | 15 | 35 | 35 | 65 | 60 | 5 | 10 | 28.0 |
| ROCK SHELF | P | 10 | 5 | 30 | 35 | 0 | 40 | 0 | 0 | 80 | 75 | 27.5 |
| RELIEF (MAXIMUM IN CM) | N | 20 | 12 | 15 | 20 | 25 | 25 | 25 | 19 | 17 | 27 | 20.5 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS HYPNOIDES | P | 15 | 12 | 20 | 14 | 5 | 6 | 20 | 6 | 8 | 9 | 11.5 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0.5 |
| RHODOPHYTA | | | | | | | | | | | | |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0.5 |
| BOSSIELLA SPP. | P | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CORALLINA OFFICINALIS VAR. CHILENSIS | P | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| CORALLINA / HALIPTYLON | P | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 0.8 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| PRIONITIS SPP. | P | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| PTEROCLADIA / GELIDIUM | P | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0.3 |
| RHODYMENIA SPP. | P | 3 | 2 | 4 | 2 | 1 | 1 | 1 | 3 | 6 | 4 | 2.7 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| CRYPTONEMIA/HALYMENIA/SCHIZYMENIA | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PARVOSILVOSA | P | 10 | 5 | 3 | 6 | 1 | 2 | 3 | 4 | 3 | 3 | 4.0 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.1 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 6 | 5 | 3 | 2.0 |
| LEUCOSOLENIA SPP. | P | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| PORIFERANS,UNIDENT. | P | 1 | 1 | 2 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 2.0 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 10 | 14 | 9 | 8 | 4 | 1 | 3 | 4 | 4 | 6 | 6.3 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 5 | 1.1 |
| CORYNACTIS CALIFORNICA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| MURICEA CALIFORNICA | N | 0 | 1 | 3 | 7 | 6 | 3 | 20 | 30 | 2 | 2 | 7.4 |
| MURICEA FRUTICOSA | N | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.3 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 3 | 3 | 2 | 5 | 1 | 1 | 6 | 4 | 4 | 2 | 3.1 |
| PISTA SPP. | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| SPIOCHAETOPTERUS COSTARUM | N | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |

BENTHIC STATION 8, AUGUST 25, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| SABELLARID,UNIDENT. | N | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 |
| SABELLID,UNIDENT. | N | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 3 | 0.8 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 1.9 |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| PAGURUS SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0.4 |
| MOLLUSCA | | | | | | | | | | | | |
| PELECYPODA | | | | | | | | | | | | |
| CHAMA SPP. | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| GASTROPODA | | | | | | | | | | | | |
| CHROMODORIS MACFARLANDI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| CONUS CALIFORNICUS | N | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.4 |
| NUDIBRANCH EGGS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 15 | 10 | 15 | 16 | 14 | 12 | 9 | 9 | 4 | 7 | 11.1 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 28 | 25 | 6 | 31 | 9 | 5 | 4 | 3 | 3 | 12 | 12.6 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PISASTER GIGANTEUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 6 | 8 | 10 | 3 | 3 | 5 | 2 | 0 | 8 | 0 | 4.5 |
| CLAVELINA HUNTSMANI | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 0 | 0 | 2 | 1 | 2 | 10 | 6 | 0 | 8 | 3.0 |
| MOLGULA SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| PYURA HAUSTOR | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| STYELA MONTEREYENSIS | N | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.4 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 |
| ASCIDIAN F | P | 1 | 4 | 1 | 4 | 2 | 1 | 0 | 0 | 2 | 0 | 1.5 |
| ASCIDIAN G | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0.7 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| GASTROPOD EGG CASES | P | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |

BENTHIC STATION 9*: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 65 | 66 | 39 | 56 | 70 | 68 | 70 | 82 | 56 | 83 | 65.5 |
| BOULDER | P | 28 | 32 | 60 | 34 | 30 | 30 | 7 | 15 | 40 | 16 | 29.2 |
| SAND | P | 7 | 2 | 1 | 10 | 0 | 2 | 23 | 3 | 4 | 1 | 5.3 |
| RELIEF (MAXIMUM IN CM) | N | 25 | 24 | 25 | 26 | 22 | 13 | 11 | 10 | 30 | 25 | 21.1 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| CHLOROPHYTE,UNIDENT. | P | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1.3 |
| PHAEOPHYTA | | | | | | | | | | | | |
| DESMARESTIA SPP. | P | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| DICTYOTA / PACHYDICTYON | P | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 1.3 |
| MACROCYSTIS SPP. § | N | 15 | 6 | 9 | 12 | 8 | 12 | 9 | 5 | 11 | 8 | 9.5 |
| TAONIA LENNEBACKERAE | P | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| ECTOCARPALES,UNIDENT. | P | 3 | 0 | 2 | 3 | 0 | 3 | 0 | 1 | 2 | 0 | 1.4 |
| PHAEOPHYTE,UNIDENT. | P | 1 | 2 | 1 | 0 | 2 | 2 | 4 | 1 | 1 | 1 | 1.5 |
| RHODOPHYTA | | | | | | | | | | | | |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| BOSSIELLA SPP. | P | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0.4 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1.1 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| COELOSEIRA / CHAMPIA | P | 2 | 1 | 4 | 5 | 6 | 2 | 10 | 4 | 3 | 3 | 4.0 |
| CORALLINA OFFICINALIS VAR. CHILENSIS | P | 10 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 3 | 0 | 2.1 |
| CORALLINA / HALIPTYLON | P | 3 | 2 | 0 | 1 | 1 | 0 | 4 | 3 | 0 | 2 | 1.6 |
| GIGARTINA SPP. | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.3 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0.4 |
| JANIA SPP. | P | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0.4 |
| LAURENCIA SPP. | P | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.7 |
| LITHOTHRIX ASPERGILLUM | P | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0.3 |
| PTEROCLADIA / GELIDIUM | P | 3 | 3 | 0 | 5 | 2 | 4 | 1 | 2 | 12 | 8 | 4.0 |
| RHODYMENIA SPP. | P | 18 | 16 | 15 | 22 | 8 | 25 | 35 | 17 | 22 | 5 | 18.3 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 12 | 1 | 18 | 23 | 2 | 13 | 17 | 2 | 10 | 2 | 10.0 |
| PARVOSILVOSA | P | 48 | 6 | 46 | 34 | 8 | 33 | 52 | 4 | 26 | 6 | 26.3 |
| RHODOPHYTES,UNIDENT. | P | 3 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | 1 | 1.6 |
| PORIFERA | | | | | | | | | | | | |
| LEUCANDRA HEATHI | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| LEUCILLA NUTTINGI | P | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0.6 |
| PORIFERANS,UNIDENT. | P | 0 | 1 | 1 | 15 | 2 | 1 | 0 | 2 | 1 | 1 | 2.4 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 4 | 1 | 1 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 2.1 |

BENTHIC STATION 9, JULY 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 1 | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0.9 |
| CORYNACTIS CALIFORNICA | P | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| MURICEA CALIFORNICA | N | 0 | 0 | 2 | 2 | 2 | 0 | 3 | 2 | 0 | 2 | 1.3 |
| MURICEA FRUTICOSA | N | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| ANTHOZOAN,UNIDENT. | N | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0.6 |
| PLATYHELMINTHES | | | | | | | | | | | | |
| THYSANOZOON SPP. | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 1 | 2 | 0 | 0 | 2 | 4 | 1 | 2 | 2 | 1.5 |
| DODECACERIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0.3 |
| PISTA SPP. | N | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0.4 |
| SABELLARIA CEMENTARIUM | N | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| PAGURIDS,UNIDENT. | N | 1 | 2 | 2 | 0 | 0 | 5 | 2 | 0 | 3 | 2 | 1.7 |
| MOLLUSCA | | | | | | | | | | | | |
| PELECYPODA | | | | | | | | | | | | |
| PHOLAD,UNIDENT. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| GASTROPODA | | | | | | | | | | | | |
| APLYSIA SPP. | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| CREPIPATELLA LINGULATA | N | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| KELLETIA KELLETII | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0.3 |
| MAXWELLIA SANTAROSANA | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| MITRELLA CARINATA | N | 0 | 1 | 8 | 5 | 0 | 7 | 3 | 0 | 2 | 1 | 2.7 |
| ROPERIA POULSONI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| NUDIBRANCHS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 14 | 1 | 5 | 18 | 1 | 2 | 7 | 1 | 5 | 3 | 5.7 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 5 | 1 | 8 | 26 | 1 | 6 | 15 | 1 | 8 | 3 | 7.4 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| ASTROMETIS SERTULIFERA | N | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0.5 |
| PATIRIA MINIATA | N | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 3 | 3 | 1.3 |
| PISASTER BREVISPINUS | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 9, JULY 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PISASTER GIGANTEUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0.4 |
| ECHINOIDEA | | | | | | | | | | | | |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 1 | 10 | 7 | 2 | 0 | 0 | 0 | 1 | 0 | 2.1 |
| STRONGYLOCENTROTUS PURPURATUS | N | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| APLIDIUM SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CHELYOSOMA PRODUCTUM | N | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 0.6 |
| CLAVELINA HUNTSMANI | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.4 |
| STYELA MONTEREYENSIS | N | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0.6 |
| TRIDIDEMNUM / DIDEMNUM | P | 4 | 3 | 0 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 1.7 |
| ASCIDIAN F | P | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0.4 |
| ASCIDIAN G | P | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0.3 |
| COLONIAL ASCIDIAN, UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| SOLITARY ASCIDIAN, UNIDENT. | N | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MACROCYSTIS (HOLDFAST) + | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 5.3 |

* Station 9 is San Mateo kelp

\+ 1 *Macrocystis* holdfast in quadrat 10 was moribund.

§ All *Macrocystis* sporophytes were less than 2 m from bottom in height. Most plants were juveniles and all plants showed new growth with no fouling and/or faded fronds. The many sporophytes in the area probably represents a heavy recruitment from the summer reproductive period.

BENTHIC STATION 1Ø: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG RAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 18, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 15 | 5 | 1Ø | 2Ø | 12 | 8 | 12 | 1Ø | 19 | 9 | 12.Ø |
| BOULDER | P | 4Ø | 35 | 75 | 7Ø | 22 | 28 | 6Ø | 15 | 6 | 16 | 36.7 |
| SAND | P | 45 | 6Ø | 15 | 1Ø | 66 | 64 | 28 | 75 | 75 | 75 | 51.3 |
| RELIEF (MAXIMUM IN CM) | N | 9 | 11 | 2Ø | 13 | 5 | 6 | 15 | 8 | 7 | 1Ø | 1Ø.4 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 1 | Ø | Ø | Ø | Ø | 1 | 1 | 1 | 2 | 1 | Ø.7 |
| CHLOROPHYTE, UNIDENT. | P | Ø | Ø | 1 | 1 | 1 | Ø | 1 | Ø | Ø | Ø | Ø.4 |
| PHAEOPHYTA | | | | | | | | | | | | |
| DESMARESTIA SPP. | P | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | 1 | Ø.2 |
| TAONIA LENNEBACKERAE | P | 1 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø.2 |
| ECTOCARPALES, UNIDENT. | P | Ø | Ø | Ø | Ø | Ø | 1 | 1 | Ø | Ø | Ø | Ø.2 |
| RHODOPHYTA | | | | | | | | | | | | |
| GIGARTINA SPP. | P | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | 1 | Ø | Ø.2 |
| HILDENBRANDIA PROTOTYPUS | P | 3 | 11 | 3 | 4 | 3 | 6 | 12 | 1 | 1 | 1 | 4.5 |
| RHODYMENIA SPP. | P | 2 | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø.3 |
| CRUSTOSE CORALLINES, UNIDENT. | P | 3Ø | 2Ø | 6Ø | 55 | 16 | 3Ø | 48 | 1Ø | 5 | 1Ø | 28.4 |
| PARVOSILVOSA | P | 3 | 3 | 2 | 3 | 15 | 11 | 13 | 1 | 2 | 1 | 5.4 |
| RHODOPHYTES, UNIDENT. | P | Ø | Ø | Ø | Ø | 1 | 1 | 1 | 1 | 1 | 1 | Ø.6 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | Ø | Ø | 1 | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø.2 |
| PORIFERANS, UNIDENT. | P | Ø | Ø | Ø | Ø | 2 | 4 | Ø | Ø | Ø | Ø | Ø.6 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS, UNIDENT. | P | 1 | 2 | 3 | 1 | Ø | 1 | 1 | 1 | Ø | Ø | 1.Ø |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA XANTHOGRAMMICA | N | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø.1 |
| ASTRANGIA SPP. | P | 1 | 4 | 3 | 2 | 2 | 2 | 5 | 3 | 1 | 1 | 2.4 |
| ANTHOZOAN, UNIDENT. | N | Ø | Ø | Ø | Ø | 3 | Ø | 4 | Ø | Ø | Ø | Ø.7 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 5 | 4 | 4 | 4 | 3 | Ø | 2 | 3 | 2 | 2 | 2.9 |
| OWENIA COLLARIS | N | 2 | Ø | Ø | 2 | Ø | Ø | Ø | Ø | Ø | Ø | Ø.4 |
| SABELLARIA CEMENTARIUM | N | 6 | Ø | 9 | 6 | 2 | 4 | Ø | 5 | Ø | 1 | 3.3 |
| SPIOCHAETOPTERUS COSTARUM | N | 2 | Ø | Ø | 3 | Ø | Ø | 1 | Ø | Ø | Ø | Ø.6 |
| ONUPHID, UNIDENT. | N | Ø | Ø | Ø | 6 | Ø | Ø | Ø | Ø | Ø | Ø | Ø.6 |
| ARTHROPODA | | | | | | | | | | | | |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS, UNIDENT. | N | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø.1 |

BENTHIC STATION 1Ø, JULY 18, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1Ø | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | Ø | 1 | Ø | Ø | Ø | Ø | 2 | 2 | Ø | Ø | Ø.5 |
| KELLETIA KELLETII | N | Ø | Ø | Ø | 3 | 2 | Ø | Ø | Ø | 1 | Ø | Ø.6 |
| NASSARIUS MENDICUS | N | Ø | Ø | Ø | Ø | Ø | Ø | 3 | Ø | Ø | Ø | Ø.3 |
| PTEROPURPURA FESTIVA | N | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø.1 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 2 | 1 | 1 | 1 | 2 | Ø | Ø | 1 | 1 | 1 | 1.Ø |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| HENRICIA LEVIUSCULA | N | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø.1 |
| PATIRIA MINIATA | N | Ø | Ø | 1 | Ø | Ø | Ø | 1 | 1 | Ø | Ø | Ø.3 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 3 | 6 | 3 | 7 | 9 | 3 | 9 | 11 | 2 | 4 | 5.7 |
| STRONGYLOCENTROTUS FRANCISCANUS | N | Ø | Ø | Ø | Ø | 1 | Ø | Ø | 1 | Ø | Ø | Ø.2 |
| STRONGYLOCENTROTUS PURPURATUS | N | 1 | 1 | 2 | 3 | 5 | 3 | 1 | 4 | Ø | 1 | 2.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | Ø | 4 | Ø | Ø | Ø | Ø | 4 | 1 | Ø | Ø | Ø.9 |
| CLAVELINA HUNTSMANI | N | Ø | Ø | 2 | Ø | Ø | Ø | Ø | 1Ø | Ø | Ø | 1.2 |
| STYELA MONTEREYENSIS | N | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø | Ø.1 |
| TRIDIDEMNUM / DIDEMNUM | P | 1 | 1 | 2 | 1 | 1 | 4 | 2 | 1 | 1 | 1 | 1.5 |
| COLONIAL ASCIDIAN,UNIDENT. | P | Ø | Ø | Ø | Ø | Ø | Ø | Ø | 1 | Ø | Ø | Ø.1 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| GASTROPOD EGG CASES | P | Ø | 1 | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø | Ø.1 |

* Station 10 is San Onofre kelp.

*

BENTHIC STATION 11: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF JULY 21, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 63 | 52 | 5 | 5 | 10 | 10 | 10 | 10 | 82 | 20 | 26.7 |
| BOULDER | P | 5 | 10 | 30 | 5 | 33 | 20 | 80 | 20 | 6 | 15 | 22.4 |
| SAND | P | 32 | 30 | 30 | 5 | 24 | 10 | 10 | 70 | 12 | 30 | 25.3 |
| ROCK SHELF | P | 0 | 8 | 35 | 85 | 33 | 60 | 0 | 0 | 0 | 35 | 25.6 |
| RELIEF (MAXIMUM IN CM) | N | 21 | 13 | 16 | 23 | 21 | 11 | 23 | 20 | 8 | 35 | 19.1 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.2 |
| PHAEOPHYTA | | | | | | | | | | | | |
| PTERYGOPHORA CALIFORNICA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| LAMINOID,UNIDENT. | N | 0 | 0 | 12 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 2.9 |
| PHAEOPHYTE,UNIDENT. | P | 1 | 1 | 0 | 0 | 3 | 2 | 2 | 1 | 2 | 16 | 2.8 |
| RHODOPHYTA | | | | | | | | | | | | |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| BOSSIELLA SPP. | P | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0.5 |
| CALLOPHYLLIS SPP. | P | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| CORALLINA OFFICINALIS VAR. CHILENSIS | P | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| CORALLINA / HALIPTYLON | P | 1 | 1 | 4 | 2 | 0 | 0 | 1 | 2 | 1 | 3 | 1.5 |
| FAUCHEA LACINIATA | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| GIGARTINA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.2 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.3 |
| NEOPTILOTA SPP. | P | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PRIONITIS SPP. | P | 0 | 1 | 3 | 0 | 0 | 2 | 0 | 2 | 1 | 3 | 1.2 |
| PTEROCLADIA / GELIDIUM | P | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 3 | 2 | 1.0 |
| RHODYMENIA SPP. | P | 10 | 5 | 7 | 20 | 8 | 7 | 8 | 5 | 5 | 25 | 10.0 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 2 | 5 | 0 | 1 | 0 | 1 | 1 | 4 | 1 | 4 | 1.9 |
| PARVOSILVOSA | P | 5 | 18 | 2 | 6 | 2 | 5 | 2 | 1 | 2 | 5 | 4.8 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 2 | 10 | 1 | 1 | 2 | 2 | 1 | 5 | 2.6 |
| PORIFERA | | | | | | | | | | | | |
| HYMENAMPHIASTRA CYANOCRYPTA | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| LEUCILLA NUTTINGI | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0.4 |
| PORIFERANS,UNIDENT. | P | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0.8 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 2 | 2 | 2 | 3 | 3 | 3 | 1 | 1 | 2 | 2 | 2.1 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA ARTEMISIA | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| ANTHOPLEURA SPP. | N | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 |
| ASTRANGIA SPP. | P | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0.4 |
| CACTOSOMA ARENARIA? | N | 0 | 0 | 0 | 2 | 0 | 0 | 9 | 0 | 3 | 0 | 1.4 |

BENTHIC STATION 11, JULY 21, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| CORYNACTIS CALIFORNICA | P | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0.5 |
| HALCAMPA DECEMTENTACULATA | P | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| MURICEA CALIFORNICA | N | 7 | 3 | 3 | 1 | 1 | 3 | 2 | 1 | 1 | 4 | 2.6 |
| MURICEA FRUTICOSA | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0.4 |
| ZAOLUTUS ACTIUS | N | 0 | 18 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1.9 |
| ANTHOZOAN,UNIDENT. | N | 4 | 2 | 0 | 0 | 8 | 4 | 0 | 1 | 0 | 0 | 1.9 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 3 | 5 | 7 | 4 | 6 | 3 | 1 | 0 | 0 | 4 | 3.3 |
| DODECACERIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.2 |
| OWENIA COLLARIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| PHRAGMATOPOMA CALIFORNICA | N | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.2 |
| SALMACINA TRIBRANCHIATA | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SERPULIDS,UNIDENT. | P | 1 | 1 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0.7 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 1 | 7 | 0 | 1 | 1 | 1 | 2 | 2 | 0 | 1.5 |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0.5 |
| PAGURIDS,UNIDENT. | N | 6 | 2 | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 1.7 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 3 | 1 | 5 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1.2 |
| CRASSISPIRA SEMIINFLATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 1 | 1 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 1.4 |
| MAXWELLIA GEMMA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| MEGATHURA CRENULATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.2 |
| NASSARIUS MENDICUS | N | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.4 |
| OPHIODERMELLA SPP. | N | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| PHIDIANA PUGNAX | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| SERPULORBIS SQUAMIGERUS | N | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.2 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 8 | 6 | 3 | 9 | 5 | 4 | 1 | 1 | 1 | 8 | 4.6 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 5 | 8 | 3 | 3 | 4 | 2 | 1 | 1 | 1 | 3 | 3.1 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| ASTROMETIS SERTULIFERA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 |
| ASTROPECTEN BRASILIENSIS ARMATUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| DERMASTERIAS IMBRICATA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| HENRICIA LEVIUSCULA | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0.3 |
| PATIRIA MINIATA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 11, JULY 21, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PISASTER GIGANTEUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0.2 |
| PISASTER SPP.(JUV.) | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| HOLOTHUROIDEA | | | | | | | | | | | | |
| PARASTICHOPUS PARVIMENSIS | N | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0.3 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| APLIDIUM SPP. | P | 1 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0.8 |
| ARCHIDISTOMA SPP. | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.3 |
| CHELYOSOMA PRODUCTUM | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| CLAVELINA HUNTSMANI | N | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0.5 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 1 | 3 | 1.3 |
| STYELA MONTEREYENSIS | N | 3 | 4 | 4 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 3.7 |
| TRIDIDEMNUM / DIDEMNUM | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0.5 |
| ASCIDIANS,UNIDENT. | P | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0.8 |
| ASCIDIAN F | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| ASCIDIAN G | P | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 |
| CLINIDAE | | | | | | | | | | | | |
| NEOCLINUS SPP. | R | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| INVERTEBRATES,UNIDENT. | | | | | | | | | | | | |
| GASTROPOD EGG CASES | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.3 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MACROCYSTIS(HOLDFAST)+ | N | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0.4 |

* Station 11 is Barn kelp.

\+ 4 *Macrocystis* holdfast were observed, all were in a moribund state.

