William J. Cahill, Jr.
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

REGULATORY DOCKET FILE COPY

April 5, 1978
Re: I. P. Unit No. 2.
Docket No. 50-247

US NRC
DISTRIBUTION SERVICES
BRANCH

1978 APR 11 AM 11 13

DISTRIBUTION
SERVICES UNIT

Director of Nuclear Reactor Regulation
Attn: Robert P. Geckler, Project Manager
Environmental Projects Branch No. 1
Division of Site Safety and
Environmental Analysis
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Dr. Geckler:

This transmittal is in response to Enclosure 2 to Mr. George W. Knighton's letter of July 26, 1977 to Mr. William Cahill requesting information relative to our request titled "Request for License Amendment to Eliminate Requirement for Termination of Operation with Once-Through Cooling System" dated March, 1977. This transmittal provides responses to questions I, V-3, and XV-1, 2 and 3, the remaining information to be provided as indicated in my letter of March 3, 1978.

On March 31, 1978 Dr. Kenneth Marcellus telephoned Dr. Sigurd Christensen at Oak Ridge National Laboratory to review whether any other materials were needed. Dr. Christensen requested that a response for question III be provided and that supplemental information was needed relative to questions V-5 (part 2) and XVI (part 2). These items are in preparation and will be provided shortly.

8111060162 780405
PDR ADOCK 05000247
P PDR

Should you have any questions, please contact me or Dr. Kenneth L. Marcellus (212-460-6059).

Sincerely yours,

William J. Cahill, Jr.

klm/klg

Enclosure:

cc: Richard Rush (ORNL)

Request I. Information needed to calculate estimates of $F_c$ (the fraction of live organisms killed by entrainment)

Response: A magnetic tape containing 1977 entrainment survival data along with a printout of that tape and the documentation necessary to interpret that data is being transmitted by copy of this letter to Dr. Richard Rush, Oak Ridge National Laboratory.

Request V.3. For the present simulations of 1974, of 1975, and of 1976 conditions with the Lawler, Matusky and Skelly real-time model (Sections 10 and 12 of the McFadden 1977 Report), provide tables in the format of Table V-1 for both the "no compensation, with power plants" runs (step (4), p. 10.66) and the "with compensation, with power plants" runs (step (6), p. 10.66). A total of six such tables is therefore requested. Document the full set of input parameters for these model runs. Also provide the relevant "output" biological parameters (e.g., adult survival rates).

Response: The attached Tables Nos. V-1-a through V-1-d (3 pages for each table) contain the requested information for 1974 and 1975 regarding impingement in the real-time life cycle model (RTLC). Similar tables containing 1976 data are not available as this data set has not yet been analyzed using the RTLC.

The following comments relate to Tables V-1-a through V-1-d.

1. The requested information regarding standing crops has been provided at the beginning of each month and at the end of the last month. The standing crops at the end of the intervening months are nearly the same as those at the beginning of each succeeding month.

2. In the model implementation of impingement, f-factors were computed based on the following plant flows:

| | | |
|---|---|---|
| Roseton 1 and 2 | $0.8353 \times 10^{-3}$ | $mi^3/day$ |
| Indian Point 2 and 3 | $1.8353 \times 10^{-3}$ | $mi^3/day$ |
| Bowline 1 and 2 | $1.0040 \times 10^{-3}$ | $mi^3/day$ |

The impingement f-factor is computed as follows:

$$f = \frac{\text{Numbers Impinged}}{(N_{Ave}) * (Q_p/V) * \Delta T}$$

where

$N_{Ave}$ = average standing crop

$Q_p$ = plant flow

V = plant region volume

T = impingement period

Since the plant flow used in the computation of f was also used in the impact year, the plant flow canceled out of the computation. Separate f-factors were computed for the JII and JIII periods based on the following model input values for the number of juveniles impinged:

| | 1974 | | 1975 | |
|---|---|---|---|---|
| | JII | JIII | JII | JIII |
| Roseton | 3600 | 2900 | 2000 | 300 |
| Indian Point | 28000 | 48000 | 52500 | 40000 |
| Bowline | 7500 | 110000 | 600 | 43000 |

These values were determined by calibration.

3. The "estimated impingement values" were calculated by multiplying the estimated impingement rates for 1974 and 1975 given in Tables 3-IV-31, 3-IV-32, and 3-IV-33 for Indian Point, Bowline, and Roseton, respectively, of Supplement I by the average projected power plant flows for each month over the period 1976-2013. The measured impingement rate at Indian Point Unit 2 was multiplied by 6.5 to account for the reported collection efficiency. The corrected rate was then used to predict impingement under projected flow conditions at Units 2 and 3. Application of the Unit 2 rate to predict impingement at Unit 3 is probably conservative since data collected during 1976-77 suggest that the impingement rate at Unit 3 may be lower than that at Unit 2.

Further, since the "estimated impingement values" presented in the attached tables have not been scaled-down to reflect the projected 8% decline in population levels due to plant operation, they are conservative estimates.

TABLE V-1-a. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII[a] | JIII | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AUG 74 | | Roseton | 1&2 | 107.9 | 208 | - | 208 | 3600 | - | 3600 | 143 |
| | | Indian Point | 2&3 | 239.5 | 1846 | - | 1846 | 28000 | - | 28000 | 7404 |
| | During | Bowline | 1&2 | 129.7 | 532 | - | 532 | 7500 | - | 7500 | 171 |
| | | Totals | | 477.1 | 2586 | - | 2586 | 39100 | - | 39100 | 7718 |
| SEP | | Roseton | 1&2 | 81.7 | 416 | - | 416 | | | | 86 |
| | | Indian Point | 2&3 | 202.2 | 3994 | - | 3994 | | | | 4860 |
| | During | Bowline | 1&2 | 109.0 | 1066 | - | 1066 | a | - | | 288 |
| | | Totals | | 392.9 | 5476 | - | 5476 | | | | 5234 |
| OCT | | Roseton | 1&2 | 55.5 | 1200 | - | 1200 | | | | 88 |
| | | Indian Point | 2&3 | 187.8 | 12493 | - | 12493 | | | | 2258 |
| | During | Bowline | 1&2 | 77.6 | 3721 | - | 3721 | a | - | | 1723 |
| | | Totals | | 321.0 | 17414 | - | 17414 | | | | 4069 |
| NOV | | Roseton | 1&2 | 63.0 | 761 | - | 761 | | | | 233 |
| | | Indian Point | 2&3 | 196.9 | 8803 | - | 8803 | | | | 4734 |
| | During | Bowline | 1&2 | 42.0 | 2871 | - | 2871 | a | - | | 943 |
| | | Totals | | 301.9 | 12435 | - | 12435 | | | | 5910 |
| GRAND TOTAL | | | | | | | 37,911 | | | | 22,931 |

[a] JII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-a. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII | JIII[b] | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | Roseton | 1&2 | 70.1 | - | 406 | 406 | - | 2900 | 2900 | 56 |
| | | Indian Point | 2&3 | 194.0 | - | 9592 | 9592 | - | 48000 | 48000 | 5998 |
| | During | Bowline | 1&2 | 78.3 | - | 30231 | 30231 | - | 110000 | 110000 | 10962 |
| | | Totals | | 342.5 | | 40284 | 40229 | | 160900 | 160900 | 16960 |
| JAN 75 | | Roseton | 1&2 | 70.7 | - | 313 | 313 | | | | 56 |
| | | Indian Point | 2&3 | 122.1 | - | 7105 | 7105 | - | b | | 2726 |
| | During | Bowline | 1&2 | 86.8 | - | 23371 | 23371 | | | | 22684 |
| | | Totals | | 279.6 | - | 30789 | 30789 | | | | 25466 |
| FEB | | Roseton | 1&2 | 84.3 | - | 236 | 266 | | | | 22 |
| | | Indian Point | 2&3 | 109.3 | - | 5139 | 5139 | | | | 7323 |
| | During | Bowline | 1&2 | 70.1 | - | 17190 | 17190 | - | b | | 4576 |
| | | Totals | | 263.7 | - | 22565 | 22565 | | | | 11921 |
| MAR | | Roseton | 1&2 | 93.3 | - | 190 | 190 | | | | 25 |
| | | Indian Point | 2&3 | 137.8 | - | 3943 | 3943 | | | | 1657 |
| | During | Bowline | 1&2 | 77.6 | - | 13041 | 13041 | - | b | | 12390 |
| | | Totals | | 308.8 | - | 17174 | 17174 | | | | 14072 |
| APR | | Roseton | 1&2 | 62.3 | - | 161 | 161 | | | | 33 |
| | | Indian Point | 2&3 | 212.5 | - | 3221 | 3221 | | | | 7300 |
| | During | Bowline | 1&2 | 46.5 | - | 10269 | 10269 | | | | 17645 |
| | | Totals | | 321.1 | - | 13651 | 13651 | - | b | | 24928 |
| GRAND TOTAL | | | | | | | 124,408 | | | | 93,397 |

[b] JIII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-a. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | MODEL STANDING CROPS | | | | FIELD-ESTIMATED STANDING CROPS | PERCENT STANDING CROP ABOVE BOWLINE | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | FIELD DATA | |
| | | JI | JII | JIII | TOTAL JUVENILES | TOTAL JUVENILES | MODEL PREDICTIONS | SLED & TUCKER | BEACH SEINE |
| JUL 74 | Beginning | 22690880 | - | - | 22690880 | 21691000 | 69.3 | 34.3 | 54.7 |
| AUG | Beginning | 14676634 | 122208 | - | 14798842 | 3765000 | 62.9 | 74.7 | 83.6 |
| SEP | Beginning | 82893 | 5978408 | - | 6061301 | 5460000 | 64.4 | NA | 67.9 |
| OCT | Beginning | - | 4949212 | - | 4949212 | 2832000 | 19.8 | NA | 27.9 |
| NOV | Beginning | - | 4008450 | - | 4008450 | 1404000 | 19.6 | NA | 5.6 |
| DEC | Beginning | - | 3280726 | - | 3280726 | 866000 | 19.5 | NA | 2.8 |
| JAN 75 | Beginning | - | - | 2638554 | 2638554 | NA | 19.5 | NA | NA |
| FEB | Beginning | - | - | 2107916 | 2107916 | NA | 19.5 | NA | NA |
| MAR | Beginning | - | - | 1685845 | 1685845 | NA | 19.5 | NA | NA |
| APR | Beginning | - | - | 1349087 | 1349087 | NA | 19.6 | NA | NA |
| | End | - | - | 1079690 | 1079690 | NA | 19.6 | NA | NA |

NA - Not available

TABLE V-1-b. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.78) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII[a] | JIII | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AUG 74 | | Roseton | 1&2 | 107.9 | 210 | - | 210 | 3600 | - | 3600 | 143 |
| | | Indian Point | 2&3 | 239.5 | 1986 | - | 1986 | 28000 | - | 28000 | 7404 |
| | During | Bowline | 1&2 | 129.7 | 541 | - | 541 | 7500 | - | 7500 | 171 |
| | | Totals | | 477.1 | 2737 | - | 2737 | 39100 | - | 39100 | 7718 |
| SEP | | Roseton | 1&2 | 81.7 | 420 | - | 420 | | | 3600 | 86 |
| | | Indian Point | 2&3 | 202.2 | 3972 | - | 3972 | | | | 4860 |
| | During | Bowline | 1&2 | 109.0 | 1082 | - | 1082 | a | - | | 288 |
| | | Totals | | 392.9 | 5474 | - | 5474 | | | | 5234 |
| OCT | | Roseton | 1&2 | 55.5 | 1221 | - | 1221 | | | | 88 |
| | | Indian Point | 2&3 | 187.8 | 12683 | - | 12683 | | | | 2258 |
| | During | Bowline | 1&2 | 77.6 | 3730 | - | 3730 | a | - | | 1723 |
| | | Totals | | 321.0 | 17634 | - | 17634 | | | | 4069 |
| NOV | | Roseton | 1&2 | 63.0 | 782 | - | 782 | | | | 233 |
| | | Indian Point | 2&3 | 196.9 | 8929 | - | 8929 | | | | 4734 |
| | During | Bowline | 1&2 | 42.0 | 2851 | - | 2851 | a | - | | 943 |
| | | Totals | | 301.9 | 12562 | - | 12562 | | | | 5910 |
| GRAND TOTAL | | | | | | | 38,407 | | | | 22,931 |

[a]JII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-b. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.78) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII | JIII[b] | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | Roseton | 1&2 | 70.1 | - | 446 | 446 | - | 2900 | 2900 | 56 |
| | | Indian Point | 2&3 | 194.0 | - | 10253 | 10253 | - | 48000 | 48000 | 5998 |
| | During | Bowline | 1&2 | 78.3 | - | 31606 | 31606 | - | 110000 | 110000 | 10962 |
| | | Totals | | 342.5 | - | 42305 | 42305 | - | 160900 | 160900 | 16960 |
| JAN 75 | | Roseton | 1&2 | 70.7 | - | 331 | 334 | | | | 56 |
| | | Indian Point | 2&3 | 122.1 | - | 7458 | 7458 | - | b | | 2726 |
| | During | Bowline | 1&2 | 86.8 | - | 24025 | 24025 | | | | 22684 |
| | | Totals | | 279.6 | - | 31817 | 31817 | | | | 25466 |
| FEB | | Roseton | 1&2 | 84.3 | - | 250 | 250 | | | | 22 |
| | | Indian Point | 2&3 | 109.3 | - | 5358 | 5358 | | | | 7323 |
| | During | Bowline | 1&2 | 70.1 | - | 17602 | 17602 | - | b | | 4576 |
| | | Totals | | 263.7 | - | 23210 | 23210 | | | | 11921 |
| MAR | | Roseton | 1&2 | 93.3 | - | 200 | 200 | | | | 25 |
| | | Indian Point | 2&3 | 137.8 | - | 4118 | 4118 | | | | 1657 |
| | During | Bowline | 1&2 | 77.6 | - | 13427 | 13427 | - | b | | 12390 |
| | | Totals | | 308.8 | - | 17745 | 17745 | | | | 14072 |
| APR | | Roseton | 1&2 | 62.3 | - | 170 | 170 | | | | 33 |
| | | Indian Point | 2&3 | 212.5 | - | 3391 | 3391 | | | | 7300 |
| | During | Bowline | 1&2 | 46.5 | - | 10702 | 10702 | | | | 17645 |
| | | Totals | | 321.1 | - | 14263 | 14263 | - | b | | 24978 |
| GRAND TOTAL | | | | | | | 129,340 | | | | 93,397 |

