

CATAWBA NUCLEAR STATION

316 (a) DEMONSTRATION TWO UNIT OPERATIONAL REPORT

**DUKE POWER COMPANY
CHARLOTTE, NORTH CAROLINA**

SEPTEMBER 1988

CATAWBA NUCLEAR STATION
316(a) DEMONSTRATION

CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF LAKE WYLIE, SC,
DURING THE FIRST YEAR OF OPERATION OF
UNITS 1 AND 2 OF CATAWBA NUCLEAR STATION

December 1986 through November 1987

DUKE POWER COMPANY

1988

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EXECUTIVE SUMMARY

1. This report is a requirement of the South Carolina Department of Health and Environmental Control as specified in the NPDES permit (#SC0004278) for Catawba Nuclear Station. The study is also a requirement of the Federal Energy Regulatory Commission as specified in Article 35 of the Catawba-Wateree License 2232. The report summarizes the physico-chemical and biological characteristics of Lake Wylie for a one-year period after Unit 2 attained a sustained capacity factor >50%, and compares it to preoperational data.
2. Because the thermal discharge from Catawba was predicted to exceed South Carolina Water Quality Standards (32.2°C and/or no increase greater than 2.8°C above ambient), the 316(a) Demonstration was required by the NPDES permit. The objective of the variance from Water Quality Standards is to demonstrate that more stringent technology is not needed to protect the "indigenous fish, shellfish, and wildlife" of Lake Wylie. Although Catawba already has forced draft cooling towers, this study was conducted to determine if the thermal discharge had any measurable significant adverse impact on the "fish, shellfish, and wildlife".
3. The operational data were compared to baseline data collected in 1973-74 and 1983-84. A one-year Unit 1 operational report was

submitted to South Carolina Department of Health and Environmental Control (SCDHEC) in 1987. This Unit 2 operational report summarizes the period December 1986 through November 1987.

4. The station operated at a 75.3% capacity factor during the Unit 2 Operational Study which is excellent compared to the nuclear industry average.
5. Thermal plume survey results were conducted in February 1987 and August 1987 when the station was near 100% capacity. In February, the maximum difference between intake and discharge temperatures was 6.4°C. The greatest reach of the plume was approximately 1.9 km downlake from the discharge structure. In August, a maximum difference of 3.0°C occurred between the intake and discharge.
6. The water quality of Lake Wylie, particularly in the vicinity of Catawba's intake, is relatively good. Lake Wylie is a productive lake, and has been classified "eutrophic" by the EPA and SCDHEC. This classification was primarily the result of the relatively large nutrient input from upstream sources. To date, no significant adverse effect of the nutrient loading has been observed. Routine water quality monitoring of Lake Wylie since 1973 indicates no substantial changes in water chemistry or water quality.

7. Phytoplankton species exhibited a variety of seasonal distribution patterns. Maximum standing crop values were usually observed from June through September, with minimum values occurring during the winter. Lower standing crops were observed during the Unit 2 study, and were attributed to natural variability. Catawba operation did not appear to cause any long term or consistent impacts on the phytoplankton in the vicinity of the station.

8. Zooplankton standing crops and community composition were usually similar to results observed during the Unit 1 operational study and the Second Year Preoperational Study. The discharge sampling location consistently demonstrated the highest zooplankton standing crops during all phases of the study. This was attributed to shallower net tows at that location. Year to year monthly variations in standing crop, community composition, and seasonal distribution were probably due to responses to external environmental factors, since no long-term or consistent changes have been observed due to the operation of Catawba.

9. Benthic macroinvertebrate seasonal distribution differences between the operational and preoperational periods can be attributed to the invertebrates' patchy distribution and the high variability of their population densities. Chironomids dominated densities during all three studies. Considerable year to year variability among macro-

invertebrate standing crops has always been observed among Catawba monitoring studies. These are probably due to normal environmental variability in Lake Wylie coupled with the periodicity of sampling and occasional substrate variability.

10. Operation of both units of Catawba had no observable effect on electrofishing catches except during winter, when high catches of threadfin shad occurred at the discharge location. Threadfin shad instead of bluegill or redbreast sunfish were the most abundant species at the discharge location in January, probably attracted to the slightly warmer water temperatures.

Trap netting results of black crappie suggested that the operation of Catawba could be directly or indirectly attracting black crappie into the discharge area. Variability of year class strength was not apparently influenced by the operation of Catawba. Although growth differences of bluegill among locations and years were observed, these differences were not related to the operation of Catawba. Growth of black crappie did not appear related to operation of Catawba.

Sampling with electrofishing, gill nets, rotenone, trap nets, and push nets at various locations was conducted during the operation of both units of Catawba. The fish community of Lake Wylie was comprised primarily of shad, catfishes, sunfishes, largemouth bass, and crappies.

The fish community during the two-unit operational study did not appear to be different from the community before both units of Catawba were operating. Operation of Catawba appears to attract threadfin shad into the discharge area during the winter and may be attracting black crappie in the fall. Growth of bluegill and black crappie was unrelated to the operation of Catawba.

CHAPTER 1: TWO-UNIT OPERATING DATA

Background

This report documents the water chemistry and biological characteristics of Lake Wylie for two separate one-year baseline study periods (1973-74 and 1983-84) prior to the operation of Catawba Nuclear Station, and a one-year study period after start-up of Unit 2 (1986-87). The study is a requirement of the South Carolina Department of Health and Environmental Control for a 316(a) Demonstration as specified in the NPDES permit for Catawba Nuclear Station. The report is also a requirement of the Federal Energy Regulatory Commission as specified in Article 35 of the Catawba-Wateree License 2232.

Location and Physical Description

Catawba Nuclear Station is a two-unit, 2258 MW_e nuclear station located on Lake Wylie near Charlotte, North Carolina (Figures 1-1 and 1-2). Unit 1 began commercial operation on June 29, 1985 and Unit 2 began commercial operation on August 19, 1986. The locations of Catawba's intake and discharge points are shown in Figure 1-3.

Lake Wylie was created in 1904 by the Southern Power Company, with the construction of a dam on the Catawba River for hydroelectric power production. Duke Power Company increased the original impoundment acreage in 1925, when the dam was raised 50 ft (15.2 m) and a new 60 MW_e hydroelectric facility was completed.

At full pond elevation of 569.4 ft (174 m) above mean sea level, Lake Wylie has a surface area of 12,455 acres (50 km²), a shoreline of 327 miles (526 km), a volume of 281,900 ac-ft (3.46 x 10³ m³), and a mean depth of 22.5 ft (6.9 m). Its total watershed is approximately 3,020 mi² (7,818 km²), which yields an average flow of 4,500 cfs (116 m/s) through Wylie Dam, resulting in a theoretical retention time of 32 days. Since 1950, the maximum lake drawdown has been 9.5 ft (2.9 m). The current Federal Energy Regulatory Commission license for Wylie Hydro permits a maximum drawdown of 3.0 ft (0.9 m). Maximum drawdown of Lake Wylie averages approximately five feet (1.5 m) annually. The primary sources of water for Lake Wylie are Mountain Island Lake (Catawba River), South Fork Catawba River, and other tributary creeks which respectively contribute approximately 60%, 20%, and 20% of the total flow.

Data Collection Background

Industrial Bio-Test Laboratories, Inc. (Bio-Test 1974), a consultant to Duke Power, performed water quality and biological studies on Lake Wylie for one year in 1973-1974. The Bio-Test data and the data collected in 1983-84 were used to assess year-to-year variation in Lake Wylie data prior to the operation of CNS. Interim water quality studies were conducted by Duke Power to "bridge the gap" between the Bio-Test study and the second year preoperational study. Duke has previously submitted to SCDHEC a "316(a) Demonstration Preoperational Report" and a "316(a) Demonstration Unit 1 Operational Report".

Lake Wylie's biological and chemical characteristics have been studied by other consultants to Duke Power, most notably Weiss et al. (1975). Other special purpose, short-term reconnaissance efforts have been performed by the Company to document algal blooms, natural die-offs of Corbicula, taste and odor observations, and other environmental studies.

Operating Data

Unit 2 began commercial operation on August 19, 1975. The requirements of the NPDES permit stated that the Unit 2 operational period for the 316(a) Demonstration would begin when Unit 2 attained 50% power. For the purposes of the 316(a) Demonstration, sampling began in December 1986 and continued through November 1987. The average capacity factor during the Unit 2 operational period was 75.3%. Sampling dates relative to the daily capacity factor of the station are provided in Figure 1-4, based on the formula:

$$\text{Daily Capacity Factor (\%)} = \frac{\text{Megawatt hours Generated} \times 100}{2258 \text{ Megawatts} \times 24 \text{ hours}}$$

Temperatures

The NPDES permit allows a temperature rise (ΔT) of 7.3 °C (13.2 °F) from April through September, and 20.1 °C (36.1 °F) from October through March (Figure 1-5), as a monthly average. Notably, the daily average and the monthly average ΔT 's have been considerably less than the ΔT temperatures allowed in the NPDES permit (Figure 1-5). The highest daily mean ΔT was

6.5 °C for the period April through September (1987), whereas the highest monthly mean ΔT (NPDES-reported value) was 1.9 °C (Table 1-1). From October through March, the maximum 24-hour mean and average monthly ΔT 's were 7.8 °C and 4.6 °C, respectively (Table 1-1). South Carolina's Water Quality Standard for temperature in Class A waters is a maximum of 32.2 °C (90 °F), and waters shall not be increased more than 2.8 °C (5 °F) above natural temperature conditions, unless a different temperature standard has been established, a mixing zone has been established, or a Section 316(a) determination under the Federal Clean Water Act has been completed. Thus, this 316(a) Demonstration was required by SCDHEC because ΔT values exceeded 2.8 °C (5 °F). Intake and discharge temperatures during the Unit 2 operational period are shown in Figures 1-6 and 1-7.

Flows

The volume of water withdrawn from Lake Wylie by the low pressure service water system varied considerably during the Unit 1 operational period. Flows usually ranged between 50,000 and 70,000 gpm (Figure 1-8). This system is designed to supply service water for various makeup and cooling functions. Makeup water to replace the condenser circulating water lost to evaporation, blowdown, and drift is supplied by this system.

Thermal Plume

Two surveys were made of the thermal plume discharged from CNS into the Big Allison Creek arm of Lake Wylie. The dates of these surveys were February 10 and August 6, 1987. Temperature measurements were taken at one-meter depths at transects perpendicular to the expected direction of flow. Fifty-five locations were sampled on February 10 and fifty-three locations were sampled on August 6 (Figures 1-9 and 1-10). Temperature was measured at the CNS intake during both surveys. The location of the plume was determined by determining the difference between the temperatures at the discharge and the intake, and adjusting for any solar heating during the day.

On February 10, the plume was evidenced by discharge temperatures measurably higher than the intake. These higher temperatures occurred only in the top two meters of the water column (Table 1-3). The maximum difference between intake and discharge temperatures was 6.4°C at Location F-1, nearest to the RL discharge structure. The greatest reach of the plume was approximately 1.9 km downlake from the RL structure, where it fell below 2°C above the intake temperature (Figure 1-11).

Temperatures on August 6 showed a maximum difference of 3.0°C between the intake and discharge temperatures (Table 1-4). As in February, the plume appeared to be confined to the top two meters of the water column. The leading edge of the plume extended only 1.1 km from the RL discharge structure, reaching just past the bridge, where it dropped below a 1°C increase from the intake temperature (Figure 1-12).

LITERATURE CITED

Industrial Bio-Test Laboratories, Inc. A baseline/predictive environmental investigation of Lake Wylie: Catawba Nuclear Station and Plant Allen. Rept. to Duke Power Company. 2 Volumes. 743P.; 1974

Weiss, C. M.; Campbell, P. H.; Anderson, T. P.; Phaender, S.L. The Lower Catawba Lakes. Characterization to phyto- and zooplankton communities and their relationships to environmental factors. Dept. Environ. Sci. and Eng. Univ. North Carolina, Chapel Hill. ESE Pub. No. 389. 396p.: 1975.

TABLE 1-1. AVERAGE MONTHLY ΔT AND MAXIMUM 24-HOUR MEAN ΔT (F DEGREES) FROM APRIL 1985 THROUGH NOVEMBER 1987. *

	<u>Average Monthly ΔT</u>	<u>Maximum 24-HOUR MEAN ΔT</u>
<u>1985</u>		
April	3.3	20.3 **
May	0.7	4.5
June	-1.2	1.7
July	0.2	2.4
August	0.9	3.1
September	1.6	3.4
October	1.8	4.1
November	1.3	4.1
December	4.2	6.0
<u>1986</u>		
January	4.5	6.3
February	4.9	8.3
March	2.6	5.6

April	0.4	4.2
May	1.0	4.4
June	-1.2	1.8
July	0.7	3.1
August	2.5	4.3
September	-0.1	2.8
October	1.7	4.0
November	2.5	5.7

* Average monthly ΔT = sum of 24-hour mean ΔT \div Number of days per month.
 24-Hour mean ΔT = sum of hourly ΔT \div 24

NOTE: April and May 1985 data were obtained as daily grab samples.

** Recording error or equipment malfunction is believed to have caused the extraordinarily high ΔT . The next highest value for April 1985 was 7.5.

TABLE 1-1. Continued

	<u>Average Monthly ΔT</u>	<u>Maximum 24-HOUR MEAN ΔT</u>
<u>1986</u>		
December	2.9	5.9
<u>1987</u>		
January	4.6	7.8
February	4.1	6.8
March	0.0	7.3
April	1.9	6.5
May	-0.1	4.0
June	-0.7	1.6
July	-2.2	0.7
August	-2.7	-1.0
September	0.1	2.1
October	-1.3	3.1
November	2.3	6.2

TABLE: 1-2. Catawba Nuclear Station Monthly Average and Daily Maximum Discharge Temperatures for the Period April 1985 through November 1987

	<u>Monthly Avg.</u> <u>Discharge Temp °F(°C)</u>		<u>Daily Maximum</u> <u>Discharge Temp °F(°C)</u>	
<u>1985</u>				
April	69.2	(20.7)	80.5	(26.9)
May	76.7	(24.8)	80.9	(27.2)
June	81.4	(27.4)	85.0	(29.4)
July	84.4	(29.1)	87.2	(30.7)
August	84.4	(29.1)	86.4	(30.2)
September	82.8	(28.2)	87.9	(31.1)
October	73.5	(23.1)	76.5	(24.7)
November	64.3	(17.9)	67.3	(19.6)
December	52.4	(11.4)	62.0	(16.7)
<u>1986</u>				
January	44.3	(6.8)	46.1	(7.8)
February	48.4	(9.1)	52.0	(11.6)
March	54.8	(12.7)	66.2	(19.0)

April	66.4	(19.1)	70.7	(21.5)
May	75.2	(24.0)	78.9	(26.1)
June	82.6	(28.1)	86.1	(30.1)
July	89.1	(31.7)	92.3	(33.5)
August	87.5	(30.8)	90.4	(32.4)
September	79.1	(26.2)	81.5	(27.5)
October	74.3	(23.5)	81.2	(27.3)
November	64.0	(17.8)	68.4	(20.2)

TABLE 1-2. Continued

	Monthly Avg. <u>Discharge Temp °F(°C)</u>	Daily Maximum <u>Discharge Temp °F(°C)</u>
<u>1986</u>		
December	58.0 (14.5)	60.5 (15.9)
<u>1987</u>		
January	54.3 (12.4)	58.1 (14.5)
February	54.6 (12.6)	59.7 (15.4)
March	57.0 (13.9)	64.9 (18.3)
April	68.2 (20.1)	74.4 (23.6)
May	78.1 (25.6)	82.1 (27.9)
June	86.0 (30.0)	88.1 (31.2)
July	88.8 (31.5)	91.4 (33.0)
August	88.3 (31.3)	91.6 (33.1)
September	85.3 (29.6)	87.8 (31.0)
October	70.9 (21.6)	80.4 (26.9)
November	62.8 (17.1)	66.3 (19.1)

Table 1-4. Temperatures (°C) measured in Lake Wylie during the thermal plume survey at Catawba Nuclear Station discharge, August 6, 1987.

LOCATION	C-1	D-1	F-1	G-1	H-1	H-2	H-3	I-1	I-2	I-3	J-1	J-2	K-1	M-1	L-1	L-2	L-3	M-1	M-2	M-3	O-1	O-2	O-3	O-4	P-1	P-2	P-3	P-4	
TIME	0940	0950	1022	1027	1031	1035	1038	1041	1044	1049	1054	1058	1102	1117	1123	1131	1137	1144	1149	1155	1200	1205	1215	1220	1249	1254	1259	1305	
DEPTH (M)																													
0.3	30.2	30.1	33.3	33.2	33.2	33.2	32.6	32.9	32.6	32.4	31.4	31.9	31.6	31.6	32.6	32.9	32.5	31.0	32.4	32.0	31.4	31.6	30.7	30.2	30.5	30.5	30.5	30.5	30.5
1	30.2	30.1		33.2	32.3	31.9	32.1	31.5	31.8	32.1	31.4	31.4	31.3	31.5	31.7	31.6	31.4	30.3	32.0	31.2	30.5	31.0	30.3	30.2	30.5	30.5	30.5	30.5	30.5
2	30.2	30.1		33.2	29.9	29.8	29.9	30.0	30.0	31.4	30.1	30.7	30.2	30.0	30.0	30.0	30.2	30.1	30.1	29.9	30.2	30.2	30.2	30.2	30.5	30.4	30.4	30.4	30.4
3	30.2	30.1		33.2	29.8	29.8	29.8	29.7	29.8		29.9	29.8	29.8	29.9	29.9	29.8	29.8	29.8	29.9	29.8	29.8	29.8	29.9	29.9	30.4	30.2	30.3	30.3	30.3
4	30.2	30.1				29.7	29.8		29.7			29.8		29.8	29.7	29.7	29.7	29.8	29.7	29.7	29.7	29.7	29.8	29.8	29.9	30.0	30.2	30.3	30.2
5	30.2	30.1				29.7			29.7			29.7		29.7	29.7	29.7	29.7	29.6	29.7	29.6	29.7	29.6	29.7	29.6	29.8	30.0	29.8	29.8	29.8
6	30.1	30.1									29.6			29.6	29.6		29.6	29.6		29.6	29.6	29.6	29.6	29.5	29.6	29.7	29.7	29.6	29.6
7	30.0													29.5	29.4		29.4	29.4				29.5	29.4		29.4	29.4	29.5	29.4	29.2
8	30.0																			29.1		29.3	29.3		29.2	29.2	29.4	29.2	
9																					28.8					29.1	29.2		28.7
10																													28.6
11																													28.4
																													28.0

1-12

LOCATION	R-1	R-2	R-3	R-4	R-5	T-1	T-2	T-3	S-4	S-3	S-2	S-1	V-1	U-1	U-2	U-3	I-1	W-1	W-2	W-3	T-1	AA	BB	CC	D-1
TIME	1320	1325	1332	1342	1352	1358	1405	1413	1421	1430	1436	1445	1505	1510	1515	1523	1530	1535	1540	1550	1607	1620	1630	1635	1700
DEPTH (M)																									
0.3	31.3	31.7	32.3	32.7	30.9	30.7	30.9	30.8	30.8	30.8	30.8	31.0	30.9	31.2	31.1	31.4	31.2	31.4	31.1	31.3	31.2	31.2	30.7	31.0	31.4
1	31.3	31.2	30.5	31.3	30.6	30.6	30.6	30.5	30.4	30.6	30.7	30.9	30.9	31.0	31.0	31.1	30.9	31.1	31.1	30.8	31.1	31.0	30.5	31.0	31.3
2	31.6	30.4	30.2	30.8	30.2	30.3	30.2	29.9	30.1	30.3	30.4	30.8	30.4	30.5	30.3	30.2	30.4	30.9	30.3	30.4	30.5	30.1	29.9	30.7	31.2
3	30.0	29.9	30.1	29.9	29.9	29.9	29.9	29.8	29.9	29.8	30.1	30.1	30.1	30.2	30.2	30.1	30.2	30.1	30.1	30.2	30.1	30.0	29.8	30.3	30.9
4	29.8	29.8	29.8	29.7	29.7	29.7	29.7	29.6	29.7	29.6	29.7	29.6	29.7	29.6	29.9	29.9	29.8	29.7	29.8	29.8	29.7	30.0	29.8	29.9	30.4
5	29.7	29.6	29.7	29.6	29.6	29.6	29.7	29.6	29.7	29.6	29.7	29.6	29.9	29.9	29.8	29.7	29.8	29.8	29.8	29.7	29.6	29.9	29.7	29.8	29.8
6	29.6	29.6	29.6	29.4	29.4	29.4	29.6	29.6	29.6	29.6	29.6	29.5	29.8	29.6	29.7	29.6	29.8	29.8	29.7	29.6	29.9	29.7	29.8	29.7	29.8
7	29.5	29.5	29.5		29.2	29.4	29.5	29.5	29.4	29.5	29.4	29.5	29.4	29.7	29.7	29.7	29.7	29.6	26.5	29.7	29.6		29.5	29.4	29.4
8	29.4	29.2	29.2			29.3	29.4	29.5	29.2	29.3	29.2			29.6	29.5	29.6	29.4	29.2	29.6	29.6		29.4	29.3	29.3	29.3
9	29.3	28.8	29.0			29.0	29.2	29.4	28.6	29.0	28.9			29.4	29.1		29.2	29.1	29.5	29.5		29.4	29.1	29.1	29.1
10	28.7	28.6	28.5			28.8	29.1	28.5	28.1					29.2					29.1	29.0	29.5	29.4		28.7	28.7
11						28.2	28.6							28.8					28.8	28.9		29.1		28.7	28.7
12														28.7					28.1	28.8		28.6		28.0	28.0
13																								28.0	28.0

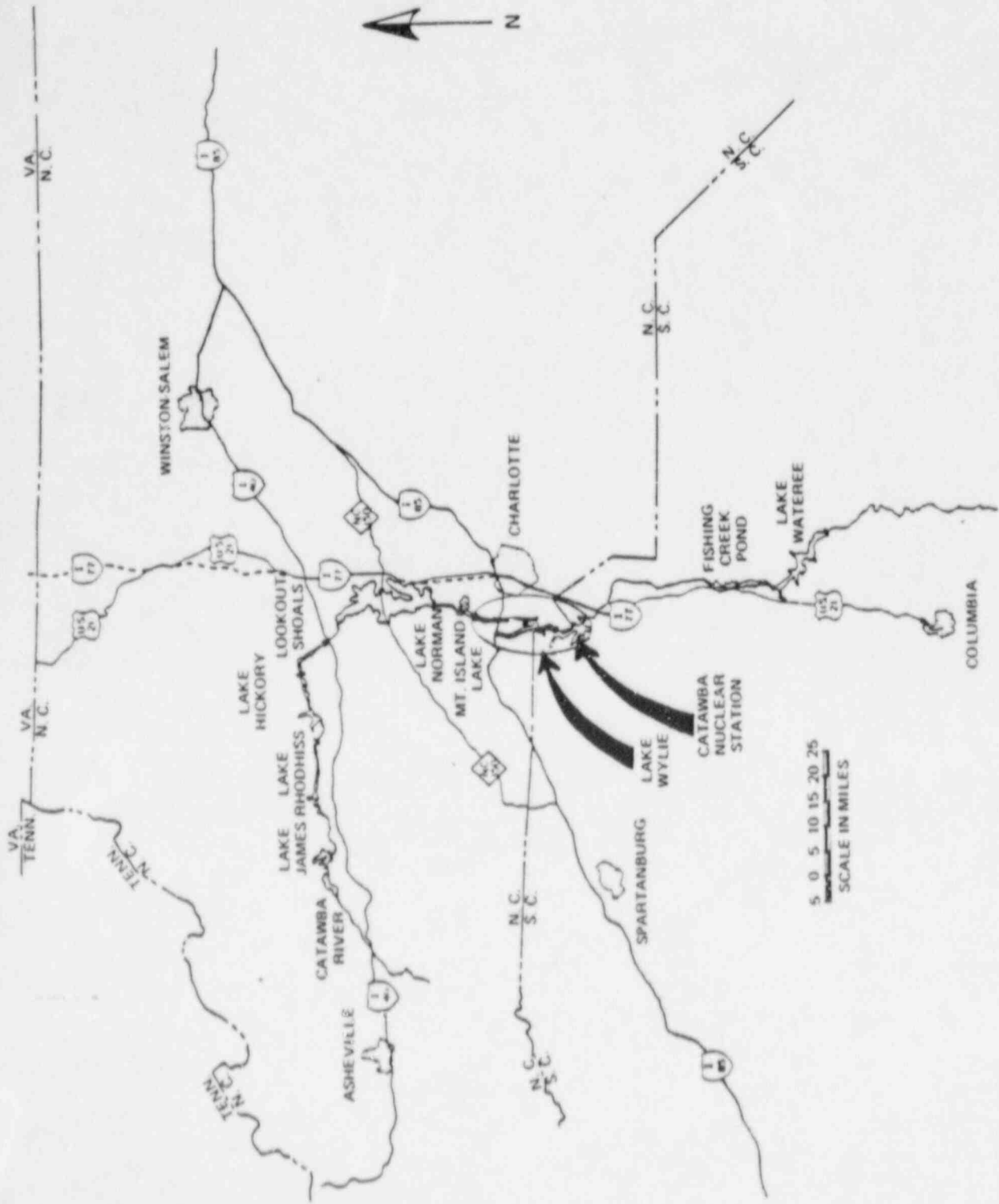
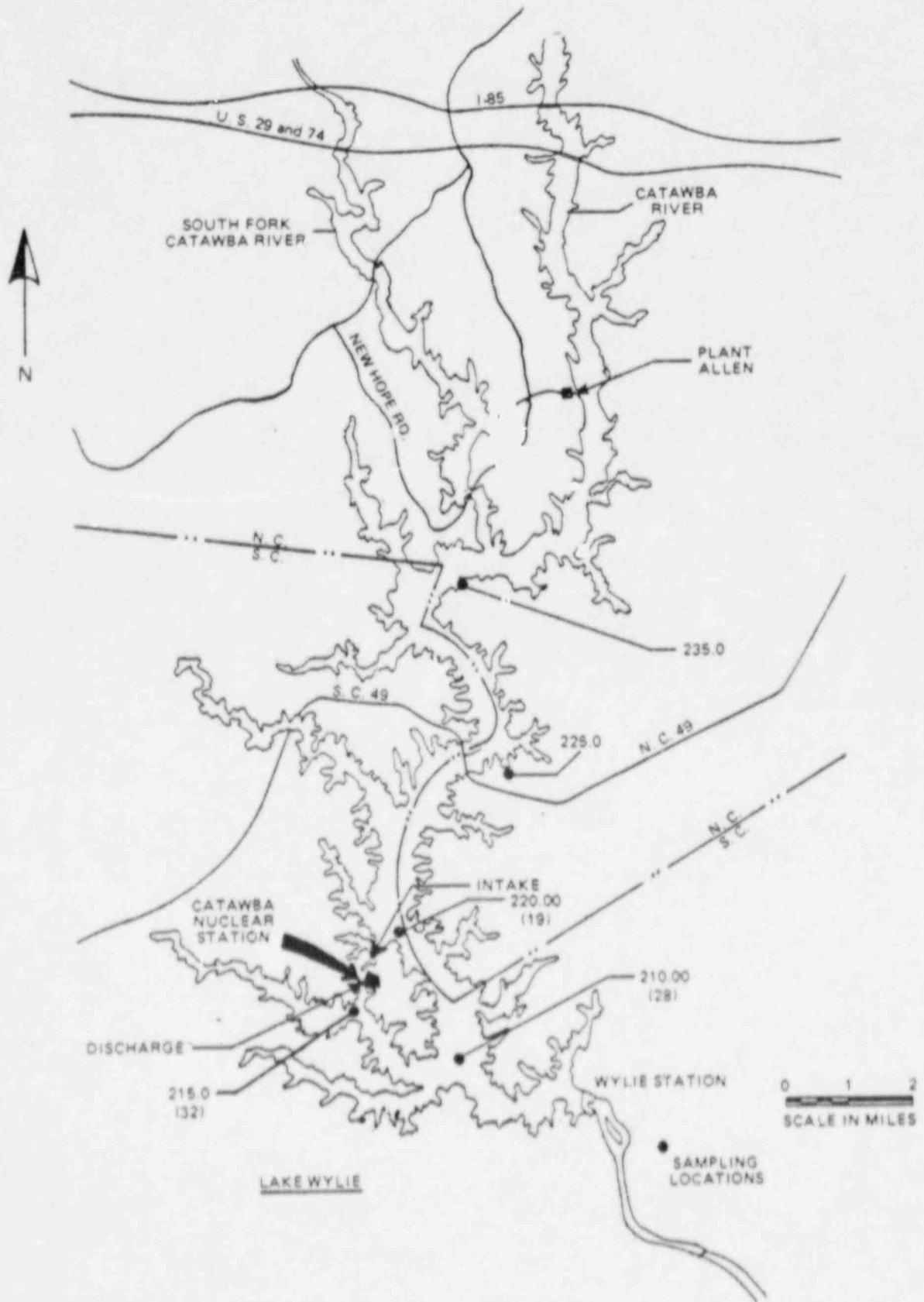


Figure I-1. Regional site location of Lake Wylie and Catawba Nuclear Station.



MAP OF LAKE WYLIE

Figure 1-2. Lake Wylie with sampling locations indicated. Industrial Bio-Test Locations are in parenthesis.

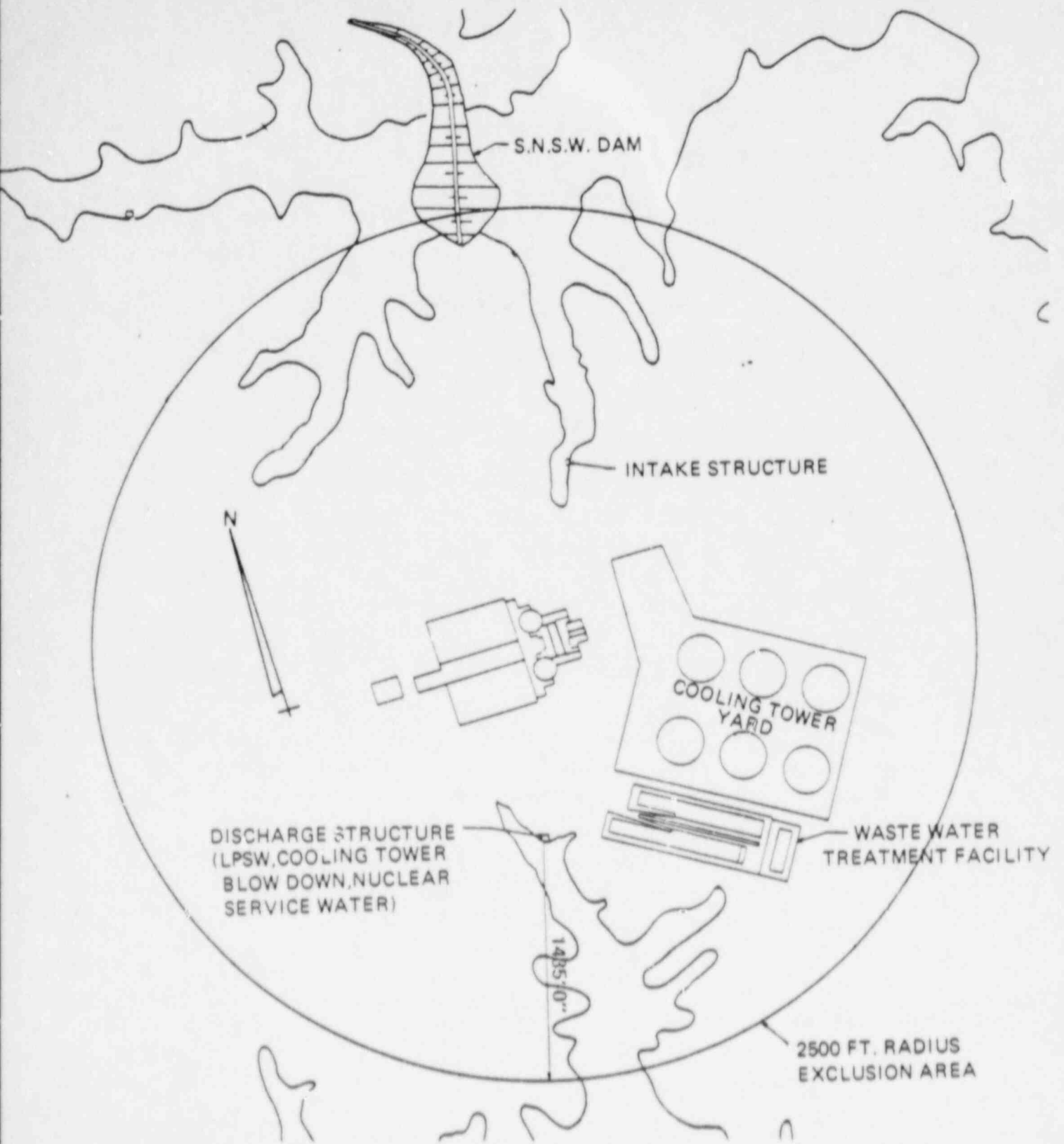
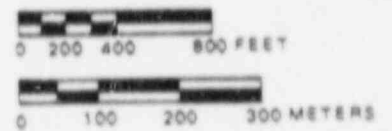


Figure 1-3. Catawba Nuclear Station with major intake and discharge areas indicated.



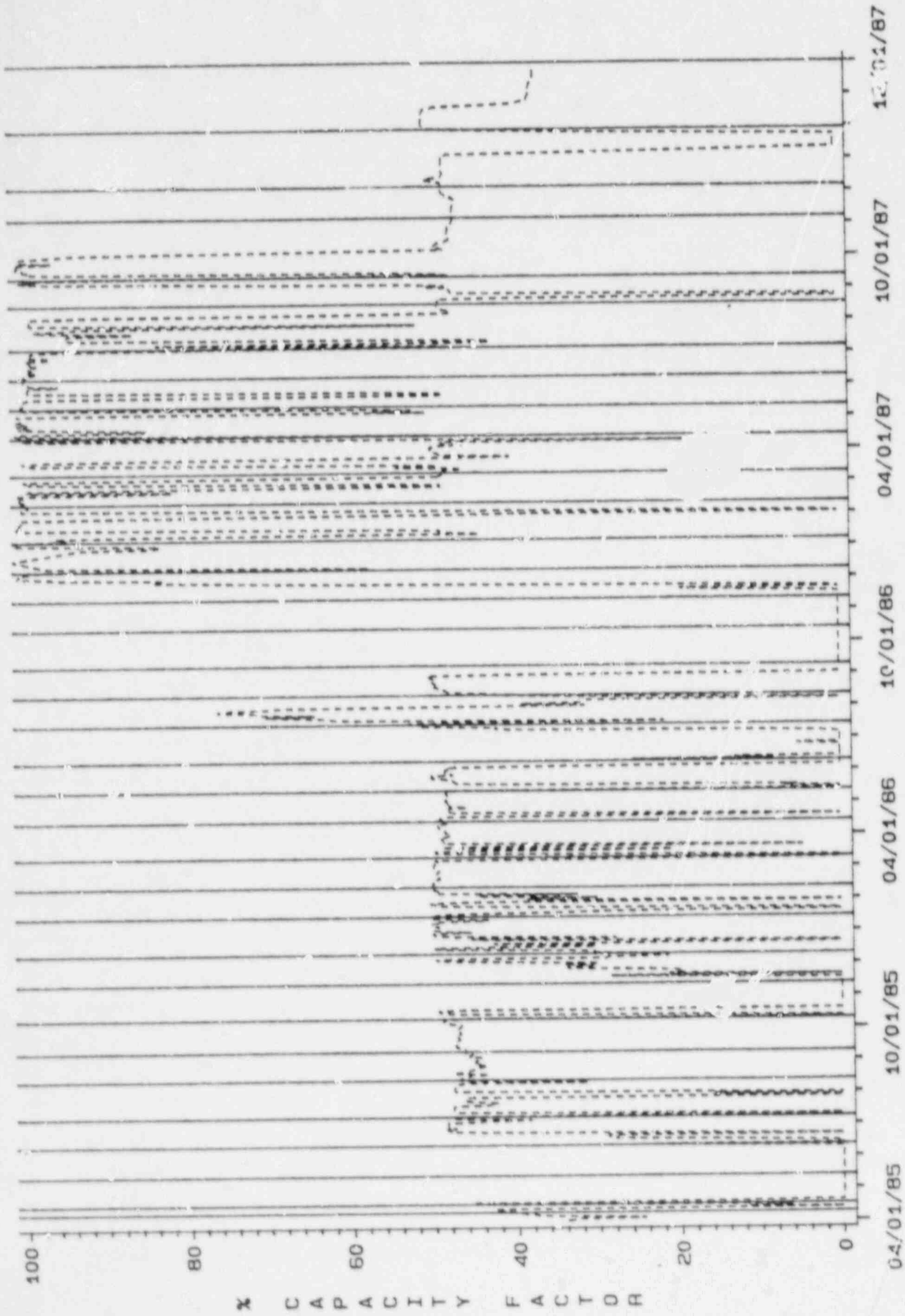


Figure 1-4. Catawba Nuclear Station, capacity factor. Their vertical lines are representative of sampling dates.

1-17

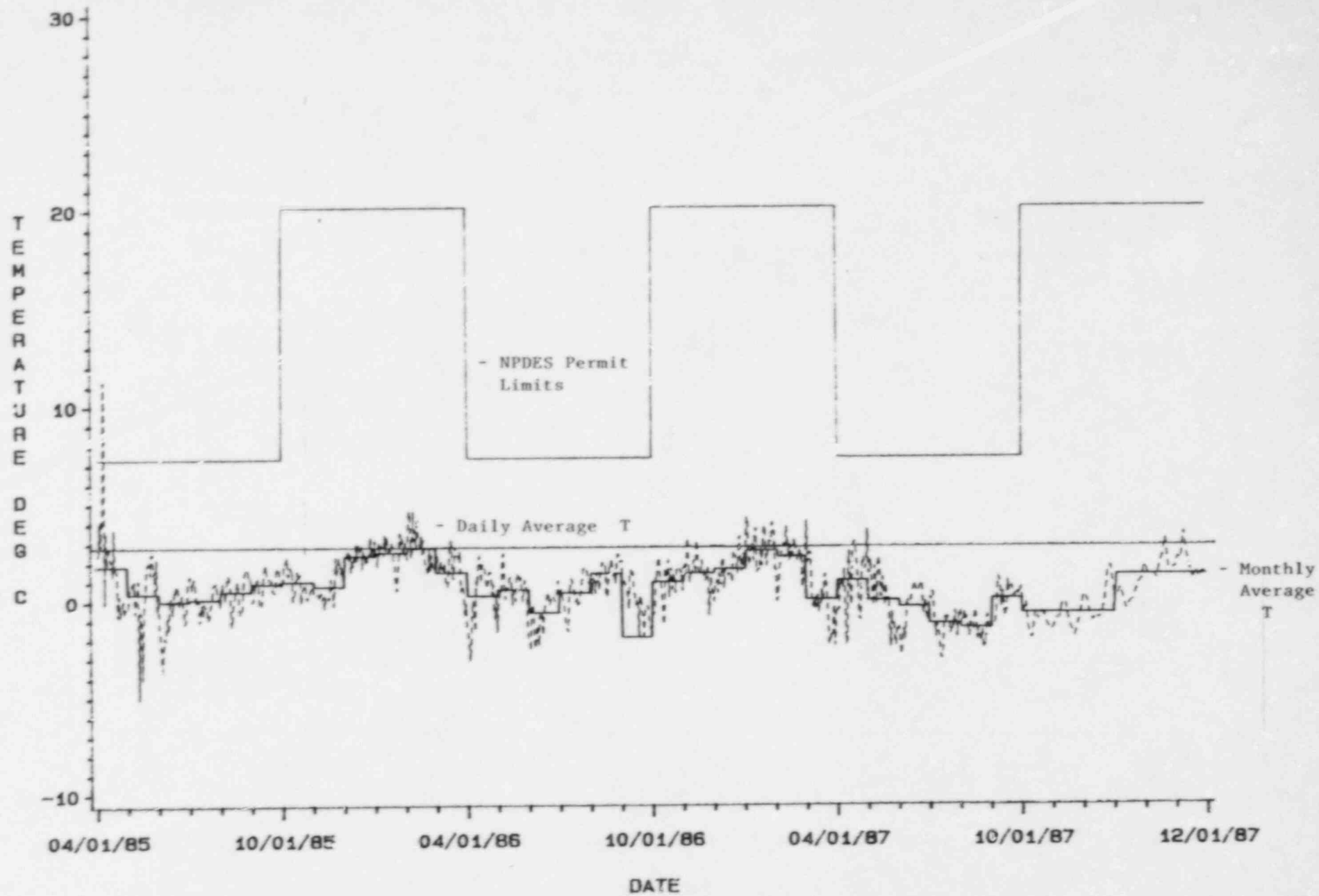


Figure 1-5. Catawba Nuclear Station daily average T and monthly average T. The horizontal line is the S.C. Water Quality Standard for T.

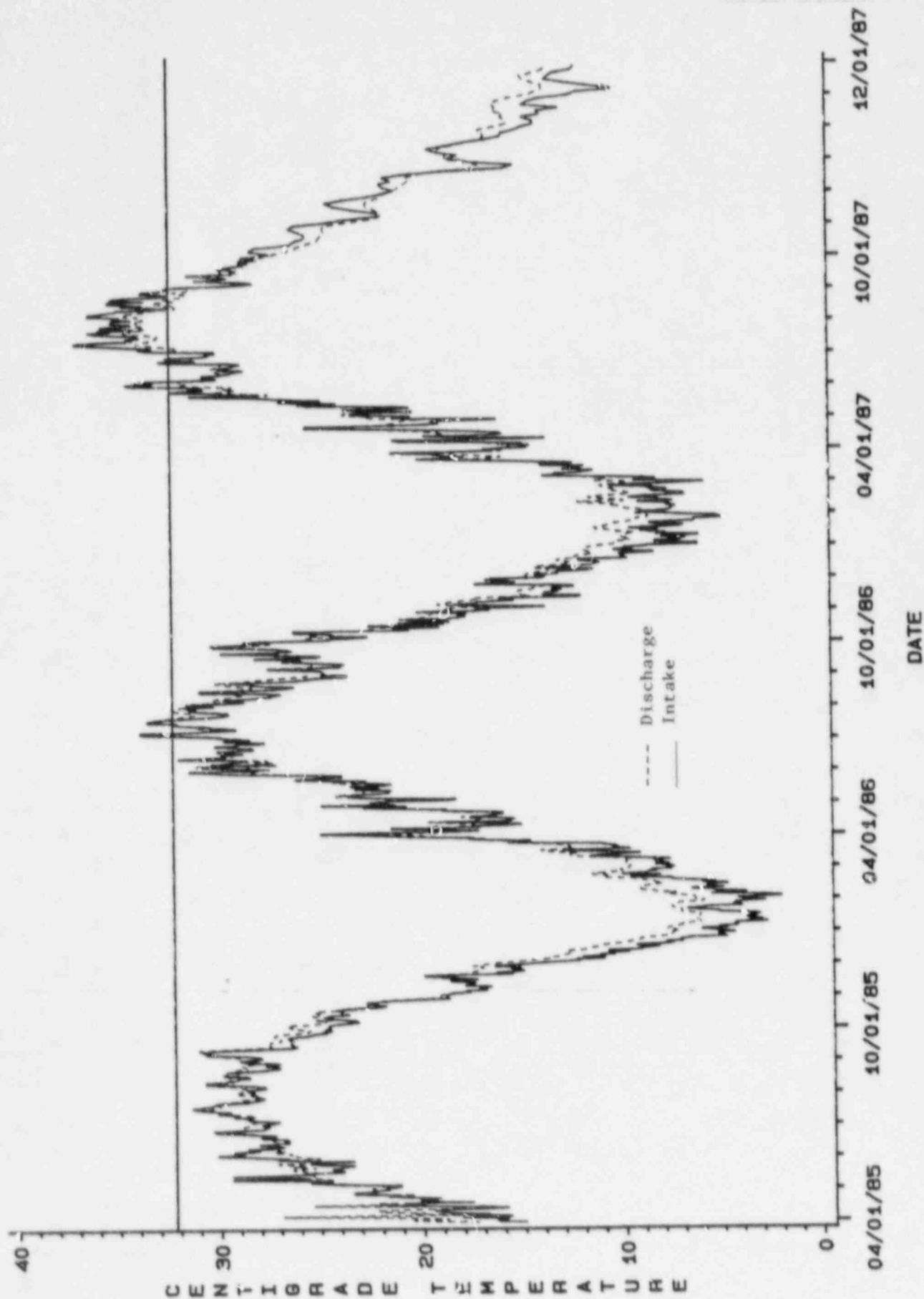


Figure 1-6. Catawba Nuclear Station daily intake and discharge temperatures. The horizontal line is the S.C. Water Quality Standard for temperature.

CNS RL DISCHARGE TEMP

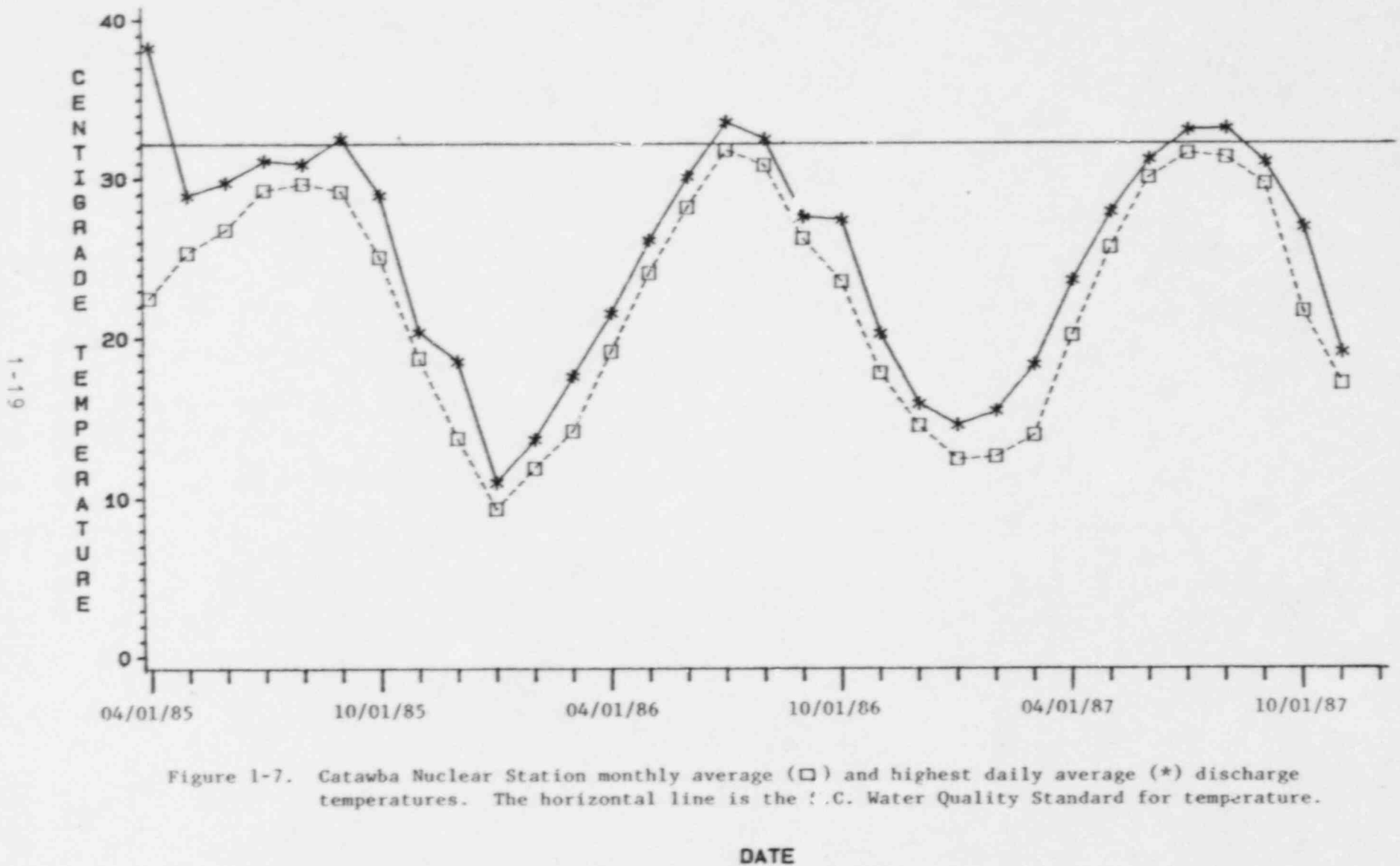


Figure 1-7. Catawba Nuclear Station monthly average (□) and highest daily average (*) discharge temperatures. The horizontal line is the WQS Water Quality Standard for temperature.

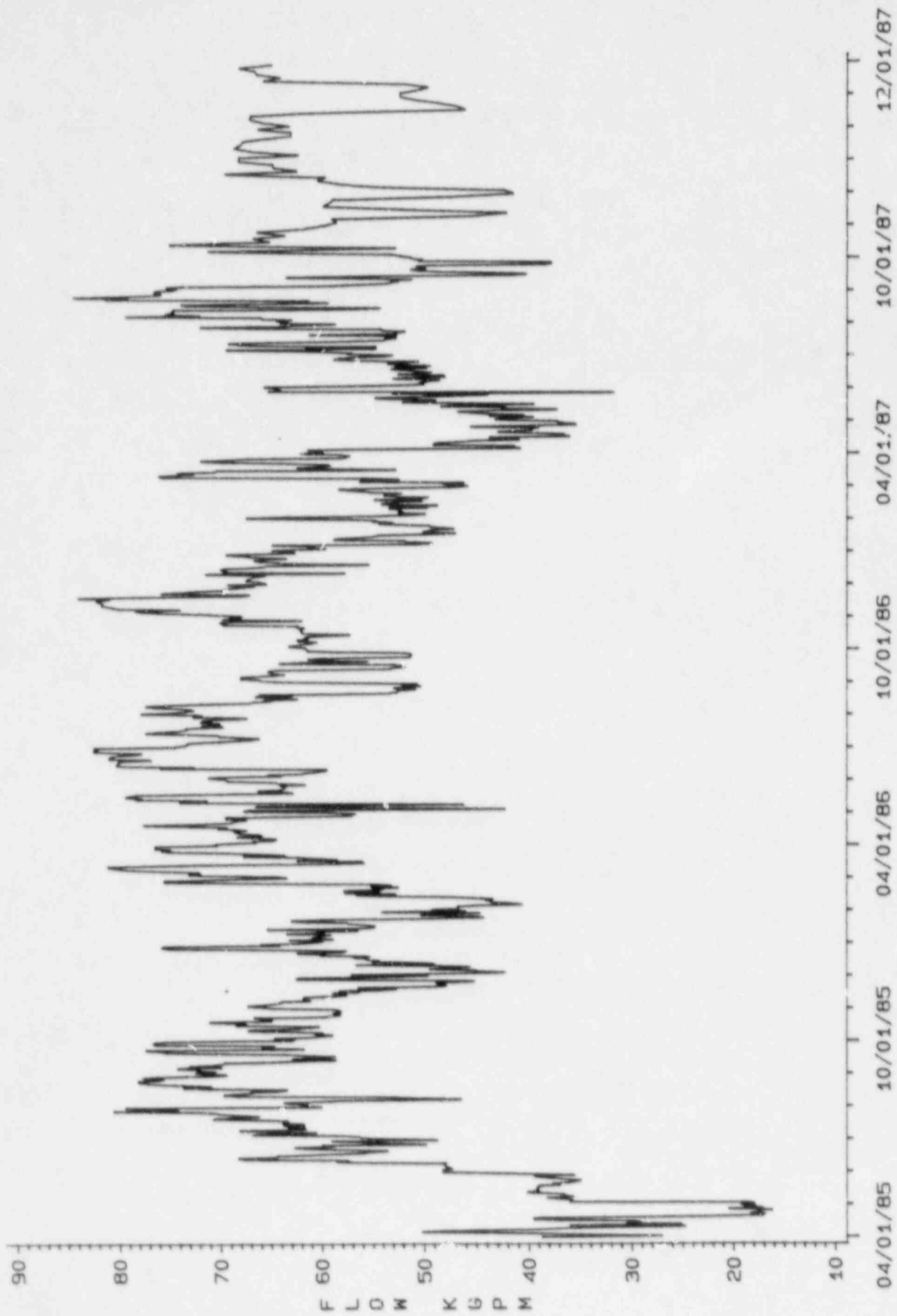


Figure 1-8. Daily flows in gallons (10³) per minute for the low pressure service water.

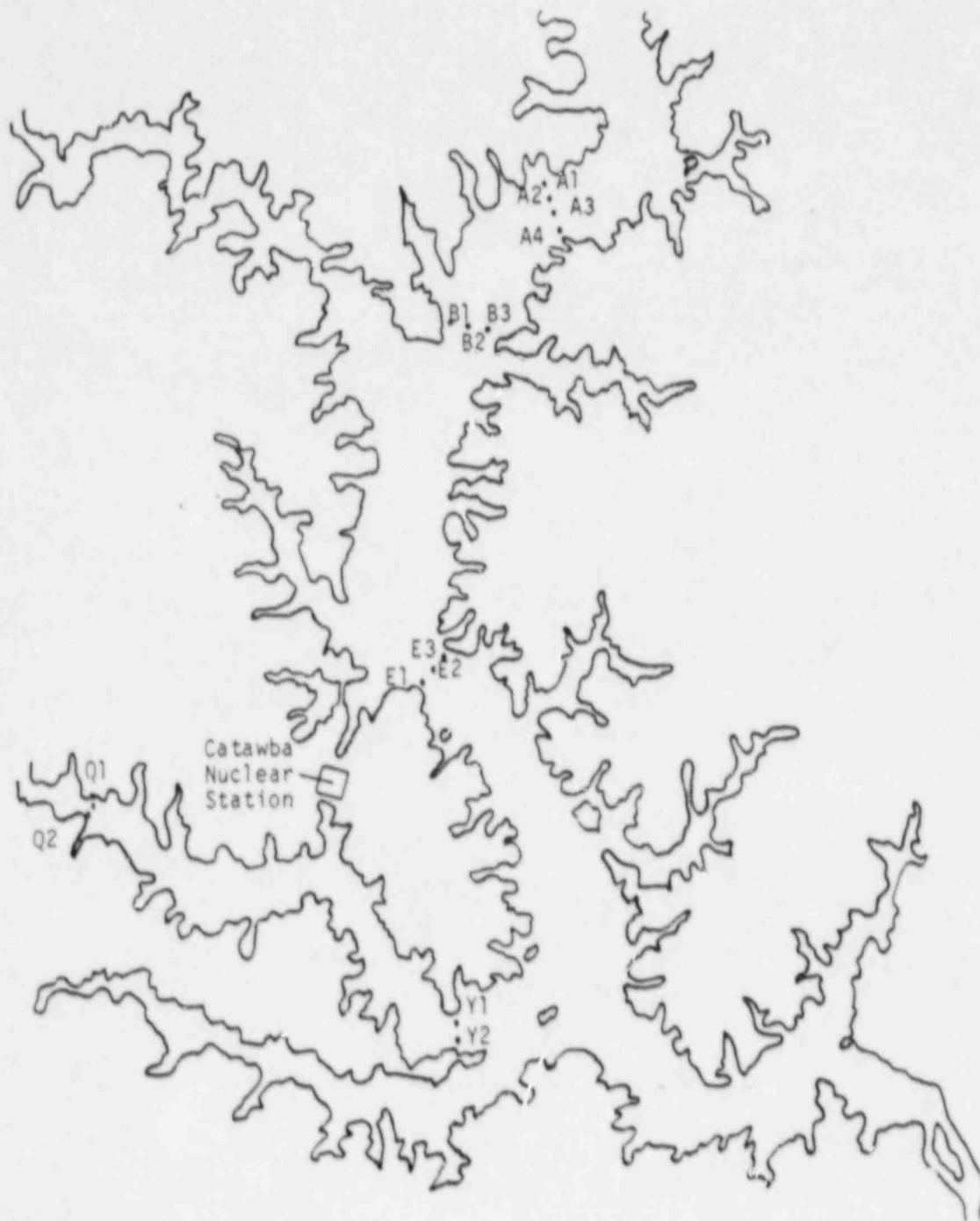


Figure 1-9. Sampling locations on Lake Wylie for the Catawba Nuclear Station thermal plume survey, February 10, 1987.

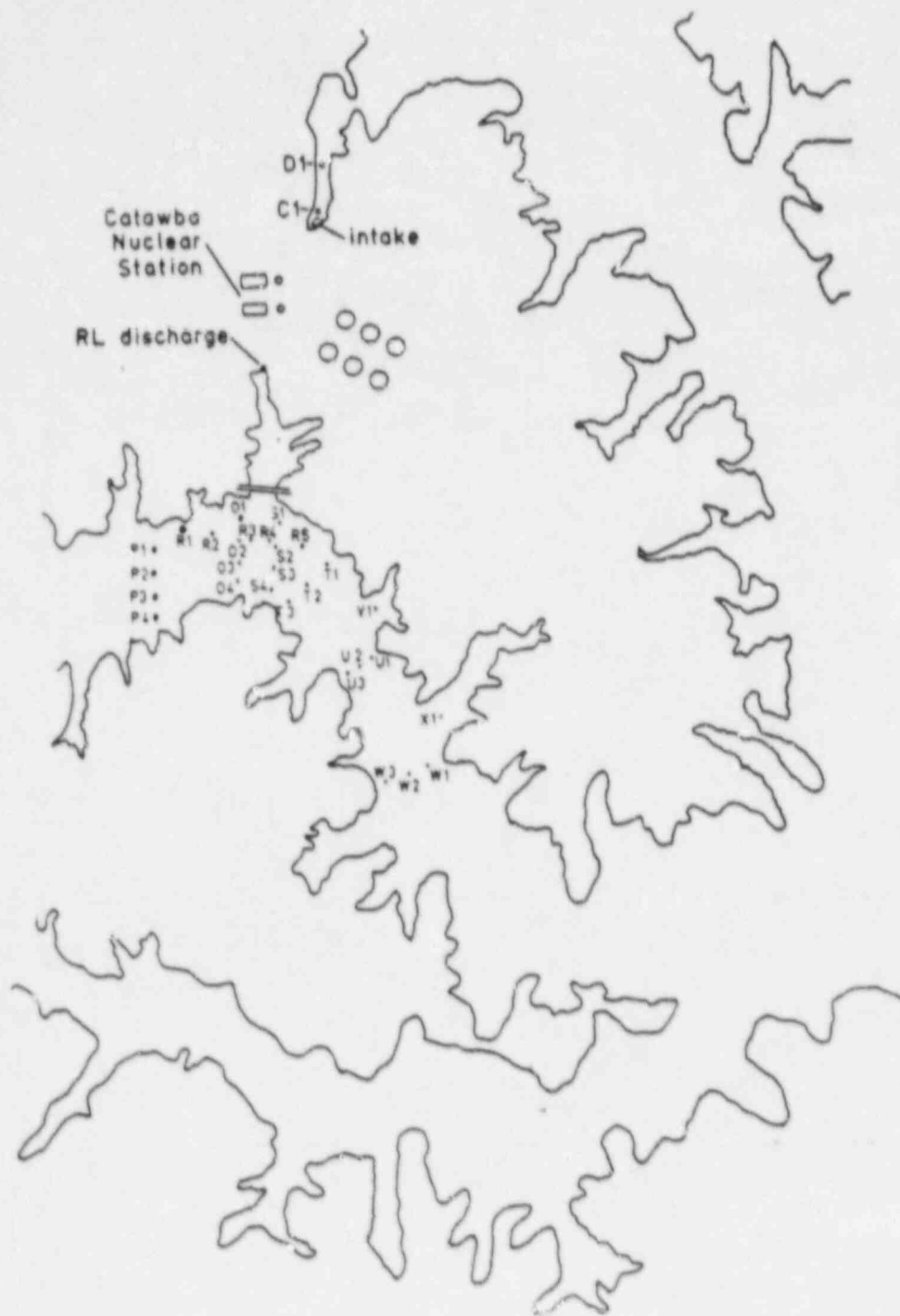


Figure 1-9. (page 2 of 3) Sampling locations on Lake Wylie for the Catawba Nuclear thermal plume survey, February 10, 1987.

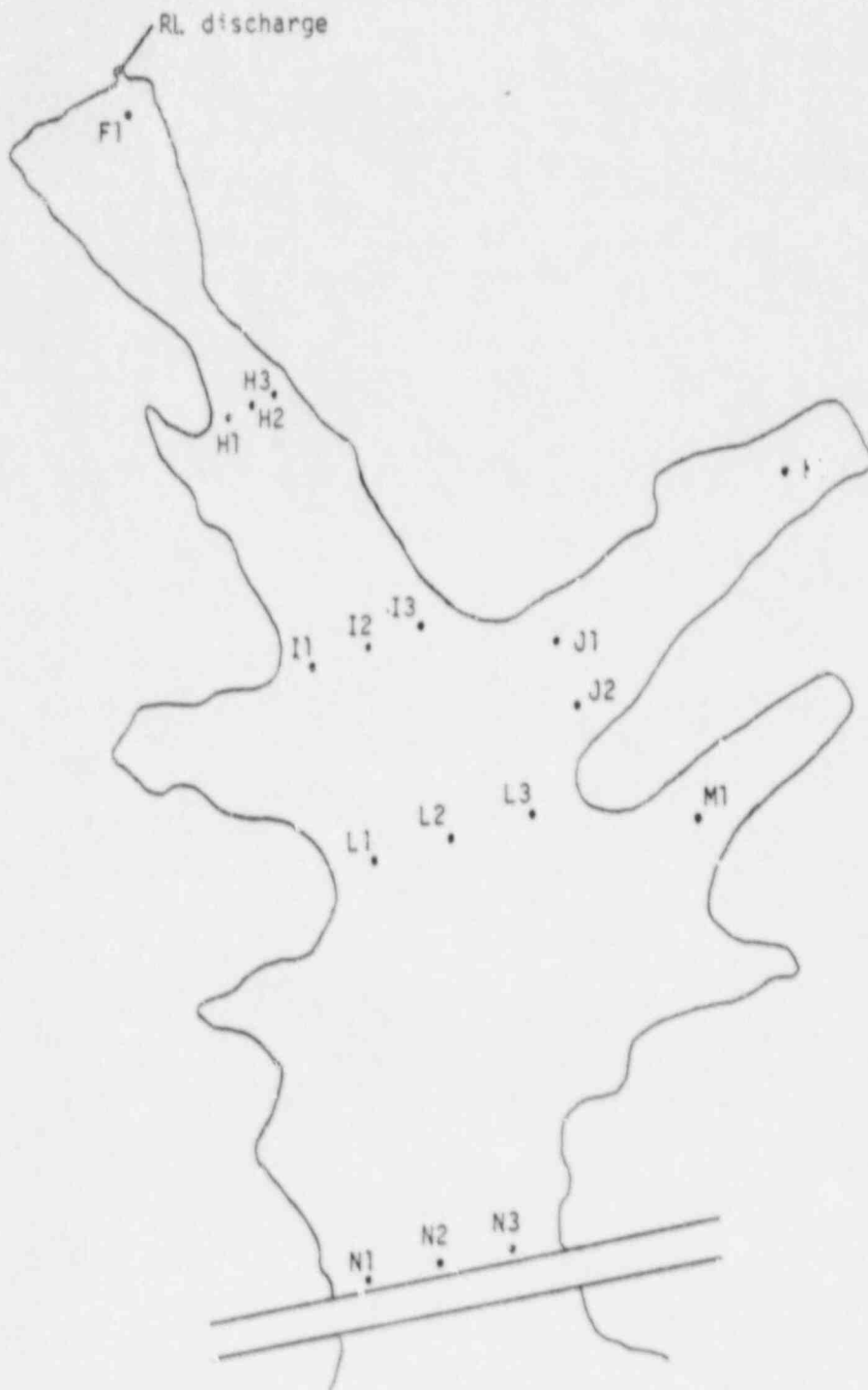


Figure 1-9. (page 3 of 3) Sampling locations on Lake Wylie for the Catawba Nuclear Station thermal plume survey, February 10, 1987.

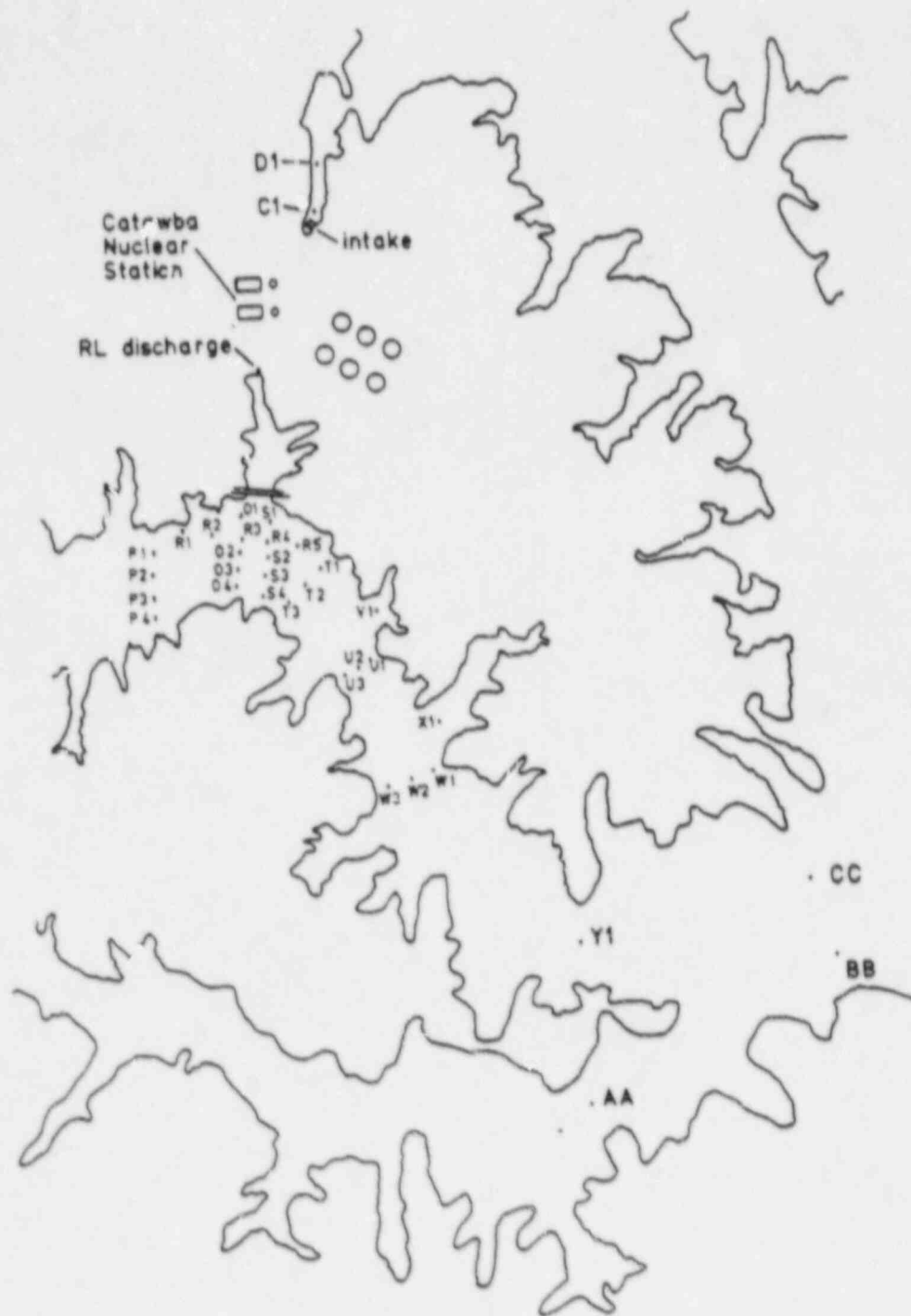


Figure 1-10. Sampling locations on Lake Wylie for the Catawba Nuclear Station thermal plume survey, August 6, 1987.

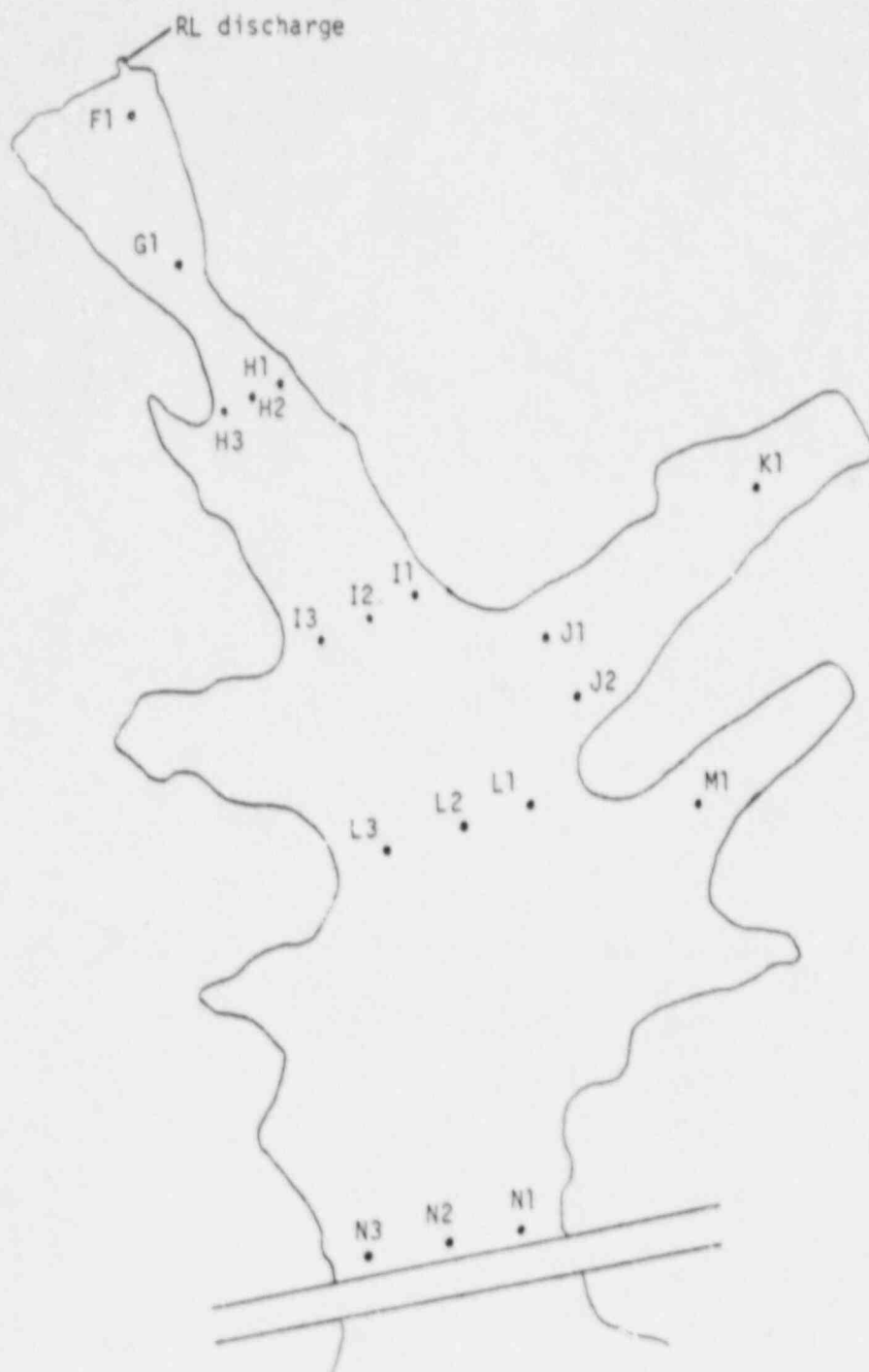


Figure 1-10. (page 2 of 2) Sampling locations on Lake Wylie for the Catawba Nuclear Station thermal plume survey, August 6, 1987.

Capacity factor: 100.2%
 ΔT : 6.4°C
Discharge temperature: 12.8°C
Discharge flow: 49,230 gpm



Figure 1-11. Surface isotherms ($^{\circ}\text{C}$ above intake temperature) of the thermal plume from the Catwba Nuclear Station discharge on February 10, 1987.