BENTHIC STATION 1: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 98 | 93 | 87 | 95 | 85 | 85 | 70 | 60 | 70 | 80 | 82.3 |
| BOULDER | P | 0 | 5 | 10 | 0 | 5 | 5 | 15 | 25 | 20 | 10 | 9.5 |
| SAND | P | 2 | 2 | 3 | 5 | 10 | 10 | 15 | 15 | 10 | 10 | 8.2 |
| RELIEF (MAXIMUM IN CM) | N | 14 | 20 | 12 | 8 | 15 | 10 | 9 | 9 | 11 | 7 | 11.5 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS HYPNOIDES | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 10 | 5 | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 2.4 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| BOSSIELLA SPP. | P | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.4 |
| CORALLINA / HALIPTYLON | P | 2 | 3 | 1 | 1 | 0 | 0 | 0 | 2 | 3 | 1 | 1.3 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 0 | 0 | 1 | 1 | 1 | 3 | 3 | 0 | 2 | 1.2 |
| PTEROCLADIA / GELIDIUM | P | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0.6 |
| RHODYMENIA SPP. | P | 5 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 12 | 11 | 25 | 10 | 5 | 10 | 15 | 12 | 10 | 7 | 11.7 |
| PARVOSILVOSA | P | 6 | 3 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1.5 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.5 |
| WHITE ERECT CORALLINE | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0.5 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 2 | 2 | 2 | 0 | 0 | 0 | 6 | 3 | 2 | 2 | 1.9 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 0 | 0 | 3 | 2 | 3 | 3 | 0 | 4 | 4 | 0 | 1.9 |
| SABELLARIA CEMENTARIUM | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0.3 |
| SABELLARID,UNIDENT. | N | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SERPULIDS,UNIDENT. | P | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0.8 |
| ARTHROPODA | | | | | | | | | | | | |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| SERPULORBIS SQUAMIGERUS | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 1, OCTOBER 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 4 | 4 | 3 | 1 | 5 | 1 | 6 | 4 | 0 | 6 | 3.4 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 18 | 9 | 10 | 1 | 2 | 1 | 15 | 9 | 0 | 4 | 6.9 |
| ECHINODERMATA | | | | | | | | | | | | |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| STYELA MONTEREYENSIS | N | 4 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 |
| TRIDIDEMNUM / DIDEMNUM | P | 2 | 2 | 2 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1.1 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MURICEA(MORIBUND HOLDFAST) | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.2 |

BENTHIC STATION 2: *SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | MEAN |
|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | |
| COBBLE | P | 7 | 60 | 78 | 5 | 37.5 |
| BOULDER | P | 0 | 0 | 10 | 10 | 5.0 |
| SAND | P | 93 | 40 | 12 | 85 | 57.5 |
| RELIEF (MAXIMUM IN CM) | N | 2 | 10 | 17 | 15 | 11.0 |
| PHAEOPHYTA | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 3 | 5 | 2 | 0 | 2.5 |
| RHODOPHYTA | | | | | | |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 1 | 0 | 0.3 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 1 | 1 | 0 | 0.8 |
| PTEROCLADIA / GELIDIUM | P | 0 | 0 | 2 | 2 | 1.0 |
| RHODYMENIA SPP. | P | 1 | 3 | 2 | 1 | 1.8 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 4 | 5 | 9 | 1 | 4.8 |
| PARVOSILVOSA | P | 3 | 15 | 4 | 1 | 5.8 |
| RHODOPHYTES,UNIDENT. | P | 0 | 1 | 1 | 1 | 0.8 |
| CNIDARIA | | | | | | |
| HYDROZOA | | | | | | |
| HYDROIDS,UNIDENT. | P | 1 | 0 | 3 | 1 | 1.3 |
| ANTHOZOA | | | | | | |
| MURICEA CALIFORNICA | N | 0 | 0 | 3 | 6 | 2.3 |
| ANNELIDA | | | | | | |
| POLYCHAETA | | | | | | |
| DIOPATRA ORNATA | N | 3 | 0 | 2 | 1 | 1.5 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 2 | 0 | 0.5 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 1 | 0 | 0.3 |
| SABELLID,UNIDENT. | N | 0 | 0 | 1 | 0 | 0.3 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 1 | 0 | 0.3 |
| ARTHROPODA | | | | | | |
| DECAPODA | | | | | | |
| SPIRONTOCARIS SPP. | N | 0 | 0 | 1 | 0 | 0.3 |
| PAGURIDS,UNIDENT. | N | 1 | 1 | 0 | 3 | 1.3 |
| MOLLUSCA | | | | | | |
| GASTROPODA | | | | | | |
| KELLETIA KELLETII | N | 0 | 0 | 1 | 0 | 0.3 |
| MITRELLA CARINATA | N | 0 | 3 | 0 | 0 | 0.8 |
| ECTOPROCTA | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 1 | 2 | 5 | 2.3 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 3 | 5 | 10 | 2 | 5.0 |

BENTHIC STATION 2, OCTOBER 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | MEAN |
|---|---|---|---|---|---|---|
| CHORDATA | | | | | | |
| UROCHORDATA | | | | | | |
| EUHERDMANIA CLAVIFORMIS | P | Ø | 1 | 1 | 1 | Ø.9 |
| TRIDIDEMNUM / DIDEMNUM | P | Ø | Ø | 2 | 1 | Ø.8 |
| ASCIDIANS,UNIDENT. | P | Ø | Ø | 1 | 1 | Ø.5 |

* Means calculated on a sample size of 4 quadrats; remaining quadrats were sanded in and rebar were not located.

BENTHIC STATION 5: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 20 | 40 | 25 | 9.6 |
| BOULDER | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1.5 |
| SAND | P | 100 | 99 | 100 | 100 | 100 | 100 | 80 | 10 | 35 | 35 | 75.9 |
| ROCK SHELF | P | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 70 | 25 | 25 | 13.0 |
| RELIEF (MAXIMUM IN CM) | N | 0 | 3 | 0 | 0 | 0 | 8 | 2 | 28 | 20 | 10 | 7.1 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS HYPNOIDES | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | 10 | 14 | 5.1 |
| RHODOPHYTA | | | | | | | | | | | | |
| PTEROCLADIA / GELIDIUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| RHODYMENIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.2 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 0.5 |
| PARVOSILVOSA | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0.3 |
| RHODOPHYTES,UNIDENT. | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 2 | 0.9 |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA CALIFORNICA | N | 1 | 3 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 6 | 1.7 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 3 | 11 | 14 | 1 | 6 | 14 | 10 | 5 | 8 | 6 | 7.8 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.2 |
| SABELLID,UNIDENT. | N | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| MAXWELLIA SANTAROSANA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 10 | 1.9 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 5 | 25 | 5.0 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| EUHERDMANIA CLAVIFORMIS | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 7 | 1.4 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.2 |
| ASCIDIAN F | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0.3 |

BENTHIC STATION 6: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 26, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 10 | 10 | 5 | 5 | 20 | 27 | 15 | 5 | 5 | 15 | 11.7 |
| BOULDER | P | 0 | 0 | 30 | 0 | 0 | 25 | 0 | 20 | 0 | 5 | 8.0 |
| SAND | P | 40 | 90 | 55 | 85 | 68 | 48 | 40 | 75 | 85 | 80 | 66.6 |
| ROCK SHELF | P | 50 | 0 | 10 | 10 | 12 | 0 | 45 | 0 | 10 | 0 | 13.7 |
| RELIEF (MAXIMUM IN CM) | N | 12 | 15 | 12 | 4 | 7 | 6 | 14 | 18 | 13 | 9 | 11.0 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS CORTICULANS | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0.2 |
| BRYOPSIS HYPNOIDES | P | 1 | 1 | 3 | 1 | 5 | 4 | 4 | 2 | 4 | 1 | 2.6 |
| CHLOROPHYTE,UNIDENT. | P | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0.5 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 3 | 5 | 5 | 7 | 2 | 5 | 4 | 7 | 2 | 1 | 4.1 |
| DICTYOTA / PACHYDICTYON | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2 |
| PHAEOPHYTE,UNIDENT. | P | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0.6 |
| PHAEOPHYTE,UNIDENT.(JUV.) | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0.3 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| ANISOCLADELLA PACIFICA | P | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.3 |
| BOSSIELLA SPP. | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.4 |
| CORALLINA / HALIPTYLON | P | 5 | 5 | 5 | 3 | 8 | 5 | 8 | 4 | 5 | 7 | 5.5 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.5 |
| NIENBURGIA ANDERSONIANA | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0.2 |
| PLOCAMIUM SPP. | P | 1 | 1 | 0 | 1 | 2 | 2 | 0 | 4 | 2 | 2 | 1.5 |
| PRIONITIS SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PTEROCLADIA / GELIDIUM | P | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 1 | 1 | 2 | 1.2 |
| RHODYMENIA SPP. | P | 1 | 1 | 2 | 1 | 2 | 2 | 5 | 3 | 0 | 2 | 1.9 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 1 | 1 | 1 | 1 | 2 | 1 | 5 | 1 | 1 | 1 | 1.5 |
| PARVOSILVOSA | P | 30 | 5 | 30 | 5 | 12 | 15 | 15 | 6 | 3 | 7 | 12.8 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0.9 |
| PORIFERA | | | | | | | | | | | | |
| LEUCANDRA HEATHI | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| LEUCILLA NUTTINGI | P | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| PORIFERANS,UNIDENT. | P | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.6 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 1 | 1 | 2 | 2 | 2 | 3 | 6 | 6 | 2 | 4 | 2.9 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 1 | 1 | 1 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 1.0 |
| MURICEA CALIFORNICA | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0.3 |
| ANEMONE,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0.4 |

BENTHIC STATION 6, OCTOBER 26, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 2 | 4 | 2 | 3 | 5 | 2 | 0 | 0 | 0 | 1.9 |
| OWENIA COLLARIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0.3 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0.4 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 1 | 1 | 1 | 2 | 2 | 15 | 5 | 0 | 1 | 3 | 3.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 5 | 1 | 2 | 1 | 2 | 4 | 5 | 10 | 5 | 4 | 3.9 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 1 | 1 | 1 | 2 | 1 | 4 | 3 | 6 | 2 | 3 | 2.4 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 1 | 1 | 0 | 1 | 3 | 2 | 3 | 1 | 2 | 1.5 |
| PYURA HAUSTOR | N | 2 | 6 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1.3 |
| STYELA MONTEREYENSIS | N | 0 | 2 | 2 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0.9 |
| STYELA SPP.(JUV.) | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| ASCIDIAN F | P | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0.5 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |

BENTHIC STATION 8: SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 17, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 50 | 60 | 60 | 10 | 20 | 20 | 10 | 5 | 5 | 5 | 24.5 |
| BOULDER | P | 0 | 10 | 0 | 20 | 35 | 20 | 20 | 0 | 5 | 5 | 11.5 |
| SAND | P | 50 | 20 | 20 | 25 | 25 | 20 | 50 | 55 | 60 | 35 | 36.0 |
| ROCK SHELF | P | 0 | 10 | 20 | 45 | 20 | 40 | 20 | 40 | 30 | 55 | 28.0 |
| RELIEF (MAXIMUM IN CM) | N | 10 | 15 | 18 | 22 | 21 | 24 | 17 | 13 | 11 | 8 | 15.9 |
| CHLOROPHYTA | | | | | | | | | | | | |
| BRYOPSIS HYPNOIDES | P | 10 | 10 | 10 | 6 | 4 | 13 | 15 | 2 | 4 | 3 | 7.7 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0.2 |
| RHODOPHYTA | | | | | | | | | | | | |
| ACROSORIUM UNCINATUM | P | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0.3 |
| ANISOCLADELLA PACIFICA | P | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0.3 |
| CORALLINA / HALIPTYLON | P | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0.5 |
| PRIONITIS SPP. | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0.2 |
| PTEROCLADIA / GELIDIUM | P | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0.6 |
| RHODYMENIA SPP. | P | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 1.4 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| PARVOSILVOSA | P | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 1 | 5 | 2 | 1.8 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 1.5 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0.9 |
| LEUCOSOLENIA SPP. | P | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| PORIFERANS,UNIDENT. | P | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0.5 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 5 | 5 | 5 | 2 | 2 | 4 | 3 | 3 | 2 | 2 | 3.3 |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA CALIFORNICA | N | 0 | 0 | 2 | 4 | 5 | 3 | 5 | 7 | 0 | 0 | 2.6 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 1 | 2 | 1 | 3 | 2 | 5 | 3 | 3 | 1 | 2.2 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0.6 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 1 | 1 | 1 | 1 | 1 | 0 | 6 | 0 | 2 | 6 | 1.9 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |

BENTHIC STATION 8, OCTOBER 17, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOLLUSCA | | | | | | | | | | | | |
| PELECYPODA | | | | | | | | | | | | |
| CHAMA PELLUCIDA | N | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 5 | 5 | 15 | 10 | 15 | 8 | 9 | 4 | 3 | 7.5 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 1 | 10 | 10 | 20 | 8 | 8 | 5 | 2 | 2 | 3 | 6.9 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| EUHERDMANIA CLAVIFORMIS | P | 1 | 1 | 1 | 1 | 2 | 2 | 9 | 5 | 3 | 2 | 2.7 |
| ASCIDIAN F | P | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MURICEA(MORIBUND HOLDFAST) | P | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0.4 |

BENTHIC STATION 9* SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 75 | 75 | 20 | 35 | 25 | 35 | 82 | 77 | 70 | 75 | 56.9 |
| BOULDER | P | 20 | 15 | 70 | 60 | 70 | 60 | 16 | 21 | 28 | 20 | 38.0 |
| SAND | P | 5 | 10 | 10 | 5 | 5 | 5 | 2 | 2 | 2 | 5 | 5.1 |
| RELIEF (MAXIMUM IN CM) | N | 30 | 30 | 28 | 27 | 25 | 16 | 15 | 17 | 40 | 32 | 26.0 |
| CHLOROPHYTA | | | | | | | | | | | | |
| CHLOROPHYTE,UNIDENT. | P | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| PHAEOPHYTA | | | | | | | | | | | | |
| CYSTOSEIRA / HALIDRYS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| DICTYOPTERIS SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| DICTYOTA / PACHYDICTYON | P | 1 | 1 | 1 | 0 | 3 | 0 | 2 | 1 | 2 | 1 | 1.2 |
| †MACROCYSTIS SPP. | N | 4 | 6 | 3 | 5 | 6 | 6 | 3 | 1 | 3 | 5 | 4.2 |
| TAONIA LENNEBACKERAE | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| ECTOCARPALES,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.2 |
| PHAEOPHYTE,UNIDENT. | P | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 |
| RHODOPHYTA | | | | | | | | | | | | |
| BOSSIELLA SPP. | P | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0.4 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0.5 |
| CALLOPHYLLIS SPP. | P | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0.3 |
| COELOSEIRA / CHAMPIA | P | 2 | 1 | 10 | 7 | 2 | 6 | 3 | 2 | 3 | 10 | 4.6 |
| CORALLINA / HALIPTYLON | P | 7 | 2 | 3 | 2 | 12 | 12 | 2 | 6 | 9 | 7 | 6.2 |
| CRYPTONEMIA/HALYMENIA/SCHIZYMENIA | P | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| HILDENBRANDIA PROTOTYPUS | P | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| JANIA SPP. | P | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 2 | 0 | 0.6 |
| LITHOTHRIX ASPERGILLUM | P | 1 | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 1 | 0 | 0.9 |
| NEOAGARDHIELLA BAILEYI | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0.3 |
| PTEROCLADIA / GELIDIUM | P | 2 | 1 | 0 | 18 | 0 | 7 | 1 | 3 | 23 | 15 | 7.0 |
| RHODYMENIA SPP. | P | 10 | 15 | 10 | 18 | 20 | 25 | 18 | 25 | 10 | 5 | 15.6 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 3 | 1 | 10 | 12 | 15 | 9 | 18 | 14 | 8 | 15 | 10.5 |
| PARVOSILVOSA | P | 40 | 25 | 60 | 20 | 17 | 12 | 10 | 12 | 11 | 10 | 21.7 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.8 |
| PORIFERA | | | | | | | | | | | | |
| LEUCANDRA HEATHI | P | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0.2 |
| LEUCILLA NUTTINGI | P | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0.6 |
| PORIFERANS,UNIDENT. | P | 1 | 1 | 1 | 7 | 2 | 3 | 1 | 1 | 1 | 1 | 1.9 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 3 | 1 | 2 | 4 | 3 | 3 | 4 | 6 | 5 | 5 | 3.6 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 1 | 1 | 1 | 2 | 3 | 2 | 0 | 1 | 2 | 2 | 1.5 |
| CORYNACTIS CALIFORNICA | P | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0.6 |

BENTHIC STATION 9, OCTOBER 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| MURICEA CALIFORNICA | N | 0 | 1 | 3 | 1 | 2 | 1 | 3 | 2 | 0 | 1 | 1.4 |
| MURICEA FRUTICOSA | N | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0.8 |
| ANEMONE,UNIDENT. | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.2 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 2 | 4 | 0 | 3 | 2 | 3 | 3 | 2 | 1 | 1 | 2.1 |
| DODECACERIA SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0.5 |
| OWENIA COLLARIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| PISTA SPP. | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SALMACINA TRIBRANCHIATA | P | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0.5 |
| SPIOCHAETOPTERUS COSTARUM | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.2 |
| SABELLARID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.2 |
| SABELLID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 45 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.3 |
| PAGURIDS,UNIDENT. | N | 0 | 1 | 0 | 6 | 1 | 2 | 1 | 1 | 2 | 1 | 1.5 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CREPIPATELLA LINGULATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.2 |
| KELLETIA KELLETII | N | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0.5 |
| MITRELLA CARINATA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 1.1 |
| NASSARIUS MENDICUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| PTEROPURPURA FESTIVA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| NUDIBRANCH EGGS | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 4 | 1 | 1.8 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 2 | 2 | 1 | 7 | 8 | 9 | 10 | 4 | 10 | 2 | 5.5 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| ASTROMETIS SERTULIFERA | N | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 1 | 6 | 8 | 4 | 0 | 0 | 0 | 1 | 0 | 2.0 |
| STRONGYLOCENTROTUS PURPURATUS | N | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 |

BENTHIC STATION 9, OCTOBER 16, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| **APLIDIUM SPP.** | **P** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0.2** |
| **CHELYOSOMA PRODUCTUM** | **N** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **2** | **0.6** |
| **CLAVELINA HUNTSMANI** | **N** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **2** | **0.5** |
| **EUHERDMANIA CLAVIFORMIS** | **P** | **1** | **0** | **1** | **0** | **0** | **2** | **1** | **0** | **0** | **0** | **0.5** |
| MOLGULA SPP. | N | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 2 | 6 | 0 | 1.6 |
| PYCNOCLAVELLA STANLEYI | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0.4 |
| PYURA HAUSTOR | N | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| STYELA MONTEREYENSIS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0.2 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 1 | 1 | 0 | 1 | 2 | 2 | 4 | 5 | 1 | 1.7 |
| ASCIDIAN F | P | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0.6 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0.3 |

*ETS Benthic Station 9 is San Mateo Kelp Station.

†A total of 42 plants were enumerated in the band transect. Seventeen plants accounting for 48 stipes were observed extending ≥2m above the bottom. Generally all plants exhibited new growth and appeared healthy. Most plants were juveniles. Two plants in Quadrat 9 appeared to have damaged holdfasts resulting from herbivorous grazing activity.

BENTHIC STATION 10* SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 25 | 10 | 55 | 30 | 40 | 25 | 80 | 55 | 62 | 55 | 43.7 |
| BOULDER | P | 35 | 40 | 30 | 50 | 30 | 15 | 10 | 35 | 18 | 30 | 29.3 |
| SAND | P | 40 | 50 | 15 | 20 | 30 | 60 | 10 | 10 | 20 | 15 | 27.0 |
| ROCK SHELF | P | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 |
| RELIEF (MAXIMUM IN CM) | N | 16 | 0 | 22 | 18 | 15 | 15 | 16 | 16 | 11 | 15 | 14.4 |
| PHAEOPHYTA | | | | | | | | | | | | |
| DESMARESTIA SPP. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| RHODOPHYTA | | | | | | | | | | | | |
| ANISOCLADELLA PACIFICA | P | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0.4 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| HILDENBRANDIA PROTOTYPUS | P | 4 | 3 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 1.2 |
| RHODYMENIA SPP. | P | 1 | 2 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0.9 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 60 | 45 | 45 | 30 | 50 | 30 | 42 | 50 | 40 | 30 | 42.2 |
| PARVOSILVOSA | P | 3 | 6 | 28 | 20 | 10 | 5 | 13 | 10 | 8 | 1 | 10.4 |
| RHODOPHYTES,UNIDENT. | P | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0.7 |
| PORIFERA | | | | | | | | | | | | |
| LEUCILLA NUTTINGI | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 2 | 5 | 2 | 5 | 5 | 2 | 3 | 3 | 3 | 1 | 3.1 |
| ANTHOZOA | | | | | | | | | | | | |
| ANTHOPLEURA SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| ASTRANGIA SPP. | P | 2 | 4 | 8 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | 2.8 |
| MURICEA CALIFORNICA | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ANEMONE,UNIDENT. | N | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.2 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 1 | 2 | 1 | 1 | 2 | 2 | 6 | 5 | 3 | 3 | 2.6 |
| PHYLLOCHAETOPTERUS? SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| SPIOCHAETOPTERUS COSTARUM | N | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.3 |
| SABELLARID,UNIDENT. | N | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0.5 |
| SABELLID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0.2 |
| DECAPODA | | | | | | | | | | | | |
| PAGURIDS,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |

BENTHIC STATION 10, OCTOBER 19, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOLLUSCA | | | | | | | | | | | | |
| PELECYPODA | | | | | | | | | | | | |
| CHAMA PELLUCIDA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| KELLETIA KELLETII | N | 0 | 2 | 1 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 1.3 |
| MITRELLA CARINATA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0.6 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 1 | 2 | 0 | 1 | 2 | 3 | 4 | 2 | 3 | 1 | 1.9 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| PATIRIA MINIATA | N | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.5 |
| ECHINOIDEA | | | | | | | | | | | | |
| LYTECHINUS SPP. | N | 2 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 2 | 6 | 1.5 |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| STRONGYLOCENTROTUS PURPURATUS | N | 0 | 1 | 2 | 2 | 2 | 0 | 3 | 2 | 0 | 0 | 1.2 |
| HOLOTHUROIDEA | | | | | | | | | | | | |
| PARASTICHOPUS PARVIMENSIS | N | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| EUHERDMANIA CLAVIFORMIS | P | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0.3 |
| PYCNOCLAVELLA STANLEYI | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.2 |
| TRIDIDEMNUM / DIDEMNUM | P | 3 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 0 | 1 | 1.2 |
| ASCIDIAN F | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MACROCYSTIS(MORIBUND HOLDFAST) | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| MURICEA(MORIBUND HOLDFAST) | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

*ETS Benthic Station 10 is San Onofre Kelp Station.