[b] JIII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-b. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1974 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.78) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| | | MODEL STANDING CROPS | | | | FIELD-ESTIMATED STANDING CROPS | PERCENT STANDING CROP ABOVE BOWLINE | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | FIELD DATA | |
| MONTH (Period) | TIME | JI | JII | JIII | TOTAL JUVENILES | TOTAL JUVENILES | MODEL PREDICTIONS | SLED & TUCKER | BEACH SEINE |
| JUL 74 | Beginning | 23574704 | - | - | 23574704 | 21691000 | 69.5 | 34.3 | 54.7 |
| AUG | Beginning | 15785708 | 163828 | - | 15949536 | 3765000 | 63.6 | 74.7 | 83.6 |
| SEP | Beginning | 202348 | 6845285 | - | 7047633 | 5460000 | 64.7 | NA | 67.9 |
| OCT | Beginning | - | 5569584 | - | 5569584 | 2832000 | 19.8 | NA | 27.9 |
| NOV | Beginning | - | 4438737 | - | 4438737 | 1404000 | 19.7 | NA | 5.6 |
| DEC | Beginning | - | 3618582 | - | 3618582 | 866000 | 19.6 | NA | 2.8 |
| JAN 75 | Beginning | - | - | 2830450 | 2830450 | NA | 19.5 | NA | NA |
| FEB | Beginning | - | - | 2230035 | 2230035 | NA | 19.5 | NA | NA |
| MAR | Beginning | - | - | 1781078 | 1781078 | NA | 19.6 | NA | NA |
| APR | Beginning | - | - | 1436924 | 1436924 | NA | 19.6 | NA | NA |
| | End | - | - | 1167945 | 1167945 | NA | 19.6 | NA | NA |

NA - Not available

TABLE V-1-c. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII[a] | JIII | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AUG 75 | | Roseton | 1&2 | 107.9 | 25 | - | 25 | 2000 | - | 2000 | 86 |
| | | Indian Point | 2&3 | 239.5 | 667 | - | 667 | 52500 | - | 52500 | 14808 |
| | During | Bowline | 1&2 | 129.7 | 9 | - | 9 | 600 | - | 600 | 34 |
| | | Totals | | 477.1 | 701 | - | 701 | 55100 | - | 55100 | 14928 |
| SEP | | Roseton | 1&2 | 81.7 | 40 | - | 40 | | | | 43 |
| | | Indian Point | 2&3 | 202.2 | 1067 | - | 1067 | | | | 6596 |
| | During | Bowline | 1&2 | 109.0 | 13 | - | 13 | a | | | 29 |
| | | Totals | | 392.9 | 1120 | - | 1120 | | | | 6668 |
| OCT | | Roseton | 1&2 | 55.5 | 787 | - | 787 | | | | 235 |
| | | Indian Point | 2&3 | 187.8 | 19016 | - | 19016 | | | | 3548 |
| | During | Bowline | 1&2 | 77.6 | 289 | - | 289 | a | | | 21 |
| | | Totals | | 321.0 | 20092 | - | 20092 | | | | 3804 |
| NOV | | Roseton | 1&2 | 63.0 | 556 | - | 556 | | | | 183 |
| | | Indian Point | 2&3 | 196.9 | 30751 | - | 11409 | | | | 2367 |
| | During | Bowline | 1&2 | 42.0 | 234 | - | 234 | a | | | 11 |
| | | Totals | | 301.9 | 31541 | - | 12199 | | | | 2561 |
| GRAND TOTAL | | | | | | | 34,112 | | | | 27,961 |

[a]JII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-c. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII | JIII[b] | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | Roseton | 1&2 | 70.1 | - | 46 | 46 | - | 300 | 300 | 74 |
| | | Indian Point | 2&3 | 194.0 | - | 5220 | 5220 | - | 40000 | 40000 | 3999 |
| | During | Bowline | 1&2 | 78.3 | - | 8490 | 8490 | - | 43000 | 43000 | 6764 |
| | | Totals | | 342.5 | - | 13756 | 13756 | - | 83300 | 83300 | 10837 |
| JAN 76 | | Roseton | 1&2 | 70.7 | - | 51 | 51 | | | | 0 |
| | | Indian Point | 2&3 | 122.1 | - | 4789 | 4789 | - | b | | 18030 |
| | During | Bowline | 1&2 | 86.8 | - | 9190 | 9190 | | | | 1147 |
| | | Totals | | 279.6 | - | 14030 | 14030 | | | | 19177 |
| FEB | | Roseton | 1&2 | 84.3 | - | 40 | 40 | | | | 22 |
| | | Indian Point | 2&3 | 109.3 | - | 3264 | 3264 | | | | 939 |
| | During | Bowline | 1&2 | 70.1 | - | 6889 | 6889 | - | b | | 2724 |
| | | Totals | | 263.7 | - | 10193 | 10193 | | | | 3685 |
| MAR | | Roseton | 1&2 | 93.3 | - | 34 | 34 | | | | 25 |
| | | Indian Point | 2&3 | 137.8 | - | 2619 | 2619 | | | | 1420 |
| | During | Bowline | 1&2 | 77.6 | - | 5574 | 5574 | - | b | | 4308 |
| | | Totals | | 308.8 | - | 8227 | 8227 | | | | 5753 |
| APR | | Roseton | 1&2 | 62.3 | - | 29 | 29 | | | | 16 |
| | | Indian Point | 2&3 | 212.5 | - | 2266 | 2266 | | | | 0[c] |
| | During | Bowline | 1&2 | 46.5 | - | 4533 | 4533 | | | | 5075 |
| | | Totals | | 321.1 | - | 6828 | 6828 | - | b | | 5091 |
| GRAND TOTAL | | | | | | | 53,034 | | | | 44,543 |

[b] JIII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.
[c] Indian Point Unit 2 was not online.

TABLE V-1-c. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITHOUT COMPENSATION (KO/KE = 1.0) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | MODEL STANDING CROPS | | | | FIELD-ESTIMATED STANDING CROPS | PERCENT STANDING CROP ABOVE BOWLINE | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | FIELD DATA | |
| | | JI | JII | JIII | TOTAL JUVENILES | TOTAL JUVENILES | MODEL PREDICTIONS | SLED & TUCKER | BEACH SEINE |
| JUL 75 | Beginning | 12620928 | - | - | 12620928 | 16249000 | 49.5 | 98.7 | 42.3 |
| AUG | Beginning | 27369648 | - | - | 27369648 | 5316000 | 57.0 | 5.9 | 35.1 |
| SEP | Beginning | 585246 | 5873028 | - | 6458274 | 6374000 | 53.5 | NA | 11.0 |
| OCT | Beginning | - | 5131145 | - | 5131145 | 6051000 | 11.7 | NA | 14.7 |
| NOV | Beginning | - | 4086594 | - | 4086594 | 1071000 | 11.4 | NA | 8.3 |
| DEC | Beginning | - | 3245903 | - | 3245903 | 484000 | 11.2 | NA | NA |
| JAN 76 | Beginning | - | - | 2703416 | 2702416 | NA | 11.2 | NA | NA |
| FEB | Beginning | - | - | 2184366 | 2184366 | NA | 11.1 | NA | NA |
| MAR | Beginning | - | - | 1789116 | 1789116 | NA | 11.1 | NA | NA |
| APR | Beginning | - | - | 1465499 | 1465499 | NA | 11.2 | NA | NA |
| | End | - | - | 1093516 | 1093516 | NA | 11.2 | NA | NA |

NA - Not available

TABLE V-1-d. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.825) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII[a] | JIII | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AUG 75 | | Roseton | 1&2 | 107.9 | 26 | - | 26 | 2000 | - | 2000 | 86 |
| | | Indian Point | 2&3 | 239.5 | 687 | - | 687 | 52500 | - | 52500 | 14808 |
| | During | Bowline | 1&2 | 129.7 | 9 | - | 9 | 600 | - | 600 | 34 |
| | | Totals | | 477.1 | 722 | - | 722 | 55100 | - | 55100 | 14928 |
| SEP | | Roseton | 1&2 | 81.7 | 43 | - | 43 | | | | 43 |
| | | Indian Point | 2&3 | 202.2 | 1137 | - | 1137 | | | | 6596 |
| | During | Bowline | 1&2 | 109.0 | 13 | - | 13 | a | | | 29 |
| | | Totals | | 392.9 | 1193 | - | 1193 | | | | 6668 |
| OCT | | Roseton | 1&2 | 55.5 | 832 | - | 832 | | | | 235 |
| | | Indian Point | 2&3 | 187.8 | 20011 | - | 20011 | | | | 3548 |
| | During | Bowline | 1&2 | 77.6 | 296 | - | 296 | a | | | 21 |
| | | Totals | | 321.0 | 21139 | - | 21139 | | | | 3804 |
| NOV | | Roseton | 1&2 | 63.0 | 576 | - | 576 | | | | 183 |
| | | Indian Point | 2&3 | 196.9 | 11884 | - | 11884 | | | | 2367 |
| | During | Bowline | 1&2 | 42.0 | 233 | - | 233 | a | | | 11 |
| | | Totals | | 301.9 | 12693 | - | 12693 | | | | 2561 |
| GRAND TOTAL | | | | | | | 35,747 | | | | 27,961 |

[a] JII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.

TABLE V-1-d. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.825) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| MONTH (Period) | TIME | POWER STATION | UNIT | COOLING WATER WITHDRAWN (MCM) | MODEL IMPINGEMENT NUMBERS (ACTUAL MODEL CALCULATED OUTPUT VALUES) JII | JIII | TOTAL JUVENILES | MODEL IMPINGEMENT INPUT NUMBERS JII[b] | JIII | TOTAL JUVENILES | ESTIMATED IMPINGEMENT VALUES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | | Roseton | 1&2 | 70.1 | - | 49 | 49 | - | 300 | 300 | 74 |
| | | Indian Point | 2&3 | 194.0 | - | 5719 | 5719 | - | 40000 | 40000 | 3999 |
| | During | Bowline | 1&2 | 78.3 | - | 8996 | 8996 | - | 43000 | 43000 | 6464 |
| | | Totals | | 342.5 | - | 14764 | 14764 | - | 83000 | 83000 | 10837 |
| JAN 76 | | Roseton | 1&2 | 70.7 | - | 54 | 54 | | | | 0 |
| | | Indian Point | 2&3 | 122.1 | - | 5112 | 5112 | - | b | | 18030 |
| | During | Bowline | 1&2 | 86.8 | - | 9332 | 9332 | | | | 1147 |
| | | Totals | | 279.6 | - | 14798 | 14798 | | | | 19177 |
| FEB | | Roseton | 1&2 | 84.3 | - | 42 | 42 | | | | 22 |
| | | Indian Point | 2&3 | 109.3 | - | 3420 | 3420 | | | | 939 |
| | During | Bowline | 1&2 | 70.1 | - | 7058 | 7058 | - | b | | 2724 |
| | | Totals | | 263.7 | - | 10520 | 10520 | | | | 3685 |
| MAR | | Roseton | 1&2 | 93.3 | - | 35 | 35 | | | | 25 |
| | | Indian Point | 2&3 | 137.8 | - | 2721 | 2721 | | | | 1420 |
| | During | Bowline | 1&2 | 77.6 | - | 5692 | 5692 | - | b | | 4308 |
| | | Totals | | 308.8 | - | 8448 | 8448 | | | | 5753 |
| APR | | Roseton | 1&2 | 62.3 | - | 29 | 29 | | | | 16 |
| | | Indian Point | 2&3 | 212.5 | - | 2350 | 2350 | | | | 0[c] |
| | During | Bowline | 1&2 | 46.5 | - | 4646 | 4646 | | | | 5075 |
| | | Totals | | 321.1 | - | 7025 | 7025 | - | b | | 5091 |
| GRAND TOTAL | | | | | | | 55,555 | | | | 44,543 |

[b] JIII Impingement f factors were computed for each plant based on total model impingement input numbers shown here.
[c] Indian Point Unit 2 was not online.

TABLE V-1-d. COMPARISON OF NUMBER OF STRIPED BASS IMPINGED AND OF STANDING CROPS FOR 1975 AS OBTAINED FROM THE LMS RTLC MODEL WITH COMPENSATION (KO/KE = 0.825) WITH ESTIMATES DERIVED FROM PLANT AND FIELD SAMPLING DATA.

| | | MODEL STANDING CROPS | | | | FIELD-ESTIMATED STANDING CROPS | PERCENT STANDING CROP ABOVE BOWLINE | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | FIELD DATA | |
| MONTH (Period) | TIME | JI | JII | JIII | TOTAL JUVENILES | TOTAL JUVENILES | MODEL PREDICTIONS | SLED & TUCKER | BEACH SEINE |
| JUL 75 | Beginning | 13863915 | - | - | 13863915 | 16249000 | 49.6 | 98.7 | 42.3 |
| AUG | Beginning | 28247088 | - | - | 28247088 | 5316000 | 56.7 | 5.9 | 35.1 |
| SEP | Beginning | 1121703 | 6489959 | - | 7611662 | 6374000 | 53.9 | NA | 11.0 |
| OCT | Beginning | - | 5742163 | - | 5742163 | 6051000 | 11.7 | NA | 14.7 |
| NOV | Beginning | - | 4482331 | - | 4482331 | 1071000 | 11.4 | NA | 8.3 |
| DEC | Beginning | - | 3533593 | - | 3533593 | 484000 | 11.3 | NA | NA |
| JAN 76 | Beginning | - | - | 2874490 | 2874490 | NA | 11.2 | NA | NA |
| FEB | Beginning | - | - | 2279362 | 2279362 | NA | 11.1 | NA | NA |
| MAR | Beginning | - | - | 1853150 | 1853150 | NA | 11.1 | NA | NA |
| APR | Beginning | - | - | 1518306 | 1518306 | NA | 11.2 | NA | NA |
| | End | - | - | 1145364 | 1145364 | NA | 11.2 | NA | NA |

NA - Not available

XV.1 Please provide the raw data on which this report was based. For each sample, provide at least: gear type, sampling speed, time of day, date, volume filtered, and number of organisms caught (by life stage). Provide any additional information needed to reproduce the analyses. Provide the data in a format which clearly indicates which samples were "matched" (i.e., approximately coinciding in time and space). Provide a means of identifying the samples included in each particular analysis.

Response: Work sheets of data sets used in the report are attached. These provide all the numbers used in the analytical calculations.

The sheets labeled "1974 Gear Evaluation Data", "1975 Comparability Study", and "1975 Tow Speed Efficiency Data" contain the "matched" data. The matching is indicated by time of day of sample collection for the 1974 data, and by sample number for the two sets of 1975 data.