Capacity factor: 98.3%

ΔT : 3.1°C

Discharge temperature: 33.3°C

Discharge Flow: 64,900 gpm

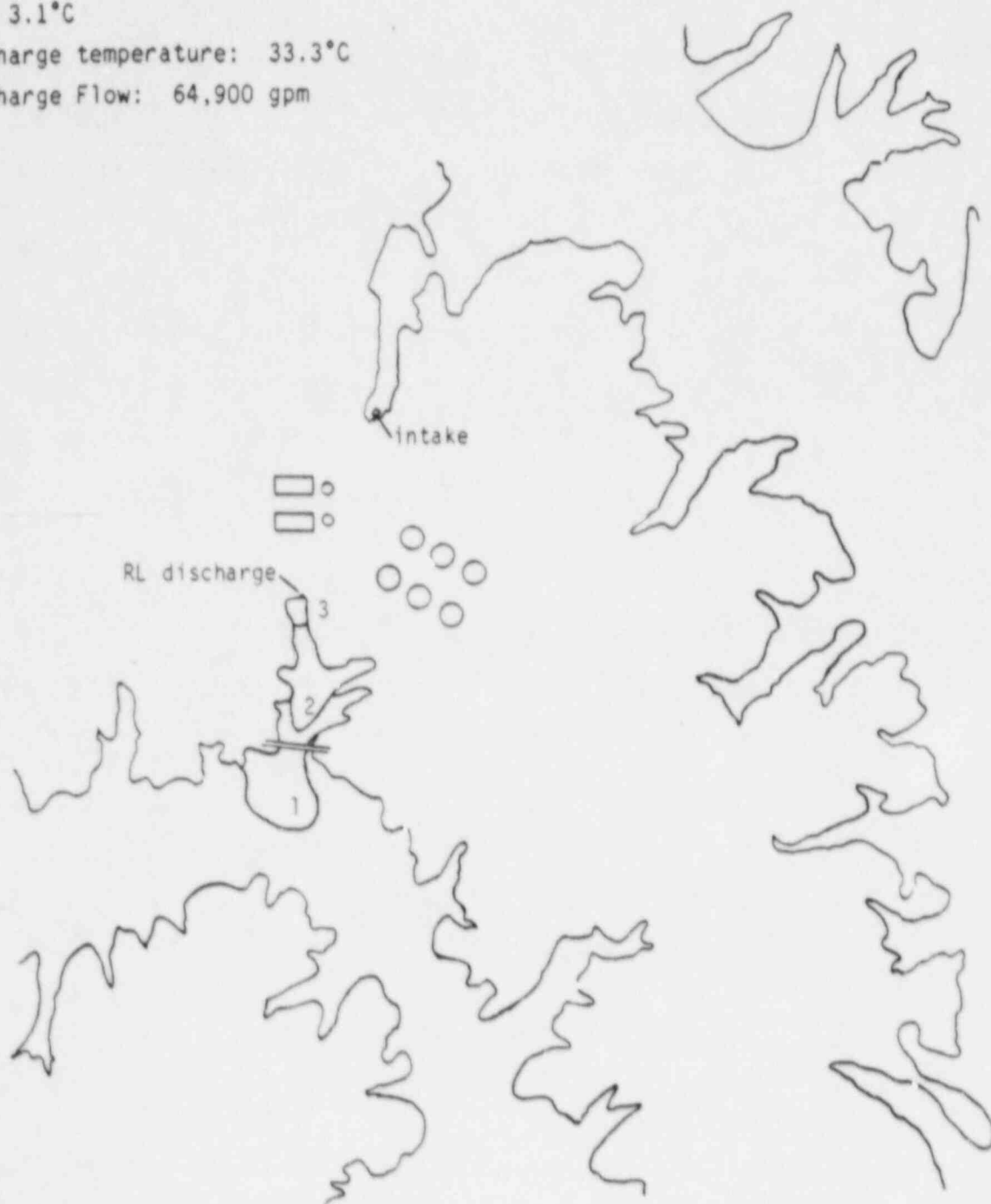


Figure 1-12. Surface isotherms ($^{\circ}\text{C}$ above adjusted intake temperature) of the thermal plume from the Catawba Nuclear Station discharge on August 6, 1987.

INTRODUCTION

The Catawba Nuclear Station Two-Unit Operational Study was initiated in December 1986, and was terminated in November 1987. An interim water quality monitoring program was conducted to provide continuity between the year-long preoperational studies. Data for the period 1974 through April 1984 have been reported by Duke Power Company (1977a, 1978, 1979, 1980, 1981, 1982, 1984a, 1985). The Preoperational Study for Catawba Nuclear Station incorporated the period May 1983 through April 1984 (Duke Power Company, 1985), and evaluated the chemical and physical characteristics of Lake Wylie. Appendices 2-1 through 2-13 include raw data for the two-unit operational period.

The objectives of this operational water quality study in the vicinity of the Catawba Nuclear Station were to:

- (1) document spatial and temporal variability in physicochemical data for the intake and discharge area during the two-unit operational period, and
- (2) compare the water quality data during the Two-Unit Operational Study with the preoperational (1983 through 1984) and baseline (1973 through 1974) periods.

METHODS AND MATERIALS

Sampling Locations and Frequency

During the Two-Unit Operational Study, in-situ profile data and water samples for laboratory analyses were collected monthly at three locations on Lake Wylie (Figure 1-2; Table 2-1). Water samples for trace element analyses were collected quarterly. Previous Lake Wylie water quality monitoring programs are indicated in Table 2-2.

In-Situ and Laboratory Methods

A Hydrolab water quality analyzer was used for all in-situ measurements taken at 0.3 m and at one-meter intervals to 1.0 m above the bottom. Calibration procedures recommended by the Hydrolab Corporation (1973) were performed during each sampling. During the operational study, a vertical Kemmerer sampler was used to collect samples for laboratory analyses. Samples were collected at 0.3 m and at five-meter intervals to 1.0 m above the bottom. All samples were stored in acid-washed linear-polyethylene bottles and preserved by placing on ice or by adding a preservative to extend the holding time until analyses and/or filtrations could be performed (Table 2-3).

The chemical and physical variables, analytical methods, references, and preservation techniques are included in Table 2-3. The detection limits are also documented in Table 2-3. The analytical methods are approved by the USEPA (1976, 1979, 1983), and all analyses were subjected to quality control procedures recommended by USEPA (1979). The laboratory is certified by the State of South Carolina, Department of Health and Environmental Control, to perform chemical and microbiological analyses for both water and waste water.

Data Analysis

Data collected during the Two-Unit Operational Period were compared to data collected during the preoperational periods. The preoperational monthly or seasonal maximum and minimum surface (0.3 m depth) values for selected variables, along with the corresponding Two-Unit operational surface values, were plotted to indicate temporal variation. Where applicable, comparisons were made to the baseline period (1973 - 1974), preoperational period (5/83-4/84), and the interim period (1/75-1/83).

Water quality data were subjected to descriptive statistics (maximum and minimum values) as outlined in SAS (1985). For statistical comparison, all analytical determinations recorded as less than the detection limit were set equal to the detection limit (Table 2-3). In discussing seasonal variability, the following designations were made: spring (May), summer (August), fall (November), winter (February).

RESULTS AND DISCUSSION

Precipitation

The total rainfall for 1986, 26.8 in (68 cm), was the lowest recorded during the period 1975 through 1987 (Table 2-4). In 1987, the total rainfall increased to 39.5 in (100 cm). For the period 1975 through 1987, the average total precipitation was 47.2 in (120 cm). The 1986 and 1987 total precipitation amounts were 57% and 84% of this average total precipitation, respectively. The highest rainfall during the two-unit operational period occurred during January, February and March, 13.7 in (35 cm), with the lowest rainfall during April, May and June, 6.4 in (16 cm).

Lake Wylie is influenced by surface runoff after heavy rainfall. Effects of this runoff may persist downstream to the Lake Wylie Dam (Industrial Bio-Test 1974).

Temperature and Dissolved Oxygen

During the Two-Unit Operational Study, the CNS intake and discharge areas exhibited similar thermal and dissolved oxygen regimes. Maximum temperatures occurred in August, and minimum temperatures occurred in January. The surface temperatures in the main lake, both above and below CNS, displayed similar seasonal variations (Figure 2-1).

Surface water temperature within the study area during the Two-Unit Operational Period ranged from 6.8°C (Location 210.0) during February to 30.5°C (Location 215.0) during August (Figure 2-1; Table 2-5). Spatial variation in surface temperatures was minimal, with the maximum surface temperature difference (3.0°C) during the Two-Unit operational period observed in February 1987 between Locations 210.0 and 215.0 (Figure 2-2). Temporal variations in temperature from December 1986 through November 1987 closely followed patterns established during the preoperational period. Temperature exceeded the baseline range only on one occasion, during September at all three locations.

Seasonal temperature profiles for Locations 210.0, 215.0, and 220.0 are presented in Figures 2-3, 2-4, and 2-5. These figures indicate that the thermal regimes for the Two-Unit operational period were similar to those observed during the preoperational period, with no major excursions beyond the maximum and minimum range determined during the baseline period.

The maximum surface to bottom temperature gradient (15.6°C) was observed during the spring. Maximum temperature gradients for Location 210.0 (15°C) and Location 220.0 (15.2°C) occurred during the spring period.

As with temperature, dissolved oxygen (DO) concentrations displayed distinct seasonal variations (Figure 2-2). Dissolved oxygen concentrations in the surface (0.3 m) water ranged from 6.6 mg·l⁻¹ (Location 220.0, August) to 11.0 mg·l⁻¹ (Location 215.0, June; Location 220.0, January) (Figure 2-6). The maximum surface water spatial DO variation (0.9 mg·l⁻¹) was observed in January between Locations 215.0 (10.1 mg·l⁻¹) and 220.0 (11.0 mg·l⁻¹). Dissolved oxygen concentrations in the water column typically began to decline in the spring, with bottom water DO concentrations usually less than 5.0 mg·l⁻¹ during

the spring and summer periods. During the summer, anoxic conditions existed in the bottom waters at Locations 210.0, 215.0, and 220.0. As indicated above, the spatial and temporal DO trends during the operational year were similar to those observed previously (Figure 2-6) (Duke Power Company 1977a, 1978, 1979, 1980, 1981, 1982, 1984a, 1985, 1987; Industrial Bio-Test 1974). Seasonal dissolved oxygen profiles for the Two-Unit Operational Period (Figures 2-7, 2-8, 2-9) were similar between Locations 210.0, 215.0, and 220.0. Dissolved oxygen profiles were similar to the preoperational period, and generally were within the range of the baseline period.

Alkalinity and pH

During the Two-Unit Operational Period, surface alkalinity values ranged from 9 to 19 $\text{mg-CaCO}_3 \cdot \text{l}^{-1}$ (Table 2-5). The pH values ranged from 6.8 (Location 215.0 in August) to 8.9 (Location 215.0 in May) (Figure 2-10; Table 2-5). The higher spring pH values in the surface waters may be attributed to photosynthetic activity. Previous studies on Lake Wylie reported similar alkalinity and pH values (Table 2-5). Both pH and alkalinity values were similar among all locations during the operational period (Figure 2-11). Profile data for alkalinity were similar from surface to bottom and between locations (Appendix 2-3, 2-4).

Specific Conductance and Turbidity

During the Two-Unit Operational Period, specific conductance of the surface waters ranged from 54 to 166 $\mu\text{mho} \cdot \text{cm}^{-1}$ among the three locations. (Figure 2-12; Table 2-5). Temporal fluctuations in specific conductance values were similar to those observed previously. Specific conductance values generally increased from January through December (Figure 2-12) during the study period.

This increase has been observed previously (Duke Power Company 1984b). Surface turbidity values during the Two-Unit Operational Period ranged from 2.0 to 131 NTU (Table 2-5). The maximum turbidity (131 NTU) observed during the Two-Unit Operational Period was lower than the maximum turbidity value (250 NTU) observed during the Interim Period (Table 2-5). During the Interim Period, substantially higher turbidity values were observed in June, October, and January in the surface waters at Locations 215.0, 210.0, and 220.0 (Figure 2-13). During the Two-Unit Operational Period, turbidity values were highest in March (Figure 2-14). The high March turbidity values may be attributed to precipitation events preceding the March sampling. Precipitation amounts of 0.85 inches (2.2 cm) were recorded over the two days prior to sampling (NOAA 1987). This precipitation resulted in runoff that was reflected in Lake Wylie water quality at the time of sampling. As with the other parameters discussed, both conductivity and turbidity values were similar among all locations during the operational period (Figure 2-14). Profile data for turbidity and specific conductance were similar from surface to bottom (Appendix 2-5, 2-6).

Inorganic Nitrogen

During the Two-Unit Operational Study, the mean surface nitrate plus nitrite concentration was $0.15 \text{ mg-N}\cdot\text{l}^{-1}$, with concentrations ranging from less than 0.020 to $0.49 \text{ mg-N}\cdot\text{l}^{-1}$ (Figure 2-15; Table 2-5). The trends recorded in the surface waters during the preoperational study have continued through the operational period (Table 2-5).

Maximum concentrations of nitrate plus nitrite generally occurred in winter and spring, and were associated with oxidizing conditions in the surface waters (Figure 2-15). During the summer, nitrate plus nitrite concentrations decreased from the high spring values, accompanied by decreased dissolved

oxygen concentrations and reducing conditions. The minimum nitrate plus nitrite concentrations occurred in late summer (Figure 2-15). Little spatial variability between locations in nitrate plus nitrite concentrations was observed in the study area (Figure 2-17). The Two-Unit Operational Period nitrate plus nitrite seasonal trends were similar to interim and preoperational periods (Figure 2-15) (Duke Power Company 1977a, 1978, 1979, 1980, 1981, 1982, 1984a, 1985, 1987; Industrial Bio-Test 1974). Profile data for nitrate plus nitrite were similar from surface to bottom, and between locations during the Two-Unit operational period (Appendix 2-7).

The mean surface ammonia concentration for the December 1986 through November 1987 period was $0.057 \text{ mg-N}\cdot\text{l}^{-1}$, with concentrations ranging from less than 0.020 to $0.180 \text{ mg-N}\cdot\text{l}^{-1}$ (Figure 2-16; Table 2-5). Higher surface ammonia concentrations were generally observed during the fall and winter (Figure 2-16). During the Two-Unit Operational Period, surface ammonia concentrations usually exhibited little spatial variability. Higher concentrations were observed, however, during September, October, and November at Location 210.0 (Figure 2-17). Profile data for ammonia nitrogen were similar from top to bottom, except for the summer months, during the Two-Unit operational period. During the summer months, near anoxic to anoxic conditions at the deeper depths created a reducing environment and a subsequent increase in ammonia nitrogen concentrations. This condition existed at all three locations (Appendix 2-8).

Phosphorus

During the Two-Unit Operational Period, surface orthophosphate concentrations ranged from less than $0.005 \text{ mg-P}\cdot\text{l}^{-1}$ (Location 210.0, 215.0, 220.0) to $0.13 \text{ mg-P}\cdot\text{l}^{-1}$ (Location 220.0). The mean surface concentration was

0.029 mg-P·l⁻¹. Spatial variations were generally similar between the Two-Unit Operational Period, and Preoperational and Interim periods (Figure 2-18). Excursions above the interim maximum values were observed at all three locations in December, February, March, and April (Figure 2-18). The mean surface orthophosphate concentrations of all locations indicated a slight positive trend since the baseline period (baseline \bar{X} = 0.013 mg-P·l⁻¹, Preoperational Period \bar{X} = 0.018 mg-P·l⁻¹, Two-Unit Operational Period \bar{X} = 0.029 mg-P·l⁻¹) (Table 2-5). Profile data for orthophosphate were similar between locations during the Two-Unit operational period; however, concentrations increased with depth during the summer months due to the reducing environment present during this time period (Appendix 2-9).

Total phosphorus surface concentrations during the Two-Unit Operational Period ranged from 0.030 mg-P·l⁻¹ (Locations 210.0 and 215.0) to 0.20 mg-P·l⁻¹ (Location 220.0). The mean surface concentration was 0.066 mg-P·l⁻¹. As with orthophosphate, mean surface concentrations of total phosphorus for all locations indicated a positive trend since the interim period (Interim Period \bar{X} = 0.038 mg-P·l⁻¹, Preoperational Period \bar{X} = 0.047 mg-P·l⁻¹, Two-Unit Operational Period \bar{X} = 0.066 mg-P·l⁻¹) (Table 2-5). Spatial variations were similar between the Two-Unit Operational Period, and Interim and Preoperational Periods. Some deviations at all locations were apparent during November, December, February, March, and April. These deviations exceeded the interim maximum values (Figure 2-19). Total phosphorus concentrations were similar between locations (Figure 2-20). Profile data for total phosphorus were similar to orthophosphate during the Two-Unit operational period (Appendix 2-10).

Comparison of nitrogen to phosphorus concentrations indicated that nitrogen was the dominant parameter (Table 2-5). Both the EPA (USEPA 1975) and the pre-operational studies (Industrial Bio-Test 1974) indicated that Lake Wylie was phosphorus-limited.

Silica

Little variability was observed during the Two-Unit Operational Period in silica concentrations measured on Lake Wylie (Figure 2-21). Soluble silica concentrations averaged $4.6 \text{ mg-Si}\cdot\text{l}^{-1}$ during the Baseline period, $4.4 \text{ mg-Si}\cdot\text{l}^{-1}$ during the Preoperational Period, and $4.3 \text{ mg-Si}\cdot\text{l}^{-1}$ during the Two-Unit Operational Period (Table 2-5). The primary source of silica is dissolution of minerals in the watershed; it is important in the Lake Wylie system as a nutrient for diatoms (Duke Power Company 1977a). Silica concentrations were similar among all locations during the operational period (Figure 2-21). Silica profile concentrations were similar between depths and locations during the Two-Unit operational period (Appendix 2-11).

Mineral Composition

Seasonal variability in mineral constituents was minor during the Two-Unit operational period (Table 2-5). This seasonal variability was similar to both the preoperational and baseline periods. The major ions in Lake Wylie during the two-unit operational period were sodium, bicarbonate, and chloride. This ionic predominance was reported previously (Duke Power Company 1987). Minor mineral constituents included aluminum, iron, and magnesium. The geochemistry of the Piedmont area produces the observed concentrations of sodium, bicarbonate, chloride, and silica (Duke Power Company 1977b). Profile data for mineral constituents were similar between depths and locations during the Two-Unit operational period (Appendix 2-12). Iron and manganese

concentrations in the bottom waters at Locations 210.0 and 220.0 during August were higher than concentrations at other depths, and were due in part to the reducing environment.

Trace Metals (Cadmium, Copper, Zinc, Lead)

Little variability was apparent in trace metals between locations and seasons during the Two-Unit operational period (Table 2-6). Surface concentrations of cadmium ranged from 0.10 to 0.20 $\mu\text{g}\cdot\text{l}^{-1}$. Many values were at or near the detection limit of 0.10 $\mu\text{g}\cdot\text{l}^{-1}$. Copper concentrations at the surface ranged from 2.4 to 11 $\mu\text{g}\cdot\text{l}^{-1}$. Lead concentrations at the surface ranged from 1.0 $\mu\text{g}\cdot\text{l}^{-1}$ to 2.6 $\mu\text{g}\cdot\text{l}^{-1}$. Surface concentrations for zinc ranged from 2.0 $\mu\text{g}\cdot\text{l}^{-1}$ to 33 $\mu\text{g}\cdot\text{l}^{-1}$. The concentrations and temporal and spatial variability were similar to previous years (Duke Power Company 1977a, 1978, 1979, 1980, 1981, 1982, 1984a, 1985, 1987). Profile data were similar for trace metals between depths and locations for the Two-Unit operational period (Appendix 2-13).

SUMMARY

A comparison of physical and chemical parameters (temperature, DO, pH, alkalinity, conductivity, turbidity, nitrate + nitrite nitrogen, ammonia nitrogen, orthophosphate, total phosphorus, and silica) indicated similar concentrations among Locations 210.0, 215.0, and 220.0, and minimal thermal impact from the CNS discharge (Chapter 1). As a result, the Catawba Nuclear Station has had minimal impact on the physicochemical characteristics of Lake Wylie.

The limnological characteristics of Lake Wylie reflected the lithology of the basin. Water temperatures throughout Lake Wylie demonstrated typical seasonal variations. Maximum temperatures occurred in August, with minimum temperatures in February. Isothermal conditions generally existed from fall through winter, with thermal gradients apparent by spring.

Dissolved oxygen concentrations reflected the inverse relationship between oxygen solubility and water temperature. Dissolved oxygen concentrations in the water column typically began to decline in spring, with dissolved oxygen concentrations in the bottom water less than $5.0 \text{ mg}\cdot\text{l}^{-1}$ during the summer period. Dissolved oxygen characteristics, both surface and profile, followed trends established during the Interim and Preoperational Periods.

Maximum concentrations of nitrate plus nitrite usually occurred in winter and spring, with minimum concentrations observed in late summer. Little spatial variability of ammonia concentrations was observed. Laboratory bioassays and comparison of nitrogen concentrations to phosphorus concentrations have indicated that Lake Wylie is phosphorus limited. Total phosphorus concentrations exhibited seasonal trends similar to turbidity, with highest concentrations observed in the winter and spring. A slight positive trend in total phosphorus and ^{ortho phosphate}~~orthophosphate~~ concentrations has occurred at all three monitoring locations since the Interim Period. Sodium, chloride, and bicarbonate were the major ions in Lake Wylie.

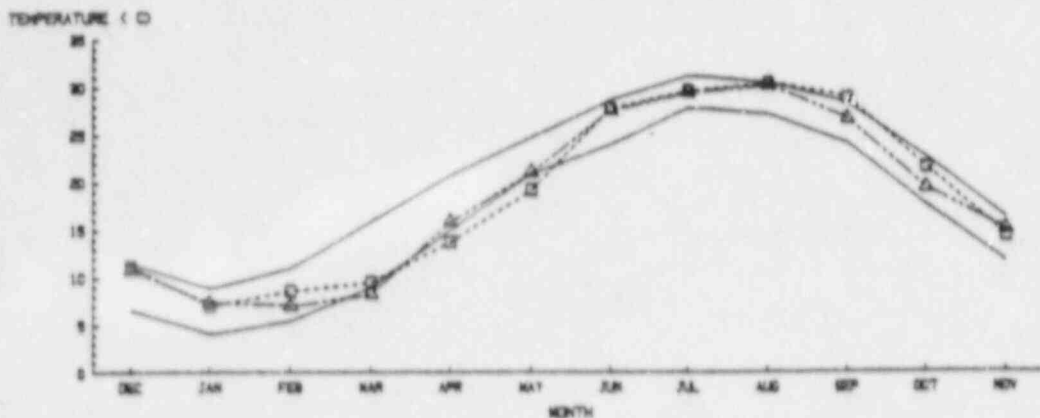
Cadmium, copper, lead, and zinc were monitored to assess trends in the trace metal concentrations in Lake Wylie. Little temporal or spatial variability was observed in trace metal concentrations, with concentrations generally at the analytical detection limit.

LITERATURE CITED

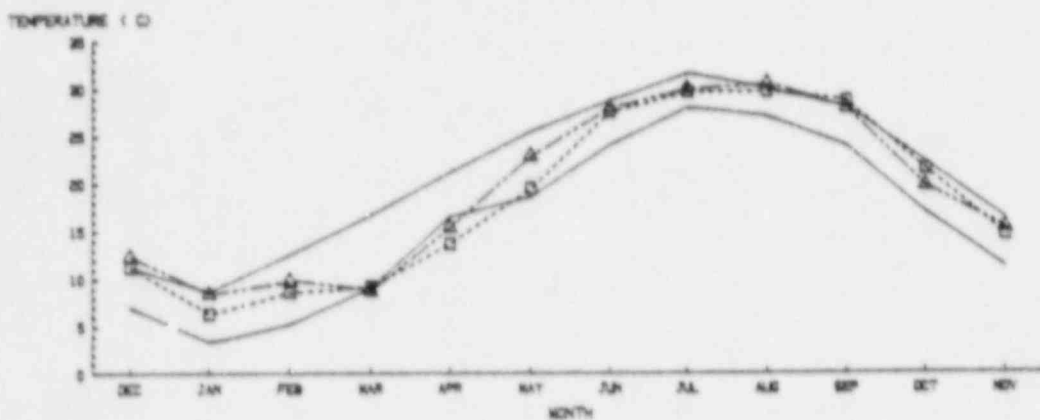
- American Public Health Associate (APHA), American Water Works Association (AWWA), and Water Pollution Control Federation (WPCF). Standard methods for the examination of water and wastewater. 14th ed. American Public Health Assn. NY 1193 p. 1976.
- Currie, L. A. Limits for qualitative detection and quantitative detection. Anal. Chem. 40 (3): pages 586-693. 1968.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1974-1977. Duke Power Company. Charlotte, NC. 1977a.
- Duke Power Company, Chemical characteristics of piedmont lakes. Workshop in Aquatic Ecology in the Southeast. October 14, 1977. Duke Power Company. Charlotte, NC. np. (not published). 1977b.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1977 - June 1978. Duke Power Company. Charlotte, NC. 1978.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1978 - June 1979. Duke Power Company. Charlotte, NC. 1979.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1979 - June 1980. Duke Power Company, Charlotte, NC. 1980.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1980 - June 1981. Duke Power Company, Charlotte, NC. 1981.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1981 - June 1982. Duke Power Company, Charlotte, NC. 1982.
- Duke Power Company, Catawba Nuclear Station interim monitoring study. July 1982 - June 1983. Duke Power Company, Charlotte, NC. 1984a.
- Duke Power Company, Catawba Nuclear Station 316(a) Demonstration preoperational report. Duke Power Company, Charlotte, NC. 1985.
- Duke Power Company, Evaluation of historical data on 12 reservoirs in the piedmont carolinas with respect to acid rain considerations. Duke Power Company. Charlotte, NC. 1984b.
- Hem, J. D. Study and interpretation of the chemical characteristics of natural water. Geological Survey Water-Supply Paper 1473. U.S. Government Printing Office, Washington, DC. 363 p. 1970.
- Hydrolab Corporation. Instructions for operating the Hydrolab Surveyor Model 6D in-situ water quality analyzer. Austin, TX. 146 p. 1973.

- Industrial Bio-Test Laboratories, Inc. A baseline/predictive environmental investigation of Lake Wylie. Catawba Nuclear Station and Plant Allen. September 1973 - August 1974. Rept. to Duke Power Company 2 Vols. 743 p. 1974.
- National Oceanic and Atmospheric Administration, Climatological Data, Asheville, NC, 1987.
- SAS Institute, Inc., Cary, NC. A user's guide to SAS 79. Sparks Press. Raleigh, NC. 494 p. 1985.
- United State Environmental Protection Agency. Handbook for analytical quality control in water and wastewater laboratories. Technology Transfer. Cincinnati, OH. 1972.
- United State Environmental Protection Agency. National eutrophication survey. Corvallis, OR. Working Paper NO. 441. 1975.
- United State Environmental Protection Agency. Methods for chemical analysis for water and wastes. Environmental Monitoring and Support Laboratory. Cincinnati, OH. 1976.
- United State Environmental Protection Agency. Methods for chemical analysis of water and wastes. Environmental Monitoring and Support Laboratory. Cincinnati, OH. 1979.
- United State Environmental Protection Agency. Methods for chemical analysis of water and wastes. Environmental Monitoring and Support Laboratory, Office of Research and Development. Cincinnati, OH. 1983.

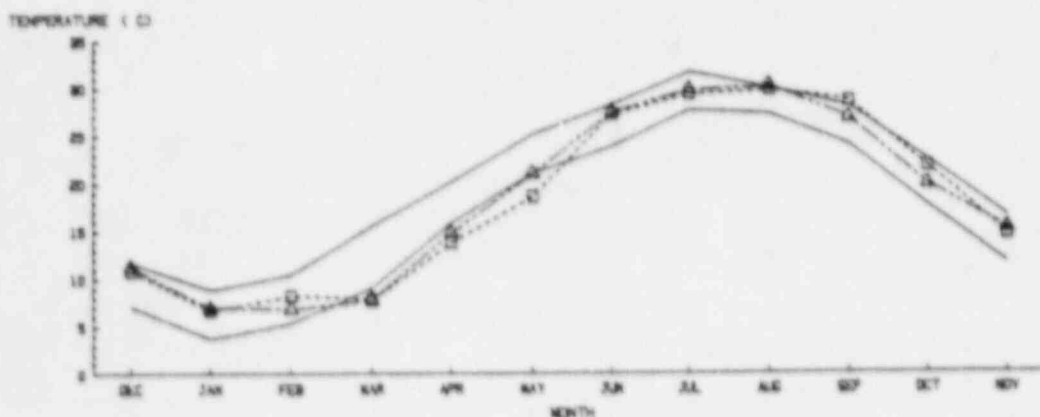
Location 220.0



Location 215.0



Location 210.0



INTERIM (1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

TWO-UNIT OPERATION
(12/86 - 11/87)

Figure 2-1. Monthly comparisons of surface (0.3m) temperature values at locations 210.0, 215.0 and 220.0.

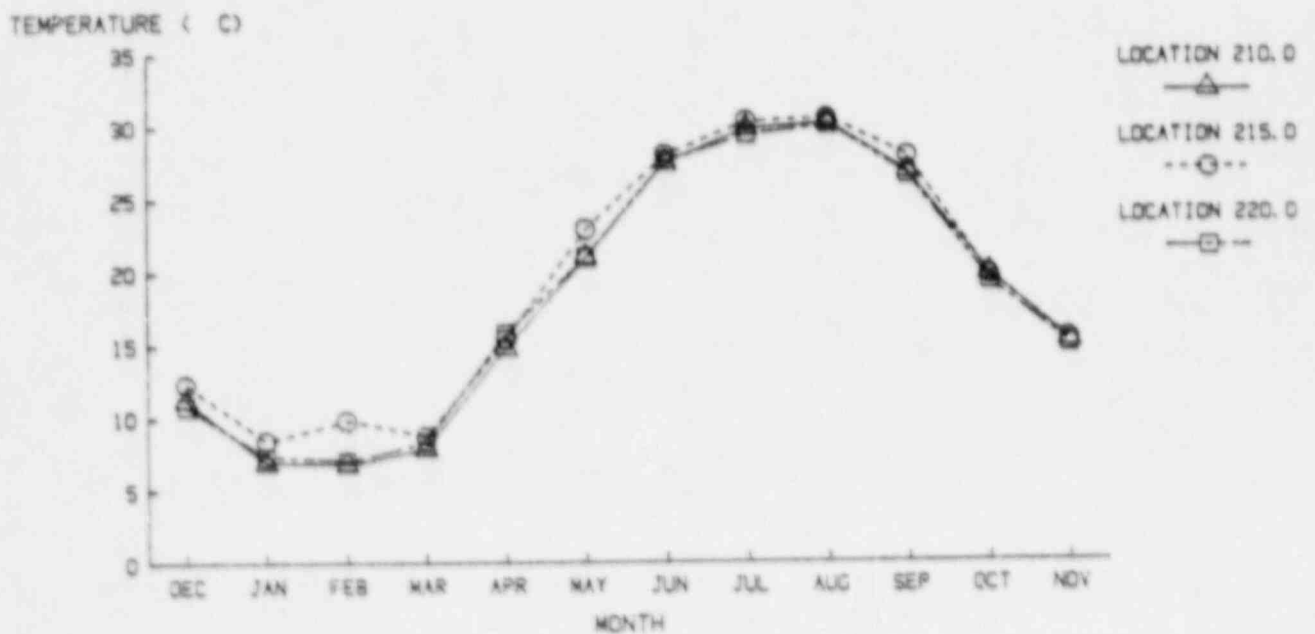
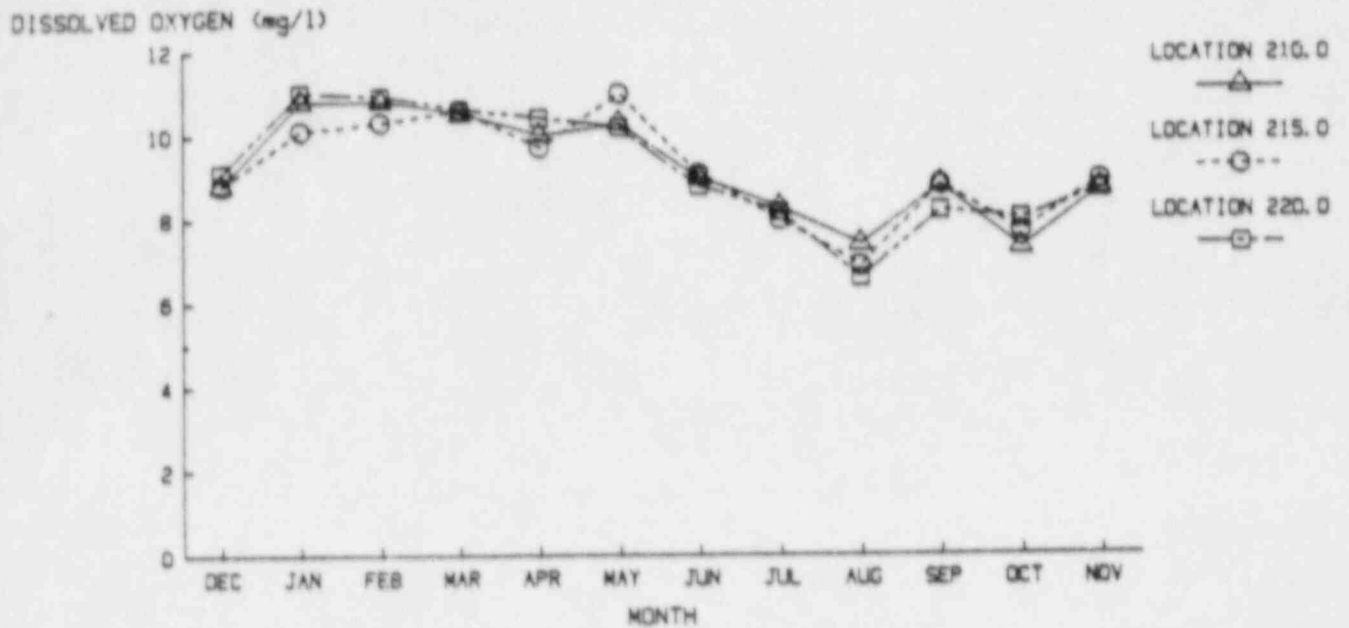
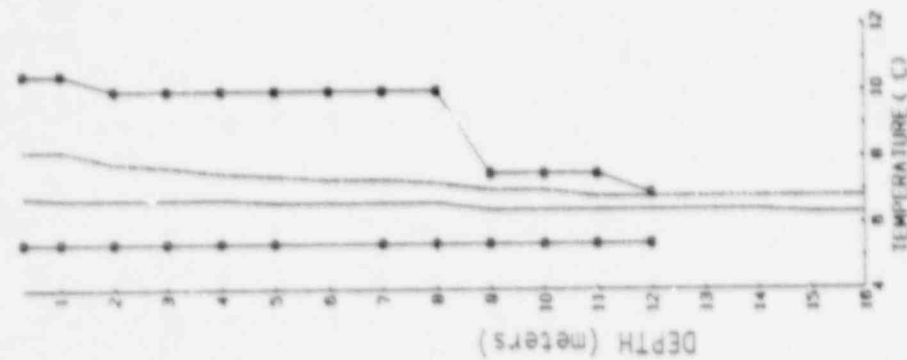


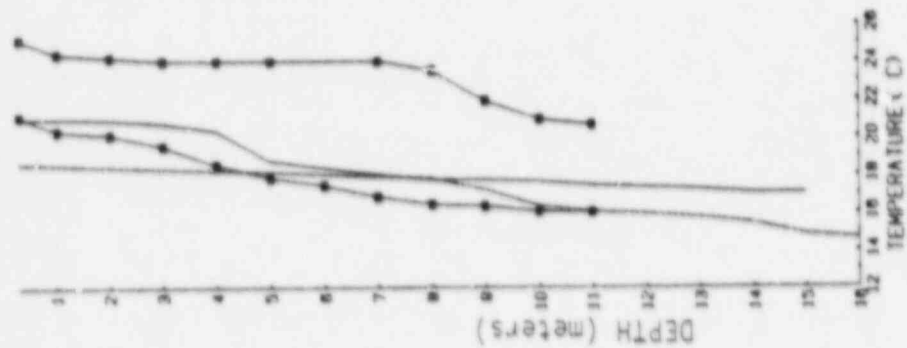
Figure 2-2. Monthly comparison of surface temperatures and dissolved oxygen between locations during the Two-Unit operational period (Dec 1986-Nov 1987).

LOCATION 210.0

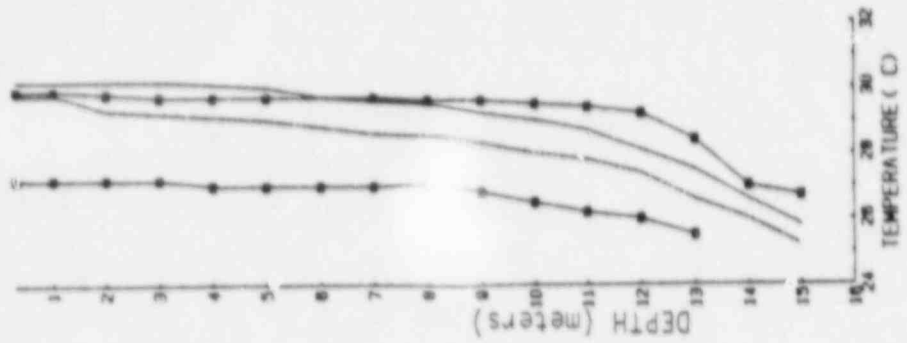
WINTER
(February)



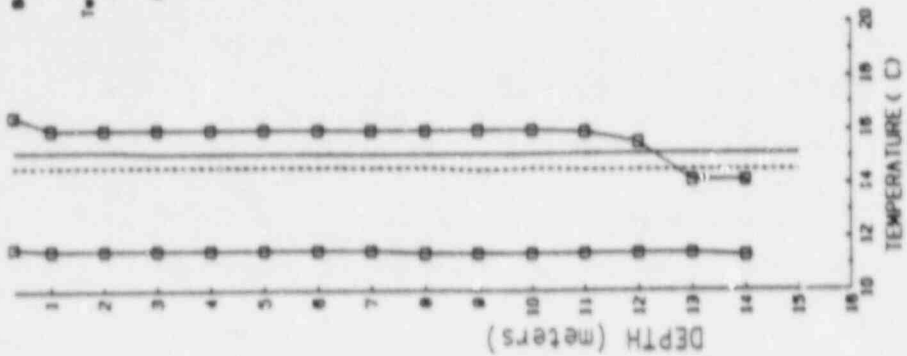
SPRING
(May)



SUMMER
(August)



FALL
(November)



Baseline Max Min
Prior to 5/83
—○—
Two-Unit Operation
11/2/86 - 11/87
—
Preparational
3/83 - 4/84
- - - - -

Figure 2-3. Seasonal temperature profiles from four representative months for Location 210.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

LOCATION 215.0

WINTER
(February)

SPRING
(MAY)

SUMMER
(August)

FALL
(November)

2-17

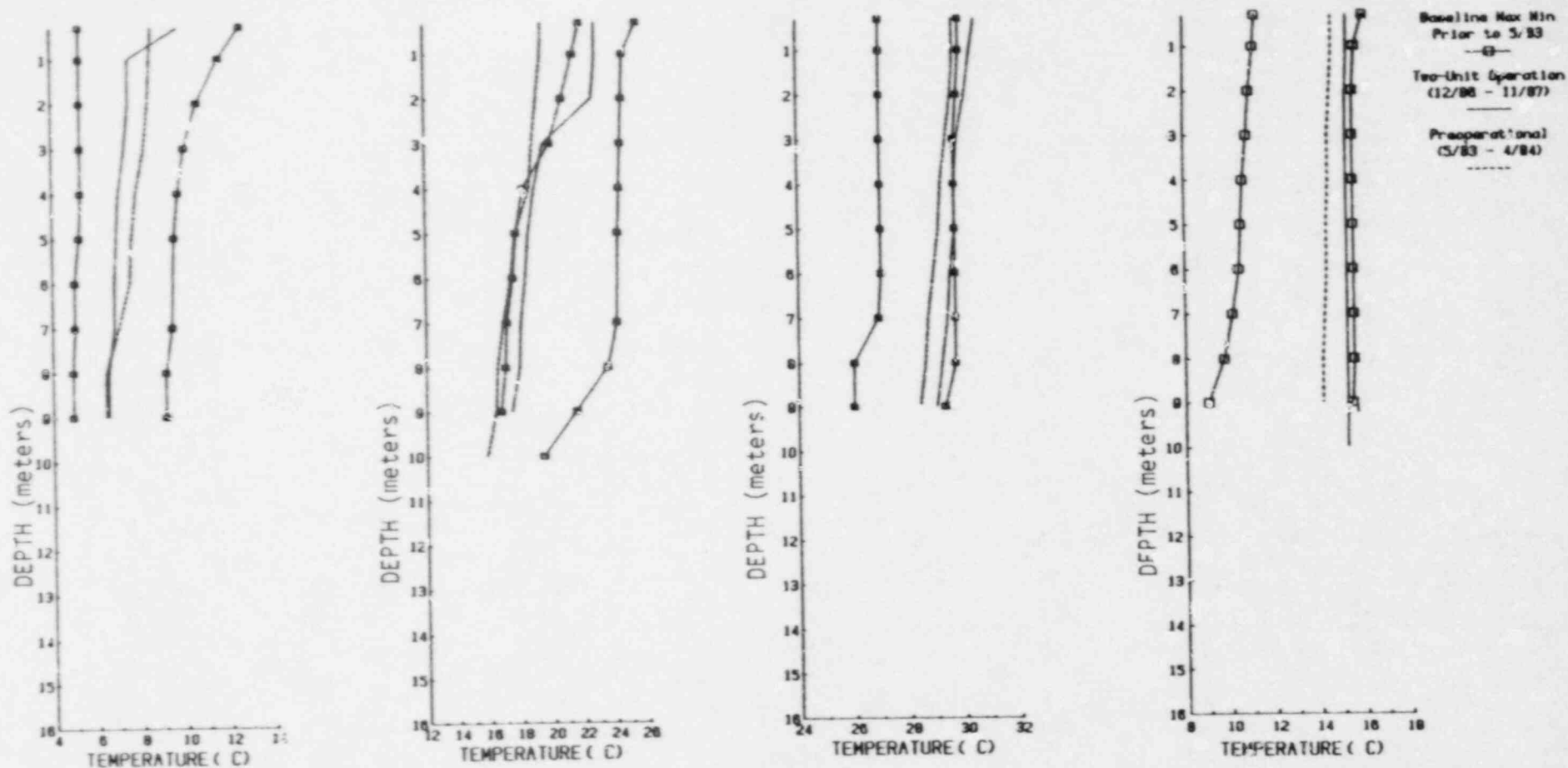


Figure 2-4. Seasonal temperature profiles (from four representative months) for Location 215.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

LOCATION 220.0

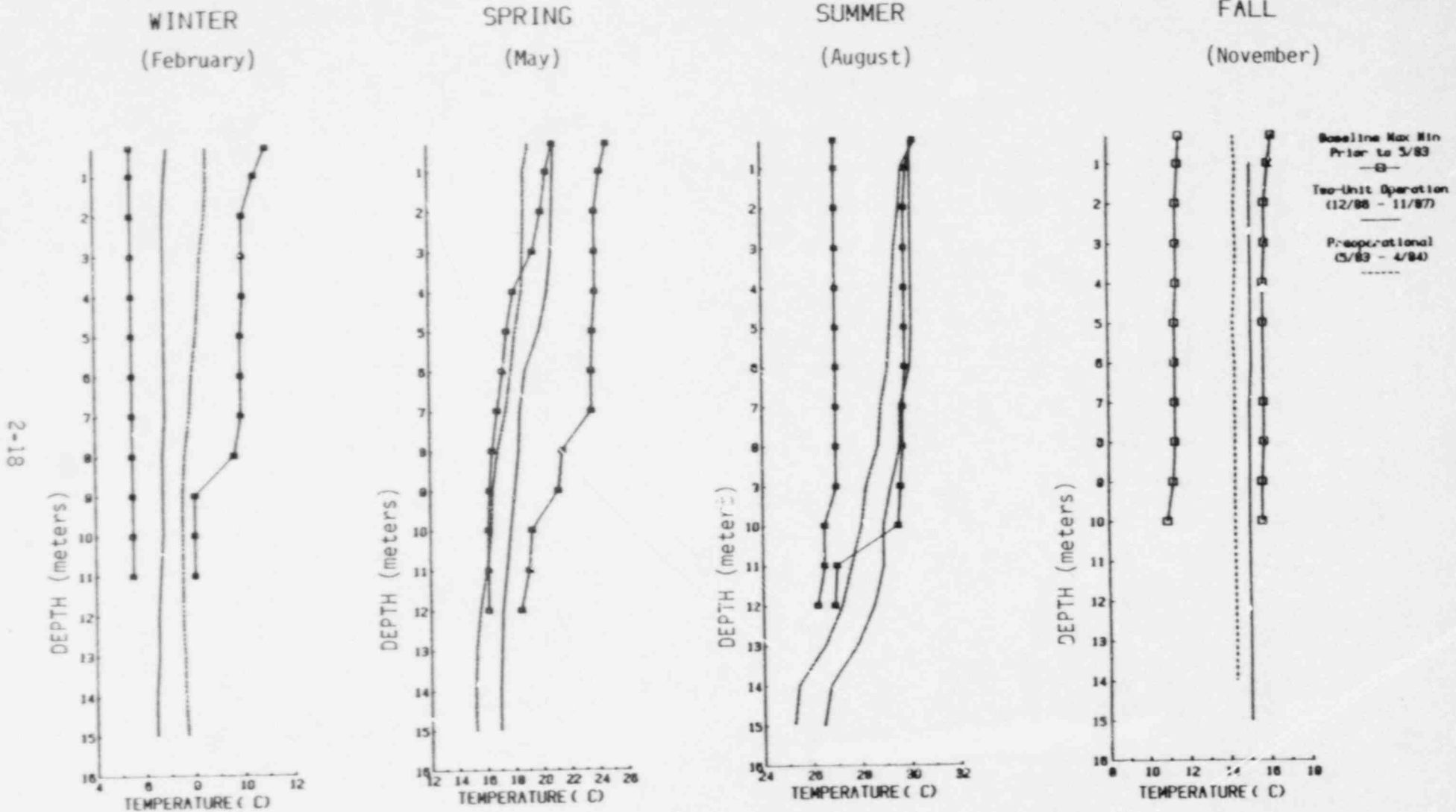
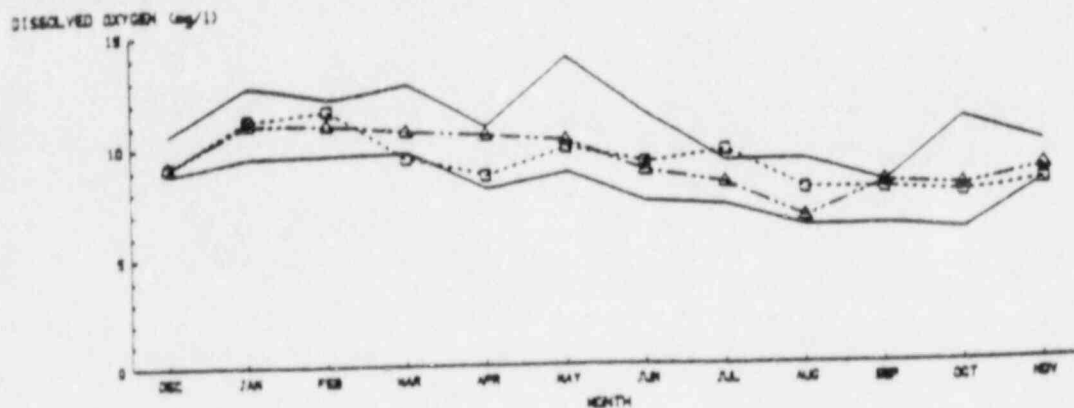
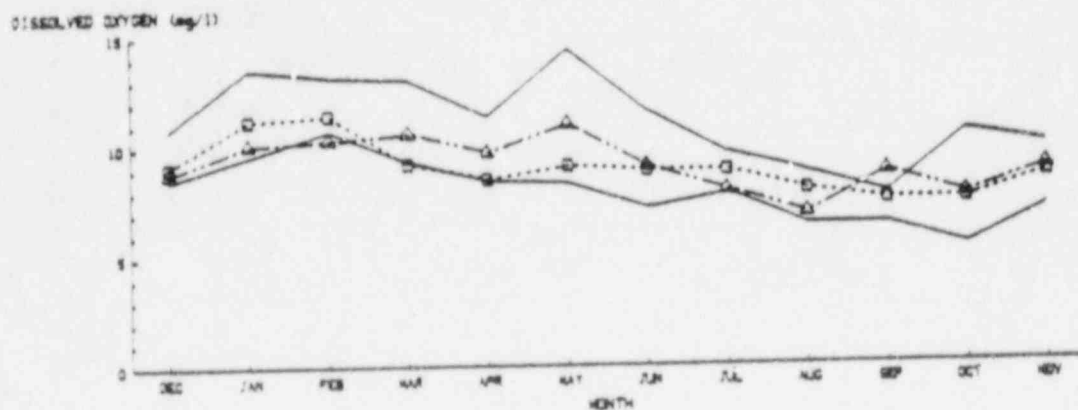


Figure 2-5. Seasonal temperature profiles (from four representative months) for Location 220.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

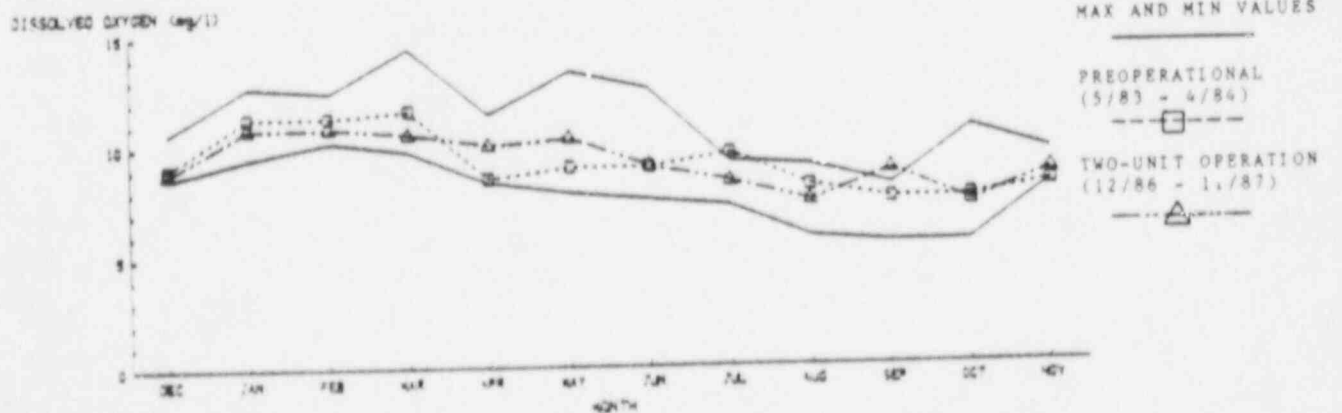
Location 220.0



Location 215.0



Location 210.0



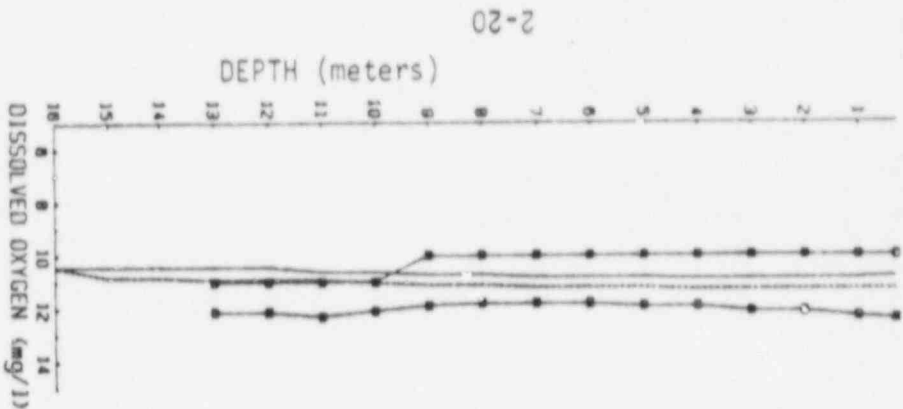
INTERIM(1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

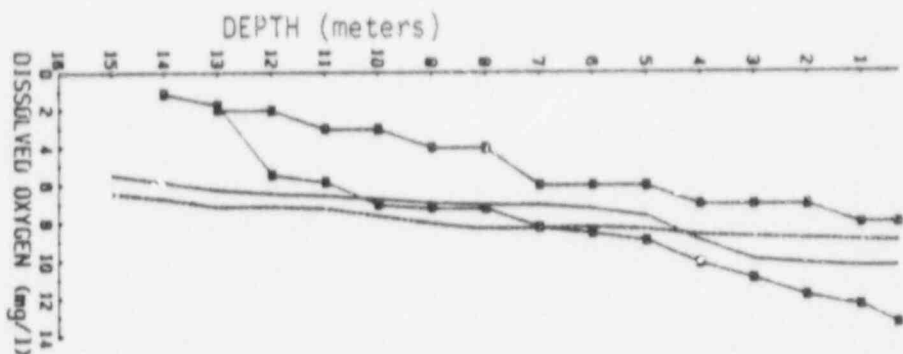
TWO-UNIT OPERATION
(12/86 - 1/87)

Figure 2-6. Monthly comparisons of surface (0.3m) dissolved oxygen values at locations 210.0, 215.0, and 220.0.

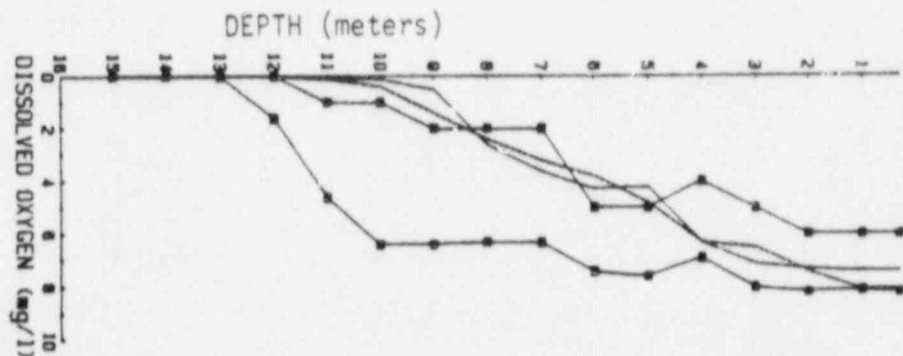
WINTER
(February)



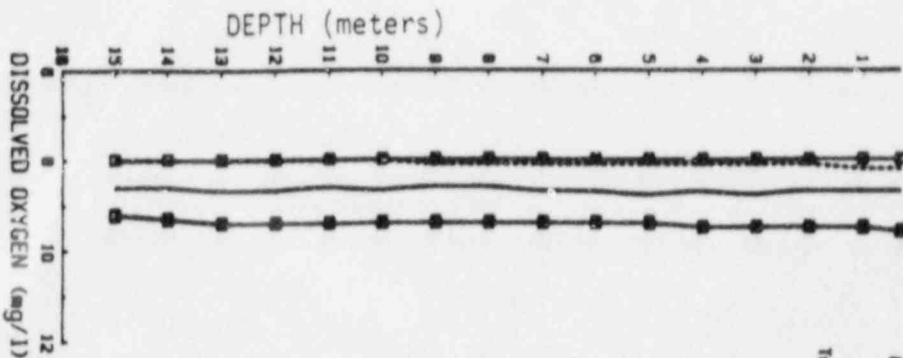
SPRING
(May)



SUMMER
(August)



FALL
(November)



Baseline Kox Min
Pre- to 3/83
Tee-Unit Operation
(12/80 - 11/87)
Pre-operational
(3/83 - 4/84)

Figure 2-7. Seasonal dissolved oxygen profiles (from four representative months) for Location 210.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

LOCATION 215.0

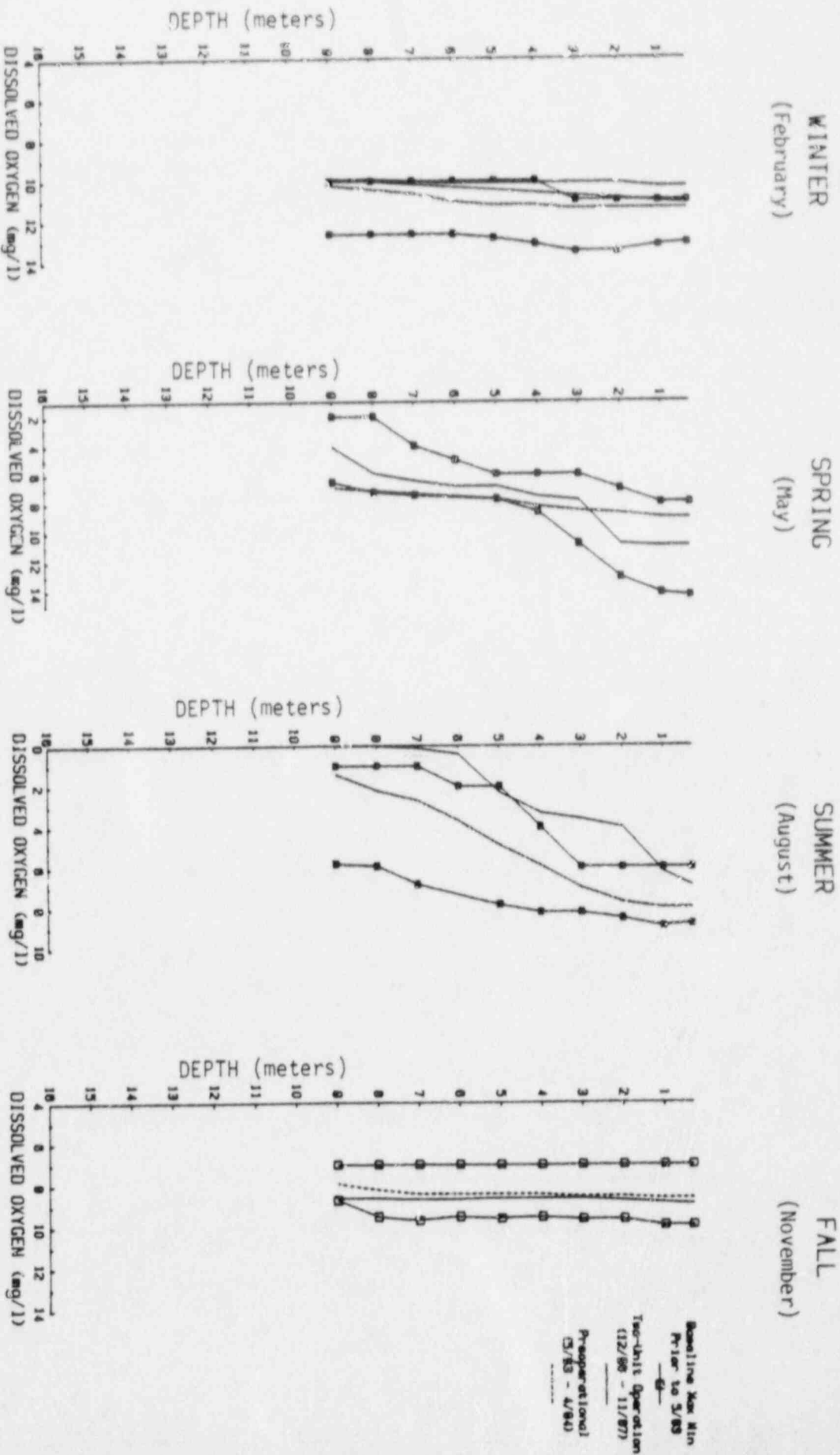


Figure 2-8. Seasonal dissolved oxygen profiles (from four representative months) for Location 215.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

LOCATION 220.0

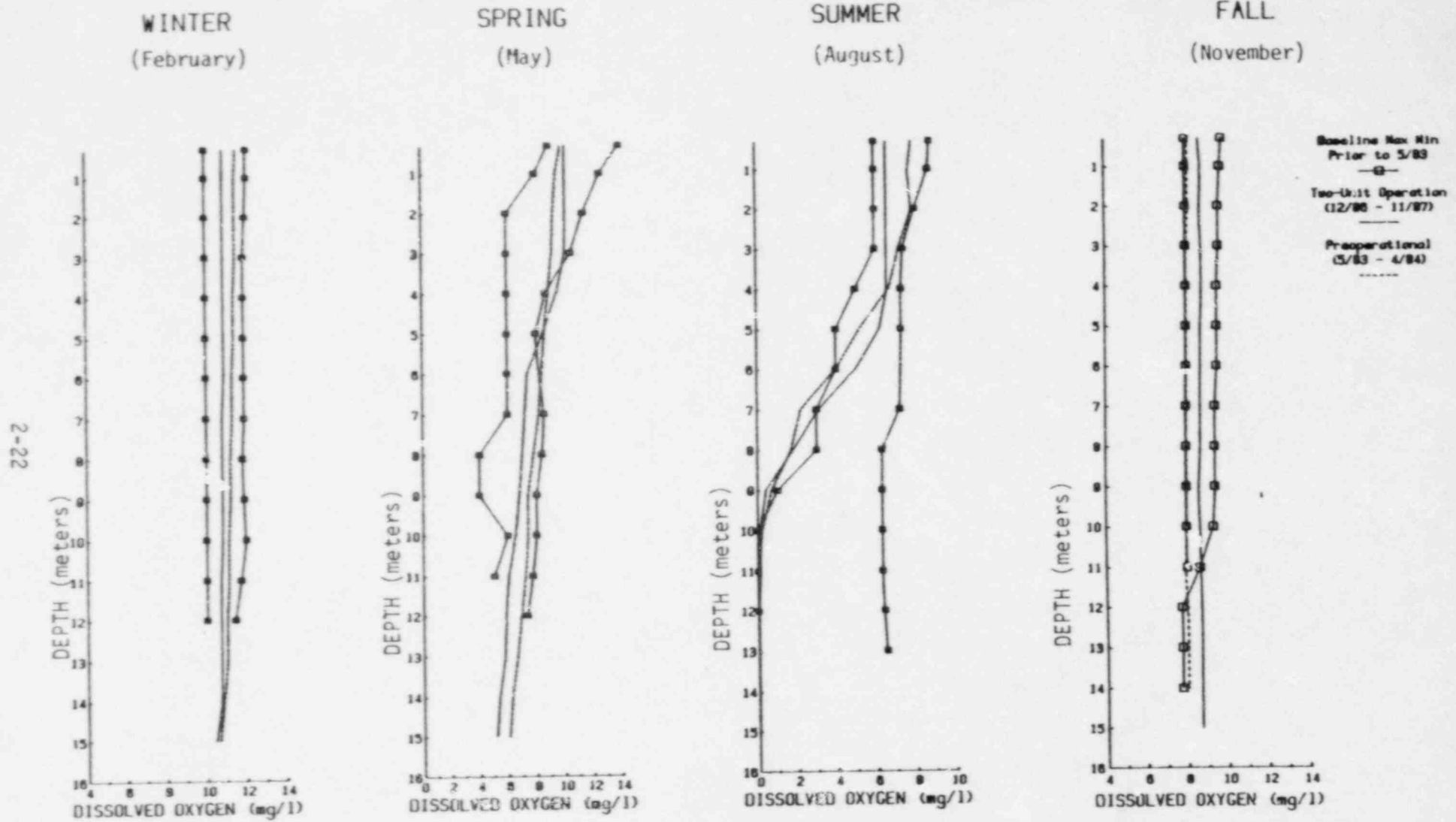


Figure 2-9. Seasonal dissolved oxygen profiles (from four representative months) for Location 220.0 for the Two-Unit operational period (Dec 1986 - Nov 1987).

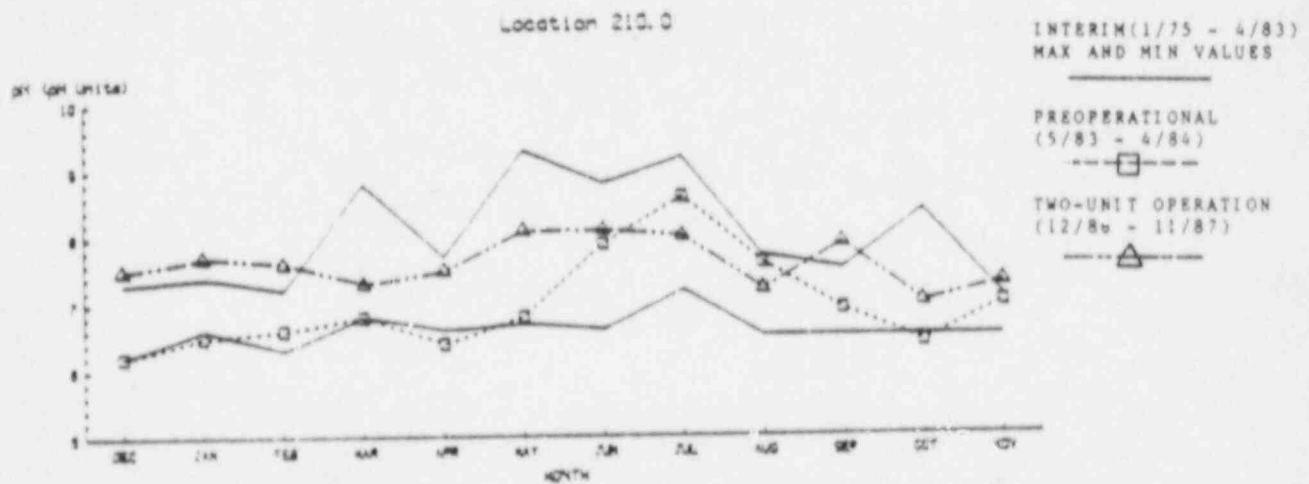
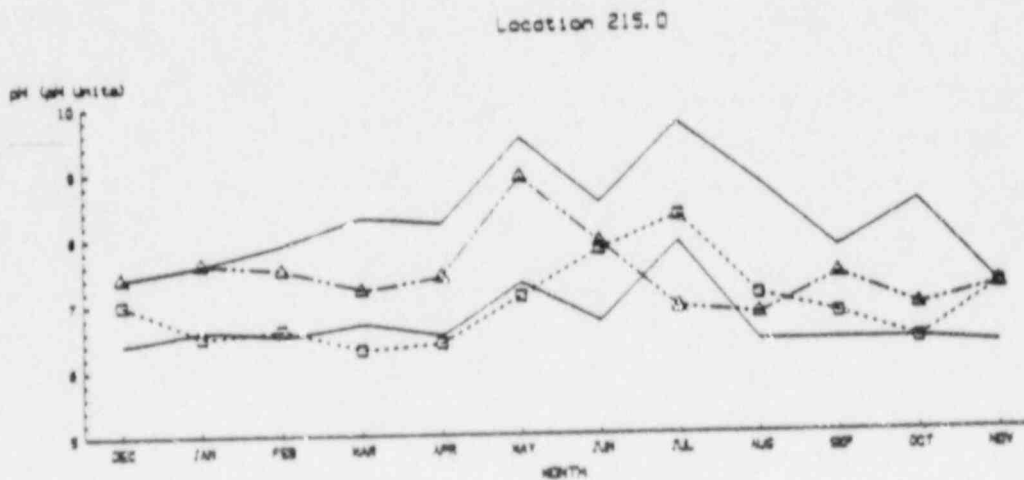
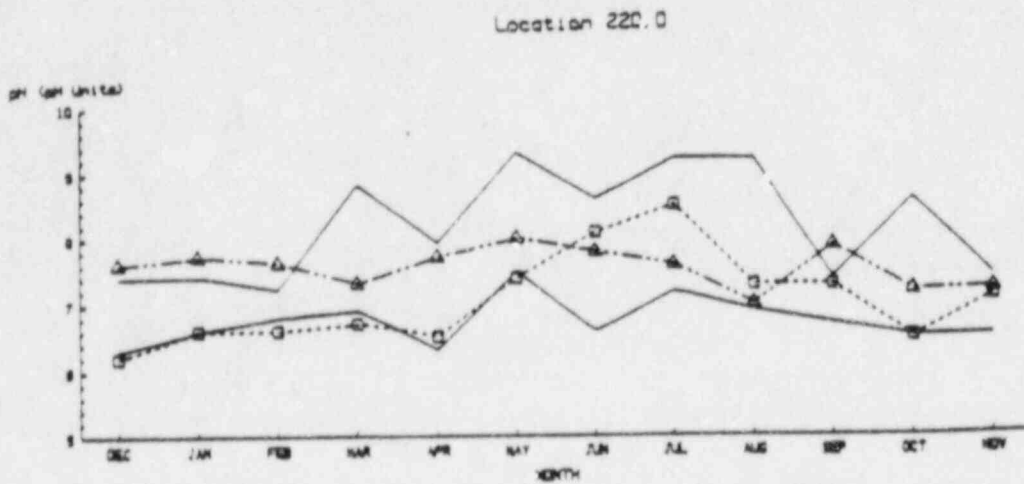
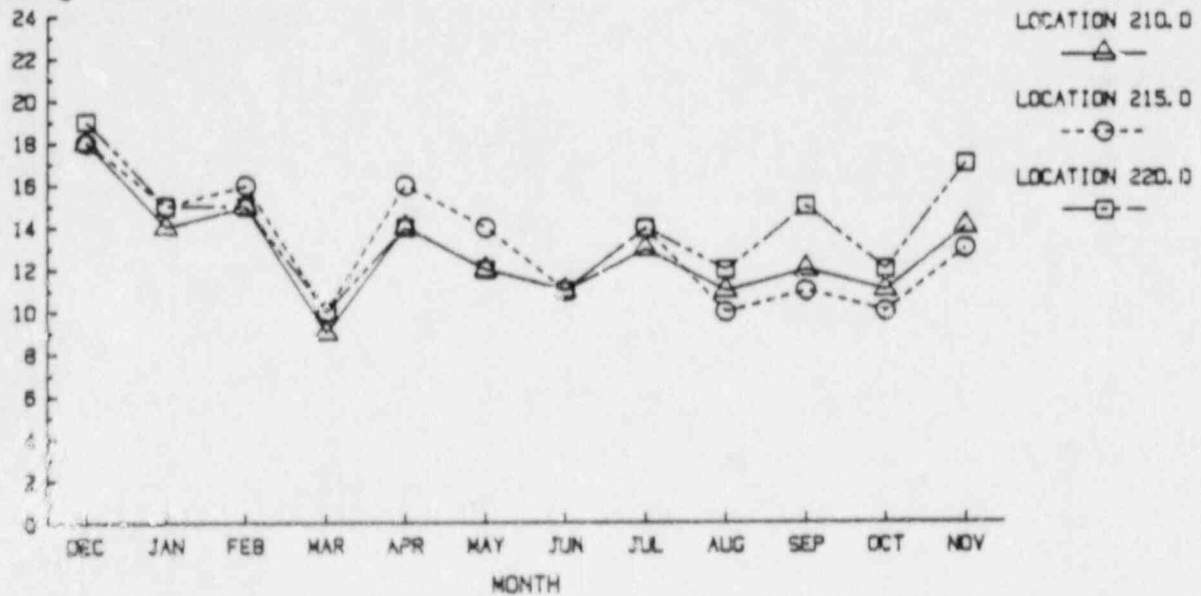


Figure 2-10. Monthly comparisons of surface (0.3m) pH values at locations 210.0, 215.0, and 220.0.