BENTHIC STATION 11:* SPECIES COMPOSITION OF TEN FIXED METER-SQUARE QUADRATS ALONG BAND TRANSECT, AND MEAN FOR THE ENTIRE TRANSECT. SURVEY OF OCTOBER 26, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | | | | | |
| COBBLE | P | 20 | 35 | 40 | 0 | 10 | 10 | 15 | 10 | 30 | 5 | 17.5 |
| BOULDER | P | 30 | 35 | 40 | 10 | 0 | 5 | 30 | 35 | 20 | 10 | 21.5 |
| SAND | P | 25 | 20 | 20 | 25 | 30 | 15 | 25 | 50 | 50 | 55 | 31.5 |
| ROCK SHELF | P | 25 | 10 | 0 | 65 | 60 | 70 | 30 | 5 | 0 | 30 | 29.5 |
| RELIEF (MAXIMUM IN CM) | N | 25 | 20 | 15 | 22 | 30 | 20 | 12 | 29 | 9 | 21 | 20.3 |
| CHLOROPHYTA | | | | | | | | | | | | |
| CHLOROPHYTE,UNIDENT. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| PHAEOPHYTA | | | | | | | | | | | | |
| †MACROCYSTIS SPP. | N | 0 | 0 | 0 | 8 | 3 | 0 | 1 | 1 | 0 | 1 | 1.4 |
| PTERYGOPHORA CALIFORNICA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0.4 |
| LAMINOID,UNIDENT. | N | 0 | 0 | 0 | 3 | 6 | 1 | 0 | 0 | 0 | 0 | 1.0 |
| PHAEOPHYTE,UNIDENT. | P | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| RHODOPHYTA | | | | | | | | | | | | |
| ANISOCLADELLA PACIFICA | P | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| BOSSIELLA SPP. | P | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.7 |
| BOTRYOCLADIA PSEUDODICHOTOMA | P | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0.5 |
| CORALLINA / HALIPTYLON | P | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 7 | 6 | 2 | 2.5 |
| CRYPTONEMIA/HALYMENIA/SCHIZYMENIA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0.1 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 0 | 5 | 0 | 3 | 0 | 3 | 2 | 2 | 1 | 1.6 |
| HILDENBRANDIA PROTOTYPUS | P | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0.4 |
| HYMENENA / CRYPTOPLEURA | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PRIONITIS SPP. | P | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 3 | 0 | 0.8 |
| PTEROCLADIA / GELIDIUM | P | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 1 | 1.4 |
| RHODYMENIA SPP. | P | 2 | 5 | 1 | 6 | 7 | 3 | 20 | 10 | 6 | 15 | 7.5 |
| CRUSTOSE CORALLINES,UNIDENT. | P | 3 | 1 | 1 | 2 | 5 | 3 | 3 | 3 | 4 | 4 | 2.9 |
| PARVOSILVOSA | P | 5 | 10 | 2 | 0 | 6 | 2 | 2 | 3 | 5 | 3 | 3.8 |
| RHODOPHYTES,UNIDENT. | P | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0.8 |
| PORIFERA | | | | | | | | | | | | |
| HYMENAMPHIASTRA CYANOCRYPTA | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| LEUCILLA NUTTINGI | P | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 0.7 |
| TETHYA AURANTIA | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PORIFERANS,UNIDENT. | P | 3 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 3 | 1.1 |
| CNIDARIA | | | | | | | | | | | | |
| HYDROZOA | | | | | | | | | | | | |
| HYDROIDS,UNIDENT. | P | 5 | 5 | 15 | 10 | 11 | 5 | 3 | 3 | 4 | 4 | 6.5 |
| ANTHOZOA | | | | | | | | | | | | |
| ASTRANGIA SPP. | P | 3 | 0 | 0 | 2 | 2 | 0 | 1 | 0 | 2 | 0 | 1.0 |
| CORYNACTIS CALIFORNICA | P | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0.6 |
| MURICEA CALIFORNICA | N | 7 | 4 | 0 | 1 | 1 | 4 | 3 | 3 | 2 | 4 | 2.9 |
| MURICEA FRUTICOSA | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |

BENTHIC STATION 11, OCTOBER 26, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | | | | | |
| ANTHOZOA | | | | | | | | | | | | |
| ANEMONE,UNIDENT. | N | 5 | 1 | 1 | 1 | 2 | 3 | 3 | 5 | 3 | 3 | 2.7 |
| CERIANTHID,UNIDENT. | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0.3 |
| ANNELIDA | | | | | | | | | | | | |
| POLYCHAETA | | | | | | | | | | | | |
| DIOPATRA ORNATA | N | 2 | 3 | 7 | 0 | 3 | 6 | 1 | 3 | 1 | 4 | 3.0 |
| PHRAGMATOPOMA CALIFORNICA | N | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0.2 |
| PHYLLOCHAETOPTERUS PROLIFICA | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| SALMACINA TRIBRANCHIATA | P | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0.6 |
| SPIOCHAETOPTERUS COSTARUM | N | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0.5 |
| SERPULIDS,UNIDENT. | P | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0.2 |
| ARTHROPODA | | | | | | | | | | | | |
| CIRRIPEDIA | | | | | | | | | | | | |
| BALANUS SPP. | P | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 2 | 1.0 |
| DECAPODA | | | | | | | | | | | | |
| PAGURISTES SPP. | N | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0.6 |
| PAGURIDS,UNIDENT. | N | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| MOLLUSCA | | | | | | | | | | | | |
| GASTROPODA | | | | | | | | | | | | |
| CONUS CALIFORNICUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 |
| KELLETIA KELLETII | N | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0.4 |
| MEGATHURA CRENULATA | N | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ECTOPROCTA | | | | | | | | | | | | |
| ECTOPROCTS,UNIDENT.(ERECT) | P | 10 | 5 | 1 | 12 | 10 | 4 | 8 | 3 | 6 | 9 | 6.8 |
| ECTOPROCTS,UNIDENT.(ENCRUSTING) | P | 5 | 10 | 1 | 18 | 10 | 9 | 4 | 5 | 2 | 7 | 7.1 |
| ECHINODERMATA | | | | | | | | | | | | |
| ASTEROIDEA | | | | | | | | | | | | |
| HENRICIA SPP. | N | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.1 |
| PISASTER GIGANTEUS | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 |
| PISASTER SPP.(JUV.) | N | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0.4 |
| ECHINOIDEA | | | | | | | | | | | | |
| STRONGYLOCENTROTUS FRANCISCANUS | N | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| HOLOTHUROIDEA | | | | | | | | | | | | |
| CUCUMARIA SPP. | N | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0.4 |
| PARASTICHOPUS PARVIMENSIS | N | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| CHELYOSOMA PRODUCTUM | N | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 |
| CLAVELINA HUNTSMANI | N | 0 | 1 | 0 | 0 | 4 | 4 | 1 | 0 | 0 | 0 | 1.0 |
| EUHERDMANIA CLAVIFORMIS | P | 2 | 1 | 1 | 2 | 2 | 0 | 2 | 0 | 1 | 2 | 1.3 |
| PYCNOCLAVELLA STANLEYI | P | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.2 |

BENTHIC STATION 11, OCTOBER 26, 1978

| TAXA | DATA TYPE | QUADRAT 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | | | | | |
| UROCHORDATA | | | | | | | | | | | | |
| STYELA MONTEREYENSIS | N | 4 | 10 | 8 | 4 | 0 | 9 | 5 | 2 | 6 | 3 | 5.1 |
| TRIDIDEMNUM / DIDEMNUM | P | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| ASCIDIAN F | P | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0.7 |
| ASCIDIAN G | P | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 1.0 |
| COLONIAL ASCIDIAN,UNIDENT. | P | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| SOLITARY ASCIDIAN,UNIDENT. | N | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0.2 |
| SECONDARY SUBSTRATE | | | | | | | | | | | | |
| MURICEA(MORIBUND HOLDFAST) | P | 2 | 0 | 2 | 21 | 2 | 0 | 0 | 0 | 0 | 0 | 2.7 |

*ETS Benthic Station 11 is Barn Kelp Station

†A total of 13 plants were observed in the band transect. All plants were juveniles with no stipes extending ≥2m above the bottom. All plants exhibited new growth and appeared healthy (e.g. no frayed or bleached fronds).

Diver measured surface and bottom temperature, and diver estimated surface and bottom visibility and surge at benthic stations. Survey of February 1, 1978.

| STATION NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | SMK | SOK | BK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | - | - | - | - | - | - | - | - | 2/1/78 | - | - |
| TEMPERATURE (°C) | | | | | | | | | | | |
| SURFACE | - | - | - | - | - | - | - | - | 15.7 | - | - |
| BOTTOM | - | - | - | - | - | - | - | - | 15.6 | - | - |
| VISIBILITY (M) | | | | | | | | | | | |
| SURFACE | - | - | - | - | - | - | - | - | 1.2 | - | - |
| BOTTOM | - | - | - | - | - | - | - | - | 1.5 | - | - |
| SURGE | - | - | - | - | - | - | - | - | Mild | - | - |

Diver measured surface and bottom temperature, and diver estimated surface and bottom visibility and surge at benthic stations. Survey of May 10-25, 1978.

| STATION NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | SMK | SOK | BK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | 5/23 | 5/15 | 5/16 | - | - | - | - | - | 5/25 | 5/10 | - |
| TEMPERATURE (°C) | | | | | | | | | | | |
| SURFACE | 19.6 | 20.5 | 20.8 | - | - | - | - | - | 18.2 | 17.6 | - |
| BOTTOM | 18.1 | 18.0 | 18.8 | - | - | - | - | - | 14.4 | 13.9 | - |
| VISIBILITY (M) | | | | | | | | | | | |
| SURFACE | 3.8 | 20* | 2.3 | - | - | - | - | - | >15 | 4.8 | - |
| BOTTOM | 2.7 | 10* | 0.7 | - | - | - | - | - | 3.6 | 1.7 | - |
| SURGE | Mild | Mild | Mod. | - | - | - | - | - | Mild | Mild | - |

*Transmissometer readings (percent transmittance)

Surface and bottom temperature and visibility and bottom surge conditions measured by sampling biologists at ETS benthic stations. Survey of July 14 - August 25, 1978

| STATION NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | SMK | SOK | BK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | 7/14 | 7/14 | - | - | 7/17 | 7/24 | - | 8/25 | 7/19 | 7/18 | 7/21 |
| TEMPERATURE (°C) | | | | | | | | | | | |
| SURFACE | 20.7 | 20.7 | - | - | 20.2 | 17.5 | - | 19.4 | 20.2 | 20.9 | 16.7 |
| BOTTOM | 17.4 | 17.3 | - | - | 14.6 | 13.5 | - | 15.4 | 15.2 | 15.1 | 11.8 |
| VISIBILITY (M) | | | | | | | | | | | |
| SURFACE | 10.8 | 10.8 | - | - | 6.9 | 3.3 | - | 15.1 | 2.4 | 5.0 | 3.1 |
| BOTTOM | 3.1 | 2.9 | - | - | 0.6 | 2.4 | - | 1.0 | 3.4 | 1.5 | 3.7 |
| SURGE | Mod. | Mod. | - | - | Mod. | Light | - | Light | Heavy | Mod. | Light |

Surface and bottom temperature and visibility, and bottom surge conditions measured by sampling biologists at ETS benthic stations. Survey of October 16-26, 1978.

| STATION NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | SMK | SOK | BK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | 10/16/78 | 10/19/78 | - | - | 10/19/78 | 10/26/78 | - | 10/17/78 | 10/16/78 | 10/19/78 | 10/26/78 |
| TEMPERATURE ($^{o}$C) | | | | | | | | | | | |
| SURFACE | 18.8 | 18.6 | - | - | 18.4 | 19.0 | - | 18.3 | 19.3 | 18.5 | 18.9 |
| BOTTOM | 15.3 | 15.9 | - | - | 15.5 | 18.9 | - | 15.7 | 17.2 | 15.3 | 18.5 |
| VISIBILITY (M) | | | | | | | | | | | |
| SURFACE | 11.1 | 5.2 | - | - | 2.3 | 6.3 | - | 6.0 | 13.6 | 8.5 | 8.3 |
| BOTTOM | 0.8 | 1.5 | - | - | 0.7 | 6.8 | - | 0.7 | 6.6 | 1.7 | 5.9 |
| SURGE | Light | Light | - | - | Light | Light | - | Light | Light | Light | Moderate |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 182 | Ø.6Ø67 | Ø.2394 | Ø.Ø283 |
| Boulder | 84 | Ø.28ØØ | Ø.2Ø23 | Ø.Ø26Ø |
| Sand | 31 | Ø.1Ø33 | Ø.Ø929 | Ø.Ø176 |
| Shell debris | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Macrocystis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Macrocystis* spp.(holdfast) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Callophyllis* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Hildenbrandia prototypus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Prionitis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 42 | Ø.14ØØ | Ø.12Ø8 | Ø.Ø2Ø1 |
| Crustose corallines,unident. | 23 | Ø.Ø766 | Ø.Ø71Ø | Ø.Ø154 |
| Parvosilvosa | 33 | Ø.11ØØ | Ø.Ø982 | Ø.Ø181 |
| Rhodophytes,unident. | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| PORIFERA | | | | |
| Poriferans,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 39 | Ø.13ØØ | Ø.1135 | Ø.Ø195 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 14 | Ø.Ø467 | Ø.Ø446 | Ø.Ø122 |
| *Corynactis californica* | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| *Muricea californica* | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| *Muricea fruticosa* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Salmacina tribranchiata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 4Ø | Ø.1333 | Ø.1159 | Ø.Ø197 |
| Ectoprocts,unident.(encrusting) | 36 | Ø.12ØØ | Ø.1Ø59 | Ø.Ø188 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pisaster giganteus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Strongylocentrotus purpuratus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Macrocystis* spp. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Botryocladia pseudodichotoma* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Callophyllis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 44 | Ø.1467 | Ø.1256 | Ø.Ø2Ø5 |
| Parvosilvosa | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Rhodophytes,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 75 | Ø.25ØØ | Ø.1881 | Ø.Ø25Ø |
| *Muricea fruticosa* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| *Pagurus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Ectoprocts,unident.(encrusting) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Strongylocentrotus purpuratus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINODERMATA | | | | |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Macrocystis* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Rhodymenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| **Hydroids,unident.** | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| **ANTHOZOA** | | | | |
| *Muricea californica* | 19 | Ø.Ø633 | Ø.Ø595 | Ø.Ø141 |
| **ECHINODERMATA** | | | | |
| ASTEROIDEA | | | | |
| *Dermasterias imbricata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON AUGUST 9, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 196 | Ø.6533 | Ø.2273 | Ø.Ø275 |
| Boulder | 72 | Ø.24ØØ | Ø.183Ø | Ø.Ø247 |
| Sand | 32 | Ø.1Ø67 | Ø.Ø956 | Ø.Ø179 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Ectocarpus* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Macrocystis* spp. | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| Ectocarpales,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Botryocladia pseudodichotoma* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 89 | Ø.2967 | Ø.2Ø94 | Ø.Ø264 |
| Crustose corallines,unident. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| Parvosilvosa | 74 | Ø.2467 | Ø.1864 | Ø.Ø249 |
| Rhodophytes,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| PORIFERA | | | | |
| Poriferans,unident. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| ANTHOZOA | | | | |
| *Corynactis californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Muricea californica* | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| *Muricea fruticosa* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| Ectoprocts,unident.(encrusting) | 25 | Ø.Ø833 | Ø.Ø766 | Ø.Ø16Ø |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus purpuratus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Pycnoclavella stanleyi* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Trididemnum / Didemnum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Macrocystis* spp. | 1Ø6 | Ø.3533 | Ø.2293 | Ø.Ø276 |
| *Pterygophora californica* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Ectocarpales,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Acrosorium uncinatum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Coeloseira / Champia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 58 | Ø.1933 | Ø.1565 | Ø.Ø228 |
| Parvosilvosa | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PORIFERA | | | | |
| Poriferans,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 43 | Ø.1433 | Ø.1232 | Ø.Ø2Ø3 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 37 | Ø.1233 | Ø.1Ø85 | Ø.Ø19Ø |
| RHODOPHYTA | | | | |
| *Rhodymenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 17 | Ø.Ø567 | Ø.Ø536 | Ø.Ø134 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 14
SAMPLED ON AUGUST 8, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 137 | Ø.4567 | Ø.249Ø | Ø.Ø288 |
| Boulder | 133 | Ø.4433 | Ø.2476 | Ø.Ø287 |
| Sand | 29 | Ø.Ø966 | Ø.Ø876 | Ø.Ø171 |
| Shell debris | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Cystoseira / Halidrys* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Desmarestia* spp. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| *Macrocystis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Taonia lennebackerae* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Ectocarpales,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Laminoid,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Callophyllis* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Coeloseira / Champia* | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| *Cryptonemia / Halymenia / Schizymenia* | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| *Hildenbrandia prototypus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| *Rhodymenia* spp. | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |
| Crustose corallines,unident. | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| Parvosilvosa | 168 | Ø.56ØØ | Ø.2472 | Ø.Ø287 |
| PORIFERA | | | | |
| *Leucilla nuttingi* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Poriferans,unident. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |
| ANTHOZOA | | | | |
| *Corynactis californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Ectoprocts,unident.(encrusting) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 89 | Ø.2967 | Ø.2Ø94 | Ø.Ø264 |
| *Laminaria* spp. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Macrocystis* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Pterygophora californica* | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| Laminoid,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| RHODOPHYTA | | | | |
| *Callophyllis* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 63 | Ø.21ØØ | Ø.1665 | Ø.Ø236 |
| *Laurencia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pterocladia / Gelidium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| Parvosilvosa | 17 | Ø.Ø567 | Ø.Ø536 | Ø.Ø134 |
| Rhodophytes,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Muricea californica* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Muricea fruticosa* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 39 | Ø.13ØØ | Ø.1135 | Ø.Ø195 |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterygophora californica* | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| *Taonia lennebackerae* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Laminoid,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 2Ø | Ø.Ø666 | Ø.Ø624 | Ø.Ø144 |
| *Laurencia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Muricea fruticosa* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON AUGUST 8, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 231 | Ø.77ØØ | Ø.1777 | Ø.Ø243 |
| Boulder | 5Ø | Ø.1667 | Ø.1393 | Ø.Ø215 |
| Sand | 18 | Ø.Ø6ØØ | Ø.Ø566 | Ø.Ø137 |
| Shell debris | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Laminoid,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Callophyllis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Cryptonemia / Halymenia / Schizymenia* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Rhodymenia* spp. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| Crustose corallines,unident. | 46 | Ø.1533 | Ø.13Ø3 | Ø.Ø2Ø8 |
| Parvosilvosa | 172 | Ø.5733 | Ø.2454 | Ø.Ø286 |
| PORIFERA | | | | |
| Poriferans,unident. | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Ectoprocts,unident.(encrusting) | 14 | Ø.Ø467 | Ø.Ø446 | Ø.Ø122 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 17 | Ø.Ø567 | Ø.Ø536 | Ø.Ø134 |
| *Macrocystis* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Pterygophora californica* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Taonia lennebackerae* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Ectocarpales,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Laminoid,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Botryocladia pseudodichotoma* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Coeloseira / Champia* | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| *Cryptonemia / Halymenia / Schizymenia* | 59 | Ø.1967 | Ø.1585 | Ø.Ø23Ø |
| *Gigartina* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Hildenbrandia prototypus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Nienburgia andersoniana* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Rhodymenia* spp. | 29 | Ø.Ø966 | Ø.Ø876 | Ø.Ø171 |
| Parvosilvosa | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Muricea fruticosa* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| OPHIUROIDEA | | | | |
| *Ophioderma panamense* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Macrocystis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterygophora californica* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Laminoid,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 35 | Ø.1167 | Ø.1Ø34 | Ø.Ø186 |
| *Rhodymenia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Muricea californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Muricea fruticosa* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON AUGUST 7, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 72 | Ø.24ØØ | Ø.183Ø | Ø.Ø247 |
| Boulder | 127 | Ø.4233 | Ø.2449 | Ø.Ø286 |
| Sand | 96 | Ø.32ØØ | Ø.2183 | Ø.Ø27Ø |
| Shell debris | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterygophora californica* | 62 | Ø.2Ø67 | Ø.1645 | Ø.Ø234 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Bossiella* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Corallina / Haliptylon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Hildenbrandia prototypus* | 19 | Ø.Ø633 | Ø.Ø595 | Ø.Ø141 |
| *Pterocladia / Gelidium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 13 | Ø.Ø433 | Ø.Ø416 | Ø.Ø118 |
| Crustose corallines,unident. | 99 | Ø.33ØØ | Ø.2218 | Ø.Ø272 |
| Parvosilvosa | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PORIFERA | | | | |
| *Leucosolenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Ectoprocts,unident.(encrusting) | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 68 | Ø.2267 | Ø.1759 | Ø.Ø242 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Rhodymenia* spp. | 15 | Ø.Ø5ØØ | Ø.Ø477 | Ø.Ø126 |
| Crustose corallines,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Parvosilvosa | 66 | Ø.22ØØ | Ø.1722 | Ø.Ø24Ø |
| Rhodophytes,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| PORIFERA | | | | |
| *Leucilla nuttingi* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Leucosolenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Sabellaria cementarium* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Ectoprocts,unident.(encrusting) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Styela montereyensis* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 87 | Ø.29ØØ | Ø.2Ø66 | Ø.Ø262 |
| RHODOPHYTA | | | | |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON AUGUST 7, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 41 | Ø.1367 | Ø.1184 | Ø.Ø199 |
| Boulder | 145 | Ø.4833 | Ø.25Ø6 | Ø.Ø289 |
| Sand | 11Ø | Ø.3667 | Ø.233Ø | Ø.Ø279 |
| Shell debris | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pterygophora californica* | 41 | Ø.1367 | Ø.1184 | Ø.Ø199 |
| RHODOPHYTA | | | | |
| *Hildenbrandia prototypus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Rhodymenia* spp. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| Crustose corallines,unident. | 95 | Ø.3167 | Ø.2171 | Ø.Ø269 |
| Parvosilvosa | 47 | Ø.1567 | Ø.1326 | Ø.Ø21Ø |
| Rhodophytes,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(encrusting) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Trididemnum / Didemnum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 36 | Ø.12ØØ | Ø.1Ø59 | Ø.Ø188 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Pterocladia / Gelidium* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Rhodymenia* spp. | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| Parvosilvosa | 51 | Ø.17ØØ | Ø.1416 | Ø.Ø217 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Lytechinus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterygophora californica* | 17 | Ø.Ø567 | Ø.Ø536 | Ø.Ø134 |
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 2ØØ | Ø.6667 | Ø.223Ø | Ø.Ø273 |
| Boulder | 58 | Ø.1933 | Ø.1565 | Ø.Ø228 |
| Sand | 35 | Ø.1167 | Ø.1Ø34 | Ø.Ø186 |
| Shell debris | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CHLOROPHYTA | | | | |
| Chlorophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Laminoid,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Hildenbrandia prototypus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Crustose corallines,unident. | 83 | Ø.2767 | Ø.2ØØ8 | Ø.Ø259 |
| Parvosilvosa | 117 | Ø.39ØØ | Ø.2387 | Ø.Ø282 |
| Rhodophytes,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| *Pagurus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(encrusting) | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Trididemnum / Didemnum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CHLOROPHYTA | | | | |
| Chlorophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PHAEOPHYTA | | | | |
| *Desmarestia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Ectocarpales,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Laminoid,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Parvosilvosa | 44 | Ø.1467 | Ø.1256 | Ø.Ø2Ø5 |
| Rhodophytes,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Muricea californica* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| *Paguristes* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(encrusting) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ECHINODERMATA | | | | |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 2Ø1 | Ø.67ØØ | Ø.2218 | Ø.Ø272 |
| Boulder | 66 | Ø.22ØØ | Ø.1722 | Ø.Ø24Ø |
| Sand | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| Shell debris | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Hildenbrandia prototypus* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Rhodymenia* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Crustose corallines,unident. | 77 | Ø.2567 | Ø.1914 | Ø.Ø253 |
| Parvosilvosa | 48 | Ø.16ØØ | Ø.1349 | Ø.Ø212 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PORIFERA | | | | |
| Poriferans,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 66 | Ø.22ØØ | Ø.1722 | Ø.Ø24Ø |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Muricea californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Sabellarid,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Serpulids,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pteropurpura festiva* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| Ectoprocts,unident.(encrusting) | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Trididemnum / Didemnum* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| Laminoid,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Rhodymenia* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Parvosilvosa | 52 | Ø.1733 | Ø.1438 | Ø.Ø219 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 15 | Ø.Ø5ØØ | Ø.Ø477 | Ø.Ø126 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| ECHINODERMATA | | | | |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| Serpulids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON AUGUST 2, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 77 | Ø.2567 | Ø.1914 | Ø.Ø253 |
| Boulder | 55 | Ø.1833 | Ø.15Ø2 | Ø.Ø224 |
| Sand | 129 | Ø.43ØØ | Ø.2459 | Ø.Ø286 |
| Shell debris | 39 | Ø.13ØØ | Ø.1135 | Ø.Ø195 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| *Hildenbrandia prototypus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Plocamium* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Crustose corallines,unident. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| Parvosilvosa | 28 | Ø.Ø933 | Ø.Ø849 | Ø.Ø168 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 23 | Ø.Ø766 | Ø.Ø71Ø | Ø.Ø154 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Muricea californica* | 23 | Ø.Ø766 | Ø.Ø71Ø | Ø.Ø154 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Sabellaria cementarium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Spiochaetopterus costarum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Sabellarid,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Serpulids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Chromodoris* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Kelletia kelletii* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 2Ø | Ø.Ø666 | Ø.Ø624 | Ø.Ø144 |
| Ectoprocts,unident.(encrusting) | 37 | Ø.1233 | Ø.1Ø85 | Ø.Ø19Ø |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Molgula* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Pycnoclavella stanleyi* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Trididemnum / Didemnum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Pterocladia / Gelidium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| Parvosilvosa | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| ANTHOZOA | | | | |
| *Muricea californica* | 15 | Ø.Ø5ØØ | Ø.Ø477 | Ø.Ø126 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Conus californicus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 3