The data presented on the sheets labeled "1974 Gear Mouth Size Efficiency Data", "1975 Net/No Net Experiment" and the "1975 Sustained Filtration Data" are grouped by replicates for each test item (gear, tow speed, tow duration).

# 1974 Gear Evaluation Data

XV-1

D Page 1 of 7

| Sample# | GEAR | DATE | TIME of DAY | TOW SPEED | VOLUME FILTERED | STRIPED BASS LARVAE |
|---|---|---|---|---|---|---|
| 8000 00 | 62 | 6/24/74 | 14:30 | 0.80 | 373.44 | 46 |
| 9000 01 | 65 | | 14:30 | | 385.42 | 66 |
| 8000 02 | 62 | | 14:45 | | 306.27 | 56 |
| 9000 03 | 65 | | 14:45 | | 405.12 | 59 |
| 8000 04 | 62 | | 14:55 | | 311.05 | 94 |
| 9000 05 | 65 | | 14:55 | | 383.33 | 97 |
| 8000 06 | 62 | | 15:05 | | 271.63 | 100 |
| 9000 07 | 65 | | 15:05 | | 356.29 | 56 |
| 8000 08 | 62 | | 15:20 | | 281.07 | 92 |
| 9000 09 | 65 | | 15:20 | | 0.0+ | 123 |
| 8000 10 | 62 | | 15:35 | | 292.89 | 153 |
| 9000 11 | 65 | | 15:35 | | 424.18 | 287 |
| 8000 12 | 62 | | 15:50 | | 298.15 | 220 |
| 9000 13 | 65 | | 15:50 | | 0.0+ | 274 |
| 8000 16 | 62 | | 16:30 | | 323.54 | 46 |
| 9000 17 | 65 | | 16:30 | | 232.01 | 128 |
| 8000 18 | 62 | | 16:40 | | 328.61 | 30 |
| 9000 19 | 65 | | 16:40 | | 299.61 | 124 |
| 8000 20 | 62 | | 16:50 | | 269.76 | 105 |
| 9000 21 | 65 | 6/24/74 | 16:50 | 0.80 | 236.78 | 152 |
| | | | | | | |
| 8000 22 | 60 | 6/24/74 | 18:10 | 0.80 | 89.54 | 8 |
| 9000 23 | 65 | | 18:10 | | 276.65 | 156 |
| 8000 24 | 60 | | 18:20 | | 83.35 | 53 |
| 9000 25 | 65 | | 18:20 | | 266.34 | 101 |
| 8000 26 | 60 | | 18:25 | | 78.35 | 55 |
| 9000 27 | 65 | | 18:25 | | 384.17 | 62 |
| 8000 30 | 60 | | 18:50 | | 82.83 | 19 |
| 9000 31 | 65 | | 18:50 | | 306.71 | 31 |
| 8000 32 | 60 | | 19:00 | | 84.19 | 27 |
| 9000 33 | 65 | | 19:00 | | 218.93 | 55 |
| 8000 34 | 60 | | 19:15 | | 70.79 | 5 |
| 9000 35 | 65 | | 19:15 | | 332.36 | 85 |
| 8000 36 | 60 | | 19:25 | | 70.03 | 33 |
| 9000 37 | 65 | | 19:25 | | 305.46 | 73 |
| 8000 38 | 60 | | 19:35 | | 73.60 | 30 |
| 9000 39 | 65 | | 19:35 | | 307.66 | 137 |
| 8000 40 | 60 | | 19:45 | | 62.79 | 22 |
| 9000 41 | 65 | | 19:45 | | 269.04 | 17 |
| 8000 42 | 60 | | 20:00 | | 69.26 | 24 |
| 9000 43 | 65 | 6/24/74 | 20:00 | 0.80 | 314.70 | 20 |

GEAR 60 = 0.5 m ring net
62 = 1.0 m ring net
65 = 1.0 m² Tucker Trawl

TOW SPEED: centimeters/second

VOLUME FILTERED: m³

+ Zero volumes indicate value outside tolerance. Data not included in analyses

197[illegible] Year Evaluation Data

NATIONAL 42-384

XV-1

D Page 247

| Sample # | Gear | Date | Time of day | Tow Speed | Volume Filtered | Striped bass Larvae |
|---|---|---|---|---|---|---|
| 000444 | 86 | 6/25/74 | 12:35 | 090 | 258.79 | 14 |
| 000445 | 65 | | 12:35 | 090 | 233.87 | 153 |
| 000446 | 86 | | 13:00 | 090 | 263.88 | 16 |
| 000447 | 65 | | 13:00 | 090 | 252.63 | 105 |
| 000448 | 86 | | 13:20 | 080 | 217.04 | 57 |
| 000449 | 65 | | 13:20 | | 275.21 | 135 |
| 000450 | 86 | | 13:30 | | 291.27 | 112 |
| 000451 | 65 | | 13:30 | | 227.51 | 149 |
| 000452 | 86 | | 13:40 | | 240.70 | 106 |
| 000453 | 65 | | 13:40 | | 360.97 | 71 |
| 000454 | 86 | | 13:50 | | 268.47 | 121 |
| 000455 | 65 | | 13:50 | | 366.66 | 172 |
| 000456 | 86 | | 14:15 | | 0.0+ | 10 |
| 000457 | 65 | 6/25/74 | 14:15 | 080 | 314.43 | 71 |
| | | | | | | |
| | | | | | | |
| 000460 | 60 | 6/26/74 | 12:45 | 080 | 0.0+ | 5 |
| 000461 | 64 | | 12:45 | | 359.01 | 12 |
| 000462 | 60 | | 12:55 | | 0.0+ | 10 |
| 000463 | 64 | | 12:55 | | 344.79 | 36 |
| 000464 | 60 | | 13:05 | | 95.04 | 11 |
| 000465 | 64 | | 13:05 | | 307.55 | 29 |
| 000466 | 60 | | 13:15 | | 85.41 | 4 |
| 000467 | 64 | | 13:15 | | 253.52 | 16 |
| 000468 | 60 | | 13:30 | | 0.0+ | 5 |
| 000469 | 64 | | 13:30 | | 335.0[illegible] | 17 |
| 000470 | 60 | | 13:40 | | 0.0+ | 21 |
| 000471 | 64 | | 13:40 | | 313.26 | 18 |
| 000472 | 60 | | 14:05 | | 91.30 | 2 |
| 000473 | 64 | | 14:05 | | 151.75 | 3 |
| 000474 | 60 | | 14:20 | | 91.76 | 1 |
| 000475 | 64 | | 14:20 | | 303.44 | 9 |
| 000476 | 60 | | 14:45 | | 84.21 | 6 |
| 000477 | 64 | | 14:45 | 080 | 377.67 | 6 |
| 000478 | 60 | | 14:55 | 090 | 91.31 | 2 |
| 000479 | 64 | 6/26/74 | 14:55 | 080 | 319.79 | 29 |

Gear 60 = 0.5 m² ring net
64 = 1.0 m² Epibenthic sled
65 = 1.0 m² Tucker Trawl
86 = 1.0 m² Kenson net

Tow speed: centimetres/second

Volume Filtered: m³

+ Zero volumes indicate value outside tolerance. Data not included in analysis

1974 Year Evaluation Data

NATIONAL 42-384

XV-1

D Page 347

| Sample # | Gear | Date | Time of day | Tow speed | Volume filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 900080 | 62 | 6/26/74 | 16:45 | 080 | 315.33 | 25 |
| 900081 | 64 | | 16:45 | | 360.78 | 2 |
| 900082 | 62 | | 16:55 | | 254.82 | 11 |
| 900083 | 64 | | 16:55 | | 0.0 + | 5 |
| 900084 | 62 | | 17:05 | | 205.39 | 14 |
| 900085 | 64 | | 17:05 | | 360.35 | 6 |
| 900086 | 62 | | 17:20 | | 363.24 | 26 |
| 900087 | 64 | | 17:20 | | 148.19 | 10 |
| 900088 | 62 | | 17:30 | | 316.37 | 20 |
| 900089 | 64 | | 17:30 | | 442.63 | 36 |
| 900090 | 62 | | 17:45 | | 328.95 | 32 |
| 900091 | 64 | | 17:45 | | 224.73 | 16 |
| 900092 | 62 | | 17:55 | | 265.33 | 21 |
| 900093 | 64 | | 17:55 | | 354.72 | 23 |
| 900094 | 62 | | 18:05 | | 305.00 | 25 |
| 900095 | 64 | | 18:05 | | 301.13 | 14 |
| 900096 | 62 | | 18:15 | | 357.30 | 37 |
| 900097 | 64 | | 18:15 | | 249.89 | 10 |
| 900098 | 62 | | 18:30 | | 292.93 | 21 |
| 900099 | 64 | 6/26/74 | 18:30 | 080 | 372.04 | 22 |
| 900100 | 86 | 7/2/74 | 17:30 | 080 | 364.13 | 10 |
| 900101 | 64 | | 17:30 | | 420.76 | 5 |
| 900102 | 86 | | 17:40 | | 308.33 | 11 |
| 900103 | 64 | | 17:40 | | 377.51 | 9 |
| 900104 | 86 | | 17:55 | | 306.53 | 7 |
| 900105 | 64 | | 17:55 | | 356.56 | 11 |
| 900106 | 86 | | 18:12 | | 334.24 | 20 |
| 900107 | 64 | | 18:12 | | 291.56 | 8 |
| 900108 | 86 | | 18:25 | | 317.46 | 2 |
| 900109 | 64 | 7/2/74 | 18:25 | 080 | 309.24 | 3 |
| 900250 | 62 | 7/8/74 | 21:30 | 090 | 335.66 | 11 |
| 900251 | 65 | | 21:30 | | 234.14 | 3 |
| 900252 | 62 | | 21:55 | | 355.62 | 2 |
| 900253 | 65 | | 21:55 | | 235.01 | 0 |
| 900254 | 62 | | 22:10 | | 335.36 | 0 |
| 900255 | 65 | | 22:10 | | 267.51 | 0 |
| 900256 | 62 | | 22:25 | | 321.91 | 4 |
| 900257 | 65 | | 22:25 | | 213.17 | 6 |
| 900258 | 62 | | 22:37 | | 340.92 | 1 |
| 900259 | 65 | | 22:37 | | 281.63 | 0 |
| 900260 | 62 | | 22:53 | | 325.60 | 2 |
| 900261 | 65 | | 22:53 | | 222.12 | 1 |
| 900262 | 62 | | 23:05 | | 356.62 | 11 |
| 900263 | 65 | | 23:05 | | 227.04 | 0 |
| 900264 | 62 | | 23:20 | | 358.34 | 3 |
| 900265 | 65 | | 23:20 | | 253.01 | 0 |
| 900266 | 62 | | 23:40 | | 386.77 | 3 |
| 900267 | 65 | | 23:40 | | 303.12 | 0 |
| 900268 | 62 | | 23:50 | | 327.25 | 6 |
| 900269 | 65 | 7/8/74 | 23:50 | 090 | 211.02 | 1 |

GEAR 62 = 1.0 m ring net
64 = 1.0 m² Epibenthic sled
65 = 1.0 m² Tucker Trawl
86 = 1.0 m Hardy net

Tow speed : centimeters/second

Volume Filtered : m³

+ Zero volume indicates value outside tolerance. Data not included in analyses

197 [illegible] Expedition data

NATIONAL 42-384

XV-1

D Page 4 of 7

| Sample # | Gear | Date | Time of day | Tow speed | Volume filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 100270 | 86 | 7/9/77 | 22:35 | 080 | 177.05 | 1 |
| 100271 | 65 | | 22:35 | | 246.70 | 1 |
| 100272 | 86 | | 22:45 | | 267.75 | 2 |
| 100273 | 65 | | 22:45 | | 231.53 | 0 |
| 100274 | 86 | | 23:10 | | 277.99 | 14 |
| 100275 | 65 | | 23:10 | | 221.33 | 1 |
| 100276 | 86 | | 23:35 | | 256.23 | 2 |
| 100277 | 65 | | 23:35 | | 204.46 | 1 |
| 100278 | 86 | | 24:00 | | 221.07 | 3 |
| 100279 | 65 | 7/9/77 | 24:00 | | 241.29 | 5 |
| 100280 | 86 | 7/10/74 | 00:25 | | 181.16 | 0 |
| 100281 | 65 | | 00:25 | | 145.05 | 3 |
| 100282 | 86 | | 00:35 | | 187.68 | 0 |
| 100283 | 65 | | 00:35 | | 134.28 | 1 |
| 100284 | 86 | | 00:45 | | 186.00 | 0 |
| 100285 | 65 | | 00:45 | | 246.11 | 8 |
| 100286 | 86 | | 01:05 | | 188.93 | 0 |
| 100287 | 65 | | 01:05 | | 105.89 | 6 |
| 100288 | 86 | | 01:15 | | 236.09 | 1 |
| 100289 | 65 | 7/10/74 | 01:15 | 080 | 217.84 | 2 |
| 800290 | 86 | 7/10/74 | 02:10 | 080 | 230.62 | 2 |
| 900291 | 64 | | 02:10 | | 178.27 | 1 |
| 800292 | 86 | | 02:25 | | 122.01 | 8 |
| 900293 | 64 | | 02:25 | | 272.16 | 12 |
| 800294 | 86 | | 02:35 | | 151.69 | 1 |
| 900295 | 64 | | 02:35 | | 0.0 + | 2 |
| 800296 | 86 | | 02:45 | | 175.37 | 4 |
| 900297 | 64 | | 02:45 | | 374.21 | 0 |
| 800298 | 86 | | 03:00 | | 179.21 | 0 |
| 900299 | 64 | | 03:00 | | 372.68 | 0 |
| 800300 | 86 | | 03:20 | | 217.97 | 0 |
| 900301 | 64 | | 03:20 | | 359.97 | 0 |
| 800302 | 86 | | 03:35 | | 187.69 | 0 |
| 900303 | 64 | | 03:35 | | 128.44 | 0 |
| 800304 | 86 | | 03:45 | | 150.65 | 0 |
| 900305 | 64 | | 03:45 | | 0.0 + | 0 |
| 800306 | 86 | | 04:00 | | 169.11 | 0 |
| 900307 | 64 | | 04:00 | | 0.0 + | 1 |
| 800308 | 86 | | 04:10 | | 140.39 | 2 |
| 900309 | 64 | 7/10/74 | 04:10 | 080 | 298.99 | 0 |