ALKALINITY (mg CaCO₃/l)



pH (SU)

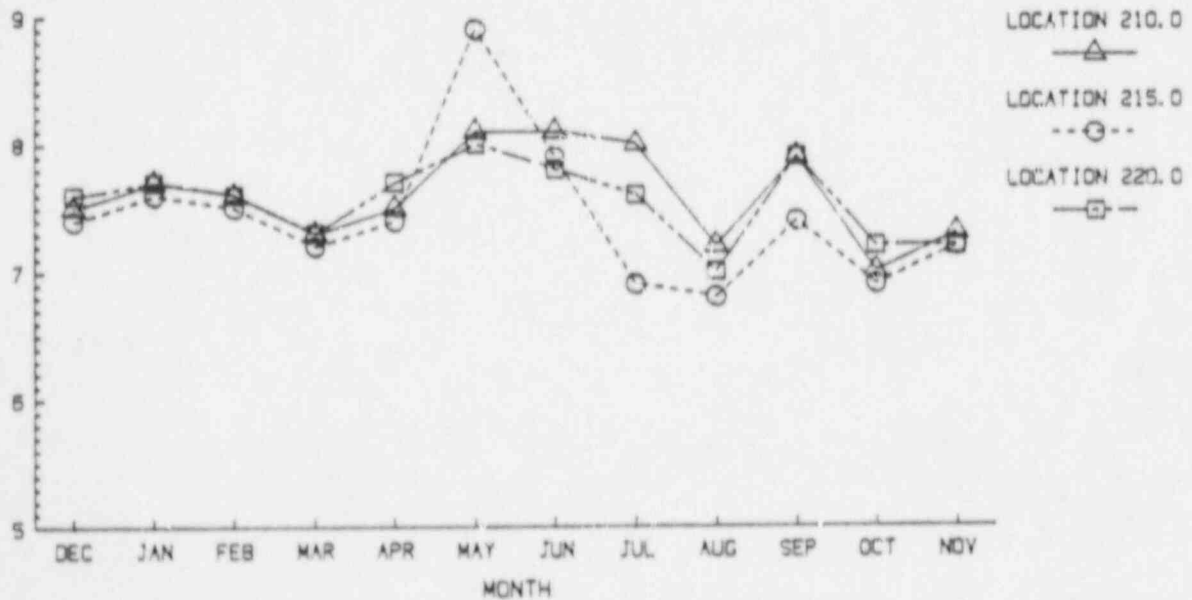
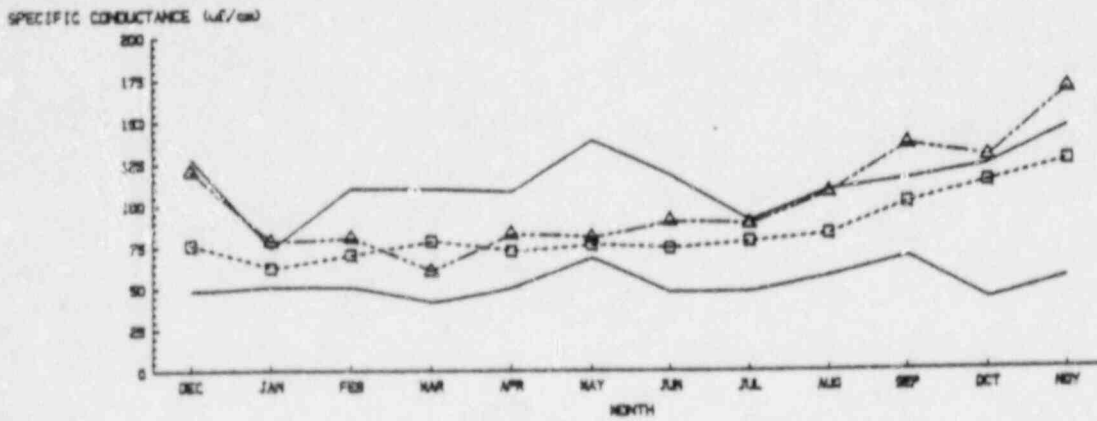
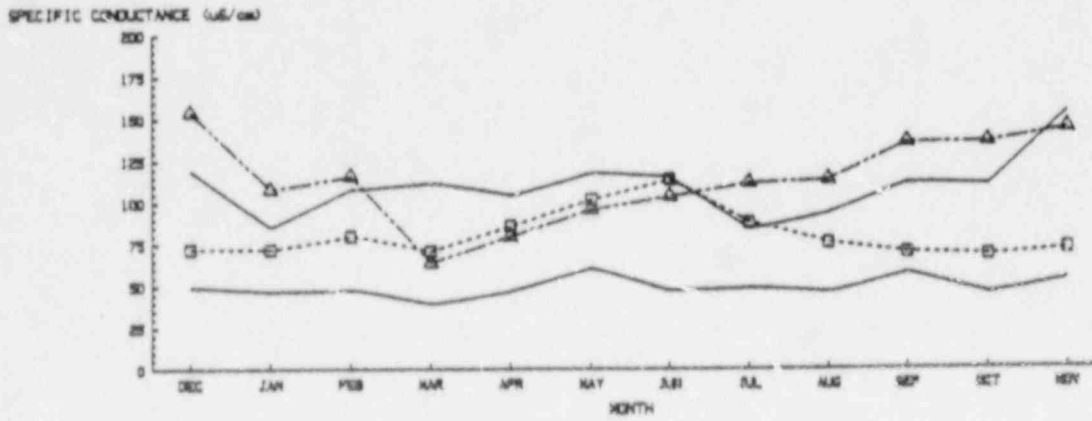


Figure 2-11. Monthly comparison of surface alkalinity and pH values between locations during the Two-Unit operational period (Dec 1986 - Nov 1987).

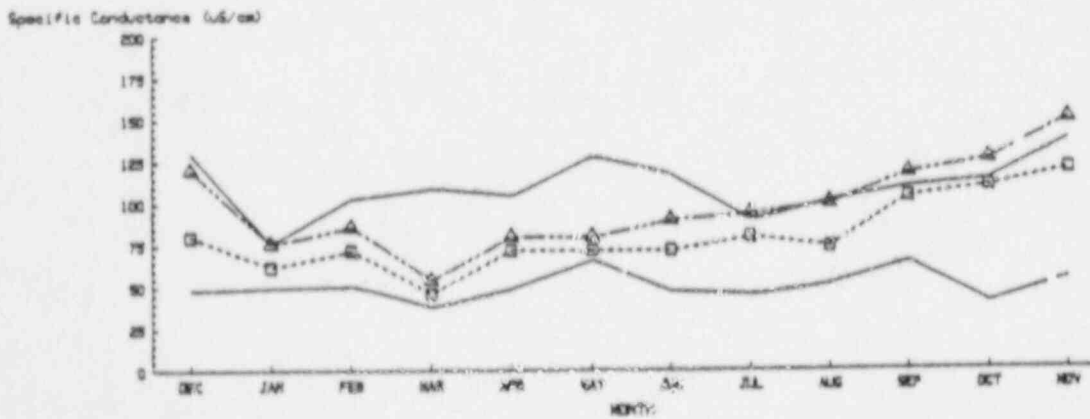
Location 220.0



Location 215.0



Location 210.0



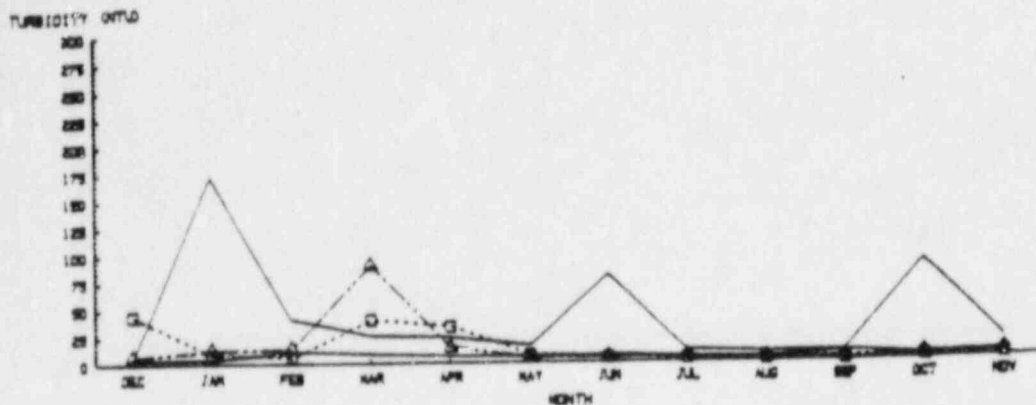
INTERIM (1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

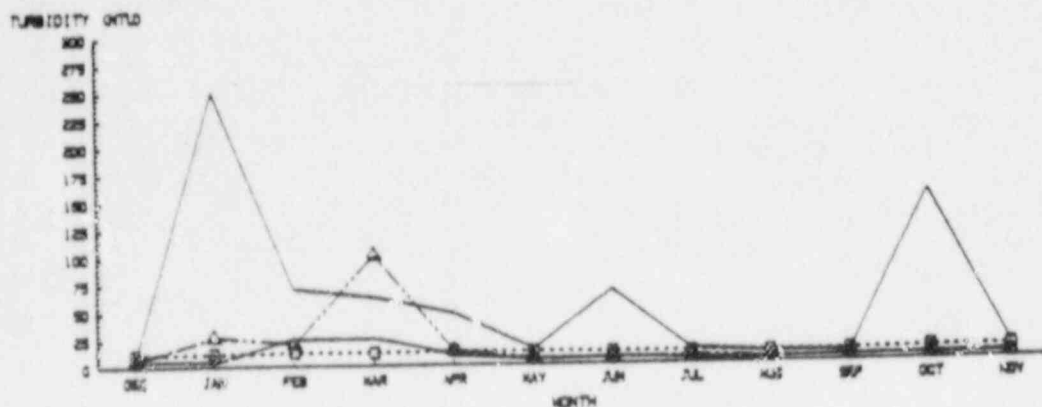
TWO-UNIT OPERATION
(12/86 - 11/87)

Figure 2-12. Monthly comparisons of surface (0.3m) specific conductance values at locations 210.0, 215.0, and 220.0.

Location 220.0



Location 215.0



Location 210.0

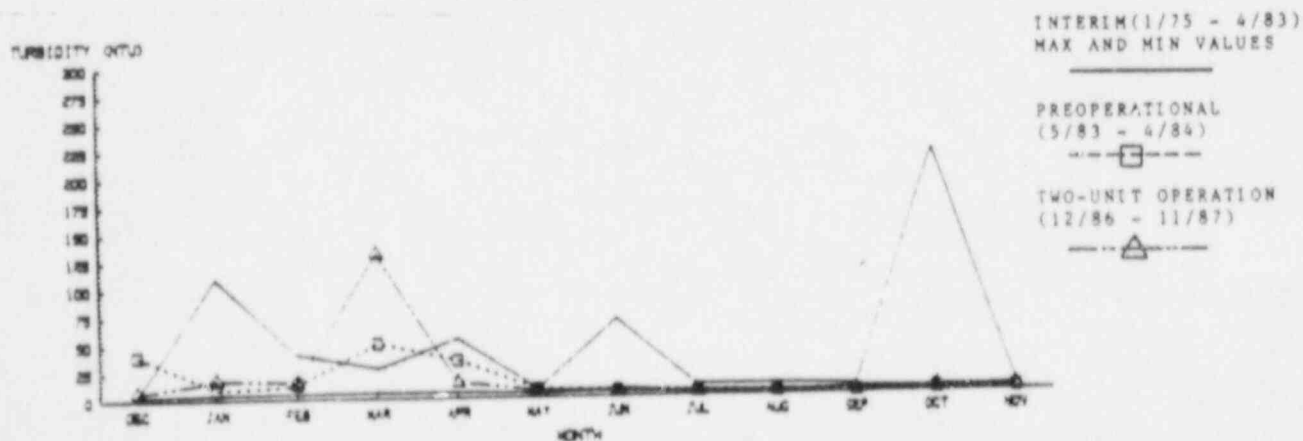


Figure 2-13. Monthly comparison of surface (0.3m) turbidity values at locations 210.0, 215.0, and 220.0.

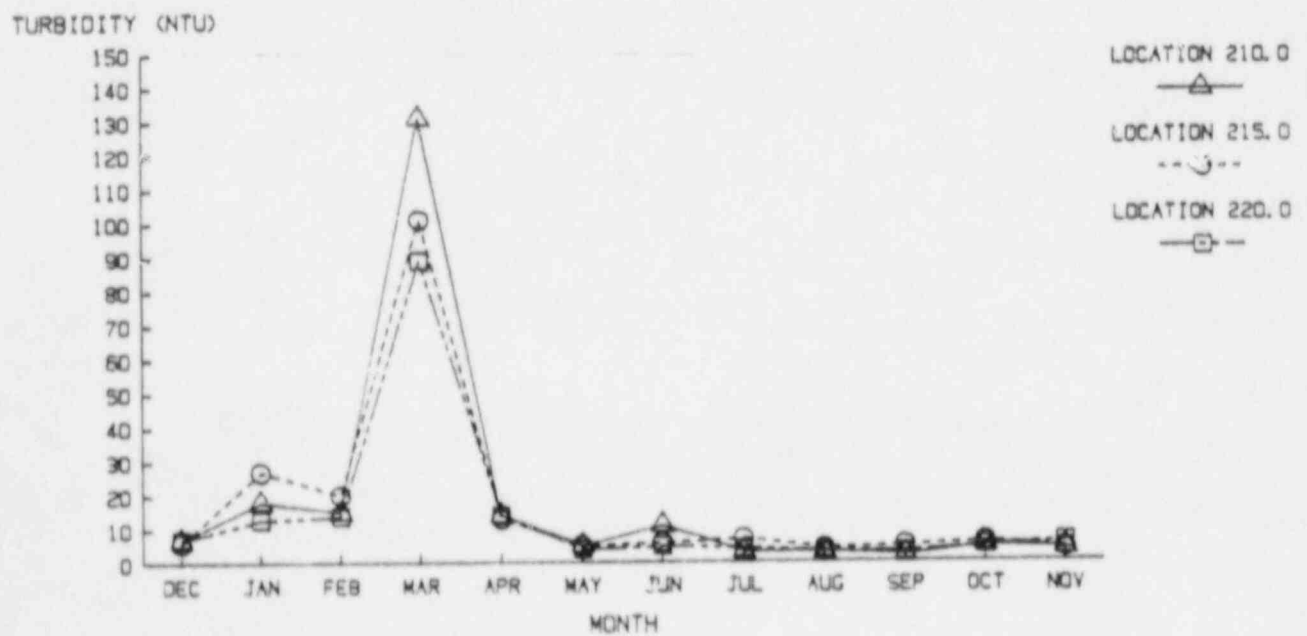
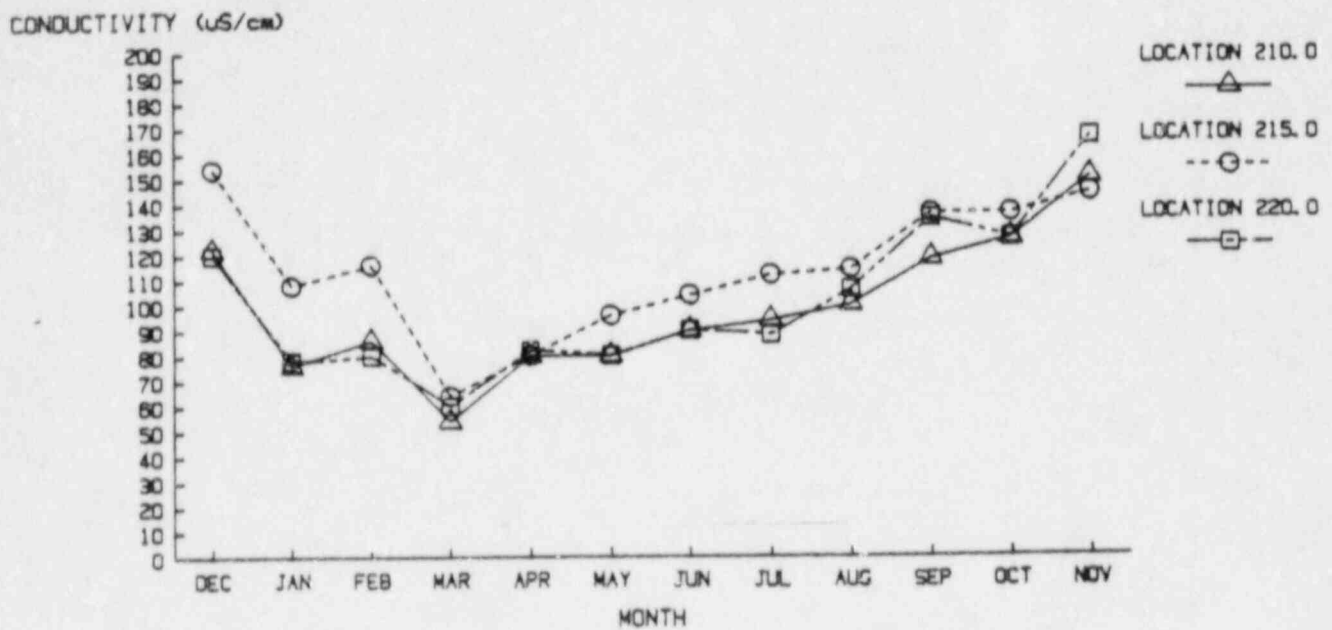
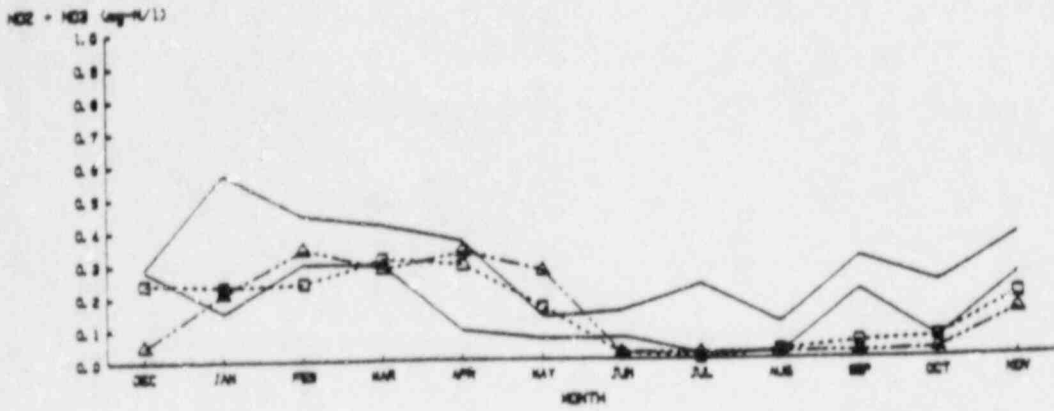
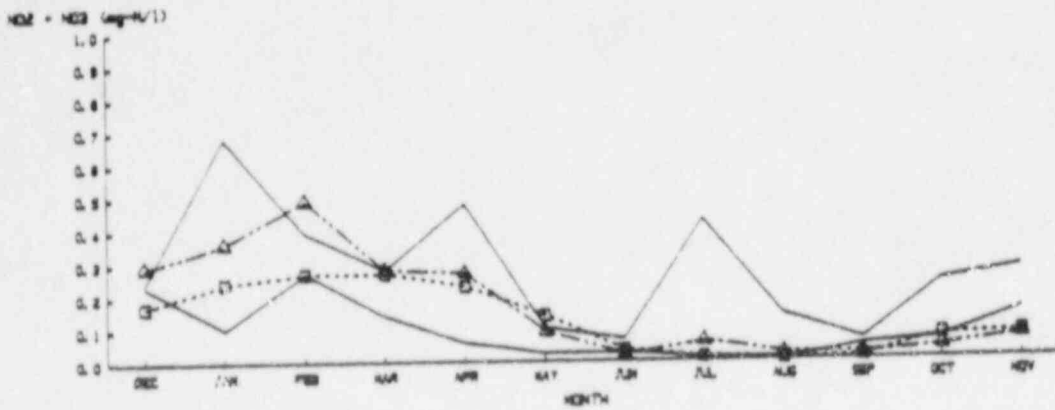


Figure 2-14. Monthly comparison of surface specific conductivity and turbidity between locations during the Two-Unit operational period (Dec 1986 - Nov 1987).

Location 220.0



Location 215.0



Location 210.0

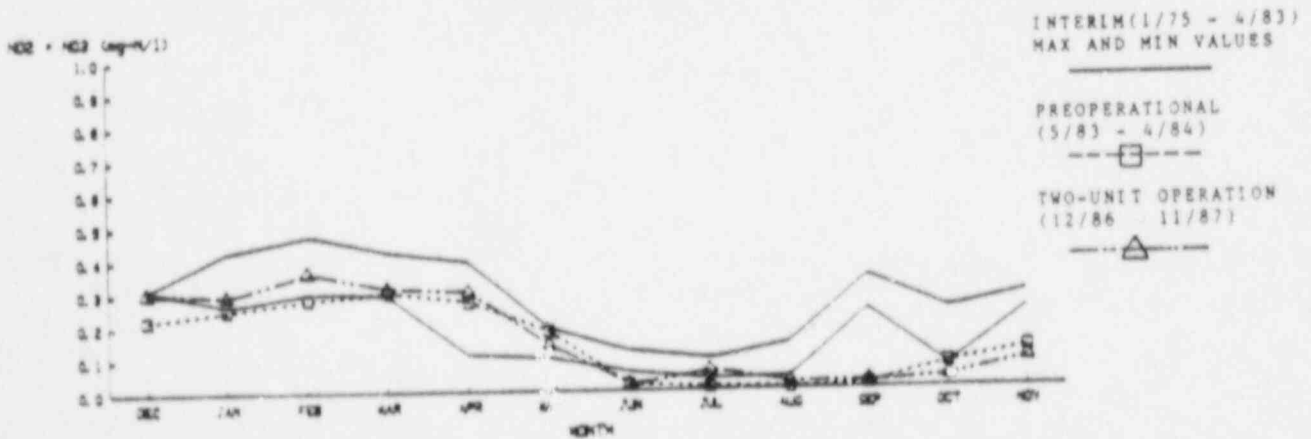
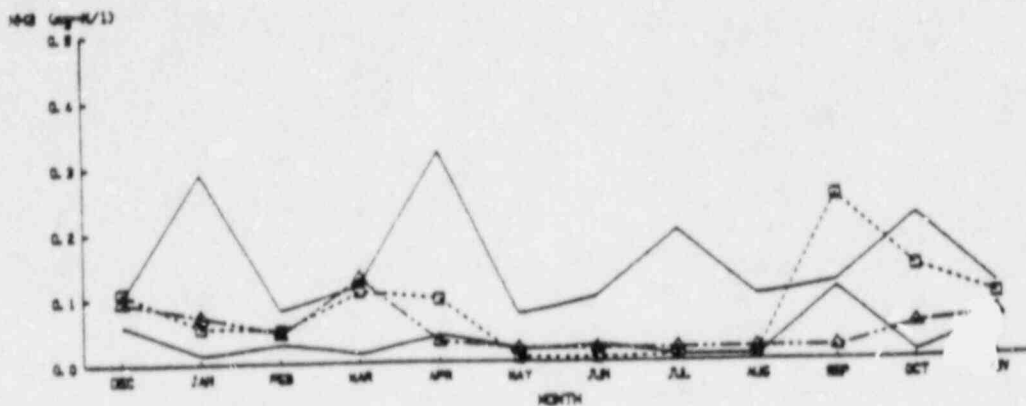
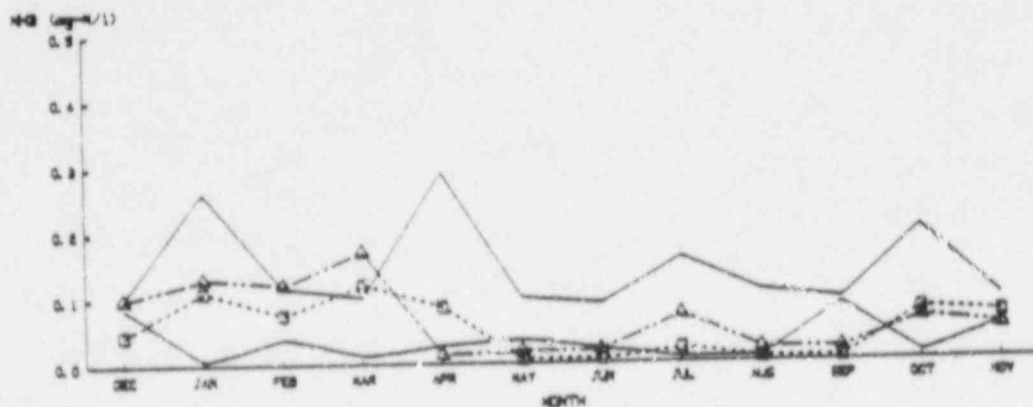


Figure 2-15. Monthly comparisons of surface (0.3m) nitrate plus nitrite nitrogen values at Locations 210.0, 215.0, and 220.0.

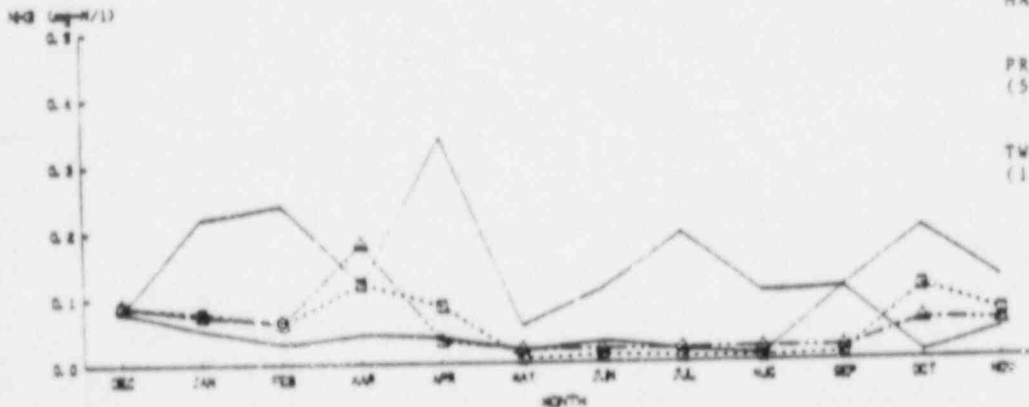
Location 220.0



Location 215.0



Location 210.0



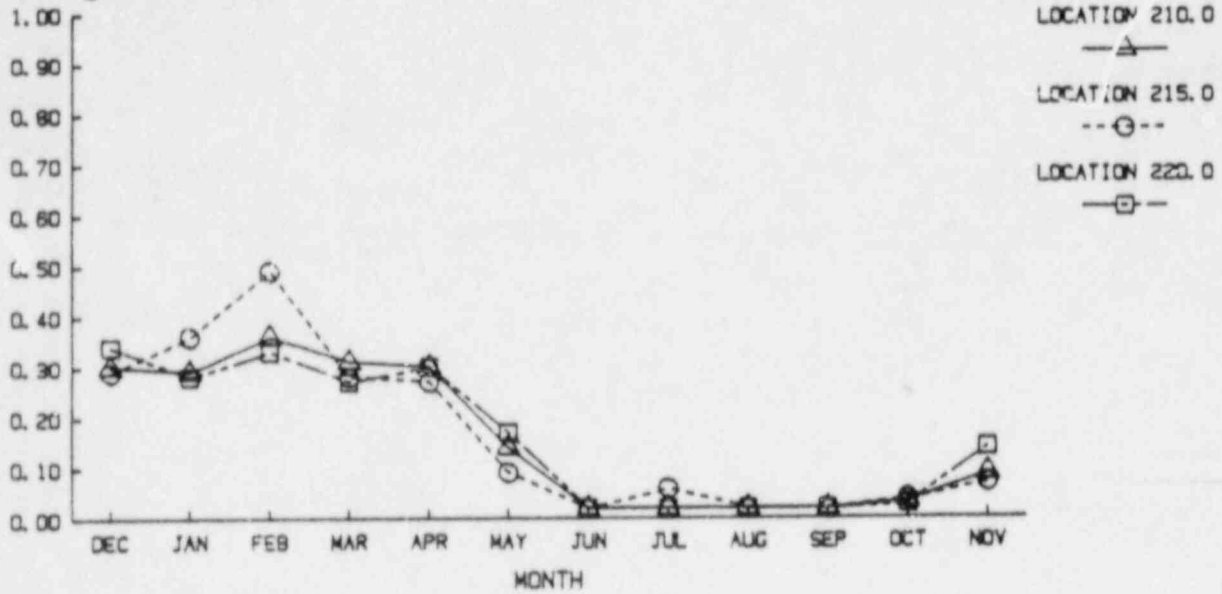
INTERIM(1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

TWO-UNIT OPERATION
(12/86 - 11/87)

Figure 2-16. Monthly comparisons of surface (0.3m) ammonia nitrogen values at locations 210.0, 215.0, and 220.0.

NO₂ + NO₃ (mg-N/l)



NH₃ (mg-N/l)

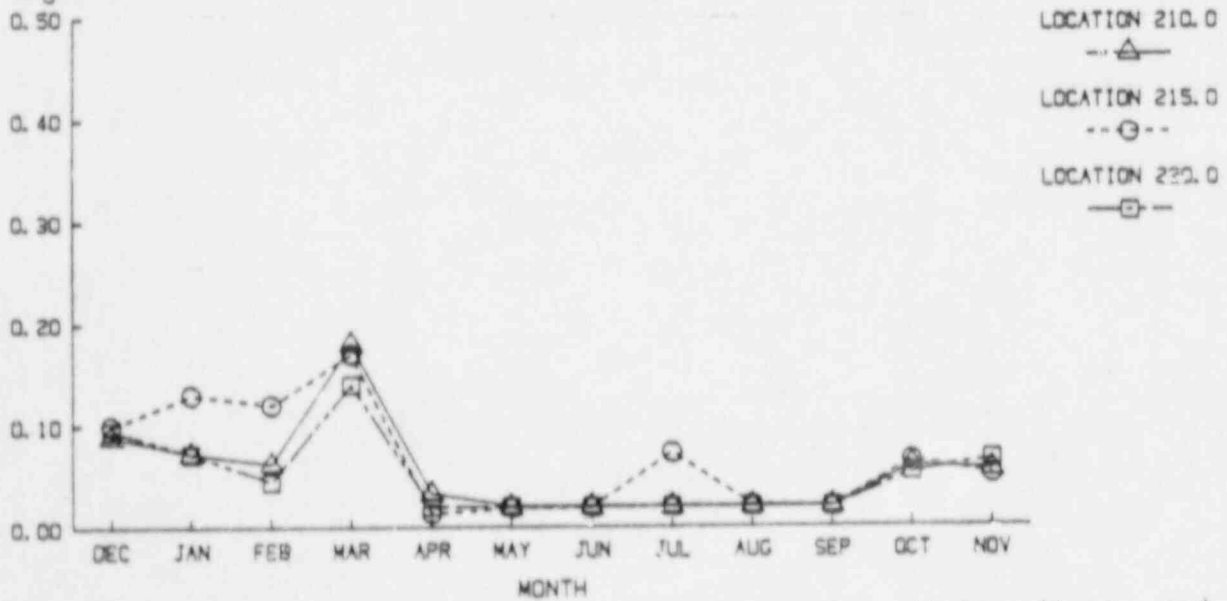
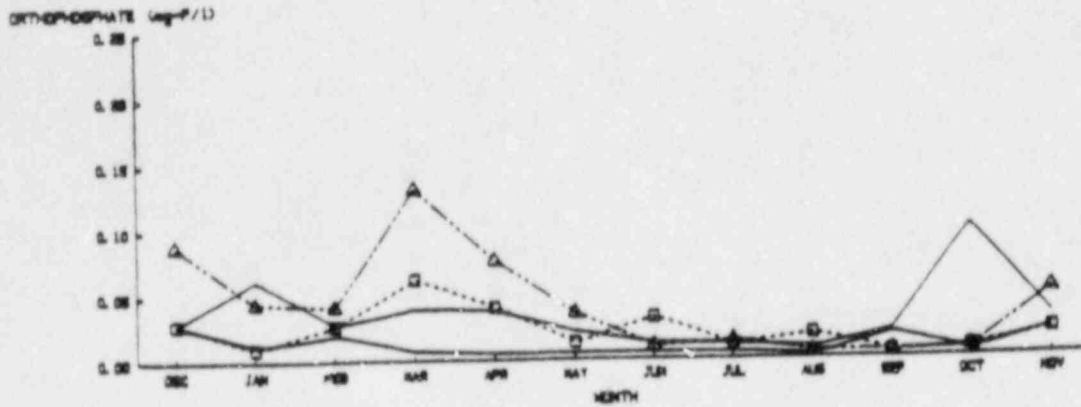
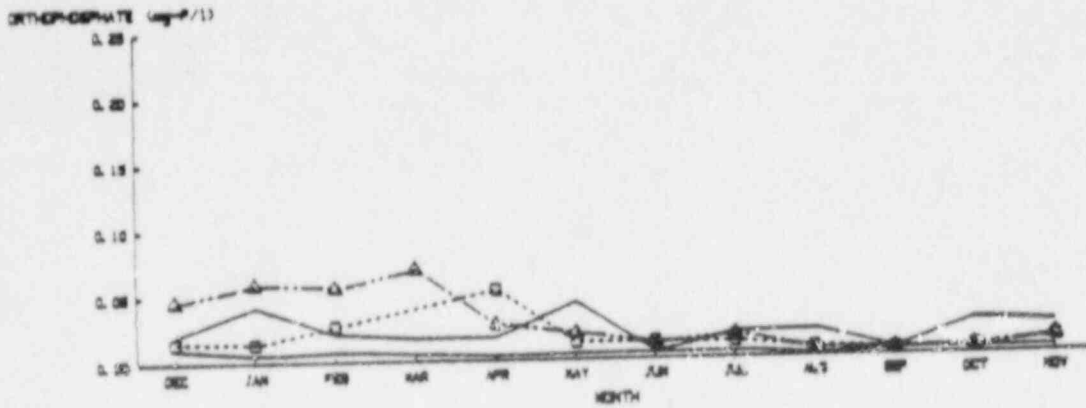


Figure 2-17. Monthly comparisons of surface nitrate plus nitrite nitrogen and ammonia nitrogen between locations during the Two-Unit operational period (Dec 1986 - Nov 1987).

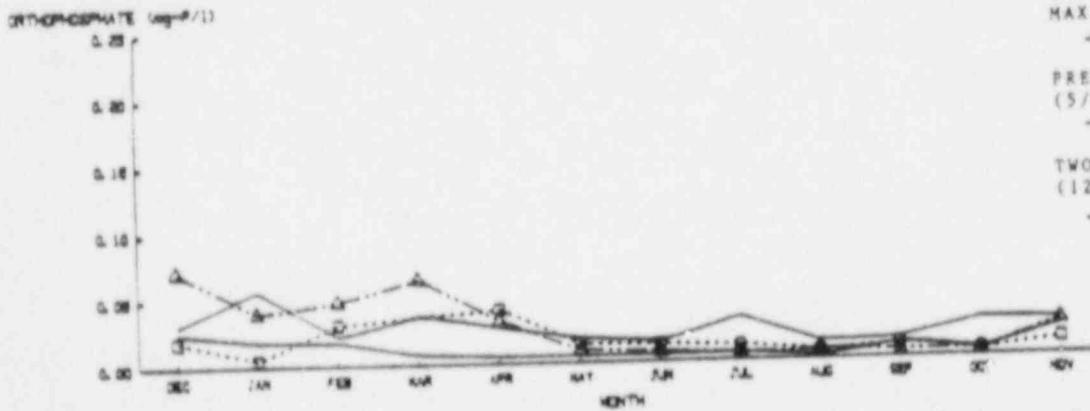
Location 220.0



Location 215.0



Location 210.0



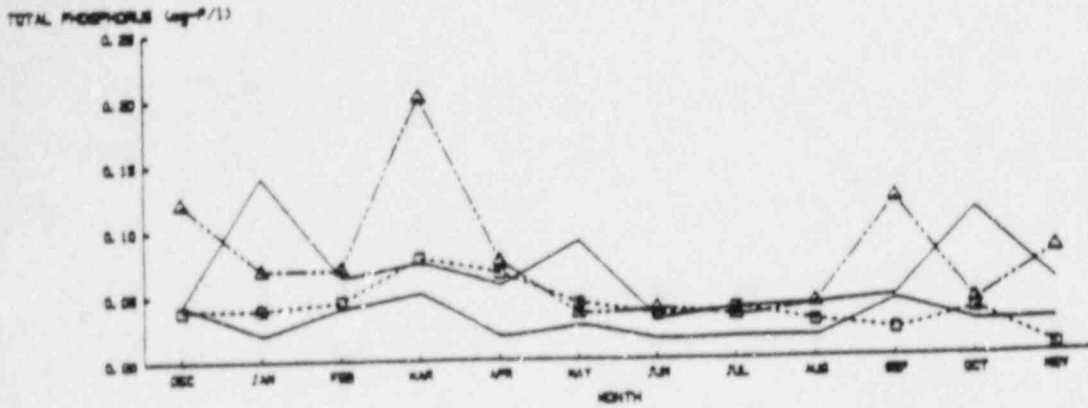
INTERIM(1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

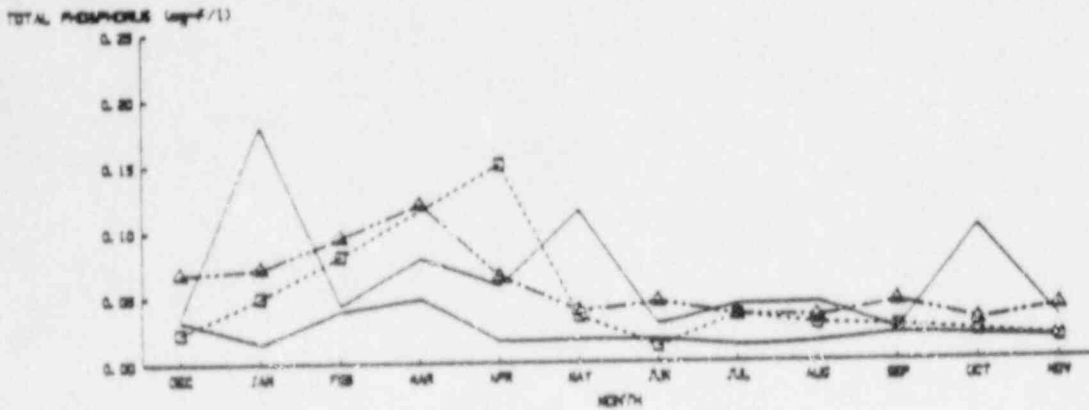
TWO-UNIT OPERATION
(12/86 - 11/87)

Figure 2-18. Monthly comparison of surface (0.3m) orthophosphate values at locations 210.0, 215.0, and 220.0.

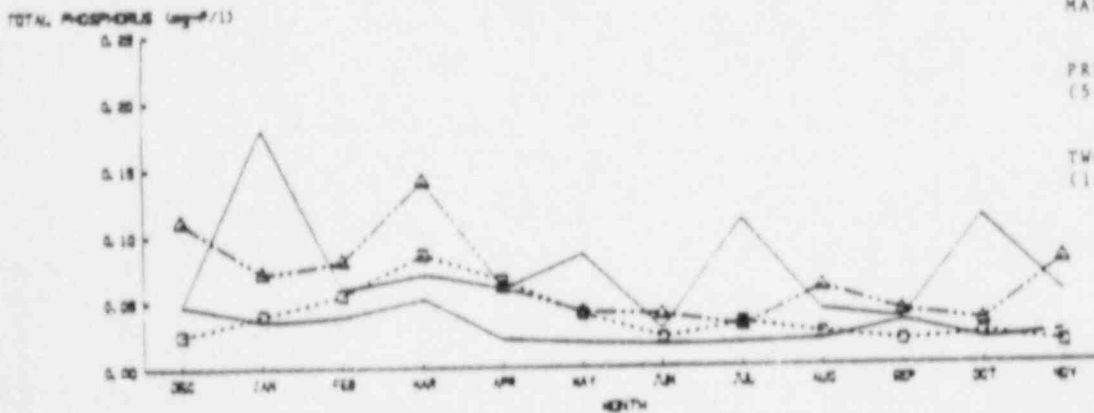
Location 220.0



Location 215.0



Location 210.0



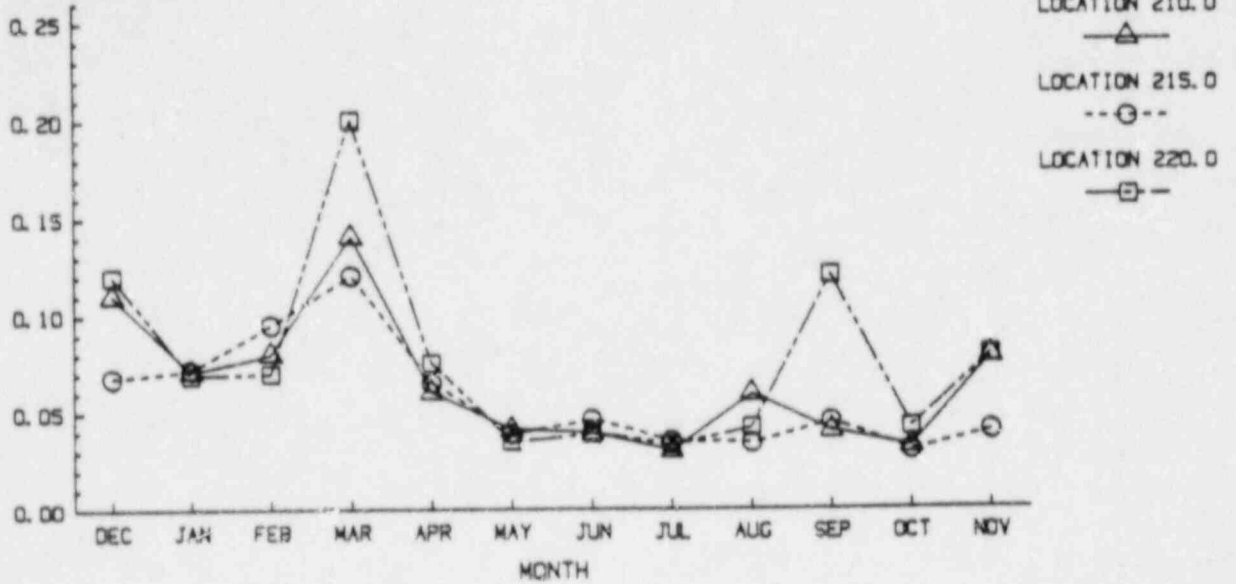
INTERIM(1/75 - 4/83)
MAX AND MIN VALUES

PREOPERATIONAL
(5/83 - 4/84)

TWO-UNIT OPERATION
(12/86 - 11/87)

Figure 2-19. Monthly comparison of surface (0.3m) total phosphorus values at locations 210.0, 215.0, and 220.0.

TOTAL PHOSPHORUS (mg-P/l)



ORTHOPHOSPHATE (mg-P/l)

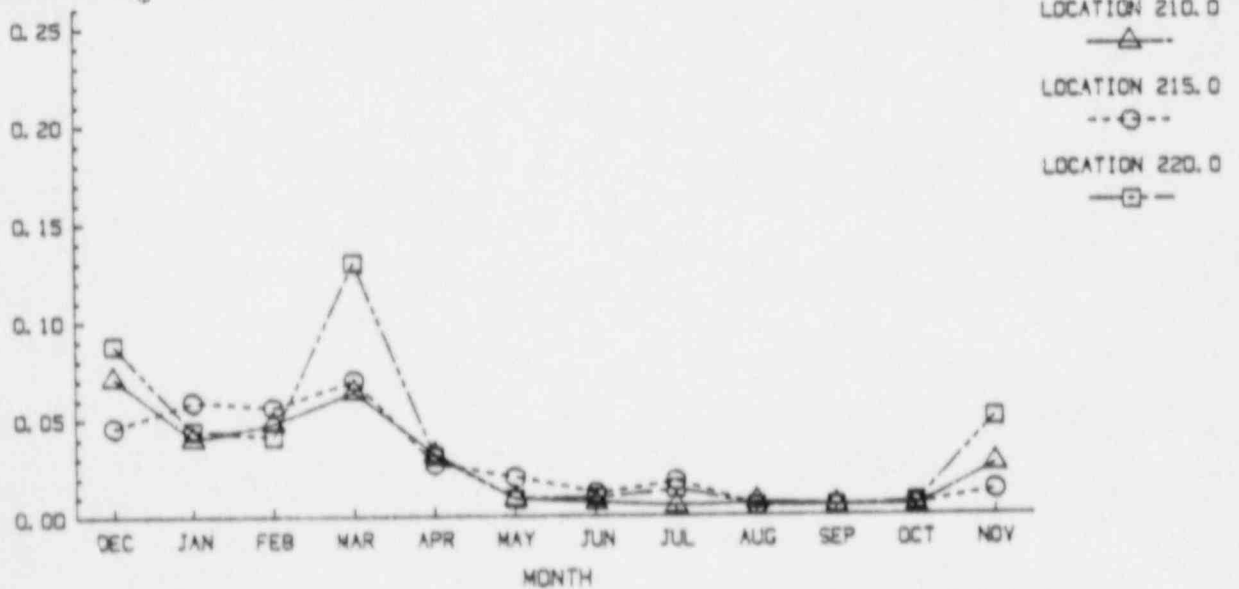


Figure 2-20. Monthly comparison of surface orthophosphate and total phosphorus between locations during the Two-Unit operational period (Dec 1986 - Nov 1987).

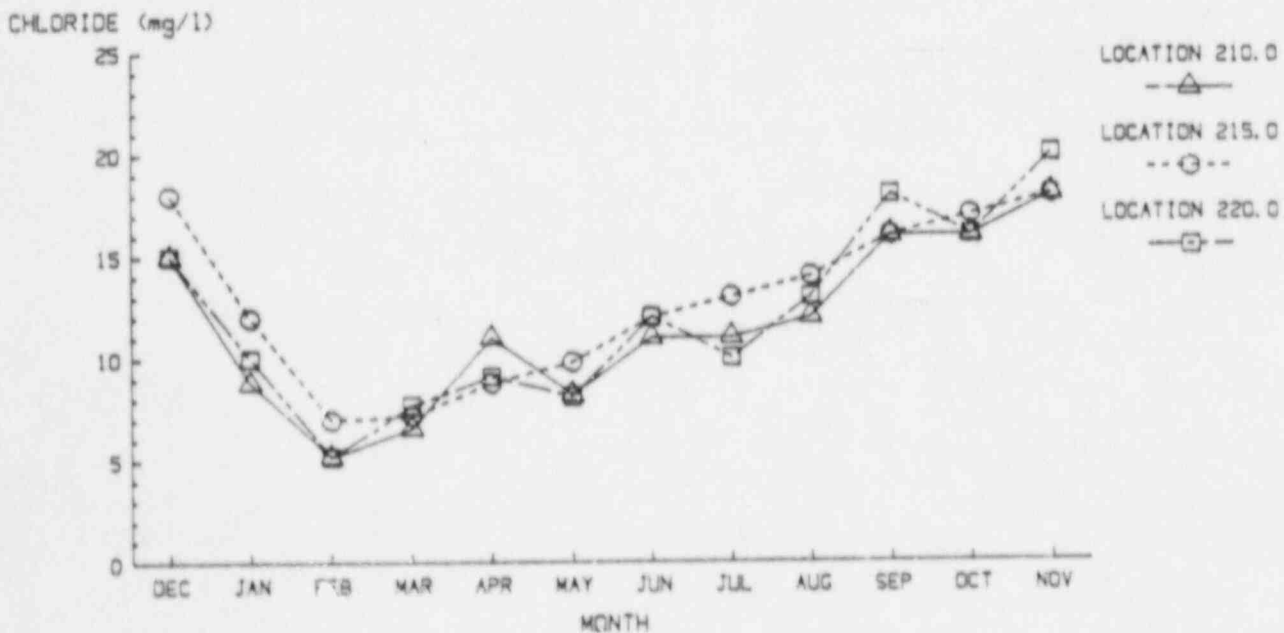
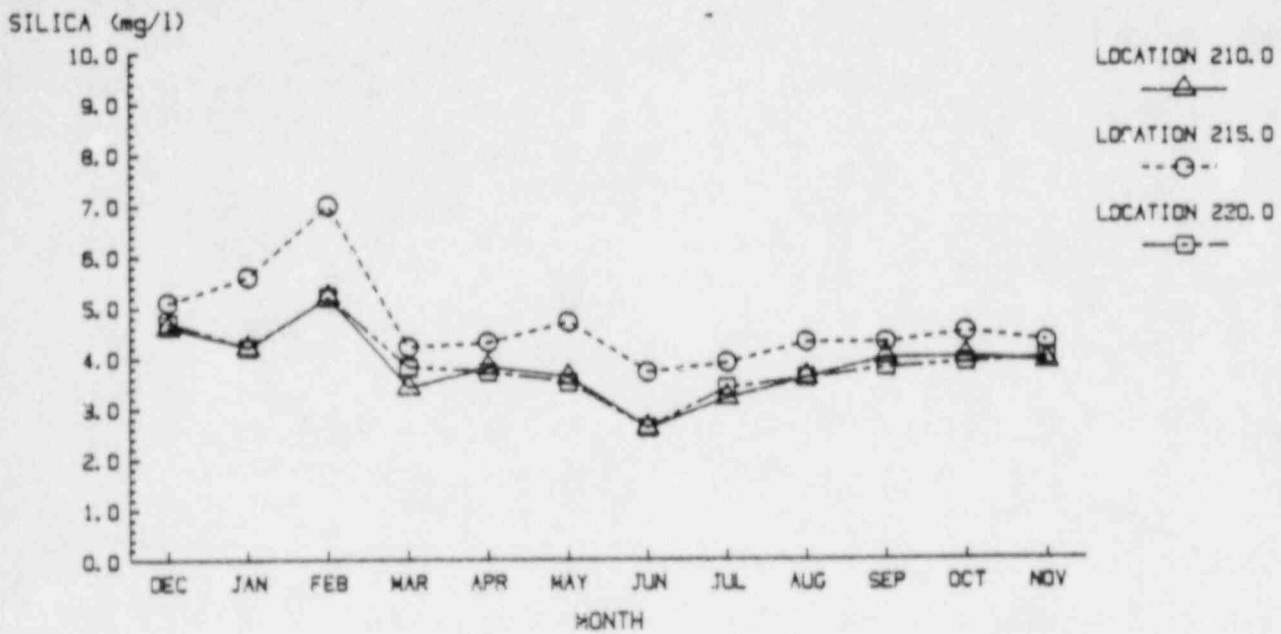


Figure 2-21. Monthly comparisons of surface silica and chloride between locations during the Two-Unit operational period (Dec 1986 - Nov 1987).

Table 2-1. Lake Wylie water quality monitoring locations (Figures 1-2) in the vicinity of Catawba Nuclear Station.

<u>Sampling Location #</u>	<u>Depth* (m)</u>	<u>Description</u>
210.0	16-17	Lake Wylie near mouth of Big Allison Creek and Catawba River due east of Goat Island, mid-channel.
215.0	9-10	Big Allison Creek, near bridge over discharge of CNS mid-channel.
220.0 (Intake)	14-15	Lake Wylie near mouth of embayment near intake to CNS, mid-channel.

*Function of lake level, reflecting water level fluctuations

Table 2-2. Locations sampled and types of variables analyzed from 1974 through 1985.

<u>Location</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
210.0	****	*444	*444	*444	*444	***4	*884	*444	*444	*994	4441	4441	4441	4441
215.0	****	*444	*444	*444	*444	****	*888	*444	*444	*994	4441	4441	4441	4441
220.0	****	*444	*444	*444	*444	****	*888	*444	*444	*994	4441	4441	4441	4441

Each digit in the four digit code represents the following variables, respectively: physical variables; nutrients; minerals; trace elements. The value of a digit represents the number of times that group of variables was sampled at a location during that year. A number is shown even if only one of the variables of a group was sampled. An asterisk (*) indicates that a group of variables was sampled more than nine times in a year.

Table 2-3. Analytical methods for chemical and physical constituents on Lake Wylie (April 1983 through November 1987).

Variables	Method	Preservation	Detection Limit
Alkalinity, total	Electrometric titration to a pH of 5.1 ¹	4°C	1 mg-CaCO ₃ ·l ^{-1*}
Hardness (Ca, Mg)	Calculation ²		
Aluminum	Atomic emission/ICP ³	0.5% HNO ₃	0.01 mg·l ⁻¹
Ammonia	Automated phenate ¹	4°C	0.006 mg-N·l ⁻¹
Cadmium	Atomic absorption/HGA ¹	0.5% HNO ₃	0.10 µg·l ⁻¹
	Atomic emission/ICP ³	0.5% HNO ₃	0.001 mg·l ⁻¹
Calcium	Atomic emission/ICP ³	0.5% HNO ₃	0.005 mg·l ⁻¹
Chloride	Automated ferricyanide ¹	4°C	0.2 µg·l ⁻¹
Conductance, specific	Temperature compensated nickel electrode ¹	In-situ	1 µmho·cm ^{-1*}
Copper	Atomic absorption/HGA ¹	0.5% HNO ₃	0.7 µg·l ⁻¹
	Atomic emission/ICP ³		0.002 mg·l ^{-1**}
Iron	Atomic emission/ICP ³	0.5% HNO ₃	0.003 mg·l ⁻¹
Lead	Atomic absorption/HGA ¹	0.5% HNO ₃	1.0 µg·l ⁻¹
Magnesium	Atomic emission/ICP ³	0.5% HNO ₃	0.0001 mg·l ⁻¹
Manganese	Atomic emission/ICP ³	0.5% HNO ₃	0.0007 mg·l ⁻¹
Nitrate + Nitrite	Automated cadmium reduction ¹	4°C	0.005 mg-N·l ⁻¹
Orthophosphate	Automated ascorbic acid reduction ¹	4°C	0.005 mg-P·l ⁻¹
Oxygen, dissolved	Temperature compensated polarographic cell ¹	In-situ	0.1 mg·l ^{-1*}
pH	Temperature compensated glass electrode ¹	In-situ	0.1* std. units
Phosphorus, total	Persulfate digestion followed by automated ascorbic acid reduction ¹	4°C	0.004 mp-P·l ⁻¹
Potassium	Atomic absorption/DA ¹	0.5% HNO ₃	0.03 mg·l ⁻¹
Silica	Automated molybdosilicate ¹	4°C	0.2 mg-Si·l ⁻¹
Sodium	Atomic emission/ICP ³	0.5% HNO ₃	0.02 mg·l ⁻¹
Temperature	Thermistor thermometer ¹	In-situ	0.1°C*
Turbidity	Nephelometric turbidity ¹	4°C	1 NTU*
Zinc	Atomic emission/ICP ³	0.5% HNO ₃	0.002 mg·l ⁻¹

* = Detection limit and limit of determination were not determined on these variables; instead, instrument sensitivity is given.

** = ICP detection limit change from 7.0 µg·l⁻¹ to 0.002 mg·l⁻¹ (8/82).

¹USEPA 1979

²APHA 1976

³USEPA 1983

Table 2-4. Monthly precipitation totals (inches) for Lake Wylie for the period January, 1975 through December, 1987, measured at the Douglas International Airport, Charlotte, NC.

Month	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
January	6.1	1.9	2.7	6.8	5.3	4.7	0.5	4.3	2.5	4.1	5.1	1.0	4.8
February	3.5	1.1	1.5	0.7	7.6	1.3	3.6	4.9	5.5	4.9	4.0	1.0	5.2
March	7.6	4.4	8.5	5.0	3.8	8.8	2.1	1.6	6.1	5.9	0.6	3.0	3.7
April	1.7	0.3	2.1	2.7	6.5	2.3	0.7	3.8	2.7	4.5	1.9	1.2	2.4
May	12.5	4.3	3.2	4.9	4.5	3.6	4.3	5.0	2.1	4.8	5.1	1.6	1.0
June	1.9	3.8	3.1	4.2	4.7	2.3	1.8	4.2	3.8	2.9	5.5	0.4	3.0
July	7.6	2.3	0.8	4.0	4.7	2.6	6.6	4.2	0.5	6.0	4.1	2.3	1.4
August	4.5	0.9	2.4	8.1	1.3	1.9	2.7	2.0	3.6	3.9	7.3	5.4	2.8
September	6.5	5.6	6.4	1.2	9.7	5.4	3.4	0.6	0.7	1.7	0.7	0.8	6.9
October	3.6	8.3	4.7	1.2	3.0	1.7	3.9	3.8	2.4	0.7	5.2	3.5	0.8
November	2.8	3.4	4.2	2.8	4.6	3.3	0.9	3.1	4.1	2.1	8.7	3.4	4.1
December	3.8	5.6	2.0	3.1	1.4	6.8	6.2	4.2	7.5	2.4	0.9	3.2	3.4
Totals:	62.1	41.9	41.6	44.7	57.1	39.2	36.7	41.7	41.5	43.9	49.1	26.8	39.5

Source: NOAA

Table 2-5. Surface means (\bar{x}), and ranges (R) of selected variables sampled during the Interim Period, Preoperational Period, and Two-Unit Operational Period.

	Mouth of Big Allison Creek						CNS Discharge						CNS Intake					
	Location 28		Location 210.0		Location 32		Location 215.0		Location 19		Location 270.0		Location 19		Location 270.0			
	Biotest	Preoperational	Operational	Biotest	Preoperational	Operational	Biotest	Preoperational	Operational	Biotest	Preoperational	Operational	Biotest	Preoperational	Operational			
Temperature (°C)	\bar{x} 19.7 R 10.0-29.2	13.1	18.2	19.7	18.4	19.1	19.9	19.9	18.5	18.5	18.5	18.5	19.9	18.5	18.2			
Dissolved Oxygen (mg-l ⁻¹)	\bar{x} 8.4 R 5.7-10.4	9.2	9.2	9.5	9.0	9.2	8.8	8.8	9.2	9.2	9.2	9.2	8.8	9.2	9.2			
pH (std. units)	\bar{x} 6.8 R 6.2-8.3	7.0	7.6	6.9	7.0	7.4	6.9	6.9	7.1	7.1	7.1	7.1	6.9	7.1	7.5			
Alkalinity (mg-CaCO ₃ -l ⁻¹)	\bar{x} 11 R 10-16	12	13	12	12	13	13	13	12	12	12	12	13	12	14			
Hardness (Ca, Mg Calculation)	\bar{x} 14 R 11-17	13	13	13	13	13	13	13	13	13	13	13	13	13	13			
Specific Conductance (µmho-cm ⁻¹)	\bar{x} 76 R 60-88	80	98	72	81	114	77	77	84	84	84	84	77	84	101			
Turbidity (NTU)	\bar{x} 18 R 4-76	14	18	14	18	17	18	18	13	13	13	13	18	13	14			
Nitrate + Nitrite (mg-N-l ⁻¹)	\bar{x} 0.19(Nitrate) R <0.010-0.47	0.15	0.16	0.16(Nitrate)	0.14	0.17	0.17(Nitrate)	0.16	0.16	0.16	0.16	0.16	0.17(Nitrate)	0.16	0.16			
Ammonia (mg-N-l ⁻¹)	\bar{x} 0.050 R <0.010-0.12	0.054	0.054	0.046	0.053	0.067	0.059	0.059	0.064	0.064	0.064	0.064	0.059	0.064	0.049			
Orthophosphate (mg-P-l ⁻¹)	\bar{x} 0.014 R <0.001-0.039	0.016	0.022	0.006	0.016	0.028	0.018	0.018	0.023	0.023	0.023	0.023	0.018	0.023	0.036			
Total Phosphorus (mg-P-l ⁻¹)	\bar{x} 0.038 R 0.010-0.072	0.037	0.065	0.032	0.064	0.057	0.044	0.044	0.040	0.040	0.040	0.040	0.044	0.040	0.077			
Silica (mg-Si-l ⁻¹)	\bar{x} 4.7 R 3.1-6.3	4.3	4.3	4.7	4.4	4.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.9			
Chloride (mg-Cl-l ⁻¹)	\bar{x} Not Analyzed R Not Analyzed	5-12	12	Not Analyzed	4.9-12	7.2	Not Analyzed	4.9-12	4-13	4-13	4-13	4-13	Not Analyzed	4-13	7.5			
Calcium (mg-l ⁻¹)	\bar{x} 6.8 R 4.8-8.8	2.8	3.3	6.1	2.7	3.5	6.8	6.8	2.9	2.9	2.9	2.9	6.8	2.9	3.5			
Magnesium (mg-l ⁻¹)	\bar{x} 1.5 R 1.2-1.7	1.3	1.5	1.6	1.4	1.6	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.5			
Potassium (mg-l ⁻¹)	\bar{x} 1.8 R 1.5-2.5	1.9	1.9	1.7	1.9	2.4	1.7	1.7	2.0	2.0	2.0	2.0	1.7	2.0	2.4			

Table 2-6. Surface means and ranges of trace metals sampled during the Preoperational Period (May 1983-Apr. 1984), and the Two-Unit Operational Period (Dec 1986-Nov 1987).

Parameter	Units		Location 210.0		Location 215.0		Location 220.0	
			Preoperational Period	Two-Unit Operational Period	Preoperational Period	Two-Unit Operational Period	Preoperational Period	Two-Unit Operational Period
Aluminum	mg/l	mean range	0.13 0.10-0.20	0.13 0.10-0.20	0.15 0.10-0.30	0.20 0.10-0.50	0.10 0.10-0.10	0.15 0.10-0.20
Cadmium	ug/l	mean range	0.13 2.0-3.4	0.15 2.7-4.2	0.10 1.6-3.8	0.17 2.4-5.2	0.10 2.1-3.3	0.17 3.1-4.1
Calcium	mg/l	mean range	2.8 2.0-3.4	3.3 2.7-4.2	2.7 1.6-3.8	3.5 2.4-5.2	2.9 2.1-3.3	3.6 3.1-4.1
Copper	ug/l	mean range	4.7 2.9-11	2.9 2.4-3.4	4.0 2.9-5.4	5.1 3.5-7.8	3.0 2.4-4.0	4.2 2.6-5.4
Iron	mg/l	mean range	0.13 0.10-0.20	0.13 0.10-0.20	0.15 0.10-0.30	0.20 0.10-0.50	0.10 0.10-0.10	0.13 0.10-0.20
Manganese	mg/l	mean range	1.3 1.2-1.5	1.5 1.4-1.6	1.4 1.3-1.5	1.7 1.7-1.9	1.3 1.2-1.4	1.5 1.4-1.6
Manganese	mg/l	mean range	0.018 0.010-0.030	0.020 0.010-0.030	0.020 0.010-0.030	0.030 0.010-0.090	0.017 0.010-0.020	0.025 0.020-0.030
Sodium	mg/l	mean range	8.7 6.0-14	13 8.0-20	8.2 5.9-13	14 10-20	9.2 6.7-14	13 8.8-22
Potassium	mg/l	mean range	1.9 1.6-2.5	2.3 1.9-2.9	1.9 1.7-2.4	2.7 2.2-3.0	2.0 1.6-2.5	2.3 1.9-3.0
Lead	ug/l	mean range	1.3 1.0-2.4	1.1 1.0-2.0	1.4 1.0-2.0	1.4 1.0-2.0	1.4 1.0-2.6	1.1 1.0-2.0
Zinc	ug/l	mean range	10 10-10	4.0 2.0-6.0	10 10-10	12 2.0-33	10 10-10	6.5 2.0-22

CHAPTER 3: PHYTOPLANKTON

INTRODUCTION

Comparisons of previous phytoplankton studies on Lake Wylie have shown considerable year-to-year variations in phytoplankton taxonomic composition, and seasonal and spatial distribution (Duke Power Company 1985, 1986; Industrial Bio-Test 1974; Weiss et al. 1975). The objectives of the Catawba Nuclear Station (CNS) Two-Unit Operational Study of phytoplankton presented in this chapter were to:

1. document the taxonomic composition of the phytoplankton during the first twelve months of two-unit operations,
2. describe seasonal and spatial patterns of phytoplankton standing crop, and
3. compare phytoplankton standing crop data collected during this study (December 1986 through November 1987) with data collected during the preoperational period of May 1983 through April 1984 (Duke Power Company 1985) and the Unit 1 Operational period of April 1985 through March 1986 (Duke Power Company 1987).

METHODS AND MATERIALS

Monthly phytoplankton sampling for the Two-Unit Operational Study was conducted from December 1986 through November 1987 at Locations 210.0, 215.0, and 220.0 (Figure 1-2). Samples were collected at 0.3 m and at 5.0-m intervals to 1 m above the bottom at each location. The field and laboratory methods used during this study were the same as those presented in the Preoperational Report (Duke Power Company 1985). Monthly phytoplankton standing crop data from December 1986 through November 1987 (taxonomic composition, density, and biovolume) are presented in Appendix 3-1.

The computer-generated graphs of phytoplankton standing crop parameters presented in this study include interim data collected from May 1984 through March 1985, and from April through November 1986. These data are presented merely to provide continuity of sampling data, and will not be discussed in the following text.

RESULTS AND DISCUSSION

Phytoplankton Standing Crop

Phytoplankton standing crops varied considerably among locations during the Two-Unit Operational Study; however, some spatial trends were observed. Location 220.0 generally demonstrated higher densities and biovolumes than other locations among 0.3 and 5.0-m samples, while chlorophyll concentrations were often highest at Location 215.0 (Tables 3-1 through 3-3; Figures 3-1 through 3-6). During both the Preoperational and the Unit 1 Operational Studies, no consistent spatial patterns were observed (Duke Power Company 1985, 1987).

Overall seasonal trends of phytoplankton standing crops during this study were similar to those observed during previous studies, with maximum standing crops generally occurring from May through August and minimum values observed from December through March. Most standing crop values recorded during the Two-Unit Operational Study were within ranges of those observed during previous studies on Lake Wylie, except that standing crops at 0.3 and 5.0 m from January through March 1987 were lower than those observed during these same months of the Unit 1 Operational Study. This was probably due to higher light intensities and lower turbidities recorded for January through March 1986 (Figure 3-7). Also, chlorophyll concentrations at 0.3 m in August and

September at Locations 220.0 and 215.0, respectively, were well above values previously recorded. The cause of these chlorophyll spikes cannot be explained, since variations in physical-chemical parameters among sampling locations during these months were minimal (Chapter 3) and effects of CNS operations would probably not have had an impact at Location 220.0, which is located in mid-channel out from the intake.

Vertical distribution patterns among phytoplankton during the Two-Unit Operational Study were generally similar to those observed during previous studies. Maximum standing crops were observed among surface or 5.0-m samples, where temperatures were optimum and ample light was available for photosynthesis. Minimum standing crops usually occurred in 10.0-m and bottom samples. The greatest vertical differences in algal standing crops were observed from April through September 1987. This pattern of algal stratification was the same as that observed during the Preoperational Study. During the Unit 1 Operational Study, the period of greatest algal stratification was from May through December. From December 1986 through March 1987, and in October and November 1987, variations in vertical distribution of phytoplankton were relatively small due to vertical mixing in the Lake (Tables 3-1 through 3-3).

Lakewide surface algal blooms have never been recorded from Lake Wylie; however, localized blooms in coves and protected areas have often been observed during spring and summer. These blooms have usually consisted of green algae (i.e., Hydrodictyon, Gloeocystis, Chlamydomonas) and have dissipated rapidly. No algal blooms of any type were reported during the Two-Unit Operational Study.

Community Composition

Nine classes comprising 92 genera and 200 species of phytoplankton were recorded from samples collected during the Two-Unit Operational Study; as compared to 10 classes, 86 genera, and 178 species listed during the Unit 1 Operational Study; and 8 classes, 71 genera, and 146 species observed during the Preoperational Study. The distribution of species within classes during this study was as follows: Chlorophyceae, 99; Bacillariophyceae, 40; Chrysophyceae, 19; Xanthophyceae, 2; Cryptophyceae, 4; Myxophyceae, 18; Euglenophyceae, 9; Dinophyceae, 5; and Chloromonadophyceae, 4. Haptophyceae were not observed during this study; however, 16 genera and 53 species were identified which were not recorded during previous Duke Power studies, as compared to 7 genera and 33 species recorded exclusively from the Unit 1 Operational Study, and 9 genera and 29 species recorded exclusively from the Preoperational Study (Table 3-4).

Based on density, The Bacillariophyceae (diatoms) were the most abundant algae observed during this study, followed in importance by the Chlorophyceae (green algae), the Myxophyceae (blue-green algae), and the Cryptophyceae (cryptophytes). All other classes combined constituted approximately 10% of the total phytoplankton density (Table 3-5). This same general pattern of relative abundance was usually observed among sampling locations during this study. This represents a continuing shift in taxonomic composition from those observed during the Preoperational and Unit 1 Operational Studies, with diatoms increasing in relative abundance, while the relative abundance of cryptophytes has continued to decline.

Diatoms constituted at least 50% of the density and biovolume in nearly

one-third of the samples (Tables 3-6 and 3-7). At locations 210.0 and 215.0, diatom standing crops peaked in May, then gradually declined through November. Maximum diatom standing crops were also observed in May at Location 220.0; however, after declining sharply in June, they demonstrated a secondary seasonal peak from August through September. Minimum values at all locations were observed from December through March. During the Unit 1 Operational Study, maximum diatom standing crops generally occurred in April and May, and during the Preoperational Study, maximum values occurred from June through August. The most abundant diatom taxa during this study were Skeletonema spp. and Melosira spp.. These taxa were also identified as among the most abundant diatoms during the two previous Duke Power studies.

The Chlorophyceae have always been the most diverse class of algae present in Lake Wylie samples. Over half of the previously unrecorded taxa observed during this study were green algae. The green algae comprised at least 25% of the density and 20% of the biovolume in approximately one-fourth of the samples (Tables 3-8 and 3-9). Maximum green algal standing crops occurred from July through September, while minimum values were observed from December through March. Seasonal trends of green algal standing crops during this study were similar to those observed during previous studies; however, overall abundance of this class was more comparable to that observed during the Preoperational Period. The most abundant green algae were Chlamydomonas spp., Scenedesmus spp. and Ankistrodesmus spp.. These same taxa were most abundant among green algae during the two previous Duke Power studies.

The Myxophyceae contributed at least 25% to the density in approximately one-fifth of the samples, but seldom accounted for more than 25% of the biovolume

(Tables 3-10 and 3-11). Maximum standing crops occurred from May through September, when blue-green algae often dominated phytoplankton assemblages. Minimum values were observed from December through March. Although seasonal patterns of abundance of blue-green algae during this study were similar to those of the Unit 1 Operational Study, standing crops and proportional abundance during this study were often much lower than those recorded during the Unit 1 Operational Study. Comparisons with the Preoperational Study showed that blue-green standing crops during this study were generally higher at all locations, and the period of peak abundance was longer than that observed during the Preoperational Study. The most abundant blue green algae during this study were Oscillatoria spp. and Chroococcus spp.. Both of these taxa were also abundant during previous Duke Power studies on Lake Wylie.

The Cryptophyceae comprised over 25% of the density and biovolume in approximately one-fifth of the samples (Tables 3-12 and 3-13). Maximum cryptophyte standing crops were observed from April through August and in October, and this class was often dominant in surface and 5.0-m samples in April. Minimum standing crops occurred from January through March. Seasonal patterns of cryptophyte distribution observed during this study were similar to those observed during previous Duke Power studies; however, the importance of this class has declined considerably since the Preoperational Study when it constituted over 43% of the total phytoplankton density. The relative abundance of cryptophytes appears to be approaching that observed by Industrial Bio-Test (1974) in 1973-1974, when this class constituted less than 10% of the total phytoplankton density among surface samples. The most abundant cryptophyte during this study, as in previous Duke Power studies, was Rhodomonas minuta.

All other classes combined constituted at least 25% of the density and biovolume in approximately one-tenth of the samples (Tables 3-14 and 3-15), and they represented a lower percent of the total phytoplankton density during this study than during the Unit 1 Operational Study due primarily to lower numbers of Chrysophyceae observed during 1986-1987. Chrysophytes were still an important constituent of the phytoplankton from January through March, when they often comprised over 25% of the density in Lake Wylie samples. The most abundant chrysophytes during this period were Stylexomonas spp. and Synura spp., Stylexomonas dominated chrysophyte densities during January 1986.

The Dinophyceae were observed in approximately one-third of the samples and seldom contributed over 5% to the density or 20% to the biovolume in any sample. The Euglenophyceae were observed in approximately one-fourth of the samples and seldom accounted for more than 5% of the algal standing crop. The Xanthophyceae were observed far more frequently during this study than during previous studies. Xanthophyceae, primarily the newly recorded taxon Dichotomococcus spp., were observed in nearly one-fourth of the samples; however, they rarely constituted more than 1% of the algal standing crop.

The Chloromonadophyceae, which were first recorded from fall samples of the Unit 1 Operational Study, were observed in 28 samples, 18 of which were collected in October and November 1987. The taxon Gonyostomum spp., a large flagellate, often accounted for over 25% of the biovolume in October-November samples. This taxon occasionally dominated October phytoplankton biovolumes during the Unit 1 Operational Study.

SUMMARY

Phytoplankton were sampled monthly from December 1986 through November 1987 at three locations in the vicinity of CNS. Standing crop parameters consisted of algal density, biovolume, and chlorophyll a.

Total phytoplankton standing crop parameters and the standing crops of the major classes showed the same general seasonal trends during this study as during previous studies on Lake Wylie, with maximum values occurring during late spring and summer, and minimum values occurring during late fall and winter. Phytoplankton standing crops during the Two-Unit Operational Study and the Preoperational Study were generally lower than those observed during the Unit 1 Operational Study, particularly during winter-spring periods. This was probably due to higher surface light intensities and lower turbidities recorded during the winter-spring period of the Unit 1 Operational Study.

Location 220.0, near the CNS intake, often had higher densities and biovolumes than other locations during this study, while chlorophyll concentrations were often highest at Location 215.0. Chlorophyll concentrations in the surface samples at Locations 215.0 and 220.0 in August and September 1987 were higher than those previously recorded.

Total phytoplankton and major class standing crops showed similar trends of vertical distribution, with higher standing crops among surface samples than among lower strata samples. The greatest degree of vertical stratification was observed from April through September 1987, while relatively small vertical standing crop differences occurred during fall and winter due to seasonal mixing. These same general trends were observed during both previous Duke Power studies on Lake Wylie.

The major classes of phytoplankton during this study, in order of importance based on percent composition of total density, were the Bacillariophyceae, Chlorophyceae, Myxophyceae, and Cryptophyceae. The Bacillariophyceae was also the most abundant class during the Unit 1 Operational Study, while the Cryptophyceae dominated phytoplankton assemblages during the Preoperational Study. This appears to indicate a shift in community composition similar to that which was observed by Industrial Bio-Test in 1973-1974. Nine classes and 200 species were recorded during this study, with Skeletonema, Chlamydomonas, Chroococcus, and Rhodomonas among the most abundant from each major class. These same taxa were also among the most abundant observed during the two previous Duke Power studies.

Results from all four of the studies conducted on Lake Wylie have shown year-to-year monthly variations in standing crop, community composition, and seasonal distribution. This appears to indicate that periodic differences in community composition and seasonal abundance patterns noted during this study as compared to previous studies are primarily a function of normal environmental variability. CNS two-unit operation did not appear to cause any long-term or consistent impacts on the phytoplankton in the vicinity of the Catawba Nuclear Station.

LITERATURE CITED

- Duke Power Company. Chemical and biological characteristics prior to the operation of the Catawba Nuclear Station, 316(a) Demonstration preoperational report. Summary of data collected 1973-1974 and 1983-1984. Duke Power Company, Charlotte, NC. 134p.; 1985.
- Duke Power Company. Chemical and biological characteristics during the first year of operation of Unit 1 of Catawba Nuclear Station, 316(a) Demonstration operational report. Summary of data collected April 1985 through March 1986. Duke Power Company, Charlotte, NC. 166p.; 1987.
- Industrial Bio-Test Laboratories, Inc. A baseline/predictive environmental investigation of Lake Wylie, Catawba Nuclear Station, and Plant Allen. Report to Duke Power Company. 2 vols. 743p.; 1974.
- Weiss, C. M.; Campbell, P. H.; Anderson, T. P.; Pleander, S. L. The lower Catawba lakes: characterization of phyto- and zooplankton communities and their relationships to environmental factors. Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC. ESE Pub. No. 389. 396p.; 1975.