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON AUGUST 2, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 59 | Ø.1967 | Ø.1585 | Ø.Ø23Ø |
| Boulder | 69 | Ø.23ØØ | Ø.1777 | Ø.Ø243 |
| Sand | 148 | Ø.4933 | Ø.25Ø8 | Ø.Ø289 |
| Shell debris | 24 | Ø.Ø8ØØ | Ø.Ø738 | Ø.Ø157 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Ectocarpales,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| RHODOPHYTA | | | | |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Hildenbrandia prototypus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pterocladia / Gelidium* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| Crustose corallines,unident. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Parvosilvosa | 17 | Ø.Ø567 | Ø.Ø536 | Ø.Ø134 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 27 | Ø.Ø9ØØ | Ø.Ø821 | Ø.Ø166 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Muricea californica* | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| *Muricea fruticosa* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Pista* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Spiochaetopterus costarum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Sabellarid,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ARTHROPODA | | | | |
| CIRRIPEDIA | | | | |
| *Balanus* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| DECAPODA | | | | |
| *Pagurus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

STATION 21 (CONTINUED), SAN ONOFRE NUC. GEN. STA. UNITS 2&3 PREOP. MONITORING PROG.
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS ON
AUGUST 2, 1978 TAXA LEVEL 1

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 23 | Ø.Ø766 | Ø.Ø71Ø | Ø.Ø154 |
| Ectoprocts,unident.(encrusting) | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pisaster giganteus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 2

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| Parvosilvosa | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| ANTHOZOA | | | | |
| *Muricea californica* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| *Pagurus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

Total numbers of designated solitary organisms observed at each $6.0m^2$ preoperational benthic monitoring station (Units 2 and 3) during Survey 01 (August 2-9, 1978).

| DESIGNATED TAXA | STATIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| *Cystoseira/Halidrys* | - | - | - | - | - | - | - | - | - | - |
| *Egregia laevigata* | - | - | - | - | - | - | - | - | - | - |
| *Laminaria* spp. | - | - | - | - | - | - | - | - | 2 | 1 |
| *Pterygophora californica* | - | - | 1 | 1 | 16 | 4 | - | - | - | - |
| *Anthopleura* spp. | - | - | - | - | - | - | - | - | - | - |
| *Diopatra ornata* | - | - | - | - | 11 | 21 | 19 | 19 | 5 | 7 |
| *Octopus* spp. | - | - | - | - | - | - | - | - | - | - |
| *Kelletia kelletii* | 2 | - | 1 | 3 | 2 | 2 | 3 | 13 | 12 | 4 |
| *Astrometis sertulifera* | - | - | - | - | - | - | - | - | - | - |
| *Dermasterias imbricata* | - | - | - | - | - | - | - | - | 1 | - |
| *Patiria miniata* | 2 | 5 | 4 | 8 | 8 | 10 | 1 | 5 | - | 7 |
| *Pisaster giganteus* | 9 | 1 | 1 | 1 | - | - | - | - | - | 1 |
| *Lytechinus* spp. | - | - | - | - | 1 | 1 | - | 1 | - | - |
| *Strongylocentrotus franciscanus* | 1 | - | 2 | 2 | - | - | 3 | 7 | - | - |
| *S. purpuratus* | 1 | - | - | - | - | - | 10 | 1 | - | - |
| *Parastichopus parvimensis* | 1 | - | 6 | - | - | - | 1 | - | - | - |
| *Styela montereyensis* | - | - | 1 | 2 | 2 | - | - | - | - | - |
| *Styela* spp. (Juv.) | - | - | - | - | - | - | - | - | 5 | 4 |

## Field Notes From August Survey

Station 12 Very diverse station (i.e., many taxa) - large settlement of *Macrocystis sporophytes* recently occurred (1-2 months past), heavy overstory of *Muricea californica* and *M. fruticosa* - general area appears to undergo little dynamic wave action.

Station 13 All *Macrocystis* spp. were <10 cm. tall; are juveniles.

Station 14 Juv. *Styela mont.* present. Dominant algal overstory is *Desmarestia* and *Haly/Schizy*. *Macrocystis* plants (juv.) present.

Station 15 Both *Muricea calif.* and *Muricea fruticosa* present.

Station 16 Heavy overstory of *Pterygophora californica*. *Euherdmania clauiformis* present.

Station 18 Juvenile *Styela mont.*, small.

Station 20 Thin layer of sand over most of the hard rock surfaces. Juvenile *Styela mont.* common in and around station.

Station 21 Most hard substrate was covered with 1-2 cm. of sand. Juvenile *Styela mont.* were observed frequently outside the sampling area. *Scorpanea guttata*, juveniles and adults were common to abundant; 10-15/6.0 $m^2$.

*Callianassa?* holes present.

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON NOVEMBER 2, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 158 | Ø.5267 | Ø.25Ø1 | Ø.Ø289 |
| Boulder | 111 | Ø.37ØØ | Ø.2339 | Ø.Ø279 |
| Sand | 27 | Ø.Ø9ØØ | Ø.Ø821 | Ø.Ø166 |
| Shell debris | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Corallina / Haliptylon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Prionitis* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| Crustose corallines,unident. | 38 | Ø.1267 | Ø.111Ø | Ø.Ø192 |
| Parvosilvosa | 34 | Ø.1133 | Ø.1ØØ8 | Ø.Ø183 |
| PORIFERA | | | | |
| Poriferans,unident. | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 26 | Ø.Ø866 | Ø.Ø794 | Ø.Ø163 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| *Corynactis californica* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Muricea californica* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Muricea fruticosa* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Owenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Salmacina tribranchiata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 56 | Ø.1867 | Ø.1523 | Ø.Ø225 |
| Ectoprocts,unident.(encrusting) | 5Ø | Ø.1667 | Ø.1393 | Ø.Ø215 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Clavelina huntsmani* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Trididemnum / Didemnum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Botryocladia pseudodichotoma* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Prionitis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 54 | Ø.18ØØ | Ø.1481 | Ø.Ø222 |
| Parvosilvosa | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| PORIFERA | | | | |
| Poriferans,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 95 | Ø.3167 | Ø.2171 | Ø.Ø269 |
| *Muricea fruticosa* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Prionitis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON NOVEMBER 1, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 179 | Ø.5967 | Ø.2415 | Ø.Ø284 |
| Boulder | 8Ø | Ø.2667 | Ø.1962 | Ø.Ø256 |
| Sand | 37 | Ø.1233 | Ø.1Ø85 | Ø.Ø19Ø |
| Shell debris | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Coeloseira / Champia* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Corallina / Haliptylon* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Hildenbrandia prototypus* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Prionitis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 71 | Ø.2367 | Ø.1813 | Ø.Ø246 |
| Crustose corallines,unident. | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| Parvosilvosa | 28 | Ø.Ø933 | Ø.Ø849 | Ø.Ø168 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 49 | Ø.1633 | Ø.1371 | Ø.Ø214 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 29 | Ø.Ø966 | Ø.Ø876 | Ø.Ø171 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 15 | Ø.Ø5ØØ | Ø.Ø477 | Ø.Ø126 |
| Ectoprocts,unident.(encrusting) | 36 | Ø.12ØØ | Ø.1Ø59 | Ø.Ø188 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Pisaster giganteus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Colonial ascidian,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 53 | Ø.1767 | Ø.1459 | Ø.Ø221 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Prionitis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 42 | Ø.14ØØ | Ø.12Ø8 | Ø.Ø2Ø1 |
| Parvosilvosa | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| PORIFERA | | | | |
| Poriferans,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| Ectoprocts,unident.(encrusting) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Pisaster giganteus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Macrocystis* spp. | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |
| RHODOPHYTA | | | | |
| *Rhodymenia* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| Parvosilvosa | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 14
SAMPLED ON NOVEMBER 7, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 163 | 0.5433 | 0.2490 | 0.0288 |
| Boulder | 107 | 0.3567 | 0.2302 | 0.0277 |
| Sand | 23 | 0.0766 | 0.0710 | 0.0154 |
| Shell debris | 7 | 0.0233 | 0.0229 | 0.0087 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CHLOROPHYTA | | | | |
| *Bryopsis corticulans* | 1 | 0.0033 | 0.0033 | 0.0033 |
| PHAEOPHYTA | | | | |
| *Desmarestia ligulata* | 9 | 0.0300 | 0.0292 | 0.0098 |
| *Laminaria* spp. | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Pterygophora californica* | 1 | 0.0033 | 0.0033 | 0.0033 |
| Phaeophyte,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Pterocladia / Gelidium* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Rhodymenia* spp. | 19 | 0.0633 | 0.0595 | 0.0141 |
| Crustose corallines,unident. | 34 | 0.1133 | 0.1008 | 0.0183 |
| Parvosilvosa | 180 | 0.6000 | 0.2408 | 0.0283 |
| Rhodophytes,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| PORIFERA | | | | |
| Poriferans,unident. | 4 | 0.0133 | 0.0132 | 0.0066 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 5 | 0.0167 | 0.0164 | 0.0074 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 3 | 0.0100 | 0.0099 | 0.0058 |
| *Corynactis californica* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Muricea californica* | 2 | 0.0066 | 0.0066 | 0.0047 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | 0.0033 | 0.0033 | 0.0033 |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| Pagurids,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 5 | 0.0167 | 0.0164 | 0.0074 |
| Ectoprocts,unident.(encrusting) | 13 | 0.0433 | 0.0416 | 0.0118 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Pisaster giganteus* | 1 | 0.0033 | 0.0033 | 0.0033 |
| OPHIUROIDEA | | | | |
| *Ophioderma panamense* | 1 | 0.0033 | 0.0033 | 0.0033 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Styela montereyensis* | 1 | 0.0033 | 0.0033 | 0.0033 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Cystoseira / Halidrys* | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Desmarestia ligulata* | 53 | 0.1767 | 0.1459 | 0.0221 |
| *Laminaria* spp. | 7 | 0.0233 | 0.0229 | 0.0087 |
| *Macrocystis* spp. | 26 | 0.0866 | 0.0794 | 0.0163 |
| *Pterygophora californica* | 10 | 0.0333 | 0.0323 | 0.0104 |
| Phaeophyte,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 4 | 0.0133 | 0.0132 | 0.0066 |
| *Rhodymenia* spp. | 28 | 0.0933 | 0.0849 | 0.0168 |
| Parvosilvosa | 30 | 0.1000 | 0.0903 | 0.0174 |
| Rhodophytes,unident. | 6 | 0.0200 | 0.0197 | 0.0080 |
| PORIFERA | | | | |
| Poriferans,unident. | 4 | 0.0133 | 0.0132 | 0.0066 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 3 | 0.0100 | 0.0099 | 0.0058 |
| ANTHOZOA | | | | |
| *Muricea californica* | 5 | 0.0167 | 0.0164 | 0.0074 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(encrusting) | 1 | 0.0033 | 0.0033 | 0.0033 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Pisaster brevispinus* | 1 | 0.0033 | 0.0033 | 0.0033 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia ligulata* | 18 | 0.0600 | 0.0566 | 0.0137 |
| *Laminaria* spp. | 5 | 0.0167 | 0.0164 | 0.0074 |
| *Macrocystis* spp. | 4 | 0.0133 | 0.0132 | 0.0066 |
| *Pterygophora californica* | 4 | 0.0133 | 0.0132 | 0.0066 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 2 | 0.0066 | 0.0066 | 0.0047 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 2 | 0.0066 | 0.0066 | 0.0047 |
| ANTHOZOA | | | | |
| *Muricea californica* | 5 | 0.0167 | 0.0164 | 0.0074 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | 0.0033 | 0.0033 | 0.0033 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON NOVEMBER 8, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 154 | Ø.5133 | Ø.25Ø7 | Ø.Ø289 |
| Boulder | 81 | Ø.27ØØ | Ø.1978 | Ø.Ø257 |
| Sand | 56 | Ø.1867 | Ø.1523 | Ø.Ø225 |
| Shell debris | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia ligulata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Laminaria* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Macrocystis* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Phaeophyte,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Callophyllis* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 18 | Ø.Ø6ØØ | Ø.Ø566 | Ø.Ø137 |
| Crustose corallines,unident. | 37 | Ø.1233 | Ø.1Ø85 | Ø.Ø19Ø |
| Parvosilvosa | 156 | Ø.52ØØ | Ø.25Ø4 | Ø.Ø289 |
| Rhodophytes,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| PORIFERA | | | | |
| *Hymenamphiastra cyanocrypta* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Poriferans,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| ANTHOZOA | | | | |
| *Muricea californica* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Muricea fruticosa* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Anemone,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| Serpulids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Ectoprocts,unident.(encrusting) | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINODERMATA | | | | |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| HOLOTHUROIDEA | | | | |
| *Parastichopus parvimensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Styela montereyensis* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| GOBIIDAE | | | | |
| *Coryphopterus nicholsii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia ligulata* | 12 | 0.0400 | 0.0385 | 0.0113 |
| *Laminaria* spp. | 9 | 0.0300 | 0.0292 | 0.0098 |
| *Macrocystis* spp. | 13 | 0.0433 | 0.0416 | 0.0118 |
| Laminoid,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| Phaeophyte,unident. | 3 | 0.0100 | 0.0099 | 0.0058 |
| RHODOPHYTA | | | | |
| *Callophyllis* spp. | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Coeloseira / Champia* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Gigartina* spp. | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Nienburgia andersoniana* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Pterocladia / Gelidium* | 3 | 0.0100 | 0.0099 | 0.0058 |
| *Rhodymenia* spp. | 14 | 0.0467 | 0.0446 | 0.0122 |
| Parvosilvosa | 35 | 0.1167 | 0.1034 | 0.0186 |
| Rhodophytes,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Muricea californica* | 4 | 0.0133 | 0.0132 | 0.0066 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 1 | 0.0033 | 0.0033 | 0.0033 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 4 | 0.0133 | 0.0132 | 0.0066 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 1 | 0.0033 | 0.0033 | 0.0033 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 1 | 0.0033 | 0.0033 | 0.0033 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Desmarestia ligulata* | 4 | 0.0133 | 0.0132 | 0.0066 |
| *Dictyota / Pachydictyon* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Laminaria* spp. | 4 | 0.0133 | 0.0132 | 0.0066 |
| *Macrocystis* spp. | 2 | 0.0066 | 0.0066 | 0.0047 |
| RHODOPHYTA | | | | |
| *Coeloseira / Champia* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Gigartina* spp. | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Rhodymenia* spp. | 1 | 0.0033 | 0.0033 | 0.0033 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 2 | 0.0066 | 0.0066 | 0.0047 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 5Ø | Ø.1667 | Ø.1393 | Ø.Ø215 |
| Boulder | 162 | Ø.54ØØ | Ø.2492 | Ø.Ø288 |
| Sand | 76 | Ø.2533 | Ø.1898 | Ø.Ø252 |
| Shell debris | 12 | Ø.Ø4ØØ | Ø.Ø385 | Ø.Ø113 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 66 | Ø.22ØØ | Ø.1722 | Ø.Ø24Ø |
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Hildenbrandia prototypus* | 18 | Ø.Ø6ØØ | Ø.Ø566 | Ø.Ø137 |
| *Pterocladia / Gelidium* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| *Rhodymenia* spp. | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| Crustose corallines,unident. | 47 | Ø.1567 | Ø.1326 | Ø.Ø21Ø |
| Parvosilvosa | 1Ø1 | Ø.3367 | Ø.2241 | Ø.Ø273 |
| Rhodophytes,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| ARTHROPODA | | | | |
| DECAPODA | | | | |
| Pagurids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Ectoprocts,unident.(encrusting) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 132 | Ø.44ØØ | Ø.2472 | Ø.Ø287 |
| RHODOPHYTA | | | | |
| *Corallina / Haliptylon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pterocladia / Gelidium* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Rhodymenia* spp. | 19 | Ø.Ø633 | Ø.Ø595 | Ø.Ø141 |
| Parvosilvosa | 28 | Ø.Ø933 | Ø.Ø849 | Ø.Ø168 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Styela montereyensis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Colonial ascidian, unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 49 | Ø.1633 | Ø.1371 | Ø.Ø214 |
| RHODOPHYTA | | | | |
| *Rhodymenia* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| Anthozoan, unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON NOVEMBER 1, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 41 | Ø.1367 | Ø.1184 | Ø.Ø199 |
| Boulder | 164 | Ø.5467 | Ø.2487 | Ø.Ø288 |
| Sand | 92 | Ø.3Ø67 | Ø.2133 | Ø.Ø267 |
| Shell debris | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Pterygophora californica* | 38 | Ø.1267 | Ø.111Ø | Ø.Ø192 |
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Hildenbrandia prototypus* | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| *Rhodymenia* spp. | 13 | Ø.Ø433 | Ø.Ø416 | Ø.Ø118 |
| Crustose corallines,unident. | 71 | Ø.2367 | Ø.1813 | Ø.Ø246 |
| Parvosilvosa | 89 | Ø.2967 | Ø.2Ø94 | Ø.Ø264 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| Ectoprocts,unident.(encrusting) | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECHINOIDEA | | | | |
| *Lytechinus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Dictyota / Pachydictyon* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterygophora californica* | 43 | Ø.1433 | Ø.1232 | Ø.Ø2Ø3 |
| RHODOPHYTA | | | | |
| *Acrosorium uncinatum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Bossiella* spp. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Pterocladia / Gelidium* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Rhodymenia* spp. | 3Ø | Ø.1ØØØ | Ø.Ø9Ø3 | Ø.Ø174 |
| Parvosilvosa | 6Ø | Ø.2ØØØ | Ø.16Ø5 | Ø.Ø231 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Lytechinus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Pterygophora californica* | 37 | Ø.1233 | Ø.1Ø85 | Ø.Ø19Ø |
| RHODOPHYTA | | | | |
| *Pterocladia / Gelidium* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 13 | Ø.Ø433 | Ø.Ø416 | Ø.Ø118 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Trididemnum / Didemnum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON NOVEMBER 6, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 19Ø | Ø.6333 | Ø.233Ø | Ø.Ø279 |
| Boulder | 82 | Ø.2733 | Ø.199Ø | Ø.Ø258 |
| Sand | 24 | Ø.Ø8ØØ | Ø.Ø738 | Ø.Ø157 |
| Shell debris | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 18
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| Ectocarpales,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Hildenbrandia prototypus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Crustose corallines,unident. | 86 | Ø.2867 | Ø.2Ø52 | Ø.Ø262 |
| Parvosilvosa | 132 | Ø.44ØØ | Ø.2472 | Ø.Ø287 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| *Muricea californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Ectoprocts,unident.(encrusting) | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Strongylocentrotus purpuratus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Trididemnum / Didemnum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 18
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Anisocladella pacifica* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Coeloseira / Champia* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Corallina / Haliptylon* | 1 | 0.0033 | 0.0033 | 0.0033 |
| *Pterocladia / Gelidium* | 2 | 0.0066 | 0.0066 | 0.0047 |
| *Rhodymenia* spp. | 3 | 0.0100 | 0.0099 | 0.0058 |
| Parvosilvosa | 61 | 0.2033 | 0.1625 | 0.0233 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | 0.0033 | 0.0033 | 0.0033 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 3 | 0.0100 | 0.0099 | 0.0058 |
| *Muricea californica* | 4 | 0.0133 | 0.0132 | 0.0066 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 2 | 0.0066 | 0.0066 | 0.0047 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | 0.0033 | 0.0033 | 0.0033 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 3 | 0.0100 | 0.0099 | 0.0058 |
| *Strongylocentrotus purpuratus* | 1 | 0.0033 | 0.0033 | 0.0033 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.0M2 BENTHIC QUADRAT SAMPLED WITH 300 POINTS. STATION 18
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 2 | 0.0066 | 0.0066 | 0.0047 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON NOVEMBER 6, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 195 | Ø.65ØØ | Ø.2283 | Ø.Ø276 |
| Boulder | 78 | Ø.26ØØ | Ø.193Ø | Ø.Ø254 |
| Sand | 27 | Ø.Ø9ØØ | Ø.Ø361 | [illegible] |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Botryocladia pseudodichotoma* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Hildenbrandia prototypus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Rhodymenia* spp. | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| Crustose corallines,unident. | 72 | Ø.24ØØ | Ø.163Ø | Ø.Ø247 |
| Parvosilvosa | 168 | Ø.56ØØ | Ø.2472 | Ø.Ø287 |
| White coralline crust | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(encrusting) | 8 | Ø.Ø267 | Ø.Ø26Ø | Ø.ØØ93 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Botryocladia pseudodichotoma* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Coeloseira / Champia* | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| *Rhodymenia* spp. | 1Ø | Ø.Ø333 | Ø.Ø323 | Ø.Ø1Ø4 |
| Parvosilvosa | 64 | Ø.2133 | Ø.1684 | Ø.Ø237 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 2Ø | Ø.Ø666 | Ø.Ø624 | Ø.Ø144 |
| *Corynactis californica* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Muricea californica* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Patiria miniata* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECHINOIDEA | | | | |
| *Strongylocentrotus franciscanus* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Chelyosoma productum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Trididemnum / Didemnum* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Rhodymenia* spp. | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 83 | Ø.2767 | Ø.2ØØ8 | Ø.Ø259 |
| Boulder | 87 | Ø.29ØØ | Ø.2Ø66 | Ø.Ø262 |
| Sand | 95 | Ø.3167 | Ø.2171 | Ø.Ø269 |
| Shell debris | 35 | Ø.1167 | Ø.1Ø34 | Ø.Ø186 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Macrocystis* spp.(holdfast) | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| *Rhodymenia* spp. | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| Crustose corallines,unident. | 4 | Ø.Ø133 | Ø.Ø132 | Ø.ØØ66 |
| Parvosilvosa | 62 | Ø.2Ø67 | Ø.1645 | Ø.Ø234 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 29 | Ø.ØØ966 | Ø.ØØ876 | Ø.Ø171 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Muricea californica* | 21 | Ø.Ø7ØØ | Ø.Ø653 | Ø.Ø148 |
| Anthozoan,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| ARTHROPODA | | | | |
| CIRRIPEDIA | | | | |
| *Balanus* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 21 | Ø.Ø7ØØ | Ø.Ø653 | Ø.Ø148 |
| Ectoprocts,unident.(encrusting) | 31 | Ø.1Ø33 | Ø.Ø929 | Ø.Ø176 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| RHODOPHYTA | | | | |
| *Corallina / Haliptylon* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Cryptonemia / Halymenia / Schizymenia* | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Hildenbrandia prototypus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Pterocladia / Gelidium* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| Parvosilvosa | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 15 | Ø.Ø5ØØ | Ø.Ø477 | Ø.Ø126 |
| ANTHOZOA | | | | |
| *Muricea californica* | 21 | Ø.Ø7ØØ | Ø.Ø653 | Ø.Ø148 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 2Ø
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Rhodymenia* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| Rhodophytes,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ANTHOZOA | | | | |
| *Muricea californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| SUBSTRATE | | | | |
| Cobble | 51 | Ø.17ØØ | Ø.1416 | Ø.Ø217 |
| Boulder | 92 | Ø.3Ø67 | Ø.2133 | Ø.Ø267 |
| Sand | 126 | Ø.42ØØ | Ø.2444 | Ø.Ø285 |
| Shell debris | 31 | Ø.1Ø33 | Ø.Ø929 | Ø.Ø176 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| PHAEOPHYTA | | | | |
| *Laminaria* spp.(holdfast) | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| RHODOPHYTA | | | | |
| *Bossiella* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Corallina / Haliptylon* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Cryptonemia / Halymenia / Schizymenia* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Hildenbrandia prototypus* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Rhodymenia* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| Crustose corallines,unident. | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| Parvosilvosa | 2Ø | Ø.Ø666 | Ø.Ø624 | Ø.Ø144 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 44 | Ø.1467 | Ø.1256 | Ø.Ø2Ø5 |
| ANTHOZOA | | | | |
| *Astrangia* spp. | 5 | Ø.Ø167 | Ø.Ø164 | Ø.ØØ74 |
| *Corynactis californica* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| *Muricea californica* | 16 | Ø.Ø533 | Ø.Ø5Ø7 | Ø.Ø13Ø |
| ANNELIDA | | | | |
| POLYCHAETA | | | | |
| *Diopatra ornata* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |
| *Diopatra* spp. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| *Spiochaetopterus costarum* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ARTHROPODA | | | | |
| CIRRIPEDIA | | | | |
| *Balanus* spp. | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| DECAPODA | | | | |
| Pagurids,unident. | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| MOLLUSCA | | | | |
| GASTROPODA | | | | |
| *Kelletia kelletii* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 22 | Ø.Ø733 | Ø.Ø681 | Ø.Ø151 |
| Ectoprocts,unident.(encrusting) | 28 | Ø.Ø933 | Ø.1849 | Ø.Ø168 |
| ECHINODERMATA | | | | |
| ASTEROIDEA | | | | |
| *Pisaster giganteus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 9 | Ø.Ø3ØØ | Ø.Ø292 | Ø.ØØ98 |
| *Rhodymenia* spp. | 7 | Ø.Ø233 | Ø.Ø229 | Ø.ØØ87 |
| Parvosilvosa | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| HYDROZOA | | | | |
| Hydroids,unident. | 11 | Ø.Ø367 | Ø.Ø354 | Ø.Ø1Ø9 |
| ANTHOZOA | | | | |
| *Muricea californica* | 6 | Ø.Ø2ØØ | Ø.Ø197 | Ø.ØØ8Ø |
| ECTOPROCTA | | | | |
| Ectoprocts,unident.(erect) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| **ECHINODERMATA** | | | | |
| **ASTEROIDEA** | | | | |
| *Pisaster giganteus* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| CHORDATA | | | | |
| UROCHORDATA | | | | |
| *Euherdmania claviformis* | 1 | Ø.ØØ33 | Ø.ØØ33 | Ø.ØØ33 |
| SECONDARY SUBSTRATE | | | | |
| *Muricea*(moribund holdfast) | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM
RESULTS OF A 6.ØM2 BENTHIC QUADRAT SAMPLED WITH 3ØØ POINTS. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS (n) | MEAN | VARIANCE | STANDARD DEVIATION |
|---|---|---|---|---|
| RHODOPHYTA | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | Ø.ØØ66 | Ø.ØØ66 | Ø.ØØ47 |
| CNIDARIA | | | | |
| ANTHOZOA | | | | |
| *Muricea californica* | 3 | Ø.Ø1ØØ | Ø.ØØ99 | Ø.ØØ58 |