GEAR: 64 = 1.0 m² Epibenthic sled
65 = 1.0 m² Tucker Trawl
86 = 1.0 m Hensen net

TOW SPEED: centimetres/second

VOLUME FILTERED: m³

+ Zero volumes indicate value outside tolerance. Data not included in analyses

1974 [illegible]

NATIONAL 42-384

XV-1

D Page 5 of 7

| Sample # | Gear | Date | Time of day | Tow speed | Volume filtered | Estimated bass larvae |
|---|---|---|---|---|---|---|
| 900310 | 62 | 7/11/74 | 00:35 | 080 | 285.14 | 0 |
| 900311 | 64 | | 00:35 | | 0.0 + | 0 |
| 900312 | 62 | | 00:50 | | 284.95 | 0 |
| 900313 | 64 | | 00:50 | | 0.0 + | 0 |
| 900314 | 62 | | 01:50 | | 290.60 | 1 |
| 900315 | 64 | | 01:50 | | 160.64 | 3 |
| 800316 | 62 | | 02:10 | | 233.51 | 0 |
| 900317 | 64 | | 02:10 | | 110.30 | 0 |
| 800318 | 62 | | 02:20 | | 275.21 | 1 |
| 900319 | 64 | | 02:20 | | 0.0 + | 1 |
| 800320 | 62 | | 02:30 | | 297.31 | 2 |
| 900321 | 64 | | 02:30 | | 0.0 + | 0 |
| 800322 | 62 | | 02:40 | | 298.62 | 2 |
| 900323 | 64 | | 02:40 | | 264.00 | 3 |
| 800324 | 62 | | 02:50 | | 285.55 | 4 |
| 900325 | 64 | | 02:50 | | 271.10 | 0 |
| 800326 | 62 | | 02:58 | | 234.65 | 1 |
| 900327 | 64 | | 02:58 | | 383.93 | 1 |
| 800328 | 62 | | 03:08 | | 246.17 | 1 |
| 900329 | 64 | 7/11/74 | 03:08 | 080 | 0.0 + | 0 |
| 800300 | 60 | 7/11/74 | 03:25 | 080 | 78.85 | 0 |
| 900331 | 64 | | 03:25 | | 122.92 | 2 |
| 800332 | 60 | | 03:35 | | 90.62 | 1 |
| 900333 | 64 | | 03:35 | | 132.08 | 0 |
| 800334 | 60 | | 03:45 | | 85.99 | 0 |
| 900335 | 64 | | 03:45 | | 229.24 | 0 |
| 800336 | 60 | | 03:55 | | 95.10 | 0 |
| 900337 | 64 | | 03:55 | | 342.77 | 2 |
| 800338 | 60 | | 04:04 | | 0.0 + | 0 |
| 900339 | 64 | | 04:04 | | 357.44 | 0 |
| 800340 | 60 | | 04:17 | | 79.55 | 0 |
| 900341 | 64 | | 04:17 | | 122.51 | 0 |
| 800342 | 60 | | 04:26 | | 85.43 | 1 |
| 900343 | 64 | | 04:26 | | 366.71 | 0 |
| 800344 | 60 | | 04:35 | | DATA MISSING - SAMPLE VOID | |
| 900345 | 64 | | 04:35 | | 0.0 + | 0 |
| 800346 | 60 | | 04:44 | | 91.82 | 0 |
| 900347 | 64 | | 04:44 | | 0.0 + | 0 |
| 800348 | 60 | | 04:54 | | 73.06 | 0 |
| 900349 | 64 | 7/11/74 | 04:54 | 080 | 0.0 + | 0 |

GEAR 60 = 0.5 m ring net
62 = 1.0 m ring net
64 = 1.0 m² epibenthic sled

TOW SPEED: centimeters/second

VOLUME FILTERED = m³

+ Zero volumes indicate value outside tolerance. Data not included in analysis

1974 Year Evaluation Data

NATIONAL 42-384

XV-1

D Page 6 of 7

| Sample # | Gear | Date | Time of Day | Tow Speed | Volume Filtered | Striped Bass Larvae |
|---|---|---|---|---|---|---|
| 900350 | 60 | 7/11/74 | 22:05 | 090 | 0.0 + | 0 |
| 900351 | 65 | | 22:05 | | 230.17 | 0 |
| 900352 | 60 | | 22:15 | | 0.0 + | 0 |
| 900353 | 65 | | 22:15 | | 295.83 | 0 |
| 900354 | 60 | | 22:28 | | 72.86 | 0 |
| 900355 | 65 | | 22:28 | | 254.16 | 0 |
| 900356 | 60 | | 22:38 | | 88.26 | 1 |
| 900357 | 65 | | 22:38 | | 262.02 | 1 |
| 900358 | 60 | | 22:46 | | 81.55 | 0 |
| 900359 | 65 | | 22:46 | | 238.54 | 1 |
| 900360 | 60 | | 22:55 | | 88.16 | 0 |
| 900361 | 65 | | 22:55 | | 285.57 | 1 |
| 900362 | 60 | | 23:05 | | 81.05 | 0 |
| 900363 | 65 | | 23:05 | | 291.20 | 0 |
| 900364 | 60 | | 23:15 | | 86.49 | 0 |
| 900365 | 65 | | 23:15 | | 279.53 | 0 |
| 900366 | 60 | | 23:25 | | 79.48 | 0 |
| 900367 | 65 | | 23:25 | | 0.0 + | 0 |
| 900368 | 60 | | 23:33 | | 78.23 | 3 |
| 900369 | 65 | 7/11/74 | 23:33 | 090 | 267.92 | 0 |
| | | | | | | |
| 800632 | 86 | 7/23/74 | 14:55 | 080 | 230.32 | 1 |
| 900633 | 64 | | 14:55 | | 175.68 | 1 |
| 800634 | 86 | | 15:08 | | 244.15 | 1 |
| 900635 | 64 | | 15:08 | | 0.0 + | 0 |
| 800636 | 86 | | 15:20 | | 243.22 | 0 |
| 900637 | 64 | | 15:20 | | 201.77 | 0 |
| 800638 | 86 | | 15:30 | | 256.93 | 2 |
| 900639 | 64 | | 15:30 | | 124.55 | 0 |
| 800640 | 86 | | 15:40 | | 260.77 | 0 |
| 900641 | 64 | | 15:40 | | 0.0 + | 1 |
| 800642 | 86 | | 15:50 | | 312.28 | 1 |
| 900643 | 64 | | 15:50 | | 0.0 + | 0 |
| 800644 | 86 | | 16:05 | | 234.44 | 0 |
| 900645 | 64 | | 16:05 | | 0.0 + | 0 |
| 800646 | 86 | | 16:15 | | 263.10 | 1 |
| 900647 | 64 | | 16:15 | | 0.0 + | 2 |
| 800648 | 86 | | 16:25 | | 264.16 | 0 |
| 900649 | 64 | | 16:25 | | 0.0 + | 0 |
| 800650 | 86 | | 16:35 | | 225.29 | 0 |
| 900651 | 64 | 7/23/74 | 16:35 | 080 | 242.41 | 0 |

Gear 60 = 0.5 m ring net
64 = 1.0 m² Epibenthic sled
65 = 1.0 m² Tucker Trawl
86 = 1.0 m Hensen net

Tow speed = centimetres/second

Volume Filtered = m³

+ Zero volumes indicate value outside tolerance. Data not included in analyses

19 [illegible] Larvae Data

NATIONAL 42-384

XII-1

D Pope 7 of 7

| Sample # | Gear | Date | Time of day | Tow speed | Volume Filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 00780 | 62 | 8/1/74 | 21:20 | 080 | 384.69 | 0 |
| 00781 | 64 | | 21:20 | | 0.0 + | 1 |
| 00782 | 62 | | 21:30 | | 383.37 | 0 |
| 00783 | 64 | | 21:30 | | 0.0 + | 0 |
| 00784 | 62 | | 21:40 | | 367.31 | 0 |
| 00785 | 64 | | 21:40 | | 163.96 | 1 |
| 00786 | 62 | | 21:50 | | 0.0 + | 0 |
| 00787 | 64 | | 21:50 | | 0.0 + | 0 |
| 00788 | 62 | | 22:00 | | 367.46 | 1 |
| 00789 | 64 | | 22:00 | | 0.0 + | 1 |
| 00790 | 62 | | 22:10 | | 340.13 | 0 |
| 00791 | 64 | | 22:10 | | 121.01 | 0 |
| 00792 | 62 | | 22:20 | | 377.92 | 0 |
| 00793 | 64 | | 22:20 | | 108.53 | 0 |
| 00794 | 62 | | 22:30 | | 358.34 | 0 |
| 00795 | 64 | | 22:30 | | 0.0 + | 0 |
| 00796 | 62 | | 22:40 | | 0.0 + | 0 |
| 00797 | 64 | | 22:40 | | 143.34 | 0 |
| 00798 | 62 | | 22:50 | | 397.44 | 1 |
| 00799 | 64 | 8/1/74 | 22:50 | 080 | 0.0 + | 0 |

GEAR 62 = 1.0 m ring net
64 = 1.0 m² Epibenthic sled

TOW SPEED = centimetres/second

VOLUME FILTERED = m³

+ Zero volumes indicate value outside Tolerance. Data not include in analyses

# 1975 Comparability Study data

XV-1

E Page 1 of 2

| Sample # | GEAR | DATE | TIME OF day | TOW SPEED | VOLUME FILTERED | STRIPED BASS YOLK-SAC | POST YOLK-SAC | EGG |
|---|---|---|---|---|---|---|---|---|
| 850001 | 64 | 5/30/75 | 06:17 | 120 | 197.98 | 63 | 0 | 1 |
| 855001 | 60 | | 06:17 | 120 | 92.88 | 3 | 28 | 22 |
| 850002 | 64 | | 06:37 | 100 | 311.05 | 71 | 142 | 3 |
| 855002 | 60 | | 06:37 | 100 | 87.78 | 2 | 61 | 12 |
| 850003 | 64 | | 06:54 | 100 | 288.12 | 54 | 198 | 12 |
| 855003 | 60 | | 06:54 | 110 | 98.56 | 16 | 74 | 5 |
| 850004 | 64 | | 07:21 | 100 | 328.05 | 26 | 38 | 3 |
| 855004 | 60 | | 07:21 | 130 | 96.67 | 23 | 1 | 1 |
| 850005 | 64 | | 07:40 | 100 | 297.68 | 7 | 13 | 0 |
| 855005 | 60 | | 07:40 | 110 | 84.46 | 36 | 3 | 27 |
| 850006 | 64 | | 07:59 | 100 | 310.32 | 225 | 45 | 58 |
| 855006 | 60 | | 07:59 | 125 | 99.22 | 29 | 0 | 4 |
| 850007 | 64 | | 08:15 | 100 | 323.17 | 62 | 106 | 54 |
| 855007 | 60 | | 08:15 | 125 | 80.74 | 38 | 1 | 31 |
| 850008 | 64 | | 08:33 | 095 | 280.63 | 102 | 152 | 27 |
| 855008 | 60 | | 08:33 | 120 | 93.08 | 57 | 5 | 10 |
| 850009 | 64 | | 08:49 | 100 | 318.24 | 12 | 4 | 0 |
| 855009 | 60 | | 08:49 | 110 | 77.30 | 33 | 2 | 6 |
| 850010 | 64 | | 09:04 | 100 | 279.52 | 135 | 27 | 17 |
| 855010 | 60 | 5/30/75 | 09:04 | 110 | 74.38 | 59 | 3 | 14 |
| 850011 | 64 | 5/30/75 | 09:24 | 100 | 279.87 | 257 | 49 | 284 |
| 855011 | 86 | | 09:24 | 100 | 293.65 | 188 | 79 | 0 |
| 850012 | 64 | | 09:38 | 100 | 276.61 | 11 | 195 | 6 |
| 855012 | 86 | | 09:38 | 100 | 347.10 | 34 | 58 | 1 |
| 850013 | 64 | | 09:53 | 100 | 273.12 | 59 | 21 | 11 |
| 855013 | 86 | | 09:53 | 100 | 282.42 | 92 | 8 | 29 |
| 850014 | 64 | | 10:07 | 100 | 287.64 | 3 | 7 | 0 |
| 855014 | 86 | | 10:07 | 95 | 300.69 | 33 | 27 | 0 |
| 850016 | 64 | | 10:37 | 100 | 278.61 | 79 | 50 | 0 |
| 855016 | 86 | | 10:37 | 90 | 290.33 | 86 | 41 | 0 |
| 850019 | 64 | | 11:20 | 100 | 295.83 | 54 | 62 | 5 |
| 855019 | 86 | | 11:20 | 100 | 277.18 | 81 | 23 | 7 |
| 850021 | 64 | | 11:46 | 100 | 305.26 | 44 | 87 | 2 |
| 855021 | 86 | | 11:46 | 90 | 278.60 | 49 | 26 | 12 |
| 850022 | 64 | | 12:10 | 100 | 306.10 | 430 | 0 | 15 |
| 855022 | 86 | | 12:10 | 95 | 299.49 | 302 | 128 | 3 |
| 850023 | 64 | | 12:42 | 100 | 309.94 | 334 | 124 | 2 |
| 855023 | 86 | | 12:42 | 85 | 266.19 | 224 | 124 | 1 |
| 850024 | 64 | | 12:54 | 100 | 321.20 | 287 | 372 | 0 |
| 855024 | 86 | 5/30/75 | 12:54 | 90 | 94.21 | 236 | 99 | 10 |