Table 3-1 Phytoplankton densities (units/ml) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	1,975	866	688	366	3,750	15,171	15,246	10,795	18,737	6,861	6,796	7,299
	5.0	1,974	1,566	868	490	1,584	13,655	2,258	8,099	4,226	7,742	5,221	3,660
	15.4	1,162	488	1,460	570	624	1,272	522	720	2,352	2,717	6,081	4,506
	15.0	915	322	840	520	848	752	306	1,056	1,200	1,772	4,876	3,741
215.0	0.3	1,877	915	836	1,290	4,932	17,586	11,962	7,733	14,559	10,165	5,634	3,200
	5.0	1,879	1,932	620	2,042	1,040	7,586	1,416	4,394	2,809	10,165	4,083	3,964
	9.0	1,751	1,401	424	920	544	1,748	708	2,784	2,376	2,043	3,797	3,264
220.0	0.3	2,137	979	1,095	770	8,678	16,774	10,067	18,738	18,230	13,563	8,269	4,408
	5.0	1,275	694	1,156	270	3,218	10,796	10,941	10,142	12,473	11,084	7,984	3,151
	10.0	1,128	1,295	664	220	768	2,017	936	1,772	1,944	2,484	7,326	3,461
	14.0	623	648	544	650	881	732	1,056	768	1,248	4,102	7,061	3,069

Table 3-2 Phytoplankton biovolumes (mm^3/m^3) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth (m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	729	303	498	356	1,594	3,009	4,844	4,322	6,021	2,979	2,327	869
	5.0	586	1,447	695	336	801	3,031	1,197	2,519	2,467	3,372	1,728	894
	10.0	368	233	1,242	241	814	352	500	461	862	1,816	1,631	1,063
	15.0	649	405	415	254	775	190	240	351	484	1,165	1,332	672
215.0	0.3	808	464	351	604	1,351	3,279	5,658	4,251	5,552	4,725	2,343	1,000
	5.0	652	758	309	1,006	307	3,368	429	2,401	1,511	4,572	1,711	1,527
	9.0	839	636	118	427	379	321	578	847	986	950	1,097	1,342
220.0	0.3	986	426	1,018	823	4,574	8,091	2,983	6,196	6,458	5,584	2,209	1,071
	5.0	350	312	829	78	1,463	2,046	3,542	4,983	4,615	4,784	2,921	623
	10.0	355	623	654	132	679	722	334	408	561	1,342	2,157	466
	14.0	250	150	601	513	865	159	353	261	349	2,052	2,042	542

Table 3-3 Phytoplankton chlorophyll a values (mg/m³) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	4.32	1.54	2.72	1.32	2.92	7.24	9.25	10.06	19.22	8.25	6.44	7.84
	5.0	2.99	1.66	4.54	0.91	1.21	7.44	2.26	8.45	6.44	10.46	7.44	4.63
	10.0	1.60	1.34	4.64	0.98	0.81	1.42	0.73	1.37	1.94	2.50	7.44	5.83
	15.0	1.82	1.09	4.70	1.14	0.89	0.65	0.73	1.45	1.94	2.42	3.39	6.24
215.0	0.3	5.61	3.87	4.38	2.66	4.63	0.86	11.06	10.66	24.03	28.30	8.05	7.24
	5.0	2.62	3.71	2.88	3.23	1.53	2.07	1.86	7.64	4.83	20.29	6.84	4.83
	9.0	2.40	2.90	1.76	2.02	0.61	1.47	1.53	3.62	3.82	2.58	6.03	6.24
220.0	0.3	4.59	2.19	4.32	1.69	2.90	7.84	7.44	10.46	29.37	20.82	10.46	6.24
	5.0	2.03	1.90	4.64	1.29	1.69	6.02	6.03	6.64	19.76	9.05	11.26	4.83
	10.0	1.71	2.11	4.06	0.91	1.26	1.66	1.29	1.21	1.94	5.43	10.70	4.83
	14.0	1.60	1.62	3.31	1.53	1.30	1.22	0.97	1.13	2.34	2.66	10.26	4.83

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Table 3-4 Phytoplankton taxa observed in samples collected on Lake Wylie for the periods May 1983 through April 1984 (POS=Preoperational study), April 1985 through March 1986 (U1S=Unit 1 study), and December 1986 through November 1987 (U2S=Two-Unit study).

CHLOROPHYCEAE	POS	U1S	U2S
<i>Actinastrum gracilimum</i> G. M. Smith			X
<i>A. hantzschii</i> Lag.			X
<i>A. hantzschii</i> v. <i>fluviatile</i> Schroed.			X
<i>Ankistrodesmus corvolutus</i> Corda	X	X	
<i>A. falcatus</i> (Corda) Ralfs	X	X	X
<i>A. falcatus</i> v. <i>acicularis</i> (A. Braun) G. S. West			X
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	X	X	X
<i>A. nannoseleone</i> Skuja		X	X
<i>A. spiralis</i> (Turner) Lemm.			X
<i>Arthrodesmus incus</i> (Breb.) Hassall	X	X	X
<i>A. incus</i> v. <i>ralfsii</i> W. West			X
<i>A. sp.</i> Ehr.	X	X	
<i>Asterococcus limneticus</i> G. M. Smith	X	X	X
<i>Botryococcus braunii</i> Kutz.	X		
<i>Carteria fritzschii</i> Takeda		X	
<i>C. sp.</i> Deising	X	X	X
<i>Chlamydomonas angulosa</i> Dill		X	
<i>C. globosa</i> Snow	X	X	
<i>C. spp.</i> Ehr.	X	X	X
<i>Chlorella spp.</i> Beyerink	X		
<i>Chlorogonium spirale</i> Scherf. & Pascher		X	X
<i>C. spp.</i> Ehr.			X
<i>Closteriopsis lungrissima</i> v. <i>tropica</i> West & West		X	X
<i>Closterium incurvum</i> Breb.	X		
<i>C. spp.</i> Nitzsch.	X		
<i>Coccomonas orbicularis</i> Stien			X
<i>Coelastrum cambricum</i> Archer		X	X
<i>C. microporum</i> Nag.		X	X
<i>C. reticulatum</i> (Dang.) Senn.		X	
<i>C. sphaericum</i> Nag.			X
<i>C. spp.</i> Nag.		X	X
<i>Cosmarium angulosum</i> v. <i>concinnum</i> (Rab.) W. & W.	X		X
<i>C. asphearosporum</i> v. <i>strigosum</i> Norst.	X	X	X
<i>C. phaseolus</i> f. <i>minor</i> Boldt			X
<i>C. subtumidum</i> Nord.			X
<i>C. tenue</i> Archer		X	X
<i>C. tinctum</i> Ralfs		X	X
<i>C. tumidum</i> Lundell			X
<i>C. spp.</i> Corda	X	X	X
<i>Crucigenia apiculata</i> (Lemm.) Schmidle			X
<i>C. crucifera</i> (Wolle.) Collins	X	X	X
<i>C. fenestrata</i> Schmidle			X
<i>C. irregularis</i> Wille		X	X
<i>C. rectangularis</i> (A. Braun) Gay		X	
<i>C. tetrapedia</i> (Kirch.) West & West	X	X	X

Table 3-4

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	POS	U1S	U2S
C. spp. Morren	X		
<u>Dactyococcus</u> spp. Nag.		X	
<u>Dictyosphearium ehrenbergianum</u> Nag.		X	X
<u>D. pulchellum</u> Nag.	X	X	X
<u>Elakatothrix gelatinosa</u> Wille	X	X	X
<u>Euastrum denticulatum</u> v. <u>rectangulare</u> West & West			X
E. spp. Ehr.			X
<u>Eudorina elegans</u> Ehr.	X	X	X
<u>Franceia droescheri</u> (Lemm.) G. M. Smith	X	X	X
<u>F. ovalis</u> (France) Lemm.	X		X
<u>Gloeocystis botryoides</u> (Kutz.) Nag.		X	X
<u>G. gigas</u> (Kutz.) Lag.		X	
G. spp. Nag.	X	X	
<u>Golenkinia pausispina</u> West & West	X	X	X
<u>G. radiata</u> (Chodat) Wille	X	X	X
<u>Gonium pectorale</u> Mueller	X		X
<u>G. sociale</u> (Duj.) Warming			X
<u>Haematococcus lacustris</u> (Girod.) Rost.			X
<u>Kirchneriella contorta</u> (Schmidle) Bohlin	X	X	X
<u>K. lunaris</u> (Kirch.) Moebius	X		X
<u>K. lunaris</u> v. <u>dianae</u> Bohlin		X	X
<u>K. obesa</u> (W. West) Schmidle	X		X
<u>K. subsolitaria</u>		X	X
K. spp. Schmidle	X	X	X
<u>Lagerhemia ciliata</u> (Lag.) Chodat		X	
<u>L. ciliata</u> v. <u>minor</u> (G. M. Smith) G. M. Smith		X	
<u>L. longiseta</u> (Lemm.) Printz		X	X
<u>L. subsala</u> Lemm.	X	X	X
<u>Mesostigma viride</u> Lauterb			X
<u>Micractinium pusillum</u> Fresen.	X	X	X
<u>Monoraphidium braunii</u> Nag.			X
<u>M. contortum</u> Thuret	X	X	X
<u>M. setiforme</u> Nygard	X		
M. spp. Lernerova	X		
<u>Nannochloris</u> sp. Nauman	X		
<u>Nephrocytium agardianum</u> Nag.	X	X	X
<u>Oocystis borgei</u> Snow			X
<u>O. lacustris</u> Chodat	X		
<u>O. parva</u> West & West		X	X
<u>O. pusilla</u> Hansg.	X		
O. spp. Nag.	X	X	
<u>Pandorina charkoweinsis</u> Korsh.		X	X
<u>P. morum</u> (Muel.) Bory	X	X	X
<u>Planktosphaeria gelatinosa</u> G. M. Smith		X	X
<u>Pediastrum biradiatum</u> Meyen		X	
<u>P. duplex</u> Meyen	X	X	X
<u>P. duplex</u> v. <u>gracillimum</u> West & West		X	
<u>P. tetras</u> (Ehr.) Ralfs	X	X	X
P. spp. Meyen	X		
<u>Poledriopsis spinulosa</u> (Playf.) G. M. Smith			X
<u>Pteromonas angulosa</u> (Carter) Lemm.			X
<u>Quadrigula lacustris</u> (Chodat) G. M. Smith	X	X	
Q. spp. Printz	X		

	POS	UIS	U2S
<i>Scenedesmus abundans</i> (Kirch.) Chodat	X	X	X
<i>S. abundans</i> v. <i>asymetrica</i> (Schroed.) G. M. Smith		X	X
<i>S. abundans</i> v. <i>brevicauda</i> G. M. Smith		X	
<i>S. acuminatus</i> (Lag.) Chodat	X	X	X
<i>S. acutus</i> v. <i>minor</i> G. M. Smith	X		
<i>S. arcuatus</i> v. <i>platydisca</i> G. M. Smith	X		X
<i>S. armatus</i> Chodat	X	X	
<i>S. armatus</i> v. <i>bicaudatus</i> (Gugl. & Printz) Chodat		X	X
<i>S. barnardii</i> G. M. Smith	X		
<i>S. bijuga</i> (Turp.) Lag.	X	X	X
<i>S. bijuga</i> v. <i>alterans</i> (Rein.) Hansg.	X	X	
<i>S. brasiliensis</i> Bohlin	X		X
<i>S. denticulatus</i> Lag.	X	X	X
<i>S. denticulatus</i> v. <i>recurvatus</i> Schum.		X	X
<i>S. dimorphus</i> (Turp.) Kutz.	X	X	X
<i>S. opoliensis</i> P. Richter	X		
<i>S. opoliensis</i> v. <i>contracta</i> Prescott		X	
<i>S. quadricauda</i>	X	X	X
<i>S. quadricauda</i> v. <i>maximus</i> West & West	X		
<i>S. spp.</i> Meyen	X	X	X
<i>Schroederia setigera</i> (Schroed.) Lemm.		X	X
<i>Selenastrum bibraianum</i> Reinsch			X
<i>S. minutum</i> (Nag.) Collins	X	X	X
<i>S. westii</i> G. M. Smith	X	X	X
<i>S. spp.</i> Reinsch	X		
<i>Sphaerocystis schroeteri</i> Chodat		X	X
<i>Sphaerosma granulata</i> Roy & Bliss			X
<i>Sorastrum spinulosum</i> Nag.			X
<i>Staurastrum americanum</i> (West & West) G. M. Smith	X		X
<i>S. curvatum</i> v. <i>elongatum</i> G. M. Smith		X	
<i>S. dickiei</i> v. <i>rhomboidium</i> West & West			X
<i>S. paradoxum</i> Meyen	X		X
<i>S. tetracerum</i> Ralfs	X		X
<i>S. spp.</i> Meyen	X	X	X
<i>Tetraedron arthrodesmiforme</i> (G. S. West) Woln.			X
<i>T. caudatum</i> (Corda) Hansg.	X		X
<i>T. caudatum</i> v. <i>longispinum</i> Lemm.	X		X
<i>T. limneticum</i> Borge			X
<i>T. minimum</i> (A. Braun) Hansg.	X	X	X
<i>T. muticum</i> (A. Braun) Hansg.			X
<i>T. pentaedricum</i> West & West	X	X	
<i>T. regulare</i> Kutz.	X		X
<i>T. regulare</i> v. <i>incus</i> Tieling			X
<i>T. trigonum</i> (Nag.) Hansg.	X		X
<i>T. trigonum</i> v. <i>gracile</i> (Reinsch) DeT.		X	X
<i>T. trigonum</i> v. <i>setigerum</i> (Archer) Lemm.			X
<i>T. spp.</i> Kutz.		X	
<i>Tetrastrum heteracanthum</i> (Nordst.) Chodat	X	X	X
<i>T. staurigeniforme</i> (Schroed.) Lemm.			X
<i>Truebaria setigerum</i> (Archer) G. M. Smith	X	X	X
<i>Westella linearis</i> G. M. Smith			X

BACILLARIOPHYCEAE	POS	U1S	U2S
<i>Achnanthes exigua</i> Krasske		X	
<i>A. microcephala</i> Kutz.		X	X
<i>A. spp.</i> Bory	X	X	X
<i>Amphiphora costata</i> Hust.		X	
<i>Amphora ovalis</i> (Kutz.) Kutz.	X		
<i>Anomoeoneis vitrea</i> (Grun.) Ross	X		
<i>Asterionella formosa</i> Hassall	X	X	X
<i>Attheya zachariasii</i> J. Brun.	X	X	
<i>Cocconeis placentula</i> Ehr.		X	
<i>Cyclotella meneghiniana</i> Kutz.		X	X
<i>C. stelligera</i> (Cleve) V. H.	X	X	X
<i>C. spp.</i> Kutz.	X		X
<i>Cymbella naviculiformis</i> Auers.			X
<i>C. tumida</i> (Breb.) V. H.			X
<i>C. spp.</i> Agardh		X	
<i>Fragilaria crotonensis</i> Kitton	X	X	X
<i>F. spp.</i> Kutz.	X	X	
<i>Frustulia rhomboides</i> (Ehr.) DeT.	X		X
<i>F. vulgaris</i> Thwaites		X	
<i>Gomphonema spp.</i> Agardh	X		X
<i>Melosira ambigua</i> (Grun.) O. Muller		X	X
<i>M. distans</i> (Ehr.) Kutz.	X	X	X
<i>M. distans v. alpigena</i> Grun.	X		
<i>M. granulata</i> (Ehr.) Ralfs	X	X	X
<i>M. granulata v. angustissima</i> Muller	X	X	X
<i>M. islandica</i> Mueller			X
<i>M. italica</i> (Ehr.) Kutz.	X		X
<i>M. italica v. tenuissima</i> (Grun.) Mueller	X	X	X
<i>M. varians</i> Agardh	X	X	X
<i>M. spp.</i> Agardh	X	X	X
<i>Navicula cryptocephala</i> Kutz.		X	
<i>N. exigua</i> (Greg.) O. Muller	X	X	X
<i>N. pupula</i> Kutz.		X	
<i>N. spp.</i> Bory	X	X	X
<i>Nitzschia acicularis</i> (Kutz.) W. Smith	X	X	X
<i>N. agnita</i> Hust.			X
<i>N. holsatica</i> Hust.			X
<i>N. kutzingiana</i> Hilse			X
<i>N. palea</i> (Kutz.) W. Smith		X	X
<i>N. paleacea</i> Grun.		X	X
<i>N. sublinearis</i> Hust.			X
<i>N. subtilis</i> Kutz.			X
<i>N. spp.</i> Hassall	X	X	X
<i>Pinaculalia spp.</i> Ehr.			X
<i>Rhizosolenia spp.</i> Ehr.	X	X	X
<i>Skeletonema potemos</i> (Weber) Hasle	X	X	X
<i>Stephanodiscus spp.</i> Ehr.		X	X
<i>Surirella spp.</i> Turpin		X	
<i>Synedra acus</i> Kutz.		X	X
<i>S. planktonica</i> Ehr.	X	X	X
<i>S. rumpens</i> Kutz.	X	X	X
<i>S. rumpens v. fragilarioides</i> Grun.			X
<i>S. rumpens v. scotica</i> Grun.	X	X	

Table 3-4

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	POS	U1S	U2S
<u>S. ulna</u> Nitz.	X	X	X
<u>S. ulna</u> v. <u>ramesii</u> (Herib.) Hust.	X		
<u>S. spp.</u> Ehr.	X	X	X
<u>Tabellaria fenestrata</u> (Lyngb.) Kutz.		X	X
<u>T. flocculosa</u> (Roth) Kutz.		X	X
<u>Terpsinoe americana</u> (Bailey) Ralfs			X
CHRYSOPHYCEAE			
<u>Aulomonas purdyii</u> Lackey		X	X
<u>Chromulina</u> spp. Chien.		X	
<u>Chrysococcus rufescens</u> Klebs			X
<u>Codomonas annulata</u> Lackey		X	X
<u>Dinobryon bavaricum</u> Imhof	X	X	X
<u>D. cylindricum</u> Imhof & Ahlstr.			X
<u>D. spp.</u> Ehr.	X	X	X
<u>Erkenia subaequiciliata</u> Skuja		X	X
<u>Kephyrion littorale</u> Lund		X	X
<u>Lagynion</u> spp. Pascher	X		
<u>Mallomonas acroides</u> Perty	X	X	X
<u>M. allantoides</u> Harris		X	X
<u>M. alpina</u> Pascher & Ruttner	X	X	X
<u>M. caudata</u> Conrad		X	
<u>M. pseudocoronata</u> Prescott	X		X
<u>M. tonsurata</u> Telling	X	X	X
<u>M. spp.</u> Perty	X	X	
<u>Ochromonas mutabilis</u> Klrbs		X	X
<u>O. spp.</u> Wyssot.		X	X
<u>Pseudokephyrion</u> spp. Pascher		X	X
<u>Stelaxomonas dichotoma</u> Lackey	X	X	X
<u>Synura spinosa</u> Korsh.	X	X	X
<u>S. ulvella</u> Ehr.		X	
<u>S. spp.</u> Ehr.	X	X	
<u>Uroglenopsis americana</u> (Calk.) Lemm.	X	X	
HAPTOPHYCEAE			
<u>Chrysochromulina parva</u> Lackey		X	
XANTHOPHYCEAE			
<u>Dichotomococcus</u> spp. Korsh.			X
<u>Ophiocytium capitatum</u> v. <u>longispinum</u> (Moeb.) Lem.	X	X	
<u>Pseudotetraedron neglectum</u> (Perty) A. Braun			X
CRYPTOPHYCEAE			
<u>Cryptomonas erosa</u> Ehr.	X	X	X
<u>C. erosa</u> v. <u>reflexa</u> Marsson		X	
<u>C. marsonii</u> Skuja		X	
<u>C. ovata</u> Ehr.	X	X	X
<u>C. phaseolus</u> Skuja	X		
<u>C. reflexa</u> Skuja	X	X	X
<u>C. spp.</u> Ehr.	X		
<u>Rhodomonas minuta</u> Skuja	X	X	X

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	POS	UIS	U2S
MYXOPHYCEAE			
<u>Agmenellum quadriduplicatum</u> Breb.	X	X	X
<u>Anabaena spiroides</u> Lemm.		X	X
<u>A. wisconsinense</u> Prescott			X
<u>A. spp.</u> Bory	X	X	X
<u>Anabaenopsis spp.</u> Wolo. & Miller			X
<u>Anacystis cyanea</u> Druet & Daily	X		
<u>A. incerta</u> Druet & Daily		X	
<u>A. spp.</u>		X	X
<u>Aphanothece clathrata</u> G. S. West	X		
<u>A. nidulans</u> P. Richter		X	
<u>A. saxicola</u> Nag.		X	
<u>A. spp.</u> Nag.		X	
<u>Chroococcus dispersus</u> (KieSSL.) Lemm.			X
<u>C. limneticus</u> Lemm.	X	X	X
<u>C. minutus</u> Kutz.	X	X	
<u>C. prescottii</u> Druet & Daily		X	X
<u>C. spp.</u> Nag.	X	X	X
<u>Dactylococcopsi raphidioides</u> Hansg.	X		
<u>D. smithii</u> Chodat & Chodat	X		
<u>Lyngbya contorta</u> Lemm.	X		
<u>L. ochracea</u> Thuret			X
<u>L. spirulinoides</u> Gomont			X
<u>L. versicolor</u> (Wartman) Gomont			X
<u>Microcoleus spp.</u> Esmaz.	X		
<u>Oscillatoria geminata</u> Meneg.	X	X	X
<u>O. limnetica</u> Lemm.	X	X	X
<u>O. minima</u>		X	
<u>O. subtilissima</u> Kutz.	X	X	
<u>O. spp.</u> Vaucher	X	X	X
<u>Phormidium angustissima</u> West & West	X	X	
<u>P. spp.</u> Kutz.			X
<u>Rabdoderma lineare</u> Schmidle & Lauterb.			X
<u>Raphidiopsis curvata</u> Fritsch & Rich			X
<u>Spirulina spp.</u> Turpin	X	X	
EUGLENOPHYCEAE			
<u>Euglena acus</u> Ehr.	X	X	
<u>E. elastica</u> Prescott		X	
<u>E. spp.</u> Ehr.	X	X	X
<u>Lepocinclus ovum</u> (Ehr.) Lemm.			X
<u>L. spp.</u> Perty			X
<u>Phacus spp.</u> Duj.	X	X	X
<u>Trachelomonas acanthostoma</u> (Stokes) Defl.		X	X
<u>T. hispida</u> (Perty) Stein		X	X
<u>T. hispida v. punctata</u> Lemm.			X
<u>T. volvocina</u> Ehr.		X	X
<u>T. spp.</u> Ehr.	X	X	X
DINOPHYCEAE			
<u>Ceratium hirundinella</u> (Mueller) Schrank	X		
<u>C. hirundinella v. brachyceras</u> (Daday) Osten.		X	
<u>C. spp.</u> Schrank	X		
<u>Glenodinium quadridens</u> (Stein) Schiller	X	X	

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	<u>POS</u>	<u>U1S</u>	<u>U2S</u>
<u>G. spp.</u> Stein	X	X	
<u>Gymnodinium neglectum</u> (Schilling) Linde.		X	
<u>Peridinium aciculiferum</u> Lemm.			X
<u>P. inconspicuum</u> Lemm.	X	X	X
<u>P. penardiforme</u> Linde.			X
<u>P. pulvisculus</u> (Ehr.) Stein	X		
<u>P. pusillum</u> (Pennard) Lemm.	X		X
<u>P. quadridens</u> Stein		X	
<u>P. spp.</u> Ehr.	X	X	X
<u>CHLOROMONADOPHYCEAE</u>			
<u>Gonyostomum depressum</u> (Lauterb.) Lemm.			X
<u>G. latum</u> Iwanoif			X
<u>G. semen</u> (Ehr.) Diesing		X	X
<u>G. spp.</u> Deising		X	X

Table 3-5. List of algal classes observed in samples collected on Lake Wylie and their percent composition of total phytoplankton observed from May 1983 through April 1984 (POS=Preoperational study), April 1985 through March 1986 (U1S=Unit 1 study), and December 1986 through November 1987 (U2S=Two-Unit study).

Class	Density Percent Composition		
	POS	U1S	U2S
Chlorophyceae	19.0	14.7	21.7
Bacillariophyceae	18.7	21.7	33.6
Chrysophyceae	5.7	12.3	8.6
Haptophyceae	0	1.2	0
Xanthophyceae	<0.1	<0.1	0.6
Cryptophyceae	43.4	23.9	17.0
Myxophyceae	11.6	21.7	17.5
Euglenophyceae	0.1	0.1	0.2
Dinophyceae	0.9	0.6	0.3
Chloromonadophyceae	0	0.1	0.4
Unknowns	0.6	0	0

Class	Biovolume Percent Composition		
	POS	U1S	U2S
Chlorophyceae	13.0	15.5	20.8
Bacillariophyceae	24.7	31.0	24.9
Chrysophyceae	4.8	4.4	5.0
Haptophyceae	0	0.7	0
Xanthophyceae	<0.1	<0.1	0.2
Cryptophyceae	42.6	24.2	21.3
Myxophyceae	2.3	7.6	14.9
Euglenophyceae	1.1	1.0	2.0
Dinophyceae	11.3	12.1	4.7
Chloromonadophyceae	0	3.5	6.2
Unknowns	0.2	0	0

Table 3-6 Bacillariophyceae densities (units/ml) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	711 (35.9)	173 (20.0)	252 (36.6)	224 (60.8)	753 (21.0)	3,646 (24.0)	2,844 (18.6)	2,625 (24.3)	3,291 (17.5)	1,920 (27.9)	2,533 (37.2)	1,405 (42.5)
	5.0	1,127 (57.0)	757 (47.9)	244 (28.1)	210 (82.8)	977 (61.6)	6,052 (46.3)	1,105 (48.9)	2,625 (32.4)	1,562 (36.9)	2,697 (34.8)	1,941 (37.1)	2,075 (56.6)
	10.0	882 (75.7)	168 (40.9)	404 (28.7)	330 (57.8)	464 (74.3)	793 (62.2)	366 (70.1)	353 (48.9)	673 (28.5)	1,108 (40.6)	2,554 (41.9)	2,533 (56.1)
	15.0	686 (74.9)	193 (59.5)	84 (10.0)	340 (65.3)	561 (66.0)	481 (83.8)	210 (68.6)	336 (31.8)	553 (46.0)	797 (44.8)	1,818 (37.2)	1,944 (51.9)
215.0	0.3	605 (32.1)	156 (17.1)	168 (20.0)	290 (22.4)	1,186 (24.0)	1,458 (19.9)	2,771 (23.1)	1,531 (19.8)	2,911 (19.9)	1,900 (18.6)	1,307 (23.1)	1,144 (35.7)
	5.0	1,095 (58.2)	381 (19.3)	132 (21.2)	641 (31.3)	449 (43.0)	3,792 (49.9)	481 (33.9)	1,322 (30.0)	1,009 (35.9)	2,247 (22.0)	1,001 (24.4)	1,814 (45.4)
	9.0	1,078 (61.5)	444 (31.7)	140 (33.0)	210 (22.8)	208 (38.2)	961 (76.9)	444 (62.7)	937 (33.6)	625 (26.2)	572 (28.0)	1,103 (29.0)	1,177 (36.0)
220.0	0.3	670 (31.3)	173 (17.6)	468 (42.7)	360 (46.7)	1,202 (13.8)	6,854 (10.8)	1,021 (10.1)	4,936 (26.3)	5,695 (31.2)	5,312 (39.1)	3,923 (47.4)	2,026 (45.9)
	5.0	703 (55.1)	148 (21.4)	324 (28.0)	20 (17.4)	529 (16.4)	5,032 (46.6)	2,333 (21.3)	2,333 (23.0)	4,521 (36.2)	5,189 (46.7)	3,473 (43.4)	1,552 (49.2)
	10.0	797 (70.6)	383 (29.5)	212 (31.9)	130 (59.1)	593 (77.0)	1,370 (67.8)	288 (30.7)	601 (47.1)	985 (50.6)	1,267 (50.8)	2,636 (35.9)	2,239 (64.6)
	14.0	404 (64.6)	138 (21.4)	324 (59.5)	430 (66.1)	817 (92.7)	540 (73.7)	505 (47.7)	216 (28.1)	529 (42.3)	2,104 (51.2)	3,146 (44.5)	1,797 (58.5)

Table 3-7 Bacillariophyceae biovolumes (mm^3/m^3) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	170 (23.3)	118 (39.0)	389 (78.1)	200 (52.7)	627 (139.3)	516 (117.1)	2,367 (488.8)	1,408 (32.5)	1,778 (29.5)	1,398 (46.9)	671 (28.8)	141 (16.1)
	5.0	353 (60.2)	1,204 (83.2)	466 (67.8)	224 (66.7)	716 (89.3)	923 (130.4)	793 (166.0)	1,129 (44.8)	1,233 (49.9)	1,521 (45.0)	301 (17.3)	254 (28.4)
	10.0	299 (81.1)	163 (70.0)	147 (60.1)	181 (75.4)	709 (87.0)	277 (78.6)	408 (81.4)	293 (63.4)	294 (34.0)	1,344 (74.0)	737 (45.1)	204 (19.1)
	15.0	543 (83.6)	363 (89.6)	64 (15.3)	181 (71.5)	742 (95.7)	151 (79.5)	202 (84.1)	147 (41.9)	279 (57.6)	758 (65.0)	448 (33.6)	203 (30.2)
215.0	0.3	155 (19.1)	87 (18.7)	85 (24.1)	165 (27.3)	184 (113.6)	302 (19.2)	3,219 (56.8)	1,480 (34.8)	2,512 (45.2)	969 (20.5)	247 (10.5)	91 (7.1)
	5.0	169 (25.9)	183 (24.1)	61 (19.6)	393 (39.1)	73 (20.4)	2,378 (70.5)	261 (60.9)	696 (28.5)	285 (18.8)	1,052 (23.0)	337 (19.7)	694 (45.4)
	9.0	369 (43.9)	270 (42.4)	50 (42.0)	170 (29.7)	126 (33.3)	265 (82.5)	513 (88.7)	412 (40.6)	369 (37.4)	491 (51.6)	359 (32.7)	112 (8.3)
220.0	0.3	105 (10.6)	228 (53.5)	731 (71.8)	609 (73.9)	655 (14.3)	5,345 (66.9)	680 (22.7)	1,517 (24.4)	2,328 (36.0)	2,725 (48.8)	882 (39.9)	347 (32.4)
	5.0	106 (30.3)	182 (58.2)	546 (65.8)	6 (7.5)	324 (22.1)	1,010 (49.3)	2,213 (62.4)	1,668 (33.4)	2,472 (53.5)	3,156 (66.4)	906 (31.0)	129 (20.7)
	10.0	251 (70.6)	429 (68.8)	468 (71.4)	124 (94.6)	650 (95.8)	532 (73.6)	145 (43.3)	293 (71.9)	380 (67.6)	1,020 (76.0)	800 (37.0)	146 (31.3)
	14.0	106 (42.3)	70 (46.7)	505 (84.0)	350 (68.2)	857 (99.0)	147 (87.2)	268 (75.9)	106 (40.5)	138 (39.4)	1,424 (69.3)	649 (31.8)	142 (26.1)

Table 3-8 Chlorophyceae densities (units/ml) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates												
		12/05/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87	
42-G	210.0	0.3	114 (5.7)	107 (12.3)	60 (8.7)	21 (5.7)	224 (6.2)	1,240 (8.1)	1,312 (8.6)	2,261 (20.9)	6,455 (34.4)	2,206 (32.1)	1,798 (26.4)	555 (16.8)
		5.0	245 (12.3)	99 (6.2)	88 (10.1)	10 (2.0)	192 (12.1)	2,333 (17.8)	648 (20.7)	1,679 (20.7)	1,201 (28.4)	2,240 (29.3)	1,466 (28.1)	556 (15.1)
		10.0	74 (6.3)	53 (12.9)	64 (4.5)	40 (7.0)	32 (5.1)	48 (3.7)	78 (14.9)	224 (31.0)	937 (39.7)	858 (31.5)	1,695 (27.8)	768 (17.0)
		15.0	85 (7.1)	58 (17.7)	56 (6.6)	0 (0)	208 (24.5)	96 (12.7)	54 (17.6)	288 (27.2)	126 (9.9)	735 (41.3)	1,425 (29.2)	654 (17.4)
	215.0	0.3	163 (8.6)	173 (18.9)	76 (9.0)	180 (13.9)	625 (12.6)	1,458 (9.9)	3,208 (26.8)	1,823 (23.5)	5,569 (38.2)	3,432 (33.7)	1,512 (26.8)	539 (16.8)
		5.0	261 (13.9)	247 (12.8)	44 (7.0)	341 (16.6)	48 (4.6)	510 (6.7)	360 (25.4)	961 (21.8)	817 (29.0)	3,363 (33.1)	1,165 (28.5)	702 (17.6)
		9.0	343 (19.5)	99 (7.0)	36 (8.4)	150 (16.3)	48 (8.8)	96 (7.6)	132 (18.6)	529 (18.9)	769 (32.3)	817 (39.9)	1,246 (32.7)	621 (18.9)
	220.0	0.3	196 (9.1)	107 (10.9)	60 (5.4)	90 (11.6)	1,506 (17.3)	1,750 (10.4)	1,604 (15.9)	3,544 (18.9)	6,454 (35.4)	4,536 (33.4)	1,594 (19.2)	801 (18.1)
		5.0	163 (12.8)	66 (9.5)	108 (9.3)	60 (22.2)	272 (8.4)	2,188 (20.2)	1,750 (15.7)	2,406 (23.7)	3,573 (28.6)	2,549 (23.0)	1,859 (23.2)	653 (20.7)
		10.0	160 (14.1)	136 (10.3)	76 (11.4)	10 (4.5)	32 (4.1)	192 (9.5)	168 (17.9)	288 (22.6)	601 (30.8)	608 (24.5)	2,017 (27.5)	441 (12.7)
		14.0	119 (18.9)	105 (16.3)	76 (13.9)	20 (3.0)	32 (3.6)	36 (4.9)	288 (27.2)	288 (37.5)	240 (19.2)	1,226 (29.8)	2,038 (28.9)	637 (20.7)

Table 3-9 Chlorophyceae biovolumes (mm^3/m^3) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Locat.on	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.1	90 (12.3)	11 (3.4)	10 (1.9)	4 (1.0)	141 (8.8)	478 (15.8)	544 (11.2)	514 (11.9)	1,622 (26.9)	872 (29.2)	511 (21.9)	105 (12.1)
	5.0	112 (19.1)	69 (4.7)	8 (1.1)	1 (0.3)	41 (5.1)	977 (32.2)	145 (12.1)	294 (11.6)	279 (11.2)	947 (28.0)	349 (20.2)	106 (11.8)
	10.0	26 (7.0)	7 (2.9)	11 (0.8)	5 (1.9)	8 (1.0)	8 (2.2)	10 (2.0)	96 (20.8)	278 (32.2)	250 (13.7)	408 (24.9)	171 (16.1)
	14.0	35 (5.3)	9 (2.1)	6 (1.5)	0 (0)	27 (3.5)	12 (6.3)	17 (7.0)	68 (19.2)	25 (5.1)	166 (14.2)	258 (19.3)	131 (19.4)
215.0	0.3	175 (21.6)	43 (9.2)	16 (4.6)	31 (5.2)	136 (10.0)	204 (6.2)	822 (14.5)	471 (11.0)	1,754 (31.5)	937 (20.6)	429 (18.2)	107 (8.3)
	5.0	361 (55.4)	67 (8.7)	4 (0.8)	113 (11.2)	3 (0.8)	68 (2.0)	52 (12.1)	237 (9.8)	288 (19.0)	1,106 (24.1)	256 (14.9)	163 (10.6)
	9.0	418 (49.8)	17 (2.6)	3 (2.5)	60 (14.0)	3 (0.8)	12 (3.6)	42 (7.2)	126 (14.9)	220 (22.3)	206 (21.6)	249 (22.6)	92 (6.8)
220.0	0.3	157 (15.9)	17 (3.9)	12 (1.1)	12 (1.4)	1,278 (27.9)	512 (6.3)	556 (18.6)	751 (12.1)	1,741 (26.9)	1,350 (24.1)	295 (13.3)	208 (19.3)
	5.0	131 (37.3)	12 (3.8)	13 (1.5)	10 (12.2)	328 (22.4)	356 (17.4)	239 (6.7)	917 (18.3)	884 (19.1)	689 (14.5)	315 (10.7)	139 (22.3)
	10.0	86 (24.2)	26 (4.1)	8 (1.2)	1 (0.4)	5 (0.7)	20 (2.7)	116 (34.6)	55 (13.3)	133 (23.6)	211 (15.7)	405 (18.7)	87 (18.5)
	14.0	122 (48.8)	16 (10.4)	6 (1.0)	3 (0.6)	5 (0.5)	5 (2.7)	42 (11.8)	92 (35.4)	43 (12.3)	315 (15.3)	334 (16.3)	137 (25.2)

Table 3-10 Myxophyceae densities (units/ml) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth (m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	65 (3.3)	17 (1.9)	8 (1.1)	0 (0)	48 (1.3)	4,740 (31.2)	6,490 (42.5)	3,646 (33.7)	5,315 (28.3)	2,125 (30.9)	593 (8.7)	196 (5.9)
		0 (0)	0 (0)	40 (4.6)	0 (0)	32 (2.0)	1,823 (13.9)	120 (5.3)	2,115 (26.1)	961 (22.7)	2,166 (27.9)	511 (9.7)	180 (4.9)
		37 (3.1)	8 (1.9)	0 (0)	0 (0)	0 (0)	48 (3.7)	54 (10.3)	96 (13.3)	529 (22.4)	531 (19.5)	266 (4.3)	196 (4.3)
215.0	0.3	25 (2.6)	0 (0)	4 (0.4)	0 (0)	80 (10.6)	24 (7.8)	348 (32.9)	401 (40.0)	82 (4.5)	613 (12.5)	147 (3.9)	
		33 (1.7)	8 (0.8)	8 (0.9)	10 (0.7)	192 (3.8)	948 (6.4)	1,823 (15.2)	2,406 (31.1)	3,923 (26.9)	2,840 (27.9)	817 (14.4)	245 (7.6)
		0 (0)	0 (0)	12 (1.9)	0 (0)	64 (6.1)	729 (9.6)	192 (13.5)	1,418 (32.2)	721 (25.6)	2,758 (27.1)	572 (14.0)	180 (4.5)
220.0	0.3	12 (0.7)	0 (0)	20 (4.7)	20 (2.1)	48 (8.8)	60 (4.8)	913 (32.7)	721 (30.3)	552 (27.0)	572 (15.0)	229 (7.0)	
		33 (1.5)	8 (0.8)	8 (0.7)	0 (0)	192 (2.2)	2,188 (13.0)	4,229 (42.0)	6,328 (33.7)	2,784 (15.2)	1,982 (14.6)	695 (8.3)	212 (4.8)
		0 (0)	25 (3.5)	16 (1.3)	10 (3.7)	16 (0.4)	1,167 (10.8)	3,136 (28.6)	3,719 (36.6)	2,333 (18.7)	2,227 (20.0)	633 (7.9)	196 (6.2)
10.0	10.0	0 (0)	0 (0)	8 (1.2)	0 (0)	72 (3.5)	72 (7.6)	240 (18.8)	192 (9.8)	245 (9.8)	838 (11.4)	163 (4.7)	
		12 (1.9)	0 (0)	8 (1.4)	0 (0)	60 (8.1)	144 (13.6)	192 (25.0)	457 (36.5)	327 (7.9)	327 (4.6)	65 (2.1)	

Table 3-11 Myxophyceae biovolumes (mm^3/m^3) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	3 (< 0.1)	< 1 (< 0.1)	3 (0.6)	0 (0)	14 (0.9)	1,019 (33.8)	887 (18.3)	1,082 (24.3)	1,342 (22.2)	544 (5.8)	135 (3.8)	68 (3.8)
	5.0	0 (0)	0 (0)	19 (2.7)	0 (0)	< 1 (< 0.1)	358 (11.7)	49 (4.1)	579 (22.9)	269 (10.8)	555 (16.4)	168 (9.7)	49 (5.5)
	10.0	< 1 (0.1)	6 (2.5)	0 (0)	0 (0)	0 (0)	9 (2.6)	19 (3.7)	39 (8.3)	128 (14.8)	330 (7.3)	85 (5.2)	35 (3.3)
	15.0	8 (0.5)	0 (0)	2 (0.4)	0 (0)	0 (0)	16 (0.2)	9 (3.9)	113 (32.0)	165 (34.3)	28 (2.4)	190 (14.2)	21 (3.1)
215.0	0.3	7 (0.8)	1 (0.3)	4 (1.0)	2 (0.2)	60 (4.4)	188 (5.7)	808 (14.2)	765 (17.9)	723 (15.3)	212 (9.0)	22 (1.7)	
	5.0	0 (0)	0 (0)	5 (1.4)	0 (0)	20 (5.6)	171 (5.0)	79 (18.3)	380 (35.8)	198 (13.1)	660 (14.8)	145 (1.8)	28 (1.8)
	9.0	5 (0.6)	0 (0)	4 (3.3)	0 (0)	1 (0.3)	18 (5.6)	16 (2.7)	237 (27.9)	153 (15.4)	159 (16.6)	177 (15.1)	63 (4.6)
	220.0	14 (1.3)	4 (0.9)	2 (0.1)	0 (0)	28 (0.6)	469 (5.7)	1,242 (41.6)	1,399 (22.5)	541 (8.3)	610 (10.9)	151 (6.8)	35 (3.2)
5.0	0	8 (1.3)	13 (3.9)	4 (5.3)	4 (5.3)	7 (0.4)	164 (8.0)	737 (20.8)	1,376 (27.6)	702 (13.2)	622 (4.3)	128 (4.3)	51 (8.2)
	10.0	0 (0)	0 (0)	3 (0.4)	0 (0)	0 (0)	14 (1.9)	34 (10.2)	47 (11.4)	35 (6.1)	74 (5.5)	239 (11.0)	44 (9.3)
14.0	0	10 (3.9)	0 (0)	< 1 (< 0.1)	0 (0)	0 (0)	5 (3.0)	32 (9.1)	75 (21.1)	105 (5.1)	61 (3.0)	7 (1.3)	
	14.0	10 (3.9)	0 (0)	< 1 (< 0.1)	0 (0)	0 (0)	5 (3.0)	32 (9.1)	75 (21.1)	105 (5.1)	61 (3.0)	7 (1.3)	

Table 3-12 Cryptophyceae densities (units/ml) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	907 (45.8)	239 (27.6)	84 (12.2)	53 (14.4)	1,826 (51.1)	2,042 (113.4)	3,063 (20.0)	1,604 (14.8)	2,152 (11.4)	102 (3.4)	1,103 (16.2)	752 (22.7)
	5.0	539 (27.2)	346 (21.8)	144 (16.5)	160 (32.6)	224 (14.1)	1,240 (9.4)	288 (12.7)	729 (9.0)	168 (3.9)	143 (1.8)	756 (14.4)	425 (11.6)
	10.0	147 (12.6)	90 (22.0)	408 (29.0)	90 (15.7)	32 (5.1)	72 (5.6)	12 (2.2)	24 (3.3)	0 (0)	61 (2.2)	1,022 (16.7)	572 (12.6)
	15.0	90 (9.8)	41 (12.6)	280 (33.3)	70 (13.4)	0 (0)	40 (5.3)	6 (1.9)	48 (4.5)	48 (3.9)	0 (0)	736 (15.0)	719 (19.2)
215.0	0.3	915 (48.7)	519 (56.7)	248 (29.6)	390 (30.2)	2,339 (47.7)	7,657 (52.5)	3,063 (25.6)	1,167 (15.0)	1,392 (9.5)	1,124 (11.0)	1,512 (26.8)	850 (26.5)
	5.0	376 (19.9)	1,119 (58.1)	284 (45.8)	401 (19.6)	336 (32.3)	1,677 (22.1)	168 (11.8)	216 (4.9)	24 (0.8)	1,001 (9.8)	1,062 (25.9)	621 (15.5)
	9.0	184 (10.4)	610 (43.5)	64 (15.0)	170 (18.4)	112 (20.5)	12 (0.9)	24 (3.3)	96 (3.4)	24 (1.0)	0 (0)	593 (15.5)	915 (28.0)
220.0	0.3	1,111 (51.9)	403 (41.1)	236 (21.5)	180 (23.3)	4,261 (48.9)	4,667 (27.8)	2,261 (22.4)	1,519 (8.1)	1,772 (9.7)	1,001 (7.3)	1,451 (17.5)	882 (19.9)
	5.0	278 (21.7)	189 (27.3)	464 (40.1)	50 (18.5)	1,394 (43.2)	1,677 (15.5)	1,750 (15.9)	1,021 (10.0)	1,458 (11.6)	511 (4.6)	1,185 (14.8)	474 (15.0)
	10.0	123 (10.8)	667 (51.4)	220 (3.1)	30 (13.6)	128 (16.6)	192 (9.5)	216 (23.0)	48 (3.7)	48 (2.4)	123 (4.9)	1,246 (16.9)	327 (9.4)
	14.0	61 (9.3)	342 (53.0)	92 (16.9)	160 (24.6)	16 (1.8)	24 (3.2)	48 (4.5)	24 (3.1)	24 (1.9)	225 (5.4)	1,062 (15.0)	261 (8.5)

Table 3-13 Cryptophyceae biovolumes (mm^3/m^3) and percent composition (in parenthesis) for samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/10/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	445 (61.0)	107 (15.2)	28 (3.8)	100 (13.7)	558 (75.0)	564 (76.7)	855 (115.6)	1,070 (144.7)	556 (74.8)	12 (1.6)	392 (52.0)	175 (23.1)
	5.0	116 (15.7)	68 (9.1)	86 (11.4)	104 (13.8)	33 (4.4)	468 (62.4)	140 (18.7)	438 (58.2)	191 (25.4)	73 (9.7)	399 (52.9)	103 (13.7)
	10.0	42 (5.6)	43 (5.7)	232 (30.8)	47 (6.2)	42 (5.6)	36 (4.8)	6 (0.8)	32 (4.2)	0 (0.0)	32 (4.2)	235 (31.0)	107 (14.2)
	15.0	43 (5.6)	31 (4.1)	118 (15.6)	56 (7.4)	0 (0.0)	8 (1.1)	8 (1.1)	20 (2.6)	15 (2.0)	0 (0.0)	306 (40.5)	222 (29.2)
215.0	0.3	459 (61.0)	319 (42.4)	130 (17.2)	290 (38.6)	790 (104.6)	2,263 (300.6)	687 (91.1)	1,017 (134.9)	167 (22.1)	679 (90.1)	629 (83.6)	246 (32.5)
	5.0	110 (14.6)	343 (45.3)	126 (16.6)	369 (48.8)	193 (25.5)	696 (92.1)	20 (2.6)	64 (8.4)	32 (4.2)	305 (40.3)	371 (48.9)	307 (40.5)
	9.0	37 (4.8)	238 (31.3)	46 (6.0)	105 (13.8)	209 (27.6)	16 (2.1)	3 (0.4)	48 (6.3)	3 (0.4)	0 (0.0)	161 (21.1)	284 (37.4)
220.0	0.3	670 (88.7)	91 (12.1)	172 (22.7)	161 (21.2)	1,553 (205.7)	1,082 (143.3)	447 (59.1)	937 (124.6)	1,065 (141.4)	405 (53.5)	530 (69.9)	301 (39.6)
	5.0	105 (13.9)	56 (7.4)	168 (22.1)	42 (5.5)	523 (69.4)	433 (57.3)	266 (35.1)	298 (39.4)	518 (68.5)	118 (15.5)	351 (46.0)	211 (27.7)
	10.0	15 (2.0)	148 (19.5)	120 (15.8)	4 (0.5)	15 (2.0)	139 (18.3)	26 (3.4)	6 (0.8)	6 (0.8)	15 (2.0)	430 (56.6)	174 (22.8)
	14.0	10 (1.3)	57 (7.5)	64 (8.4)	116 (15.3)	2 (0.3)	3 (0.4)	6 (0.8)	3 (0.4)	32 (4.2)	43 (5.6)	400 (52.8)	238 (31.2)

Table 3-14 Densities (units/ml) and percent composition (in parenthesis) of all other classes (Chrysophyceae, Xanthophyceae, Euglenophyceae, Dinophyceae, Chloromonadophyceae) in samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates											
		12/09/86	01/13/87	02/16/87	03/10/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87
210.0	0.3	180 (9.0)	329 (38.0)	284 (41.2)	69 (18.8)	721 (20.1)	3,501 (22.9)	1,532 (9.9)	657 (5.9)	1,520 (7.9)	511 (7.3)	776 (11.3)	392 (11.8)
	5.0	65 (3.3)	379 (23.9)	352 (40.4)	110 (22.4)	160 (10.1)	1,604 (12.2)	96 (4.1)	948 (11.7)	336 (11.2)	490 (6.1)	552 (10.3)	424 (11.4)
	10.0	25 (2.1)	90 (22.8)	528 (37.3)	110 (19.3)	96 (15.3)	312 (24.5)	12 (2.2)	24 (3.3)	216 (9.1)	163 (5.9)	551 (8.9)	440 (9.5)
	15.0	49 (5.2)	33 (10.1)	416 (49.4)	110 (21.1)	80 (9.4)	56 (7.4)	12 (3.9)	36 (3.3)	0 (0)	163 (9.0)	285 (5.8)	277 (7.3)
215.0	0.3	163 (8.6)	58 (6.3)	336 (40.1)	420 (32.4)	593 (11.9)	3,063 (20.9)	1,094 (9.1)	802 (10.2)	760 (5.1)	878 (8.6)	491 (8.5)	325 (13.2)
	5.0	147 (7.8)	379 (19.6)	148 (22.7)	661 (32.3)	144 (13.8)	875 (11.5)	216 (15.2)	480 (10.7)	240 (8.5)	796 (7.8)	286 (6.9)	669 (16.7)
	9.0	135 (7.6)	248 (17.5)	154 (38.6)	370 (40.1)	128 (23.5)	120 (9.6)	60 (8.4)	312 (11.1)	240 (10.0)	101 (4.8)	286 (7.4)	327 (9.9)
220.0	0.3	131 (6.1)	288 (29.4)	324 (29.4)	140 (18.0)	1,568 (17.5)	1,313 (7.7)	948 (9.3)	2,405 (12.6)	1,430 (8.0)	735 (5.3)	613 (7.2)	489 (10.9)
	5.0	131 (10.2)	263 (38.0)	244 (21.1)	130 (48.1)	1,009 (31.3)	729 (6.7)	1,969 (17.9)	657 (6.3)	584 (4.6)	612 (5.3)	838 (10.4)	277 (8.7)
	10.0	49 (4.3)	111 (8.5)	148 (22.2)	50 (22.7)	16 (2.0)	192 (9.5)	192 (20.4)	96 (7.5)	120 (6.1)	245 (9.8)	592 (7.9)	294 (8.4)
	14.0	29 (4.5)	59 (9.1)	44 (8.0)	40 (6.1)	16 (1.8)	72 (9.8)	72 (6.8)	48 (6.2)	0 (0)	224 (5.3)	490 (6.6)	311 (10.0)

Table 3-15 Biovolumes (mm^3/m^3) and percent composition (in parenthesis) of all other classes (Chrysophyceae, Xanthophyceae, Euglenophyceae, Dinophyceae, Chloromonadophyceae) in samples collected on Lake Wylie from December 1986 through November 1987.

Location	Depth(m)	Sampling Dates												
		12/09/86	01/13/87	02/10/87	03/16/87	04/14/87	05/12/87	06/09/87	07/14/87	08/11/87	09/15/87	10/13/87	11/10/87	
210.0	0.3	23 (3.1)	46 (15.0)	68 (22.9)	45 (15.0)	255 (83.6)	431 (14.1)	191 (6.3)	288 (9.5)	723 (23.8)	153 (5.0)	618 (20.4)	379 (12.5)	
	5.0	5 (0.8)	106 (7.3)	116 (8.6)	0 (0.0)	33 (1.1)	306 (10.0)	71 (2.3)	75 (2.5)	496 (16.1)	277 (9.0)	412 (13.7)	381 (12.6)	
	10.0	3 (0.3)	14 (0.5)	252 (8.3)	0 (0.0)	55 (1.8)	22 (0.7)	111 (3.7)	50 (1.6)	2 (0.0)	162 (5.3)	60 (2.0)	167 (5.4)	545 (18.1)
	15.0	25 (8.3)	2 (0.7)	225 (7.5)	16 (0.5)	6 (0.2)	3 (0.1)	1 (0.0)	4 (0.1)	4 (0.1)	0 (0.0)	233 (7.6)	130 (4.3)	93 (3.0)
215.0	0.3	12 (1.4)	14 (1.6)	113 (37.8)	115 (38.0)	180 (59.2)	321 (105.0)	121 (39.0)	528 (172.0)	103 (33.0)	1,380 (444.0)	827 (271.0)	816 (265.0)	
	5.0	11 (1.3)	165 (55.0)	113 (37.5)	131 (43.0)	68 (22.0)	56 (18.0)	17 (5.5)	1,034 (338.0)	708 (228.0)	1,450 (465.0)	602 (191.0)	334 (107.0)	
	9.0	10 (1.2)	112 (37.0)	15 (5.0)	84 (27.5)	40 (13.0)	11 (3.6)	4 (1.3)	23 (7.4)	243 (77.0)	95 (30.0)	151 (48.0)	792 (250.0)	
	220.0	0.3	0 (0.0)	0 (0.0)	41 (13.3)	41 (13.3)	683 (223.0)	683 (223.0)	59 (19.0)	1,591 (513.0)	684 (223.0)	495 (161.0)	251 (80.0)	180 (57.0)
225.0	5.0	0 (0.0)	59 (19.0)	0 (0.0)	16 (5.3)	281 (90.0)	0 (0.0)	0 (0.0)	724 (235.0)	36 (11.5)	152 (48.0)	1,021 (329.0)	92 (29.0)	
	10.0	4 (1.3)	20 (6.6)	56 (18.0)	3 (1.0)	7 (2.3)	17 (5.5)	13 (4.2)	7 (2.3)	0 (0.0)	21 (6.6)	384 (121.0)	16 (5.0)	
230.0	5.0	2 (0.6)	7 (2.3)	26 (8.3)	14 (4.5)	0 (0.0)	9 (2.9)	5 (1.6)	5 (1.6)	0 (0.0)	166 (53.0)	599 (190.0)	19 (6.0)	
	10.0	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	

Phytoplankton density (units/ml) at depth=0.3 m

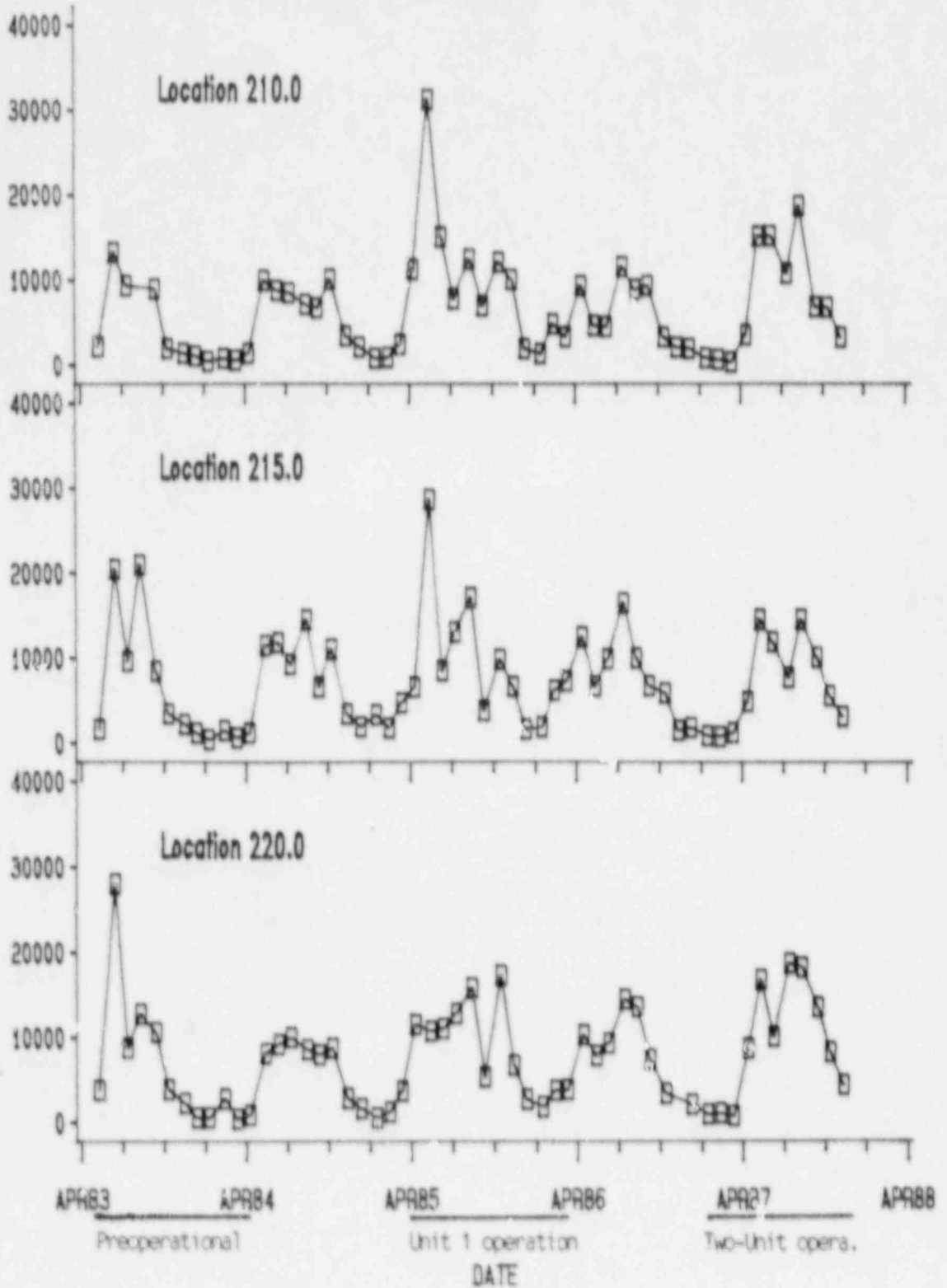


Figure 3-1 Phytoplankton densities from three locations at 0.3 m on Lake Wylie from May 1983 through November 1987.

Phytoplankton density (units/ml) at depth=5 m

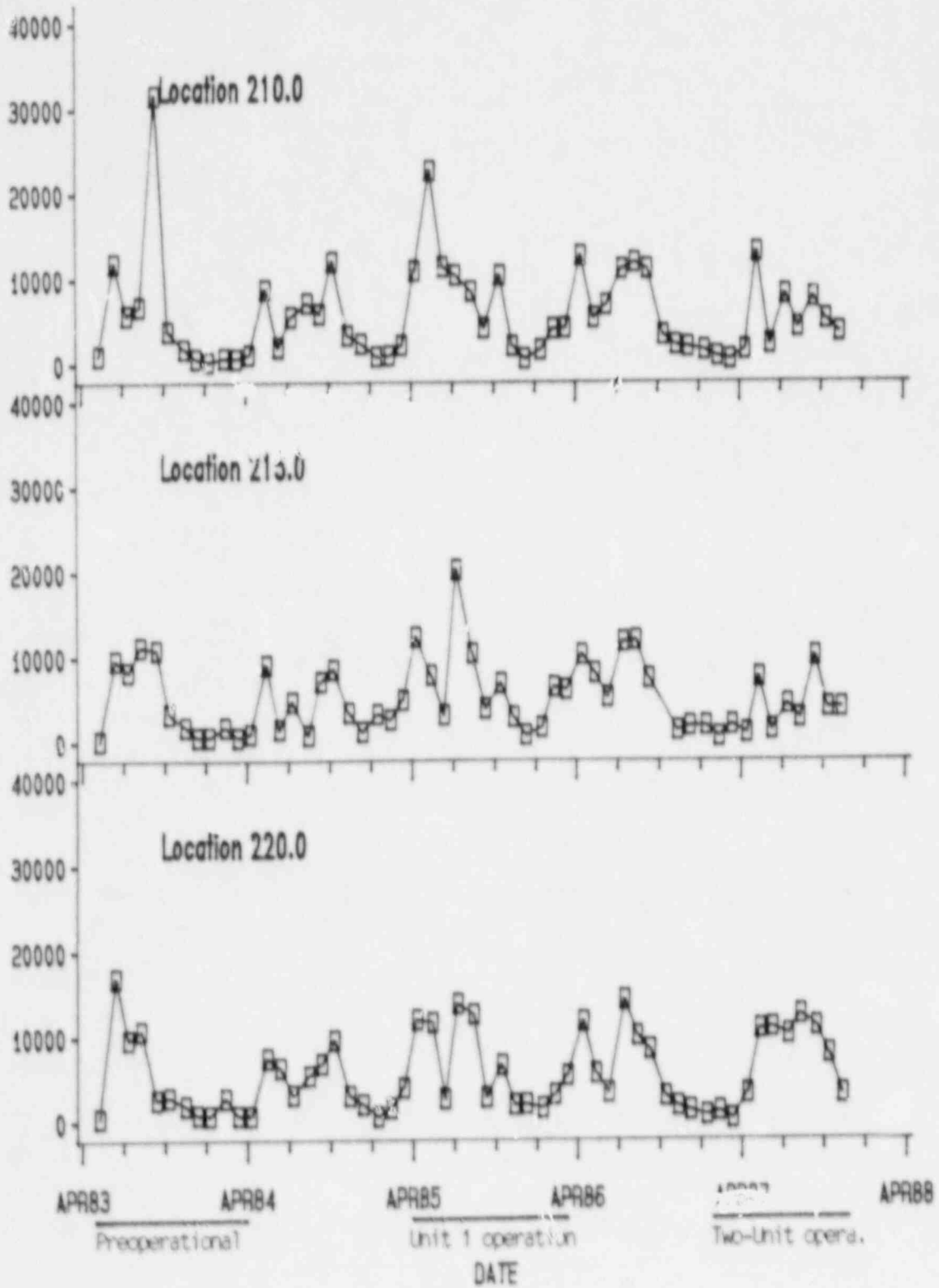


Figure 3-2 Phytoplankton densities from three locations at 5.0 m on Lake Wylie from May 1983 through November 1987.

Phytoplankton biovolume (m.m3/m3) at depth=0.3 m

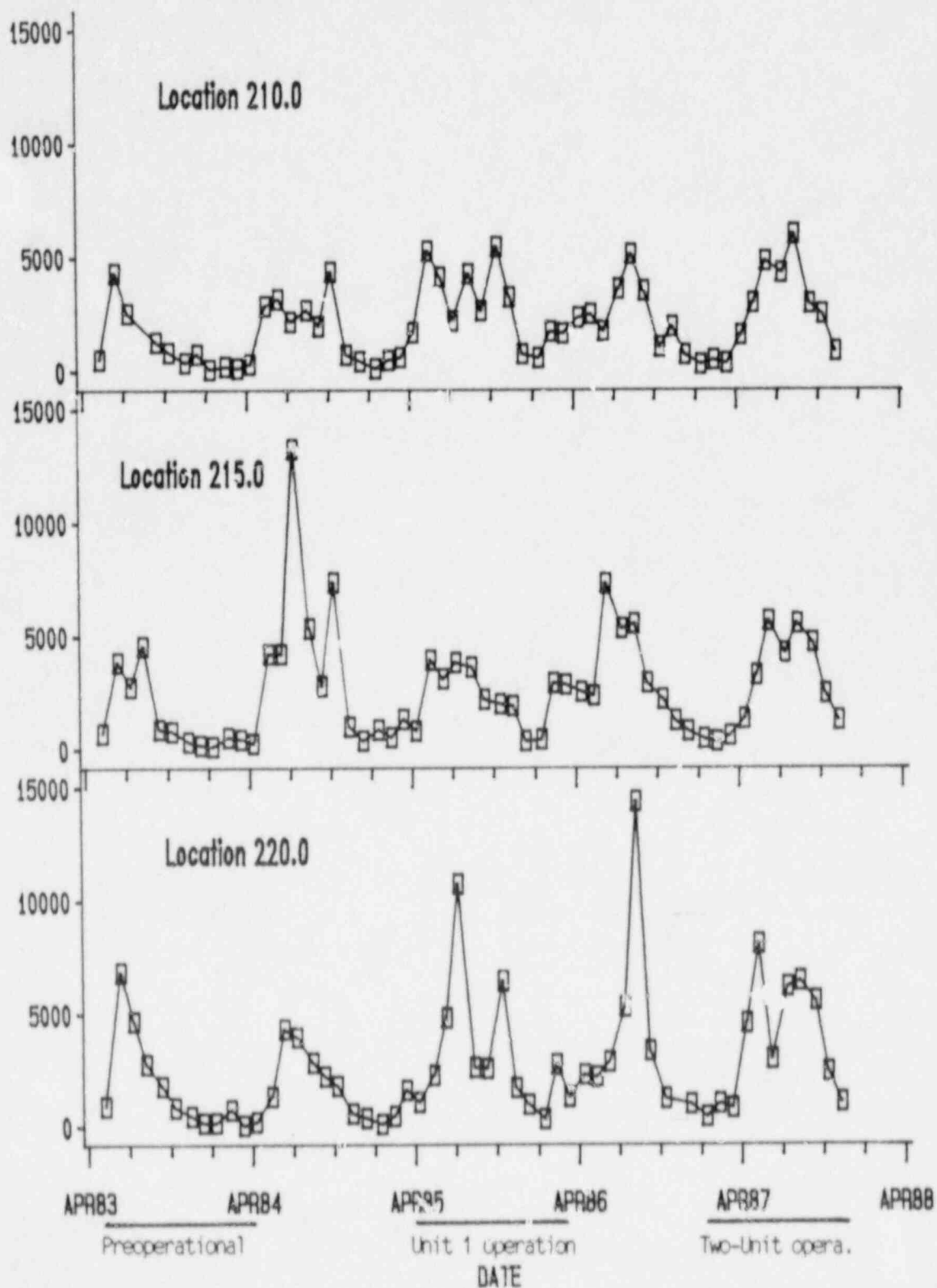


Figure 3-3 Phytoplankton biovolumes from three locations at 0.3 m on Lake Wylie from May 1983 through November 1987.

Phytoplankton biovolume (mm³/m³) at depth=5 m

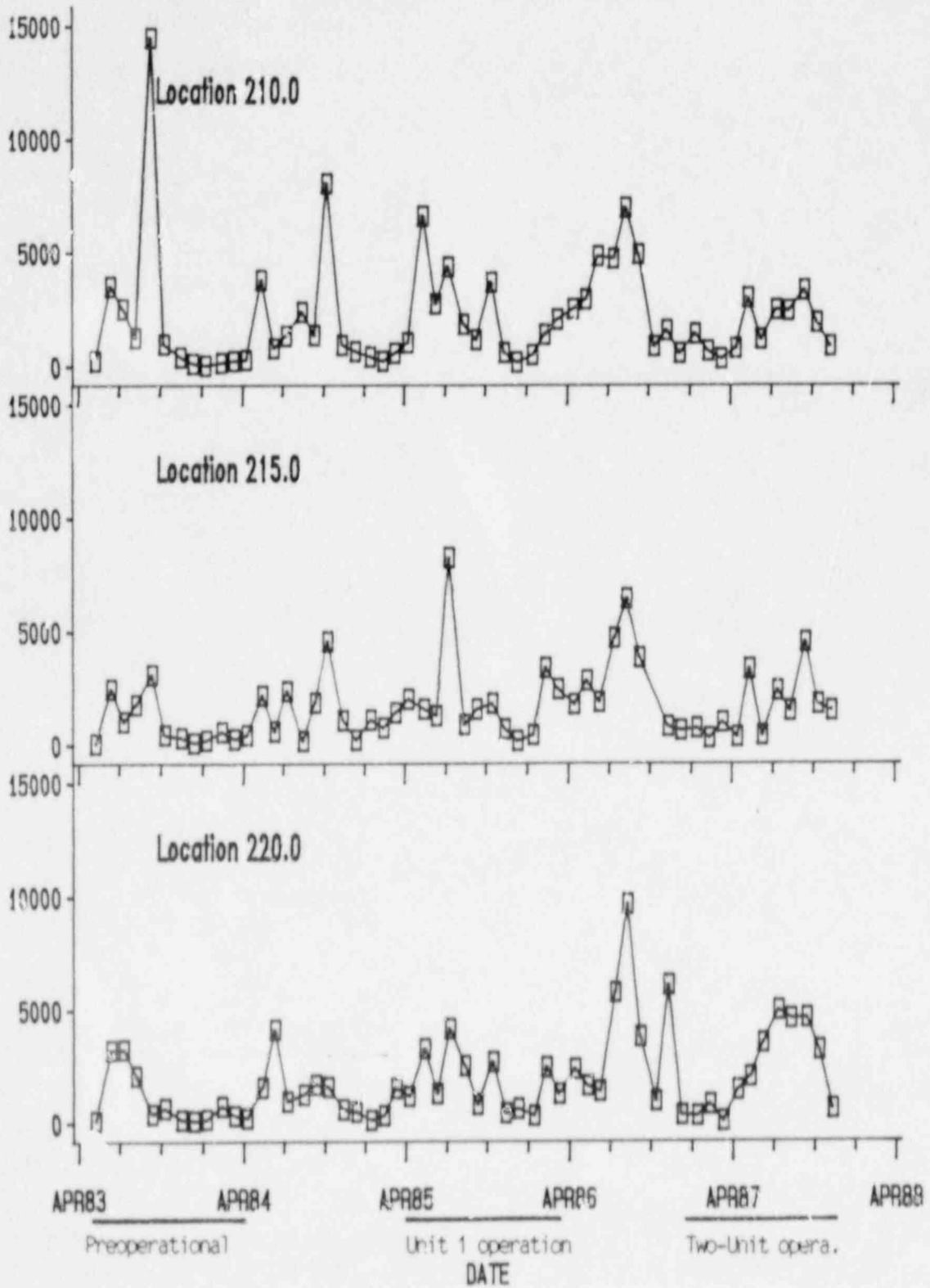


Figure 3-4 Phytoplankton biovolumes from three locations at 5.0 m on Lake Wylie from May 1983 through November 1987.

Chlorophyll a (mg/m³) at depth=0.3 m

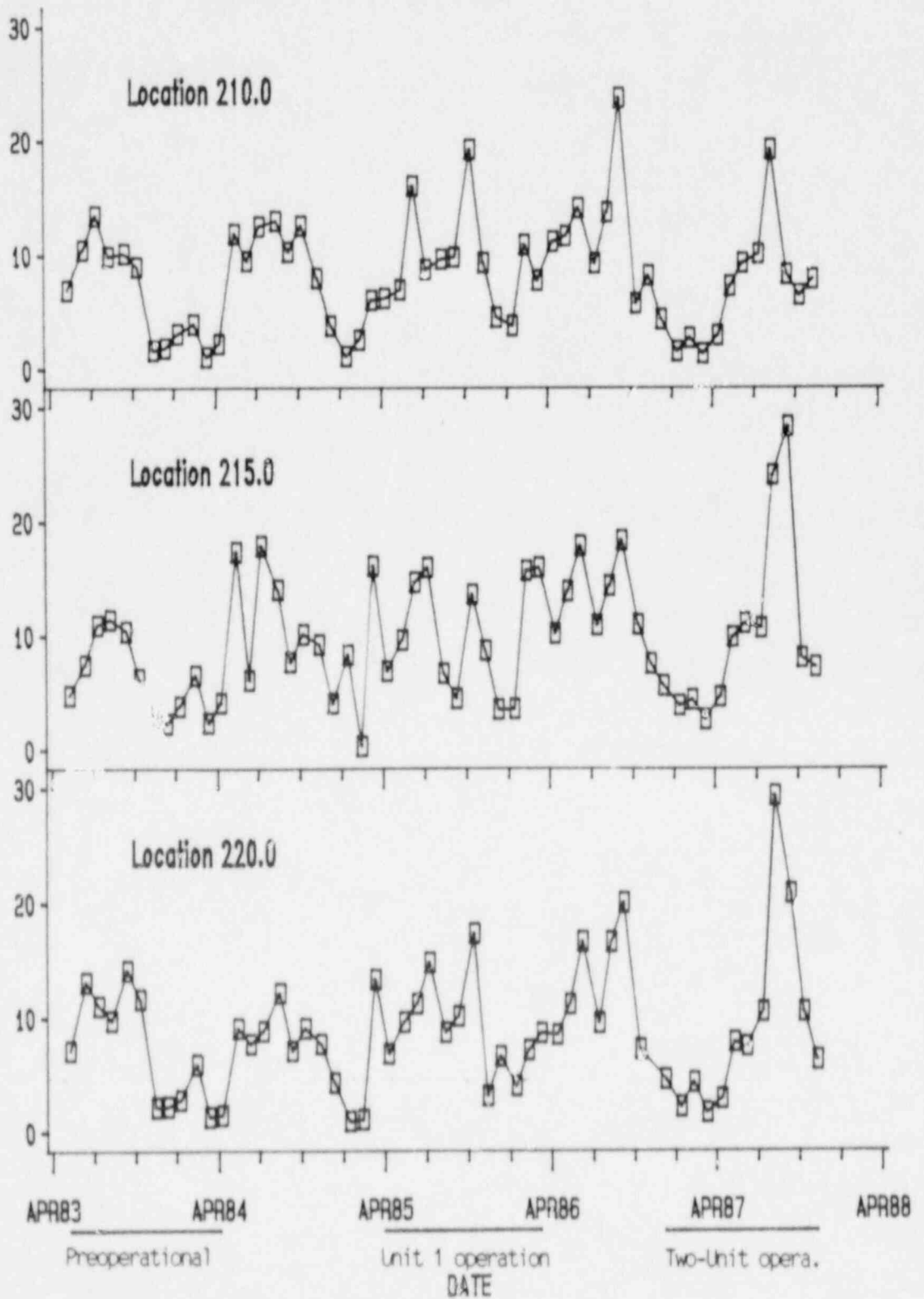


Figure 3-5 Phytoplankton chlorophyll a values from three locations at 0.3 m on Lake Wylie from May 1983 through November 1987.