Total numbers of designated solitary organisms observed at each preoperational benthic monitoring station (6.0 $m^2$ quadrat).
Survey October 31, 1978 to November 8, 1978.

| DESIGNATED TAXA | STATIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| *Cystoseira/Halidrys* | | | | | | | | | | |
| *Egregia laevigata* | | | | | | | | | | |
| *Laminaria* spp. | | | | | | | | | | |
| *Macrocystis* spp. | | | 6 | | | | | | | |
| *Pterygophora californica* | | | | | 16 | 3 | | | | |
| *Anthopleura* spp. | | | | | | | | | | |
| *Diopatra ornata* | | 1 | 2 | | 7 | 24 | 27 | 23 | 12 | 34 |
| *Octopus* spp. | | | | | | | | | | |
| *Kelletia kelletii* | 1 | 1 | 5 | 3 | 3 | 4 | | 5 | 2 | 4 |
| *Astrometis sertulifera* | | | | | | | | | | |
| *Dermasterias imbricata* | 1 | | | | | | | | | |
| *Patiria miniata* | 5 | 1 | 7 | 15 | 10 | 16 | 10 | 7 | | |
| *Pisaster brevispinus* | | | 1 | | | | | | | |
| *Pisaster giganteus* | 4 | 5 | 2 | 2 | | | | | 1 | 2 |
| *Lytechinus* spp. | | | | | 1 | 5 | | | | |
| *Strongylocentrotus franciscanus* | 3 | | 1 | 4 | | | 4 | 5 | | |
| *S. purpuratus* | | | | | | | 10 | | | |
| *Parastichopus parvimensis* | 2 | | | 2 | | | | | | |
| *Styela montereyensis* | 1 | 1 | 3 | 2 | 4 | 3 | | | 3 | 4 |
| *Styela* spp. (Juv.) | | | | | | | | | | 2 |

Field Notes From October - November Survey

Station 12 Nothing unusual.

Station 13 Juvenile *Macrocystis* plants abundant (9-13/$m^2$). Plants generally 12-20 cm. tall.

Station 15 Two juvenile *Macrocystis*. Four juvenile *Laminaria*.

Station 17 Unusually good conditions.

Station 18 Most, if not all, erect or arboreal organisms were covered with a fine, coagulated brown film (? diatoms). This was noticed at both stations (18 & 19).

Station 19 General area relatively devoid of macroscopic algae compared to other surrounding areas (i.e. within 80').

Station 20 Most small and fine structured organisms were covered with a globular material (similar to *Leptopel* ) - common and abundant on hydroids and Parvosilvosa.

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 28 | 45 | 46 | 40 | 159 | 39.7500 | 68.2500 | 4.1307 |
| Boulder | 32 | 8 | 3 | 14 | 57 | 14.2500 | 160.2500 | 6.3295 |
| Sand | 0 | 7 | 11 | 6 | 24 | 6.0000 | 20.6667 | 2.2730 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Macrocystis* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 1 | 3 | 0 | 4 | 1.0000 | 2.0000 | 0.7071 |
| *Coeloseira / Champia* | 0 | 0 | 0 | 4 | 4 | 1.0000 | 4.0000 | 1.0000 |
| *Hildenbrandia prototypus* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Prionitis* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 7 | 0 | 6 | 9 | 22 | 5.5000 | 15.0000 | 1.9365 |
| Crustose corallines,unident. | 3 | 8 | 8 | 2 | 21 | 5.2500 | 10.2500 | 1.6008 |
| Parvosilvosa | 0 | 8 | 6 | 24 | 38 | 9.5000 | 105.0000 | 5.1235 |
| Rhodophytes,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| PORIFERA | | | | | | | | |
| *Tethya aurantia* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Poriferans,unident. | 0 | 2 | 0 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 10 | 13 | 15 | 8 | 46 | 11.5000 | 9.6667 | 1.5546 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 3 | 3 | 0 | 0 | 6 | 1.5000 | 3.0000 | 0.8660 |
| *Corynactis californica* | 2 | 3 | 0 | 0 | 5 | 1.2500 | 2.2500 | 0.7500 |
| *Muricea californica* | 18 | 2 | 1 | 0 | 21 | 5.2500 | 72.9167 | 4.2696 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| *Pteropurpura festiva* | 0 | 2 | 1 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 7 | 2 | 2 | 4 | 15 | 3.7500 | 5.5833 | 1.1814 |
| Ectoprocts,unident.(encrusting) | 0 | 10 | 9 | 0 | 19 | 4.7500 | 30.2500 | 2.7500 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