GEAR: 60 - 0.5 m² ring net
64 - 1.0 m² Epibenthic sled
86 - 1.0 m² Hensen net

Tow speed: centimeters/second

Volume filtered in m³

1975 Comparative Gear study to

XV-1

E page 2 of 2

| Sample # | GEAR | DATE | TIME OF DAY | TOW SPEED | VOLUME FILTERED | STRIPED BASS YOLK-SAC | POST YOLK-SAC | EGG |
|---|---|---|---|---|---|---|---|---|
| 850025 | 65 | 5/30/75 | 13:14 | 110 | 309.64 | 7 | 3 | 1 |
| 855025 | 60 | | 13:14 | 100 | 66.92 | 0 | 0 | 0 |
| 850026 | 65 | | 13:23 | 110 | 329.54 | 7 | 4 | 0 |
| 855026 | 60 | | 13:23 | 100 | 67.50 | 0 | 0 | 0 |
| 850027 | 65 | | 13:33 | 110 | 298.69 | 7 | 3 | 0 |
| 855027 | 60 | | 13:33 | 101 | 75.04 | 0 | 0 | 0 |
| 850028 | 65 | | 13:44 | 125 | 272.47 | 1 | 24 | 0 |
| 855028 | 60 | | 13:44 | 120 | 81.75 | 0 | 0 | 0 |
| 850029 | 65 | | 13:54 | 115 | 286.72 | 1 | 14 | 0 |
| 855029 | 60 | | 13:54 | 125 | 82.98 | 0 | 0 | 0 |
| 850030 | 65 | | 14:03 | 105 | 325.32 | 4 | 10 | 0 |
| 855030 | 60 | | 14:03 | 125 | 84.81 | 0 | 0 | 0 |
| 850031 | 65 | | 14:13 | 095 | 330.60 | 10 | 8 | 0 |
| 855031 | 60 | | 14:13 | 130 | 84.29 | 0 | 0 | 0 |
| 850032 | 65 | | 14:23 | 110 | 313.75 | 11 | 52 | 3 |
| 855032 | 60 | | 14:23 | 130 | 83.75 | 1 | 0 | 0 |
| 850033 | 65 | | 14:34 | 110 | 330.76 | 40 | 35 | 7 |
| 855033 | 60 | 5/30/75 | 14:34 | 130 | 84.83 | 0 | 0 | 0 |
| | | | | | | | | |
| 850035 | 65 | 5/30/75 | 15:09 | 110 | 343.13 | 18 | 6 | 6 |
| 855035 | 86 | | 15:09 | 095 | 207.29 | 7 | 0 | 0 |
| 850036 | 65 | | 15:24 | 110 | 331.56 | 17 | 24 | 3 |
| 855036 | 86 | | 15:24 | 085 | 238.57 | 3 | 0 | 0 |
| 850037 | 65 | | 15:35 | 110 | 314.61 | 8 | 112 | 0 |
| 855037 | 86 | | 15:35 | 090 | 241.48 | 3 | 0 | 0 |
| 850038 | 65 | | 15:45 | 110 | 317.06 | 51 | 165 | 0 |
| 855038 | 86 | | 15:45 | 085 | 224.54 | 1 | 5 | 0 |
| 850039 | 65 | | 15:57 | 115 | 359.02 | 32 | 253 | 0 |
| 855039 | 86 | | 15:57 | 090 | 217.05 | 1 | 16 | 0 |
| 850040 | 65 | | 16:08 | 105 | 324.80 | 1 | 156 | 1 |
| 855040 | 86 | | 16:08 | 090 | 232.90 | 1 | 0 | 0 |
| 850041 | 65 | | 16:20 | 105 | 326.46 | 51 | 220 | 0 |
| 855041 | 86 | | 16:20 | 090 | 232.35 | 0 | 2 | 0 |
| 850042 | 65 | | 16:32 | 105 | 364.82 | 69 | 55 | 0 |
| 855042 | 86 | | 16:32 | 085 | 239.87 | 0 | 5 | 0 |
| 850043 | 65 | | 16:43 | 105 | 316.63 | 0 | 57 | 0 |
| 855043 | 86 | | 16:43 | 090 | 239.61 | 1 | 0 | 0 |
| 850044 | 65 | | 16:55 | 105 | 323.74 | 41 | 130 | 0 |
| 855044 | 86 | 5/30/75 | 16:55 | 090 | 272.15 | 0 | 0 | 0 |

Gear: 60 = 0.5 m ring net
65 = 1.0 m² Tucker Trawl
86 = 1.0 m Hiwen net

Tow speed: Centimeters/second

Volume Filtered = m³

1975 - Tow speed effloway data

XV-1

B 1/1

| SAMPLE# | DATE | TIME OF DAY | VOLUME FILTERED | striped bass Post Yolk-sac | TOW SPEED |
|---|---|---|---|---|---|
| 750001 | 7/9/75 | 21:10 | 319.43 | 0 | 120 |
| 755001 | | 21:10 | 379.22 | 2 | 80 |
| 750002 | | 22:00 | 255.75 | 0 | 120 |
| 755002 | | 22:00 | 317.65 | 0 | 80 |
| 750003 | | 22:14 | 320.57 | 2 | 120 |
| 755003 | | 22:14 | 300.64 | 0 | 80 |
| 750007 | | 23:25 | 291.08 | 3 | 120 |
| 755007 | | 23:25 | 348.43 | 0 | 80 |
| 750008 | | 23:44 | 320.39 | 6 | 120 |
| 755008 | 7/9/75 | 23:44 | 347.75 | 0 | 80 |
| 750010 | 7/10/75 | 00:06 | 334.09 | 7 | 120 |
| 755010 | | 00:06 | 349.17 | 1 | 80 |
| 750011 | | 00:19 | 295.89 | 4 | 120 |
| 755011 | | 00:19 | 321.91 | 5 | 80 |
| 750012 | | 00:31 | 279.00 | 5 | 120 |
| 755012 | | 00:30 | 348.70 | 0 | 80 |
| 750013 | | 00:42 | 312.55 | 2 | 120 |
| 755013 | | 00:41 | 330.95 | 0 | 80 |
| 750014 | | 00:52 | 317.47 | 8 | 120 |
| 755014 | | 00:51 | 361.74 | 0 | 80 |
| 750015 | | 01:00 | 245.27 | 3 | 120 |
| 755015 | | 01:02 | 360.24 | 8 | 80 |
| 750016 | | 01:13 | 322.35 | 0 | 120 |
| 755016 | | 01:12 | 335.44 | 0 | 80 |
| 750017 | | 01:25 | 301.67 | 0 | 120 |
| 755017 | | 01:24 | 335.08 | 0 | 80 |
| 750018 | | 01:40 | 333.01 | 2 | 120 |
| 755018 | | 01:39 | 350.97 | 0 | 80 |
| 750019 | | 01:49 | 339.43 | 0 | 120 |
| 755019 | | 01:50 | 330.38 | 0 | 80 |
| 750020 | | 02:05 | 254.01 | 0 | 120 |
| 755020 | | 02:04 | 343.32 | 0 | 80 |
| 750021 | | 02:15 | 309.96 | 7 | 120 |
| 755021 | | 02:14 | 294.66 | 2 | 80 |
| 750022 | | 02:23 | 273.54 | 0 | 120 |
| 755022 | | 02:24 | 218.10 | 0 | 80 |
| 750023 | | 02:38 | 318.84 | 0 | 120 |
| 755023 | | 02:38 | 197.45 | 0 | 80 |
| 750024 | | 02:49 | 339.62 | 0 | 120 |
| 755024 | | 02:48 | 282.44 | 0 | 80 |
| 750025 | | 02:59 | 322.59 | 0 | 120 |
| 755025 | | 02:59 | 326.15 | 0 | 80 |
| 750026 | | 03:25 | 256.54 | 0 | 120 |
| 755026 | | 03:24 | 388.96 | 0 | 80 |
| 750027 | | 03:34 | 259.44 | 8 | 120 |
| 755027 | | 03:34 | 365.82 | 0 | 80 |
| 750028 | | 03:44 | 287.36 | 7 | 120 |
| 755028 | | 03:42 | 350.97 | 3 | 80 |
| 750029 | | 03:53 | 341.76 | 0 | 120 |
| 755029 | 7/10/75 | 03:52 | 387.55 | 1 | 80 |

Volume = $m^3$
Tow speed = cm/sec

1974 Mouth Size Efficiency data

XVI-1

# DAYTIME SAMPLES

c Page 1 of 5

| Sample # | Gear | Mouth Size | Date | Time of day | Volume Filtered | Striped Bass Larvae |
|---|---|---|---|---|---|---|
| 900121 | Tucker Trawl | 1.25 m² | 7/1/74 | 14:10 | 419.49 | 4 |
| 123 | | | | 14:25 | 420.07 | 0 |
| 125 | | | | 14:45 | 515.07 | 7 |
| 127 | | | | 15:20 | 545.90 | 16 |
| 129 | | | | 15:30 | 535.02 | 6 |
| 900131 | Tucker Trawl | 1.25 m² | 7/1/74 | 15:40 | 519.45 | 7 |
| 800120 | Tucker Trawl | 1.0 m² | 7/1/74 | 14:10 | 311.03 | 3 |
| 800122 | | | | 14:25 | 271.02 | 0 |
| 900133 | | | | 16:00 | 482.15 | 13 |
| 900135 | | | | 16:10 | 421.00 | 0 |
| 900137 | | | | 16:25 | 403.95 | 0 |
| 900139 | Tucker Trawl | 1.0 m² | 7/1/74 | 16:35 | 393.94 | 0 |
| 800124 | Tucker Trawl | 0.75 m² | 7/1/74 | 14:45 | 253.74 | 5 |
| 800126 | | | | 15:20 | 262.53 | 10 |
| 800136 | | | | 16:25 | 165.99 | 1 |
| 800138 | | | | 16:35 | 306.84 | 4 |
| 800140 | | | | 16:45 | 205.88 | 3 |
| 800142 | Tucker Trawl | 0.75 m² | 7/1/74 | 16:55 | 212.53 | 3 |
| 800128 | Tucker Trawl | 0.50 m² | 7/1/74 | 15:30 | 193.46 | 6 |
| 800130 | | | | 15:40 | 216.29 | 1 |
| 800132 | | | | 16:00 | 210.47 | 6 |
| 800134 | | | | 16:10 | 195.68 | 2 |
| 900141 | | | | 16:45 | 238.38 | 0 |
| 900143 | Tucker Trawl | 0.50 m² | 7/1/74 | 16:55 | 193.70 | 1 |
| 900151 | Epibenthic sled | 1.0 m² | 7/1/74 | 19:25 | 303.99 | 2 |
| 153 | | | | 19:50 | 379.44 | 6 |
| 155 | | | | 20:05 | 236.12 | 5 |
| 157 | | | | 20:30 | 153.11 | 6 |
| 900159 | Epibenthic sled | 1.0 m² | 7/1/74 | 20:45 | 339.37 | 16 |
| 800148 | Epibenthic sled | 0.75 m² | 7/1/74 | 19:10 | 315.81 | 23 |
| 150 | | | 7/1/74 | 19:25 | 338.91 | 51 |
| 166 | | | 7/2/74 | 16:15 | 108.63 | 4 |
| 800170 | Epibenthic sled | 0.75 m² | 7/2/74 | 17:00 | 343.23 | 3 |
| 900152 | Epibenthic sled | 0.50 m² | 7/1/74 | 19:50 | 268.30 | 20 |
| 800154 | | | 7/1/74 | 20:05 | 221.90 | 17 |
| 900161 | | | 7/1/74 | 21:05 | 134.15 | 3 |
| 900163 | | | 7/1/74 | 21:17 | 196.91 | 3 |
| 900165 | Epibenthic sled | 0.50 m² | 7/2/74 | 16:00 | 59.64 | 2 |

1974 Gear mouth Size Efficiency data

NATIONAL 42-384



## DAYTIME SAMPLES (CONTINUED)

| Sample # | Gear | Mouth size | Date | Time of day | Volume filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 800158 | Epibenthic sled | 0.25 m² | 7/1/74 | 20:45 | 116.04 | 17 |
| 800160 | ↓ | ↓ | 7/1/74 | 21:05 | 108.28 | 3 |
| 800162 | ↓ | ↓ | 7/1/74 | 21:17 | 116.96 | 4 |
| 900169 | ↓ | ↓ | 7/2/74 | 16:45 | 112.89 | 3 |
| 900171 | Epibenthic sled | 0.25 m² | 7/2/74 | 17:00 | 128.15 | 10 |

## NIGHTTIME SAMPLES

| Sample # | Gear | Mouth size | Date | Time of day | Volume filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 900183 | Tucker trawl | 1.25 m² | 7/2/74 | 21:50 | 350.20 | 10 |
| 187 | ↓ | ↓ | ↓ | 22:40 | 298.86 | 11 |
| 189 | ↓ | ↓ | ↓ | 22:55 | 343.06 | 10 |
| 191 | ↓ | ↓ | ↓ | 23:10 | 348.02 | 3 |
| 900193 | Tucker trawl | 1.25 m² | 7/2/74 | 23:25 | 349.79 | 4 |
| 800182 | Tucker trawl | 1.0 m² | 7/2/74 | 21:50 | 154.55 | 2 |
| 800188 | Tucker trawl | 0.75 m² | 7/2/74 | 22:55 | 155.71 | 4 |
| 800194 | ↓ | ↓ | ↓ | 23:40 | 135.52 | 1 |
| 800196 | Tucker trawl | 0.75 m² | 7/2/74 | 23:55 | 170.05 | 0 |
| 800190 | Tucker trawl | 0.50 m² | 7/2/74 | 23:10 | 119.72 | 2 |
| 900193 | ↓ | ↓ | ↓ | 23:25 | 349.79 | 4 |
| 900195 | ↓ | ↓ | ↓ | 23:40 | 216.08 | 2 |
| 900197 | Tucker trawl | 0.50 m² | 7/2/74 | 23:55 | 71.74 | 1 |
| 900199 | Epibenthic sled | 1.0 m² | 7/3/74 | 00:15 | 169.10 | 1 |
| 201 | ↓ | ↓ | ↓ | 00:30 | 405.93 | 0 |
| 203 | ↓ | ↓ | ↓ | 00:50 | 442.76 | 0 |
| 205 | ↓ | ↓ | ↓ | 01:00 | 415.40 | 2 |
| 207 | ↓ | ↓ | ↓ | 01:23 | 431.31 | 1 |
| 900209 | Epibenthic sled | 1.0 m² | 7/3/74 | 01:40 | 439.88 | 3 |
| 800198 | Epibenthic sled | 0.75 m² | 7/3/74 | 00:15 | 337.99 | 2 |
| 200 | ↓ | ↓ | ↓ | 00:30 | 376.01 | 1 |
| 214 | ↓ | ↓ | ↓ | 02:45 | 151.23 | 4 |
| 216 | ↓ | ↓ | ↓ | 02:55 | 335.79 | 6 |
| 218 | ↓ | ↓ | ↓ | 03:20 | 337.05 | 6 |
| 800220 | Epibenthic sled | 0.75 m² | 7/3/74 | 03:30 | 344.31 | 1 |
| 800202 | Epibenthic sled | 0.50 m² | 7/3/74 | 00:50 | 244.57 | 0 |
| 900211 | ↓ | ↓ | ↓ | 02:00 | 229.15 | 1 |
| 900217 | Epibenthic sled | 0.50 m² | 7/3/74 | 02:55 | 106.81 | 0 |