Chlorophyll a (mg/m³) at depth=5 m

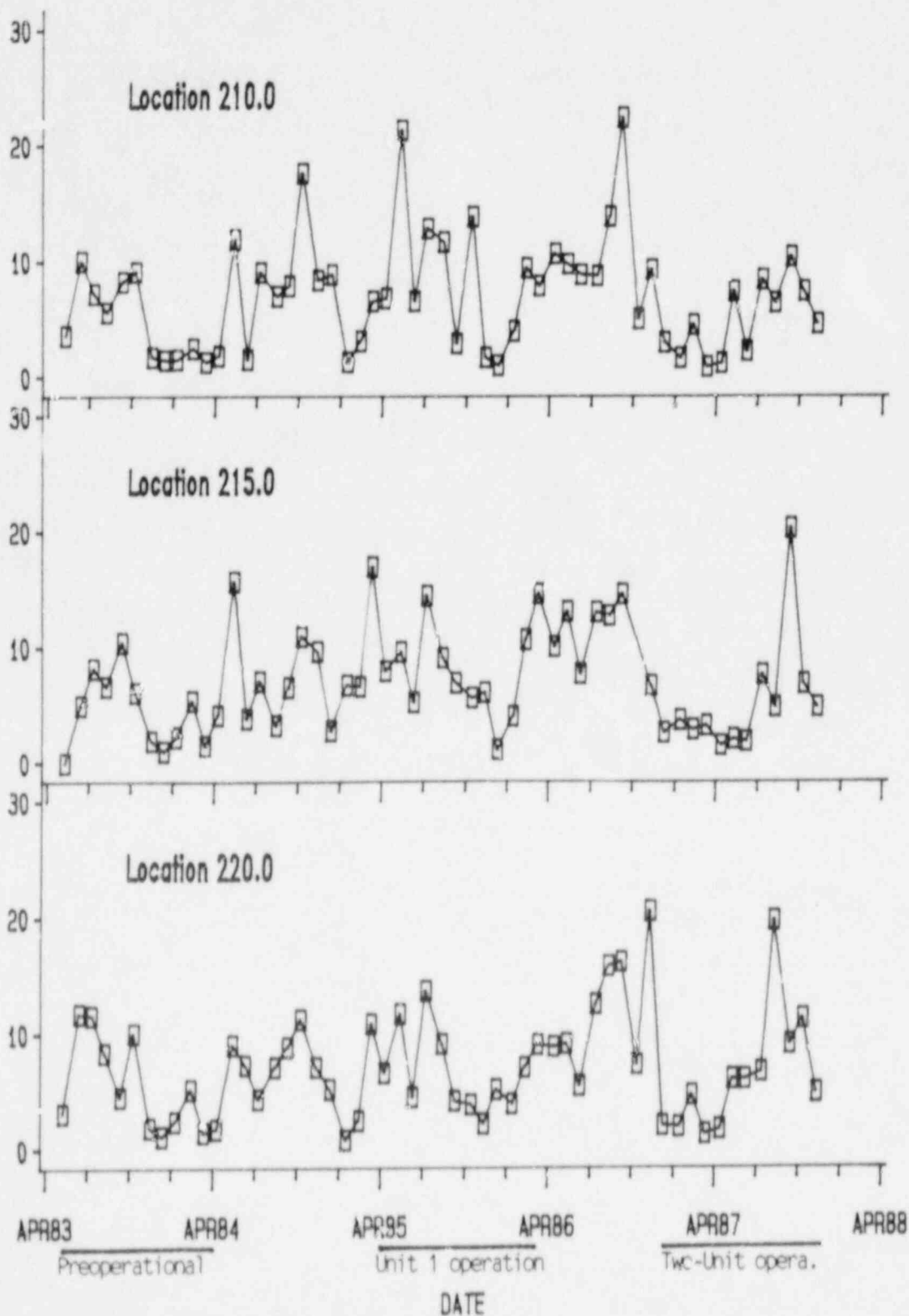


Figure 3-6 Phytoplankton chlorophyll a values from three locations at 5.0 m on Lake Wylie from May 1983 through November 1987.

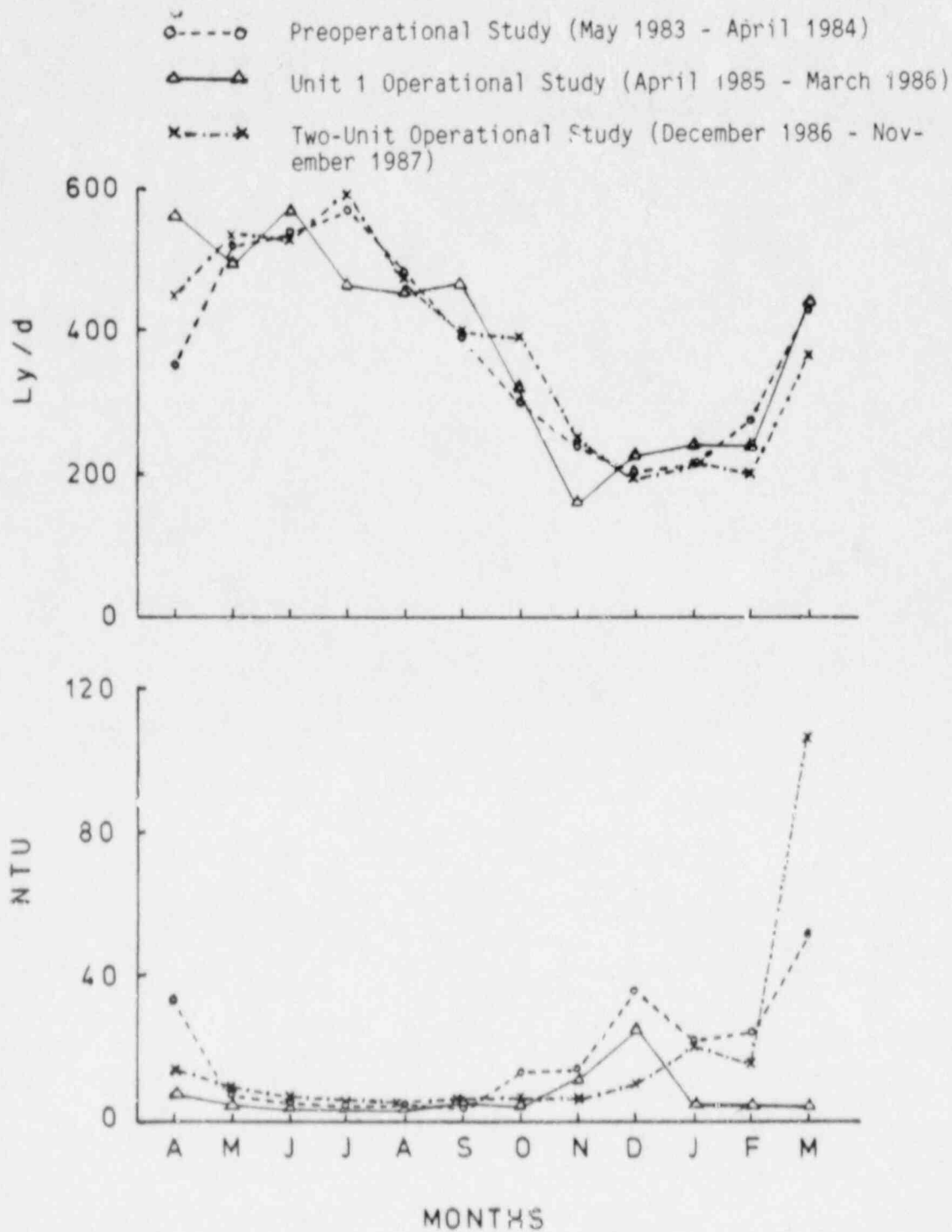


Figure 3-7 A comparison of mean monthly solar radiation values in Langleys/day (Ly/d) and Nephthelometric turbidity units (NTU averaged for three locations) between May 1983-April 1984, April 1985-March 1986, and December 1986-November 1987.

CHAPTER 4: ZOOPLANKTON

INTRODUCTION

Previous studies by Industrial Bio-Test Laboratories, Inc. (Industrial Bio-Test 1974), Weiss et al. (1975), and Duke Power Company (1985, 1987) found that zooplankton in Lake Wylie demonstrated year-to-year variations in seasonal distribution. Trends observed were a function of normal environmental variability. The objectives of the Catawba Nuclear Station (CNS) Two-Unit Operational Study presented in this chapter were to:

1. document the taxonomic composition of zooplankton,
2. describe seasonal and spatial patterns of zooplankton standing crops, and
3. compare zooplankton standing crop data collected during this study (December 1986 through November 1987) with data collected during the Unit 1 Operational Study (April 1985 through March 1986) and the Preoperational Study (May 1983 through April 1984).

METHODS AND MATERIALS

Monthly zooplankton sampling for the CNS Two-Unit Operational Study was conducted from December 1986 through November 1987 at Locations 210.0, 215.0, and 220.0 (Figure 1-2). A single bottom to surface net tow was taken at each location. The field and laboratory methods used in this study were reported in the Preoperational Report (Duke Power Company 1985). Monthly zooplankton standing crop data from December 1986 through November 1987 (taxonomic composition and density) are presented in Appendix 4-1.

RESULTS AND DISCUSSION

Standing Crop

Location 215.0 had the highest zooplankton standing crops among sampling locations during every month of the Two-Unit Operational Study except January and November (Table 4-1). During both the Unit 1 Operational Study and the Preoperational Study, this location also generally had the highest zooplankton standing crops. Zooplankton are usually more abundant in the upper 10.0 m of the water column throughout the year (Hamme 1982; Ruttner-Kolisko 1974). Since bottom to surface tows were made at all locations, the higher concentrations of zooplankton observed at Location 215.0 were probably due to the fact that the entire column of water sampled (usually 7.0 to 8.0 m) was within 10.0 m of the surface; whereas, at Locations 210.0 and 220.0 (where the depth of the tows was approximately 12.0 to 13.0 m) the tows included volumes of water below 10.0 m where zooplankton were probably much less abundant.

Peak zooplankton densities during the Two-Unit Operational Study were generally observed in May, September, and October, with the exception of Location 220.0, which showed a second peak in November. Minimum values usually occurred from December through March (Table 4-1; Figure 4-1). During the Unit 1 Operational Study peak standing crops were observed in March, April, and September. During the Preoperational Study, maximum densities were observed from July through October. Minimum values during both previous studies usually occurred from December through February. Standing crops observed during this study were generally within ranges of those observed during the previous studies, with the exception that densities in March and April of the Unit 1 Operational Study were

considerably higher than those of the Two-Unit Operational Study and the Preoperational Study. This may have been a response to relatively high algal standing crops noted during these months (Chapter 3).

The Index of Variance data presented in Table 4-2 indicated considerable monthly variability between the Two-Unit Operational Study and each of the previous studies; however, the overall summation of indices indicated that zooplankton densities during this study were more similar to those observed during the Preoperational Study.

The most unusual event involving zooplankton occurred during the interim sampling period immediately following the end of the Unit 1 Operational Study. Zooplankton standing crops during this quarter were the highest ever observed on Lake Wylie. These unusually high standing crops were probably due to the effects of drought conditions at that time. Low discharge and high retention times throughout the late winter and early spring provided optimum conditions for zooplankton development. Phytoplankton, which provide a major food supply for zooplankton, increased rapidly during the late winter and remained high through early spring; this was probably a result of increased light penetration in the water column. Turbidity values from February through April averaged 25 to 35% higher than those during the same months of the Preoperational Study (Chapter 3, Figure 3-7). This consistent food supply, coupled with high retention time in the reservoir, brought about the substantial increase in zooplankton standing crops observed from April through June 1986. In May and June 1986, phytoplankton standing crops declined rapidly, while mean algal cell size increased; this probably represents the effects of extensive zooplankton grazing on phytoplankton.

Community Composition

Fifty-three taxa were identified in samples collected on Lake Wylie from December 1986 through November 1987 (Table 4-3). The taxa were organized into three major groups. The Rotifera usually dominated zooplankton assemblages throughout the study, followed in importance by the Copepoda and the Cladocera. Trends of relative abundance among major zooplankton taxonomic groups were generally similar at sampling locations throughout this study (Table 4-1). During each of the previous Duke Power studies, 37 taxa were identified.

Copepods were most abundant from June through August, with a secondary peak in October. Minimum densities were observed from December through March. Similar seasonal trends of copepod standing crops were observed during the two previous Duke Power monitoring studies; however, the maximum value recorded during this study ($156.3 \times 10^3/m^3$, 215.0, June) was much higher than those recorded for the Unit 1 Operational Study ($60.8 \times 10^3/m^3$, 215.0, May) and the Preoperational Study ($68.2 \times 10^3/m^3$, 215.0, October).

Immature copepods were a significant component of the zooplankton community during the study, accounting for over 19% of the total zooplankton density, as compared to 14% during the Unit 1 Operational Study and 1% during the Preoperational Study (Table 4-3). Nauplii usually comprised well over half of the copepod densities and were most abundant from June through October. The copepodites averaged over 3.5% of the total zooplankton, and cyclopoid copepodite densities were approximately five times higher than those of calanoid copepodites.

Six species of adult copepods were identified during this study. The adults seldom accounted for over 10% of the copepod densities, and averaged less than 1% of the total zooplankton (Table 4-3). Among adult copepods, Cyclops thomasi was relatively abundant from March through May and showed similar seasonal trends as were found during the two previous studies. Mesocyclops edax was important among adult populations from September through November, and in February. This taxon showed considerable year-to-year variability between studies. Tropocyclops prasinus was important in July, August, and February. This taxon showed lower peaks and generally higher minimum values during this study than during the two previous Duke Power monitoring studies (Figure 4-2).

The Cladocera accounted for less than 5% of the total zooplankton during this study as compared to 8.6% and 7% during the Unit 1 Operational Study and the Preoperational Study, respectively (Table 4-3). Cladocerans were most abundant from April through July, and in September. Minimum densities were observed from November through February (Table 4-1).

Fourteen cladoceran taxa were identified during this study. Bosmina longirostris was the most important cladoceran observed during all three studies, and accounted for nearly 3.5% of the total zooplankton density during this study (Table 4-3). B. longirostris comprised over 80% of the cladoceran densities in April, May, and November, and from January through March. This pattern was generally similar to those observed during previous studies, with the exception that B. longirostris had comparatively low relative abundance in December of this study as compared to December values of previous studies. Diaphanosoma spp. was present from June through

September when it comprised over 40% of the cladoceran standing crops. The seasonal pattern of D.spp. observed during this study was more similar to that observed during the Preoperational Study.

Daphnia spp. were occasionally important among cladoceran populations during April and May. Although the percent composition of D. spp. among cladocerans was lower during this study than during the previous Duke Power studies (Figure 4-3), their observed densities were usually similar to those reported during the Preoperational and Industrial Bio-Test studies (Duke Power Company 1985; Industrial Bio-Test 1974). This taxon was only observed at Location 215.0 in April and May 1987. The low frequency of D. spp. at this location cannot be explained in terms of thermal effects, since surface temperatures did not vary greatly between Location 215.0 and the other locations during the Two-Unit Operational Study.

Rotifers dominated zooplankton assemblages throughout most of this study, and accounted for 75% of the total zooplankton (Table 4-3). Peak rotifer densities were observed in April, May, and October, while minimum densities occurred from January through March (Table 4-1). During the Unit 1 Operational Study, peak standing crops occurred in March, April, October, and November; while maximum standing crops during the Preoperational Study were observed in March, April, September, and October. Minimum densities during the two previous studies occurred from December through February.

The most abundant rotifers during this study, as during the two previous studies, were Conochilus, Synchaeta, Polyarthra, and Keratella. Conochilus was the dominant zooplankton taxon during all three studies (Table 4-3). This

taxon was most abundant in May, and from July through September, when it constituted over 50% of the rotifer densities. Synchaeta dominated rotifer populations from December through February, and accounted for over 75% of the rotifers observed in January. Keratella contributed over 20% to rotifer densities in June, November, December, and March; while Polyarthra accounted for at least 25% of the rotifers in April, May, and September through November. Although monthly variations in magnitude of relative abundance were noted between studies, trends of seasonal distribution among Conochilus, Synchaeta, and Keratella during this study were generally similar to those observed during the previous studies. Polyarthra did not show any consistent patterns between any two studies (Figure 4-4).

SUMMARY

Zooplankton were sampled monthly on Lake Wylie from December 1986 through November 1987. Standing crop values were determined from bottom to surface tows at three locations in the vicinity of CNS.

Peak zooplankton standing crops during the Two-Unit Operational Study were observed in May, and September through October, as compared to March, April, and September during the Unit 1 Operational Study; and July through October during the Preoperational Study. Total zooplankton densities during March and April of this study were considerably lower than those observed during March-April of the Unit 1 Operational Study due to higher algal standing crops, which resulted from low turbidities and high light intensities recorded during March-April of the Unit 1 Operational Study. The extremely high zooplankton densities observed from April through June 1986

(during the interim following completion of Unit 1 sampling) were a result of drought conditions occurring at that time.

Location 215.0 demonstrated the highest zooplankton standing crops during all three studies. This was probably due to shallower net tows at that location (i.e., 7.0-8.0 m). Tows at the other locations included large volumes of water below 10.0 m, where zooplankton are less abundant.

Fifty-three zooplankton taxa were identified during this study. The Rotifera was the most diverse and abundant group, followed in importance by the Copepoda and the Cladocera. Rotifers have always been most abundant in spring and early fall, with minimum values occurring during winter. Conochilus, the dominant zooplankton taxon during all three monitoring studies, was most abundant among rotifer populations during May, and July through September; while Keratella was most important during June, November, and December. Synchaeta dominated rotifer populations from December through February. Seasonal trends among these taxa were generally similar to those observed during the previous two studies. Polyarthra, which was most abundant among rotifers in spring and fall of this study, has shown considerable seasonal variability in all three studies.

High copepod densities during all three studies have usually been observed during summer and mid-fall, with minimum standing crops occurring during the late fall and winter. Immature forms (primarily nauplii) dominated copepod populations during all three studies. The most important adult taxa during all three studies were Cyclops, Mesocyclops, and Tropocyclops; however,

adults have seldom accounted for more than 10% of the copepod densities. Cladocerans were most abundant from April through July, and in September. Minimum densities were usually observed from November through February. Bosmina dominated cladoceran standing crops throughout most of the year, while Diaphanosoma was important among cladoceran populations during the summer. Daphnia was occasionally abundant during April and May. Seasonal trends of copepod and cladoceran standing crops and the relative abundance of their major taxa during this study were generally similar to those observed during the previous Duke Power monitoring studies, with the exception that Daphnia showed lower relative abundance patterns during this study than during the previous two.

Results of the Two-Unit Operational Study indicated that zooplankton standing crops and community composition were usually similar to results observed during the Unit 1 Operational study and the Preoperational Study. Year-to-year monthly variations in standing crop, community composition, and seasonal distribution were probably due to responses to external environmental factors, since no long term or consistent changes have been observed due to the operation of Units 1 and 2 of the Catawba Nuclear Station.

LITERATURE CITED

- Duke Power Company. Chemical and biological characteristics prior to the operation of Catawba Nuclear Station, 316(a) Demonstration preoperational report. Summary of data collected 1973-1974 and 1983-1984. Duke Power Company, Charlotte, NC. 134p.; 1985.
- Duke Power Company. Chemical and biological characteristics during the first year of operation of Unit 1 of Catawba Nuclear Station, 316(a) Demonstration operational report. Summary of data collected April 1985 through March 1986. Duke Power Company, Charlotte, NC. 166p.; 1987.
- Hamme, R. E. Zooplankton, p. 323-353. In J. E. Hogan and W. D. Adair (ed.). Lake Norman summary, Technical Report DUKEPWP/82-02. Duke Power Company, Charlotte NC. 460 p.; 1982.
- Industrial Bio-Test Laboratories, Inc. A Baseline/predictive environmental investigation of Lake Wylie, Catawba Nuclear Station, and Plant Allen. Report to Duke Power Company. 2 vols. 743 p.; 1974.
- Ruttner-Kolisko. Plankton rotifers: biology and taxonomy. Die Binnengewasser. 24(1) Supplement 146 p.; 1974.
- Weiss, C. M.; Campbell, P. H.; Anderson, T. P.; Pfeander, S. L. The lower Catawba lakes: characterization of phytozooplankton communities and their relationships to environmental factors. Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC. ESE Pub. No. 389. 395 p.; 1975.

Table 4-1. Total zooplankton densities (no. X 10³ /m³) and densities of major zooplankton groups from samples collected on Lake Wylie from December 1986 through November 1987.

Sampling Date	Taxon	Locations					
		210.0		215.0		220.0	
		Density	(%)	Density	(%)	Density	(%)
12/09/86	Copepoda	6.43	(18.7)	5.38	(5.2)	3.42	(9.4)
	Cladocera	1.73	(5.1)	0.56	(0.5)	0.46	(1.3)
	Rotifera	26.22	(76.2)	96.00	(94.2)	32.41	(89.3)
	Total	34.38		101.94		36.29	
01/13/87	Copepoda	2.56	(7.7)	1.43	(6.1)	2.52	(7.1)
	Cladocera	3.84	(11.5)	0.34	(1.4)	1.32	(3.7)
	Rotifera	26.91	(80.8)	21.56	(92.4)	31.70	(89.2)
	Total	33.31		23.33		35.54	
02/10/87	Copepoda	4.68	(19.7)	1.60	(2.0)	4.77	(24.4)
	Cladocera	4.69	(19.7)	0.20	(0.2)	2.65	(13.6)
	Rotifera	14.35	(60.6)	78.21	(97.8)	12.10	(62.0)
	Total	23.71		80.01		19.52	
03/10/87	Copepoda	5.02	(32.8)	6.02	(13.9)	7.68	(36.7)
	Cladocera	2.06	(13.4)	1.76	(4.1)	3.35	(16.0)
	Rotifera	8.24	(53.8)	35.53	(82.0)	9.91	(47.3)
	Total	15.33		43.31		20.94	
04/14/87	Copepoda	10.88	(10.4)	23.18	(13.3)	8.45	(5.4)
	Cladocera	13.10	(12.6)	11.90	(6.8)	11.48	(7.4)
	Rotifera	80.21	(77.0)	138.75	(79.9)	135.22	(87.2)
	Total	104.19		173.83		155.16	
05/12/87	Copepoda	9.96	(5.9)	30.73	(8.2)	15.36	(4.4)
	Cladocera	11.88	(7.1)	26.54	(7.1)	22.04	(6.3)
	Rotifera	146.28	(86.9)	314.98	(84.7)	312.51	(89.3)
	Insecta	0.18	(0.1)	0	(0)	0.18	(<0.1)
	Total	168.29		372.24		350.09	
06/05/87	Copepoda	54.07	(47.0)	156.29	(67.0)	36.98	(28.6)
	Cladocera	18.02	(15.7)	4.77	(2.0)	14.92	(11.6)
	Rotifera	42.47	(36.9)	72.34	(31.0)	77.20	(59.8)
	Insecta	0.44	(0.4)	0	(0)	0	(0)
	Total	115.00		233.42		129.09	
07/15/87	Copepoda	18.55	(15.3)	45.49	(29.4)	15.64	(23.9)
	Cladocera	10.17	(9.0)	6.28	(4.0)	9.47	(14.5)
	Rotifera	84.61	(74.5)	102.91	(66.5)	39.83	(60.9)
	Insecta	0.18	(0.2)	0	(0)	0.44	(0.7)
	Total	113.52		154.68		65.39	

Table 4-1

Sampling Date	Taxon	Locations					
		210.0		215.0		220.0	
		Density	(%)	Density	(%)	Density	(%)
08/11/87	Copepoda	19.42	(15.2)	39.93	(24.9)	21.67	(22.3)
	Cladocera	6.04	(4.8)	3.36	(2.1)	3.92	(4.0)
	Rotifera	102.21	(80.0)	117.17	(73.0)	71.73	(73.7)
	Total	127.67		160.46		97.32	
09/15/87	Copepoda	28.52	(32.6)	32.40	(28.5)	34.18	(36.0)
	Cladocera	12.02	(13.8)	2.60	(2.3)	12.64	(13.3)
	Rotifera	46.86	(53.6)	78.76	(69.3)	48.06	(50.6)
	Total	87.40		113.67		94.87	
10/23/87	Copepoda	37.97	(21.2)	46.05	(23.0)	16.86	(21.8)
	Cladocera	1.38	(0.8)	1.95	(1.0)	0.42	(0.5)
	Rotifera	139.30	(78.0)	152.41	(76.0)	60.06	(77.6)
	Total	178.65		200.40		77.34	
11/12/87	Copepoda	7.47	(8.5)	10.53	(10.6)	11.76	(8.2)
	Cladocera	1.87	(0.2)	1.62	(1.6)	1.02	(0.7)
	Rotifera	79.88	(91.3)	87.11	(87.8)	130.55	(91.1)
	Total	87.54		99.26		143.32	

Table 4-2

Monthly Index of Variance for zooplankton densities comparing the Two-Unit Operational Study (U2S) with the Unit 1 Operational Study ($U1S=U2S-U1S/U2S+U1S$) and the Preoperational Study ($POS=U2S -POS/U2S+POS$).

Month	210.0		215.0		220.0	
	U1S	POS	U1S	POS	U1S	POS
Apr	-0.45	+0.48	-0.36	+0.05	-0.27	+0.45
May	+0.31	+0.37	+0.43	+0.28	+0.48	+0.70
Jun	-0.11	+0.16	+0.11	+0.50	-0.05	+0.17
Jul	+0.15	-0.17	+0.08	+0.02	-0.16	-0.13
Aug	+0.18	-0.13	-0.19	-0.08	-0.04	-0.13
Sep	-0.36	-0.37	-0.38	+0.04	-0.43	-0.33
Oct	0	-0.03	-0.23	-0.25	-0.22	-0.27
Nov	+0.60	-0.16	+0.19	+0.06	+0.86	+0.19
Dec	+0.34	+0.50	+0.59	+0.65	+0.31	+0.22
Jan	-0.56	-0.13	-0.18	-0.43	-0.35	+0.04
Feb	-0.30	-0.20	+0.08	-0.48	-0.12	-0.21
Mar	-0.83	-0.55	-0.72	-0.44	-0.72	-0.34
Sum	-1.71	-0.23	-0.58	-0.08	-1.27	+0.11

Table 4-3 Zooplankton taxa, percent frequency among samples (% Fr), and percent composition (% Co) of total zooplankton observed in samples collected on Lake Wylie from May 1983 through April 1984 (POS = preoperational study), April 1985 through March 1986 (U1S = unit 1 study), and December 1986 through November 1987 (U2S = two-unit study).

Taxon	POS		U1S		U2S	
	% Fr	% Co	% Fr	% Co	% Fr	% Co
COPEPODA	(19.0)		(14.7)		(20.2)	
<i>Cyclops thomasi</i> Forbes	38.9	0.3	22.2	0.1	25.0	0.1
<i>C. vernalis</i> Fischer	0	0	0	0	2.8	<0.1
<i>Diaptomus bergei</i> Marsh	13.9	<0.1	0	0	0	0
<i>D. mississippiensis</i> Marsh	5.6	<0.1	13.8	<0.1	22.2	0.2
<i>D. pallidus</i> Herrick	2.8	<0.1	8.3	<0.1	11.1	<0.1
<i>Mesocyclops edax</i> (Forbes)	41.7	0.4	38.9	0.3	50.0	0.4
<i>Tropocyclops prasinus</i> (Fis.)	63.9	0.4	47.2	0.2	50.0	0.2
Calanoid copepodites	63.9	0.4	38.9	0.1	69.4	0.8
Cyclopoid copepodites	100.0	4.3	100.0	3.1	100.0	3.7
Nauplii	100.0	13.1	100.0	10.7	100.0	14.9
Unidentified parasitic copepods	5.6	<0.1	0	0	5.6	<0.1
CLADOCERA	(7.0)		(8.6)		(4.7)	
<i>Bosmina longirostris</i> (Muller)	97.2	3.9	72.2	5.6	97.2	3.4
<i>Bosminopsis dietersi</i> Richad	8.3	0.1	11.1	0.3	13.8	0.2
<i>Ceriodaphnia</i> spp. Dana	8.3	0.1	19.4	0.1	5.6	<0.1
<i>Chydorus</i> spp. Leach	0	0	0	0	2.8	<0.1
<i>Daphnia ambigua</i> Scourfield	13.9	<0.1	0	0	5.6	<0.1
<i>D. leavis</i> Birge	0	0	0	0	2.8	<0.1
<i>D. parvula</i> Fordyce	30.6	0.3	27.8	0.5	33.3	0.3
<i>D. spp.</i> Muller	41.7	0.4	41.7	1.0	41.7	<0.1
<i>Diaphanosoma</i>						
<i>leuchtenbergianum</i> Fischer	38.9	2.1	50.0	1.0	36.1	0.6
<i>D. spp.</i> Fischer	0	0	0	0	5.6	<0.1
<i>Holopedium gibberum</i> Stingelin	5.6	<0.1	0	0	5.6	<0.1
<i>H. amazonicum</i> Stingelin	0	0	0	0	2.8	<0.1
<i>Leptodora kindtii</i> (Focke)	2.8	<0.1	2.8	<0.1	0	0
<i>Moina microcura</i> Kurz	0	0	0	0	2.8	<0.1
<i>M. spp.</i> Baird	0	0	2.8	<0.1	0	0
<i>Lydia quadrangularis</i>	0	0	0	0	2.8	<0.1
Unidentified Cladocera	0	0	5.6	<0.1	0	0
ROTIFERA	(74.0)		(76.7)		(75.1)	
<i>Anuraeopsis</i> spp. Gosse	33.3	0.6	41.7	1.4	30.6	0.3
<i>Asplanchna</i> spp. Lauterborn	0	0	2.8	0.1	2.8	<0.1
<i>Brachionus angularis</i> Gosse	25.0	0.9	11.1	0.3	16.7	0.3
<i>B. budapestensis</i>	0	0	0	0	8.3	0.1
<i>B. calcyflorus</i> Pallas	8.3	0.1	5.6	0.1	11.1	0.1
<i>B. caudatus</i> Barrois & Daday	0	0	2.8	<0.1	27.8	0.5
<i>B. spp.</i> Pallas	8.3	0.9	13.9	0.4	2.8	<0.1
<i>Cephalodella</i> Bory de St. V.	0	0	0	0	2.8	<0.1
<i>Collotheca</i> spp. Haring	38.9	2.6	50.0	0.5	52.7	0.7
<i>Conochiloides</i> spp. Hlava	41.7	4.2	41.7	1.2	41.7	1.5
<i>Conochilus unicornis</i> Rous.	83.3	29.6	80.6	27.1	100.0	25.6

Table 4-3

Taxon	POS		U15		U25	
	% Fr	% Co	% Fr	% Co	% Fr	% Co
<u>Filinia</u> spp. Bory de St. V.	2.8	<0.1	11.1	<0.1	19.4	<0.1
<u>Gastropus</u> spp. Imhof	11.1	0.2	2.8	<0.1	22.2	0.1
<u>Hexarthra</u> spp. Schmada	19.4	0.4	36.1	<0.1	19.4	0.2
<u>Kellicotia bostoniensis</u> (Rou.)	30.6	0.2	36.1	0.2	50.0	0.4
<u>Keratella</u> spp. Bory de St.V.	100.0	13.9	94.4	7.8	94.4	9.3
<u>Lacane</u> spp. Nitzsh	0	0	0	0	2.8	<0.1
<u>Mytilina</u> spp. Bory de St. V.	0	0	2.8	<0.1	0	0
<u>Notholca</u> spp. Gosse	5.6	<0.1	2.8	<0.1	2.8	<0.1
<u>Ploesoma hudsonii</u> Brauer	0	0	0	0	2.8	<0.1
<u>P. truncatum</u> (Levander)	41.7	<0.1	58.3	1.6	50.0	1.7
<u>Polyarthra euryptera</u> (Wier.)	2.8	0.1	0	0	2.8	<0.1
<u>P. vulgaris</u> Carlin	0	0	0	0	47.2	14.0
<u>P. spp.</u> Ehrenberg	100.0	12.5	97.2	15.0	52.7	6.1
<u>Pompholix sulcata</u> Pejler	0	0	0	0	2.8	<0.1
<u>P. spp.</u> Gosse	0	0	0	0	5.6	<0.1
<u>Ptygura</u> spp. Ehrenberg	0	0	2.8	<0.1	0	0
<u>Synchaeta</u> spp. Ehrenberg	75.0	6.1	97.2	18.4	88.8	11.5
<u>Tricocera capucina</u> (Wier.)	19.4	0.2	13.9	0.2	25.0	0.2
<u>T. cylindrica</u> (Imhof)	33.3	0.6	11.1	<0.1	8.3	0.2
<u>T. porcellus</u> (Gosse)	22.2	0.3	0	0	25.0	1.4
<u>T. spp.</u> Lamark	22.2	0.3	47.2	1.7	33.3	0.5
Order Bdelloida	0	0	5.6	<0.1	13.9	<0.1
Unidentified Rotifera	41.7	0.2	36.1	0.2	19.4	0.1
INSECTA		(<0.1)		(0)		(<0.1)
<u>Chaoborus</u> spp. Lichtenstien	2.8	<0.1	0	0	8.3	<0.1

Zooplankton density (No./m³)

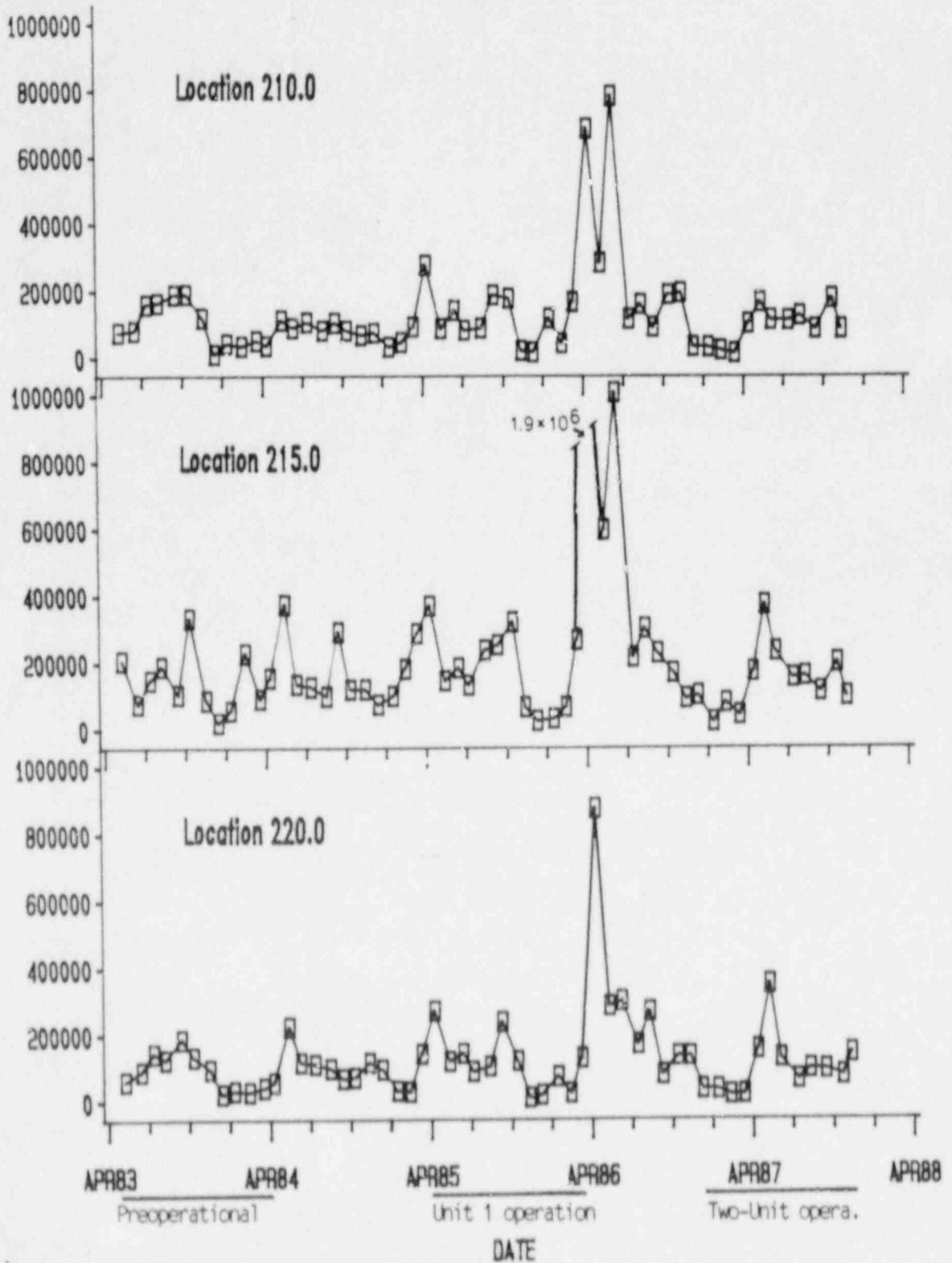


Figure 4-1 Monthly zooplankton densities at three locations on Lake Wylie from May 1983 through November 1987.

- - - - ○ Preoperational Study (May 1983-April 1984)
- △ - - - △ Unit 1 Operational Study (April 1985-March 1986)
- × - - - × Two-Unit Operational Study (December 1986-November 1987)

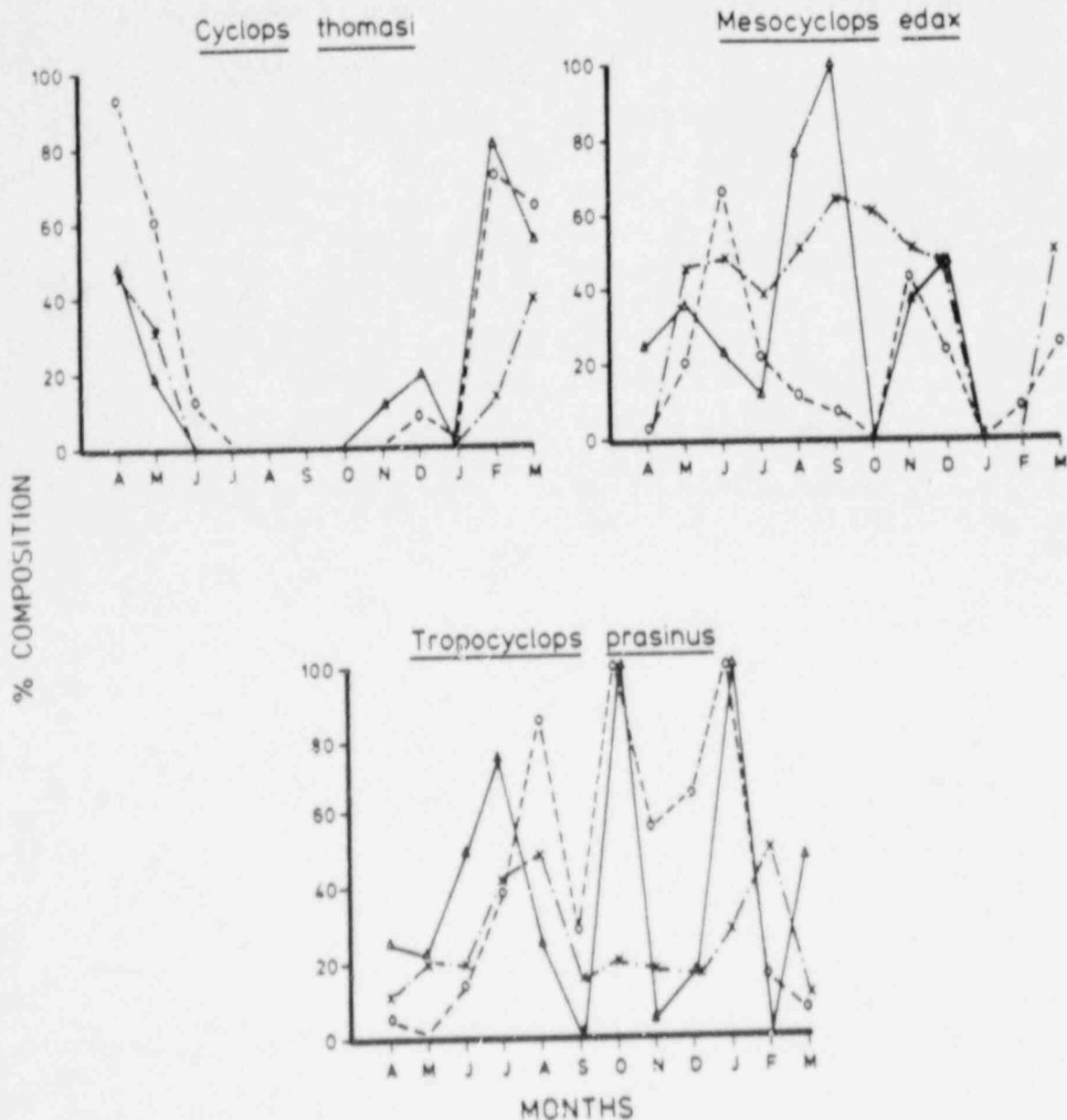


Figure 4-2 Percent composition of major copepod taxa among adult copepod densities averaged for three locations on Lake Wylie during the Preoperational Study, the Unit 1 Operational Study, and the Two-Unit Operational Study.

- - - - ○ Preoperational Study (May 1983-April 1984)
- △ - - - △ Unit 1 Operational Study (April 1985-March 1986)
- × - - - × Two-Unit Operational Study (December 1986-November 1987)

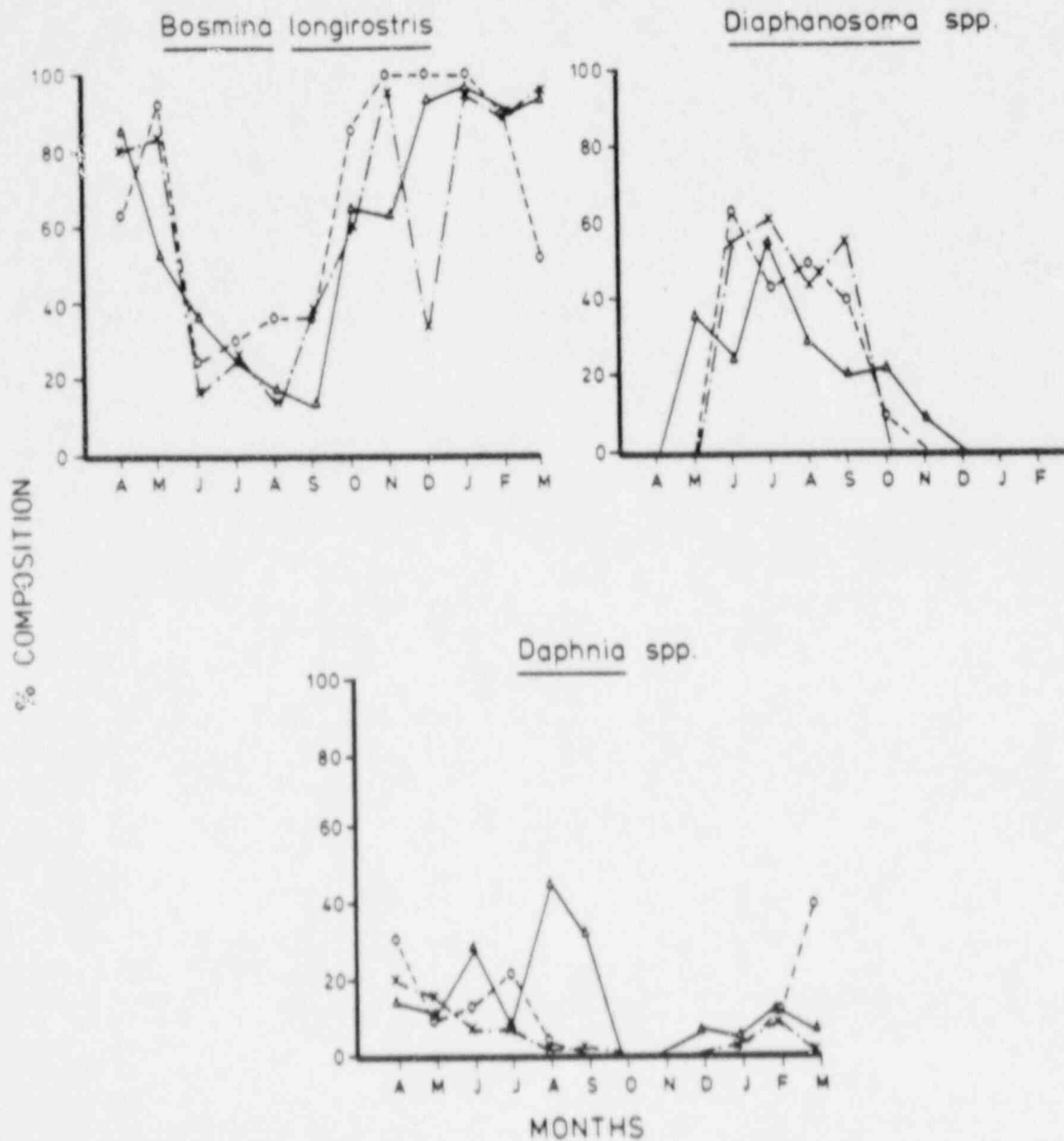


Figure 4-3 Percent composition of major cladoceran taxa among total cladoceran densities averaged for three locations on Lake Wylie during the Preoperational Study, the Unit 1 Operational Study, and the Two-Unit Operational Study.

- Preoperational Study (May 1983-April 1984)
- ▲---▲ Unit 1 Operational Study (April 1985-March 1986)
- ×---× Two-Unit Operational Study (December 1986-November 1987)

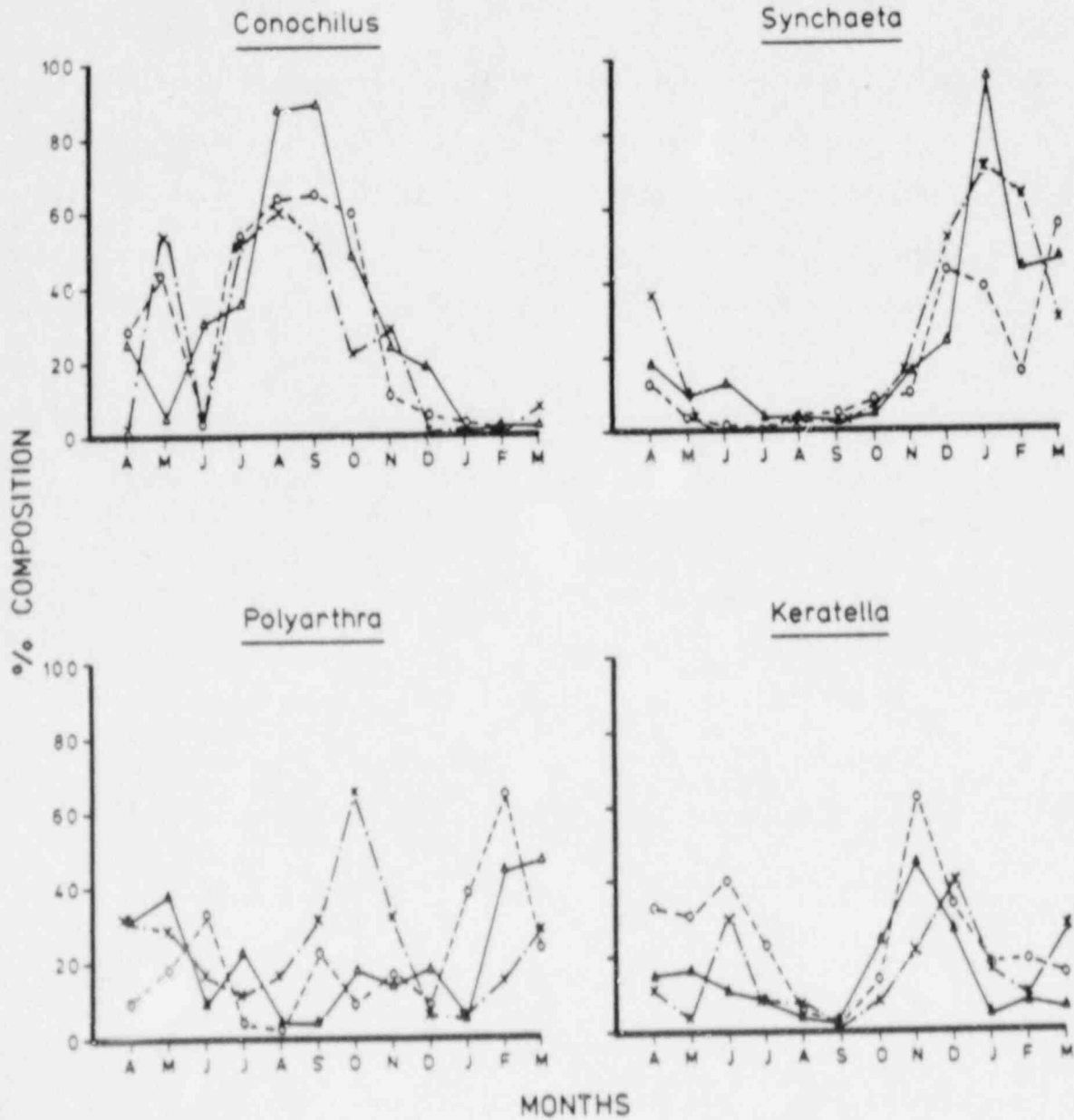


Figure 4-4 Percent composition of major rotifer taxa among total rotifer densities averaged for three locations on Lake Wylie for the Preoperational Study, the Unit 1 Operational Study, and the Two-Unit Operational Study.

CHAPTER 5: MACROINVERTEBRATES

INTRODUCTION

Previous studies by Lenat and Weiss (1973), Industrial Bio-Test Laboratories, Inc (1974), and Duke Power Company (1985,1987) have shown that benthic macroinvertebrates in lower Lake Wylie demonstrate year-to-year variations in standing crop and taxonomic composition in response to normal environmental factors. The objectives of the Catawba Nuclear Station (CNS) Two-Unit Operational Study of macroinvertebrates were to:

1. document the taxonomic composition of macroinvertebrates,
2. describe the distribution, relative abundance, and biomass of littoral macroinvertebrates, and
3. compare macroinvertebrate standing crop and taxonomic data collected during the Two-Unit Operational Study (February, May, August, November 1987) with data collected during the Preoperational Study (May, August, November 1983, February 1984), and the Unit 1 Operational Study (May, August, November 1985, February 1986).

METHODS AND MATERIALS

Quarterly benthic macroinvertebrate sampling was conducted in February, May, August, and November 1987 in the littoral zone (approximately 4.0 m) at Locations 210.0, 215.0, and 220.0 (Figure 1-2). Three replicate modified Petersen grabs were collected at each location. Field and laboratory methods used in this study, as well as detailed location descriptions, are presented

in the Preoperational Report (Duke Power Company 1985). Quarterly macroinvertebrate standing crop data (density and biomass) are presented in Appendix 5-1.

The computer-generated graphs of macroinvertebrate standing crop parameters presented in this report include interim data collected in May, August, November 1984, February 1985, May, August, and November 1986. These data are presented to provide continuity of sampling data, but will not be discussed in the following text.

RESULTS AND DISCUSSION

Physical and Chemical Parameters

Sediment temperatures (quarterly means) ranged from 6.8 C in February, to 29.9 C in August. Dissolved oxygen values at depths sampled for macroinvertebrates were generally greater than 6.0 mg/l, except at Location 215.0 in August when the DO was 3.3 mg/l. Temperature and DO values recorded during this study were generally within ranges considered sufficient to maintain established benthic communities (Duke Power Company 1985).

A qualitative determination of substrate type was done at each location throughout the study. Substrates at Locations 210.0 and 220.0 consisted of silt and clay, as well as some fine organic detritus. Sediments at Location 215.0 were characterized by silt and clay, as well as significant amounts of sand.

Standing Crop

Mean quarterly macroinvertebrate densities were highest in February and lowest in August (Table 5-1, Figures 5-1 through 5-3). During the Unit 1 Operational Study and the Preoperational Study, maximum values were also observed in February. Minimum densities occurred in May during the Unit 1 study and in August during the Preoperational study. Spatially, location 220.0 had higher densities than other locations during February and August, while location 210.0 had the highest densities in May and November. During the Unit 1 study, Location 215.0 had maximum densities in all sample periods except November. This location also demonstrated the highest densities among all sampling periods of the Preoperational Study except August. Densities during this study averaged approximately 15% higher than those of the Unit 1 study but were similar to those of the Preoperational Study.

Macroinvertebrate biomass values were highest in February, with minimum values observed in May (Table 5-2; Figures 5-1 through 5-3). During the two previous Duke Power monitoring studies, maximum biomass was also observed in February, with minimum values in November. Biomass during this study averaged 5 and 2.5 times higher than during the Unit 1 study and the Preoperational study, respectively. This was due to unusually high numbers of Corbicula collected in replicates at Location 210.0 in February (Tables 5-1 and 5-2). Although, some variability was observed among studies, standing crop values during this study were usually within ranges of those observed during the two previous studies.

Community Composition

Twenty-nine genera and seven phyla were identified during this study (Table 5-3). Five major taxonomic groups accounted for over 90% of the organisms observed (Table 5-4). The Family Chironomidae was the most diverse and abundant group, followed in importance by the Class Oligochaeta, the Family Chaoboridae, and the Families Corbiculidae and Ephemeridae. Overall community composition during this study was comparable to that observed during the Preoperational Study.

Chironomids usually dominated macroinvertebrate assemblages during this study, and were most abundant during February. Lowest densities were usually observed in August (Table 5-1). Chironomids showed considerable spatial variation throughout the study. Similar trends were observed during the two previous studies.

During the Preoperational Study, five taxa were ranked among the most abundant chironomids (Figure 5-4). These taxa were also observed during the Unit 1 and Two-Unit Operational Studies. Coelotanypus has always been the most abundant benthic taxon. The relative abundance of Chironomus during this study was somewhat higher than during the previous studies. The relative abundance of Ablabesmyia during this study was more similar to that observed during the Unit 1 study; while Cryptochironomus and Dicrotendipes showed relative abundances similar to those of the Preoperational Study. Tanytarsus and Procladius, which accounted for 9.3% of the total density during the Unit 1 study, were far less important during this study and the Preoperational Study. Cladotanytarsus was far more important during this study, accounting

for 4.6% of the total density as compared to <1.0% during the previous studies (Table 5-3).

The Choboridae (Chaoboris punctipennis) were most abundant in May, while low densities were observed in November (Table 5-1). During the Preoperational Study, maximum densities were also observed in May, with minimum values in February. During the Unit 1 study, maximum densities were in February, and minimum densities occurred in May. Also, Chaoborus was more abundant during the Unit 1 and Two-Unit studies than during the Preoperational Study.

Oligochaetes were most abundant in August, with minimum densities in May. During the Unit 1 study, highest densities also occurred in August, with minimum densities in November. During the Preoperational Study, highest densities occurred in November and lowest densities in August. The percent composition of oligochaetes during this study was similar to that recorded during the Preoperational Study (Table 5-4).

Corbicula was most abundant in February, with minimum standing crops observed in August. This same trend was observed during the Preoperational Study. During the Unit 1 Study, Corbicula were most abundant in February, with minimum densities in November (Figure 5-5).

Corbicula have always dominated macroinvertebrate biomass samples due to their large size; however, during this study their overall biomass was much higher. This was due to very high numbers of clams in replicates collected at Location 210.0 in February (the mean density was twice that of the highest previously recorded). Also, several very large clams were observed in one of

the replicates. This event also contributed significantly to the overall density of Corbicula during this study, which was higher than those observed during the previous studies. It should be noted that Corbicula accounted for nearly 30% of the total density of macroinvertebrates during the Industrial Bio-Test study of 1973-1974 (Industrial Bio-Test, 1974).

Corbicula die-offs have not been recorded in Lake Wylie since August 1984; this die-off was concentrated primarily in the upper portion of the lake, above Plant Allen.

The Ephemeroidea, represented by the genus Hexagenia, accounted for 2.4% of the total density during this study (Table 5-4), as compared to 3.4% during the Unit 1 study, and over 5% during the Preoperational Study. Hexagenia was most abundant in February, with minimum densities in August. Similar seasonal trends were observed during the two previous studies. Spatially, Hexagenia were not found at Location 215.0 during this study. During the Unit 1 Study, Hexagenia were only observed once at this location (: May). Individuals were collected at this location in May, November, and February of the Preoperational Study; however, Hexagenia has never accounted for more than 1% of the density at this location.

The absence of Hexagenia at location 215.0 during this study was probably due to less suitable substrates at this location (i.e., high sand content) rather than any thermal effects. Hexagenia (a burrowing mayfly) requires substrates composed primarily of silt, clay, and organic detritus in order to construct stable burrows (Weiss, et al. 1978). During July 1988, Hexagenia were collected by Duke Power Company biologists from silt-clay substrates much closer to the CNS discharge than Location 215.0.

SUMMARY

Benthic macroinvertebrates were collected from the littoral zone at Locations 210.0, 215.0, and 220.0 on Lake Wylie in February, May, August, and November 1987. Substrates at these locations consisted of silt, clay, and varying amounts of organic matter and sand. Temperatures and dissolved oxygen were generally within ranges considered sufficient to support established benthic macroinvertebrate communities.

Macroinvertebrate standing crops during this study were highest in February and lowest in August, with minimum biomass observed in May. Locations 220.0 and 210.0 had higher densities than other locations during February and August, and May and November, respectively. Biomass was usually highest at Location 210.0. Benthic macroinvertebrate standing crops observed during the Two-Unit Operational Study were generally within ranges of those observed during the previous two studies.

Twenty-nine genera of macroinvertebrates were identified during this study. The Chironomidae, Chaoboridae, Oligochaeta, Corbiculidae, and Ephemeraeidae accounted for over 90% of the total density. Community composition during this study was similar to that observed during the Preoperational Study.

Chironomids dominated macroinvertebrate densities during all three studies, and the chironomid taxon Coelotanypus has always been the most important member of this family. Other important chironomids observed during this study included Chironomus, Cladotanytarsus, and Dicrotendipes. Chironomid relative abundance was similar to that observed during the Unit 1 study, but lower than that of the Preoperational Study.

The relative abundance of Corbicula was higher during this study than during the previous two studies due to very high densities observed among replicates collected at Location 210.0 in February. These samples also included several very large clams, which contributed significantly to the overall biomass of Corbicula during this study. Percent composition of Corbicula during this study was still much lower than that observed during the First Year Preoperational Study of 1973-74.

Chaoborus standing crops during this study were similar to those observed during the Unit 1 study, but were higher than those of the Preoperational Study. Oligochaete relative abundance was similar to that of the Preoperational Study, and higher than that of the Unit 1 study. Hexagenia seldom accounted for more than 10% of macroinvertebrate densities during any study, and were not collected at all at Location 215.0 during this study. The absence of Hexagenia at Location 215.0 was probably due to less suitable substrates at this location.

Considerable year-to-year variability among macroinvertebrate standing crops has always been observed between CNS monitoring studies. This is probably due to normal environmental variability in Lake Wylie coupled with the periodicity of sampling and occasional substrate variability.

LITERATURE CITED

- Duke Power Company. Chemical and biological characteristics prior to the operation of Catawba Nuclear Station, 316 (a) Demonstration. Summary of data collected 1973-1974 and 1983-1984. Duke Power Company, Charlotte, NC. 134 p.; 1985.
- Duke Power Company. Chemical and biological characteristics during the first year of operation of Unit 1 of Catawba Nuclear Station, April 1985-March 1986. 316 (a) Demonstration. Duke Power Company, Charlotte, NC. 166 p.; 1987.
- Industrial Bio-Test Laboratories, Inc. A baseline/predictive environmental investigation of Lake Wylie, Catawba Nuclear Station, and Plant Allen. Report to Duke Power Company. 2 vols. 743 p.; 1974.
- Lenat, D. R. and C. M. Weiss. Distribution of benthic macroinvertebrates in Lake Wylie, North-South Carolina. Dept. of Environmental Sciences and Engineering, University of North Carolina, Chapel Hill, NC. 75 p.; 1973.
- Weiss, C. M., T. P. Anderson, P. H. Campbell, and D. R. Lenat. Environmental effects of power plant operation, Belews Lake, Years V and VI, July 1976-June 1977. Department of Environmental Science and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC. 601 p.; 1978.

Table 5-1 Total macroinvertebrate densities (no./m²), and densities and percent composition (in parenthesis) of major taxonomic groups, from samples collected at locations on Lake Wylie in February, May, August, and November 1987.

Location	Date	Chironomidae	Chaoboridae	Oligochaeta	Ephemeroidea	Corbiculidae	Others	Total Density
210.0	02/10/87	724 (35.5)	90 (4.4)	413 (20.2)	39 (1.9)	633 (31.0)	142 (7.0)	2,040
215.0		517 (55.6)	155 (16.7)	78 (8.2)	0 (0)	116 (12.5)	65 (7.0)	931
220.0		2,326 (58.0)	26 (0.6)	917 (22.9)	220 (5.5)	142 (3.6)	375 (9.4)	4,006
210.0	05/12/87	711 (28.5)	1,447 (58.0)	39 (1.6)	13 (0.5)	194 (7.8)	90 (3.6)	2,494
215.0		478 (27.8)	517 (30.1)	375 (21.8)	0 (0)	194 (11.3)	155 (9.0)	1,719
220.0		1,163 (65.7)	116 (6.6)	39 (2.2)	90 (5.1)	181 (10.2)	181 (10.2)	1,770
210.0	08/11/87	362 (38.4)	233 (27.4)	78 (8.2)	13 (1.3)	155 (16.4)	103 (11.0)	944
215.0		271 (26.2)	13 (1.2)	607 (58.8)	0 (0)	193 (18.0)	39 (3.8)	1,033
220.0		491 (20.8)	233 (9.9)	1,279 (54.4)	13 (0.6)	129 (5.5)	207 (8.8)	2,352
210.0	11/12/87	1,473 (69.5)	0 (0)	90 (4.2)	78 (3.7)	220 (10.4)	258 (12.2)	2,119
215.0		749 (40.8)	0 (0)	788 (43.0)	0 (0)	155 (8.4)	142 (7.8)	1,834
220.0		478 (30.2)	26 (1.6)	530 (33.3)	78 (4.9)	310 (19.5)	168 (10.6)	1,590

Table 5-2 Mean biomass (blotted wet weight in mg/m^2), and percent composition (in parenthesis) of major taxonomic groups (excluding Corbicula), from samples collected on Lake Wylie in February, May, August, and November 1987. Corbicula biomass is listed separately and expressed in g/m^2 .

Taxon	02/10/87			05/12/87			08/11/87			11/12/87		
	210.0	215.0	220.0	210.0	215.0	220.0	210.0	215.0	220.0	210.0	215.0	220.0
Chironomidae	1,393 (67.8)	1,220 (71.5)	1,069 (18.8)	1,460 (46.4)	1,030 (84.2)	2,776 (39.6)	482 (9.8)	478 (57.2)	260 (7.4)	1,846 (57.0)	959 (51.1)	766 (19.2)
Chaoboridae	45 (2.1)	79 (4.6)	24 (0.4)	420 (13.3)	59 (4.8)	27 (0.4)	53 (1.1)	4 (0.5)	29 (0.8)	0 (0)	0 (0)	41 (1.0)
Oligochaeta	466 (22.8)	104 (6.1)	3,269 (57.5)	35 (1.1)	95 (7.8)	106 (1.5)	48 (1.0)	244 (29.2)	1,760 (49.8)	53 (1.6)	791 (42.2)	1,218 (30.5)
Ephemeridae	102 (5.0)	0 (0)	548 (9.6)	1,221 (38.8)	0 (0)	4,032 (57.5)	4,004 (81.3)	0 (0)	668 (18.9)	899 (27.8)	0 (0)	983 (24.6)
Others	48 (2.3)	302 (17.8)	780 (13.7)	13 (0.4)	39 (3.2)	70 (1.0)	335 (6.8)	109 (13.1)	817 (23.1)	441 (13.6)	125 (6.7)	988 (24.7)
Total	2,054	1,705	5,690	3,149	1,223	7,011	4,923	835	3,534	3,239	1,875	3,996
<u>Corbicula</u>	15,010	353	1,650	692	795	1,549	1,770	790	1,431	2,353	1,192	4,007

Table 5-3 Macroinvertebrate taxa, percent frequency among samples (% Fr), and percent composition (% Co) of total macroinvertebrates observed in samples from the Preoperational Study (POS), the Unit 1 Operational Study (U1S), and the Two-Unit Operational Study (U2S).

	POS		U1S		U2S	
	% Fr	% Co	% Fr	% Co	% Fr	% Co
Phylum Nemertina						
Class Enopla						
Order Hoplonemertina						
Family Tetrastemmatidae						
<u>Prostoma</u> spp.	16.7	0.1	8.3	0.1	0	0
Phylum Porifera						
Class Demospongiae						
Order Haplosclerida						
Family Spongillidae	41.7	P	25.0	P	33.3	P
Phylum Bryozoa						
Class Phylactolaemata						
Order Plumatellina						
Family Lophopodidae						
<u>Pectinatella magnifica</u>	100.0	P	100.0	P	100.0	P
Phylum Nematoda	66.7	3.8	100.0	16.4	66.7	1.5
Phylum Platyhelminthes						
Class Turbellaria	0	0	8.3	<0.1	8.3	<0.1
Unidentified	0	0	8.3	<0.1	0	0
Phylum Annelida						
Class Hirudinea	0	0	3.3	<0.1	8.3	<0.1
Class Oligochaeta	83.3	20.1	91.7	8.5	100.0	21.3
Phylum Arthropoda						
Class Acari	0	0	8.3	<0.1	0	0
Class Insecta						
Order Diptera						
Family Ceratopogonidae						
<u>Palpomyia</u> (Complex)	83.3	1.4	91.7	6.7	91.7	4.2
Family Chaoboridae						
<u>Chaoborus punctipennis</u>	100.0	7.0	91.7	13.0	83.3	12.6
Family Chironomidae						
Chironomini genus B	0	0	0	0	8.3	<0.1
Tribe Tanytarsini	0	0	0	0	8.3	<0.1
<u>Ablabesmyia annulata</u>	0	0	66.7	1.4	41.7	0.8
A. app.	75.0	3.3	33.3	0.4	50.0	0.4
<u>Chironomus</u> spp.	83.3	3.0	83.3	3.9	83.3	5.0
<u>Cladopelma</u> spp.	8.3	<0.1	8.3	0.2	16.7	0.2
<u>Cladotanytarsus</u> spp.	50.0	0.8	50.0	0.4	50.0	4.6
<u>Clinotanypus</u> spp.	0	0	8.3	<0.1	8.3	<0.1
<u>Coelotanypus tricolor</u>	83.3	3.6	100.0	8.1	83.3	4.8

Table 5-3

	POS		U1S		U2S	
	% Fr	% Co	% Fr	% Co	% Fr	% Co
C. spp.	100.0	22.5	100.0	14.2	100.0	12.1
<u>Cricotopus</u> spp.	8.3	0.1	16.7	0.1	8.3	<0.1
<u>Cryptochironomus ponderosus</u>	8.3	<0.1	0	0	0	0
C. spp.	75.0	2.6	33.3	0.8	75.0	2.5
<u>Cryptotendipes</u> spp.	0	0	0	0	8.3	<0.1
<u>Dicrotendipes modestus</u>	8.3	<0.1	0	0	0	0
<u>D. neomodestus</u>	0	0	0	0	50.0	3.3
<u>D. nervosus</u>	0	0	0	0	41.7	0.5
D. spp.	75.0	6.5	58.0	0.8	50.0	0.7
<u>Endochironomus</u> spp.	8.3	<0.1	0	0	0	0
<u>Glyptotendipes</u> spp.	50.0	2.0	66.7	2.4	50.0	0.6
<u>Harnischia</u> spp.	8.3	<0.1	0	0	0	0
<u>Microchironomus</u> spp.	41.7	0.2	33.3	1.0	33.3	0.8
<u>Nanocladius</u> spp.	8.3	<0.1	0	0	0	0
<u>Nilothauma</u> spp.	8.3	0.1	8.3	<0.1	0	0
<u>Farakiefferiella</u> spp.	8.3	<0.1	0	0	0	0
<u>Phaenospectra</u> spp.	0	0	0	0	8.3	0.4
<u>Polypedilum</u> spp.	41.7	2.0	16.7	0.3	41.7	0.6
<u>Procladius</u> spp.	41.7	0.8	91.7	3.4	75.0	1.1
<u>Pseudochironomus</u> spp.	50.0	1.8	16.7	0.2	33.3	0.9
<u>Stentochironomus</u> spp.	8.3	0.2	0	0	0	0
<u>Stictichironomus</u> spp.	25.0	0.3	0	0	0	0
<u>Tanytarsus neoflavellus</u>	0	0	0	0	25.0	0.2
T. spp.	83.3	1.3	91.7	5.9	75.0	2.7
<u>Tribelos</u> spp.	0	0	0	0	8.3	0.1
<u>Xenochironomus xenolabis</u>	8.3	<0.1	0	0	0	0
X. spp.	25.0	0.2	0	0	0	0
Unidentified	0	0	25.0	0.2	16.7	0.4
Family Simuliidae						
<u>Simulium</u> spp.	0	0	0	0	8.3	<0.1
Order Ephemeroptera						
Family Caenidae						
<u>Caenis</u> spp.	41.7	0.4	8.3	<0.1	50.0	0.4
Family Ephemeridae						
<u>Hexagenia</u> spp.	91.7	5.1	66.7	3.4	66.7	2.4
Order Megaloptera						
Family Sialidae						
<u>Sialis</u> spp.	25.0	1.3	41.7	1.0	58.3	1.0
Order Neuroptera						
Family Sisyridae						
<u>Climacia areolaris</u>	8.3	<0.1	0	0	0	0
Order Odonata						
Family Coenagrionidae						
<u>Argia</u> spp.	8.3	0.1	0	0	8.3	<0.1
Order Trichoptera						
Family Hydroptilidae						
<u>Orthotrichia</u> spp.	8.3	0.1	16.7	0.2	16.7	0.1
Family Leptoceridae						
<u>Oecetis</u> spp.	41.7	0.4	41.7	0.3	8.3	<0.1
Family Polycentropidae						
<u>Cyrenellus fraternus</u>	66.7	0.8	25.0	0.2	50.0	0.5

Table 5-3

page 3 of 3

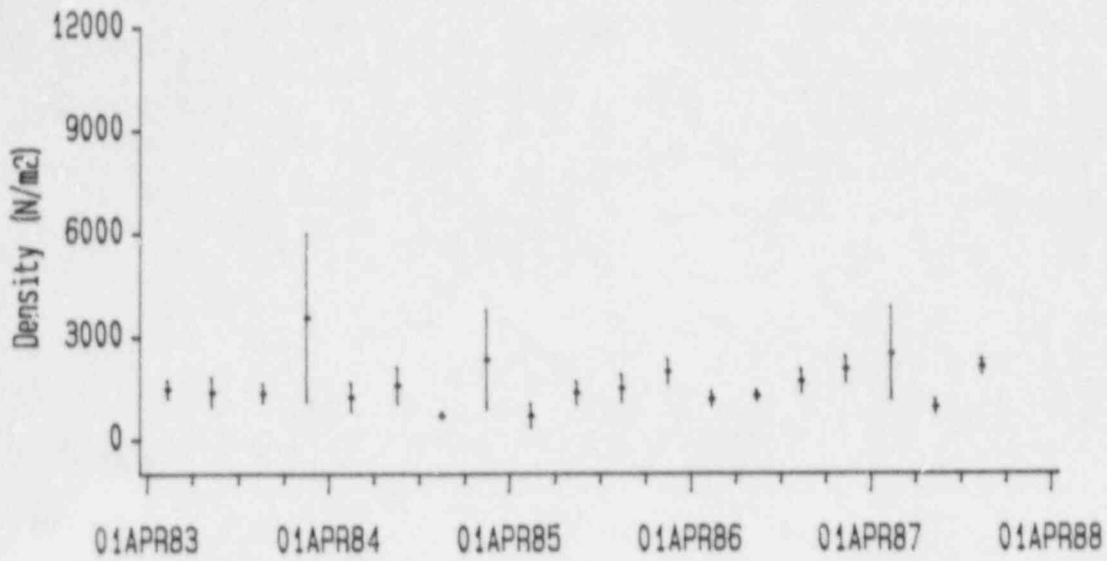
Taxon C. spp.	POS		U1S		U2S	
	% Fr	% Co	% Fr	% Co	% Fr	% Co
	0	0	0	0	8.3	<0.1
Phylum Mollusca						
Class Bivalvia						
Order Heterodontida						
Family Corbiculidae						
<u>Corbicula spp.</u>	100.0	7.3	100.0	5.0	100.0	11.2
Family Sphaeriidae	0	0	33.3	5.0	25.0	0.2
Family Unionidae						
<u>Anodonta imbecillis</u>	8.3	<0.1	0	0	0	0
Class Gastropoda	0	0	0	0	8.3	<0.1

P = presence noted in sample but not quantified

Table 5-4 Percent composition of total density and biomass for major macroinvertebrate taxa from samples collected during the Preoperational Study (POS), the Unit 1 Operational Study (U1S), and the Two-Unit Operational Study (U2S).