STATION 12 (CONTINUED), SAN ONOFRE NUC. GEN. STA. UNITS 2&3 PREOP. MONITORING PROGRAM
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH
ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Trididemnum / Didemnum* | Ø | 4 | 4 | Ø | 8 | 2.ØØØØ | 5.3333 | 1.1547 |
| Ascidians,unident. | Ø | Ø | Ø | 2 | 2 | Ø.5ØØØ | 1.ØØØØ | Ø.5ØØØ |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 2 | Ø | Ø | Ø | 2 | Ø.5ØØØ | 1.ØØØØ | Ø.5ØØØ |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 1 | 0 | 0 | 10 | 11 | 2.7500 | 23.5833 | 2.4281 |
| *Macrocystis* spp. | 0 | 0 | 0 | 10 | 10 | 2.5000 | 25.0000 | 2.5000 |
| Phaeophyte,unident. | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Botryocladia pseudodichotoma* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 4 | 5 | 14 | 1 | 24 | 6.0000 | 31.3333 | 2.7988 |
| Parvosilvosa | 0 | 3 | 4 | 0 | 7 | 1.7500 | 4.2500 | 1.0308 |
| Rhodophytes,unident. | 0 | 1 | 2 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 4 | 5 | 1 | 10 | 2.5000 | 5.6667 | 1.1902 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 22 | 9 | 7 | 0 | 38 | 9.5000 | 84.3333 | 4.5917 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| *Nassarius mendicus* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 4 | 1 | 1 | 6 | 1.5000 | 3.0000 | 0.8660 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Styela montereyensis* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Trididemnum / Didemnum* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Macrocystis* spp. | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| RHODOPHYTA | | | | | | | | |
| *Coeloseira / Champia* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 0 | 1 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Parvosilvosa | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 5 | 2 | 5 | 0 | 12 | 3.0000 | 6.0000 | 1.2247 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Pista* spp. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON AUGUST 9, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 50 | 40 | 19 | 4 | 113 | 28.2500 | 428.2500 | 10.3471 |
| Boulder | 3 | 15 | 32 | 49 | 99 | 24.7500 | 402.9167 | 10.0364 |
| Sand | 7 | 4 | 9 | 7 | 27 | 6.7500 | 4.2500 | 1.0308 |
| Shell debris | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Macrocystis* spp. | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Botryocladia pseudodichotoma* | 1 | 1 | 1 | 0 | 3 | 0.7500 | 0.2500 | 0.2500 |
| *Coeloseira / Champia* | 6 | 1 | 1 | 1 | 9 | 2.2500 | 6.2500 | 1.2500 |
| *Corallina / Haliptylon* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Hildenbrandia prototypus* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Laurencia* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Pterocladia / Gelidium* | 0 | 0 | 2 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Rhodymenia* spp. | 25 | 33 | 11 | 15 | 84 | 21.0000 | 98.6667 | 4.9666 |
| Crustose corallines,unident. | 4 | 3 | 0 | 3 | 10 | 2.5000 | 3.0000 | 0.8660 |
| Parvosilvosa | 10 | 8 | 14 | 10 | 42 | 10.5000 | 6.3333 | 1.2583 |
| PORIFERA | | | | | | | | |
| Poriferans,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 5 | 8 | 12 | 27 | 6.7500 | 18.2500 | 2.1360 |
| ANTHOZOA | | | | | | | | |
| *Corynactis californica* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Muricea californica* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 5 | 0 | 5 | 7 | 17 | 4.2500 | 8.9167 | 1.4930 |
| Ectoprocts,unident.(encrusting) | 6 | 7 | 15 | 5 | 33 | 8.2500 | 20.9167 | 2.2867 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Macrocystis* spp. | 5 | 16 | 3 | 19 | 43 | 10.7500 | 62.9167 | 3.9660 |
| Laminoid,unident. | 2 | 0 | 4 | 0 | 6 | 1.5000 | 3.6667 | 0.9574 |
| RHODOPHYTA | | | | | | | | |
| *Botryocladia pseudodichotoma* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Callophyllis* spp. | 0 | 0 | 1 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Coeloseira / Champia* | 2 | 0 | 1 | 1 | 4 | 1.0000 | 0.6667 | 0.4083 |
| *Corallina / Haliptylon* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Prionitis* spp. | 0 | 0 | 0 | 5 | 5 | 1.2500 | 6.2500 | 1.2500 |
| *Rhodymenia* spp. | 19 | 16 | 23 | 22 | 80 | 20.0000 | 10.0000 | 1.5811 |
| Parvosilvosa | 2 | 0 | 0 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 1 | 2 | 0 | 4 | 1.0000 | 0.6667 | 0.4083 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 0 | 0 | 9 | 0 | 9 | 2.2500 | 20.2500 | 2.2500 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| Nudibranch eggs | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 13
SAMPLED ON AUGUST 9, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Macrocystis* spp. | 6 | 2 | 6 | 17 | 31 | 7.75ØØ | 41.5833 | 3.2243 |
| Laminoid,unident. | 1 | Ø | Ø | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| **RHODOPHYTA** | | | | | | | | |
| *Callophyllis* spp. | Ø | Ø | 1 | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| *Rhodymenia* spp. | 1 | 1 | 1 | Ø | 3 | Ø.75ØØ | Ø.25ØØ | Ø.25ØØ |
| **CNIDARIA** | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | Ø | Ø | Ø | 1 | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 14
SAMPLED ON AUGUST 8, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 6 | 12 | 16 | 58 | 92 | 23.ØØØØ | 561.3332 | 11.8462 |
| Boulder | 47 | 27 | 38 | Ø | 112 | 28.ØØØØ | 415.3332 | 1Ø.1899 |
| Sand | 7 | 21 | 6 | 2 | 36 | 9.ØØØØ | 68.6667 | 4.1433 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia* spp. | 3 | 1 | 1 | 1 | 6 | 1.5000 | 1.0000 | 0.5000 |
| Ectocarpales,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Laminoid,unident. | 1 | 0 | 0 | 3 | 4 | 1.0000 | 2.0000 | 0.7071 |
| RHODOPHYTA | | | | | | | | |
| *Botryocladia pseudodichotoma* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Callophyllis* spp. | 0 | 22 | 0 | 0 | 22 | 5.5000 | 121.0000 | 5.5000 |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | 1 | 1 | 0 | 4 | 1.0000 | 0.6667 | 0.4083 |
| *Rhodymenia* spp. | 14 | 3 | 8 | 0 | 25 | 6.2500 | 37.5833 | 3.0653 |
| Crustose corallines,unident. | 0 | 6 | 8 | 3 | 17 | 4.2500 | 12.2500 | 1.7500 |
| Parvosilvosa | 19 | 24 | 39 | 28 | 110 | 27.5000 | 72.3333 | 4.2524 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 1 | 1 | 0 | 4 | 1.0000 | 0.6667 | 0.4083 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| *Kelletia kelletii* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 1 | 0 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Ectoprocts,unident.(encrusting) | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 13 | 0 | 0 | 6 | 19 | 4.7500 | 38.2500 | 3.0923 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia* spp. | 35 | 28 | 17 | 15 | 95 | 23.7500 | 88.9167 | 4.7148 |
| Laminoid,unident. | 0 | 1 | 0 | 4 | 5 | 1.2500 | 3.5833 | 0.9465 |
| RHODOPHYTA | | | | | | | | |
| *Botryocladia pseudodichotoma* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Callophyllis* spp. | 0 | 4 | 0 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| *Cryptonemia / Halymenia / Schizymenia* | 5 | 3 | 7 | 1 | 16 | 4.0000 | 6.6667 | 1.2910 |
| *Rhodymenia* spp. | 0 | 0 | 1 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Crustose corallines,unident. | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Parvosilvosa | 0 | 2 | 6 | 0 | 8 | 2.0000 | 8.0000 | 1.4142 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia* spp. | 0 | 6 | 3 | 3 | 12 | 3.0000 | 6.0000 | 1.2247 |
| Laminoid,unident. | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 9 | 0 | 0 | 9 | 2.2500 | 20.2500 | 2.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON AUGUST 8, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 46 | 44 | 51 | 4 | 145 | 36.2500 | 470.9167 | 10.8503 |
| Boulder | 7 | 11 | 0 | 52 | 70 | 17.5000 | 549.6667 | 11.7225 |
| Sand | 6 | 5 | 6 | 4 | 21 | 5.2500 | 0.9167 | 0.4787 |
| Shell debris | 1 | 0 | 3 | 0 | 4 | 1.0000 | 2.0000 | 0.7071 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 1 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Coeloseira / Champia* | 1 | 0 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Cryptonemia / Halymenia / Schizymenia* | 6 | 0 | 9 | 3 | 18 | 4.5000 | 15.0000 | 1.9365 |
| *Rhodymenia* spp. | 1 | 0 | 5 | 0 | 6 | 1.5000 | 5.6667 | 1.1902 |
| Crustose corallines,unident. | 5 | 8 | 4 | 1 | 18 | 4.5000 | 8.3333 | 1.4434 |
| Parvosilvosa | 31 | 37 | 33 | 54 | 155 | 38.7500 | 109.5833 | 5.2341 |
| PORIFERA | | | | | | | | |
| Poriferans,unident. | 2 | 1 | 0 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 0 | 1 | 1 | 3 | 0.7500 | 0.2500 | 0.2500 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corynactis californica* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Ectoprocts,unident.(encrusting) | 6 | 4 | 3 | 0 | 13 | 3.2500 | 6.2500 | 1.2500 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Trididemnum / Didemnum* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia* spp. | 3 | 1 | 9 | 0 | 13 | 3.2500 | 16.2500 | 2.0156 |
| *Dictyota / Pachydictyon* | 4 | 0 | 0 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| *Pterygophora californica* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Taonia lennebackerae* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Ectocarpales,unident. | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Phaeophyte,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Botryocladia pseudodichotoma* | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Coeloseira / Champia* | 0 | 1 | 1 | 3 | 5 | 1.2500 | 1.5833 | 0.6292 |
| *Cryptonemia / Halymenia / Schizymenia* | 31 | 0 | 26 | 5 | 62 | 15.5000 | 233.6667 | 7.6431 |
| *Rhodymenia* spp. | 6 | 0 | 5 | 1 | 12 | 3.0000 | 8.6667 | 1.4720 |
| Parvosilvosa | 4 | 7 | 2 | 1 | 14 | 3.5000 | 7.0000 | 1.3229 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 2 | 0 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corynactis californica* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 15
SAMPLED ON AUGUST 8, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Desmarestia* spp. | 1 | Ø | 7 | Ø | 8 | 2.ØØØØ | 11.3333 | 1.6833 |
| *Pterygophora californica* | Ø | Ø | 1 | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| **RHODOPHYTA** | | | | | | | | |
| *Botryocladia pseudodichotoma* | 1 | Ø | Ø | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| *Cryptonemia / Halymenia / Schizymenia* | 11 | Ø | 2 | Ø | 13 | 3.25ØØ | 27.5833 | 2.626Ø |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | Ø | 1 | Ø | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON AUGUST 7, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 13 | 9 | 19 | 16 | 57 | 14.2500 | 18.2500 | 2.1360 |
| Boulder | 18 | 29 | 16 | 24 | 87 | 21.7500 | 34.9167 | 2.9545 |
| Sand | 27 | 19 | 23 | 20 | 89 | 22.2500 | 12.9167 | 1.7970 |
| Shell debris | 2 | 3 | 2 | 0 | 7 | 1.7500 | 1.5833 | 0.6292 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Pterygophora californica* | 17 | 23 | 12 | 0 | 52 | 13.0000 | 95.3333 | 4.8819 |
| Phaeophyte,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corallina / Haliptylon* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 3 | 2 | 0 | 0 | 5 | 1.2500 | 2.2500 | 0.7500 |
| *Rhodymenia* spp. | 1 | 4 | 4 | 0 | 9 | 2.2500 | 4.2500 | 1.0308 |
| Crustose corallines,unident. | 26 | 12 | 28 | 34 | 100 | 25.0000 | 86.6667 | 4.6548 |
| Parvosilvosa | 1 | 11 | 0 | 0 | 12 | 3.0000 | 28.6667 | 2.6771 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ANTHOZOA | | | | | | | | |
| *Halcampa decemtentaculata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Sabellaria cementarium* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| *Conus californicus* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Ectoprocts,unident.(encrusting) | 0 | 1 | 2 | 2 | 5 | 1.2500 | 0.9167 | 0.4787 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 0 | 2 | 4 | 3 | 9 | 2.2500 | 2.9167 | 0.8539 |
| *Styela montereyensis* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA | | | | | | | | |
| *Bryopsis corticulans* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| PHAEOPHYTA | | | | | | | | |
| *Pterygophora californica* | 15 | 26 | 2 | 0 | 43 | 10.7500 | 147.5833 | 6.0742 |
| Phaeophyte,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 0 | 1 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Botryocladia pseudodichotoma* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corallina / Haliptylon* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | 0 | 0 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Hildenbrandia prototypus* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Pterocladia / Gelidium* | 0 | 2 | 1 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Rhodymenia* spp. | 0 | 0 | 7 | 3 | 10 | 2.5000 | 11.0000 | 1.6583 |
| Parvosilvosa | 8 | 8 | 17 | 20 | 53 | 13.2500 | 38.2500 | 3.0923 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 0 | 2 | 4 | 7 | 1.7500 | 2.9167 | 0.8539 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Pterygophora californica* | 13 | 11 | 4 | 0 | 28 | 7.0000 | 36.6667 | 3.0277 |
| Phaeophyte,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Pterocladia / Gelidium* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 0 | 0 | 2 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 17
SAMPLED ON AUGUST 7, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 2 | Ø | Ø | 4 | 6 | 1.5ØØØ | 3.6667 | Ø.9574 |
| Boulder | 3Ø | 53 | 42 | 25 | 15Ø | 37.5ØØØ | 157.6667 | 6.2783 |
| Sand | 26 | 7 | 17 | 31 | 81 | 2Ø.25ØØ | 111.5833 | 5.2817 |
| Shell debris | 2 | Ø | 1 | Ø | 3 | Ø.75ØØ | Ø.9167 | Ø.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Dictyota / Pachydictyon* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Pterygophora californica* | 0 | 0 | 10 | 0 | 10 | 2.5000 | 25.0000 | 2.5000 |
| RHODOPHYTA | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 0 | 1 | 3 | 4 | 1.0000 | 2.0000 | 0.7071 |
| *Rhodymenia* spp. | 0 | 0 | 8 | 9 | 17 | 4.2500 | 24.2500 | 2.4622 |
| Crustose corallines,unident. | 13 | 23 | 11 | 11 | 58 | 14.5000 | 33.0000 | 2.8723 |
| Parvosilvosa | 17 | 29 | 14 | 6 | 66 | 16.5000 | 91.0000 | 4.7697 |
| Rhodophytes,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| PORIFERA | | | | | | | | |
| Poriferans,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 0 | 4 | 5 | 9 | 2.2500 | 6.9167 | 1.3150 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 3 | 0 | 3 | 0 | 6 | 1.5000 | 3.0000 | 0.8660 |
| *Sabellaria cementarium* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 1 | 1 | 0 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 0 | 4 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| ECHINOIDEA | | | | | | | | |
| *Lytechinus* spp. | 2 | 1 | 0 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Pterygophora californica* | 0 | 0 | 41 | 0 | 41 | 10.2500 | 420.2500 | 10.2500 |
| **RHODOPHYTA** | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Pterocladia / Gelidium* | 2 | 2 | 0 | 0 | 4 | 1.0000 | 1.3333 | 0.5774 |
| *Rhodymenia* spp. | 2 | 5 | 3 | 0 | 10 | 2.5000 | 4.3333 | 1.0408 |
| Parvosilvosa | 6 | 15 | 6 | 5 | 32 | 8.0000 | 22.0000 | 2.3452 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON AUGUST 7, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Pterygophora californica* | 0 | 0 | 9 | 0 | 9 | 2.2500 | 20.2500 | 2.2500 |
| **RHODOPHYTA** | | | | | | | | |
| *Pterocladia / Gelidium* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 55 | 54 | 44 | 44 | 197 | 49.2500 | 36.9167 | 3.0380 |
| Boulder | 2 | 0 | 6 | 0 | 8 | 2.0000 | 8.0000 | 1.4142 |
| Sand | 2 | 6 | 6 | 15 | 29 | 7.2500 | 30.2500 | 2.7500 |
| Shell debris | 1 | 0 | 4 | 1 | 6 | 1.5000 | 3.0000 | 0.8660 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| CHLOROPHYTA | | | | | | | | |
| Chlorophyte,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia* spp. | 1 | 0 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Ectocarpales,unident. | 1 | 1 | 1 | 1 | 4 | 1.0000 | 0.0000 | 0.0000 |
| Laminoid,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Coeloseira / Champia* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 0 | 0 | 2 | 4 | 6 | 1.5000 | 3.6667 | 0.9574 |
| *Rhodymenia* spp. | 2 | 0 | 0 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Crustose corallines,unident. | 14 | 22 | 12 | 11 | 59 | 14.7500 | 24.9167 | 2.4958 |
| Parvosilvosa | 23 | 14 | 12 | 21 | 70 | 17.5000 | 28.3333 | 2.6615 |
| Rhodophytes,unident. | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 6 | 1 | 9 | 4 | 20 | 5.0000 | 11.3333 | 1.6833 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 0 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Ectoprocts,unident.(encrusting) | 1 | 3 | 3 | 2 | 9 | 2.2500 | 0.9167 | 0.4787 |
| ECHINODERMATA | | | | | | | | |
| ECHINOIDEA | | | | | | | | |
| *Strongylocentrotus franciscanus* | 0 | 0 | 6 | 0 | 6 | 1.5000 | 9.0000 | 1.5000 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Trididemnum / Didemnum* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| Ectocarpales,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Laminoid,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Phaeophyte,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| **RHODOPHYTA** | | | | | | | | |
| *Rhodymenia* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Parvosilvosa | 7 | 7 | 9 | 10 | 33 | 8.2500 | 2.2500 | 0.7500 |
| **CNIDARIA** | | | | | | | | |
| **HYDROZOA** | | | | | | | | |
| **Hydroids,unident.** | 1 | 1 | 2 | 1 | 5 | 1.2500 | 0.2500 | 0.2500 |
| **ECTOPROCTA** | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| **ECHINODERMATA** | | | | | | | | |
| **ECHINOIDEA** | | | | | | | | |
| *Strongylocentrotus franciscanus* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 19
SAMPLED ON AUGUST 3, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **SUBSTRATE** | | | | | | | | |
| Cobble | 10 | 34 | 38 | 39 | 121 | 30.2500 | 186.9167 | 6.8359 |
| Boulder | 48 | 25 | 13 | 9 | 95 | 23.7500 | 307.5832 | 8.7690 |
| Sand | 1 | 0 | 8 | 11 | 20 | 5.0000 | 28.6667 | 2.6771 |
| Shell debris | 1 | 1 | 1 | 1 | 4 | 1.0000 | 0.0000 | 0.0000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 19
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Coeloseira / Champia* | 0 | 0 | 1 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Corallina / Haliptylon* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 0 | 0 | 1 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Rhodymenia* spp. | 0 | 0 | 2 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Crustose corallines,unident. | 16 | 11 | 15 | 20 | 62 | 15.5000 | 13.6667 | 1.8484 |
| Parvosilvosa | 5 | 1 | 16 | 10 | 32 | 8.0000 | 42.0000 | 3.2404 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 28 | 30 | 1 | 7 | 66 | 16.5000 | 215.0000 | 7.3314 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 4 | 2 | 1 | 0 | 7 | 1.7500 | 2.9167 | 0.8539 |
| Anthozoan,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Sabellarid,unident. | 0 | 0 | 2 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| MOLLUSCA | | | | | | | | |
| GASTROPODA | | | | | | | | |
| *Pteropurpura festiva* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 0 | 0 | 6 | 3 | 9 | 2.2500 | 8.2500 | 1.4361 |
| ECHINODERMATA | | | | | | | | |
| ECHINOIDEA | | | | | | | | |
| *Strongylocentrotus franciscanus* | 4 | 5 | 0 | 0 | 9 | 2.2500 | 6.9167 | 1.3150 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 0 | 0 | 2 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| *Trididemnum / Didemnum* | 0 | 1 | 3 | 2 | 6 | 1.5000 | 1.6667 | 0.6455 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 19
SAMPLED ON AUGUST 3, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Coeloseira / Champia* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corallina / Haliptylon* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 0 | 0 | 1 | 7 | 8 | 2.0000 | 11.3333 | 1.6833 |
| Parvosilvosa | 13 | 7 | 10 | 21 | 51 | 12.7500 | 36.2500 | 3.0104 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 2 | 4 | 2 | 9 | 2.2500 | 1.5833 | 0.6292 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 0 | 2 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| ECHINODERMATA | | | | | | | | |
| ECHINOIDEA | | | | | | | | |
| *Strongylocentrotus franciscanus* | 7 | 1 | 0 | 0 | 8 | 2.0000 | 11.3333 | 1.6833 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 2Ø
SAMPLED ON AUGUST 2, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 3Ø | 21 | 3 | 1Ø | 64 | 16.ØØØØ | 142.ØØØØ | 5.9582 |
| Boulder | 12 | 15 | 2 | 6 | 35 | 8.75ØØ | 34.25ØØ | 2.9262 |
| Sand | 13 | 21 | 51 | 31 | 116 | 29.ØØØØ | 269.3332 | 8.2Ø57 |
| Shell debris | 5 | 3 | 4 | 13 | 25 | 6.25ØØ | 2Ø.9167 | 2.2867 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | 2 | 1 | 3 | 0 | 6 | 1.5000 | 1.6667 | 0.6455 |
| Crustose corallines,unident. | 0 | 0 | 0 | 4 | 4 | 1.0000 | 4.0000 | 1.0000 |
| Parvosilvosa | 2 | 0 | 0 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| Rhodophytes,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 0 | 9 | 6 | 15 | 3.7500 | 20.2500 | 2.2500 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 5 | 12 | 5 | 0 | 22 | 5.5000 | 24.3333 | 2.4664 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Spiochaetopterus costarum* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 8 | 1 | 2 | 1 | 12 | 3.0000 | 11.3333 | 1.6833 |
| Ectoprocts,unident.(encrusting) | 26 | 28 | 2 | 1 | 57 | 14.2500 | 217.5833 | 7.3753 |
| INVERTEBRATES,UNIDENT. | | | | | | | | |
| Gastropod egg cases | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 6 | 0 | 6 | 1.5000 | 9.0000 | 1.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | 0 | 0 | 1 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Parvosilvosa | 1 | 0 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Rhodophytes,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 0 | 6 | 1 | 7 | 1.7500 | 8.2500 | 1.4361 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 5 | 17 | 1 | 0 | 23 | 5.7500 | 60.9167 | 3.9025 |
| ARTHROPODA | | | | | | | | |
| DECAPODA | | | | | | | | |
| Pagurids,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 1 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON AUGUST 2, 1978 SUBSTRATE LEVEL

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 6 | 2 | 13 | 2 | 23 | 5.7500 | 26.9167 | 2.5941 |
| Boulder | 17 | 23 | 27 | 32 | 99 | 24.7500 | 40.2500 | 3.1721 |
| Sand | 33 | 32 | 17 | 24 | 106 | 26.5000 | 56.3333 | 3.7528 |
| Shell debris | 4 | 3 | 3 | 2 | 12 | 3.0000 | 0.6667 | 0.4083 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 1

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 0 | 0 | 4 | 4 | 1.0000 | 4.0000 | 1.0000 |
| *Hildenbrandia prototypus* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Pterocladia / Gelidium* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 2 | 0 | 3 | 0 | 5 | 1.2500 | 2.2500 | 0.7500 |
| Crustose corallines,unident. | 9 | 5 | 8 | 0 | 22 | 5.5000 | 16.3333 | 2.0207 |
| Parvosilvosa | 0 | 0 | 1 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Rhodophytes,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 1 | 4 | 8 | 15 | 3.7500 | 9.5833 | 1.5479 |
| ANTHOZOA | | | | | | | | |
| *Muricea fruticosa* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 3 | 2 | 0 | 0 | 5 | 1.2500 | 2.2500 | 0.7500 |
| ARTHROPODA | | | | | | | | |
| CIRRIPEDIA | | | | | | | | |
| *Balanus* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 13 | 3 | 2 | 18 | 4.5000 | 33.6667 | 2.9012 |
| Ectoprocts,unident.(encrusting) | 4 | 4 | 6 | 21 | 35 | 8.7500 | 67.5833 | 4.1105 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Pisaster giganteus* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Trididemnum / Didemnum* | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| INVERTEBRATES,UNIDENT. | | | | | | | | |
| *Muricea*(holdfast) | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 2

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 2 | 0 | 0 | 10 | 12 | 3.0000 | 22.6667 | 2.3805 |
| *Rhodymenia* spp. | 0 | 2 | 0 | 3 | 5 | 1.2500 | 2.2500 | 0.7500 |
| Parvosilvosa | 0 | 0 | 2 | 8 | 10 | 2.5000 | 14.3333 | 1.8930 |
| Rhodophytes,unident. | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 0 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Muricea fruticosa* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ARTHROPODA | | | | | | | | |
| CIRRIPEDIA | | | | | | | | |
| *Balanus* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 2 | 0 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Ectoprocts,unident.(encrusting) | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Trididemnum / Didemnum* | 0 | 6 | 0 | 0 | 6 | 1.5000 | 9.0000 | 1.5000 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 21
SAMPLED ON AUGUST 2, 1978 TAXA LEVEL 3