NATIONAL 42-384

## NIGHTTIME SAMPLES (CONTINUED)

| SAMPLE # | GEAR | MOUTH SIZE | DATE | TIME OF DAY | VOLUME FILTERED | STRIPED BASS LARVAE |
|---|---|---|---|---|---|---|
| 900219 | EPIBENTHIC SLED | 0.25 m² | 7/3/74 | 03:20 | 55.77 | 0 |
| 900221 | EPIBENTHIC SLED | 0.25 m² | 7/3/74 | 03:30 | 70.77 | 0 |

## DAYTIME SAMPLES

| SAMPLE # | GEAR | MOUTH SIZE | DATE | TIME OF DAY | VOLUME FILTERED | STRIPED BASS LARVAE |
|---|---|---|---|---|---|---|
| 900441 | EPIBENTHIC SLED | 1.0 m² | 7/16/74 | 13:02 | 294.52 | 1 |
| 447 | | | | 13:48 | 198.23 | 0 |
| 449 | | | | 14:00 | 98.30 | 1 |
| 900457 | EPIBENTHIC SLED | 1.0 m² | 7/16/74 | 14:54 | 114.27 | 0 |
| 800440 | EPIBENTHIC SLED | 0.75 m² | 7/16/74 | 13:02 | 321.28 | 1 |
| 442 | | | 7/16/74 | 13:16 | 180.64 | 1 |
| 444 | | | 7/16/74 | 13:26 | 339.80 | 0 |
| 476 | | | 7/17/74 | 20:00 | 249.45 | 2 |
| 478 | | | | 20:07 | 283.80 | 2 |
| 480 | | | | 20:18 | 231.64 | 1 |
| 482 | | | | 20:30 | 238.95 | 4 |
| 800484 | EPIBENTHIC SLED | 0.75 m² | 7/17/74 | 20:45 | 200.72 | 1 |
| 800446 | EPIBENTHIC SLED | 0.50 m² | 7/16/74 | 13:48 | 149.79 | 0 |
| 800448 | | | | 14:00 | 155.64 | 0 |
| 800450 | | | | 14:15 | 171.06 | 0 |
| 900459 | | | | 15:55 | 119.80 | 1 |
| 463 | | | 7/16/74 | 16:23 | 79.15 | 0 |
| 483 | | | 7/17/74 | 20:30 | 87.90 | 0 |
| 485 | | | | 20:45 | 51.99 | 1 |
| 900487 | EPIBENTHIC SLED | 0.50 m² | 7/17/74 | 20:55 | 97.05 | 0 |
| 800452 | EPIBENTHIC SLED | 0.25 m² | 7/16/74 | 14:33 | 75.24 | 3 |
| 454 | | | | 14:43 | 75.28 | 1 |
| 456 | | | | 14:54 | 39.65 | 0 |
| 458 | | | | 15:55 | 34.52 | 0 |
| 460 | | | | 16:10 | 77.49 | 1 |
| 800462 | | | 7/16/74 | 16:23 | 93.04 | 0 |
| 900477 | | | 7/17/74 | 20:00 | 56.77 | 0 |
| 900479 | EPIBENTHIC SLED | 0.25 m² | 7/17/74 | 20:07 | 28.49 | 0 |

## NIGHT TIME SAMPLES

| SAMPLE # | GEAR | MOUTH SIZE | DATE | TIME OF DAY | VOLUME FILTERED | STRIPED BASS LARVAE |
|---|---|---|---|---|---|---|
| 900489 | TUCKER TRAWL | 1.25 m² | 7/17/74 | 21:20 | 399.36 | 0 |
| 491 | | | | 21:35 | 376.35 | 0 |
| 493 | | | | 21:45 | 387.77 | 4 |
| 495 | | | | 22:05 | 431.70 | 6 |
| 497 | | | | 22:15 | 400.79 | 12 |
| 499 | | | | 22:25 | 372.06 | 1 |
| 501 | | | | 22:40 | 383.76 | 2 |
| 503 | | | | 22:55 | 341.16 | 8 |
| 900505 | TUCKER TRAWL | 1.25 m² | 7/17/74 | 23:05 | 380.43 | 0 |

1974 [illegible]ar mouth Size Effici[illegible] data

NATIONAL 42-384

XV-1

NIGHT TIME SAMPLES (CONTINUED)

c Page 4 of 5

| Sample # | Gear | mouth size | Date | Time of day | Volume Filtered | Striped bass larvae |
|---|---|---|---|---|---|---|
| 800 488 | Tucker Trawl | 1.0 m² | 7/17/74 | 21:20 | 185.15 | 4 |
| 800 490 | | | | 21:35 | 162.68 | 2 |
| 800 492 | | | | 21:45 | 234.22 | 7 |
| 900 507 | | | | 23:40 | 217.27 | 1 |
| 509 | | | 7/17/74 | 23:50 | 232.07 | 4 |
| 511 | | | 7/18/74 | 00:02 | 263.24 | 3 |
| 513 | | | | 00:15 | 209.71 | 1 |
| 515 | | | | 00:25 | 241.13 | 5 |
| 900 517 | Tucker Trawl | 1.0 m² | 7/18/74 | 00:40 | 200.00 | 8 |
| 800 494 | Tucker Trawl | 0.75 m² | 7/17/74 | 22:05 | 161.77 | 7 |
| 498 | | | 7/17/74 | 22:25 | 103.39 | 7 |
| 512 | | | 7/18/74 | 00:15 | 147.02 | 2 |
| 514 | | | | 00:25 | 82.95 | 4 |
| 518 | | | | 00:50 | 263.81 | 1 |
| 800 522 | Tucker Trawl | 0.75 m² | 7/18/74 | 01:15 | 114.48 | 2 |
| 800 500 | Tucker Trawl | 0.5 m² | 7/17/74 | 22:40 | 113.48 | 0 |
| 502 | | | | 22:55 | 130.85 | 2 |
| 504 | | | | 23:05 | 118.69 | 4 |
| 506 | | | | 23:40 | 194.71 | 4 |
| 508 | | | 7/17/74 | 23:50 | 62.55 | 0 |
| 800 510 | | | 7/18/74 | 00:02 | 71.11 | 2 |
| 900 519 | | | | 00:50 | 208.26 | 0 |
| 900 521 | | | | 01:05 | 207.77 | 2 |
| 900 523 | Tucker Trawl | 0.5 m² | 7/18/74 | 01:15 | 195.47 | 0 |
| 900 527 | Epibenthic sled | 1.0 m² | 7/18/74 | 21:10 | 210.34 | 3 |
| 529 | | | | 21:20 | 235.36 | 1 |
| 537 | | | | 22:20 | 249.78 | 7 |
| 539 | | | | 22:35 | 226.25 | 4 |
| 541 | | | | 22:45 | 233.19 | 8 |
| 900 543 | Epibenthic sled | 1.0 m² | 7/18/74 | 22:57 | 237.92 | 3 |
| 800 526 | Epibenthic sled | 0.75 m² | 7/18/74 | 21:10 | 115.87 | 0 |
| 800 528 | | | | 21:20 | 86.70 | 1 |
| 800 545 | | | | 23:20 | 204.27 | 4 |
| 900 547 | | | | 23:30 | 143.92 | 0 |
| 549 | | | 7/18/74 | 23:45 | 238.23 | 6 |
| 551 | | | 7/19/74 | 00:05 | 196.27 | 2 |
| 553 | | | | 00:20 | 227.36 | 7 |
| 900 555 | Epibenthic sled | 0.75 m² | 7/19/74 | 00:30 | 193.66 | 1 |

1974 Mean mouth Size Efficiency data

XV-1

NIGHTTIME SAMPLES (CONTINUED)



| Sample # | Gear | Mouth Size | Date | Time of day | Volume Filtered | Striped bass larvae | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 800 532 | Epibenthic sled | 0.5 m² | 7/18/74 | 22:00 | 66.20 | 4 | | | | |
| 536 | | | | 22:20 | 194.28 | 9 | | | | |
| 544 | | | | 23:20 | 183.53 | 3 | | | | |
| 800 548 | | | 7/18/74 | 23:45 | 91.11 | 0 | | | | |
| 900 559 | Epibenthic sled | 0.5 m² | 7/19/74 | 01:00 | 51.44 | 0 | | | | |
| 800 538 | Epibenthic sled | 0.25 m² | 7/18/74 | 22:35 | 30.67 | 5 | | | | |
| 550 | | | 7/19/74 | 00:05 | 60.94 | 0 | | | | |
| 552 | | | | 00:20 | 104.45 | 1 | | | | |
| 554 | | | | 00:30 | 91.98 | 0 | | | | |
| 558 | | | | 01:00 | 66.65 | 0 | | | | |
| 800 562 | Epibenthic sled | 0.25 m² | 7/19/74 | 01:20 | 57.81 | 0 | | | | |

1975 net / no-net

NATIONAL 42-384

XV-1

F 1/1

| Sample # | Gear | Duration | Tow speed | Volume Filtered | | Sample # | Gear | Duration | Tow speed | Volume Filtered |
|---|---|---|---|---|---|---|---|---|---|---|
| 780001 | Tucker Trawl | 5.1 | 85 | 247.94 | | 780032 | Epibenthic sled | 5.8 | 95 | 321.04 |
| 780002 | | 5.0 | 85 | 310.59 | | 780033 | | 5.4 | 95 | 312.64 |
| 780003 | | 5.2 | 90 | 246.44 | | 780034 | | 5.6 | 90 | 328.90 |
| 780004 | | 5.1 | 90 | 310.41 | | 780035 | | 5.7 | 100 | 344.56 |
| 780005 | | 5.3 | 90 | 313.55 | | 780036 | | 5.7 | 100 | 382.79 |
| 780006 | | 5.0 | 90 | 299.24 | with | 780037 | | 5.3 | 105 | 347.49 |
| 780007 | | 5.0 | 95 | 318.62 | | 780038 | | 5.6 | 95 | 335.32 |
| 780008 | | 5.2 | 95 | 305.26 | NET | 780039 | | 5.5 | 95 | 310.15 |
| 780009 | | 5.1 | 100 | 333.27 | | 780040 | | 6.2 | 90 | 333.33 |
| 780010 | | 5.1 | 100 | 348.35 | | 780041 | | 5.7 | 100 | 363.37 |
| 780011 | | 5.2 | 95 | 281.50 | | 780042 | | 5.8 | 90 | 311.28 |
| 780012 | | 5.0 | 95 | 305.11 | | 780043 | | 5.7 | 90 | 292.32 |
| 780013 | | 5.0 | 100 | 354.74 | | 780044 | | 5.5 | 105 | 370.89 |
| 780014 | | 5.2 | 100 | 313.94 | | 780045 | Epibenthic sled | 5.7 | 110 | 377.94 |
| 780015 | Tucker Trawl | 5.3 | 95 | 287.63 | | | | | | |
| | | | | | | | | | | |
| 780016 | Tucker Trawl | 5.3 | 90 | 339.06 | | 780047 | Epibenthic sled | 5.3 | 110 | 368.79 |
| 780017 | | 5.2 | 100 | 330.62 | | 780048 | | 5.4 | 100 | 327.04 |
| 780018 | | 5.2 | 100 | 312.63 | | 780049 | | 5.3 | 110 | 367.53 |
| 780019 | | 5.5 | 100 | 390.44 | | 780050 | | 5.5 | 110 | 387.2 |
| 780021 | | 5.2 | 100 | 318.70 | without | 780051 | | 5.5 | 110 | 390.43 |
| 780022 | | 5.2 | 100 | 310.93 | | 780052 | | 5.5 | 110 | 377.7 |
| 780023 | | 5.0 | 100 | 336.05 | NET | 780053 | | 5.5 | 110 | 389.48 |
| 780024 | | 5.2 | 100 | 352.52 | | 780054 | | 5.3 | 110 | 383.45 |
| 780025 | | 5.2 | 105 | 322.64 | | 780055 | | 5.5 | 110 | 394.39 |
| 780026 | | 5.1 | 105 | 325.44 | | 780056 | | 5.4 | 110 | 379.15 |
| 780027 | | 5.2 | 105 | 304.21 | | 780057 | | 5.4 | 110 | 384.45 |
| 780028 | | 5.1 | 100 | 359.58 | | 780058 | | 5.4 | 110 | 381.17 |
| 780029 | | 5.1 | 105 | 361.40 | | 780059 | | 5.5 | 110 | 370.1 |
| 780030 | Tucker Trawl | 5.2 | 105 | 318.24 | | 780060 | Epibenthic sled | 5.4 | 110 | 334.02 |