<u>Taxon</u>	<u>Density</u>			<u>Biomass</u>		
	<u>POS</u>	<u>U1S</u>	<u>U2S</u>	<u>POS</u>	<u>U1S</u>	<u>U2S</u>
Family Chironomidae	51.7	44.0	43.7	0.2	0.3	<0.1
Family Chaoboridae	7.0	13.0	12.6	<0.1	<0.1	<0.1
Class Oligochaeta	20.1	8.4	21.3	<0.1	<0.1	<0.1
Family Ephemeridae	5.1	3.4	2.4	0.3	0.3	<0.1
Family Corbiculidae	7.3	5.0	11.2	99.2	99.2	99.9
Others	8.8	26.1	8.8	0.2	0.1	<0.1

LOCATION=210.0



LOCATION=210.0

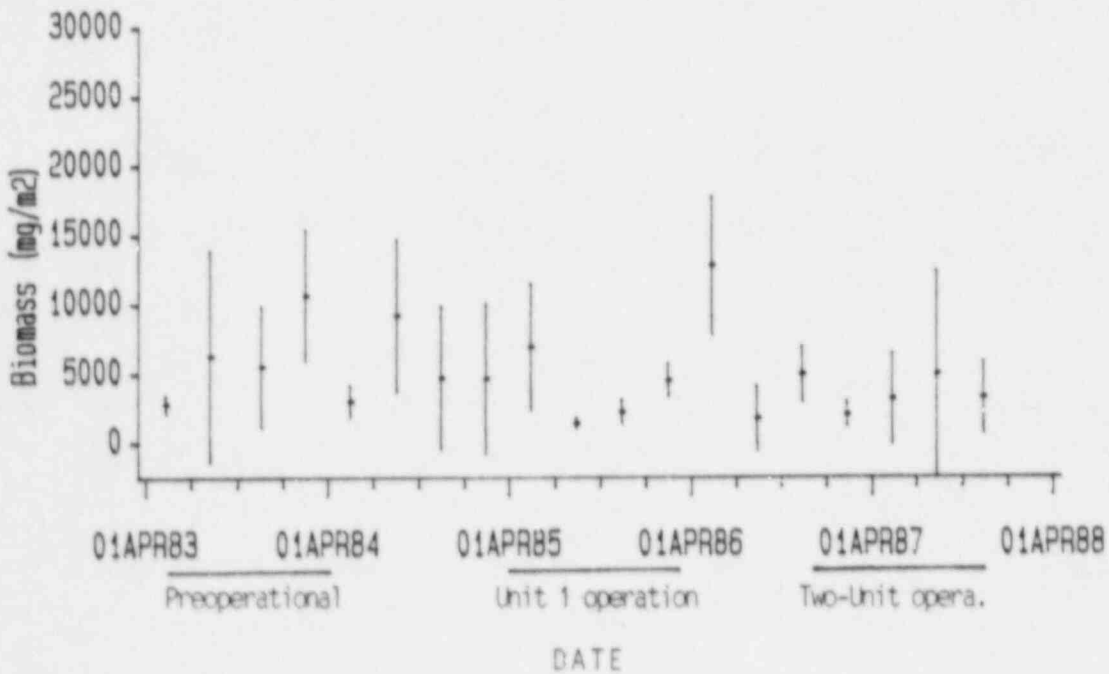
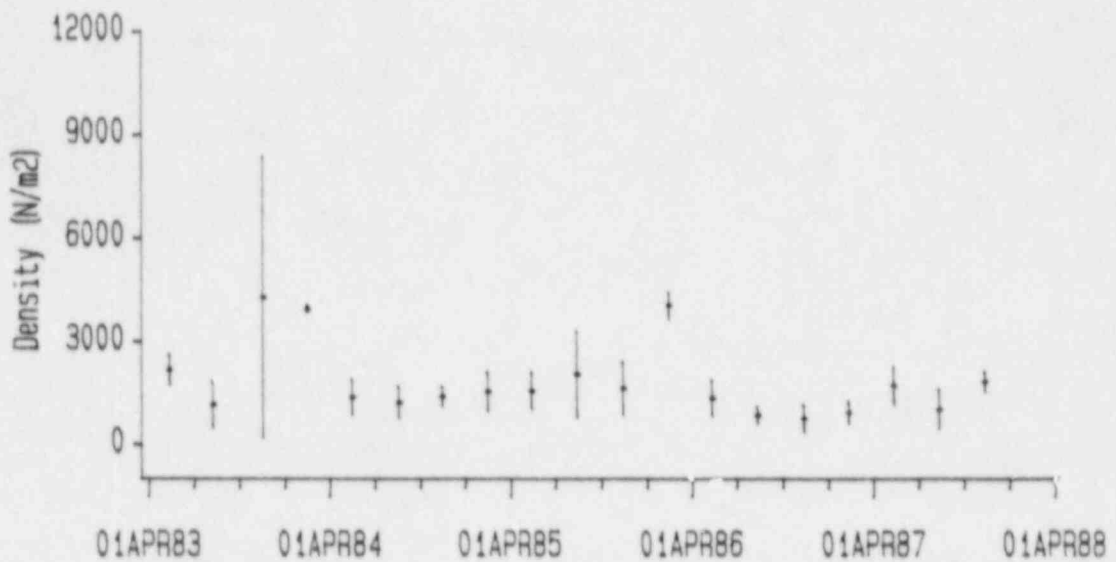


Figure 5-1 Means and standard deviations (three replicates) of macroinvertebrate density and biomass values (blotted wet wt) for quarterly sampling periods (May, August, November, February) from May 1983 to November 1987. Note: biomass does not include Corbicula.

LOCATION=215.0



LOCATION=215.0

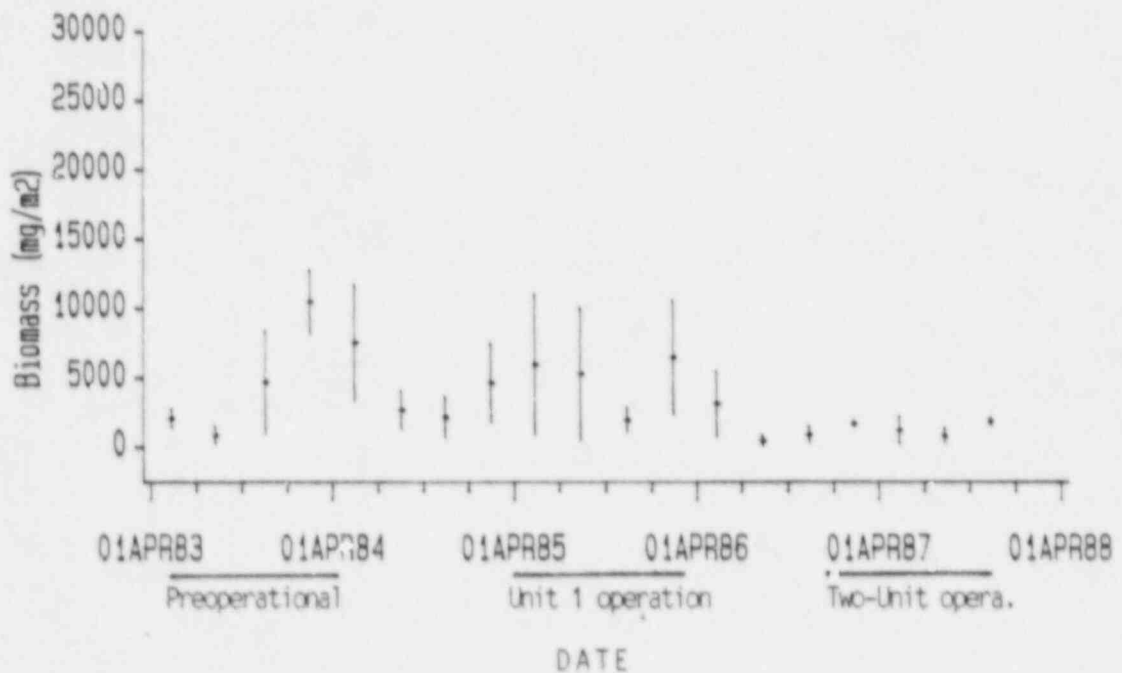
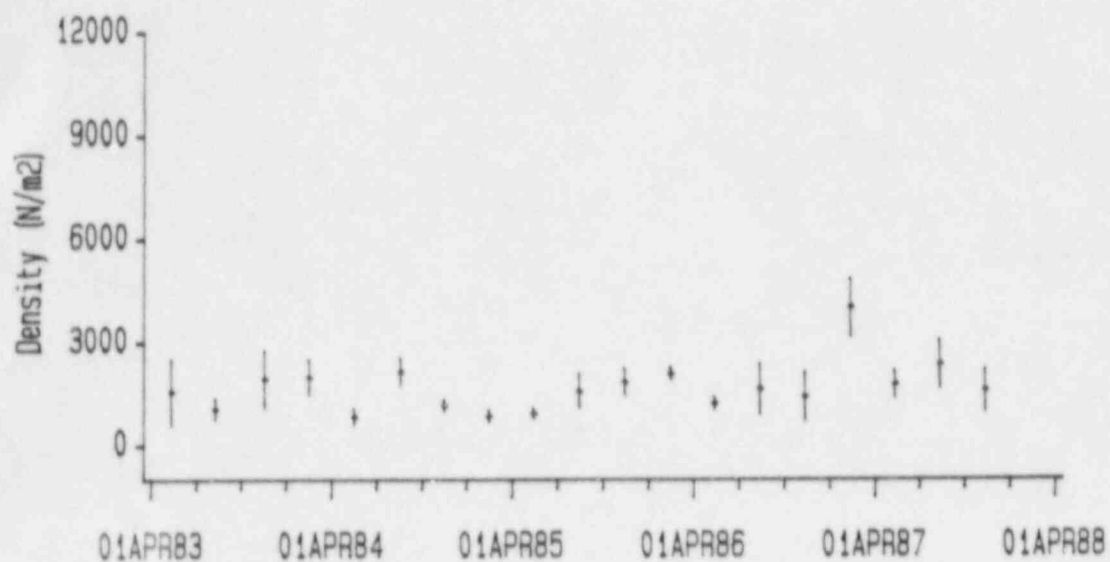


Figure 5-2 Means and standard deviations (three replicates) of macro-invertebrate density and biomass values (blotted wet wt.) for quarterly sampling periods (May, August, November, February) from May 1983 to November 1987. Note: biomass does not include Corbicula.

LOCATION=220.0



LOCATION=220.0

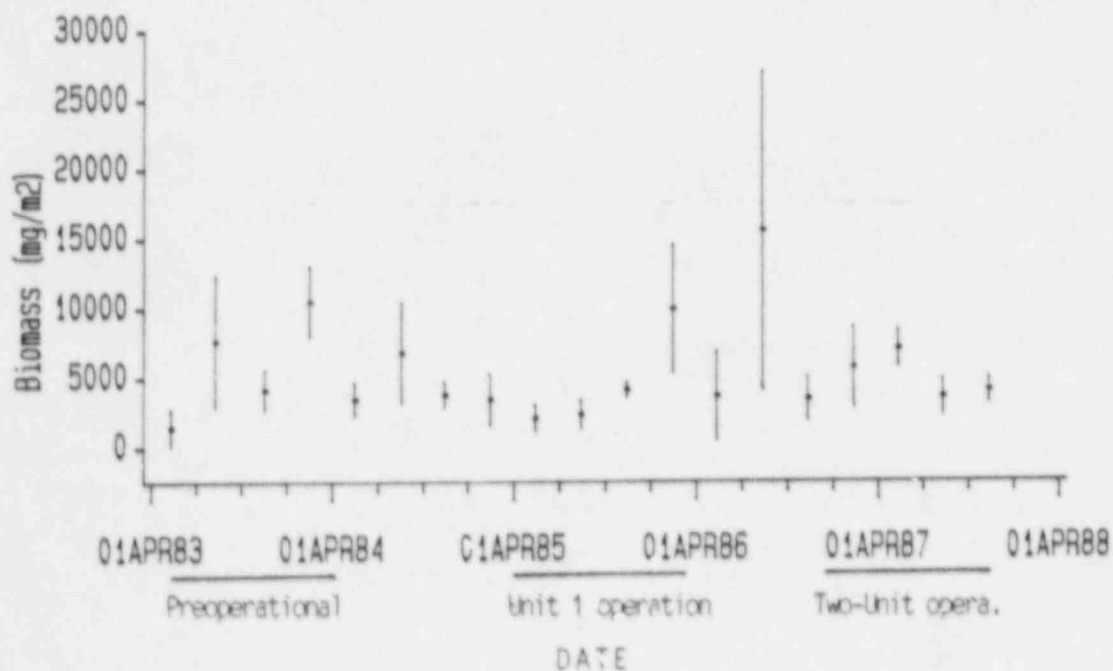


Figure 5-3 Means and standard deviations (three replicates) of macro-invertebrate density and biomass values (blotted wet wt.) for quarterly sampling periods (May, August, November, February) from May 1983 to November 1987. Note: biomass does include Corbicula.

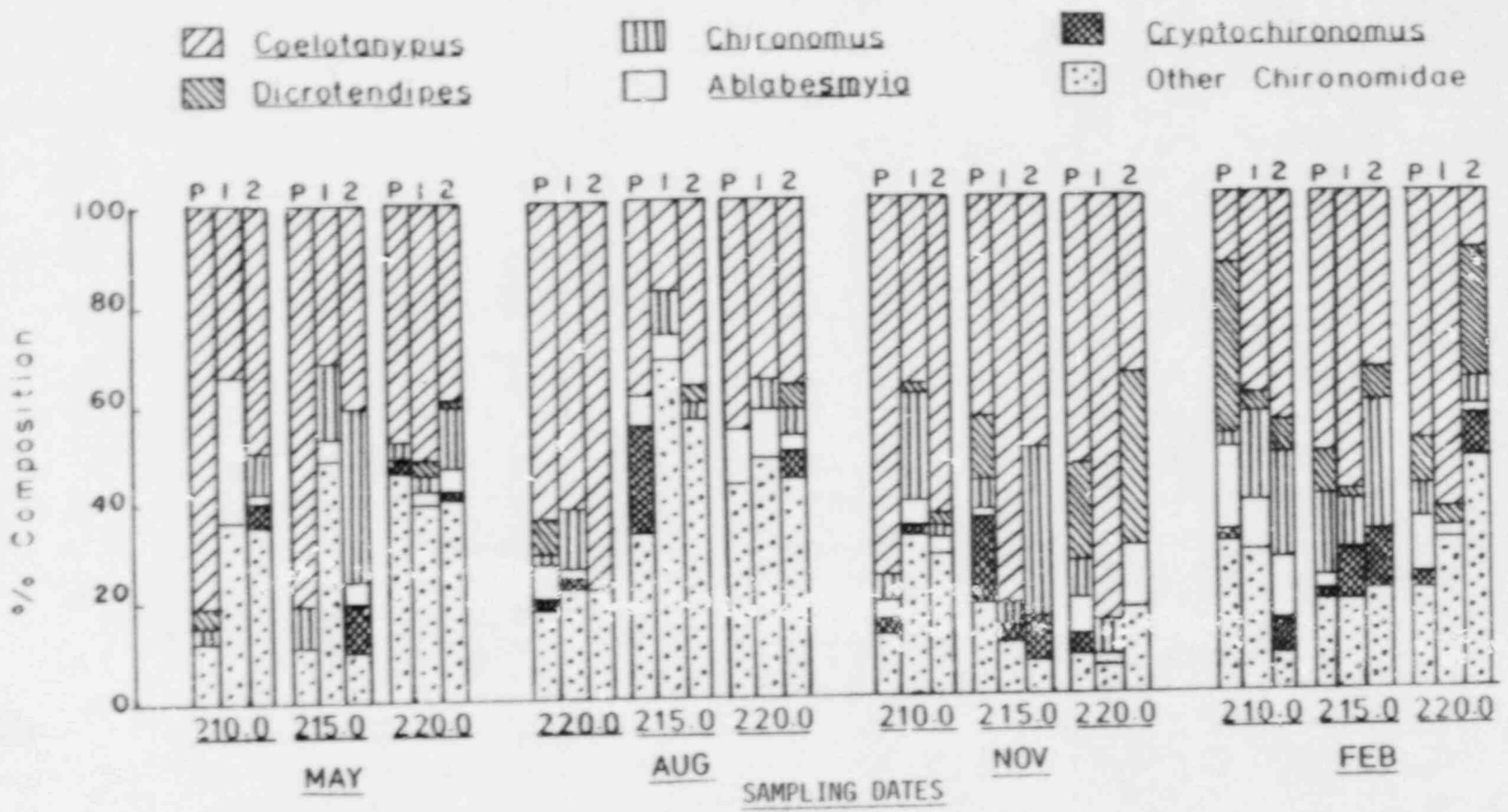


Figure 5-4 Major chironomid taxa identified during the Preoperational Study (P) and their percent composition of chironomid densities during that study compared to the Unit 1 Operational Study (1), and the Two-Unit Operational Study (2).

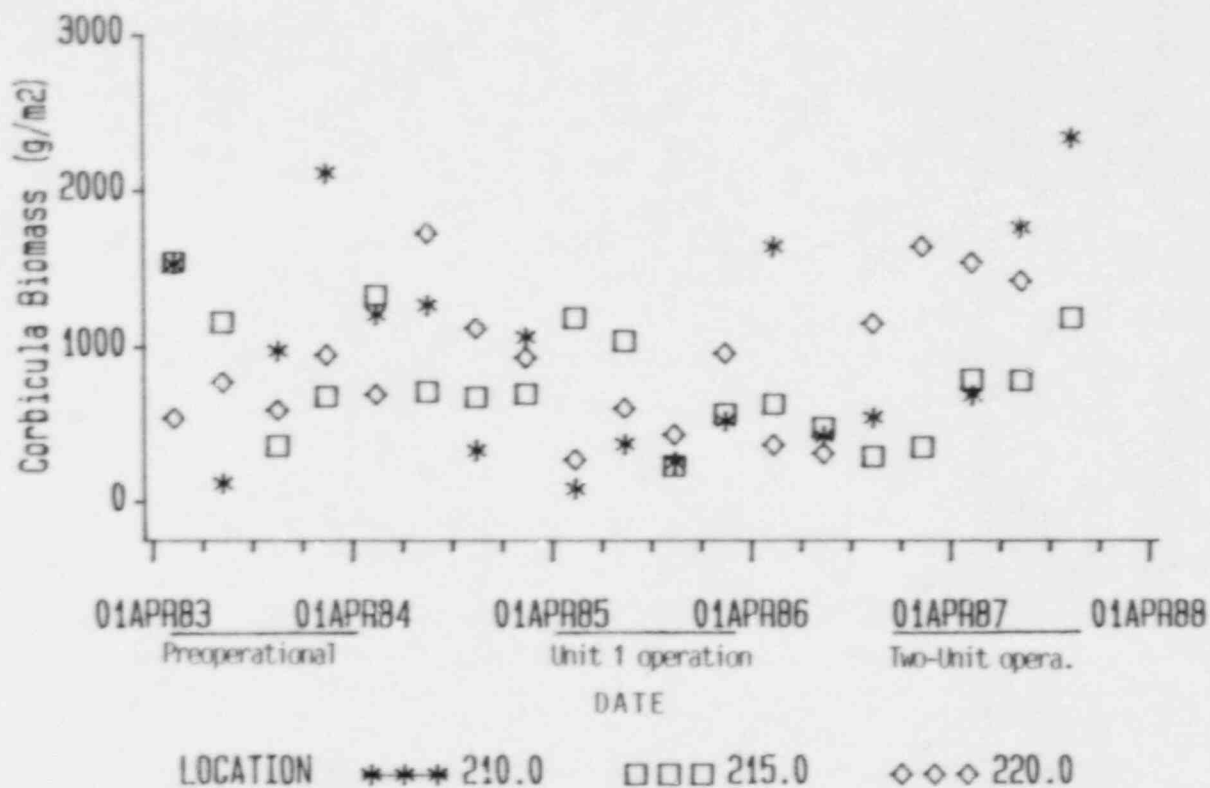


Figure 5-5 Mean *Corbicula* biomass values (three replicates, blotted wet wt.) for quarterly sampling periods (May, August, November, February) from May 1983 to November 1987. Note: *Corbicula* biomass in February 1987 was 15,010 g/m².

INTRODUCTION

Lake Wylie is classified as a warm-water fishery, and supports substantial sport fisheries for catfish (Ictalurus spp.), sunfish (Lepomis spp.), largemouth bass (Micropterus salmoides), and crappie (Pomoxis spp.) (Harrell 1986; McInerny and Baker 1987). Previous sampling at Lake Wylie indicated that the fish community is comprised primarily of clupeids, ictalurids, and centrarchids (Industrial Biotest Laboratories, Inc. 1974; Duke Power Company 1985, 1986, 1987).

Operation of steam-electric stations has resulted in elevated water temperature, movement of water, and thermal destratification in cooling reservoirs (Olmsted and Clugston 1986; Oliver and Hudson 1987). These operational effects have caused alterations in spawning (Miller and DeMont 1974), growth (Siler 1981; Smithson et al. 1986), and fish distribution (Smithson et al. 1986; Siler et al. 1986). The incorporation of cooling towers at Catawba Nuclear Station (CNS) should have resulted in minimal elevation of water temperature and water movement (Chapter 2, this report); consequently, these operational effects on fish populations of Lake Wylie were expected to be minimal.

Sodium hypochlorite, a biocide applied in the cooling towers of each unit every other day for approximately one hour, prevents biofouling. During normal operating conditions, total residual chlorine concentrations discharged into Lake Wylie are less than detectable (0.02 mg/l), below the 2-hr LC1's

(concentration that is lethal to 1% of the test animals) for emerald shiner (Notropis atherinoides) and channel catfish (Ictalurus punctatus) (LC1's = 0.10 and 0.14 mg/l, respectively) (Brooks and Bartos 1984). An accidental spill of sodium hypochlorite occurred in October 1984, before either unit of CNS was operating, and resulted in a fish kill in the discharge area of the station.

Three creel surveys and a study characterizing the largemouth bass population at Lake Wylie have been conducted before and during operation of Unit 1 of CNS. The creel surveys demonstrated that anglers utilized the discharge area of CNS and that the operation of CNS had little overall effect on pressure, catch rates, or harvest of sport fishes (McInerny and Baker 1987). Growth of largemouth bass was not affected by the operation of CNS; however, mortality of largemouth bass in the discharge area of CNS was higher than in other areas of the lake. This mortality was linked to the probable increase in angling pressure in the discharge area after CNS began operation (McInerny 1988). Density, year-class strength, and distribution of largemouth bass were unaffected by the operation of CNS.

Fish sampling for the 316(a) Demonstration was conducted before Unit 1 of CNS was operational (1973-1974 and 1983-1984) (Industrial Biotest Laboratories 1974; Duke Power Company 1985), during operation of CNS Unit 1 (1985-1986) (Duke Power Company 1987), and during operation of both units of CNS. The objectives of this report are to:

1. Summarize data on species richness and relative abundance of fishes at selected locations of Lake Wylie during operation of Units 1 and 2

of Catawba Nuclear Station, and relate these data to operation of these units.

2. Summarize growth data of bluegill (Lepomis macrochirus) and black crappie (Pomoxis nigromaculatus) during operation of Units 1 and 2 of Catawba Nuclear Station, and relate these data to operation of these units.

METHODS AND MATERIALS

Sample Collection

Electrofishing, experimental gill nets, rotenone, and trap nets were used for sampling fish during this study. Electrofishing (840 V pulsed DC; 3-5 amps) samples were collected in January, April, July, and October 1987. One kilometer of shoreline at Locations 210, 215, and 220 (Figure 1-2) was electrofished during each sampling period. All captured fish were identified to species, counted, and released.

Two experimental gill nets (27 m x 1.5 m) with alternating mesh sizes of 2.5, 3.8, and 8.1 cm² bar mesh were set overnight and perpendicular to shore at Locations 210, 215, and 220 on the same dates as electrofishing samples. Nets were retrieved the next day and taken to the laboratory where the fish were removed from the nets, identified to species, and counted.

Fish in a selected cove at Locations 215, 225, and 235 (Figure 1-2) were collected after rotenone application during August 1987. At approximately 0900 hr, the mouth of each cove was blocked with a 0.64-cm² mesh block net. Rotenone was applied at a concentration of ~1 ppm within the cove. Dead and moribund fish were collected during the first two days after rotenone application, identified to species, and counted. Total weight (g) of each fish

species collected was measured on the first day of collection. Total weight of each species collected during the second-day was the product of the weight per fish ratio during the first day and the total number of fish of that species collected during the second day.

Ten to thirty trap nets (0.9 x 1.8 m, with 1.9- or 2.5-cm² bar mesh and with a single 15.2-m lead) were set overnight and perpendicular to shore in Zones 1, 4, and 5 (Figure 6-1) during November, 1984 through 1987. Five to fifteen trap nets were set at Zone 5 in January, April, and August, 1986 and 1987. Captured white crappie (Pomoxis annularis) and black crappie from each net were measured (total length in mm) and released; all other fishes were released.

Scales for age and growth analyses were removed from bluegill (Lepomis macrochirus) collected during the first day of cove sampling at Locations 215, 225, and 235 (August 1979 through 1987) and from black crappie captured in trap nets set in November. From 1979 through 1983, approximately 100 bluegill were kept for age/growth analysis. These fish were selected in proportion to their length-frequency distribution, but a minimum of 10 fish from each 2-cm size group were selected. From 1984 through 1987, 100 bluegill from 2-cm size classes 4 (60-79 mm TL) through 8 (140-159 mm TL), proportional to the same size classes in the total bluegill catch, and up to 10 individuals from size class 3 (40-59 mm TL) and each 2-cm size class ≥ 9 (≥ 160 mm) were kept for age/growth analyses. All bluegill for age/growth analyses were taken to the laboratory where they were measured, weighed (g), and their sex determined. Scales were removed from the first 100 black crappie processed in each zone sampled; however, sex was not determined. In addition, scales were removed from all captured black crappie ≥ 300 mm total length. Scale impressions on acetate strips were made with a hydraulic press (1983 through 1987). With the

aid of an Eberbach® scale projector (80X and 40X for bluegill and black crappie, respectively), annuli were counted by two individuals; all disagreements in annuli counts were discarded. Crossing over patterns or wider spacing patterns between circuli distinguished annuli from circuli.

Data Analyses

Percent composition (% of catch) for each species collected with electrofishing and for each species collected with gill nets at Locations 210, 215, and 220 were calculated for each date sampled. Standing stock (kg/ha), density (number/ha), and % composition in standing stock and density for each species collected in coves (Locations 215, 225, and 235) sampled with rotenone were calculated. A surface area/lake level model to calculate the surface area of the coves sampled was used. Mean catch rates (number of fish/net set) of white crappie and black crappie were calculated for each zone and year sampled with trap nets. Catch rates by year-class were also determined for black crappie from each zone. Catch rates by year class of black crappie in each zone were derived from the total number of black crappie of that year class divided by the number of nets set in that zone. Length-frequency distributions coupled with an age-length key for that zone were used to obtain the number of black crappie of that year class. Mean lengths (mm) at annulus formation of bluegill and black crappie were calculated with the traditional method (Carlander 1981); standard intercepts of 20 and 35 mm for bluegill and black crappie (Carlander 1982), respectively, were used. Growth was estimated as the difference between the length at time t and length at time $t-1$ (Ricker 1975). Data analyses were restricted to tables and graphs. Applicable data before operation of either Unit of CNS, and during operation of CNS Unit 1 (collected

by Industrial Biotest Laboratories, Inc., and by Duke Power Company) were compared with data gathered during this study.

RESULTS AND DISCUSSION

Species Richness

A total of 49 fish species has been reported at Lake Wylie since sampling began in 1973 (Table 6-1). Industrial Biotest Laboratories, Inc. reported 39 species, and 38 species were collected by Duke Power Company before CNS was operational (Table 6-1). Duke Power Company collected 35 and 29 species, respectively, after Unit 1 was operational and after Units 1 and 2 were operational.

Differences in the number of species collected were probably the result of differences in the areas sampled, sampling frequency and duration, and misidentification. Industrial Biotest Laboratories sampled several riverine locations not sampled by Duke Power Company, and sampled monthly rather than quarterly, which could account for their collections of bowfin, bluehead chub, and suckermouth redhorse (Table 6-1). The sampling effort by Duke Power Company before operation of CNS included six years of cove sampling (Baker and McInerny 1985) and one year of electrofishing and gillnetting samples (Duke Power Company 1985). No years of cove, electrofishing, and gill net samples were collected during operation of CNS Unit 1 (Duke Power Company 1986, 1987; Duke Power Company unpublished data), and one year of cove, electrofishing, and gill net samples were collected during operation of both units of CNS. Increased sampling effort increases chances of capturing the rarer species. The listings of river carpsucker, black bullhead, rock bass,

and johnny darter (Table 6-1) were probably results of misidentification. River carpsucker and johnny darter have close relatives found at Lake Wylie (quillback and tessellated darters, respectively), but have never been reported elsewhere from the Catawba River drainage (Menhenick 1975; Cloutman and Olmsted 1979). One suspected black bullhead (similar taxonomically to brown bullhead) was collected in Lake Norman, N.C. (Cloutman and Olmsted 1979), and rock bass (similar appearance to warmouth) had been stocked in an upper reservoir of the Catawba River system (Randall 1957). These are the only other reports of these species from the Catawba River system (Cloutman and Olmsted 1979). Greenfin shiners were once grouped with satinfin shiners until being listed as separate species by 1970; taxonomists did not regularly use greenfin shiner as the new name for satinfin shiner until the mid-seventies (D. G. Cloutman, Duke Power Company, personal communication).

Species Composition and Relative Abundance

Electrofishing

Thirteen, eighteen, and fourteen fish species at Locations 210, 215, and 220 were captured in electrofishing samples during the two-unit operational study (Table 6-2). Bluegill and redbreast sunfish were usually the most frequently captured species; however, threadfin shad and gizzard shad were occasionally common in these samples, especially in January samples. (Table 6-2).

Operation of both units of CNS had no observable effect on electrofishing catches except during winter when high catches of threadfin shad occurred at Location 215. Species composition in electrofishing catches during the two-unit operational study was similar to that observed in the previous studies

(Industrial Biotest Laboratories 1974; Duke Power Company 1986, 1987). Bluegill and redbreast sunfish were usually the more abundant species in electrofishing samples at all locations during each month sampled before the two-unit operational study. At Location 215 in January, threadfin shad were probably attracted to the slightly warmer water temperatures (Chapter 2, this report). Threadfin shad become stressed, become moribund, or die when water temperatures drop below 9°C (Griffith 1978). Heated discharges of some steam-electric stations provide thermal refuges for threadfin shad (Siler et al. 1986); however, the discharge area of Catawba Nuclear Station does not. Cold-temperature winterkills of threadfin shad in the discharge area of Catawba Nuclear Station occurred in March, the same period when threadfin shad kills were observed throughout Lake Wylie.

Gill Netting

Fourteen, sixteen, and thirteen fish species at Locations 210, 215, and 220, respectively, were collected in gill nets during the two-unit operational study (Table 6-3). White catfish and gizzard shad were captured more frequently at each location than the other species; black crappie and channel catfish were periodically captured in relatively high numbers (Table 6-3). These data suggest little difference among locations during this period.

White catfish and gizzard shad were also the more frequently captured species in gill nets set before the two-unit operational study (Duke Power Company 1985, 1986, 1987). Catches in gill nets were usually most diverse at Location 215 compared to Locations 210 and 220. A collective total of 25, 19, and 21 species were captured in gill nets at Locations 215, 210, and 220, respectively, before the two-unit operational study (Duke Power Company 1985, 1986, 1987). Changes in the species composition at Locations 210, 215, and 220 could not be detected between gill net samples collected before and during the two-unit operational study.

Cove Sampling

Sixteen, eighteen, and twenty-three fish species were collected in coves at Locations 215, 225, and 235, respectively, during the two-unit operational study (Table 6-4). Gizzard shad comprised the highest standing stocks at each location; each location also yielded high standing stocks of threadfin shad and bluegill (Table 6-4). Threadfin shad accounted for the highest densities at each location, followed by bluegill (Table 6-4). Species composition in coves during the two-unit operational study was similar to that observed in the previous cove samples (Baker and McInerny 1985; Duke Power Company 1985, 1987); however, total standing stock and total number of species collected were lowest at Location 215 during the two-unit operational study. Standing stocks of individual species at Location 215 during the two-unit operational study were within the ranges of those observed during the previous samples (Baker and McInerny 1985; Duke Power Company 1985, 1987). Total densities and densities of individual species during the two-unit operational study (Table 6-4) were within the ranges observed during previous cove samples (Baker and McInerny 1985; Duke Power Company 1985, 1987). Changes in standing stocks, densities, and species composition of fishes in coves, could not be attributed to the operation of CNS.

Trap Netting

Black crappie were captured in trap nets in each zone sampled, but catches of white crappie were rare (Table 6-5). Catch rates of black crappie in Zones 1 and 5 (adjacent zones) varied similarly among years, but differed from that observed at Zone 4 (Table 6-5). This variability was related to the relative year class strengths in each zone (Table 6-6). The operation of CNS could be directly or indirectly attracting black crappie into Zone 5; catch rates at

Zone 5 were lower than at Zone 1 in 1984 just after start-up of Unit 1, but higher during each year afterward (Table 6-5). Variability of year class strength resulting from the operation of CNS could not be detected; catch rates of the 1986 year class at Zone 5 were within the ranges observed in previous years (Table 6-6). Black crappie were captured in the discharge area of CNS at all times of the year (Table 6-7).

Growth

Bluegill

Growth differences of both male and female bluegill were observed among locations and years (Figure 6-2); however, these differences were not related to the operation of CNS. Growth among locations varied similarly among years (Figure 6-2). First- and second-year growth of both sexes at Location 215 were usually lower than growth at Locations 225 and 235 each year (Figure 6-2); however, these differences were related to lower water temperature and/or lower nutrient concentrations at Location 215 compared to the other locations (McInerny 1986). Annual variation of bluegill growth was related to annual variation in water temperature (McInerny 1986).

Black Crappie

Growth of black crappie varied among zones and years (Figure 6-3), but this variation does not appear related to operation of CNS. First-, second-, and third-year growth in Zone 5 usually reflected growth in Zone 1, which was mostly unaffected by operation of CNS (Chapter 1, this report); growth in both zones differed from growth in Zone 4 (Figure 6-3). First-year growth was generally higher in 1985 and 1986 than in previous years, and second- and third-year growth among years varied considerably (Figure 6-3). Reasons for

this variability at Lake Wylie are unknown at this time, but could be related to population density (Hanson et al. 1983) and/or diet differences (Heidinger et al. 1985).

SUMMARY

Sampling with electrofishing, gill nets, rotenone, trap nets, and push nets at various locations was conducted during the operation of both units of Catawba Nuclear Station. This sampling demonstrated that the fish community of Lake Wylie is comprised primarily of shad, catfishes, sunfishes, largemouth bass, and crappies. The fish community during the two-unit operational study did not appear to be different than the community before both units of CNS were operating. Operation of CNS appears to attract threadfin shad into the discharge area during the winter, and may be attracting black crappie in the fall. Growth of bluegill and black crappie was unrelated to the operation of CNS.

LITERATURE CITED

- Baker, B. K.; McInerney, M. C. Catawba rotenone summary (1984). Prod. Environ. Serv. Sec. Res. Rept. PES/85-03. Duke Power Company, Huntersville, N.C.; 1985.
- Brooks, A. S.; Bartos, J. M. Effects of free and combined chlorine and exposure duration on rainbow trout, channel catfish, and emerald shiners. Trans. Am. Fish. Soc. 113:786-793; 1984.
- Carlander, K. D. Caution on the use of the regression method of back-calculating lengths from scale measurements. Fisheries 6(1):2-4; 1981.
- Carlander, K. D. Standard intercepts for calculating lengths from scale measurements for some centrarchid and percid fishes. Trans. Am. Fish. Soc. 111:332-336; 1982.
- Cloutman, D. G.; Olmsted, L. L. The fishes of Mecklenburg County, N.C. Charlotte Nature Museum, Inc. Charlotte, N.C.; 1979.
- Duke Power Company. Catawba Nuclear Station 316(a) Demonstration preoperational report. Duke Power Company, Charlotte, N.C.; 1985.
- Duke Power Company. Interim monitoring report (March 1986 through November 1986). Duke Power Company, Charlotte, N.C.; 1986.
- Duke Power Company. Catawba Nuclear Station 316(a) Demonstration Unit 1 operational report. Duke Power Company, Charlotte, NC; 1987.
- Griffith, J. S. Effects of low temperature on the survival and behavior of threadfin shad, Dorosoma petenense. Trans. Am. Fish. Soc. 107:63-70; 1978.
- Hanson, D. A.; Belonger, B. J.; Schoenike, D. L. Evaluation of a mechanical population reduction of black crappie and black bullheads in a small Wisconsin Lake. N. Am. J. Fish. Mgmt. 3:41-47; 1983.
- Harrell, R. D. Comparison of creel and physical/chemical parameters for Lake Norman, North Carolina, and Lake Wylie, North Carolina and South Carolina. Proc. Southeast. Assoc. Fish. Wildl. Ag. 38:532-548; 1986.
- Heidinger, R. C.; Tetzlaff, B.; Stoeckel, J. Evidence of two feeding subpopulations of white crappie (Pomoxis annularis) in Rend Lake, Illinois. J. Freshwater Ecol. 3:133-144; 1985.
- Industrial Biotest Laboratories, Inc. A baseline/predictive environmental investigation of Lake Wylie, Catawba Nuclear Station, and Plant Allen, September 1973 - August 1974. Volume II. Industrial Biotest Laboratories, Inc., Northbrook, Illinois; 1974.

- McInerny, M. C. Age, growth, and condition of bluegill collected from selected locations in Lake Wylie prior to the operation of Catawba Nuclear Station (1979 through 1984). Prod. Env. Serv. Res. Rept. PES/86-05. Duke Power Company, Huntersville, N.C.; 1986.
- McInerny, M. C. Characteristics of the largemouth bass population in Lake Wylie. Prod. Env. Serv. Sec. Res. Rept. PES/88-02. Duke Power Company, Huntersville, N.C.; 1988.
- McInerny, M. C.; Baker, B. K. Variation of selected creel parameters at Lake Wylie from 1 December 1985 through 30 November 1986, and comparisons with two previous surveys. Prod. Env. Serv. Sec. Res. Rept. PES/87-10. Duke Power Company, Huntersville, N.C.; 1987.
- Menhenick, E. F. The freshwater fishes of North Carolina. Charlotte, N.C.: Press of the University of North Carolina at Charlotte; 1975.
- Miller, R. W.; DeMont, D. J. Fisheries research. Jensen, I. D. ed. Environmental responses to thermal discharges from Marshall Steam Station, Lake Norman, North Carolina. Palo Alto, CA: Electric Power Research Institute; 1974:187-216.
- Oliver, J. L.; Clugston, P. L. Thermal and dissolved oxygen characteristics of a South Carolina cooling reservoir. Water Res. Bull. 23:257-269; 1987.
- Ulmsted, L. L.; Clugston, J. P. Fishery management in cooling impoundments. Hall, G. E.; Van den Avyle, M. J. eds. Reservoir fisheries management: strategies for the 80's. Bethesda, Md: Reservoir Committee, Southern Division American Fisheries Society; 1986:227-237.
- Randall, J. The distribution of fishes of the Catawba-Wateree River drainage. Phd Dissertation. University of South Carolina, Columbia, S.C.; 1957.
- Ricker, W. E. Computation and interpretation of biological statistics of fish populations. Bulletin 191, Ottawa: Bulletin of Fisheries Research Board of Canada; 1975.
- Siler, J. R. Growth of largemouth bass, bluegill, and yellow perch in Lake Norman, North Carolina - a summary of 1975 through 1979 collections. Prod. Env. Serv. Sec. Res. Rept. PES/81-26. Duke Power Company, Huntersville, N.C.; 1981.
- Siler, J. R.; Foris, W. J.; McInerny, M. C. Spatial heterogeneity in fish parameters within a reservoir. Hall, G. E.; Van den Avyle, M. J. eds. Reservoir fisheries management: Strategies for the 80's. Bethesda, Md: Reservoir Committee, Southern Division American Fisheries Society; 1986:122-136.
- Smithson, J. A.; Kurzawski, K. F.; Clevenger, T. V. Management of largemouth bass in a period cooling pond in Illinois. Hall, G. E.; Van den Avyle, M. J. eds. Reservoir fisheries management: strategies for the 80's. Bethesda, Md: Reservoir Committee, Southern Division American Fisheries Society; 1986:255-260.

TABLE 6-1.

Common and scientific names of fishes collected at Lake Wylie by Industrial Biotest Laboratories (IBL), by Duke Power Company before operation of Catawba Nuclear Station (DPCP), by Duke Power Company after Unit 1 of Catawba Nuclear Station was operational (DPC CNS 1), and by Duke Power after Units 1 and 2 of Catawba Nuclear Station were operational (DPC CNS 1 and 2) ('X' denotes collected).

Family	Species	Common Name	IBL	DPCP	DPC CNS 1	DPC CNS 1&2
Lepisosteidae - gars	<i>Lepisosteus osseus</i> (Linnaeus)	longnose gar	X	X	X	X
Amiidae - bowfins	<i>Amia calva</i> Linnaeus	bowfin	X			
Clypeidae - herrings	<i>Dorosoma cepedianum</i> (Lesueur)	gizzard shad	X	X	X	X
	<i>Dorosoma petenense</i> (Gunther)	threadfin shad	X	X	X	X
Cyprinidae - carps and minnows	<i>Carassius auratus</i> (Linnaeus)	goldfish	X			
	<i>Cyprinus carpio</i> Linnaeus	common carp	X	X	X	X
	<i>Hybognathus regalis</i> Girard	eastern silvery minnow	X	X	X	
	<i>Nocomis biguttatus</i> (Girard)	bluehead chub	X			
	<i>Notemigonus crysoleucas</i> (Mitchill)	golden shiner	X	X	X	X
	<i>Notropis anostanus</i> (Girard)	satinfin shiner	X			
	<i>Notropis chlicristius</i> (Jordan and Brayton)	greenfin shiner		X	X	X
	<i>Notropis hudsonius</i> (Clinton)	spottail shiner	X	X	X	
	<i>Notropis niveus</i> (Cope)	whitefin shiner		X	X	X
	<i>Notropis procne</i> (Cope)	swallowtail shiner	X	X	X	X
	<i>Pimephales promelas</i> Rafinesque	fathead minnow		X	X	
Catostomidae - suckers	<i>Carploides carpio</i> (Rafinesque)	river carpsucker	X			
	<i>Carploides cyprinus</i> (Lesueur)	quillback	X	X	X	X
	<i>Catostomus commersoni</i> (Lacepede)	white sucker	X	X	X	
	<i>Erimyzon oblongus</i> (Mitchill)	creek chubsucker	X	X	X	X
	<i>Ictiobus bubalus</i> (Rafinesque)	smallmouth buffalo	X	X		
	<i>Ictiobus cyprinellus</i> (Valenciennes)	bigmouth buffalo	X	X		X
	<i>Moxostoma anisurum</i> (Rafinesque)	silver redhorse		X		
	<i>Moxostoma macrolepidotum</i> (Lesueur)	shorthead redhorse	X	X	X	
	<i>Moxostoma pappillusum</i> (Cope)	sucker outh redhorse	X			
	<i>Moxostoma robustum</i> (Cope)	smallfin redhorse	X	X	X	X
	<i>Moxostoma rupiscartes</i> Jordan and Jenkins	striped jumprock			X	
Ictaluridae - bullhead catfishes	<i>Ictalurus brunneus</i> (Jordan)	snail bullhead		X	X	X
	<i>Ictalurus catus</i> (Linnaeus)	white catfish	X	X	X	X
	<i>Ictalurus melas</i> (Rafinesque)	black bullhead	X			
	<i>Ictalurus nebulosus</i> (Lesueur)	brown bullhead	X	X	X	
	<i>Ictalurus plectycephalus</i> (Girard)	flat bullhead	X	X	X	X
	<i>Ictalurus punctatus</i> (Rafinesque)	channel catfish	X	X	X	X
Poeciliidae - livebearers	<i>Gambusia affinis</i> (Baird and Girard)	mosquitofish	X	X	X	X
Percichthyidae - temperate basses	<i>Morone chrysops</i> (Rafinesque)	white bass	X	X	X	X
	<i>Morone saxatilis</i> (Walbaum)	striped bass		X		
Centrarchidae - sunfishes	<i>Ambloplites rupestris</i> (Rafinesque)	rock bass	X			
	<i>Lepomis auritus</i> (Linnaeus)	redbreast sunfish	X	X	X	X
	<i>Lepomis gibbosus</i> (Linnaeus)	pumpkinseed	X	X	X	X
	<i>Lepomis gulosus</i> (Cuvier)	warmouth	X	X	X	X
	<i>Lepomis macrochirus</i> Rafinesque	bluegill	X	X	X	X
	<i>Lepomis microlophus</i> (Gunther)	roundear sunfish	X	X	X	X
	<i>Micropterus salmoides</i> (Lacepede)	largemouth bass	X	X	X	X
	<i>Pomoxis annularis</i> Rafinesque	white crappie	X	X	X	X
	<i>Pomoxis nigromaculatus</i> (Lesueur)	black crappie	X	X	X	X
Percidae - perches	<i>Etheostoma fusiforme</i> (Girard)	swamp darter		X	X	
	<i>Etheostoma nigrum</i> Rafinesque	johnny darter	X			
	<i>Etheostoma olesiecki</i> Storer	tessellated darter		X	X	X
	<i>Perca flavescens</i> (Mitchill)	yellow perch	X	X		X
	<i>Percina crassa</i> (Jordan and Brayton)	Piedmont darter				

Table 6-2 Percent composition of fishes (%) in electrofishing samples in January, April, July, and October at Locations 210, 215, and 220 of Lake Wylie during two-unit operational study.

Species	Locations											
	210				215				220			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Longnose gar	0	0	0	0	0	0	0	0	0	0	1	0
Gizzard shad	52	4	8	5	3	2	6	1	0	6	8	2
Threadfin shad	0	0	0	54	50	0	0	8	0	0	0	40
Common carp	0	0	0	0	0	<1	0	0	12	<1	0	0
Golden shiner	0	0	0	0	0	1	1	0	0	0	0	0
Greenfin shiner	4	0	0	0	0	<1	0	0	0	0	0	0
Whitefin shiner	0	<1	0	0	0	2	0	0	0	0	0	0
Swallowtail shiner	0	<1	0	0	0	0	0	0	0	0	0	0
Moxostoma spp.	0	0	0	0	<1	0	0	0	0	0	0	0
White catfish	4	0	8	0	1	2	2	0	0	12	14	3
Channel catfish	0	0	4	0	0	0	0	0	0	<1	0	0
Mosquitofish	0	0	0	0	<1	0	1	0	0	0	0	0
Redbreast sunfish	4	14	27	6	5	19	13	17	0	15	7	6
Pumpkinseed	0	17	15	0	4	6	5	7	19	4	6	1
Warmouth	0	0	0	0	<1	1	0	0	0	<1	0	1
Bluegill	16	61	38	29	32	60	68	58	38	47	59	34
Redear sunfish	0	0	0	0	1	0	1	1	12	<1	0	0
Sunfish hybrid	0	<1	0	0	0	0	0	0	0	0	0	0
Largemouth bass	1	4	0	3	2	4	1	9	19	10	4	13
Black crappie		0	0	0	0	<1	0	0	0	3	0	0
Tessellated darter	0	0	0	3	0	1	0	0	0	0	0	0
Yellow perch	4	0	0	0	1	<1	0	0	0	2	0	0
Total number in sample	25	229	26	63	363	403	91	120	16	269	71	159

Table 6-3. Percent composition (%) of fishes in gill net samples in January, April, July, and October at Locations 210, 215, and 220 of Lake Wylie during the two-unit operational period.

Species	Locations											
	210				215				220			
	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
Longnose gar	0	0	0	0	0	0	0	20	0	0	0	0
Gizzard shad	11	40	21	14	0	2	25	24	14	4	55	29
Quillback	0	0	5	0	0	2	0	8	0	0	5	12
Creek chubsucker	7	0	0	0	0	0	0	0	0	0	0	0
Smallfin redhorse	0	0	0	0	0	2	5	0	0	0	0	0
Snail bullhead	0	3	0	0	0	0	0	0	0	4	0	0
White catfish	29	16	16	0	52	44	20	4	7	39	7	17
Flat bullhead	0	3	0	0	2	2	0	0	7	0	9	0
Channel catfish	0	5	21	0	0	15	20	8	0	22	11	17
Redbreast sunfish	0	0	0	0	0	0	5	0	0	0	0	0
Pumpkinseed	0	0	5	0	3	0	5	0	7	0	0	4
Wormouth	0	0	10	0	0	2	5	0	0	0	0	0
Bluegill	11	11	10	0	5	17	0	4	14	0	7	0
Redear sunfish	4	3	10	0	0	0	0	16	7	0	2	0
Sunfish hybrid	0	0	0	0	0	0	5	0	0	0	2	0
Largemouth bass	21	5	0	43	13	7	0	4	29	0	0	12
Black crappie	14	14	0	43	25	2	10	8	14	26	0	8
Yellow perch	4	0	0	0	0	2	0	0	0	4	2	0
Total number in sample	28	37	19	7	63	41	20	25	14	23	44	24

Table 6-4. Standing stock (kg/ha), density (number/ha) and percent (%) of catch, of fishes in coves at Locations 215, 225, and 235 of Lake Wylie in August during the two-unit operational period.

Species	Locations											
	215				225				235			
	kg/ha	(%)	no/ha	%	kg/ha	%	no/ha	%	kg/ha	%	no/ha	%
Gizzard shad	179	(53)	5,252	(14)	160	(36)	2,202	(3)	122	(24)	6,380	(5)
Threadfin shad	28	(8)	17,341	(46)	109	(24)	71,808	(8)	87	(17)	93,138	(80)
Common carp	0	(0)	0	(0)	0	(0)	0	(0)	5	(1)	6	(<1)
Golden shiner	0	(0)	0	(0)	0	(0)	0	(0)	.	(<1)	32	(<1)
Greenfin shiner	<1	(<1)	2	(<1)	<1	(<1)	1	(<1)	<1	(<1)	83	(<1)
Whitefin shiner	0	(0)	0	(0)	0	(0)	0	(0)	<1	(<1)	2	(<1)
Swallowtail shiner	0	(0)	0	(0)	<1	(<1)	23	(<1)	<1	(<1)	1	(<1)
Quillback	0	(0)	0	(0)	2	(<1)	3	(<1)	6	(1)	10	(<1)
Smallmouth buffalo	0	(0)	0	(0)	20	(4)	4	(<1)	8	(2)	1	(<1)
White catfish	18	(5)	156	(<1)	24	(5)	149	(<1)	19	(4)	224	(<1)
Channel catfish	15	(4)	15	(<1)	29	(6)	52	(<1)	121	(24)	2,642	(2)
Mosquitofish	<1	(<1)	152	(<1)	<1	(<1)	73	(<1)	<1	(<1)	36	(<1)
White bass	1	(<1)	36	(<1)	<1	(<1)	1	(<1)	57	(11)	1,344	(1)
Redbreast sunfish	9	(3)	382	(1)	2	(<1)	97	(<1)	2	(<1)	85	(<1)
Pumpkinseed	6	(2)	554	(1)	4	(1)	321	(<1)	7	(1)	932	(1)
Warmouth	3	(1)	254	(1)	2	(<1)	104	(<1)	1	(<1)	25	(<1)
Bluegill	60	(17)	11,228	(30)	61	(14)	9,578	(11)	58	(11)	11,017	(9)
Redear sunfish	1	(<1)	7	(<1)	5	(1)	56	(<1)	1	(<1)	6	(<1)
Sunfish hybrid	<1	(<1)	3	(<1)	0	(0)	0	(0)	0	(0)	0	(0)
Largemouth bass	11	(3)	328	(1)	22	(5)	265	(<1)	16	(3)	434	(<1)
Black crappie	1	(<1)	39	(<1)	0	(0)	0	(0)	<1	(<1)	3	(<1)
Tessellated darter	<1	(<1)	202	(1)	<1	(<1)	66	(<1)	<1	(<1)	26	(<1)
Yellow perch	8	(2)	1,497	(4)	2	(<1)	275	(<1)	3	(1)	333	(<1)
Piedmont darter	0	(0)	0	(0)	0	(0)	0	(0)	<1	(<1)	1	(<1)
Totals	341	(100)	37,397	(100)	443	(100)	85,079	(100)	515	(100)	116,766	(100)

Table 6-5. Mean catch rates (number/net set) with 95% confidence limits (black crappie only) of black crappie and white crappie in trap nets set in Zones 1, 4, and 5 of Lake Wylie during November, 1984 through 1987.

Black Crappie

<u>Zone</u>	<u>Year</u>			
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1	17.7 ± 12.2	7.5 ± 3.0	13.4 ± 7.9	10.3 ± 3.8
4	11.7 ± 7.4	21.0 ± 16.3	10.4 ± 3.8	15.0 ± 7.0
5	10.7 ± 3.8	19.8 ± 9.7	29.5 ± 9.7	15.0 ± 8.7

White Crappie

<u>Zone</u>	<u>Year</u>			
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1	0.1	0	0	0
4	0.1	0.2	0.1	0.3
5	0	0	0	0.1

Table 6-6. Mean catch rates (number/net set) of all year classes of black crappie captured in trap nets set in Zones 1, 4, and 5 of Lake Wylie during November 1984, 1985, 1986, and 1987.

<u>Year Class</u>	<u>Zone 1</u>			
	<u>Sample Year</u>			
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1980	0.00	0.00	0.00	0.00
1981	0.60	0.03	0.00	0.00
1982	9.20	0.53	0.00	0.04
1983	7.80	0.33	0.30	0.00
1984	0.10	6.60	3.80	0.33
1985	-	0.00	9.35	4.67
1986	-	-	0.00	5.29
1987	-	-	-	0.00

<u>Year Class</u>	<u>Zone 4</u>			
	<u>Sample Year</u>			
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1980	0.00	0.00	0.00	0.00
1981	0.50	0.21	0.04	0.00
1982	4.80	0.79	0.04	0.00
1983	6.30	0.79	0.04	0.00
1984	0.10	18.92	0.76	0.39
1985	-	0.29	9.36	2.78
1986	-	-	0.12	11.83
1987	-	-	-	0.00

<u>Year Class</u>	<u>Zone 5</u>			
	<u>sample Year</u>			
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
1980	0.07	0.00	0.00	0.00
1981	0.57	0.08	0.00	0.00
1982	6.42	0.38	0.00	0.06
1983	3.64	0.38	0.07	0.06
1984	0.00	19.00	4.73	0.47
1985	-	0.00	24.66	9.27
1986	-	-	0.00	5.13
1987	-	-	-	0.06

Table 6-7. Mean catch rates (number/net set) of black crappie at Zone 5 of Lake Wylie in January, April, August, and November 1986 and 1987.

<u>Year</u>	<u>Jan</u>	<u>Apr</u>	<u>Aug</u>	<u>Nov</u>
1986	35.2	13.1	2.8	29.5
1987	7.2	12.2	19.6	15.0

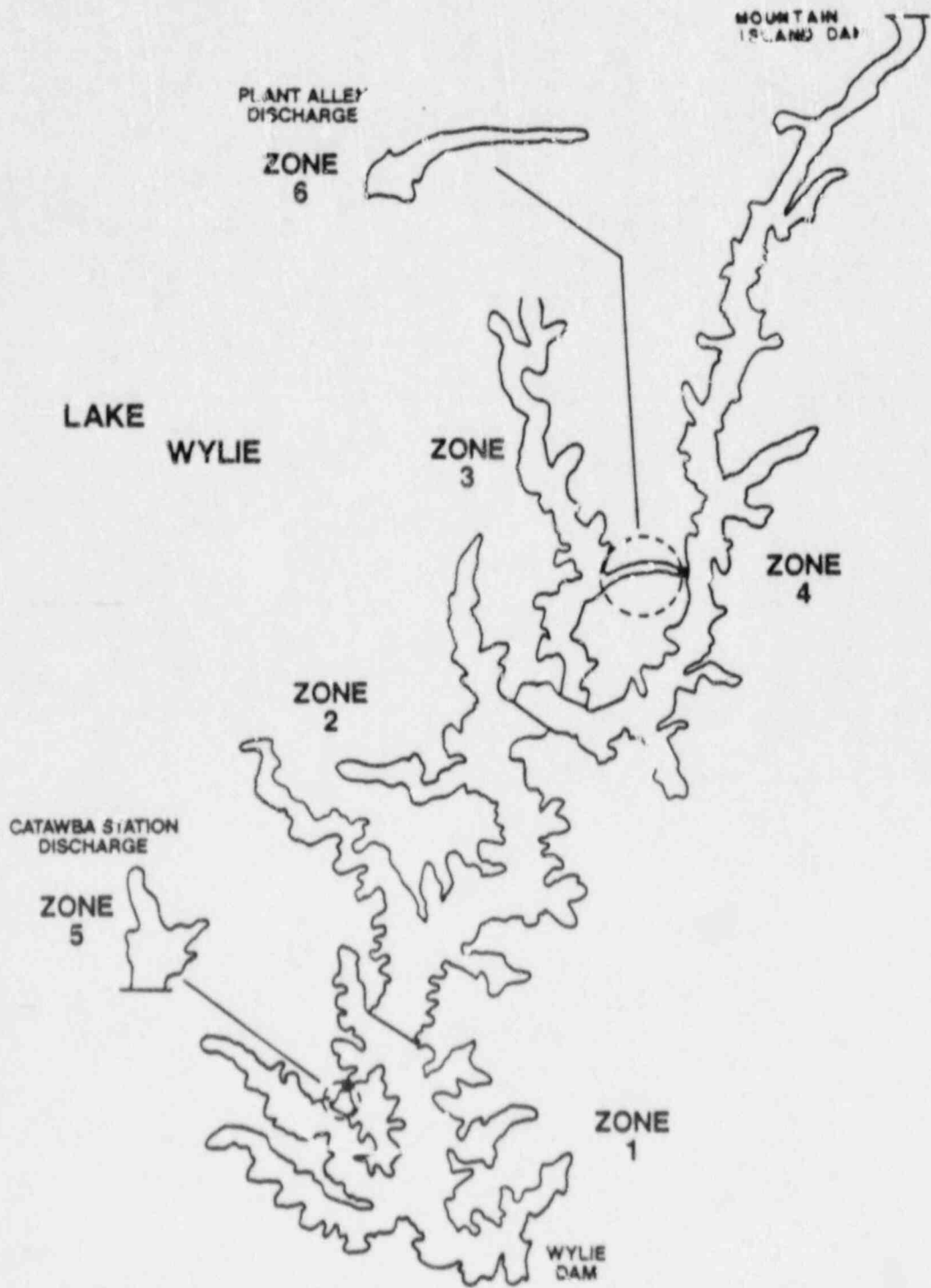


Figure 6-1. Sampling zones at Lake Wylie used during the trap net sampling of black crappie in November, 1984 through 1987.

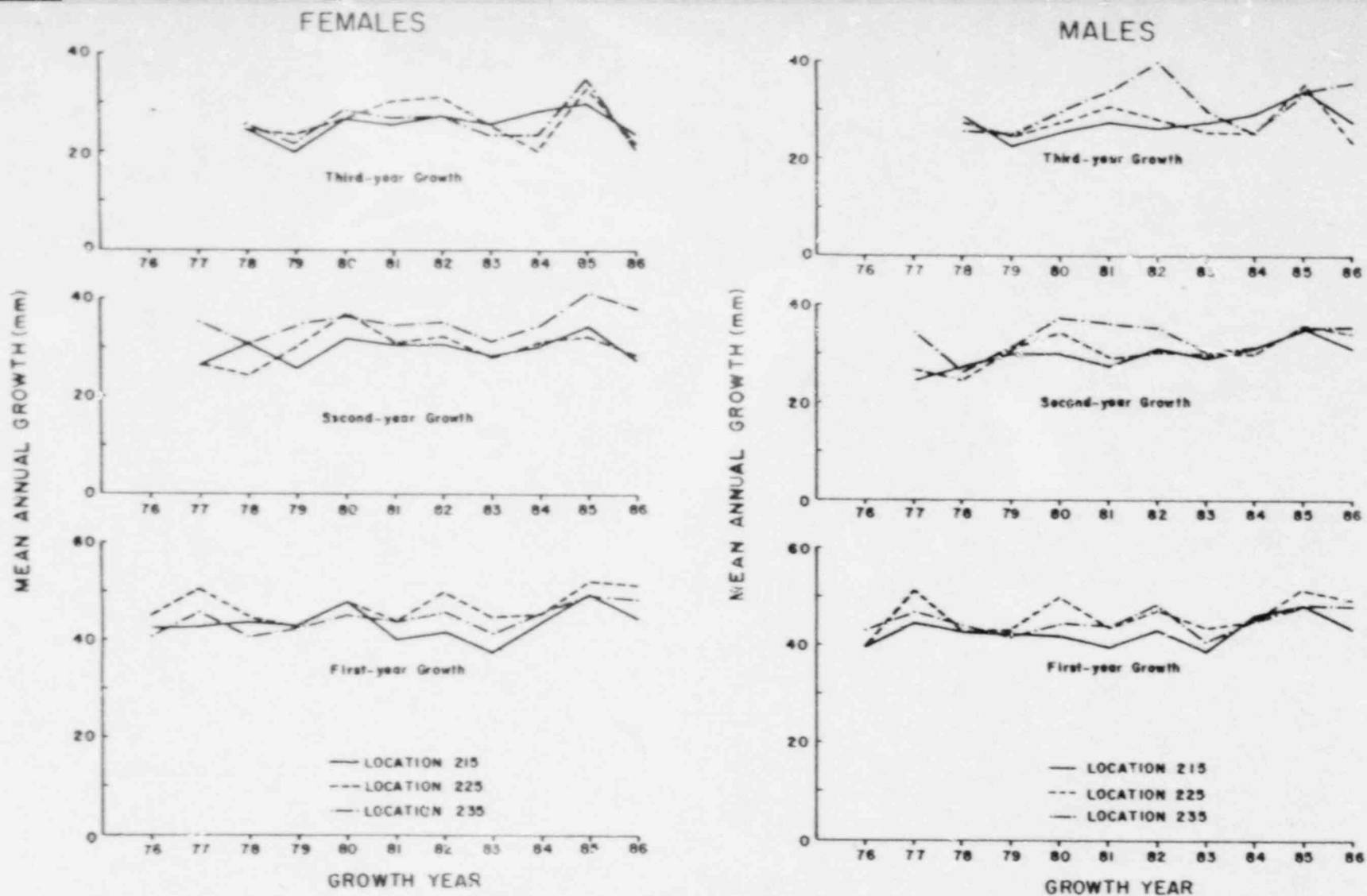


Figure 6-2 Mean annual growth of male and female bluegill at Locations 215, 225, and 235 of Lake Wylie, during the first, second, and third year of life in 1976 through 1986.

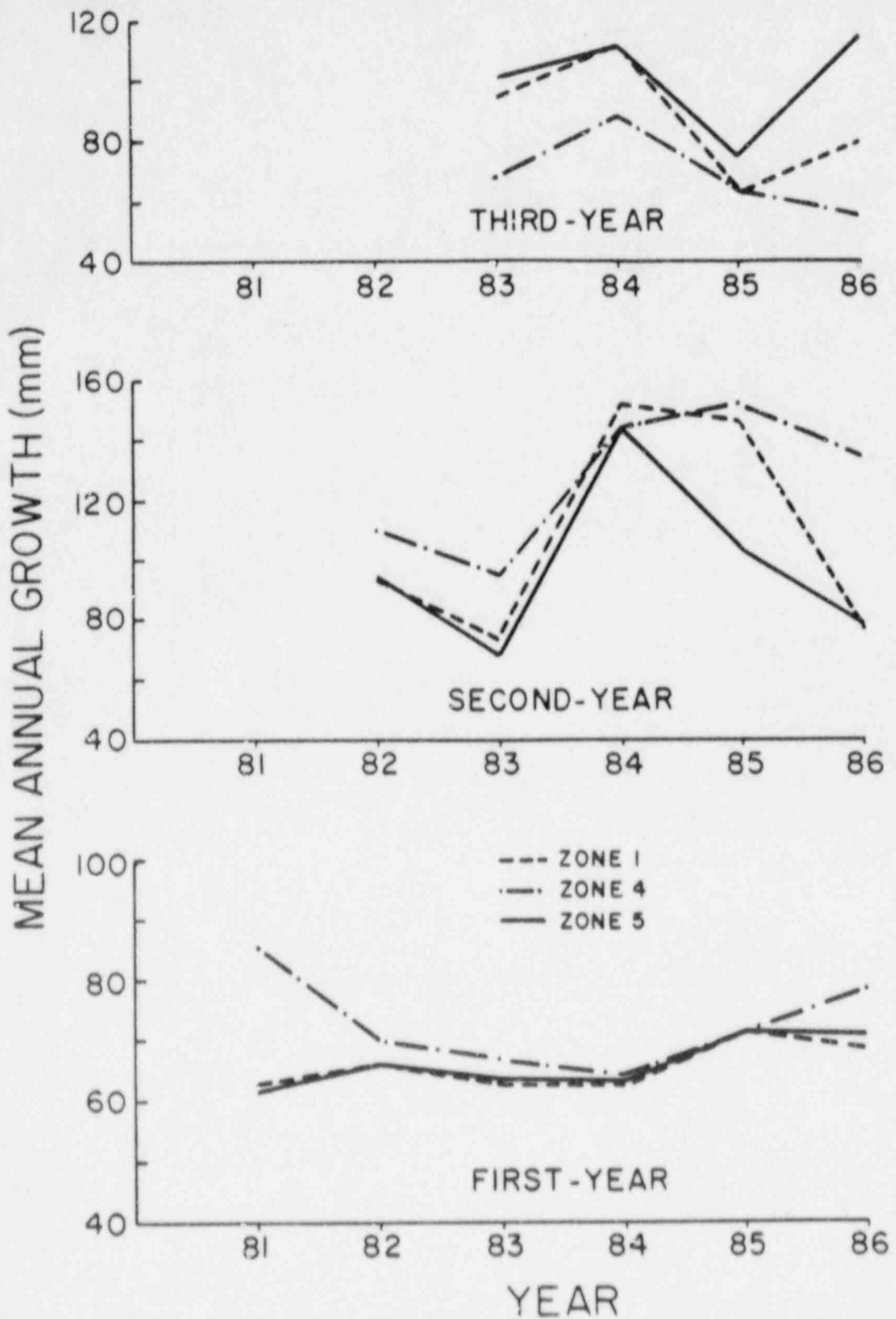


Figure 6-3 Mean annual growth of black crappie in Zones 1, 4, and 5 of Lake Wylie during the first, second, and third year of life in 1981 through 1986.

CATAWBA NUCLEAR STATION

316 (a)
DEMONSTRATION
TWO UNIT OPERATIONAL REPORT

- APPENDICES -

DUKE POWER COMPANY
CHARLOTTE, NORTH CAROLINA

SEPTEMBER 1988

CATAWBA NUCLEAR STATION

316(a) DEMONSTRATION

VOLUME 2: APPENDICES

2. Water Chemistry
3. Phytoplankton
4. Zooplankton
5. Macroinvertebrates

DUKE POWER COMPANY

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Appendices 2-1 through 2-13. Monthly water chemistry data for Locations 210.0, 215.0, and 220.0 on Lake Wylie, South Carolina, from December 1986 through November 1987.

LOCATION 220

TEMPERATURE (°C)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0.3	7.3	7.0	8.3	15.8	21.0	27.6	29.4	30.1	26.6	19.3	15.0	10.8
1.0	7.3	6.9	8.3	15.7	20.9	27.3	29.4	30.1	26.5	19.3	15.1	10.8
2.0	7.4	6.8	8.3	15.6	20.8	27.2	29.4	30.1	26.4	19.4	15.1	10.7
3.0	7.2	6.8	8.2	15.5	20.7	26.9	29.4	30.1	26.3	19.4	15.1	10.6
4.0	7.2	6.8	8.2	15.3	20.4	26.8	29.4	30.1	26.3	19.4	15.1	10.6
5.0	7.2	6.8	8.2	14.4	19.8	26.4	28.9	30.1	26.2	19.4	15.1	10.6
6.0	7.2	6.3	8.2	14.2	18.8	24.6	28.8	30.0	26.1	19.4	15.1	10.5
7.0	7.1	6.8	8.1	14.0	18.4	23.8	28.0	29.6	25.9	19.3	15.0	10.5
8.0	7.1	6.7	8.0	13.8	18.3	23.1	27.7	29.6	25.7	19.3	15.0	10.5
9.0	7.1	6.7	8.0	13.1	18.0	22.4	27.1	29.2	25.5	19.3	15.0	10.4
10.0	7.1	6.7	7.9	13.4	17.7	22.2	26.8	28.9	25.4	19.3	15.0	10.4
11.0	7.1	6.6	7.8	12.9	17.4	21.9	26.6	28.9	25.2	19.3	15.0	10.4
12.0	7.1	6.5	7.6	12.8	17.1	21.8	26.1	28.5	25.1	19.2	15.0	10.3
13.0	7.0	6.5	7.3	12.7	17.0	20.8		27.8		19.1	15.0	10.3
14.0	7.0	6.4	3.4	12.6	16.9	20.2		26.7		19.1	15.0	10.3
15.0	6.7	6.4		12.4	16.9	15.6		26.4			15.0	10.2

LOCATION 215.0

DISSOLVED OXYGEN (mg. l^{-1})

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0.3	10.1	10.3	10.6	9.7	11.0	9.1	8.0	6.9	8.8	7.7	8.9	8.8
1.0	10.2	10.3	10.6	9.6	11.0	9.1	8.1	6.2	8.9	7.7	8.8	8.7
2.0	10.2	10.2	10.4	9.5	10.8	9.1	7.8	4.0	8.1	7.7	8.7	8.7
3.0	10.2	10.1	10.3	9.5	7.8	5.3	7.4	3.6	6.3	7.5	8.6	8.6
4.0	10.2	10.1	10.3	8.3	7.5	3.7	6.3	3.3	5.4	7.5	8.6	8.6
5.0	10.2	10.1	10.3	8.2	6.8	2.8	5.4	2.3	3.8	7.5	8.6	8.8
6.0	10.1	10.1	10.3	8.0	6.8	2.5	3.2	0.4	3.2	7.5	8.7	8.8
7.0	10.1	10.0	10.2	8.0	6.4	2.0	2.2	0.1	2.6	7.5	8.7	8.8
8.0	10.2	9.9	9.8	7.5	5.9	1.0	1.0	0.0	2.5	7.5	8.6	8.8
9.0	10.2	9.9	9.6	7.2	4.1	0.0	0.0	0.0	1.4	7.5	8.6	8.6
10.0			9.2									

LOCATION 220

DISSOLVED OXYGEN (mg. ℓ^{-1})

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0.3	11.0	10.9	10.6	10.4	10.2	8.8	8.2	6.6	8.2	8.0	8.7	9.1
1.0	11.0	10.9	10.6	10.3	10.2	8.8	8.2	6.6	8.3	8.0	8.8	9.1
2.0	11.0	10.9	10.6	10.1	10.2	8.7	8.1	6.6	8.0	8.0	8.7	9.1
3.0	10.9	10.9	10.5	10.0	10.1	7.9	7.9	6.6	7.6	8.0	8.8	9.1
4.0	10.9	10.9	10.5	9.9	9.5	7.3	7.3	6.6	7.4	7.9	8.8	9.1
5.0	10.8	10.9	10.5	9.5	8.5	6.4	5.2	6.2	7.0	7.9	8.7	9.1
6.0	10.8	10.9	10.5	9.5	7.4	3.6	4.7	5.0	5.6	7.9	8.7	9.2
7.0	10.8	10.8	10.5	9.5	7.2	2.9	3.3	3.1	4.6	7.8	8.7	9.2
8.0	10.8	10.8	10.4	9.2	7.0	2.2	2.9	1.8	3.6	7.8	8.7	9.2
9.0	10.8	10.8	10.4	8.7	6.8	1.5	2.0	0.4	3.4	7.8	8.6	9.2
10.0	10.8	10.8	10.4	8.7	6.5	1.3	1.1	0.1	3.4	7.8	8.7	9.2
11.0	10.8	10.8	10.3	8.7	6.0	1.1	0.8	0.1	3.5	7.8	8.7	9.1
12.0	10.8	10.7	10.3	8.6	5.8	1.0	0.0	0.0	3.8	7.7	8.7	9.1
13.0	10.8	10.7	9.9	8.4	5.7	0.4		0.0		7.7	8.7	9.0
14.0	10.8	10.7	9.8	8.2	5.3	0.0		0.0		7.7	8.7	8.9
15.0	10.8	10.7		8.1	5.1	0.0		0.0			8.7	8.9

APPENDIX 2-3 pH data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

pH (pH UNITS)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	7.7	7.6	7.3	7.5	8.1	8.1	8.0	7.2	7.9	7.0	7.3	7.5
5.0	7.7	7.6	7.1	7.3	7.2	6.5	6.5	6.7	7.1	7.0	7.2	7.5
10.0	7.7	7.6	7.1	7.2	6.9	6.2	6.4	6.3	6.5	7.0	7.2	7.5
Bottom	7.7	7.6	7.0	7.2	6.8	6.1	6.5	6.7	6.5	7.0	7.2	7.4
<u>LOCATION 215.0</u>												
0.3	7.6	7.5	7.2	7.4	8.9	7.9	6.9	6.8	7.4	6.9	7.2	7.4
5.0	7.6	7.5	7.2	7.2	7.2	6.3	6.6	6.4	6.4	6.9	7.1	7.4
Bottom	7.6	7.5	7.1	7.1	6.9	6.2	6.3	6.3	6.3	6.9	7.1	7.4
<u>LOCATION 220.0</u>												
0.3	7.7	7.6	7.3	7.7	8.0	7.8	7.6	7.0	7.9	7.2	7.2	7.6
5.0	7.8	7.6	7.2	7.4	7.4	6.5	6.7	6.9	7.0	7.2	7.3	7.5
10.0	7.7	7.6	7.2	7.3	6.9	6.2	6.4	6.4	6.6	7.2	7.3	7.5
Bottom	7.7	7.1	6.9	7.2	6.8	6.2	6.4	6.7	6.5	7.1	7.3	7.4

APPENDIX 2-4 Alkalinity data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

ALKALINITY ($\text{mgCaCO}_3 \cdot \text{L}^{-1}$)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	14	15	9	14	12	11	13	11	12	11	14	18
5.0	14	15	9	14	12	13	13	11	12	10	15	18
10.0	14	15	8	14	12	13	15	13	16	10	15	19
Bottom	14	15	8	14	13	16	21	24	15	11	15	19
<u>LOCATION 215.0</u>												
0.3	15	16	10	16	14	11	14	10	11	10	13	18
5.0	15	18	11	19	13	13	12	11	11	10	13	18
Bottom	16	18	10	22	13	14	14	12	13	10	13	18
<u>LOCATION 220.0</u>												
0.3	15	15	10	14	12	11	14	12	15	12	17	19
5.0	14	15	10	14	12	12	13	12	13	13	17	19
10.0	14	14	9	14	12	14	16	13	17	12	17	19
Bottom	15	15	10	14	13	16	17	24	17	13	16	19

APPENDIX 2-5 Specific Conductance data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987) at Locations 210.0, 215.0, and 220.0.