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | Ø | Ø | Ø | 3 | 3 | Ø.75ØØ | 2.25ØØ | Ø.75ØØ |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | Ø | 2 | Ø | 1 | 3 | Ø.75ØØ | Ø.9167 | Ø.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON NOVEMBER 2, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 13 | 29 | 22 | 19 | 83 | 20.7500 | 44.2500 | 3.3260 |
| Boulder | 27 | 20 | 29 | 14 | 90 | 22.5000 | 47.0000 | 3.4278 |
| Sand | 20 | 11 | 9 | 25 | 65 | 16.2500 | 56.9167 | 3.7722 |
| Shell debris | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Hildenbrandia prototypus* | 4 | 0 | 0 | 1 | 5 | 1.2500 | 3.5833 | 0.9465 |
| *Rhodymenia* spp. | 2 | 16 | 0 | 15 | 33 | 8.2500 | 70.9167 | 4.2106 |
| Crustose corallines, unident. | 4 | 6 | 18 | 2 | 30 | 7.5000 | 51.6667 | 3.5940 |
| Parvosilvosa | 4 | 23 | 5 | 1 | 33 | 8.2500 | 99.5833 | 4.9896 |
| Rhodophytes, unident. | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| PORIFERA | | | | | | | | |
| *Leucilla nuttingi* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Poriferans, unident. | 1 | 0 | 2 | 1 | 4 | 1.0000 | 0.6667 | 0.4083 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids, unident. | 1 | 1 | 0 | 11 | 13 | 3.2500 | 26.9167 | 2.5941 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Corynactis californica* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Muricea californica* | 12 | 0 | 6 | 2 | 20 | 5.0000 | 28.0000 | 2.6458 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Salmacina tribranchiata* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts, unident. (erect) | 9 | 0 | 12 | 10 | 31 | 7.7500 | 28.2500 | 2.6575 |
| Ectoprocts, unident. (encrusting) | 14 | 6 | 9 | 9 | 38 | 9.5000 | 11.0000 | 1.6583 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 1 | 0 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Trididemnum / Didemnum* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Macrocystis* spp. | 0 | 0 | 3 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| RHODOPHYTA | | | | | | | | |
| *Callophyllis* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Coeloseira / Champia* | 1 | 1 | 0 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Rhodymenia* spp. | 3 | 3 | 10 | 24 | 40 | 10.0000 | 98.0000 | 4.9497 |
| Parvosilvosa | 1 | 2 | 10 | 0 | 13 | 3.2500 | 20.9167 | 2.2867 |
| Rhodophytes,unident. | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 3 | 0 | 4 | 1 | 8 | 2.0000 | 3.3333 | 0.9129 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Muricea californica* | 20 | 0 | 11 | 13 | 44 | 11.0000 | 68.6667 | 4.1433 |
| ARTHROPODA | | | | | | | | |
| DECAPODA | | | | | | | | |
| Pagurids,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 0 | 3 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| Ectoprocts,unident.(encrusting) | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 12
SAMPLED ON NOVEMBER 2, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **RHODOPHYTA** | | | | | | | | |
| ***Rhodymenia* spp.** | **0** | **1** | **1** | **1** | **3** | **0.7500** | **0.2500** | **0.2500** |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 4 | 0 | 10 | 9 | 23 | 5.7500 | 21.5833 | 2.3229 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON NOVEMBER 1, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 33 | 52 | 22 | 44 | 151 | 37.7500 | 170.9167 | 6.5368 |
| Boulder | 12 | 2 | 36 | 0 | 50 | 12.5000 | 273.0000 | 8.2614 |
| Sand | 15 | 6 | 2 | 16 | 39 | 9.7500 | 46.9167 | 3.4248 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Coeloseira / Champia* | 0 | 2 | 2 | 4 | 8 | 2.0000 | 2.6667 | 0.8165 |
| *Corallina / Haliptylon* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 2 | 4 | 2 | 14 | 22 | 5.5000 | 33.0000 | 2.8723 |
| Crustose corallines,unident. | 9 | 18 | 6 | 0 | 33 | 8.2500 | 56.2500 | 3.7500 |
| Parvosilvosa | 3 | 0 | 4 | 1 | 8 | 2.0000 | 3.3333 | 0.9129 |
| PORIFERA | | | | | | | | |
| *Leucandra heathi* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Leucilla nuttingi* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Poriferans,unident. | 2 | 2 | 0 | 0 | 4 | 1.0000 | 1.3333 | 0.5774 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 0 | 0 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 4 | 2 | 1 | 0 | 7 | 1.7500 | 2.9167 | 0.8539 |
| *Corynactis californica* | 0 | 2 | 1 | 3 | 6 | 1.5000 | 1.6667 | 0.6455 |
| *Muricea californica* | 9 | 1 | 2 | 0 | 12 | 3.0000 | 16.6667 | 2.0412 |
| *Muricea fruticosa* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 7 | 1 | 20 | 2 | 30 | 7.5000 | 76.3333 | 4.3685 |
| Ectoprocts,unident.(encrusting) | 14 | 21 | 18 | 25 | 78 | 19.5000 | 21.6667 | 2.3274 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Trididemnum / Didemnum* | 0 | 3 | 1 | 1 | 5 | 1.2500 | 1.5833 | 0.6292 |
| Ascidian f | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Macrocystis* spp. | 1 | 0 | 0 | 6 | 7 | 1.7500 | 8.2500 | 1.4361 |
| RHODOPHYTA | | | | | | | | |
| *Bossiella* spp. | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Coeloseira / Champia* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corallina / Haliptylon* | 0 | 0 | 5 | 0 | 5 | 1.2500 | 6.2500 | 1.2500 |
| *Rhodymenia* spp. | 10 | 27 | 30 | 23 | 90 | 22.5000 | 77.6667 | 4.4064 |
| Parvosilvosa | 10 | 9 | 3 | 3 | 25 | 6.2500 | 14.2500 | 1.8875 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 0 | 0 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 18 | 3 | 10 | 0 | 31 | 7.7500 | 64.2500 | 4.0078 |
| *Muricea fruticosa* | 0 | 0 | 0 | 6 | 6 | 1.5000 | 9.0000 | 1.5000 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 1 | 4 | 2 | 8 | 2.0000 | 2.0000 | 0.7071 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Pisaster giganteus* | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 13
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Macrocystis* spp. | 2 | 1 | 2 | 9 | 14 | 3.5ØØØ | 13.6667 | 1.8484 |
| RHODOPHYTA | | | | | | | | |
| *Coeloseira / Champia* | Ø | 1 | Ø | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| *Rhodymenia* spp. | 4 | 4 | 4 | 1 | 13 | 3.25ØØ | 2.25ØØ | Ø.75ØØ |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 3 | 5 | 14 | Ø | 22 | 5.5ØØØ | 36.3333 | 3.Ø139 |
| *Muricea fruticosa* | Ø | Ø | Ø | 2 | 2 | Ø.5ØØØ | 1.ØØØØ | Ø.5ØØØ |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON NOVEMBER 7, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 40 | 20 | 33 | 47 | 140 | 35.0000 | 132.6667 | 5.7591 |
| Boulder | 0 | 33 | 23 | 4 | 60 | 15.0000 | 244.6667 | 7.8209 |
| Sand | 20 | 7 | 4 | 9 | 40 | 10.0000 | 48.6667 | 3.4881 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia ligulata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Pterocladia / Gelidium* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 3 | 1 | 0 | 0 | 4 | 1.0000 | 2.0000 | 0.7071 |
| Crustose corallines,unident. | 18 | 7 | 22 | 5 | 52 | 13.0000 | 68.6667 | 4.1433 |
| Parvosilvosa | 9 | 44 | 23 | 13 | 89 | 22.2500 | 244.9167 | 7.8249 |
| Rhodophytes,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| White coralline crust | 2 | 0 | 2 | 3 | 7 | 1.7500 | 1.5833 | 0.6292 |
| PORIFERA | | | | | | | | |
| Poriferans,unident. | 1 | 3 | 2 | 3 | 9 | 2.2500 | 0.9167 | 0.4787 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 1 | 0 | 1 | 3 | 0.7500 | 0.2500 | 0.2500 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 1 | 1 | 2 | 3 | 7 | 1.7500 | 0.9167 | 0.4787 |
| *Corynactis californica* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Spiochaetopterus costarum* | 1 | 0 | 1 | 1 | 3 | 0.7500 | 0.2500 | 0.2500 |
| Polychaete,unident.(tube) | 1 | 0 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 0 | 0 | 3 | 4 | 1.0000 | 2.0000 | 0.7071 |
| Ectoprocts,unident.(encrusting) | 11 | 0 | 2 | 10 | 23 | 5.7500 | 30.9167 | 2.7801 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 0 | 0 | 0 | 4 | 4 | 1.0000 | 4.0000 | 1.0000 |
| Colonial ascidian,unident. | 1 | 0 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia ligulata* | 0 | 17 | 0 | 0 | 17 | 4.2500 | 72.2500 | 4.2500 |
| *Laminaria* spp. | 0 | 4 | 0 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Pterocladia / Gelidium* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 2 | 1 | 0 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Parvosilvosa | 27 | 5 | 24 | 19 | 75 | 18.7500 | 94.9167 | 4.8713 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 0 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ANTHOZOA | | | | | | | | |
| *Corynactis californica* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ARTHROPODA | | | | | | | | |
| DECAPODA | | | | | | | | |
| Pagurids,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 14
SAMPLED ON NOVEMBER 7, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia ligulata* | 0 | 4 | 0 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Parvosilvosa | 1 | 0 | 0 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON NOVEMBER 8, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 44 | 48 | 30 | 43 | 165 | 41.2500 | 60.9167 | 3.9025 |
| Boulder | 0 | 0 | 10 | 0 | 10 | 2.5000 | 25.0000 | 2.5000 |
| Sand | 16 | 12 | 18 | 16 | 62 | 15.5000 | 6.3333 | 1.2583 |
| Shell debris | 0 | 0 | 2 | 1 | 3 | 0.7500 | 0.9167 | 0.4787 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Anisocladella pacifica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 11 | 3 | 2 | 0 | 16 | 4.0000 | 23.3333 | 2.4152 |
| Crustose corallines,unident. | 12 | 7 | 7 | 24 | 50 | 12.5000 | 64.3333 | 4.0104 |
| Parvosilvosa | 7 | 15 | 7 | 5 | 34 | 8.5000 | 19.6667 | 2.2174 |
| PORIFERA | | | | | | | | |
| *Tethya aurantia* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Poriferans,unident. | 7 | 2 | 0 | 5 | 14 | 3.5000 | 9.6667 | 1.5546 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 6 | 8 | 0 | 15 | 3.7500 | 14.9167 | 1.9311 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Muricea californica* | 1 | 0 | 8 | 0 | 9 | 2.2500 | 14.9167 | 1.9311 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| Sabellarid,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Serpulids,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ARTHROPODA | | | | | | | | |
| DECAPODA | | | | | | | | |
| *Paguristes* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 4 | 0 | 0 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |
| Ectoprocts,unident.(encrusting) | 7 | 6 | 7 | 6 | 26 | 6.5000 | 0.3333 | 0.2887 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Styela montereyensis* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Desmarestia ligulata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Laminaria* spp. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Laminoid,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| **RHODOPHYTA** | | | | | | | | |
| *Rhodymenia* spp. | 12 | 1 | 0 | 1 | 14 | 3.5000 | 32.3333 | 2.8431 |
| Parvosilvosa | 18 | 5 | 3 | 30 | 56 | 14.0000 | 158.0000 | 6.2849 |
| Rhodophytes,unident. | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 2 | 1 | 1 | 0 | 4 | 1.0000 | 0.6667 | 0.4083 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 15
SAMPLED ON NOVEMBER 8, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| *Desmarestia ligulata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 1 | 13 | 35 | 3 | 52 | 13.0000 | 242.6667 | 7.7889 |
| Boulder | 39 | 38 | 4 | 35 | 116 | 29.0000 | 280.6667 | 8.3766 |
| Sand | 17 | 9 | 20 | 21 | 67 | 16.7500 | 29.5833 | 2.7195 |
| Shell debris | 3 | 0 | 1 | 1 | 5 | 1.2500 | 1.5833 | 0.6292 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Pterygophora californica* | 4 | 6 | 1 | 0 | 11 | 2.7500 | 7.5833 | 1.3769 |
| RHODOPHYTA | | | | | | | | |
| *Bossiella* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 8 | 6 | 6 | 1 | 21 | 5.2500 | 8.9167 | 1.4930 |
| *Rhodymenia* spp. | 4 | 1 | 0 | 0 | 5 | 1.2500 | 3.5833 | 0.9465 |
| Crustose corallines,unident. | 8 | 26 | 19 | 18 | 71 | 17.7500 | 54.9167 | 3.7053 |
| Parvosilvosa | 7 | 1 | 0 | 11 | 19 | 4.7500 | 26.9167 | 2.5941 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| Ectoprocts,unident.(encrusting) | 4 | 5 | 6 | 1 | 16 | 4.0000 | 4.6667 | 1.0801 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Chelyosoma productum* | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Euherdmania claviformis* | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Trididemnum / Didemnum* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Solitary ascidian,unident. | 2 | 0 | 0 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Pterygophora californica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Pterocladia / Gelidium* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 5 | 4 | 1 | 0 | 10 | 2.5000 | 5.6667 | 1.1902 |
| Parvosilvosa | 9 | 21 | 21 | 14 | 65 | 16.2500 | 34.2500 | 2.9262 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECHINODERMATA | | | | | | | | |
| ECHINOIDEA | | | | | | | | |
| *Lytechinus* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 16
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **PHAEOPHYTA** | | | | | | | | |
| ***Pterygophora californica*** | **0** | **3** | **0** | **0** | **3** | **0.7500** | **2.2500** | **0.7500** |
| RHODOPHYTA | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Pterocladia / Gelidium* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 1 | 3 | 5 | 0 | 9 | 2.2500 | 4.9167 | 1.1087 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON NOVEMBER 1, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 0 | 4 | 4 | 0 | 8 | 2.0000 | 5.3333 | 1.1547 |
| Boulder | 37 | 44 | 33 | 60 | 174 | 43.5000 | 141.6667 | 5.9512 |
| Sand | 23 | 11 | 22 | 0 | 56 | 14.0000 | 116.6667 | 5.4006 |
| Shell debris | 0 | 1 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Bossiella* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Hildenbrandia prototypus* | 0 | 0 | 1 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |
| *Rhodymenia* spp. | 10 | 0 | 1 | 0 | 11 | 2.7500 | 23.5833 | 2.4281 |
| Crustose corallines,unident. | 8 | 26 | 20 | 51 | 105 | 26.2500 | 328.2500 | 9.0588 |
| Parvosilvosa | 2 | 2 | 3 | 2 | 9 | 2.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 15 | 0 | 3 | 0 | 18 | 4.5000 | 51.0000 | 3.5707 |
| Ectoprocts,unident.(encrusting) | 6 | 15 | 5 | 5 | 31 | 7.7500 | 23.5833 | 2.4281 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Trididemnum / Didemnum* | 0 | 3 | 0 | 1 | 4 | 1.0000 | 2.0000 | 0.7071 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Bossiella* spp. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Corallina / Haliptylon* | 0 | 2 | 0 | 2 | 4 | 1.0000 | 1.3333 | 0.5774 |
| *Prionitis* spp. | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Rhodymenia* spp. | 9 | 3 | 2 | 5 | 19 | 4.7500 | 9.5833 | 1.5479 |
| Crustose corallines,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Parvosilvosa | 1 | 33 | 1 | 48 | 83 | 20.7500 | 557.5832 | 11.8066 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 3 | 0 | 3 | 0 | 6 | 1.5000 | 3.0000 | 0.8660 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 17
SAMPLED ON NOVEMBER 1, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Acrosorium uncinatum* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 1 | 5 | 0 | 4 | 10 | 2.5000 | 5.6667 | 1.1902 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON NOVEMBER 6, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 40 | 49 | 47 | 45 | 181 | 45.2500 | 14.9167 | 1.9311 |
| Sand | 18 | 10 | 10 | 15 | 53 | 13.2500 | 15.5833 | 1.9738 |
| Shell debris | 2 | 1 | 3 | 0 | 6 | 1.5000 | 1.6667 | 0.6455 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Hildenbrandia prototypus* | 0 | 3 | 1 | 0 | 4 | 1.0000 | 2.0000 | 0.7071 |
| *Rhodymenia* spp. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Crustose corallines,unident. | 11 | 10 | 9 | 14 | 44 | 11.0000 | 4.6667 | 1.0801 |
| Parvosilvosa | 20 | 20 | 27 | 24 | 91 | 22.7500 | 11.5833 | 1.7017 |
| White coralline crust | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 1 | 3 | 6 | 2 | 12 | 3.0000 | 4.6667 | 1.0801 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 0 | 0 | 0 | 3 | 3 | 0.7500 | 2.2500 | 0.7500 |
| Ectoprocts,unident.(encrusting) | 3 | 4 | 5 | 2 | 14 | 3.5000 | 1.6667 | 0.6455 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| Colonial ascidian,unident. | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 18
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **RHODOPHYTA** | | | | | | | | |
| *Corallina / Haliptylon* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| **Parvosilvosa** | 6 | 7 | 6 | 11 | 30 | 7.5000 | 5.6667 | 1.1902 |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 0 | 4 | 0 | 4 | 1.0000 | 4.0000 | 1.0000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 19
SAMPLED ON NOVEMBER 6, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 35 | 28 | 25 | 43 | 131 | 32.7500 | 64.2500 | 4.0078 |
| Boulder | 4 | 13 | 0 | 8 | 25 | 6.2500 | 30.9167 | 2.7801 |
| Sand | 21 | 17 | 35 | 8 | 81 | 20.2500 | 126.2500 | 5.6181 |
| Shell debris | 0 | 1 | 0 | 1 | 2 | 0.5000 | 0.3333 | 0.2887 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Coeloseira / Champia* | 0 | 2 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Hildenbrandia prototypus* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Rhodymenia* spp. | 0 | 3 | 9 | 0 | 12 | 3.0000 | 18.0000 | 2.1213 |
| Crustose corallines,unident. | 23 | 6 | 7 | 22 | 58 | 14.5000 | 85.6667 | 4.6278 |
| Parvosilvosa | 16 | 34 | 14 | 13 | 77 | 19.2500 | 98.2500 | 4.9561 |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Corynactis californica* | 0 | 1 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Muricea californica* | 0 | 0 | 7 | 0 | 7 | 1.7500 | 12.2500 | 1.7500 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(encrusting) | 0 | 2 | 1 | 7 | 10 | 2.5000 | 9.6667 | 1.5546 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | 0 | 0 | 0 | 1 | 1 | 0.2500 | 0.2500 | 0.2500 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 0 | 7 | 7 | 1.7500 | 12.2500 | 1.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | Ø | 3 | Ø | 1 | 4 | 1.ØØØØ | 2.ØØØØ | Ø.7Ø71 |
| Crustose corallines,unident. | Ø | Ø | 1 | 3 | 4 | 1.ØØØØ | 2.ØØØØ | Ø.7Ø71 |
| Parvosilvosa | 2Ø | 8 | 2 | 6 | 36 | 9.ØØØØ | 6Ø.ØØØØ | 3.873Ø |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | Ø | Ø | 12 | 2 | 14 | 3.5ØØØ | 33.ØØØØ | 2.8723 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Patiria miniata* | Ø | Ø | Ø | 3 | 3 | Ø.75ØØ | 2.25ØØ | Ø.75ØØ |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | Ø | Ø | Ø | 3 | 3 | Ø.75ØØ | 2.25ØØ | Ø.75ØØ |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 19
SAMPLED ON NOVEMBER 6, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | Ø | Ø | Ø | 1 | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | Ø | Ø | Ø | 1 | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | Ø | Ø | 1 | 1 | 2 | Ø.5ØØØ | Ø.3333 | Ø.2887 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 2Ø
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 28 | 14 | 6 | 14 | 62 | 15.5ØØØ | 83.6667 | 4.5735 |
| Boulder | 11 | 16 | 31 | 27 | 85 | 21.25ØØ | 86.9167 | 4.6615 |
| Sand | 17 | 28 | 21 | 19 | 85 | 21.25ØØ | 22.9167 | 2.3936 |
| Shell debris | 4 | 2 | 2 | Ø | 8 | 2.ØØØØ | 2.6667 | Ø.8165 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| *Laminaria* spp. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 0 | 3 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Rhodymenia* spp. | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| Parvosilvosa | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 1 | 5 | 3 | 5 | 14 | 3.5000 | 3.6667 | 0.9574 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 0 | 0 | 1 | 7 | 8 | 2.0000 | 11.3333 | 1.6833 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 0 | 1 | 1 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 9 | 5 | 2 | 17 | 4.2500 | 12.9167 | 1.7970 |
| Ectoprocts,unident.(encrusting) | 37 | 2 | 5 | 33 | 77 | 19.2500 | 334.9167 | 9.1504 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Trididemnum / Didemnum* | 4 | 0 | 0 | 1 | 5 | 1.2500 | 3.5833 | 0.9465 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 2 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| PHAEOPHYTA | | | | | | | | |
| Phaeophyte,unident. | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Rhodymenia* spp. | 1 | 1 | 0 | 0 | 2 | 0.5000 | 0.3333 | 0.2887 |
| Parvosilvosa | 5 | 0 | 0 | 1 | 6 | 1.5000 | 5.6667 | 1.1902 |
| **CNIDARIA** | | | | | | | | |
| **HYDROZOA** | | | | | | | | |
| **Hydroids,unident.** | **13** | **1** | **2** | **9** | **25** | **6.2500** | **32.9167** | **2.8687** |
| **ANTHOZOA** | | | | | | | | |
| *Muricea californica* | 1 | 1 | 0 | 11 | 13 | 3.2500 | 26.9167 | 2.5941 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 1 | 0 | 0 | 5 | 6 | 1.5000 | 5.6667 | 1.1902 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 20
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Rhodymenia* spp. | 3 | 0 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 0 | 0 | 0 | 8 | 8 | 2.0000 | 16.0000 | 2.0000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON OCTOBER 31, 1978, SUBSTRATE LEVEL.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| SUBSTRATE | | | | | | | | |
| Cobble | 3 | 0 | 5 | 13 | 21 | 5.2500 | 30.9167 | 2.7801 |
| Boulder | 29 | 28 | 31 | 30 | 118 | 29.5000 | 1.6667 | 0.6455 |
| Sand | 28 | 32 | 14 | 17 | 91 | 22.7500 | 74.2500 | 4.3084 |
| Shell debris | 0 | 0 | 10 | 0 | 10 | 2.5000 | 25.0000 | 2.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 1.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Corallina / Haliptylon* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 0 | 0 | 2 | 2 | 0.5000 | 1.0000 | 0.5000 |
| *Hildenbrandia prototypus* | 3 | 0 | 0 | 2 | 5 | 1.2500 | 2.2500 | 0.7500 |
| *Rhodymenia* spp. | 0 | 2 | 1 | 0 | 3 | 0.7500 | 0.9167 | 0.4787 |
| Crustose corallines,unident. | 5 | 0 | 1 | 0 | 6 | 1.5000 | 5.6667 | 1.1902 |
| Parvosilvosa | 0 | 4 | 1 | 0 | 5 | 1.2500 | 3.5833 | 0.9465 |
| PORIFERA | | | | | | | | |
| Poriferan, unident.,encrusting | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 2 | 1 | 7 | 1 | 11 | 2.7500 | 8.2500 | 1.4361 |
| ANTHOZOA | | | | | | | | |
| *Astrangia* spp. | 1 | 0 | 0 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| *Muricea californica* | 0 | 0 | 0 | 4 | 4 | 1.0000 | 4.0000 | 1.0000 |
| ANNELIDA | | | | | | | | |
| POLYCHAETA | | | | | | | | |
| *Diopatra ornata* | 2 | 0 | 1 | 1 | 4 | 1.0000 | 0.6667 | 0.4083 |
| ECTOPROCTA | | | | | | | | |
| **Ectoprocts,unident.(erect)** | **14** | **0** | **11** | **0** | **25** | **6.2500** | **53.5833** | **3.6600** |
| **Ectoprocts,unident.(encrusting)** | **5** | **12** | **11** | **36** | **64** | **16.0000** | **187.3333** | **6.8435** |
| **ECHINODERMATA** | | | | | | | | |
| **ASTEROIDEA** | | | | | | | | |
| *Dermasterias imbricata* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 0 | 0 | 3 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Trididemnum / Didemnum* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 60 POINTS EACH. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 2.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| RHODOPHYTA | | | | | | | | |
| *Cryptonemia / Halymenia / Schizymenia* | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |
| *Rhodymenia* spp. | 3 | 0 | 2 | 1 | 6 | 1.5000 | 1.6667 | 0.6455 |
| Parvosilvosa | 0 | 1 | 0 | 2 | 3 | 0.7500 | 0.9167 | 0.4787 |
| CNIDARIA | | | | | | | | |
| HYDROZOA | | | | | | | | |
| Hydroids,unident. | 4 | 0 | 4 | 3 | 11 | 2.7500 | 3.5833 | 0.9465 |
| ANTHOZOA | | | | | | | | |
| *Muricea californica* | 6 | 0 | 0 | 8 | 14 | 3.5000 | 17.0000 | 2.0616 |
| ECTOPROCTA | | | | | | | | |
| Ectoprocts,unident.(erect) | 5 | 0 | 3 | 7 | 15 | 3.7500 | 8.9167 | 1.4930 |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Dermasterias imbricata* | 1 | 0 | 0 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| CHORDATA | | | | | | | | |
| UROCHORDATA | | | | | | | | |
| *Euherdmania claviformis* | 0 | 0 | 1 | 0 | 1 | 0.2500 | 0.2500 | 0.2500 |
| *Trididemnum / Didemnum* | 2 | 0 | 0 | 0 | 2 | 0.5000 | 1.0000 | 0.5000 |
| SECONDARY SUBSTRATE | | | | | | | | |
| *Muricea*(moribund holdfast) | 0 | 3 | 0 | 0 | 3 | 0.7500 | 2.2500 | 0.7500 |

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 PREOPERATIONAL MONITORING PROGRAM.
RESULTS OF FOUR .125M2 BENTHIC QUADRATS SAMPLED WITH 6Ø POINTS EACH. STATION 21
SAMPLED ON OCTOBER 31, 1978, TAXA LEVEL 3.

| TAXA | CONTACTS/QUADRAT Q1 | Q2 | Q3 | Q4 | TOT. | MEAN | VARIANCE | STANDARD ERROR |
|---|---|---|---|---|---|---|---|---|
| **RHODOPHYTA** | | | | | | | | |
| *Rhodymenia* **spp.** | 4 | Ø | 1 | Ø | 5 | 1.25ØØ | 3.5833 | Ø.9465 |
| **Parvosilvosa** | 2 | Ø | Ø | Ø | 2 | Ø.5ØØØ | 1.ØØØØ | Ø.5ØØØ |
| CNIDARIA | | | | | | | | |
| ANTHOZOA | | | | | | | | |
| *Huricea californica* | 2 | Ø | Ø | 3 | 5 | 1.25ØØ | 2.25ØØ | Ø.75ØØ |
| ECHINODERMATA | | | | | | | | |
| ASTEROIDEA | | | | | | | | |
| *Dermasterias imbricata* | 1 | Ø | Ø | Ø | 1 | Ø.25ØØ | Ø.25ØØ | Ø.25ØØ |

*Muricea* tagging data collected at Preoperational Benthic Monitoring stations (Units 2 and 3) including species, substrate type, tag number, location with reference to nearest station, size dimensions and orientation. Survey 02 November 3-20, 1978.

| STATION | COLONY TAG NUMBER | COLONY * LOCATION | COLONY SPECIES | SUBSTRATE TYPE§ | HEIGHT (cm) | WIDTH (cm) | ORIENTATION DEGREES |
|---|---|---|---|---|---|---|---|
| 12 | 00034 | W | *M.calif.* | B | 42.0 | 49.5 | 300 |
| | 00035 | W | *M.calif.* | B | 51.5 | 71.0 | 300 |
| | 00036 | W | *M.calif.* | B | 49.5 | 38.0 | 300 |
| | 00037 | W | *M.calif.* | B | 46.0 | 60.0 | 300 |
| | 00038 | W | *M.calif.* | B | 58.0 | 93.0 | 300 |
| | 00039 | W | *M.calif.* | B | 63.5 | 87.0 | 300 |
| | 00040 | W | *M.calif.* | B | 37.5 | 45.0 | 300 |
| | 00042 | O | *M.calif.* | B | 47.5 | 50.5 | 300 |
| | 00043 | O | *M.calif.* | B | 49.5 | 70.0 | 300 |
| | 00044 | O | *M.calif.* | B | 47.0 | 21.5 | 300 |
| | 00045 | O | *M.calif.* | B | 47.0 | 74.5 | 300 |
| | 00046 | W | *M.calif.* | B | 41.0 | 45.0 | 300 |
| | 00047 | O | *M.calif.* | B | 49.5 | 75.0 | 300 |
| | 00048 | O | *M.calif.* | B | 32.5 | 51.5 | 300 |
| | 00049 | O | *M.claif.* | B | 47.0 | 83.0 | 300 |
| | 00050 | O | *M.calif.* | B | 54.0 | 88.5 | 300 |
| 13 | 00012 | W | *M.calif.* | C | 17.5 | 19.5 | 300 |
| | 00013 | W | *M.calif.* | B | 55.0 | 72.0 | 300 |
| | 00015 | W | *M.calif.* | B | 41.0 | 41.0 | 300 |
| | 00016 | W | *M.calif.* | C | 34.0 | 26.0 | 300 |
| | 00017 | W | *M.calif.* | C | 22.0 | 13.0 | 300 |
| | 00018 | W | *M.calif.* | B | 27.0 | 15.0 | 300 |
| | 00019 | W | *M.calif.* | C | 31.5 | 38.5 | 300 |
| | 00020 | W | *M.calif.* | C | 50.5 | 63.0 | 300 |
| | 00021 | W | *M.calif.* | B | 32.5 | 45.0 | 300 |
| | 00022 | W | *M.calif.* | B | 35.0 | 49.5 | 300 |
| | 00023 | W | *M.calif.* | B | 27.0 | 20.0 | 300 |
| | 00024 | W | *M.calif.* | B | 47.0 | 48.0 | 300 |
| | 00025 | W | *M.calif.* | B | 38.0 | 66.0 | 300 |
| | 00026 | W | *M.calif.* | C | 24.5 | 14.0 | 300 |
| | 00028 | W | *M.calif.* | B | 26.0 | 21.5 | 300 |
| | 00029 | W | *M.calif.* | B | 28.0 | 34.5 | 300 |
| | 00031 | W | *M.calif.* | B | 30.5 | 29.5 | 300 |
| | 00032 | W | *M.calif.* | B | 18.0 | 13.0 | 300 |
| | 00033 | W | *M.calif.* | C | 25.0 | 32.5 | 300 |
| TOTAL | 35 | | | | | | |
| 14 | 00051 | W | *M.calif.* | B | 31.5 | 48.0 | 295 |
| | 00052 | O | *M.calif.* | B | 29.5 | 47.5 | 310 |
| | 00063 | O | *M.calif.* | B | 51.0 | 41.0 | 295 |
| | 00064 | W | *M.calif.* | B | 33.5 | 27.5 | 300 |
| | 00065 | W | *M.species* | B | 25.0 | 15.5 | 295 |
| | 00066 | O | *M.calif.* | B | 40.5 | 50.0 | 305 |
| | 00067 | O | *M.species* | B | 27.0 | 19.0 | 305 |
| | 00068 | O | *M.calif.* | B | 34.0 | 48.0 | 305 |