Duration = minutes
Tow speed = cm/sec
Volume = $m^3$

1975 Sucotown filtration data

XV-1

A Page 1 of 2

| sample # | GEAR | Duration | Tow Speed | Volume Filtered | SAMPLE # | GEAR | Duration | Tow SPEED | Volume FILTERED |
|---|---|---|---|---|---|---|---|---|---|
| 780061 | EPIBENTHIC SLED | 2.7 | 110 | 197.96 | 780123 | EPIBENTHIC SLED | 15.0 | 100 | 934.78 |
| 780064 | | 2.5 | 95 | 171.43 | 780124 | | | | 971.21 |
| 780065 | | 2.5 | 110 | 156.09 | 780125 | | | | 1030.37 |
| 780066 | | 2.5 | 100 | 153.78 | 780126 | | | | 1022.46 |
| 780068 | | 2.5 | 100 | 152.78 | 780128 | | | | 1022.92 |
| 780069 | | 2.5 | 100 | 169.04 | 780129 | | | | 999.21 |
| 780070 | | 2.5 | 110 | 166.97 | 780130 | | | | 956.47 |
| 780071 | EPIBENTHIC SLED | 2.5 | 100 | 166.84 | 780131 | | | | 1092.15 |
| | | | | | 780132 | EPIBENTHIC SLED | 15.0 | 100 | 953.02 |
| 780076 | EPIBENTHIC SLED | 5.0 | 90 | 266.01 | 780133 | EPIBENTHIC SLED | 17.5 | 100 | 1059.61 |
| 780079 | | | 100 | 312.04 | 780134 | | | | 1079.01 |
| 780080 | | | 110 | 337.63 | 780135 | | | | 1096.40 |
| 780081 | | | 90 | 293.03 | 780136 | | | | 1156.16 |
| 780082 | | | 90 | 296.80 | 780137 | | | | 1063.92 |
| 780084 | | | 90 | 308.39 | 780138 | | | | 1161.78 |
| 780085 | | 5.0 | 100 | 316.55 | 780139 | | | | 1173.82 |
| 780086 | | 5.5 | 90 | 339.95 | 780140 | | | | 1232.35 |
| 780088 | EPIBENTHIC SLED | 5.0 | 95 | 301.52 | 780141 | | | | 1210.76 |
| | | | | | 780142 | EPIBENTHIC SLED | 17.5 | 100 | 1150.71 |
| 780091 | EPIBENTHIC SLED | 7.5 | 100 | 443.81 | 780143 | EPIBENTHIC SLED | 20.5 | 90 | 1082.56 |
| 780092 | | | | 490.86 | 780144 | | 20.0 | 100 | 1113.9 |
| 780093 | | | | 458.03 | 780145 | | | | 1124.96 |
| 780094 | | | | 418.38 | 780146 | | | | 1080.1 |
| 780095 | | 7.5 | | 452.26 | 780148 | | | | 1038.[illegible] |
| 780096 | | 7.6 | | 450.78 | 780149 | | | | 1064.12 |
| 780098 | | 7.5 | | 509.11 | 780150 | | | | 1013.17 |
| 780099 | | | | 476.23 | 780151 | | | | 1151.60 |
| 780100 | | | | 456.66 | 780152 | EPIBENTHIC SLED | 20.0 | 100 | 1099.62 |
| 780101 | EPIBENTHIC SLED | 7.5 | 100 | 435.70 | | | | | |
| 780103 | EPIBENTHIC SLED | 10.3 | 100 | 633.78 | | | | | |
| 780104 | | 10.0 | | 592.35 | | | | | |
| 780105 | | | | 621.25 | Duration = | minutes | | | |
| 780106 | | | | 602.21 | Towspeed = | cm/sec | | | |
| 780108 | | | | 600.48 | Volume = | $m^3$ | | | |
| 780109 | | | | 615.70 | | | | | |
| 780110 | EPIBENTHIC SLED | 10.0 | 100 | 614.27 | | | | | |
| 780113 | EPIBENTHIC SLED | 12.5 | 100 | 798.81 | | | | | |
| 780117 | | | | 910.00 | | | | | |
| 780118 | | | | 856.48 | | | | | |
| 780119 | | | | 833.53 | | | | | |
| 780120 | | | | 842.37 | | | | | |
| 780121 | | | | 799.23 | | | | | |
| 780122 | EPIBENTHIC SLED | 12.5 | 100 | 797.03 | | | | | |

1975 [illegible] filtration data

XV-1

A Page 2 of 2

| Sample # | Gear | Duration | Tow speed | Volume filtered | Sample # | Gear | Duration | Tow speed | Volume filtered |
|---|---|---|---|---|---|---|---|---|---|
| 780154 | Tucker Trawl | 2.6 | 100 | 167.11 | 780196 | Tucker Trawl | 12.5 | 100 | 871.84 |
| 780155 | | 2.6 | 95 | 163.91 | 780197 | | 12.5 | | 781.95 |
| 780156 | | 2.6 | 100 | 166.43 | 780198 | | 12.5 | | 836.00 |
| 780157 | | 2.5 | 95 | 151.63 | 780199 | | 12.5 | | 824.01 |
| 780158 | | | 95 | 154.41 | 780200 | | 12.6 | | 823.68 |
| 780159 | | | 100 | 159.05 | 780201 | | 12.6 | | 803.99 |
| 780160 | | | 100 | 144.26 | 780202 | | 12.5 | | 848.90 |
| 780161 | | | 95 | 147.61 | 780203 | | 12.5 | | 765.6[illegible] |
| 780162 | Tucker Trawl | 2.5 | 95 | 151.26 | 780204 | | 12.5 | | 766.08 |
| | | | | | 780205 | Tucker Trawl | 12.5 | 100 | 786.2[illegible] |
| 780164 | Tucker Trawl | 5.0 | 90 | 308.71 | | | | | |
| 780165 | | | 100 | 308.66 | 780206 | Tucker Trawl | 15.2 | 90 | 980.12 |
| 780166 | | | | 333.02 | 780207 | | 15.0 | | 992.76 |
| 780167 | | | | 318.88 | 780208 | | | | 940.00 |
| 780168 | | | | 326.15 | 780210 | | | | 1000.68 |
| 780169 | | | | 320.04 | 780211 | | | | 1013.95 |
| 780170 | | | | 342.09 | 780212 | | | | 1018.38 |
| 780171 | | | 100 | 361.71 | 780214 | | | 90 | 844.68 |
| 780172 | | | 90 | 321.85 | 780215 | | 15.0 | 80 | 786.74 |
| 780173 | Tucker Trawl | 5.0 | 90 | 329.74 | 780216 | | 15.2 | 95 | 989.[illegible] |
| | | | | | 780217 | Tucker Trawl | 15.3 | 100 | 1184.97 |
| 780174 | Tucker Trawl | 7.5 | 100 | 443.68 | | | | | |
| 780175 | | | | 458.74 | 780218 | Tucker Trawl | 17.5 | 100 | 1264.18 |
| 780178 | | | | 472.37 | 780219 | | | | 1275.2[illegible] |
| 780179 | | | | 459.34 | 780220 | | | | 1302.5[illegible] |
| 780180 | | | | 418.14 | 780221 | | | | 1293.1[illegible] |
| 780181 | | | | 450.27 | 780222 | | | | 1123.31 |
| 780182 | | | | 470.46 | 780223 | | | | 1115.20 |
| 780183 | | | | 493.01 | 780225 | | | | 1208.95 |
| 780184 | | | | 494.22 | 780226 | | | 100 | 1190.[illegible] |
| 780185 | Tucker Trawl | 7.5 | 100 | 483.60 | 780227 | Tucker Trawl | 17.5 | 90 | 1133.1[illegible] |
| 780186 | Tucker Trawl | 10.2 | 80 | 660.14 | 780228 | Tucker Trawl | 20.0 | 95 | 1245.25 |
| 780187 | | 10.2 | | 651.98 | 780229 | | 20.3 | 90 | 1270.75 |
| 780188 | | 10.7 | | 666.99 | 780230 | | 20.2 | 100 | 1300.38 |
| 780189 | | 10.4 | | 686.10 | 780231 | | 20.0 | 90 | 1287.1[illegible] |
| 780190 | | 10.0 | | 673.05 | 780232 | | 20.0 | 90 | 1311.31 |
| 780191 | | 10.4 | 80 | 727.77 | 780233 | | 20.2 | 90 | 1309.15 |
| 780192 | | 10.0 | 95 | 735.51 | 780234 | | 20.0 | 90 | 1272.28 |
| 780193 | | 10.5 | 95 | 784.50 | 780236 | | 20.0 | 100 | 1374.24 |
| 780194 | | 10.0 | 100 | 703.12 | 780237 | | 20.0 | 100 | 1266.33 |
| 780195 | Tucker Trawl | 10.2 | 100 | 671.05 | 780238 | Tucker Trawl | 20.2 | 90 | 1236.8[illegible] |

Duration = minutes
Tow speed = cm/sec
Volume = $m^3$

XV.2. Provide a table similar to Table C-1, but expanded to include total volume sampled, tow speed, and any other variables which differed between groups. Provide a similar table for 1975 sampling (and 1976, if any).

Response: Attached is a table similar to Table C-1 but expanded per your request. In addition a table relative to the 1975 sampling is also provided. No gear comparability data were collected in 1976 and accordingly no 1976 data are available.

XV-2 1 of 2

1974 Gear Comparability Study (Supplement to Table C-1)+

| Gear | Time | Date | Number of Samples | Mean Catch* per 1000 $m^3$ | Standard Deviation | Mean Volume ($m^3$) Filtered | Mean Tow Speed (cm/s) |
|---|---|---|---|---|---|---|---|
| 1.0 m ring net | day | 6/24 | 10 | 5.5777 | 0.6698 | 305.64 | 080 |
| 1.0 $m^2$ Tucker Trawl | | | 8 | 5.7338 | 0.6295 | 346.59 | 080 |
| 0.5 m ring net | day | 6/24 | 10 | 5.6763 | 0.7460 | 77.47 | 080 |
| 1.0 $m^2$ Tucker Trawl | | | 10 | 5.2778 | 0.7669 | 303.20 | 080 |
| 1.0 m Hensen net | day | 6/24 | 6 | 5.3104 | 0.9843 | 256.69 | 083 |
| 1.0 $m^2$ Tucker Trawl | | | 7 | 6.0080 | 0.4772 | 290.49 | 083 |
| 0.5 m ring net | day | 6/26 | 6 | 3.6078 | 0.8463 | 89.84 | 080 |
| 1.0 $m^2$ Epibentic sled | | | 10 | 3.8498 | 0.6758 | 311.58 | 080 |
| 1.0 m ring net | day | 6/26 | 10 | 4.3183 | 0.2394 | 300.45 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 9 | 3.7249 | 0.8321 | 312.72 | 080 |
| 1.0 m Hensen net | day | 7/02 | 5 | 3.2436 | 0.7857 | 326.14 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 5 | 2.9895 | 0.4929 | 351.13 | 080 |
| 1.0 m ring net | night | 7/08 | 10 | 2.2168 | 1.0403 | 344.61 | 090 |
| 1.0 $m^2$ Tucker Trawl | | | 10 | 0.9450 | 1.3037 | 244.78 | 090 |
| 1.0 m Hensen net | night | 7/09-10 | 10 | 1.4382 | 1.3842 | 220.20 | 080 |
| 1.0 $m^2$ Tucker Trawl | | | 10 | 2.2319 | 1.2148 | 229.45 | 080 |
| 0.5 m ring net | night | 7/11 | 8 | 0.7731 | 1.4646 | 82.01 | 090 |
| 1.0 $m^2$ Tucker Trawl | | | 9 | 0.5249 | 0.7881 | 267.22 | 090 |
| 1.0 m Hensen net | night | 7/10 | 10 | 1.5671 | 1.7204 | 172.67 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 7 | 0.8139 | 1.4964 | 287.51 | 080 |
| 1.0 m ring net | night | 7/11 | 10 | 1.3130 | 0.9733 | 271.87 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 5 | 1.3553 | 1.3839 | 237.99 | 080 |
| 0.5 m ring net | night | 7/11 | 8 | 0.6287 | 1.1643 | 85.05 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 7 | 0.6816 | 1.1944 | 239.09 | 080 |
| 1.0 m Hensen net | day | 7/23 | 10 | 0.8481 | 0.9135 | 253.47 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 4 | 0.4752 | 0.9505 | 186.10 | 080 |
| 1.0 m ring net | night | 8/01 | 8 | 0.3214 | 0.5953 | 372.08 | 080 |
| 1.0 $m^2$ Epibenthic sled | | | 4 | 0.4900 | 0.9800 | 134.21 | 080 |

*Transformation: $\log_e (1000\ C/V + 1)$

where C = catch
V = volume in $m^3$

+TI 1977. 1974 and 1975 Gear Evaluation Studies, Consolidated Edison Company of New York, Inc.

# 1975 Gear Comparability Study

| Gear | Time | Date | Number of Samples | Mean Catch Per 1000 $m^3$* Yolk-Sac | Post Yolk-Sac | Egg | Mean Volume ($m^3$) Filtered | Mean Tow Speed (cm/s) |
|---|---|---|---|---|---|---|---|---|
| 1.0 $m^2$ Epibenthic sled | day | 5/30 | 10 | 5.1608 | 4.5487 | 2.9278 | 293.48 | 101 |
| 0.5 m ring net | | | 10 | 5.4196 | 3.8512 | 4.6504 | 88.51 | 116 |
| 1.0 $m^2$ Epibenthic sled | day | 5/30 | 10 | 5.1351 | 4.6566 | 2.0410 | 264.00 | 100 |
| 1.0 m Hensen net | | | 10 | 5.3308 | 4.8706 | 2.1673 | 272.98 | 95 |
| 1.0 $m^2$ Tucker Trawl | day | 5/30 | 9 | 2.9917 | 3.5787 | 0.7662 | 310.83 | 110 |
| 0.5 m ring net | | | 9 | 0.2841 | 0 | 0 | 79.09 | 118 |
| 1.0 $m^2$ Tucker Trawl | day | 5/30 | 10 | 3.7272 | 5.9531 | 0.6631 | 335.18 | 108 |
| 1.0 m Hensen net | | | 10 | 1.5481 | 1.2806 | 0 | 234.58 | 89 |

*Transformation: $\log_e (1000\ C/V + 1)$

where

C = catch

V = volume in $m^3$

XV.3. There appear to be some errors in table callouts in the last paragraph on page III-11 and in the date given in the title to Table III-5. Please clarify.