SPECIFIC CONDUCTANCE ($\mu\text{mho. cm}^{-1}$)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	76	86	54	80	80	90	94	100	118	126	150	122
5.0	76	86	52	80	78	92	94	100	122	126	152	120
10.0	76	86	52	82	78	96	100	102	152	126	154	120
Bottom	76	86	52	84	80	102	108	132	164	126	152	122
<u>LOCATION 215.0</u>												
0.3	108	116	64	80	96	104	112	114	136	136	144	154
5.0	108	94	64	74	80	92	110	104	120	138	146	146
Bottom	108	92	58	72	84	100	106	112	110	138	146	138
<u>LOCATION 220.0</u>												
0.3	78	80	60	82	80	90	88	106	134	126	166	120
5.0	78	80	58	80	78	96	92	108	134	126	166	120
10.0	76	80	54	82	80	96	94	110	154	126	162	118
Bottom	76	86	52	84	80	106	98	132	144	128	160	122

APPENDIX 2-6 Turbidity (NTU) data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

TURBIDITY (NTU)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	18	15	131	14	5	4	3	3	2	5	4	7
5.0	19	15	129	14	5	8	3	3	3	5	4	7
10.0	20	15	150	20	13	11	11	3	5	5	3	8
Bottom	22	16	155	14	18	10	16	7	9	5	5	9
<u>LOCATION 215.0</u>												
0.3	27	20	101	13	5	6	7	4	5	6	4	6
5.0	24	15	82	14	6	6	5	3	4	7	4	6
Bottom	25	15	79	14	8	8	5	4	14	8	5	8
<u>LOCATION 220.0</u>												
0.3	13	14	89	14	4	5	4	3	3	5	6	7
5.0	14	15	93	13	6	6	4	3	3	5	4	8
10.0	15	14	119	18	14	16	15	4	9	5	7	11
Bottom	17	13	100	20	20	13	20	7	6	5	9	12

APPENDIX 2-7 Nitrate + Nitrite data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

NITRATE + NITRITE NITROGEN ($\text{mg} \cdot \text{N} \cdot \ell^{-1}$)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	0.29	0.36	0.31	0.30	0.14	0.02	0.02	0.02	0.02	0.035	0.088	0.300
5.0	0.29	0.36	0.27	0.32	0.21	0.18	0.02	0.02	0.037	0.034	0.093	0.290
10.0	0.29	0.36	0.28	0.34	0.31	0.40	0.075	0.02	0.12	0.032	0.095	0.340
Bottom	0.29	0.36	0.28	0.34	0.36	0.46	0.02	0.02	0.20	0.034	0.093	0.370
<u>LOCATION 215.0</u>												
0.3	0.36	0.49	0.28	0.27	0.091	0.02	0.059	0.02	0.02	0.039	0.071	0.29
5.0	0.36	0.42	0.26	0.26	0.260	0.10	0.020	0.02	0.02	0.028	0.066	0.26
Bottom	0.34	0.38	0.26	0.26	0.280	0.23	0.020	0.02	0.055	0.029	0.076	0.28
<u>LOCATION 220.0</u>												
0.3	.28	0.33	0.27	0.30	0.17	0.02	0.020	0.020	0.02	0.029	0.14	0.34
5.0	.29	0.34	0.27	0.30	0.22	0.03	0.020	0.020	0.033	0.026	0.14	0.30
10.0	.31	0.35	0.28	0.34	0.34	0.37	0.104	0.031	0.220	0.029	0.11	0.33
Bottom	.31	0.35	0.29	0.34	0.35	0.44	0.087	0.020	0.150	0.026	0.10	0.33

APPENDIX 2-8 Ammonia Nitrogen data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

AMMONIA NITROGEN (mg-N. ℓ^{-1})

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	0.072	0.062	0.18	0.033	0.020	0.020	0.02	0.02	0.02	0.060	0.055	0.089
5.0	0.073	0.082	0.19	0.048	0.026	0.080	0.019	0.047	0.029	0.057	0.056	0.089
10.0	0.072	0.058	0.21	0.082	0.086	0.030	0.180	0.203	0.19	0.060	0.056	0.095
Bottom	0.097	0.066	0.21	0.097	0.088	0.020	0.430	1.10	0.19	0.057	0.057	0.095
<u>LOCATION 215.0</u>												
0.3	0.130	0.12	0.17	0.014	0.020	0.02	0.073	0.021	0.020	0.065	0.051	0.100
5.0	0.086	0.11	0.13	0.057	0.065	0.10	0.041	0.076	0.024	0.068	0.051	0.083
Bottom	0.082	0.074	0.13	0.069	0.091	0.12	0.079	0.140	0.230	0.069	0.054	0.064
<u>LOCATION 220.0</u>												
0.3	.072	0.045	0.14	0.02	0.020	0.02	0.020	0.020	0.020	0.054	0.066	0.095
5.0	.047	0.050	0.16	0.02	0.028	0.04	0.030	0.020	0.034	0.063	0.065	0.083
10.0	.110	0.043	0.20	0.057	0.071	0.05	0.230	0.260	0.180	0.063	0.061	0.095
Bottom	.110	0.042	0.16	0.057	0.120	0.03	0.320	1.10	0.130	0.056	0.061	0.120

APPENDIX 2-9 Orthophosphate data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

ORTHOPHOSPHATE (mg-P. l⁻¹)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	0.040	0.048	0.064	0.032	0.009	0.007	0.005	0.007	0.005	0.005	0.026	0.071
5.0	0.041	0.050	0.072	0.035	0.008	0.016	0.005	0.005	0.005	0.005	0.030	0.075
10.0	0.042	0.049	0.078	0.041	0.020	0.031	0.013	0.007	0.023	0.005	0.031	0.085
Bottom	0.055	0.053	0.090	0.049	0.029	0.032	0.047	0.250	0.046	0.005	0.029	0.079
<u>LOCATION 215.0</u>												
0.3	0.059	0.056	0.070	0.027	0.020	0.012	0.018	0.005	0.005	0.006	0.013	0.046
5.0	0.044	0.049	0.056	0.025	0.013	0.014	0.010	0.005	0.006	0.005	0.012	0.038
Bottom	0.039	0.038	0.062	0.027	0.018	0.017	0.009	0.005	0.014	0.006	0.015	0.032
<u>LOCATION 220.0</u>												
0.3	.044	0.041	0.13	0.031	0.009	0.010	0.014	0.005	0.005	0.007	0.050	0.088
5.0	.030	0.027	0.049	0.031	0.008	0.008	0.005	0.005	0.008	0.007	0.044	0.073
10.0	.042	0.039	0.071	0.040	0.021	0.030	0.016	0.014	0.056	0.009	0.042	0.091
Bottom	.040	0.035	0.056	0.041	0.029	0.031	0.020	0.260	0.038	0.011	0.041	0.085

APPENDIX 2-10 Total Phosphorus data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

TOTAL PHOSPHORUS (mg-P.l⁻¹)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	0.071	0.080	0.14	0.060	0.041	0.039	0.030	0.059	0.040	0.032	0.078	0.110
5.0	0.071	0.086	0.012	0.058	0.038	0.041	0.030	0.032	0.045	0.034	0.062	0.100
10.0	0.077	0.084	0.16	0.061	0.042	0.073	0.032	0.044	0.070	0.032	0.057	0.11
Bottom	0.074	0.080	0.17	0.086	0.057	0.062	0.110	0.310	0.110	0.044	0.057	0.11
<u>LOCATION 215.0</u>												
0.3	0.072	0	0.12	0.065	0.039	0.046	0.035	0.034	0.045	0.030	0.040	0.068
5.0	0.070	0.110	0.11	0.048	0.036	0.036	0.029	0.023	0.040	0.033	0.041	0.057
Bottom	0.071	0.067	0.10	0.048	0.072	0.043	0.021	0.052	0.052	0.036	0.050	0.052
<u>LOCATION 220.0</u>												
0.3	.069	0.070	0.020	0.075	0.035	0.039	0.033	0.042	0.12	0.042	0.079	0.12
5.0	.059	0.063	0.11	0.065	0.032	0.045	0.032	0.064	0.056	0.049	0.084	0.11
10.0	.069	0.071	0.70	0.078	0.059	0.062	0.036	0.040	0.093	0.055	0.082	0.12
Bottom	.069	0.070	0.11	0.200	0.054	0.057	0.041	0.320	0.085	0.053	0.080	0.14

Appended data for the Two-Unit Operational Period (Dec. 1985 - Nov. 1987,
Locations 210.0, 215.0, and 220.0.

SILICA (mg. l^{-1})

DEPT: (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>LOCATION 210.0</u>												
0.3	4.2	5.2	3.4	3.8	3.6	2.6	3.2	3.6	4.0	4.0	3.9	4.6
5.0	4.2	5.2	3.4	3.8	3.5	2.9	3.3	3.7	4.0	4.0	3.9	4.6
10.0	4.2	4.9	3.2	4.2	3.6	3.3	3.4	4.1	4.3	4.0	3.9	4.8
Bottom	4.3	5.0	3.2	4.1	3.9	3.8	4.5	5.1	4.3	4.0	3.9	4.9
<u>LOCATION 215.0</u>												
0.3	5.5	7.0	4.2	5.3	4.7	3.7	5.9	4.3	4.3	4.5	4.3	5.1
5.0	5.8	6.6	4.5	4.5	3.7	3.2	3.7	4.0	4.4	4.6	4.4	5.4
Bottom	5.8	7.1	4.7	4.7	4.1	3.7	3.9	4.8	5.2	4.7	4.4	5.5
<u>LOCATION 220.0</u>												
0.3	4.2	5.2	3.8	3.7	3.5	2.6	3.4	3.6	3.8	3.9	4.0	4.7
5.0	4.1	4.8	3.8	3.6	3.3	2.7	3.3	3.5	3.8	3.9	3.9	4.8
10.0	4.2	4.6	3.5	4.1	3.6	3.4	3.8	4.1	4.2	3.9	3.9	4.9
Bottom	4.2	4.8	3.8	4.0	3.8	3.7	4.0	5.1	4.1	3.9	3.9	5.1

APPENDIX 2-12 Chloride data for the Two-Unit Operational Period (Dec. 1986 - Nov. 1987)
at Locations 210.0, 215.0, and 220.0.

CHLORIDE (mg. l⁻¹)

DEPTH (METERS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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LOCATION 210.0

0.3	8.8		6.6	11	8.2	11	11	12	16	16	18	15
5.0	8.8		6.7	9.4	8.1	10	11	12	16	16	19	15
10.0	9.7		6.5	9.0	8.1	10	11	12	19	16	19	15
Bottom	8.7		6.7	9.4	8.1	10	12	12	20	15	19	15

10 LOCATION 215.0

0.3	12		7.2	8.6	9.8	12	13	14	16	17	18	18
5.0	12		6.8	7.3	8.4	10	14	12	16	17	18	18
Bottom	12		6.8	7.1	8.1	9.6	13	13	14	17	18	17

LOCATION 220.0

0.3	10.0		7.7	9.1	8.1	12	10	13	18	16	20	15
5.0	9.1		7.0	9.1	8.2	11	10	13	18	16	21	15
10.0	9.2		7.0	9.1	8.1	10	10	12	20	16	19	15
Bottom	8.9		7.3	9.1	9.4	10	10	12	19	16	19	15

APPENDIX 2-13 Trace element data for the Two-Unit Operational Period
(Dec 1986 - Nov 1987) at Locations 210.0, 215.0, and 220.0.

PARAMETER	LOCATION 210.0				LOCATION 215.0				LOCATION 220.0				
	FEB	MAY	AUG	NOV	FEB	MAY	AUG	NOV	FEB	MAY	AUG	NOV	
Calcium (mg L ⁻¹)	0.3 5.0 10.0 15.0	1.8 3.8 3.6 3.9	3.3 3.3 3.6 3.7	3.1 3.3 3.6 4.4	4.1 4.1 4.0 4.0	5.2 5.1 4.9	3.9 3.4 3.6	2.4 2.4 2.5	2.5 2.4 2.6	4.2 4.2 4.2	3.2 3.2 3.5	2.7 2.8 3.1	3.2 3.3 3.3
Iron (mg L ⁻¹)	0.3 5.0 10.0 15.0	0.20 0.40 0.20 0.20	0.1 0.2 0.4 0.5	0.1 0.1 0.1 3.4	0.1 0.1 0.1 0.1	0.5 0.3 0.3	0.1 0.2 0.3	0.1 0.1 0.1	0.1 0.1 0.1	0.2 0.2 0.3 0.2	0.1 0.1 0.4 0.4	0.1 0.1 0.1 3.3	0.1 0.1 0.1 U.1
Manganese (mg L ⁻¹)	0.3 5.0 10.0 15.0	0.03 0.03 0.03 0.03	0.03 0.02 0.04 0.05	0.02 0.02 0.13 1.40	0.02 0.02 0.02 0.01	0.09 0.02 0.03	0.02 0.02 0.03	0.02 0.02 0.02	0.01 0.01 0.04	0.03 0.03 0.03 0.03	0.02 0.01 0.03 0.03	0.02 0.02 0.02 1.30	0.01 0.01 0.02 0.01
Magnesium (mg L ⁻¹)	0.3 5.0 10.0 15.0	1.00 1.50 1.50 1.50	1.4 1.3 1.4 1.4	1.4 1.4 1.5 1.7	1.6 1.6 1.6 1.8	1.0 1.9 1.8	1.7 1.4 1.5	1.7 1.6 1.9	1.7 1.7 1.7	1.6 1.6 1.6 1.6	1.4 1.4 1.4 1.4	1.6 1.6 1.5 1.7	1.6 1.6 1.6 1.6
Sodium (mg L ⁻¹)	0.3 5.0 10.0 15.0	9.5 9.5 9.5 9.6	8.8 8.6 8.7 8.1	12 12 11 11	22 21 21 11	14 11 10	10 8.6 8.5	13 12 13	20 19 20	10 10 10 10	8.8 8.5 8.1 8.2	13 12 12 11	20 20 20 20
Potassium (mg L ⁻¹)	0.3 5.0 10.0 15.0	2.1 2.2 1.2 2.3	2.2 2.0 2.0 2.0	1.9 2.1 2.2 2.4	3.0 3.0 3.0 3.1	2.9 2.6 2.4	2.5 2.2 2.0	2.2 1.0 2.2	3.0 3.0 3.0	2.2 2.2 2.2 2.1	2.1 2.0 1.9 2.0	1.9 1.9 2.0 2.1	2.9 2.9 3.0 3.0
Aluminum (mg L ⁻¹)	0.3 5.0 10.0 15.0	0.20 0.70 0.20 0.30	0.20 0.20 0.50 0.70	0.10 0.10 0.10 0.10	0.10 0.10 0.10 0.10	0.50 0.30 0.20	0.1 0.3 0.1	0.1 0.1 0.1	0.10 0.10 0.10	0.20 0.20 0.30 0.20	0.1 0.1 0.5 0.7	0.1 0.1 0.1 0.1	0.1 0.1 0.1 0.1
Cadmium (µg L ⁻¹)	0.5 5.0 10.0 15.0	0.20 0.80 0.10 0.10	0.30 0.10 0.10 0.10	0.10 0.10 0.10 0.10	0.20 0.20 0.20 0.60	0.30 0.10 0.10	0.20 0.10 0.10	0.1 0.1 0.1	0.2 0.2 0.2	0.1 0.1 0.1 0.2	0.1 0.1 0.1 0.1	0.1 0.1 0.1 0.1	0.2 0.2 0.2 0.2
Copper (µg L ⁻¹)	0.5 5.0 10.0 15.0	5.4 5.7 2.3 2.7	2.6 1.0 1.0 1.0	4.5 4.6 4.1 5.1	7.8 4.7 3.7	3.5 1.0 1.0	4.1 4.0 4.3	3.0 2.0 1.0	2.4 4.0 4.3	3.0 2.0 1.0 1.7	2.4 1.0 1.0 1.0	3.4 3.6 3.4 3.6	
Lead (µg L ⁻¹)	0.5 5.0 10.0 15.0	0.50 0.50 0.50 0.50	1.0 1.0 1.0 1.0	1.0 1.0 2.0 1.0	2.0 2.0 2.0 2.0	1.6 0.5 0.5	1.0 1.0 1.0	1.0 1.0 1.0	2.0 2.0 2.0	0.5 0.5 0.5 0.5	1.0 1.0 1.0 1.0	1.0 1.0 1.0 1.0	2.0 2.0 2.0 2.0
Zinc (µg L ⁻¹)	0.5 5.0 10.0 15.0	42 42 42 42	22 9.6 9.6	2.0 2.1 1.8	2.0 0.1 1.0	42 42 42	33 9.3 9.3	2.0 2.0 1.0	2.0 2.0 2.0	42 42 17	43 8.5 17	2.0 2.0 1.0	2.0 2.0 2.0

Blank spaces indicate samples not collected.

Appendix 3-1 Monthly phytoplankton standing crop parameters (density in units/ml, biovolume in mm^3/m^3 , algal carbon in mg/m^3) and taxonomic composition for samples collected on Lake Wylie from December 1986 through November 1987.
Note: mean surface areas were not calculated.

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 12/04/76 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	115	5.8	90.06	12.7	12.02	13.1	0	0.0
CHAMYDOMONAS	49	2.4	80.02	10.9	10.29	11.2	0	0.0
CC-MARIUM SPP.	8	0.4	3.53	0.4	0.54	0.5	0	0.0
CRUCIGENIA IRREGULARIS	25	1.2	3.31	0.4	0.59	0.6	0	0.0
COCCOID GREENS	33	1.6	3.22	0.4	0.60	0.6	0	0.0
BACILLARIOPHYCEAE	710	35.9	169.93	23.3	13.90	15.1	0	0.0
CYCLOTELLA MENECHINIANA	41	2.0	10.14	1.3	1.01	1.1	0	0.0
PELOSIRA AMBIGUA	16	0.8	55.01	7.5	2.91	3.1	0	0.0
RHIZOLENIA SPP.	16	0.8	35.19	4.8	2.07	2.2	0	0.0
SKELETONEMA POTAMOS	490	24.8	26.25	3.5	3.74	4.1	0	0.0
STEPHANODISCUS SPP.	16	0.8	3.85	0.5	0.38	0.4	0	0.0
SIPHEDRA RUMPHENS	8	0.4	3.91	0.5	0.33	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	123	6.2	35.58	4.8	3.41	3.7	0	0.0
CHRYSOPHYCEAE	179	9.0	23.32	3.1	3.94	4.2	0	0.0
ERKENIA SUBAEQUICILIATA	8	0.4	0.36	0.0	0.07	0.0	0	0.0
HALLONIAS TOROSURATA	16	0.8	11.34	1.5	1.63	1.7	0	0.0
PSEUDOKEPHYRON SPP.	8	0.4	0.78	0.1	0.14	0.1	0	0.0
STELIXOMONAS DICHOTOMA	8	0.4	0.60	0.0	0.11	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	159	7.0	10.24	1.4	1.99	2.1	0	0.0
CRYPTOPHYCEAE	906	45.8	445.03	61.0	61.66	67.2	0	0.0
CRYPTOMONAS EROSA	155	7.8	78.22	10.7	11.78	12.8	0	0.0
CRYPTOMONAS OVATA	155	7.8	205.33	28.1	27.47	29.6	0	0.0
CRYPTOMONAS REFLEXA	16	0.8	91.87	12.6	10.01	10.9	0	0.0
RHODOMONAS MINUTA	500	29.3	69.61	9.5	12.70	13.8	0	0.0
MYXOPHYCEAE	65	3.2	0.72	0.0	0.18	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	65	3.2	0.72	0.0	0.18	0.1	0	0.0
SAMPLE TOTALS	1975		729.06		91.70		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 12/09/86 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCOT	244	12.3	112.33	19.1	15.76	24.8	0	0.0
ANKISTRODESNIUS SPIRALLIS	16	0.8	0.47	0.0	0.10	0.1	0	0.0
CHLAMYDOMONAS	49	2.4	80.02	13.6	10.29	16.2	0	0.0
COSMARIMUM TENUE	16	0.8	8.47	1.4	1.27	2.0	0	0.0
CRUCIGENIA IRREGULARIS	16	0.8	2.70	0.3	0.39	0.6	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	16	0.8	3.94	0.6	0.65	1.0	0	0.0
SCENEDESMUS QUADRIKAUDA	33	1.6	7.59	1.2	1.26	1.9	0	0.0
COCCOID GREENS	98	4.9	9.64	1.6	1.80	2.8	0	0.0
BACILLARIOPHYCEAE	1126	57.0	353.04	60.2	28.09	44.2	0	0.0
HELOSIRA DISTANS	98	4.9	33.63	5.7	3.09	4.8	0	0.0
HELOSIRA GRANULATA	65	3.2	168.67	28.7	9.53	15.0	0	0.0
NITZSCHIA AGNITA	16	0.8	2.44	0.4	0.27	0.4	0	0.0
NITZSCHIA HOLSATICA	65	3.2	22.23	3.7	2.05	3.2	0	0.0
SKELETONEMA POTAMOS	605	30.6	32.37	5.5	4.67	7.3	0	0.0
STEPHANODISCUS SPP.	16	0.8	3.85	0.6	0.38	0.5	0	0.0
SYNEDRA ACUS	16	0.8	18.73	3.1	1.28	2.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	245	12.4	71.13	12.1	6.82	10.7	0	0.0
CHRYSOPHYCEAE	65	3.2	4.82	0.8	0.93	1.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	65	3.2	4.82	0.8	0.93	1.4	0	0.0
CRYPTOPHYCEAE	539	27.3	115.68	19.7	18.71	29.4	0	0.0
CRYPTOMONAS EROSA	82	4.1	41.18	7.0	6.20	9.7	0	0.0
CRYPTOMONAS TATA	16	0.8	21.56	3.6	2.85	4.4	0	0.0
RHODOMONAS LUTA	441	22.3	52.94	9.0	9.66	15.2	0	0.0
SAMPLE TOTALS	1974		585.88		63.49		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 12/09/86 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /L	% TOTAL	MG/M	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	75	6.2	26.31	7.0	3.71	11.6	0	0.0
CHLAMYDOMONAS	12	1.0	20.09	5.4	2.50	8.0	0	0.0
COCCOID GREENS	61	5.2	6.03	1.6	1.13	3.5	0	0.0
BACILLARIOPHYCEAE	531	75.8	290.63	81.1	21.43	67.2	0	0.0
MELOSIRA GRANULATA	37	3.1	94.91	25.7	5.36	16.8	0	0.0
NITZSCHIA AGNITA	12	1.0	1.84	0.5	0.20	0.6	0	0.0
RHIZOSOLENIA SPP.	12	1.0	26.56	7.2	1.56	4.8	0	0.0
SKELETONEMA POTAMOS	588	50.6	31.48	8.5	4.54	14.2	0	0.0
STEPHANODISCUS SPP.	49	4.2	11.56	3.1	1.16	3.6	0	0.0
SYNEDRA PLANCTONICA	12	1.0	6.49	1.7	0.53	1.6	0	0.0
SYNEDRA ULNA	12	1.0	77.71	21.1	3.53	11.0	0	0.0
SYNEDRA SPP.	12	1.0	5.41	1.4	0.46	1.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	147	12.6	42.66	11.5	4.09	12.8	0	0.0
CHRYSOPHYCEAE	24	2.0	1.23	0.3	0.23	0.7	0	0.0
AULOMONAS PURDYI	12	1.0	0.55	0.0	0.06	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	12	1.0	0.55	0.2	0.17	0.5	0	0.0
CRYPTOPHYCEAE	147	12.6	41.85	11.3	6.41	20.1	0	0.0
CRYPTOMONAS EROSA	25	2.1	12.55	3.3	1.85	5.8	0	0.0
CRYPTOMONAS OVALA	12	1.0	16.27	4.4	2.15	6.7	0	0.0
RHODOMONAS MINUTA	110	9.4	13.24	3.5	2.41	7.5	0	0.0
MYXOPHYCEAE	37	3.1	0.40	0.1	0.10	0.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	57	5.1	0.40	0.1	0.10	0.3	0	0.0
SAMPLE TOTALS	1162		368.21		51.88		0	

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PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 12/04/86 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BLOOM VOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	ML/M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	65	7.1	35.01	5.3	4.86	10.2	0	0.0
CHLAMYDOMONAS	16	1.7	26.62	4.0	3.42	7.2	0	0.0
CRUCIGENIA IRREGULARIS	8	0.8	1.11	0.1	0.19	5.6	0	0.0
SCENEDESMUS QUADRICAUDA	25	2.7	5.69	0.8	0.95	2.0	0	0.0
COCCOID GREENS	16	1.7	3.60	0.2	0.30	0.6	0	0.0
BACILLARIOPHYCEAE	626	74.9	543.07	83.6	32.73	68.9	0	0.0
PELOSIRA AMBIGUA	106	11.5	358.42	53.2	18.99	40.0	0	0.0
PELOSIRA DISTANS	16	1.7	5.59	0.8	0.51	1.0	0	0.0
PELOSIRA GRAHLIATA	49	5.3	126.37	19.4	7.14	15.0	0	0.0
MITZSCHIA HOLSATIICA	8	0.8	2.79	0.4	0.25	0.5	0	0.0
SKELETONEMA POTAMUS	409	46.6	21.87	3.3	3.15	6.6	0	0.0
STEPHANODISCUS SPP.	8	0.8	1.94	0.2	0.19	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	90	9.8	26.09	4.0	2.50	5.2	0	0.0
CHRYSOPHYCEAE	41	4.4	2.62	0.4	0.50	1.0	0	0.0
AULACONAS PURDYI	3	0.8	0.20	0.0	0.04	0.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	33	3.6	2.41	0.3	0.46	0.9	0	0.0
CRYPTOPHYCEAE	90	9.8	43.41	6.6	6.15	12.9	0	0.0
CRYPTOPHONAS EROSA	8	0.8	4.13	0.6	0.62	1.3	0	0.0
CRYPTOPHONAS OVATA	25	2.7	32.41	4.9	4.28	9.0	0	0.0
RHODONONAS MINUTA	57	6.2	6.86	1.0	1.25	2.6	0	0.0
MYXOPHYCEAE	25	2.7	3.53	0.5	0.62	1.3	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	25	2.7	3.53	0.5	0.62	1.3	0	0.0
DIMORPHYCEAE	8	0.8	21.62	3.3	2.60	5.4	0	0.0
PERIDINIUM INCONSPICUUM	8	0.8	21.62	3.3	2.60	5.4	0	0.0

SAMPLE TOTALS 915 649.26 47.66 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 12/09/86 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /L	% TOTAL	MG/M	% TOTAL	MM ² /L	% TOTAL
CHLOROPHYCEAE	163	8.6	175.01	21.6	23.06	22.5	0	0.0
CHLAMYDOMONAS	98	5.2	160.03	19.8	20.59	20.0	0	0.0
GOLENKINIA RADZATA	16	0.8	5.79	0.7	0.91	0.8	0	0.0
SCENEDESMUS QUADRICAUDA	33	1.7	7.59	0.9	1.26	1.2	0	0.0
COCCOID GREENS	16	0.8	1.60	0.1	0.30	0.2	0	0.0
BACILLARIOPHYCEAE	605	32.2	154.90	19.1	12.52	12.2	0	0.0
HELOSIRA GRANULATA	33	1.7	84.33	10.4	4.76	4.6	0	0.0
SKELETONEMA POTANUS	409	21.7	21.87	2.7	3.15	3.0	0	0.0
STEPHANODISCUS SPP.	33	1.7	7.72	0.9	0.77	0.7	0	0.0
SYNEDRA RUPPENS	16	0.8	7.78	0.9	0.66	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	114	6.0	33.20	4.1	3.18	3.1	0	0.0
CHRYSOPHYCEAE	163	8.6	11.76	1.4	2.25	2.2	0	0.0
ERKENIA SUBAEQUICILIATA	16	0.8	0.72	0.0	0.15	0.1	0	0.0
UROGLENOPSIS AMERICANA	16	0.8	1.41	0.1	0.26	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	131	6.9	9.64	1.1	1.87	1.8	0	0.0
CRYPTOPHYCEAE	914	48.6	459.02	56.8	63.54	62.0	0	0.0
CRYPTOMONAS EROSA	163	8.6	82.35	10.1	12.40	12.0	0	0.0
CRYPTOMONAS OVATA	163	8.6	216.18	26.7	28.61	27.9	0	0.0
CRYPTOMONAS REFLEXA	16	0.8	92.87	11.3	10.01	9.7	0	0.0
RHODOMONAS MINUTA	572	30.4	68.63	8.4	12.52	12.2	0	0.0
MYXOPHYCEAE	32	1.7	6.95	0.8	1.08	1.0	0	0.0
CHROOCOCCUS SPP.	16	0.8	6.78	0.8	1.04	1.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	16	0.8	3.18	0.0	0.04	0.0	0	0.0
SAMPLE TOTALS	1877		807.65		102.48		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 12/09/86 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	261	13.8	361.45	55.4	46.95	54.1	0	0.0
CHLAMYDOMONAS	212	11.2	346.85	53.2	44.62	53.3	0	0.0
COSMARUM SPP.	16	0.8	7.01	1.0	1.07	1.2	C	0.0
SCENEDESMUS QUADRICAUDA	33	1.7	7.59	1.1	1.26	1.5	0	0.0
BACILLARIOPHYCEAE	1095	58.2	169.31	25.9	17.92	21.4	0	0.0
SKELETONEMA POTAMOS	605	32.1	32.37	4.9	4.67	5.5	0	0.0
STEPHANODISCUS SPP.	96	5.2	23.13	3.5	2.33	2.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	392	20.6	113.82	17.4	10.92	13.0	0	0.0
CHRYSOPHYCEAE	147	7.8	10.85	1.6	2.11	2.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	147	7.8	10.85	1.6	2.11	2.5	0	0.0
CRYPTOPHYCEAE	376	20.0	110.30	16.9	16.60	19.6	0	0.0
CRYPTOPHYTAS EROZA	16	0.8	8.22	1.2	1.23	1.4	0	0.0
CRYPTOPHYTAS OVATA	49	2.6	64.83	9.9	8.57	10.2	0	0.0
THODORIAS MINUTA	311	16.5	37.26	5.7	6.80	8.1	0	0.0
SAMPLE TOTALS	1879		651.91		83.58		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 12/09/86 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/ML	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	342	19.5	418.09	49.8	54.44	59.7	0	0.0
CHLAMYDOMONAS	245	13.9	400.08	47.6	51.47	56.4	0	0.0
CRUCIGENIA CRUCIFERA	12	0.6	1.69	0.2	0.30	0.3	0	0.0
KIRCHNERIELLA SUBSOLITARIA	12	0.6	2.54	0.3	0.43	0.4	0	0.0
MESOSTIGMA VIRIDE	12	0.6	6.32	0.7	0.96	1.0	0	0.0
MONORAPHIDIUM CONTORTUM	37	2.1	1.63	0.1	0.30	0.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUPATUS	27	0.6	2.98	0.3	0.49	0.5	0	0.0
SCENEDESMUS QUADRICAUDA	12	0.6	2.86	0.3	0.47	0.5	0	0.0
BACILLARIOPHYCEAE	1078	61.5	349.01	43.9	28.06	30.7	0	0.0
CYMBELLA TUMIDA	12	0.6	75.12	8.9	3.44	3.7	0	0.0
HELOSIRA GRANULATA	49	2.7	126.57	15.0	7.14	7.8	0	0.0
NITZSCHIA SPP.	12	0.6	5.31	0.6	0.46	0.5	0	0.0
SKELETONEMA POTANUS	527	30.0	28.20	3.3	4.07	4.4	0	0.0
STEPHANODISCUS SPP.	86	4.9	20.25	2.4	2.04	2.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	392	22.3	113.76	13.5	10.91	11.9	0	0.0
CHRYSOPHYCEAE	135	7.7	10.10	1.2	1.96	2.1	0	0.0
UROGLENOPSIS AMERICANA	12	0.6	1.06	0.1	0.20	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	123	7.0	9.03	1.0	1.76	1.9	0	0.0
CRYPTOPHYCEAE	184	10.5	36.85	4.3	5.90	6.4	0	0.0
CRYPTOMONAS OVATA	12	0.6	16.27	1.9	2.15	2.3	0	0.0
RHODOMONAS MINUTA	172	9.8	20.58	2.4	3.75	4.1	0	0.0
MYXOPHYCEAE	12	0.6	5.11	0.6	0.79	0.8	0	0.0
CHROCOCCUS SPP.	12	0.6	5.11	0.6	0.79	0.8	0	0.0
SAMPLE TOTALS	1751		839.16		91.15		0	

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PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 12/09/86 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	194	9.0	157.22	15.9	11.42	16.9	0	0.0
CHLAMYDOMONAS	65	3.0	106.80	10.8	13.74	10.8	0	0.0
COCCONHAS ORBICULARIS	16	0.7	5.54	0.5	0.87	0.6	0	0.0
MORONIA-HIDDIUM CONTORTUM	16	0.7	0.72	0.0	0.15	0.1	0	0.0
PTERODONAS AMPULLOSA	65	3.0	25.57	2.5	3.98	3.1	0	0.0
SCENEDESMUS BIJUGA	16	0.7	3.59	0.3	0.60	0.4	0	0.0
SCENEDESMUS SPP.	16	0.7	15.00	1.5	2.08	1.6	0	0.0
BACILLARIOPHYCEAE	669	31.3	104.87	10.6	10.96	8.6	0	0.0
HELOSIRA DISTANS	65	3.0	22.45	2.2	2.06	1.6	0	0.0
SKELETONEMA POTAMOS	392	18.3	21.00	2.1	3.03	2.3	0	0.0
STEPHANODISCUS SPP.	49	2.2	11.56	1.1	1.16	0.9	0	0.0
SYNEDRA SPP.	16	0.7	7.18	0.7	0.62	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	147	6.8	42.69	4.3	4.09	3.2	0	0.0
CHRYSOPHYCEAE	130	6.0	40.09	4.0	6.07	4.8	0	0.0
MALLONHAS TONGARIATA	49	2.2	34.07	3.4	4.91	3.8	0	0.0
STELIXONHAS DICHOTOMA	16	0.7	1.20	0.1	0.23	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	65	3.0	4.82	0.4	0.93	0.7	0	0.0
CRYPTOPHYCEAE	1111	52.7	670.12	67.9	85.73	67.8	0	0.0
CRYPTONHAS ROSA	49	2.2	24.70	2.5	3.71	2.9	0	0.0
CRYPTONHAS OVATA	131	6.1	172.92	17.5	22.88	18.1	0	0.0
CRYPTONHAS REFLEXA	65	3.0	368.59	37.3	40.17	31.8	0	0.0
RHODONHAS MINUTA	866	40.5	103.92	10.5	18.97	15.0	0	0.0
MYXOPHYCEAE	33	1.5	13.57	1.3	2.10	1.6	0	0.0
CHROCOCCUS SPP.	33	1.5	13.59	1.3	2.10	1.6	0	0.0

SAMPLE TOTALS 2137 905.89 126.28 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 12/09/86 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	163	12.7	130.60	37.3	17.57	38.3	0	0.0
CHLAMYDOMONAS	65	5.0	106.80	30.5	13.74	29.9	0	0.0
COCCONIAS ORBICULARIS	16	1.2	5.54	1.5	0.87	1.8	0	0.0
COSMARIDIUM TENUE	16	1.2	8.47	2.4	1.27	2.7	0	0.0
SCENEDESMUS QUADRICAUDA	33	2.5	7.59	2.1	1.26	2.7	0	0.0
SELENASTRUM MINUTUM	33	2.5	2.19	0.6	0.43	0.9	0	0.0
BACILLARIOPHYCEAE	703	55.1	105.94	30.3	11.30	24.6	0	0.0
NITZSCHIA AGRIATA	33	2.5	4.90	1.4	0.55	1.2	0	0.0
SKELETONEMA POTAMOS	376	29.4	20.12	5.7	2.90	6.3	0	0.0
STEPHANODISCUS SPP.	82	6.4	19.28	5.5	1.94	4.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	212	16.6	61.64	17.6	5.91	12.8	0	0.0
CHRYSOPHYCEAE	131	10.2	8.18	2.3	1.62	3.5	0	0.0
ERKENIA SUBAEQUI-LIATA	49	3.7	2.16	0.6	0.45	0.9	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	82	6.4	6.02	1.7	1.17	2.5	0	0.0
CRYPTOPHYCEAE	278	21.6	104.84	29.9	15.34	33.4	0	0.0
CRYPTOMONAS ERGSA	33	2.5	16.48	4.7	2.48	5.4	0	0.0
CRYPTOMONAS OVATA	49	3.8	64.83	18.5	8.57	18.6	0	0.0
RHODOMONAS MITSUBATA	196	15.3	23.53	6.7	4.29	9.3	0	0.0

SAMPLE TOTALS 1275 349.56 45.83 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 12/09/86 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	159	16.0	86.04	24.2	11.99	34.2	0	0.0
ANKISTRODESMUS FALCATUS ACICULARIS	12	1.0	1.59	0.3	0.25	0.7	0	0.0
CHLAMYDOMONAS	37	3.2	60.09	16.9	7.73	22.0	0	0.0
SCENEDESMUS ACUMINATUS	12	1.0	6.95	1.9	1.02	2.9	0	0.0
SCENEDESMUS BIJUGA	12	1.0	2.71	0.7	0.45	1.2	0	0.0
SCENEDESMUS QUADRICAUDA	37	3.2	8.54	2.4	1.42	4.0	0	0.0
SELENASTRUM HINJUTUM	12	1.0	0.82	0.2	0.16	0.4	0	0.0
TETRAEDRON CAUDATUM VAR. LONGISPINUM	22	1.0	3.15	0.8	0.51	1.4	0	0.0
COCCOID GREENS	25	2.2	2.41	0.6	0.45	1.2	0	0.0
BACILLARIOPHYCEAE	797	70.6	250.94	70.6	19.62	56.0	0	0.0
AMPHOURENIS VITREA	12	1.0	6.36	1.7	0.53	1.5	0	0.0
MELOSIRA AMBIGUA	57	5.2	124.20	34.9	6.58	18.8	0	0.0
MELOSIRA DISTANS	86	7.6	29.95	8.2	2.71	7.7	0	0.0
NITZSCHIA SPP.	12	1.0	5.31	1.4	0.46	1.3	0	0.0
SKELETORHMA POTAMOS	429	58.0	22.96	6.4	3.31	9.4	0	0.0
STEPHANODISCUS SPP.	25	2.2	5.78	1.6	0.58	1.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	196	17.3	56.88	16.0	5.45	15.5	0	0.0
CHRYSOPHYCEAE	49	4.3	3.61	1.0	0.70	2.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	49	4.3	3.61	1.0	0.70	2.0	0	0.0
CRYPTOPHYCEAE	123	10.9	14.70	4.1	2.68	7.6	0	0.0
RHODORHNAS MINUTA	123	10.9	14.70	4.1	2.68	7.6	0	0.0
SAMPLE TOTALS	1128		355.28		34.99		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 12/09/86 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	110	10.9	122.27	48.0	16.00	56.0	0	0.0
ANKISTRORHOPUS FALCATUS ACICULARIS	0	1.2	0.92	0.3	0.17	0.5	0	0.0
CHLAMYDOMONAS	69	11.0	115.33	45.2	14.50	50.8	0	0.0
CRUCIGENIA APICULATA	4	0.6	1.02	0.4	0.16	0.5	0	0.0
MONORAPHIDIUM CONORTIUM	8	1.2	0.56	0.1	0.07	0.2	0	0.0
SCENEDESMUS QUADRICAUDA	29	4.5	6.64	2.6	1.10	3.8	0	0.0
BACILLARIOPHYCEAE	64.0	106.07	42.3	9.20	32.0	0	0	0.0
HELOSIRA DISTANS	5	5.9	12.60	5.0	1.16	4.0	0	0.0
HELOSIRA GRANULATA	0	1.2	21.15	8.4	1.19	4.1	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	0	1.2	7.08	2.8	0.52	1.8	0	0.0
NITZSCHIA SPP.	0	1.2	3.54	1.4	0.30	1.0	0	0.0
RHIZOLENIA SPP.	4	1.6	0.85	3.5	0.52	1.8	0	0.0
SKELETONEMA POTAMUS	200	32.1	10.70	4.2	1.54	5.3	0	0.0
STEPHANODISCUS SPP.	29	4.6	6.75	2.6	0.68	2.3	0	0.0
SYNEDRA SPP.	4	0.6	1.00	0.7	0.15	0.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	90	14.4	26.06	10.4	2.50	8.7	6	0.0
UNIDENTIFIED PENNATE DIATOMS	16	2.5	7.55	3.0	0.64	2.2	0	0.0
CHRYSOPHYCEAE	28	4.4	1.50	0.6	0.29	1.0	0	0.0
ERKENIA SUBAEQUICILIATA	20	3.2	0.90	0.3	0.18	0.6	0	0.0
UNIDENTIFIED CRYPTOSPHYCEAE	0	1.2	0.60	0.2	0.11	0.5	0	0.0
CRYPTOPHYCEAE	61	9.7	10.49	4.1	1.70	6.2	0	0.0
CRYPTODONAS EROSA	0	1.2	4.13	1.6	0.62	2.1	0	0.0
RHOZODONAS MINUTA	53	8.5	6.36	2.5	1.16	4.0	0	0.0
MYXOPHYCEAE	12	1.9	9.86	3.9	1.32	4.6	0	0.0
ANABAENA MISCORINENSE	4	0.6	7.32	2.9	0.93	3.2	0	0.0
OSCILLATORIA GEMINATA	4	0.6	1.95	0.7	0.29	1.0	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	4	0.6	0.59	0.2	0.10	0.3	0	0.0

SAMPLE TOTALS 625 250.20 28.67 6

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 01/13/67 TIME: 0900 DEPTH(M): 0.5

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/M	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	107	12.3	10.59	3.4	1.92	5.5	0	0.0
ANKISTRODESHPUS FALCATUS	74	8.5	4.84	1.5	0.95	2.7	0	0.0
CHLAMYDOMONAS	8	0.9	2.23	0.7	0.36	1.0	0	0.0
SCENEDESMUS QUADRICAUDA	8	0.9	1.90	0.6	0.31	0.8	0	0.0
COCCOID GREENS	17	1.9	1.62	0.5	0.30	0.8	0	0.0
BACILLARIOPHYCEAE	173	19.9	118.18	39.0	7.95	23.0	0	0.0
ACHNANTHES SPP.	8	0.9	1.26	0.4	0.14	0.4	0	0.0
HELOSIRA GRANULATA	17	1.9	42.55	14.0	2.40	6.9	0	0.0
NITZSCHIA AGNITA	49	5.6	7.41	2.4	0.83	2.4	0	0.0
RHIZOSOLENIA SPP.	17	1.9	35.62	11.7	2.10	6.0	0	0.0
SKELETONEMA POTAMUS	41	4.7	2.21	0.7	0.31	0.8	0	0.0
STEPHANODISCUS SPP.	8	0.9	1.94	0.6	0.19	0.5	0	0.0
SYNEDRA ACUS	17	1.9	18.96	6.2	1.30	3.7	0	0.0
SYNEDRA PLANKTONICA	8	0.9	4.33	1.4	0.35	1.0	0	0.0
SYNEDRA RUPENS	8	0.9	3.91	1.2	0.33	0.9	0	0.0
CHRYSOPHYCEAE	322	37.1	65.60	15.0	7.70	22.3	0	0.0
ERKENIA SUBAEQUICILIATA	82	9.4	3.63	1.1	0.75	2.1	0	0.0
KEPHYRIUM LITTORALE	8	0.9	0.64	0.2	0.12	0.3	0	0.0
OCHROMONAS SPP.	17	1.9	3.61	1.1	0.60	1.7	0	0.0
STELXOMONAS DICHOTOMA	140	16.1	10.27	3.3	2.00	5.7	0	0.0
SYNURA SPINOSA	58	6.6	26.25	8.6	4.00	11.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	17	1.9	1.22	0.4	0.23	0.6	0	0.0
CRYPTOPHYCEAE	239	27.5	106.72	35.2	14.29	41.4	0	0.0
CRYPTOMONAS EROSA	8	0.9	4.13	1.3	0.62	1.7	0	0.0
CRYPTOMONAS OVATA	25	2.8	32.68	10.7	4.32	12.5	0	0.0
CRYPTOMONAS REFLEXA	8	0.9	46.22	15.2	5.03	14.5	0	0.0
RHODOMONAS MINUTA	198	22.8	23.70	7.8	4.32	12.5	0	0.0
MYXOPHYCEAE	17	1.9	0.18	0.0	0.04	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	17	1.9	0.18	0.0	0.04	0.1	0	0.0
DINOPHYCEAE	8	0.9	21.62	7.1	2.60	7.5	0	0.0
PERIDINIUM INCONSPICUUM	8	0.9	21.62	7.1	2.60	7.5	0	0.0
SAMPLE TOTALS	866		302.90		34.50		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 01/13/67 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	99	6.2	69.29	4.7	8.78	7.8	6	0.0
ANKISTRODESPIUS FALCATUS	82	5.1	5.37	0.3	1.06	0.9	0	0.0
EUDORINA ELEGANS	17	1.0	63.92	4.4	7.32	6.8	0	0.0
BACTILLARIOPHYCEAE	760	47.9	1204.30	83.2	70.52	66.1	0	0.0
CYCLOTELLA SPP.	198	12.4	87.89	6.0	7.60	7.1	0	0.0
CYBDELLA NAVICULIFORMIS	17	1.0	5.45	0.3	0.50	0.4	0	0.0
MELOSIRA AMBIGUA	263	16.5	808.97	61.4	47.10	44.2	0	0.0
MELOSIRA DISTANS	66	4.1	22.58	1.5	2.08	1.9	0	0.0
NITZSCHIA ACICULARIS	17	1.0	6.99	0.4	0.61	0.5	0	0.0
NITZSCHIA AGNITA	49	3.0	7.41	0.5	0.83	0.7	0	0.0
RHIZOLENIA SPP.	17	1.0	35.62	2.4	2.10	1.9	0	0.0
SKELETONEMA POTAMUS	17	1.0	0.88	0.0	0.12	0.1	0	0.0
STEPHANODISL... SPP.	17	1.0	3.89	0.2	0.59	0.3	0	0.0
TABELLARIA FENESTRATA	82	5.1	139.83	9.6	8.74	8.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	17	1.0	4.79	0.3	0.45	0.4	0	0.0
CHRYSOPHYCEAE	380	23.9	105.80	7.3	16.66	15.6	0	0.0
DINOBRYON BAVARICUM	17	1.0	4.65	0.3	0.75	0.7	0	0.0
ERKENIA SUGAECICILIATA	33	2.0	1.95	0.1	0.30	0.2	0	0.0
STELIXOMONAS DICHOTOMA	33	2.0	2.41	0.1	0.47	0.4	0	0.0
SYNURA SPINOSA	198	12.4	90.00	6.2	13.73	12.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	99	6.2	7.29	0.5	1.41	1.3	0	0.0
CRYPTOPHYCEAE	347	21.8	67.67	4.6	10.98	10.3	0	0.0
CRYPTOPHYTUS EROSIA	17	1.0	8.32	0.5	1.25	1.1	0	0.0
CRYPTOPHYTUS OVATA	17	1.0	21.83	1.5	2.88	2.7	0	0.0
PHOTOPHYTUS MINUTA	313	19.7	37.52	2.5	6.85	6.4	0	0.0
SAMPLE TOTALS	1506		1447.06		106.54		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 2:0.0 SAMPLE DATE: 01/13/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
CHLOROPHYCEAE	53	12.9	6.04	2.9	1.18	5.6	0	0.0
ANKISTRIDIUMS FALCATUS	37	9.0	2.42	1.0	0.47	2.2	0	0.0
CHLAMYDOMONAS	4	0.9	1.12	0.4	0.18	0.8	0	0.0
GONIAM SOCIALE	4	0.9	1.40	0.6	0.22	1.0	0	0.0
SCENEZESPLUS QUADRICAUDA	8	1.9	1.90	0.8	0.31	1.4	0	0.0
BACILLARIOPHYCEAE	167	40.9	163.29	70.0	10.82	52.1	0	0.0
NITZSCHIA AGNITA	45	11.0	6.78	2.9	0.76	3.6	0	0.0
RHIZOSOLENIA SPP.	8	1.9	17.70	7.5	1.04	5.0	0	0.0
SKELETONEMA POTAMUS	8	1.9	0.44	0.1	0.06	0.2	0	0.0
STEPHANODISCUS SPP.	4	0.9	0.97	0.4	0.09	0.4	0	0.0
SYNEDRA SPP.	8	1.9	3.61	1.5	0.31	1.4	0	0.0
TABELLARIA FENESTRATA	74	18.1	125.73	53.9	7.86	37.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	8	1.9	2.38	1.0	0.22	1.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	12	2.9	5.69	2.4	0.48	2.3	0	0.0
CHRYSOPHYCEAE	90	22.0	13.61	5.8	2.26	10.8	0	0.0
DINOBRYON BAVARICUM	8	1.9	2.31	0.9	0.37	1.7	0	0.0
DINOBRYON CYLINDRICUM	4	0.9	1.05	0.4	0.17	0.8	0	0.0
ERKENIA SUBAEQUICILIATA	29	7.1	1.27	0.5	0.26	1.2	0	0.0
OCHRONAS SPP.	4	0.9	0.90	0.3	0.15	0.7	0	0.0
STOLEXOMPHAS DICHOPTOMA	8	1.9	0.60	0.2	0.11	0.5	0	0.0
SYMBIA SPINOSA	12	2.9	5.61	2.4	0.85	4.0	0	0.0
UROLENOPSIS AMERICANA	4	0.9	0.35	0.1	0.06	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	21	5.1	1.52	0.6	0.29	1.3	0	0.0
CRYPTOPHYCEAE	90	22.0	43.33	18.5	5.65	27.2	0	0.0
CRYPTOPHONAS OVATA	8	1.9	10.85	4.6	1.43	5.8	0	0.0
CRYPTOPHONAS REFLEXA	4	0.9	23.11	9.9	2.51	1.0	0	0.0
RHODOPHONAS MINUTA	78	19.1	9.37	4.0	1.71	8.2	0	0.0
MYXOPHYCEAE	8	1.9	6.02	2.5	0.84	4.0	0	0.0
ANABAENA SPP.	4	0.9	4.07	1.7	0.55	2.6	0	0.0
OSCELLATORIA GERINATA	4	0.9	1.95	0.8	0.29	1.3	0	0.0
SAMPLE TOTALS	408		233.08		20.75		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 01/13/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	57	17.7	8.89	2.1	1.48	5.7	0	0.0
ANKISTRODESMUS FALCATUS	41	12.7	2.68	0.6	0.53	2.0	0	0.0
ARTHRODESMUS INCUS	4	1.2	2.43	0.6	0.35	1.3	0	0.0
CHLAMYDOMONAS	4	1.2	1.12	0.2	0.26	0.9	0	0.0
COSMARIIUM SPP.	4	1.2	1.76	0.4	0.27	1.0	0	0.0
SCENEDESMUS BIJUGA	4	1.2	0.90	0.2	0.15	0.5	0	0.0
BACILLARIOPHYCEAE	192	59.6	362.73	89.6	20.23	78.1	0	0.0
ASTERIONELLA FORMOSA	4	1.2	4.58	1.1	0.31	1.1	0	0.0
MELOSIRA AMBIGUA	86	26.7	291.26	71.9	15.43	59.5	0	0.0
MELOSIRA DISTANS	12	3.7	4.22	1.0	0.38	1.4	0	0.0
MELOSIRA GRANULATA	14	4.9	42.30	10.4	2.39	9.2	0	0.0
NITZSCHIA ACICULARIS	4	1.2	1.74	0.4	0.15	0.5	0	0.0
NITZSCHIA AGNITA	25	7.7	3.70	0.9	0.4	1.5	0	0.0
RHIZOSOLENIA SPP.	4	1.2	8.85	2.1	0.52	2.0	0	0.0
SKELETONEMA POTAMIS	25	7.7	1.32	0.3	0.19	0.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	16	4.9	4.76	1.1	0.45	1.7	0	0.0
CHRYSOPHYCEAE	32	9.9	2.37	0.5	0.42	1.6	0	0.0
AULOMONAS PURDYI	8	2.4	0.20	0.0	0.04	0.1	0	0.0
ERKENIA SUBAEQUICILIATA	8	2.4	0.36	0.0	0.07	0.2	0	0.0
OCHROMONAS SPP.	4	1.2	0.90	0.2	0.15	0.5	0	0.0
STELIXOMONAS DICHOTOMA	4	1.2	0.30	0.0	0.05	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	8	2.4	0.60	0.1	0.11	0.4	0	0.0
CRYPTOPHYCEAE	41	12.7	30.69	7.5	3.76	14.5	0	0.0
CRYPTOMONAS EROSA	8	2.4	4.13	1.0	0.62	2.3	0	0.0
CRYPTOMONAS REFLEXA	4	1.2	23.11	5.7	2.51	9.6	0	0.0
RHODOMONAS MINUTA	29	9.0	3.46	0.8	0.63	2.4	0	0.0
SAMPLE TOTALS	322		404.68		25.89		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 01/15/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	173	18.9	42.90	9.2	7.05	11.7	0	0.0
ANKISTRODESPIUS FALCATUS	17	1.8	1.08	0.2	0.21	0.3	0	0.0
CHLAMYDOMONAS	140	15.3	38.05	8.1	6.22	10.3	0	0.0
SCENEDESMUS QUADRICAUDA	8	0.8	1.90	0.4	0.31	0.5	0	0.0
SELENASTRUM HESTII	8	0.8	1.87	0.4	0.31	0.5	0	0.0
BACILLARIOPHYCEAE	157	17.1	37.14	18.7	6.41	10.6	0	0.0
ASTERIONELLA FORMOSA	8	0.8	9.16	1.9	0.63	1.0	0	0.0
HELOSIRA DISTANS	58	6.3	19.77	4.2	1.82	3.0	0	0.0
HELOSIRA GRANULATA	17	1.8	42.55	9.1	2.40	3.9	0	0.0
SKELETONEMA POTAMUS	25	2.7	1.32	0.2	0.19	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	49	5.3	14.34	3.0	1.37	2.2	0	0.0
CHRYSOPHYCEAE	58	6.3	13.78	2.9	2.19	3.6	0	0.0
SYNURA SPINOSA	25	2.7	11.26	2.4	1.71	2.8	0	0.0
UROGLENOPSIS AMERICANA	8	0.8	0.71	0.1	0.13	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	25	2.7	1.82	0.3	0.35	0.5	0	0.0
CRYPTOPHYCEAE	519	56.7	318.78	68.6	44.26	73.5	0	0.0
CRYPTOMONAS EROSA	49	5.3	24.90	5.3	3.74	6.2	0	0.0
CRYPTOMONAS OVATA	198	21.6	261.29	56.3	34.58	57.4	0	0.0
RHODOMONAS MINUTA	272	29.7	32.59	7.0	5.94	9.8	0	0.0
MYXOPHYCEAE	8	0.8	1.48	0.3	0.25	0.4	0	0.0
OSCELLATORIA SPP.	8	0.8	1.48	0.3	0.25	0.4	0	0.0
SAMPLE TOTALS	915		464.08		60.16		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 01/13/67 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	249	12.8	66.58	8.7	10.64	10.9	0	0.0
AMRISTRODESPIUS FALCATUS	49	2.5	3.22	0.4	0.63	0.6	0	0.0
CARTICRIA SP	17	0.8	13.69	1.8	1.92	1.9	0	0.0
CHLAMYDOMONAS	132	6.8	35.82	4.7	5.86	6.0	0	0.0
COSMARILUM SPP.	17	0.8	7.09	0.9	1.09	1.1	0	0.0
PTEROPHUS ANGLIOSA	17	0.8	3.12	0.4	0.53	0.5	0	0.0
SCENEDESPIUS BLAUGA	17	0.8	3.63	0.4	0.61	0.6	0	0.0
BACILLARIOPHYCEAE	182	9.4	182.94	24.1	11.09	11.3	0	0.0
HELOSIRA GRAHULATA	66	3.4	169.70	22.4	9.59	9.8	0	0.0
NITZSCHIA AGHITA	33	1.7	4.93	0.6	0.55	0.5	0	0.0
SKELETONEMA POTAMOS	6	0.3	3.52	0.4	0.50	0.5	0	0.0
UNIDENTIFIED CENTRAL DIATOMS	17	0.8	4.79	0.6	0.45	0.4	0	0.0
CHRYSOPHYCEAE	364	18.8	121.17	15.9	18.78	19.2	0	0.0
KEPHYRIUM LITTORALE	17	0.8	1.29	0.1	0.24	0.2	0	0.0
MALLONNAS TORQUATA	17	0.8	11.97	1.5	1.65	1.6	0	0.0
OCHROPHUS SPP.	17	0.8	3.61	0.4	0.60	0.6	0	0.0
SYNURA SPINOSA	214	11.0	97.52	12.8	14.88	15.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	99	5.1	7.29	0.9	1.41	1.4	0	0.0
CRYPTOPHYCEAE	1120	57.9	343.32	45.3	51.78	53.0	0	0.0
CRYPTOPHUS EPOSA	132	6.8	66.38	8.7	9.99	10.2	0	0.0
CRYPTOPHUS OVATA	132	6.8	174.24	23.0	23.05	23.6	0	0.0
RHODOPHUS MINUTA	856	44.3	102.71	13.5	18.74	19.2	0	0.0
DIMPHYCEAE	17	0.8	43.51	5.7	5.25	5.3	0	0.0
FERIDINIUM INCONSPICUUM	17	0.8	43.51	5.7	5.25	5.3	0	0.0

SAMPLE TOTALS 1932 757.52 97.54 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 01/15/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	99	7.0	16.69	2.6	2.82	3.9	0	0.0
ANKISTRODESPIUS FALCATUS	33	2.3	2.15	0.3	0.42	0.5	0	0.0
CHLAMYDOMONAS	49	3.4	13.44	2.1	2.19	3.0	0	0.0
SELENASTRUM MINUTUM	17	1.2	1.11	0.1	0.21	0.2	0	0.0
BACILLARIOPHYCEAE	444	31.6	270.02	42.4	17.94	25.2	0	0.0
HELOSIRA DISTANS	82	5.8	28.25	4.4	2.40	3.6	0	0.0
HELOSIRA GRANULATA	82	5.8	212.25	33.3	12.00	16.9	0	0.0
SKELTONEMA POTAMOS	250	16.4	12.34	1.9	1.78	2.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	33	2.3	9.55	1.5	0.91	1.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	17	1.2	7.64	1.2	0.65	0.9	0	0.0
CHRYSOPHYCEAE	231	16.4	67.50	10.6	10.60	14.9	0	0.0
STELIONONAS DICHOINA	33	2.3	2.41	0.3	0.47	0.6	0	0.0
SYNDRA SPINOSA	132	9.4	60.02	9.4	9.16	12.9	0	0.0
UROBLEPDIS AMERICANA	17	1.2	1.43	0.2	0.27	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	49	3.4	3.64	0.5	0.70	0.9	0	0.0
CRYPTOPHYCEAE	610	43.5	237.86	37.4	34.39	48.4	0	0.0
CRYPTONONAS EROSA	17	1.2	8.32	1.3	1.25	1.7	0	0.0
CRYPTONONAS OVATA	132	9.4	174.24	27.4	23.05	32.4	0	0.0
RHEODONAS MINUTA	461	32.9	55.31	8.7	10.09	14.2	0	0.0
DIMPHYCEAE	17	1.2	43.51	6.8	5.25	7.3	0	0.0
PERIDINIUM INCOGNITUM	17	1.2	43.51	6.8	5.25	7.3	0	0.0

SAMPLE TOTALS 1401 635.57 71.00 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 226.0 SAMPLE DATE: 01/13/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	107	10.9	16.97	3.9	2.87	6.4	0	0.0
ANKISTRODESMUS FALCATUS	66	6.7	4.30	1.0	0.85	1.9	0	0.0
CHLAMYDOMONAS	33	3.3	8.95	2.1	1.46	3.2	0	0.0
MICRACTINIUM PUSILLUM	8	0.8	3.72	0.8	0.56	1.2	0	0.0
BACILLARIOPHYCEAE	173	17.6	228.07	55.5	13.50	30.2	0	0.0
ASTERIONELLA FORMOSA	17	1.7	18.43	4.3	1.27	2.8	0	0.0
CYCLOTELLA MENEGRINIANA	8	0.8	2.03	0.4	0.20	0.4	0	0.0
HELOSIRA AMBIGUA	49	5.0	166.72	39.1	8.83	19.7	0	0.0
NITZSCHIA AGNITA	41	4.1	6.18	1.4	0.69	1.5	0	0.0
RHIZOSOLENIA SPP.	8	0.8	17.70	4.1	1.04	2.3	0	0.0
SKELETONEMA POTANUS	17	1.7	0.80	0.2	0.12	0.2	0	0.0
SYNEDRA PLANKTONICA	8	0.8	4.33	1.0	0.35	0.7	0	0.0
SYNEDRA RUMPENS	25	2.5	11.79	2.7	1.00	2.2	0	0.0
CHRYSOPHYCEAE	288	29.4	85.72	20.1	13.38	29.9	0	0.0
AULOMONAS PURDYI	8	0.8	0.20	0.0	0.04	0.0	0	0.0
ERKENIA SUBAEQUICILIATA	41	4.1	1.82	0.4	0.37	0.8	0	0.0
SYNURA SPINOSA	173	17.6	78.74	18.4	12.02	26.9	0	0.0
UROGLENOPSIS AMERICANA	8	0.8	0.71	0.1	0.13	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	58	5.9	4.25	0.9	0.82	1.8	0	0.0
CRYPTOPHYCEAE	403	41.1	91.11	21.3	14.31	32.0	0	0.0
CRYPTOMONAS ROSA	8	0.8	4.13	0.9	0.62	1.3	0	0.0
CRYPTOMONAS OVATA	33	3.3	43.53	10.2	5.76	12.9	0	0.0
RHOZOMONAS MINUTA	362	36.9	43.45	10.2	7.93	17.7	0	0.0
MYXOPHYCEAE	8	0.8	3.90	0.9	0.59	1.3	0	0.0
OSCILLATORIA GEMINATA	8	0.8	3.90	0.9	0.59	1.3	0	0.0
SAMPLE TOTALS	979		425.76		44.65		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 01/13/67 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	67	9.6	12.16	3.8	2.04	6.4	0	0.0
ANKISTRIDESMUS FALCATUS	25	3.6	1.61	0.5	0.31	0.9	0	0.0
CHLAMYDOMONAS	25	3.6	6.72	2.1	1.09	3.4	0	0.0
SCENEDESMUS QUADRICAUDA	17	2.4	3.83	1.2	0.64	2.0	0	0.0
BACILLARIOPHYCEAE	149	21.4	181.84	58.2	11.35	35.8	0	0.0
ASTERIONELLA FORMOSA	17	2.4	18.43	5.9	1.27	4.0	0	0.0
FRAGILARIA CRYPTORHINCHIS	17	2.4	14.71	4.7	1.07	3.3	0	0.0
HELOSINA GRANULATA	33	4.7	84.85	27.2	4.79	15.1	0	0.0
NIITZSCHIA AGNITA	41	5.9	6.18	1.9	0.69	2.1	0	0.0
RHIZOLENIA SPP.	25	3.6	53.33	17.0	3.14	9.4	0	0.0
SKELETONEMA POTAMOS	8	1.1	0.44	0.1	0.06	0.1	0	0.0
SYNDRA RIPPENS	8	1.1	5.91	1.2	0.33	1.0	0	0.0
CHRYSOPHYCEAE	264	38.0	58.76	18.8	9.38	29.5	0	0.0
ERKENIA SUBAEGISCILLIATA	99	14.2	4.36	1.3	0.90	2.8	0	0.0
OCHRONHAS SPP.	8	1.1	1.79	0.5	0.30	0.9	0	0.0
SYNDRA SPINDJA	107	15.4	48.76	15.6	7.44	23.4	0	0.0
URULENOPSIS AMERICANA	17	2.4	1.43	0.4	0.27	0.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	33	4.7	2.43	0.7	0.47	1.4	0	0.0
CRYPTOPHYCEAE	189	27.2	55.58	17.6	8.36	26.3	0	0.0
CRYPTONHAS EROSA	8	1.1	4.13	1.3	0.62	1.9	0	0.0
CRYPTONHAS OVATA	25	3.6	32.68	10.4	4.32	13.6	0	0.0
RHODONHAS NABITA	156	22.4	18.77	6.0	3.42	10.7	0	0.0
MYXOPHYCEAE	25	3.6	3.59	1.1	0.56	1.7	0	0.0
CHRODOLCUS SPP.	8	1.1	3.41	1.0	0.52	1.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	17	2.4	0.18	0.0	0.04	0.1	0	0.0

SAMPLE TOTALS 694 311.93 31.69 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 01/13/87 TIME: 1100 DEPTH: 10.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	134	10.3	25.97	4.1	4.23	7.5	0	0.0
ANKISTRODESPIUS FALCATUS	49	3.7	3.22	0.5	0.63	1.1	0	0.0
ARTHRODESPIUS INCUS	12	0.9	7.35	1.1	1.08	1.9	0	0.0
CHLAMYDOMONAS	12	0.9	3.37	0.5	0.55	0.9	0	0.0
COSMARUM SPP.	12	0.9	5.33	0.8	0.82	1.4	0	0.0
PHORAPHIDIUM CONTORTUM	25	1.9	1.09	0.1	0.22	0.3	0	0.0
SCENEDESPIUS BIJUGA	12	0.9	2.73	0.7	0.45	0.8	0	0.0
SCENEDESPIUS QUADRICAUDA	12	0.9	2.88	0.4	0.48	0.8	0	0.0
BACILLARIOPHYCEAE	383	29.5	429.12	68.8	25.02	44.5	0	0.0
ACHNATHES SPP.	12	0.9	1.90	0.3	0.21	0.3	0	0.0
MELOSIRA AMBIGUA	99	7.6	333.45	53.5	17.66	31.4	0	0.0
NITZSCHIA AGNITA	99	7.6	14.82	2.3	1.66	2.9	0	0.0
RHIZOLENIA SPP.	12	0.9	26.77	4.2	1.58	2.8	0	0.0
SKELETONEMA POTAMOS	124	9.5	6.61	1.0	0.95	1.6	0	0.0
TABELLARIA FENESTRATA	25	1.9	41.97	6.7	2.62	4.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	12	0.9	3.60	0.5	0.34	0.6	0	0.0
CHRYSOPHYCEAE	111	8.5	19.75	3.1	3.23	5.7	0	0.0
ERKENIA SUBAEQUICILIATA	49	3.7	2.18	0.3	0.45	0.8	0	0.0
OCHRONAS SPP.	25	1.9	5.40	0.8	0.90	1.6	0	0.0
SYNURA SPINOSA	25	1.9	11.26	1.8	1.71	3.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	12	0.9	0.91	0.1	0.17	0.3	0	0.0
CRYPTOPHYCEAE	667	51.5	148.40	23.8	23.67	42.1	0	0.0
CRYPTOMONAS EROSA	52	4.7	31.15	4.9	4.69	8.3	0	0.0
CRYPTOMONAS OVATA	37	2.8	49.08	7.8	6.49	11.5	0	0.0
RHODOMONAS MINUTA	568	43.8	68.17	10.9	12.44	22.1	0	0.0
SAMPLE TOTALS	1295		623.24		56.10		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 01/13/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	107	16.5	15.62	10.4	2.61	14.0	0	0.0
ANKISTRODESPIUS FALCATUS	79	12.1	5.16	3.4	1.02	5.4	0	0.0
ARTHRODESPIUS INCUS	7	1.0	3.91	2.6	0.57	3.0	0	0.0
CHLAMYDOMONAS	7	1.0	1.80	1.1	0.29	1.5	0	0.0
MICRACTINIUM PUSILLUM	7	1.0	3.00	2.0	0.45	2.4	0	0.0
SCHROESERIA SETIGERA	7	1.0	1.76	1.1	0.28	1.5	0	0.0
BACILLARIOPHYCEAE	130	21.2	70.36	46.9	5.32	28.5	0	0.0
ASTERIONELLA I. MOISA	22	4.0	29.38	19.6	2.03	10.9	0	0.0
FRAGILARIA CROENENSIS	15	2.0	11.77	7.8	0.86	4.6	0	0.0
NITZSCHIA AGNITA	40	6.1	5.93	3.9	0.66	3.5	0	0.0
RHIZOSOLENIA SPP.	7	1.0	14.25	9.5	0.84	4.5	0	0.0
SKELTONEMA POTAMOS	26	4.0	1.41	0.9	0.20	1.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	26	4.0	7.63	5.0	0.73	3.9	0	0.0
CHRYSOPHYCEAE	61	9.4	6.87	4.5	1.17	6.2	0	0.0
ERKENIA SUBAEQUICILIATA	33	5.0	1.45	0.9	0.30	1.6	0	0.0
CHROMONAS SPP.	7	1.0	1.44	0.9	0.24	1.2	0	0.0
STELIXOMONAS DICHTOMA	7	1.0	0.48	0.3	0.09	0.4	0	0.0
SYNURA SPINOSA	7	1.0	3.01	2.0	0.45	2.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	7	1.0	0.49	0.3	0.09	0.4	0	0.0
CRYPTOPHYCEAE	342	52.7	56.94	38.0	9.51	51.1	0	0.0
CRYPTOMONAS OVATA	13	2.0	17.46	11.6	2.31	12.4	0	0.0
RHODOMONAS MINUTA	329	50.7	39.48	26.3	7.20	38.6	0	0.0
SAMPLE TOTALS	648		149.78		18.61		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 02/10/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	0	0.7	9.76	1.9	1.51	3.7	0	0.0
ANKISTRODESMIUS FALCATUS	56	8.1	3.66	0.7	0.72	1.7	0	0.0
DICTYOSPHAERIUM EHRENBERRIANUM	4	0.5	6.10	1.2	0.79	1.9	0	0.0
BACILLARIOPHYCEAE	252	36.6	308.80	78.1	23.66	58.2	0	0.0
ASTERIONELLA FORMOSA	16	2.3	17.87	3.5	1.23	3.0	0	0.0
MELOSIRA AMBIGUA	44	6.3	148.50	29.8	7.86	19.3	0	0.0
MELOSIRA DISTANS	20	2.9	6.86	1.3	0.63	1.5	0	0.0
MELOSIRA SPP.	16	2.3	6.27	1.2	0.55	1.3	0	0.0
NITZSCHIA AGNITA	12	1.7	1.80	0.3	0.20	0.4	0	0.0
RHIZOLENIA SPP.	12	1.7	25.91	5.2	1.52	3.7	0	0.0
SYNEURA SPP.	16	2.3	7.04	1.4	0.61	1.5	0	0.0
TABELLARIA FENESTRATA	100	14.5	169.90	34.1	10.62	26.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	16	2.3	4.64	0.9	0.44	1.0	0	0.0
CHRYSOPHYCEAE	284	41.2	68.13	13.6	10.82	26.6	0	0.0
AULONNAS PURDYI	8	1.1	0.20	0.0	0.04	0.0	0	0.0
ERKENIA SUBAEQUICILIATA	52	7.5	2.29	0.4	0.47	1.1	0	0.0
OCHRONAS SPP.	12	1.7	2.62	0.5	0.44	1.0	0	0.0
STELXOPHONAS DICHOTOMA	68	9.8	4.99	1.0	0.97	2.3	0	0.0
SYNEURA SPINOSA	124	18.0	56.51	11.3	8.62	21.2	0	0.0
UROGLENNOPSIS AMERICANA	4	0.5	0.35	0.0	0.06	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	16	2.3	1.18	0.2	0.22	0.5	0	0.0
CRYPTIOPHYCEAE	84	12.2	27.59	5.5	4.10	10.0	0	0.0
CRYPTIOPHONAS EROSA	8	1.1	4.03	0.8	0.60	1.4	0	0.0
CRYPTIOPHONAS OVATA	12	1.7	15.88	3.1	2.10	5.1	0	0.0
RHODOPHONAS MINUTA	64	9.3	7.68	1.5	1.40	3.4	0	0.0
MYXOPHYCEAE	8	1.1	3.33	0.6	0.51	1.2	0	0.0
CHROCOCCUS SPP.	8	1.1	3.33	0.6	0.51	1.2	0	0.0
SAMPLF TOTALS	688		497.60		40.60		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 02/10/87 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	88	10.1	7.94	1.1	1.45	2.4	0	0.0
ANKISTROPSHMUS FALCATUS	76	8.7	4.96	0.7	0.98	1.6	0	0.0
FRANCEIA DROESCHERI	4	0.4	0.68	0.0	0.11	0.1	0	0.0
GONIUM SOCIALE	4	0.4	1.37	0.1	0.21	0.3	0	0.0
SCENEDESMUS QUADRICAUDA	4	0.4	0.93	0.1	0.15	0.2	0	0.0
BACILLARIOPHYCEAE	244	28.1	466.46	67.0	27.23	45.2	0	0.0
ASTERIONELLA FORMOSA	8	0.9	8.94	1.2	0.61	1.0	0	0.0
HELOSIRA AMBIGUA	76	8.7	256.50	36.8	13.59	22.5	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	28	3.2	24.18	3.4	1.78	2.9	0	0.0
NITZSCHIA AGNITA	16	1.8	2.40	0.3	0.27	0.4	0	0.0
RHIZOSOLENIA SPP.	20	2.3	43.18	6.2	2.54	4.2	0	0.0
SYNEDRA SPP.	4	0.4	1.76	0.2	0.15	0.2	0	0.0
TABELLARIA FENESTRATA	72	8.2	122.33	17.5	7.65	12.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	12	1.3	3.48	0.5	0.33	0.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	8	0.9	3.70	0.5	0.31	0.5	0	0.0
CHRYSOPHYCEAE	340	39.1	84.54	12.1	13.40	22.2	0	0.0
AULOMONAS PURDYI	12	1.2	0.30	0.0	0.06	0.0	0	0.0
ERKENIA SUBAEQUICILIATA	36	4.1	1.59	0.2	0.33	0.5	0	0.0
STELIXOMONAS DICHOTOMA	108	12.4	7.93	1.1	1.54	2.5	0	0.0
SYNURA SPINOSA	160	18.4	72.91	10.4	11.13	18.4	0	0.0
UROGLENOPSIS AMERICANA	4	0.4	0.35	0.0	0.06	0.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	20	2.3	1.47	0.2	0.28	0.4	0	0.0
CRYPTOPHYCEAE	144	16.5	85.72	12.3	11.45	19.0	0	0.0
CRYPTOMONAS EROSA	8	0.9	4.03	0.5	0.60	0.9	0	0.0
CRYPTOMONAS OVATA	36	4.1	47.63	6.8	6.30	10.4	0	0.0
CRYPTOMONAS REFLEXA	4	0.4	22.54	3.2	2.45	4.0	0	0.0
RHODOMONAS MINUTA	96	11.0	11.52	1.6	2.10	3.4	0	0.0
MYXOPHYCEAE	40	4.6	19.02	2.7	2.88	4.7	0	0.0
OSCELLATORIA GEMINATA	40	4.6	19.02	2.7	2.88	4.7	0	0.0
DINOPHYCEAE	12	1.3	31.64	4.5	3.81	6.3	0	0.0
PERIDINIUM INCONSPICUUM	12	1.3	31.64	4.5	3.81	6.3	0	0.0
SAMPLE TOTALS	868		695.32		60.22		0	