| STATION | COLONY TAG NUMBER | COLONY * LOCATION | COLONY SPECIES | SUBSTRATE TYPES§ | HEIGHT (cm) | WIDTH (cm) | ORIENTATION DEGREES |
|---|---|---|---|---|---|---|---|
| 15 | 00054 | O | *M.calif.* | B | 31.0 | 33.0 | 300 |
| | 00055 | O | *M.calif.* | C | 30.0 | 36.0 | 305 |
| | 00057 | W | *M.calif.* | C | 22.0 | 30.1 | 300 |
| | 00058 | O | *M.calif.* | C | 25.5 | 15.0 | † |
| | 00059 | O | *M.calif.* | C | 17.0 | 14.5 | † |
| | 00060 | O | *M.calif.* | B | 40.0 | 66.0 | 300 |
| | 00061 | O | *M.calif.* | C | 24.5 | 15.0 | † |
| | 00068 | O | *M.calif.* | B | 35.0 | 41.5 | 300 |
| | 00070 | O | *M.calif.* | B | 34.0 | 35.5 | 300 |
| | 00071 | W | *M.calif.* | B | 36.5 | 66.5 | 305 |
| | 00072 | O | *M.calif.* | B | 39.0 | 59.5 | 305 |
| | 00073 | O | *M.calif.* | B | 27.0 | 32.5 | 300 |
| TOTAL | 20 | | | | | | |
| 17 | 00001 | O | *M.calif.* | B | 23.2 | 20.8 | † |
| | 00002 | O | *M.calif.* | B | -- | -- | 230 |
| | 00003 | O | *M.calif.* | B | 26.0 | 46.0 | 120 |
| | 00004 | O | *M.calif.* | B | 36.1 | 47.0 | 120 |
| | 00005 | O | *M.calif.* | B | 23.2 | 34.0 | 120 |
| | 00006 | O | *M.calif.* | B | 32.0 | 49.0 | 120 |
| | 00007 | O | *M.calif.* | B | 41.5 | 48.5 | 120 |
| | 00008 | O | *M.calif.* | B | 23.0 | 20.0 | 120 |
| | 00009 | O | *M.calif.* | C | 27.0 | 48.0 | 150 |
| | 00010 | O | *M.calif.* | B | 22.0 | 23.0 | 130 |
| | 00011 | O | *M.calif.* | B | -- | -- | 120 |
| | 00077 | O | *M.calif.* | C | 20.0 | 35.0 | † |
| | 00078 | O | *M.calif.* | B | 33.0 | 33.0 | 130 |
| | 00079 | O | *M.calif.* | B | 33.6 | 56.0 | 110 |
| | 00080 | O | *M.calif.* | B | 25.0 | 39.2 | 110 |
| | 00081 | O | *M.calif.* | B | 20.0 | 35.0 | 110 |
| TOTAL | 16 | | | | | | |
| 18 | 00082 | W | *M.calif.* | B | 50.0 | 43.5 | 190 |
| | 00083 | W | *M.calif.* | B | 55.0 | 60.0 | 300 |
| | 00084 | W | *M.calif.* | B | 29.5 | 31.5 | 300 |
| | 00085 | W | *M.calif.* | B | 23.5 | 11.5 | 300 |
| | 00090 | O | *M.calif.* | B | 25.0 | 12.0 | 300 |
| 19 | 00086 | W | *M.calif.* | B | 24.5 | 40.0 | 300 |
| | 00087 | W | *M.calif.* | B | 22.0 | 16.5 | 300 |
| | 00088 | W | *M.calif.* | C | 30.0 | 14.5 | 300 |
| | 00089 | O | *M.calif.* | B | 21.5 | 35.0 | 300 |
| TOTAL | 9 | | | | | | |
| 20 | 00095 | W | *M.calif* | C | 36.0 | 55.0 | 120 |
| | 00096 | O | *M.calif* | C | 47.0 | 62.0 | 130 |
| | 00097 | W | *M.calif* | C | 50.0 | 72.0 | 020 |
| | 00098 | W | *M.calif* | B | 40.0 | 45.0 | 040 |
| | 00099 | O | *M.calif* | C | 43.0 | 37.0 | 120 |
| | 00100 | W | *M.calif* | C | 40.0 | 63.0 | 120 |

| STATION | COLONY TAG NUMBER | COLONY * LOCATION | COLONY SPECIES | SUBSTRATE TYPES§ | HEIGHT (cm) | WIDTH (cm) | ORIENTATION DEGREES |
|---|---|---|---|---|---|---|---|
| 21 | 00091 | W | *M.calif.* | B | 43.0 | 52.0 | 120 |
| | 00092 | W | *M.calif.* | C | 40.5 | 31.0 | 0 |
| | 00093 | W | *M.calif.* | B | 28.0 | 33.0 | 130 |
| | 00094 | W | *M.calif.* | C | 43.0 | 43.0 | 20 |
| TOTAL | 10 | | | | | | |

* Location with respect to station: W = within station
O = outside station

† Colony located upon moveable substrate

§ B = Boulder; C = Cobble

Surface and bottom temperature and visibility, and bottom surge conditions measured by sampling biologists at each PMP benthic station. Survey of August 2-9, 1978.

| STATION NUMBER | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|
| DATE | 8/3/78 | 8/9/78 | 8/8/78 | 8/8/78 | 8/7/78 | 8/7/78 | 8/3/78 | 8/3/78 | 8/2/78 | 8/2/78 |
| TEMPERATURE (°C) | | | | | | | | | | |
| SURFACE | 21.2 | 22.1 | 21.9 | 21.9 | 21.8 | 20.8 | 21.2 | 21.2 | 21.1 | 21.3 |
| BOTTOM | 13.5 | 13.2 | 13.1 | 13.1 | 13.8 | 13.8 | 13.5 | 13.5 | 13.1 | 13.1 |
| VISIBILITY (M) | | | | | | | | | | |
| SURFACE | 9.8 | 7.8 | 6.9 | 6.9 | 4.3 | 4.3 | 3.7 | 3.7 | 8.6 | 8.6 |
| BOTTOM | 4.1 | 3.2 | 4.4 | 4.4 | 4.1 | 4.1 | 5.9 | 5.9 | 4.3 | 4.3 |
| SURGE | Light | Light | Light | Light | Light | Light | Light | Light | Light | Light |

Surface and bottom temperature and visibility, and bottom surge conditions measured by sampling biologists at each PMP benthic station. Survey of October 31 to November 8, 1978

| STATION NUMBER | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|
| DATE | 11/2/78 | 11/1/78 | 11/7/78 | 11/8/78 | 10/31/78 | 11/1/78 | 11/6/78 | 11/6/78 | 10/31/78 | 10/31/78 |
| TEMPERATURE (°C) | | | | | | | | | | |
| SURFACE | 20.0 | 19.7 | 20.5 | 20.0 | 19.4 | 19.4 | 20.5 | 20.5 | 19.7 | 18.9 |
| BOTTOM | 17.9 | 17.7 | 18.9 | 18.7 | 17.8 | 17.9 | 19.5 | 19.5 | 17.9 | 17.2 |
| VISIBILITY (M) | | | | | | | | | | |
| SURFACE | 18.7 | 17.6 | 6.4 | 6.5 | 11.3 | 12.5 | 10.3 | 10.3 | 10.1 | 7.2 |
| BOTTOM | 9.0 | 5.2 | 8.7 | 8.0 | 6.9 | 7.5 | 6.5 | 6.5 | 7.0 | 6.0 |
| SURGE | Light | Light | Light | Light | Light | Light | Light | Light | Light | Light |

# VII. BENTHOS - SETTLING PLATES

The settling plate program, conducted in compliance with Environmental Technical Specification 3.1.2a(1)C.2, "Settling Plates" from the Appendix B Technical Specifications for San Onofre, has been discontinued following verbal approval by the NRC, Division of Operating Reactors, October 13, 1978. A formal request to delete the study is currently being processed.

The purpose of the settling plate program was to supplement data obtained from the ETS benthic sampling program. That purpose had not been accomplished due to intermittent destruction and damage of settling plates over four years of the study despite the use of backup systems. Only the second year (1976-1977) provided a complete set of settling plate data from the two suveillance zones. Data loss resulting from this damage precluded analysis of a complete data set in all but one of four years.

# VIII. INTERTIDAL

This program has been established to detect gross changes in the biological community structure of the rocky cobble intertidal areas near San Onofre and to determine if these changes may be related to the operation of San Onofre Unit 1 or variations due to natural processes (e.g., sand transport, storms, etc.) or unnatural processes (e.g., human intervention). This program is not a regulatory requirement.

## A. BACKGROUND

Human activity has substantially increased (e.g., tide pooling, clam digging, walking in the intertidal, etc.) in the study area since the opening of San Onofre State Beach in 1971. Thus it is extremely difficult to separate the effect of human intervention from any effect which may be caused by the operation of SONGS 1. This, in conjunction with the conclusions of previous studies that there were no detectable effects resulting from the operation of SONGS 1, resulted in an SCE request that the intertidal sampling program be deleted from the ETS. This request was forwarded to the Nuclear Regulatory Commission in May 1977, and subsequently approved. The reduced program described below was implemented to maintain a basic surveillance of the intertidal cobble areas at San Onofre which could be utilized to detect gross changes in the biological community.

## B. METHODS

A detailed description of methodolgy and station location characteristics is presented in the combined ETS and PEM procedures (SCE R&D/LCMR procedure EMP 46-5-5). A brief review of the methodology is presented here.

Five permanently marked intertidal cobble stations were established in February 1975 based on (1) available similar substrate and habitat types, (2) historical extent of the thermal field, (3) similar fauna and flora, and (4) where possible, proximity to previously established intertidal stations occupied during past surveys in the San Onofre area (Figure VII-1). Station 1, 3.1 km upcoast of SONGS 1, and outside the influence of the $1^{o}F$ isotherm based on the maximum offshore upcoast-downcoast extent of the thermal plume was established as a control while Stations 2, 3, 4, and 5, located within the potential influence of the $1^{o}F$ isotherm, were established as test stations. Three equidistantly spaced $0.250m^2$ quadrats were permanently established perpendicular to shore at each station, the lowermost quadrat extending down to -0.6 ft MLLW. The reduced program maintains continuity with historical stations.

Nondestructive sampling techniques are employed to survey the dominant macroscopic cobble epibiota at each station. A quantitative assessment is made of the biota in the $0.250m^2$ quadrats at each station. The percent cover of the two most abundant taxa in each quadrat is recorded as well as the extent of sand in the quadrat. All field work is conducted in daylight during low tides of at least -0.6 ft MLLW. Observations of any recent, obvious, unnatural occurrences (e.g., holes left by clam diggers) which may have affected the biota within the ecological zones and fixed quadrats is recorded. Photographs (35-mm slides) of each fixed quadrat are taken during each survey.

Intertidal macrobiota are surveyed quarterly. During 1978, surveys were conducted on February 6, June 23, and November 29. During the third calendar quarter there were no low tides suitable for sampling.

## B. RESULTS

The following table presents the abundances of the two most abundant taxa in each quadrat at every station sampled during the three surveys. Percent sand coverage in the quadrat is also given. Photographs taken of the fixed intertidal quadrats are on file.

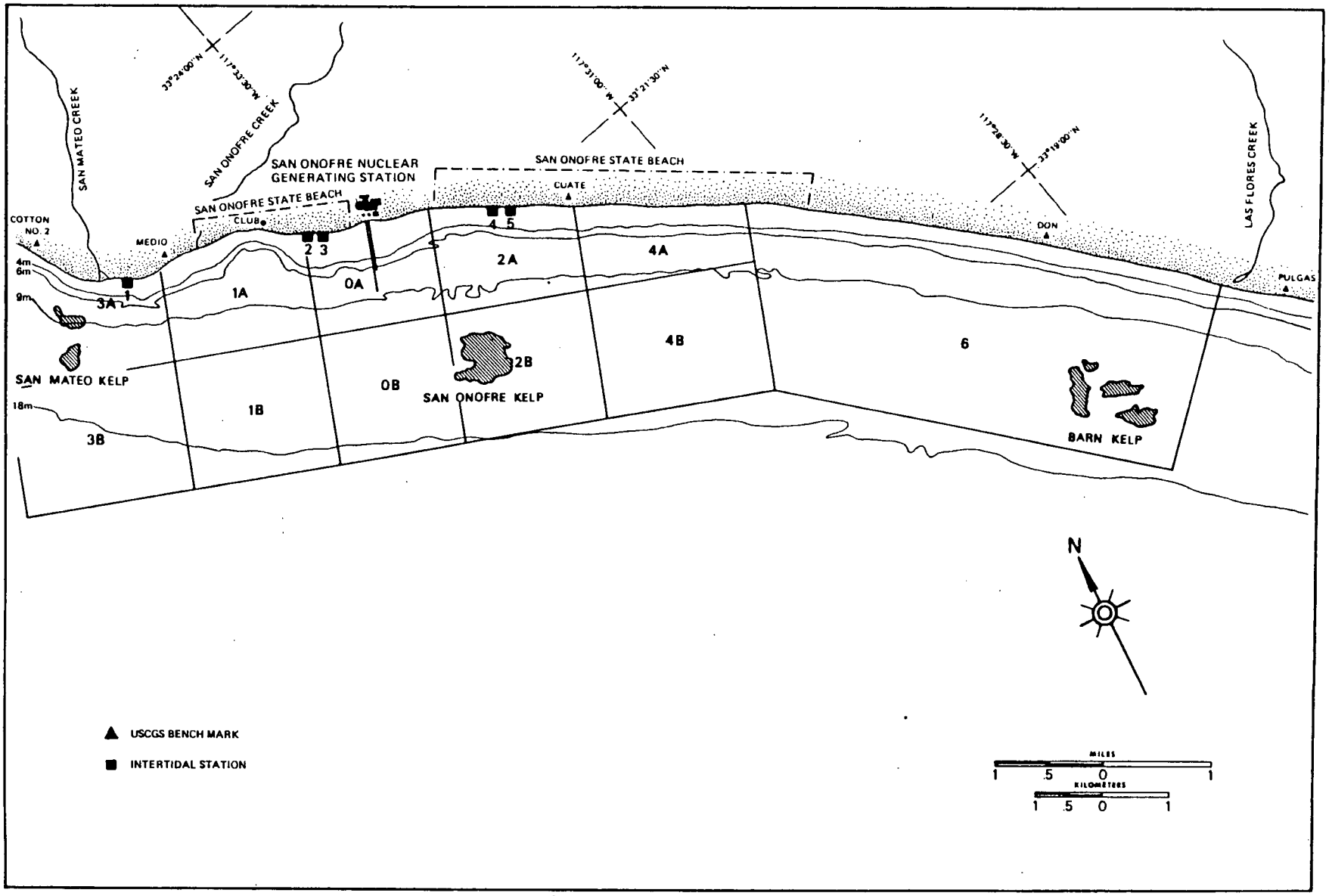



Figure VIII-1. Intertidal station locations at San Onofre Nuclear Generating Station.

1978 Intertidal Surveys. Data indicate percent sand in each quadrat and percent coverage of the two most abundant taxa in each quadrat during each survey.

| Survey Date | Category / Station | 1 | | | 2 | | | 3 | | | 4 | | | 5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Quadrat | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| February 6 | Sand | | | | 7 | 4 | 1 | 25 | 40 | 8 | 28 | 24 | 31 | 93 | 23 | 38 |
| | *Sagassum muticum* | | | | | 6 | | | | | | | | | | |
| | *Zonaria farlowii* | | | | | | 2 | 10 | 20 | 34 | 24 | 25 | 11 | | | |
| | *Corallina/Haliptylon* | | | | 7 | | | 16 | 8 | | 20 | 19 | | 4 | 10 | 24 |
| | Crustose corallines, unident. | | | | 16 | 18 | 8 | | | | | | | | | |
| | Parvosilvosa | | | | | | | | | 6 | | | 30 | 3 | 46 | 8 |
| | (footnotes) | | (1) | | | (2) | | | (3) | | | (4) | | | | |
| June 23 | Sand | | | | 16 | 2 | 12 | 10 | 20 | 5 | 10 | 30 | 25 | 2 | 2 | 2 |
| | *Dictyota/Pachydictyon* | | | | 12 | | | | | | | | 10 | | | |
| | *Zonaria farlowii* | | | | | 8 | 5 | | 20 | 16 | | | | | | |
| | *Corallina/Haliptylon* | | | | | | | | | | 18 | 6 | | | 24 | 20 |
| | *Endocladia muricata* | | | | | | | 26 | | | | | | | | |
| | Parvosilvosa | | | | 70 | 65 | 72 | 14 | 14 | 28 | 26 | 20 | 12 | 20 | 16 | 13 |
| | *Phyllospadix* spp. | | | | | | | | | | | | | 12 | | |
| | (footnotes) | | (5) | | | | | | (6) | | | (7) | | | (8) | |
| November 29 | Sand | 10 | 6 | 12 | 15 | 30 | 12 | 100 | 100 | 100 | 5 | 6 | 12 | 12 | 10 | 2 |
| | *Ulva* spp. | | | | | 4 | | | | | | | | | | |
| | Chlorophyte, unident. | 8 | | | | | | | | | | | | | | |
| | *Dictyota/Pachydictyon* | | | | | | | | | | | | 30 | | 2 | |
| | *Zonaria farlowii* | | | | 3 | 30 | 28 | | | | 12 | 10 | | | | |
| | *Corallina/Haliptylon* | | | 18 | 8 | | 8 | | | | 38 | 12 | | 16 | 20 | 12 |
| | *Laurencia* spp. | | | | | | | | | | | | 12 | | | |
| | *Pterocladia/Gelidium* | | 3 | | | | | | | | | | | | | |
| | Parvosilvosa | 80 | 75 | 60 | | | | | | | | | | | | |
| | *Phyllospadix* spp. | | | | | | | | | | | | | 12 | | |
| | *Mytilus* spp. | | | | | | | | | | | | | | | 3 |
| | (footnotes) | | (9) | | | (10) | | | (11) | | | (12) | | | (13) | |

Footnotes ( ) appear on the following page.

Footnotes

(1) Station inaccessible due to freshwater runoff and flooding.

(2) All quadrats dug out (probably by clammers) exposing 1/4 to 1/3 of rebar. Four people clamming in area.

(3) Missing rebar at 3-3. Two people clamming in area.

(4) Rock rolled into center of 4-3.

(5) Tide too high to sample station. Beach looked badly eroded.

(6) Missing rebar and pipe at 3-3. Two clammers in area.

(7) 4-3 excavated to bedrock.

(8) Summer sand deposition filled tidepool behind reef.

(9) Clam digging hole near 1-1. Two groups of clam diggers in area.

(10) Old clam digging holes near 2-3.

(11) Station covered with sand and could not be located; sand/cobble interface within 10 ft of quadrats. 2-in pipe at -0.6 ft MLLW lost; replaced with 3/8-in rebar by surveyor team. 2-in pipe at 0.0 ft MLLW under about 5 ft of sand.

(12) Sand absent in general area of quadrats; bedrock exposed. Beach extends close to quadrats and into cobble patch.

(13) Clam digging hole near 5-2. 1-in pipe is within 10 ft of beach.

# APPENDIX

FISH - RECEIVING WATERS

OPERATIONAL NOTES AND ANOMALOUS FISHES

March 15-16, 1978

Otter Trawls

No comments

March 30-31, 1978

Gill Nets

On March 31, 1978 gill net "Z" (45') was not located. The net was recovered by divers on April 6, 1978.

Otter Trawls

On March 31, 1978 at 0033 while conducting trawls at SONGS 40', the first attempt to do replicate 7, resulted in a lost trawl. A second trawl was rigged and trawl 7 completed.

At 0112 while attempting to do replicate 8, the trawl hung on the bottom, the cable parted and the trawl lost. With both trawls lost, all trawling was terminated.

June 14-15, 1978

Gill Net

On June 15 (1225) at Don Light (30') a blue shark was observed swimming around the gill net and the boat (Murre). The shark attacked the bottom of the boat.

Otter Trawl

On June 14 Don Light (20') (replicate 1) the trawl line to depth ratio was 10:1.

August 15-16, 1978

Gill Nets

No comments

Otter Trawl

*Pleuronichthys verticalis* at Don Light 60' (replicate 3) had 2 large black and yellow leeches near the eyes (approximately 50 mm in length).

1 *Citharichthys stigmaeus* at San Mateo 60' (replicate 4) had a gill cavity parasitic isopod (*Lironeca* sp.).

October 11-12, 1978

Heavy fog hampered operation of gill net and otter trawl vessels until about 1230 on 10/12/78.

Gill Nets

Moved gill net stations 6-1 and 6-2 from the Las Flores Creek area north to a large cobble patch off of Don Light at 30'.

Heavy current running in the San Mateo Point, San Onofre and Don Light areas. This current moved several nets from perpendicular to shore to about parallel with the shore.

Otter Trawls

1 *Raja inornata* on October 12 had 10 parasitic copepods (gravid females) near pelvic fins at Don Light 40' (replicate 3).

On October 11 at SONGS 60' (replicate 2) a 180 mm female *Genyonemus lineatus* was collected without pelvic fins and had no signs of any rudimentary parts.

On October 12 at SONGS 20' (replicate 4) a 155 mm female *Seriphus politus* was captured possessing no pelvic fins.

December 12-13, 1978

Gill Net

Cormorants (about 8) were sitting close to one of the San Mateo Point 45' nets.

San Mateo Point 30' benthic buoy gone, nets in this area were positioned based on the San Mateo Kelp buoy and 9 m (30') fathometer reading.

Otter Trawl

1 *Pleuronichthys ritteri* Don Light 40' (replicate 1) 12/12/78 had a damaged eye that appeared not to have been caused by the net.

1 *Mustelus californicus* San Mateo Point 40' (replicate 1) had a lesion on the dorsal fin and 2 parasitic copepods at the base of the pectoral fin.

1 *Mustelus californicus* San Mateo Point 40' (replicate 2) had a similar lesion and pectoral fin copepod parasites as above.

1 *Genyonemus lineatus* at Don Light 20' (replicate 4) lower jaw (manible) was greatly reduced, practically non-existant.

On 12/12/78 at 1700 trawls at San Onofre 40' (replicates 1 & 2) were conducted at sunset and afterward (near darkness).

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