Response: Errata to the Gear Evaluation Studies report that have been compiled to date are attached. No table callouts errors have been identified from the last paragraph on page III-11.

objectives of the 1974-1975 studies conducted by TI were to:

- Develop a method of comparing data from 0.5 m and 1.0 m ring (or conical) nets (NYU and QLM-LMS gear), 1.0 m Hensen nets (NYU and QLM-LMS gear) and the 1.0 $m^2$ epibenthic sled and 1.0 $m^2$ Tucker trawl (TI gear) by applying correction factors

- Determine the effect of net mouth size on the catch efficiency of the epibenthic sled and Tucker trawl

- Determine the effect of tow speed on the catch efficiency of the 1.0 $m^2$ Tucker trawl

- Determine the ratio of the volume of water strained through both a 1.0 $m^2$ epibenthic sled and a 1.0 $m^2$ Tucker trawl equipped with 50~~0~~5 μ mesh to the volume of water that would have passed through the net frame had no net been present (filtration efficiency)

- Describe the effect of tow duration on filtration efficiency for the 1.0 $m^2$ Tucker trawl and 1.0 $m^2$ epibenthic sled

Table III-2

Parametric and Nonparametric Tests for Equality of Mean Catch from 1974 Gear Comparability Study

| Gear | Time | Date | t-Test of Equality of Means t | | df | Wilcoxon Rank Sum Test Z | |
|---|---|---|---|---|---|---|---|
| 1.0 m ring; 1.0 $m^2$ Tucker trawl | Day | 6/24 | 0.505 | ns | 16 | 0.62 | ns |
| 0.5 m ring; 1.0 $m^2$ Tucker trawl | Day | 6/24 | 1.178 | ns | 18 | 1.29 | ns |
| 1.0 m Hensen; 1.0 $m^2$ Tucker trawl | Day | 6/25 | 1.668 | ns | 11 | 1.59 | ns |
| 0.5 m ring; 1.0 $m^2$ Epibenthic sled | Day | 6/26 | 0.632 | ns | 14 | 0.54 | ns |
| 1.0 m ring; 1.0 $m^2$ Epibenthic sled | Day | 6/26 | † | | | 2.37 | * |
| 1.0 m Hensen; 1.0 $m^2$ Epibenthic sled | Day | 7/2 | 0.612 | ns | 8 | 0.73 | ns |
| 1.0 m ring; 1.0 $m^2$ Tucker trawl | Night | 7/8 | 2.411 | * | 18 | 2.12 | * |
| 1.0 m Hensen; 1.0 $m^2$ Tucker trawl | Night | 7/9,10 | 1.362 | ns | 18 | 1.13 | ns |
| 0.5 m ring; 1.0 $m^2$ Tucker trawl | Night | 7/11 | † | | | 0.00 | ns |
| 1.0 m Hensen; 1.0 $m^2$ Epibenthic sled | Night | 7/10 | † | | | 0.83 | ns |
| 1.0 m ring; 1.0 $m^2$ Epibenthic sled | Night | 7/11 | † | | | 0.00 | ns |
| 0.5 m ring; 1.0 $m^2$ Epibenthic sled | Night | 7/11 | † | | | 0.12 | ns |
| 1.0 m ring; 1.0 $m^2$ Tucker trawl | Day | 7/22 | ✓ | | | ✓ | |
| 0.5 m ring; 1.0 $m^2$ Tucker trawl | Day | 7/22 | ✓ | | | ✓ | |
| 1.0 m Hensen; 1.0 $m^2$ Tucker trawl | Day | 7/23 | ✓ | | | ✓ | |
| 1.0 m Hensen; 1.0 $m^2$ Epibenthic sled | Day | 7/23 | † | | | 0.51 | ns |
| 1.0 m ring; 1.0 $m^2$ Epibenthic sled | Day | 7/24 | ✓ | | | ✓ | |
| 0.5 m ring; 1.0 $m^2$ Epibenthic sled | Day | 7/24 | ✓ | | | ✓ | |
| 1.0 m ring; 1.0 $m^2$ Tucker trawl | Night | 7/29 | ✓ | | | ✓ | |
| 0.5 m ring; 1.0 $m^2$ Tucker trawl | Night | 7/29,30 | ✓ | | | ✓ | |
| 1.0 m Hensen; 1.0 $m^2$ Tucker trawl | Night | 7/30 | ✓ | | | ✓ | |
| 1.0 m Hensen; 1.0 $m^2$ Epibenthic sled | Night | 7/30 | ✓ | | | ✓ | |
| 1.0 m ring; 1.0 $m^2$ Epibenthic sled | Night | 8/1 | † | | | 0.18 | ns |
| 0.5 m ring; 1.0 $m^2$ ~~Tucker trawl~~ Epibenthic sled | Night | 8/1,2 | ✓ | | | ✓ | |

✓ = Catch not sufficient for analysis; fewer than five samples with non-zero catch
* = Significant at $\alpha$ = 0.05
ns = Not significant at $\alpha$ = 0.05
† = Assumptions of normality and equality of variance not met; see Table III-1
df = degrees of freedom

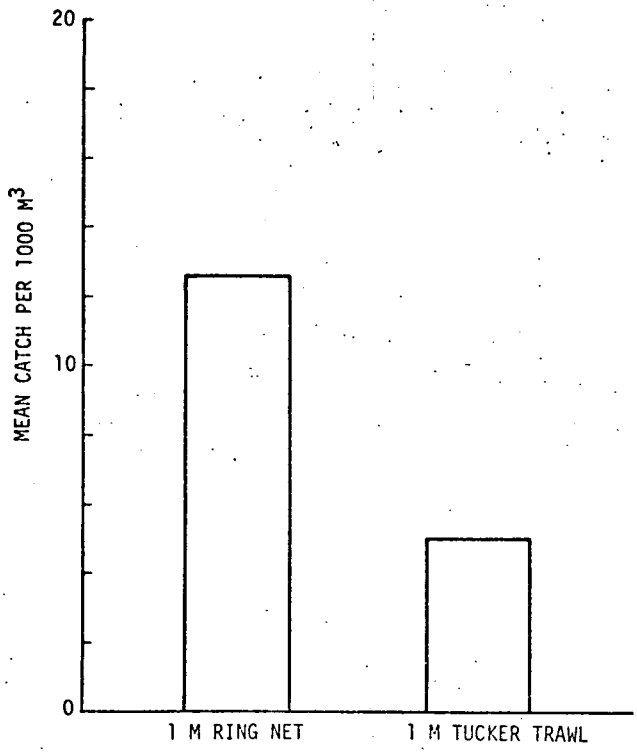


Figure III-1. Mean Catch of Striped Bass ~~Post Yolk Sac~~ Larvae by 1.0 m Ring Net and 1.0 $m^2$ Tucker Trawl during Darkness, 8 July 1974

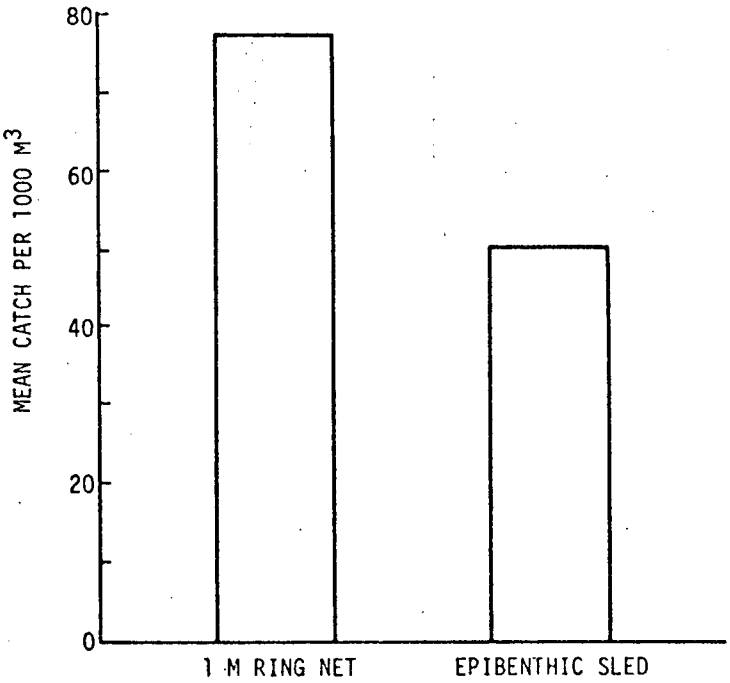


Figure III-2. Mean Catch of Striped Bass ~~Post Yolk Sac~~ Larvae by 1.0 m Ring Net and 1.0 $m^2$ Epibenthic Sled during Daylight, 26 June 1974

Table III-4

Tests for Normality, Homogeneity of Variance, and Lack of Fit in Gear Mouth Size Efficiency Study of 1974

| Gear | Time | Date | Normality W | | n | Homogeneity of Variance F | Lack of Fit F | | df |
|---|---|---|---|---|---|---|---|---|---|
| 1 m Epibenthic sled | Day | 7/1 | 0.97 | ns | 19 | 0.39 | 0.53 | ns | 2,15 |
| 1 m Tucker trawl | Day | 7/1 | 0.83 | * | 24 | --- | --- | | |
| 1 m Epibenthic sled | Night | 7/3 | 0.88 | * | 17 | --- | --- | | |
| 1 m Tucker trawl | Night | 7/3 | 0.84 | * | 13 | --- | --- | | |
| 1 m Epibenthic sled | Day | 7/16 | 0.80 | * | 24 | --- | --- | | |
| 1 m Tucker trawl | Day | 7/15 | ✓ | | | ✓ | ✓ | | |
| 1 m Epibenthic sled | Night | 7/18,19 | 0.86 | * | 25 | --- | --- | | |
| 1 m Tucker trawl | Night | 7/17,18 | 0.87 | * | 33 | --- | --- | | |
| 1 m Epibenthic sled | Day | 8/5 | ✓ | | | ✓ | ✓ | | |
| 1 m Tucker trawl | Day | 8/6 | ✓ | | | ✓ | ✓ | | |
| 1 m Epibenthic sled | Night | 8/7,8 | ✓ | | | ✓ | ✓ | | |
| 1 m Tucker trawl | Night | 8/8,9 | ✓ | | | ✓ | ✓ | | |

* Significant at $\alpha = 0.05$
ns Not significant at $\alpha = 0.05$
✓ Insufficient data for analysis; fewer than five samples with non-zero catch
df Degrees of freedom
n Number of valid samples

Table III-5

Analysis of Variance of Larval Striped Bass Catch per Volume Using Epibenthic Sleds with Five Different Mouth Sizes During Daylight of 1 July 197~~3~~4

| Source | d.f. | Sum of Squares | Mean Square | F |
|---|---|---|---|---|
| Slope | 1 | 1.1804 | 1.1804 | 1.80+ |
| Residual | 17 | 11.1446 | 0.6556 | |
| lack of fit | 2 | 0.7377 | 0.3688 | 0.53+ |
| pure error | 5 | 10.4069 | 0.6933 | |
| Total | 18 | 12.325 | | |

\+ not significant at $\alpha = 0.05$



services group

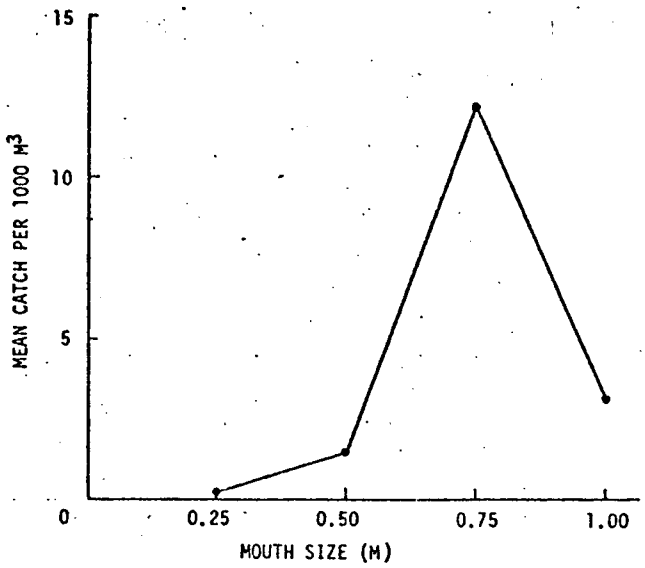


Figure III-7. Mean Catch of Larval Striped Bass by Epibenthic Sleds with Four Mouth Sizes, during Darkness, 3 July 1974

2. 1975 Tow Speed Efficiency Study

Nonparametric analysis by the Wilcoxon rank sum test indicated that a 1.0 $m^2$ Tucker trawl caught significantly ($Z = \cancel{6.64}$ 2.14; $\alpha = 0.05$) more post yolk-sac striped bass per volume at a tow speed of 120 cm/s than at 80 cm/s; the 50% increase in tow speed approximately tripled the mean catch from 2.55 to 8.61 larvae/1000 $m^3$. Gear efficiency with respect to tow speed depends on the size and type of organisms sampled (Aron and Collard, 1969) and the organism's ability to perceive the gear and avoid it (Barkley, 1964; Sissenwine et al, 1974). The Tucker trawl's maximum obtainable efficiency for post yolk-sac larvae had not been reached at 80 cm/s--and may not have been reached at 120 cm/s. TI, in its ichthyoplankton surveys of the Hudson River, usually tows the Tucker trawl at 90-120 cm/s; tow speeds greater than 120 cm/s reduce depth control and stability of this gear.

XV-3
6-16

Table C-1

Mean Catch of Larval Striped Bass during 1974 Gear Comparability Study

| Gear | Time | Date | No. of Samples | Mean Catch per 1000 $m^3$ | Standard Deviation |
|---|---|---|---|---|---|
| 1.0 m ring net | Day | 6/24 | 10 | 5.5777 | 0.6698 |
| 1.0 $m^2$ Tucker trawl | | | 8 | 5.7338 | 0.6295 |
| 0.5 m ring net | Day | 6/24 | 10 | 5.6763 | 0.7460 |
| 1.0 $m^2$ Tucker trawl | | | 10 | 5.2778 | 0.7669 |
| 1.0 m Hensen net | Day | 6/24 | 6 | 5.3104 | 0.9843 |
| 1.0 $m^2$ Tucker trawl | | | 7 | 6.0080 | 0.4772 |
| 0.5 m ring net | Day | 6/26 | 6 | 3.6078 | 0.8463 |
| 1.0 $m^2$ Epibenthic sled | | | 10 | 3.8498 | 0.6758 |
| 1.0 m ring net | Day | 6/26 | 10 | 4.3183 | 0.2394 |
| 1.0 $m^2$ Epibenthic sled | | | 9 | 3.7249 | 0.8321 |
| 1.0 m Hensen net | Day | 7/2 | 5 | 3.2436 | 0.7857 |
| 1.0 $m^2$ Epibenthic sled | | | 5 | 2.9895 | 0.4929 |
| 1.0 m ring net | Night | 7/8 | 10 | 2.2168 | 1.0403 |
| 1.0 $m^2$ Tucker trawl | | | 10 | 0.9450 | 1.3037 |
| 1.0 m Hensen net | Night | 7/9,10 | 10 | 1.4382 | 1.3842 |
| 1.0 $m^2$ ~~Epibenthic sled~~ Tucker trawl | | | 10 | 2.2319 | 1.2148 |
| 0.5 m ring net | Night | 7/11 | 8 | 0.7731 | 1.4646 |
| 1.0 $m^2$ Tucker trawl | | | 9 | 0.5249 | 0.7881 |
| 1.0 m Hensen net | Night | 7/10 | 10 | 1.5671 | 1.7204 |
| 1.0 $m^2$ Epibenthic sled | | | 7 | 0.8139 | 1.4964 |
| 1.0 m ring net | Night | 7/11 | 10 | 1.3130 | 0.9733 |
| 1.0 $m^2$ Epibenthic sled | | | 5 | 1.3553 | 1.3839 |
| 0.5 m ring net | Night | 7/11 | 8 | 0.6287 | 1.1643 |
| 1.0 $m^2$ Epibenthic sled | | | 7 | 0.6816 | 1.1944 |
| 1.0 m Hensen net | Day | 7/23 | 10 | 0.8481 | 0.9135 |
| 1.0 $m^2$ Epibenthic sled | | | 4 | 0.4752 | 0.9505 |
| 1.0 m ring net | Night | 8/1 | 8 | 0.3214 | 0.5953 |
| 1.0 $m^2$ Epibenthic sled | | | 4 | 0.4900 | 0.9800 |



services group