PHYTOPLANKTON STANDINGS CROP II

LOCATION: 210.0 SAMPLE DATE: 02/10/67 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	64	4.5	10.96	0.8	1.75	1.5	0	0.0
ANKISTRICESPUS FALCATUS	48	3.4	3.13	0.2	0.62	0.5	0	0.0
CHLAMYDOMONAS	4	0.2	1.09	0.0	0.17	0.1	0	0.0
SCENEDESMUS ARCUATUS VAR. PLATYDISCA	4	0.2	4.93	0.3	0.65	0.5	0	0.0
SCENEDESMUS BIJUGA	4	0.2	0.88	0.0	0.14	0.1	0	0.0
SCENEDESMUS QUADRICAUDA	4	0.2	0.93	0.0	0.15	0.1	0	0.0
BACILLARIOPHYCEAE	404	28.7	746.75	60.1	41.66	37.8	0	0.0
CYCLOTILLA SPP.	72	5.1	24.91	2.0	2.29	2.0	0	0.0
MELOSIRA AMBIGUA	104	7.4	351.00	28.2	18.59	16.8	0	0.0
MELOSIRA GRABULATA VAR. ANGLUSTISSIMA	76	5.4	65.62	5.2	4.83	4.3	0	0.0
MELOSIRA VARIANS	20	1.4	181.40	14.6	7.56	6.8	0	0.0
MELOSIRA SPP.	24	1.7	8.47	0.6	0.77	0.6	0	0.0
NETZSCHIA AGNITA	20	1.4	3.00	0.2	0.33	0.2	0	0.0
STEPHANODISCUS SPP.	4	0.2	0.94	0.0	0.09	0.0	0	0.0
SYNEURA PLANCTONICA	8	0.5	4.22	0.3	0.35	0.3	0	0.0
SYNEURA SPP.	4	0.2	1.76	0.1	0.15	0.1	0	0.0
TABLELLARIA FENESTRATA	60	4.2	101.94	8.2	6.37	5.7	0	0.0
UNIDENTIFIED CENTRATE DIATOM	12	0.8	3.48	0.2	0.33	0.2	0	0.0
CHRYSOPHYCEAE	508	36.1	145.99	11.7	22.92	20.8	0	0.0
ERKENIA SUBAEQUICILIATA	48	3.4	2.12	0.1	0.44	0.3	0	0.0
STELXOMONAS JICHTOMA	136	9.6	9.98	0.8	1.94	1.7	0	0.0
SYNEURA SCINDOSA	288	20.5	131.24	10.5	20.03	18.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	36	2.5	2.65	0.2	0.51	0.4	0	0.0
CRYPTOPHYCEAE	408	29.0	231.61	18.6	32.25	29.2	0	0.0
CRYPTOMONAS EROSA	12	0.8	6.05	0.4	0.91	0.8	0	0.0
CRYPTOMONAS OVATA	148	10.5	195.80	15.7	25.91	23.5	0	0.0
RHODOMONAS MINUTA	248	17.6	29.76	2.3	5.43	4.9	0	0.0
EUGLENOPHYCEAE	4	0.2	26.12	2.1	2.79	2.5	0	0.0
TRACHELOMONAS HISPIDA	4	0.2	26.12	2.1	2.79	2.5	0	0.0
DINOPHYCEAE	12	0.8	44.20	3.5	5.05	4.5	0	0.0
PERIDINIUM INCONSPICUUM	8	0.5	21.10	1.6	2.54	2.3	0	0.0
PERIDINIUM SPP.	4	0.2	23.11	1.8	2.51	2.2	0	0.0
CHLOROMONADOPHYCEAE	4	0.2	36.00	2.8	3.68	3.3	0	0.0
GONIOSYSTEM SPP.	4	0.2	36.00	2.8	3.68	3.3	0	0.0
SAMPLE TOTALS	1404		1291.63		110.08		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 02/10/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	56	6.6	6.27	1.5	1.08	2.0	0	0.0
ANKYSTRODESMIUS FALCATUS	52	6.1	3.39	0.8	0.67	1.2	0	0.0
ELAKATOTHRIX GELATINOSA	4	0.4	2.87	0.6	0.41	0.7	0	0.0
BACILLARIOPHYCEAE	84	9.9	63.75	15.3	4.34	8.0	0	0.0
MELOSIRA DISTANS	8	0.9	2.75	0.6	0.25	0.4	0	0.0
NITZSCHIA AGNIYA	28	3.3	4.20	1.0	0.47	0.8	0	0.0
RHIZOSOLENIA SPP.	8	0.9	17.27	4.1	1.01	1.8	0	0.0
SKELETONEMA POT/MOS	8	0.9	0.43	0.1	0.06	0.1	0	0.0
SYNEDRA PLANKTONICA	4	0.4	2.11	0.5	0.17	0.3	0	0.0
TABELLARIA FENESTRATA	20	2.3	35.98	8.1	2.12	3.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	4	0.4	1.16	0.2	0.11	0.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	4	0.4	1.85	0.4	0.15	0.2	0	0.0
CHRYSOPHYCEAE	400	47.6	169.77	40.8	25.54	47.4	0	0.0
DINOBRYON BAVARICUM	4	0.4	1.13	0.2	0.18	0.3	0	0.0
MALLONONAS ACAROIDES	12	1.4	22.54	5.4	2.84	5.2	0	0.0
STELXOMONAS DICHOTOMA	12	1.4	0.88	0.2	0.17	0.3	0	0.0
SYNURA SPINOSA	308	36.6	140.36	33.8	21.42	39.7	0	0.0
UROGLENOPSIS AMERICANA	12	1.4	1.04	0.2	0.19	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	52	6.1	3.83	0.9	0.74	1.3	0	0.0
CRYPTOPHYCEAE	280	33.3	118.22	28.4	16.45	30.5	0	0.0
CRYPTOMONAS OVATA	52	6.1	68.80	16.5	9.10	16.9	0	0.0
CRYPTOMONAS REFLEXA	4	0.4	22.54	5.4	2.45	4.5	0	0.0
RHODOMONAS MINUTA	224	26.6	26.88	6.4	4.90	9.1	0	0.0
MYXOPHYCEAE	4	0.4	1.66	0.4	0.25	0.4	0	0.0
CHROCOCCUS SPP.	4	0.4	1.66	0.4	0.25	0.4	0	0.0
DINOPHYCEAE	12	1.4	19.46	4.6	2.50	4.6	0	0.0
PERIDINIUM PUSILLUM	12	1.4	19.46	4.6	2.50	4.6	0	0.0
CHLOROMONADOPHYCEAE	4	0.4	36.00	8.6	3.68	6.8	0	0.0
GONYSTROMUM SPP.	4	0.4	36.00	8.6	3.68	6.8	0	0.0
SAMPLE TOTALS	840		415.12		55.84		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 02/10/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	76	9.0	16.28	4.6	2.65	5.9	0	0.0
ANKISTRODESMUS FALCATUS	32	3.8	2.09	0.5	0.41	0.9	0	0.0
CHLAMYDOMONAS	32	3.8	8.70	2.4	1.42	3.1	0	0.0
SCENEDESMUS BIJUGA	4	0.4	1.09	0.3	0.17	0.3	0	0.0
STAUROSTRUM SPP.	8	0.9	4.40	1.2	0.65	1.4	0	0.0
BACILLARIOPHYCEAE	168	20.0	84.90	24.1	6.78	15.2	0	0.0
ASTERIONELLA FORMOSA	24	2.8	26.81	7.6	1.85	4.1	0	0.0
HELOSIRA DISTANS	32	3.8	10.98	3.1	1.01	2.2	0	0.0
HELOSIRA SPP.	16	1.9	6.27	1.7	0.55	1.2	0	0.0
NITZSCHIA AGNITA	24	2.8	3.60	1.0	0.40	0.8	0	0.0
SYNEDRA SPP.	20	2.3	8.80	2.5	0.76	1.7	0	0.0
TABELLARIA FENESTRATA	8	0.9	13.59	3.8	0.85	1.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	32	3.8	9.29	2.6	0.89	2.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	12	1.4	5.55	1.5	0.47	1.0	0	0.0
CHRYSOPHYCEAE	332	39.7	82.43	23.5	12.81	28.7	0	0.0
AULOMONAS PURDYI	12	1.4	0.30	0.0	0.06	0.1	0	0.0
ERKENIA SUBAEQUICILIATA	40	4.7	1.76	0.5	0.36	0.8	0	0.0
HALLOMONAS ACAROIDES	8	0.9	15.02	4.2	1.89	4.2	0	0.0
STELIXOMONAS DICHOTOMA	120	14.3	8.81	2.5	1.71	3.8	0	0.0
SYNURA SPINOSA	120	14.3	54.68	15.5	8.34	18.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	32	3.8	2.36	0.6	0.45	1.0	0	0.0
CRYPTOPHYCEAE	248	29.6	130.81	37.2	18.29	41.1	0	0.0
CRYPTOMONAS OVATA	84	10.0	111.13	31.6	14.70	33.0	0	0.0
RHODOMONAS MINUTA	164	19.6	19.68	5.5	3.59	8.0	0	0.0
MYXOPHYCEAE	8	0.9	3.80	1.0	0.57	1.2	0	0.0
OSCELLATORIA GEMINATA	8	0.9	3.80	1.0	0.57	1.2	0	0.0
DINOPHYCEAE	4	0.4	32.72	9.3	3.39	7.6	0	0.0
PERIDINIUM SPP.	4	0.4	32.72	9.3	3.39	7.6	0	0.0
SAMPLE TOTALS	836		351.44		44.49		0	

40

PHYTOPLANKTON STANDING CROP II

STATION: 215.0 SAMPLE DATE: 02/10/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	40	7.0	4.49	1.4	0.80	2.1	0	0.0
ANKISTRODESPIUS FALCATUS	28	4.5	1.83	0.5	0.36	0.9	0	0.0
FRANCEIA DROESCHERI	4	0.6	0.68	0.2	0.11	0.2	0	0.0
LAGERHEIMIA SUBSALSA	4	0.6	0.66	0.2	0.11	0.2	0	0.0
SCENEDESMUS QUAPRICAUDA	4	0.6	0.93	0.3	0.15	0.4	0	0.0
COCCOID GREENS	4	0.6	0.39	0.1	0.07	0.1	0	0.0
BACILLARIOPHYCEAE	132	21.2	60.79	19.6	4.63	12.4	0	0.0
MELOSIRA AMBIGUA	8	1.2	27.00	8.7	1.43	3.8	0	0.0
MELOSIRA DISTANS	20	3.2	6.86	2.2	0.63	1.6	0	0.0
NITZSCHIA ACICULARIS	4	0.6	1.69	0.5	0.14	0.3	0	0.0
NITZSCHIA AGNITA	32	5.1	4.80	1.5	0.54	1.4	0	0.0
SKELTONEMA POTAMOS	8	1.2	0.43	0.1	0.06	0.1	0	0.0
SYNEDRA PLANKTONICA	8	1.2	4.22	1.3	0.35	0.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	48	7.7	13.93	4.5	1.33	3.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	4	0.6	1.85	0.5	0.15	0.4	0	0.0
CHRYSOPHYCEAE	136	21.9	21.85	7.0	3.65	9.8	0	0.0
ERKENIA SUBAEQUICILIATA	28	4.5	1.23	0.3	0.25	0.6	0	0.0
KEPHYRION LITTORALE	4	0.6	0.32	0.1	0.06	0.1	0	0.0
OCHROMONAS SPP.	24	3.8	5.25	1.6	0.88	2.3	0	0.0
STELIXOMONAS DICHTOMA	28	4.5	2.05	0.6	0.40	1.0	0	0.0
SYMURA SPINOSA	24	3.8	10.94	3.5	1.66	4.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	28	4.5	2.06	0.6	0.40	1.0	0	0.0
CRYPTOPHYCEAE	284	45.8	125.51	40.6	17.85	47.9	0	0.0
CRYPTOMONAS OVATA	76	12.2	100.55	32.5	13.30	35.7	0	0.0
RHODOMONAS MINUTA	208	33.5	24.96	8.0	4.55	12.2	0	0.0
MYXOPHYCEAE	12	1.9	4.59	1.4	0.70	1.8	0	0.0
OSCILLATORIA GEMINATA	8	1.2	3.80	1.2	0.57	1.5	0	0.0
OSCILLATORIA LIMNETICA	4	0.6	0.78	0.2	0.13	0.3	0	0.0
EUGLENOPHYCEAE	4	0.6	26.12	8.4	2.79	7.4	0	0.0
TRACHELONONAS HISPIDA	4	0.6	26.12	8.4	2.79	7.4	0	0.0
DINOPHYCEAE	8	1.2	65.45	21.1	6.78	18.2	0	0.0
PERIDINIUM SPP.	8	1.2	65.45	21.1	6.78	18.2	0	0.0
SAMPLE TOTALS	620		308.79		37.20		0	

PHYTOPLANKTON STANDING CROP II

STATION: 215.0 SAMPLE DATE: 02/10/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	56	8.4	5.02	2.5	0.56	3.8	0	0.0
AMBISTRODESMUS FALCATUS	28	6.6	1.83	1.5	0.36	2.4	0	0.0
SCENEDESMUS QUADRICAUDA	4	0.9	0.93	0.7	0.15	1.0	0	0.0
SELENASTRUM MINUTUM	4	0.9	0.27	0.2	0.05	0.3	0	0.0
BACILLARIOPHYCEAE	140	33.0	69.62	62.0	4.24	29.1	0	0.0
HELOSIRA DISTANS	32	7.5	10.98	9.3	1.01	6.9	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	4	0.9	3.45	2.9	0.25	1.7	0	0.0
NITZSCHIA AGNITA	20	4.7	3.00	2.5	0.33	2.2	0	0.0
RHIZOLENIA SPP.	4	0.9	8.64	7.3	0.50	3.4	0	0.0
SKELETONEMA POTAMUS	20	4.7	1.07	0.9	0.15	1.0	0	0.0
SYNEURA SPP.	20	4.7	8.80	7.4	0.76	5.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	28	6.6	8.13	6.8	9.77	5.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	12	2.8	5.55	4.7	0.47	3.2	0	0.0
CHRYSOPHYCEAE	164	38.6	15.29	12.9	2.77	19.0	0	0.0
AULOMONAS PURDYI	8	1.8	0.20	0.1	0.04	0.2	0	0.0
ERKENIA SURAEQUICILIATA	20	4.7	0.88	0.7	0.18	1.2	0	0.0
OCHROMONAS SPP.	8	1.8	1.75	1.4	0.29	1.9	0	0.0
STELXOMONAS DICHOATOMA	100	23.5	7.34	6.2	1.43	9.8	0	0.0
SYNEURA SPIRITSA	8	1.8	3.65	3.0	0.55	3.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	20	4.7	1.47	1.2	0.28	1.9	0	0.0
CRYPTOPHYCEAE	64	15.0	46.17	39.1	6.30	43.3	0	0.0
CRYPTOPHONAS OVATA	32	7.5	42.34	35.8	5.60	38.5	0	0.0
RHOODONAS MINUTA	32	7.5	3.84	3.2	0.70	4.8	0	0.0
MYXOPHYCEAE	20	4.7	3.92	3.3	0.67	4.6	0	0.0
OSCELLATORIA LIMBETICA	20	4.7	3.92	3.3	0.67	4.6	0	0.0

SAMPLE TOTALS 424 118.03 14.54 0

PHYTOPLANKTON STANDINGS CROP II

LOCATION: 220.0 SAMPLE DATE: 02/10/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	60	5.4	11.77	1.1	1.79	2.1	0	0.0
ANKISTRODESPIRIS FALCATUS	46	4.0	2.67	0.2	0.56	0.6	0	0.0
COSTARIUM S.P.	4	0.3	1.72	0.1	0.26	0.3	0	0.0
DICTYOSPHAERIUM EHREMBERGIANUM	4	0.3	6.10	0.5	0.79	0.9	0	0.0
FRANCEIA BROESCHERI	4	0.3	0.68	0.0	0.11	0.1	0	0.0
COCCOID GREENS	4	0.3	0.59	0.0	0.07	0.0	0	0.0
BACILLARIOPHYCEAE	468	42.7	751.45	71.6	44.62	53.0	0	0.0
ASTERIONELLA FORMOSA	40	3.6	44.68	4.3	3.09	3.6	0	0.0
HELOSIRA AMBIGUA	68	6.2	229.50	22.5	12.16	14.3	0	0.0
HELOSIRA SPP.	52	4.7	20.36	2.0	1.61	2.1	0	0.0
NITZSCHIA AGNITA	20	1.8	3.00	0.2	0.33	0.3	0	0.0
RHIZOLENIA SPP.	4	0.3	8.64	0.8	0.50	0.5	0	0.0
SKELETONEMA POTAMOS	8	0.7	0.43	0.0	0.06	0.0	0	0.0
STEPHANODISCUS SPP.	4	0.3	0.94	0.0	0.09	0.1	0	0.0
SYNEDRA SPP.	8	0.7	3.52	0.3	0.30	0.3	0	0.0
TABELLARIA FENESTRATA	244	22.2	414.56	40.7	25.93	30.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	20	1.8	5.80	0.5	0.55	0.6	0	0.0
CHRYSOPHYCEAE	320	29.1	90.94	8.9	14.26	16.8	0	0.0
AULOPHOS PURDYI	4	0.3	0.10	0.0	0.02	0.0	0	0.0
ERKENIA SUBAEQUICILIATA	40	3.6	1.76	0.1	0.36	0.4	0	0.0
STELXOPHOS F. CHOTONA	64	5.8	4.70	0.4	0.91	1.0	0	0.0
SYMBURA SPINOSA	180	16.4	82.03	8.0	12.52	14.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	52	2.9	2.36	0.2	0.45	0.5	0	0.0
CRYPTOPHYCEAE	236	21.5	171.50	16.8	22.07	26.1	0	0.0
CRYPTOPHOS OVATA	64	5.8	84.67	8.3	11.20	13.2	0	0.0
CRYPTOPHOS REFLEXA	12	1.0	67.63	6.6	7.37	8.7	0	0.0
RHODOPHOS MINUTA	160	14.5	19.20	1.8	3.50	4.1	0	0.0
MYXOPHYCEAE	8	0.7	1.57	0.1	0.26	0.3	0	0.0
OSCILLATORIA LIMBETICA	8	0.7	1.57	0.1	0.26	0.3	0	0.0
DINOPHYCEAE	4	0.3	10.55	1.0	1.27	1.5	0	0.0
PERICINIUM INCONSPICUUM	4	0.3	10.55	1.0	1.27	1.5	0	0.0
SAMPLE TOTALS	1096		1017.77		84.47		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 02/10/67 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/L	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	108	9.3	12.68	1.5	2.24	2.9	0	0.0
AMPHISTRODESMUS FALCATUS	80	6.5	5.22	0.6	1.03	1.3	0	0.0
CHLAMYDOMONAS	24	2.0	6.53	0.8	1.06	1.4	0	0.0
SCENEDESMUS QUADRICAUDA	4	0.3	0.92	0.1	0.15	0.1	0	0.0
BACILLARIOPHYCEAE	324	26.0	546.37	65.8	53.24	44.1	0	0.0
ASTERIONELLA FORMOSA	36	3.1	40.21	4.8	2.78	3.6	0	0.0
MELOSIRA AMBIGUA	48	4.1	162.00	19.5	8.53	11.3	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	16	1.3	13.81	1.6	1.01	1.3	0	0.0
NITZSCHIA AGNITA	28	2.4	4.20	0.5	0.47	0.6	0	0.0
RHIZOSOLENIA SPP.	8	0.6	17.27	2.0	1.01	1.3	0	0.0
STEPHANODISCUS SPP.	4	0.3	0.94	0.1	0.09	0.1	0	0.0
SYNEURA PLANKTONICA	4	0.3	2.11	0.2	0.17	0.2	0	0.0
TABELLARIA FENESTRATA	180	15.5	305.82	36.8	19.13	25.3	0	0.0
CHRYSOPHYCEAE	244	21.1	86.53	10.4	13.33	17.6	0	0.0
ERKENIA SUBAEQUICILIATA	20	1.7	0.88	0.1	0.18	0.2	0	0.0
MALLOPHIAS TONGRATA	8	0.6	5.56	0.6	0.90	1.0	0	0.0
STELXOMONAS DJIHOTOMA	16	1.3	1.17	0.1	0.22	0.2	0	0.0
SYNURA SPINOSA	168	14.5	76.56	9.2	11.68	15.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	32	2.7	2.36	0.2	0.45	0.5	0	0.0
CRYPTOPHYCEAE	464	40.1	167.69	20.2	24.49	32.4	0	0.0
CRYPTOMONAS EROSA	16	1.3	8.06	0.9	1.21	1.6	0	0.0
CRYPTOMONAS OVATA	88	7.6	116.42	14.0	25.40	29.4	0	0.0
RHOZOMONAS MINUTA	360	31.1	43.20	5.2	7.88	10.4	0	0.0
MYXOPHYCEAE	16	1.3	15.85	1.9	2.07	2.7	0	0.0
ANABAENA MISCOWIENSE	8	0.6	14.28	1.7	1.81	2.4	0	0.0
OSCELLATORIA LIMNETICA	8	0.6	1.57	0.1	0.26	0.3	0	0.0

SAMPLE TOTALS 1156 829.11 75.37 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 02/10/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	ML /H	% TOTAL	MG/H	% TOTAL	MM ² /H	% TOTAL
CHLOROPHYCEAE	76	11.4	0.11	1.2	1.45	2.7	0	0.0
ANKISTRODESPIUS FALCATUS	60	9.0	3.92	0.5	0.77	1.4	0	0.0
CHLAMYDOMONAS	12	1.8	3.26	0.4	0.53	1.0	0	0.0
SCENEDESPIUS QUADRICAUDA	4	0.6	0.93	0.1	0.15	0.2	0	0.0
BACILLARIOPHYCEAE	212	31.9	467.66	71.4	26.42	50.1	0	0.0
HELOSIRA AMBIGUA	92	13.8	310.50	47.4	16.45	31.2	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	16	2.4	13.81	2.1	1.01	1.9	0	0.0
NITZSCHIA AGNITA	20	3.0	3.00	0.4	0.33	0.6	0	0.0
SKELETONEMA POTAMUS	8	1.2	0.43	0.0	0.06	0.1	0	0.0
TABELLARIA FENESTRATA	36	5.4	61.16	9.3	3.82	7.2	0	0.0
TABELLARIA FLOCCULOSA	40	6.0	78.76	12.0	4.75	9.0	0	0.0
CHRYSOPHYCEAE	148	22.2	55.58	8.4	8.54	16.2	0	0.0
ERKENIA ZURAEVICILIATA	20	3.0	0.88	0.1	0.18	0.3	0	0.0
MALLOMONAS TORCOURATA	4	0.6	2.78	0.4	0.40	0.7	0	0.0
STOLEMONAS DICHOTOMA	17	1.8	0.88	0.1	0.17	0.3	0	0.0
SYNURA SPINOSA	112	16.8	51.04	7.8	7.79	14.7	0	0.0
CRYPTOPHYCEAE	220	33.1	120.18	18.3	15.89	30.1	0	0.0
CRYPTOMONAS ERGSA	4	0.6	2.02	0.3	0.30	0.5	0	0.0
CRYPTOMONAS CVATA	40	6.0	52.92	8.0	7.00	13.2	0	0.0
CRYPTOMONAS REFLEXA	3	1.2	45.09	6.8	4.91	9.3	0	0.0
RHODOMONAS MINUTA	168	25.3	20.16	3.0	3.68	6.9	0	0.0
MYXOPHYCEAE	8	1.2	2.69	0.4	0.41	0.7	0	0.0
OSCELLATORIA GEMINATA	4	0.6	1.90	0.2	0.28	0.5	0	0.0
OSCELLATORIA LIMNETICA	4	0.6	0.78	0.1	0.13	0.2	0	0.0

SAMPLE TOTALS 664 654.22 52.71 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 02/10/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	76	13.9	6.52	1.0	1.20	2.7	0	0.0
ANKISTRODESMIUS FALCATUS	72	13.2	4.70	0.7	0.93	2.1	0	0.0
MICRACTINIUM PUSILLUM	4	0.7	1.82	0.3	0.27	0.6	0	0.0
BACILLARIOPHYCEAE	324	59.5	504.94	84.0	30.93	70.2	0	0.0
ASTERIONELLA FORMOSA	20	3.6	22.34	3.7	1.54	3.4	0	0.0
HELOSIRA AMBIGUA	56	10.2	189.00	31.4	10.01	22.7	0	0.0
HELOSIRA DISTANS	32	5.8	19.98	1.8	1.01	2.2	0	0.0
HELOSIRA GRANULATA VAR. ANGRUSTISSIMA	60	11.0	51.80	8.6	3.81	8.6	0	0.0
NITZSCHIA AGNITA	16	2.9	2.40	0.3	0.27	0.6	0	0.0
STEPHANODISCUS SPP.	4	0.7	0.94	0.1	0.09	0.2	0	0.0
SYNEDRA SPP.	8	1.4	3.52	0.5	0.30	0.6	0	0.0
TABELLARIA FENESTRATA	104	19.1	176.70	29.4	11.05	25.1	0	0.0
TABELLARIA FLOCCULOSA	24	4.4	47.26	7.8	2.85	6.4	0	0.0
CHRYSOPHYCEAE	40	7.3	15.17	2.5	2.33	5.2	0	0.0
SYNURA SPINOSA	32	5.8	14.58	2.4	2.22	5.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	8	1.4	0.59	0.0	0.11	0.2	0	0.0
CRYPTOPHYCEAE	92	16.9	63.61	10.5	8.26	18.7	0	0.0
CRYPTOMONAS EROSA	4	0.7	2.02	0.3	0.30	0.6	0	0.0
CRYPTOMONAS OVATA	24	4.4	31.75	5.2	4.20	9.5	0	0.0
CRYPTOMONAS REFLEXA	4	0.7	22.54	3.7	2.45	5.5	0	0.0
RHODOMONAS MINUTA	60	11.0	7.20	1.1	1.31	2.9	0	0.0
MYXOPHYCEAE	8	1.4	0.09	0.0	0.02	0.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	8	1.4	0.09	0.0	0.02	0.0	0	0.0
DINOPHYCEAE	4	0.7	10.55	1.7	1.27	2.8	0	0.0
PERIDINIUM INCONSPICUUM	4	0.7	10.55	1.7	1.27	2.8	0	0.0
SAMPLE TOTALS	544		600.77		44.01		0	

PHYTOPLANKTON STANDING CROP II

LOCATOR: 210.0 SAMPLE DATE: 03/10/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	PM ³ /M ³	% TOTAL	MG/M ³	% TOTAL	CM ² /M ³	% TOTAL
CHLOROPHYCEAE	21	5.7	3.55	1.0	0.59	1.8	0	0.0
ANKISTRODESMUS FALCATUS	11	3.0	0.70	0.1	0.13	0.4	0	0.0
CHLAMYDOMONAS	5	1.3	1.44	0.4	0.23	0.7	0	0.0
SCHROEDERIA SETIGERA	5	1.3	1.41	0.4	0.23	0.7	0	0.0
BACILLARIOPHYCEAE	223	60.9	200.15	57.2	14.32	44.9	0	0.0
GOMPHOREMA SPP.	5	1.3	2.81	0.8	0.23	0.7	0	0.0
HELOSIRA GRANULATA	5	1.3	13.67	3.5	0.77	2.4	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	160	43.7	138.32	39.5	10.19	31.9	0	0.0
STEPHANODISCUS SPP.	5	1.3	1.25	0.3	0.12	0.3	0	0.0
TABELLARIA FENESTRATA	21	5.7	36.36	10.3	2.27	7.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	27	7.3	7.75	2.2	0.74	2.3	0	0.0
CHRYSOPHYCEAE	64	17.4	10.83	3.0	1.79	5.6	0	0.0
STELIXONIAS DICHOTOMA	11	3.0	0.79	0.2	0.15	0.4	0	0.0
SYNURA SPINOSA	6	4.3	7.29	2.0	1.11	3.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	7	10.1	2.76	0.7	0.53	1.6	0	0.0
CRYPTOPHYCEAE	53	14.4	100.48	28.7	11.47	36.0	0	0.0
CRYPTOPHYCIAS OVATA	21	5.7	8.39	2.3	1.30	4.0	0	0.0
CRYPTOPHYCIAS REFLEXA	16	4.3	90.18	25.7	9.82	30.8	0	0.0
RHODOPHYCIAS MINUTA	16	4.3	1.92	0.5	0.35	1.0	0	0.0
EUGLENOPHYCEAE	5	1.3	34.61	9.9	3.69	11.5	0	0.0
TRACHELOPHYCIAS HISPIDA	5	1.3	34.61	9.9	3.69	11.5	0	0.0
SAMPLE TOTALS	566		349.63		31.86		0	

PHYTOPLANKTON STANDING CROP II

STATION: 210.0 SAMPLE DATE: 05/10/67 TIME: 0900 DEPTH(M): 5.0

	UNITS/ML	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
		% TOTAL	MM ³ /M	% TOTAL	MM ³ /M	% TOTAL	MM ² /M	% TOTAL	MM ² /M
CHLOROPHYCEAE	10	2.0	0.65	0.1	0.12	0.3	0	0.0	0.0
ANKYSTRODESPIUS FALCATUS	10	2.0	0.65	0.1	0.12	0.3	0	0.0	0.0
BACILLARIOPHYCEAE	210	42.8	229.23	66.7	15.17	48.9	0	0.0	0.0
GOMONEMA SPP.	10	2.0	3.53	1.0	0.32	1.0	0	0.0	0.0
MELOSIRA GRANULATA VAR. ANGIUSTISSIMA	110	22.4	95.06	2.2	7.00	22.5	0	0.0	0.0
NITZSCHIA AGNITA	10	2.0	1.50	.4	0.16	0.5	0	0.0	0.0
TABELLARIA FLOCCULOSA	66	12.2	118.34	35.2	7.14	23.0	0	0.0	0.0
UNIDENTIFIED CENTRATE DIATOMS	20	4.0	5.80	1.7	0.55	1.7	0	0.0	0.0
CHRYSOPHYCEAE	110	22.4	7.64	2.2	1.48	4.7	0	0.0	0.0
AULACONAS PURDYI	10	2.0	0.25	0.0	0.05	0.1	0	0.0	0.0
KEPHYRIUM LITTORALE	10	2.0	0.78	0.2	0.15	0.4	0	0.0	0.0
STELAXONAS DICHOTOMA	90	18.3	6.61	1.9	1.28	4.1	0	0.0	0.0
CRYPTOPHYCEAE	160	32.6	103.55	30.8	14.54	65.9	0	0.0	0.0
CRYPTONONAS OVATA	70	14.2	92.74	27.5	12.27	39.5	0	0.0	0.0
RHODONONAS MINUTA	90	18.3	10.81	3.2	1.97	6.3	0	0.0	0.0

SAMPLE TOTALS 490 356.07 31.01 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 05/10/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	40	7.0	4.70	1.9	0.82	3.5	0	0.0
ANKISTRODESMIUS FALCATUS	20	3.5	1.31	0.5	0.25	1.0	0	0.0
CHLAMYDOMONAS	10	1.7	2.72	1.1	0.44	1.8	0	0.0
SELENASTRUM MINUTUM	10	1.7	0.67	0.2	0.15	0.5	0	0.0
BACILLARIOPHYCEAE	330	57.8	181.84	75.4	14.50	62.0	0	0.0
MEIOSIRA GRANULATA VAR. ANGUSTISSIMA	130	22.8	112.33	46.4	8.27	35.4	0	0.0
MEIOSIRA SPP.	110	19.2	43.16	17.5	3.85	16.4	0	0.0
SKELETONEMA POTAMUS	30	5.2	1.61	0.6	0.23	0.9	0	0.0
SYNEDRA RUMPENS	30	5.2	14.32	5.9	1.21	5.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	20	3.5	5.80	2.4	0.55	2.3	0	0.0
UNIDENTIFIED PENNATE DIATOMS	10	1.7	4.63	1.9	0.39	1.6	0	0.0
CHRYSOPHYCEAE	110	19.2	7.60	3.1	1.47	6.2	0	0.0
AULOMONAS PURDYI	10	1.7	0.25	0.1	0.05	0.2	0	0.0
STELIXOMONAS DICHOTOMA	90	15.7	6.61	2.7	1.28	5.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	10	1.7	0.74	0.3	0.14	0.5	0	0.0
CRYPTOPHYCEAE	90	15.7	46.90	19.4	6.56	28.0	0	0.0
CRYPTOMONAS OVATA	30	5.2	39.69	16.4	5.25	22.4	0	0.0
RHODOMONAS MINUTA	60	10.5	7.21	2.9	1.31	5.6	0	0.0
SAMPLE TOTALS	570		241.03		23.35		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 03/10/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
BACILLARIOPHYCEAE	340	65.3	101.49	71.5	14.71	58.7	0	0.0
CYRSELLA MINUTA	10	1.9	8.27	3.2	0.61	2.4	0	0.0
HELOSIRA DISTANS	120	23.0	41.22	16.2	5.79	15.1	0	0.0
HELOSIRA GRANULATA VAR. AEROSTISSIMA	110	21.1	95.06	37.4	7.00	27.9	0	0.0
HELOSIRA SPP.	80	15.3	31.40	12.3	2.80	11.1	0	0.0
NITZSCHIA AGNITA	10	1.9	1.50	0.5	0.16	0.6	0	0.0
NITZSCHIA PALEA	10	1.9	4.05	1.5	0.35	1.3	0	0.0
CHRYSOPHYCEAE	110	21.1	15.78	6.2	2.68	10.7	0	0.0
KEPHYRON LITTORALE	10	1.9	0.78	0.3	0.15	0.5	0	0.0
STELXOPHYIAS DICHOTOMA	60	11.5	4.41	1.7	0.86	3.4	0	0.0
SYMBURA SPINOSA	20	3.8	9.11	3.5	1.39	5.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	20	3.8	1.47	0.5	0.28	1.1	0	0.0
CRYPTOPHYCEAE	70	13.4	56.52	22.2	7.65	30.5	0	0.0
CRYPTOPHYIAS OVATA	40	7.6	52.92	20.8	7.00	27.9	0	0.0
RHODOPHYIAS MINUTA	30	5.7	3.60	1.4	0.65	2.5	0	0.0

SAMPLE TOTALS 520 253.79 25.04 0

PHYTOPLANKTON STANDING: TOP II

LOCATION: 215.0 SAMPLE DATE: 03/10/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	PM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	180	13.9	31.42	5.2	5.27	7.1	0	0.0
AKISTOPELUS FALCATUS	50	3.8	3.27	0.5	0.64	0.8	0	0.0
CHLAMYDOMONAS	50	3.8	13.63	2.2	2.22	3.0	0	0.0
CRUCIGYRIA CRUCIFERA	10	0.7	1.37	0.2	0.24	0.3	0	0.0
SCENEDESMUS ACUMINATUS	10	0.7	5.63	0.9	0.83	1.1	0	0.0
SCENEDESMUS BIJUGA	10	0.7	2.20	0.3	0.37	0.5	0	0.0
TREUBARIA SETIGERUM	10	0.7	1.39	0.2	0.24	0.3	0	0.0
COCOID GREENS	40	3.1	3.93	0.6	0.73	0.9	0	0.0
BACILLARIOPHYCEAE	290	22.4	165.00	27.3	12.62	17.1	0	0.0
ASTERIONELLA FURCATA	10	0.7	11.17	1.8	0.77	1.0	0	0.0
MELOSIRA DISTANS	20	1.5	6.86	1.1	0.63	0.8	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	90	6.9	77.79	12.8	5.73	7.7	0	0.0
MELOSIRA SPP.	10	0.7	3.92	0.6	0.34	0.4	0	0.0
NAVICULA SPP.	10	0.7	5.86	0.9	0.47	0.6	0	0.0
NITZSCHIA ACICULARIS	10	0.7	4.24	0.7	0.37	0.5	0	0.0
NITZSCHIA AGNITA	50	2.3	4.50	0.7	0.50	0.6	0	0.0
SKELETOGMA POTAMUS	40	3.1	2.14	0.3	0.30	0.4	0	0.0
TABELLARIA FENESTRATA	20	1.5	33.98	5.6	2.12	2.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	50	3.8	14.54	2.4	1.39	1.8	0	0.0
CHRYCOPHYCEAE	400	31.0	63.48	10.5	10.67	14.4	0	0.0
CHRYSOCOCUS RUFESCENS	10	0.7	3.87	0.6	0.60	0.8	0	0.0
DINIBRYON BAVARICUM	20	1.5	5.63	0.9	0.91	1.2	0	0.0
STELXOMONAS DICHOTOMA	300	23.2	22.04	5.6	4.79	5.8	0	0.0
SYRURA SPINOSA	70	5.4	31.94	5.2	4.87	6.6	0	0.0
CRYPTOPHYCEAE	390	30.2	290.38	48.0	38.54	52.3	0	0.0
CRYPTOMONAS ERGSA	20	1.5	10.08	1.6	1.51	2.0	0	0.0
CRYPTOMONAS OVATA	150	11.6	198.71	32.8	26.29	35.6	0	0.0
CRYPTOMONAS REFLEXA	10	0.7	56.36	9.3	6.14	8.3	0	0.0
RHODOMONAS MINUTA	210	16.2	25.22	4.1	4.60	6.2	0	0.0
MYXOPHYCEAE	10	0.7	1.96	0.3	0.33	0.4	0	0.0
OSCILLATORIA LIMBETICA	10	0.7	1.96	0.3	0.33	0.4	0	0.0
EUGLENOPHYCEAE	10	0.7	25.47	4.2	3.08	4.1	0	0.0
TRACHELOMONAS ACANTHOSTOMA	10	0.7	25.47	4.2	3.08	4.1	0	0.0
DINOPHYCEAE	10	0.7	26.37	4.3	3.18	4.3	0	0.0
PERIDINIUM INCONSPICUUM	10	0.7	26.37	4.3	3.18	4.3	0	0.0

SAMPLE TOTALS 1290 674.08 73.69 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 03/10/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	340	16.6	112.75	11.2	16.70	14.1	0	0.0
AMBISTRODESPUS FALCATUS	80	3.9	5.23	0.5	1.03	0.8	0	0.0
CHLAMYDOMONAS	100	4.8	27.25	2.7	4.45	3.7	0	0.0
COCCHIDIUM ORBICULARIS	20	0.9	6.80	0.6	1.07	0.9	0	0.0
DICTYOSPHAERIUM EHRENBURGERIANUM	40	1.9	61.19	6.0	7.94	6.7	0	0.0
SCENEDIUS BI-NIGRA	20	0.9	4.60	0.4	0.74	0.6	0	0.0
COCCOID GREENS	80	3.9	7.88	0.7	1.47	1.2	0	0.0
BACILLARIOPHYCEAE	641	31.3	393.33	39.1	30.50	25.8	0	0.0
ACHNANTHES SPP.	20	0.9	3.07	0.3	0.34	0.2	0	0.0
ACTERIONELLA FORMOSA	40	1.9	44.79	4.4	3.10	2.6	0	0.0
CYCLOTILLA SPP.	60	2.9	18.09	1.7	1.72	1.4	0	0.0
PELOSICA GRANULATA VAR. ANCUS-TRISSIMA	301	14.7	259.45	25.8	19.12	16.1	0	0.0
PELOSICA SPP.	40	1.9	15.72	1.5	1.40	1.1	0	0.0
NAVICULA SPP.	20	0.9	11.73	1.1	0.94	0.7	0	0.0
SKELETONEMA POTAMOS	40	1.9	2.15	0.2	0.31	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	100	4.8	29.08	2.8	2.78	2.3	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.9	9.26	0.9	0.79	0.6	0	0.0
CHRYSOPHYCEAE	661	32.7	230.53	32.9	21.19	37.9	0	0.0
CHRYSOCOCCLUS RUFESCENS	40	1.9	15.52	1.5	2.42	2.0	0	0.0
MALLORNAS ALLANTOIDES	20	0.9	12.51	1.2	1.83	1.5	0	0.0
MALLORNAS TONGURATA	20	0.9	13.91	1.3	2.00	1.6	0	0.0
STELIXOPHNAS DICHOPTOMA	441	21.5	32.34	3.2	6.30	5.3	0	0.0
SYNURA SPINDSA	120	5.8	54.78	5.4	8.36	7.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	20	0.9	1.47	0.1	0.26	0.2	0	0.0
CRYPTOPHYCEAE	400	19.5	369.01	36.6	49.73	42.1	0	0.0
CRYPTOPHNAS EROSA	20	0.9	10.08	1.0	1.51	1.2	0	0.0
CRYPTOPHNAS OVATA	260	12.7	344.51	34.2	45.59	38.5	0	0.0
RHOZOPHNAS MINUTA	120	5.8	14.42	1.4	2.63	2.2	0	0.0

SAMPLE TOTALS

2042 1005.62 118.12 0

PHYTOPLANKTON STANDINGS CROP II

LOCATION: 215.0 SAMPLE DATE: 05/10/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIO-VOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	150	16.3	40.15	14.0	8.26	17.8	0	0.0
AETHIODECYS FALCATUS	50	5.4	3.27	0.7	0.64	1.3	0	0.0
CHLAMYDOMONAS	50	5.4	13.63	3.1	2.22	4.7	0	0.0
LAGERHEIMIA SUBSALSA	10	1.0	1.65	0.3	0.28	0.6	0	0.0
MICRACETINIUM POSILLUM	10	1.0	4.54	1.0	0.69	1.4	0	0.0
SPHAROCYSTIS SCHRETERI	10	1.0	55.09	8.2	4.07	8.7	0	0.0
COCCOID GREENS	20	2.1	1.97	0.4	0.34	0.7	0	0.0
BLUZZIARIOPHYCEAE	210	22.8	170.04	39.7	9.64	20.8	0	0.0
NITZSCHIA AGRIETA	10	1.0	1.50	0.3	0.16	0.3	0	0.0
SKELETONEMA POTAMUS	200	10.8	5.34	2.2	0.77	1.6	0	0.0
SYNDRA ULNA	20	2.1	126.34	29.5	5.75	12.4	0	0.0
TERPSIMON AMERICANUM	20	1.0	16.50	3.8	1.03	2.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	70	7.6	20.34	4.7	1.95	4.2	0	0.0
CHRYSOPHYCEAE	360	39.1	54.24	12.4	9.16	19.7	0	0.0
AULODONAS PUDDYI	30	3.2	0.75	0.1	0.16	0.3	0	0.0
COCCONAS ANNULATA	10	1.0	0.82	0.1	0.15	0.3	0	0.0
OCHRODONAS SPP.	40	4.3	8.74	2.0	1.47	3.1	0	0.0
STELIXONAS DICHOTOMA	160	17.3	11.76	2.7	2.29	4.9	0	0.0
SYNDRA SPINOSA	60	6.5	27.39	6.4	4.18	9.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	40	4.3	2.95	0.6	0.57	1.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	20	2.1	1.84	0.4	0.34	0.7	0	0.0
CRYPTOPHYCEAE	170	18.4	104.74	24.5	14.44	31.1	0	0.0
CRYPTONONAS OVATA	70	7.6	92.74	21.7	12.27	26.4	0	0.0
RHODONONAS MEMUTA	100	10.8	12.01	2.8	2.19	4.7	0	0.0
MYXOPHYCEAE	20	2.1	8.31	1.9	1.28	2.7	0	0.0
CHROOCOCUS SPP.	20	2.1	8.31	1.9	1.28	2.7	0	0.0
EUGLENOPHYCEAE	10	1.0	29.82	6.9	3.53	7.6	0	0.0
TRACHELONONAS SPP.	10	1.0	29.82	6.9	3.53	7.6	0	0.0

SAMPLE TOTALS

427.33

46.35

0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.6 SAMPLE DATE: 03/10/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIODIVULPHE		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	90	11.6	12.00	1.4	2.10	3.2	0	0.0
AHR ISTRODESSES FALCATUS	60	7.7	3.92	0.4	0.77	1.2	0	0.0
CHLAMYDOMONAS	30	3.8	0.16	0.9	1.33	2.0	0	0.0
BACILLARIOPHYCEAE	360	46.7	600.54	73.9	55.42	55.5	0	0.0
FRUSTULIA RHODOIDES	10	1.2	9.28	1.1	0.57	1.0	0	0.0
MEIOSIRA CRABULATA VAR. ANGUSTISSIMA	140	18.1	120.96	14.7	6.91	13.9	0	0.0
MEIOSIRA ISLANDICA	120	15.5	437.28	53.1	22.74	35.6	0	0.0
NITZSCHIA AGNITA	10	1.2	1.50	0.1	0.16	0.2	0	0.0
SKELETONEMA POTAMOS	40	5.1	2.14	0.2	0.30	0.4	0	0.0
SYNEDRA ACUS	30	3.8	34.47	4.1	2.37	3.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	10	1.2	2.90	0.3	0.27	0.4	0	0.0
CHRYSOPHYCEAE	150	16.8	11.20	1.3	2.07	3.2	0	0.0
AULONANAS PURDYI	10	1.2	0.25	0.0	0.05	0.0	0	0.0
DINOBRYON BAVARICUM	10	1.2	2.62	0.3	0.45	0.7	0	0.0
STELIONANAS DICHOTOMA	90	11.6	6.61	0.8	1.20	2.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	10	1.2	0.74	0.0	0.14	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	10	1.2	0.79	0.0	0.15	0.2	0	0.0
CRYPTOPHYCEAE	160	23.5	161.11	19.5	20.60	32.3	0	0.0
CRYPTOPHYCAS OVATA	70	9.0	92.74	11.2	12.27	19.2	0	0.0
CRYPTOPHYCAS REFLEXA	10	1.2	56.36	6.8	6.14	9.4	0	0.0
RHODONANAS MINUTA	100	12.9	12.01	1.4	2.19	3.4	0	0.0
EUGLENOPHYCEAE	10	1.2	29.62	3.6	3.53	5.5	0	0.0
TRACHELONANAS SPP.	10	1.2	29.62	3.6	3.53	5.5	0	0.0
SAMPLE TOTALS	770		622.75		63.72		0	

PHYTOPLANKTON STANDING CROB: II

LOCATION: 220.0 SAMPLE DATE: 05/10/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	60	22.2	9.60	12.2	1.63	14.5	0	0.0
AMPHISTRODESPUS FALCATUS	30	11.1	1.96	2.5	0.30	3.3	0	0.0
CHLAMYDOMONAS	20	7.4	5.44	6.9	0.08	7.7	0	0.0
SCENEDESPUS BIJUGA	10	3.7	2.20	2.8	0.37	3.2	0	0.0
BACILLARIOPHYCEAE	20	7.4	5.90	7.5	0.54	4.7	0	0.0
NITZSCHIA AGNITA	10	3.7	1.50	1.9	0.16	1.4	0	0.0
SYNEDRA SPP.	10	3.7	4.40	5.6	0.30	3.3	0	0.0
CHRYSOPHYCEAE	130	48.1	16.30	20.8	2.04	25.0	0	0.0
DIATOMS SPP.	20	7.4	4.37	5.6	0.75	6.4	0	0.0
STELIONOMAS DICHOOMA	50	18.5	3.68	4.7	0.71	6.2	0	0.0
SYNEPSA SPINOSA	10	3.7	4.56	5.8	0.69	6.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	50	18.5	3.69	4.7	0.71	6.2	0	0.0
CRYPTOPHYCEAE	50	18.5	42.09	53.9	5.68	50.1	0	0.0
CRYPTOPHYCIAS OVATA	30	11.1	39.69	50.8	5.25	46.3	0	0.0
RHOZOMAS MINUTA	20	7.4	2.40	3.0	0.43	3.7	0	0.0
MYXOPHYCEAE	10	3.7	4.16	5.3	0.64	5.6	0	0.0
CHROOCOCUS SPP.	10	3.7	4.16	5.3	0.64	5.6	0	0.0
SAMPLE TOTALS	270		78.04		11.33		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/10/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	ML/M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	10	4.5	0.65	0.4	0.12	1.2	0	0.0
<i>AMBUSTRODESMEUS FALCATUS</i>	10	4.5	0.65	0.4	0.12	1.2	0	0.0
BACILLARIOPHYCEAE	130	59.0	124.55	94.6	0.41	86.5	0	0.0
<i>HELOSIRA DISTANS</i>	40	10.1	13.73	10.4	1.26	12.9	0	0.0
<i>SKELETONEMA PICTUM</i>	10	4.5	0.54	0.4	0.07	0.7	0	0.0
<i>SYNEURA PLANKTONICA</i>	10	4.5	5.28	4.0	0.43	4.4	0	0.0
<i>TABELLARIA FENESTRATA</i>	60	27.2	102.11	77.5	6.58	65.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	10	4.5	2.90	2.2	0.27	2.7	0	0.0
CHRYSOPHYCEAE	50	22.7	2.79	2.1	0.54	5.5	0	0.0
<i>AULOPHYIAS PURDYI</i>	20	9.0	0.50	0.3	0.11	1.1	0	0.0
<i>COCCONIAS ABBELATA</i>	10	4.5	0.82	0.6	0.15	1.5	0	0.0
<i>STELEOXYBIAS BICHOITOMA</i>	10	4.5	0.73	0.5	0.14	1.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	10	4.5	0.74	0.5	0.14	1.4	0	0.0
CRYPTOPHYCEAE	50	13.6	3.60	2.7	0.65	6.6	0	0.0
<i>RHOZOPHYIAS MINUTA</i>	50	13.6	3.60	2.7	0.65	6.6	0	0.0

SAMPLE TOTALS 220 131.59 9.72 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/10/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	20	5.0	5.18	0.6	0.55	1.1	0	0.0
SCENEDESMUS BILGUA	10	1.5	2.20	0.4	0.37	0.7	0	0.0
COCCOID GREENS	10	1.5	0.98	0.1	0.18	0.3	0	0.0
BACILLARIOPHYCEAE	450	66.1	359.11	68.2	24.67	52.9	0	9.0
PELOSIRA DISTANS	47	6.1	13.75	2.6	1.26	2.6	0	0.0
PELOSIRA DISTANS	70	10.7	24.06	4.6	2.21	4.7	0	0.0
PELOSIRA GRANULATA VAR. ANGUSTISSIMA	20	3.0	17.27	3.3	1.27	2.7	0	0.0
PELOSIRA ITALICA	100	15.3	152.25	29.6	9.78	20.9	0	0.0
PELOSIRA SPP.	70	10.7	27.68	5.3	2.45	5.2	0	0.0
SKELETONEMA POTANOS	30	4.6	1.61	0.3	0.25	0.4	0	0.0
TABELLARIA FENESTRATA	60	9.2	102.11	19.9	6.30	13.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	40	6.1	11.61	2.2	1.11	2.3	0	0.0
CHRYSOPHYCEAE	30	4.6	13.67	2.6	2.08	4.4	0	0.0
SYNEURA SPINOSA	30	4.6	13.67	2.6	2.08	4.4	0	0.0
CRYPTOPHYCEAE	160	24.6	115.58	22.5	15.77	33.7	0	0.0
CRYPTOPHYTUS OVATA	80	12.3	105.97	20.6	14.02	30.0	0	0.0
RHODOPHYTUS MINUTA	80	12.3	9.61	1.8	1.75	3.7	0	0.0
DINOPHYCEAE	10	1.5	50.79	5.9	3.58	7.6	0	0.0
PERIDINIUM PERRILLIFORME	10	1.5	30.29	5.9	3.58	7.6	0	0.0
SAMPLE TOTALS	650		512.83		46.67		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 04/16/67 TIME: 0900 DEPTH(M): 0.5

	MEAN DENSITY		MEAN BIODOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	224	6.2	140.81	8.8	18.04	9.9	0	0.0
ACTINASTRUM HABITZSCHII VAR. FLUVIATILE	32	0.8	1.75	0.1	0.55	0.1	0	0.0
AMBISTRIPSUS FALCATUS	48	1.5	5.14	0.1	0.42	0.7	0	0.0
CHLAMYDOMONAS	64	1.7	17.44	1.0	2.85	1.5	0	0.0
COCCONHAS ORBICULARIS	16	0.4	5.44	0.5	0.36	0.4	6	0.0
EUDORINA ELEGANS	16	0.4	61.98	5.8	7.10	3.8	0	0.0
PANDORINA MORUM	32	0.8	47.94	5.0	5.68	5.1	0	0.0
COCCOID GREENS			3.15	0.1	0.58	0.5	0	0.0
BACILLARIOPHYCEAE	752	21.0	626.97	39.5	45.96	25.5	0	0.0
ASTERIONELLA FORMOSA	80	2.2	89.47	5.6	4.19	3.3	0	0.0
CYCLOPHELIA STELLIGERA	48	1.5	20.13	1.7	2.27	1.2	0	0.0
PELOSIRA GIBBULATA	16	0.4	41.7	2.5	2.33	1.2	0	0.0
PELOSIRA ITALICA	240	6.7	365.	22.9	23.48	12.8	0	0.0
PELOSIRA SPP.	96	2.6	37.	2.5	3.36	1.8	0	0.0
HELSCHIA ADMITA	16	0.4	2.40	0.1	0.27	0.1	0	0.0
RHIZOLELENIA SPP.	16	0.4	54.54	2.1	2.03	1.1	0	0.0
SALETOREMA POTANUS	192	5.3	10.29	0.6	1.40	0.8	0	0.0
SYNDRA PLANCTONICA	16	0.4	8.44	0.5	0.70	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	52	0.8	9.29	0.5	0.89	0.4	0	0.0
CHRYSOPHYCEAE	704	19.7	149.58	9.5	24.22	13.2	0	0.0
EREMIA SUBAEQUICILIATA	224	6.2	9.89	0.6	2.06	1.1	0	0.0
OCCHROBONAS SPP.	128	3.5	20.02	1.7	4.72	2.5	0	0.0
SYMBRA SPINOSA	224	6.2	102.21	6.4	15.60	8.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	128	3.5	9.45	0.5	1.84	1.0	0	0.0
CRYPTOPHYCEAE	1824	51.1	558.24	35.0	85.58	45.8	0	0.0
CRYPTOBONAS EROSA	80	2.2	40.57	2.5	4.08	3.5	0	0.0
CRYPTOBONAS OVATA	256	7.1	339.08	21.2	44.87	24.6	0	0.0
RHODONONAS MINUTA	1490	41.7	176.79	11.2	32.63	17.9	0	0.0
MYXOPHYCEAE	48	1.5	14.43	0.9	2.21	1.2	0	0.0
CHROCOCCUS SPP.	16	0.4	6.65	0.4	1.02	0.5	0	0.0
OSCELLATORIA GEMINATA	16	0.4	7.61	0.4	1.15	0.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	16	0.4	0.18	0.0	0.04	0.0	0	0.0
EUGLENOPHYCEAE	16	0.4	104.50	6.5	11.16	6.1	0	0.0
TRACHELOPHONAS HISPIDA	16	0.4	104.50	6.5	11.16	6.1	0	0.0

SAMPLE TOTALS 5570 1594.52 182.21 0

PHYTOPLANKTON STANDING CROPP II

LOCATION: 230.0 SAMPLE DATE: 04/14/67 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	192	12.1	41.33	5.1	6.28	9.7	0	0.0
ACINASIRUM HANTZSCHII VAR. FLUVIATILE	40	3.0	2.60	0.3	0.52	0.8	0	0.0
AMBISTRIDIOPSIS FALCATUS	32	2.0	2.09	0.2	0.41	0.4	0	0.0
CHLAMYDOMONAS	16	1.0	4.35	0.5	0.71	1.1	0	0.0
DICTYOSPHAERIUM EMBREGERIANUM	16	1.0	24.42	3.0	3.37	4.9	0	0.0
COCCOID GREENS	80	5.0	7.88	0.9	1.47	2.2	0	0.0
BACILLARIOPHYCEAE	976	61.6	715.74	89.3	50.03	77.9	0	0.0
ASTERIONELLA FORMOSA	128	8.0	143.20	17.8	9.91	15.4	0	0.0
PELOSIRA ITALICA	256	16.1	389.83	46.6	25.04	38.9	0	0.0
PELOSIRA SPP.	208	13.1	81.65	10.1	7.28	11.3	0	0.0
RHIZOLENIA SPP.	32	2.0	69.09	8.6	4.07	6.3	0	0.0
SKELETONEMA POTAMOS	320	20.2	17.15	2.1	2.47	3.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	52	2.0	14.81	1.8	1.26	1.9	0	0.0
CHRYSDOPHYCEAE	160	10.1	10.39	1.2	2.05	3.1	0	0.0
ERGENIA SUBAEQUICILIATA	48	3.0	2.12	0.2	0.44	0.6	0	0.0
UNIDENTIFIED CHRYSDOPHYCEAE	112	7.0	8.27	1.0	1.61	2.5	0	0.0
CRYPTOPHYCEAE	224	14.2	53.06	4.1	5.77	8.9	0	0.0
CRYPTOPHYKAS ERDZA	16	1.0	8.06	1.0	1.21	1.8	0	0.0
RHODOPHYKAS MINUTA	208	13.1	25.00	3.1	4.56	7.1	0	0.0
MYXOPHYCEAE	32	2.0	0.35	0.0	0.08	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	32	2.0	0.35	0.0	0.08	0.1	0	0.0
SAMPLE TOTALS	1504		800.86		64.21		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 04/14/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	ML/M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	32	5.1	0.31	1.0	1.30	2.2	0	0.0
AKKISIRHODESPUS FALCATUS	16	2.5	1.04	0.1	0.20	0.3	0	0.0
MICRACTINIUM PUSILLUM	16	2.5	7.26	0.8	1.10	1.8	0	0.0
BACILLARIOPHYCEAE	464	79.3	708.83	87.7	64.04	75.6	0	0.0
FRUSTULIA RHOMBOIDES	16	2.5	9.79	1.1	0.78	1.3	0	0.0
PELOSIRA DISTANS	32	5.1	10.98	1.3	1.01	1.7	0	0.0
PELOSIRA GUERLATA	112	17.9	289.11	35.4	16.34	26.0	0	0.0
PELOSIRA ITALICA	256	41.0	389.83	47.8	25.04	42.9	0	0.0
SKELETOBETA POTAPES	32	5.1	1.71	0.2	0.24	0.4	0	0.0
UNIDENTIFIED PENNATE DIATOMS	16	2.5	7.41	0.9	0.63	1.0	0	0.0
CHRYSOPHYCEAE	80	12.8	12.86	1.5	2.22	3.8	0	0.0
GEMMIBUS SPP.	48	7.6	10.51	1.2	1.77	3.0	0	0.0
STELIONEMAS DICHOPTOMA	32	5.1	2.35	0.2	0.45	0.7	0	0.0
CRYPTOPHYCEAE	32	5.1	42.34	5.1	5.60	9.6	0	0.0
CRYPTONEMAS OVATA	32	5.1	42.34	5.1	5.60	9.6	0	0.0
DINOPHYCEAE	16	2.5	42.17	5.1	5.09	8.7	0	0.0
PERIDINIUM INCORPICUM	16	2.5	42.19	5.1	5.09	8.7	0	0.0

SAMPLE TOTALS 624 814.52 58.25 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 04/14/67 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	ML/M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	208	24.5	27.22	3.5	4.70	9.4	0	0.0
ACTINOSTRUM Hantzschii var. FLUVIATILE	40	5.6	2.60	0.3	0.52	1.0	0	0.0
AKTISTROBES FALATUS	16	1.8	1.04	0.1	0.20	0.4	0	0.0
MICRACTINIUM PUGILLUM	16	1.8	7.26	0.9	1.10	2.2	0	0.0
SCENEDESMUS BILKII	16	1.8	3.52	0.4	0.59	1.1	2	0.0
SCENEDESMUS QUADRICAUDA	32	3.7	7.93	0.9	1.24	2.4	0	0.0
SELENASTRUM MINUOLUM	80	9.4	5.37	0.6	1.05	2.1	0	0.0
BACILLARIOPHYCEAE	560	66.0	742.05	95.7	45.91	88.2	0	0.0
PELOUSIA AMBIOUA	144	16.9	406.67	62.7	25.78	51.8	0	0.0
PELOUSIA DYSIDANS	64	7.5	22.00	2.8	2.02	4.0	0	0.0
PELOUSIA GRABATA	52	5.7	82.53	10.5	4.44	9.3	0	0.0
PELOUSIA ITALICA	64	7.5	97.50	12.5	6.26	12.5	0	0.0
PELOUSIA SPP.	64	7.5	25.13	3.2	2.24	4.5	0	0.0
SKELETONEMA PICTUM	128	15.0	6.06	0.8	0.99	1.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	48	5.6	13.96	1.8	1.33	2.6	0	0.0
UNIDENTIFIED PERMATE DIATOMS	16	1.8	7.41	0.9	0.63	1.2	0	0.0
CHRYSOPHYCEAE	80	9.4	5.90	0.7	1.14	2.2	0	0.0
STELMOMONAS BICHOITOMA	16	1.8	1.17	0.1	0.22	0.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	64	7.5	4.73	0.5	0.92	1.8	0	0.0

SAMPLE TOTALS 848 775.17 49.75 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/14/67 TIME: 1000 DEPTH: 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	PM /M	Z TOTAL	MG/M	Z TOTAL	PM MM	Z TOTAL
CHLOROPHYCEAE	624	12.6	136.11	10.0	21.04	11.0	0	0.0
ACTINASTRUM HARTZSCHII VAR. FLUVIATILE	16	0.3	0.06	0.0	0.17	0.0	0	0.0
ANKISTRIPSIS FALCATUS	80	1.6	5.23	0.3	1.03	0.5	0	0.0
CHLAMYDOMONAS	176	3.5	67.95	3.5	7.06	4.1	0	0.0
PANDORICA MORUM	16	0.3	67.95	3.5	5.68	2.9	0	0.0
SCENEDESMUS BIJUGA	16	0.3	5.52	0.2	0.59	0.2	0	0.0
SCENEDESMUS QUADRICAUDA	16	0.3	5.72	0.2	0.62	0.3	0	0.0
SELENASTRUM MINUTUM	96	1.9	6.44	0.4	1.27	0.6	0	0.0
COCCYDIO GREENS	200	4.2	20.48	1.5	3.04	2.0	0	0.0
BACILLARIOPHYCEAE	1106	24.0	103.76	13.6	17.11	10.1	0	0.0
SKELETONEMA POTAMUS	689	13.9	56.00	2.7	1.23	2.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	401	9.7	139.47	10.3	13.27	7.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	16	0.3	7.41	0.5	1.5	0.5	0	0.0
CHRYSOHYCEAE	576	11.6	90.55	7.2	16.34	8.5	0	0.0
ERLENIA SURAEQUICILIATA	112	2.2	4.94	0.3	1.03	0.5	0	0.0
MALLOPHIAS TONGARATA	32	0.6	22.25	1.6	3.21	1.6	0	0.0
OCHROPHIAS SPP.	144	2.9	31.52	2.3	5.31	2.7	0	0.0
SYNEIRA SPINOSA	48	0.9	21.92	1.6	3.34	1.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	260	6.8	17.72	1.3	3.65	1.8	0	0.0
CRYPTOPHYCEAE	2538	47.4	790.49	58.5	115.10	60.5	0	0.0
CRYPTOPHYCIUS EROSA	144	2.9	72.68	5.3	10.94	5.7	0	0.0
CRYPTOPHYCIUS OVATA	504	6.1	402.72	29.8	53.29	28.0	0	0.0
CRYPTOPHYCIUS REFLEXA	16	0.3	90.13	6.6	9.82	5.1	0	0.0
RHOZOPHYCIUS MINUTA	1874	37.9	224.32	16.6	41.05	21.5	0	0.0
PHOTOPHYCEAE	192	3.8	19.2	4.4	9.39	4.9	0	0.0
CHROCOCCUS SPP.	144	2.9	72.68	5.3	10.94	5.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	48	0.9	21.92	1.6	3.34	1.1	0	0.0
EUGLENOPHYCEAE	16	0.3	61.69	6.0	9.00	4.7	0	0.0
LEPTOCHLIS OVUM	16	0.3	61.69	6.0	9.00	4.7	0	0.0

SAMPLE TOTALS 4952 1350.67 190.20 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 04/14/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/L	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	48	4.6	3.14	0.8	0.62	1.3	0	0.0
ANKISTRODESPIUS FALCATUS	48	4.6	3.14	0.8	0.62	1.3	0	0.0
BACILLARIOPHYCEAE	448	43.0	73.01	20.4	7.53	16.4	0	0.0
NITZSCHIA AGNITA	16	1.5	2.40	0.6	0.27	0.5	0	0.0
SKELETONEMA POTAMOS	256	24.6	15.72	3.8	1.98	4.3	0	0.0
SYNEDRA RUMPENS	16	1.5	7.64	2.1	0.64	1.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	144	13.8	41.85	11.7	4.01	8.7	0	0.0
UNIDENTIFIED PENNATE DIATOMS	16	1.5	7.41	2.0	0.63	1.3	0	0.0
CHRYSOPHYCEAE	128	12.3	26.30	7.3	4.31	9.4	0	0.0
OCHROMONAS SPP.	32	3.0	7.00	1.9	1.17	2.5	0	0.0
SYNURA SPINOSA	32	3.0	14.58	4.0	2.22	4.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	64	6.1	4.73	1.3	0.92	2.0	0	0.0
CRYPTOPHYCEAE	336	32.3	192.63	53.8	25.06	54.7	0	0.0
CRYPTOMONAS EROSA	16	1.5	8.06	2.2	1.21	2.6	0	0.0
CRYPTOMONAS OVATA	48	4.6	63.64	17.8	8.42	18.4	0	0.0
CRYPTOMONAS REFLEXA	16	1.5	90.18	25.2	9.82	21.4	0	0.0
RHODOMONAS MINUTA	256	24.6	30.76	8.6	5.61	12.2	0	0.0
MYXOPHYCEAE	64	6.1	20.17	5.6	3.13	6.8	0	0.0
CHROCOCCUS SPP.	48	4.6	20.00	5.5	3.09	6.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	16	1.5	0.18	0.0	0.04	0.0	0	0.0
DINOPHYCEAE	16	1.5	42.19	11.8	5.09	11.1	0	0.0
PERIDINIUM INCONSPICUUM	16	1.5	42.19	11.8	5.09	11.1	0	0.0
SAMPLE TOTALS	1040		357.44		45.74		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 04/14/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	48	8.8	3.16	0.8	0.62	1.5	0	0.0
ANKISTRODESPIRUS FALCATUS	32	5.8	2.09	0.5	0.41	1.0	0	0.0
SELENASTRUM MINUTUM	16	2.9	1.07	0.2	0.21	0.5	0	0.0
BACILLARIOPHYCEAE	208	38.2	126.24	33.3	8.75	22.1	0	0.0
SKELETOPIA POTAMOS	96	17.6	5.15	1.3	0.74	1.8	0	0.0
STEPHANODISCUS SPP.	32	5.8	7.55	1.9	0.76	1.9	0	0.0
TABULARIA FENESTRATA	64	11.7	108.91	28.7	6.81	17.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	16	2.9	4.64	1.2	0.44	1.1	0	0.0
CHRYSOPHYCEAE	128	23.5	39.57	10.4	6.16	15.5	0	0.0
ERLENIA SUBAEQUICILIATA	16	2.9	0.71	0.1	0.14	0.3	0	0.0
SYNDURA SPINOSA	80	14.7	36.50	9.6	5.57	14.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	32	5.8	2.36	0.6	0.45	1.1	0	0.0
CRYPTOPHYCEAE	112	20.5	209.21	55.2	23.85	60.3	0	0.0
CRYPTOMONAS OVATA	16	2.9	21.17	5.5	2.80	7.0	0	0.0
CRYPTOMONAS REFLEXA	32	5.8	180.55	47.6	19.65	49.7	0	0.0
RHODOMONAS MINUTA	64	11.7	7.69	2.0	1.40	3.5	0	0.0
MYXOPHYCEAE	48	8.8	0.53	0.1	0.13	0.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	48	8.8	0.53	0.1	0.13	0.3	0	0.0

SAMPLE TOTALS 544 378.71 39.51 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 04/14/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1505	17.3	1277.91	27.9	164.24	29.3	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	48	0.5	2.60	0.0	0.52	0.0	0	0.0
ANKISTRODESMUS FALCATUS	96	1.1	6.27	0.1	1.24	0.2	0	0.0
CHLAMYDOMONAS	929	10.6	252.74	5.5	41.34	7.3	0	0.0
PANDORINA MORUM	336	3.8	1007.85	22.0	119.54	21.3	0	0.0
SELENASTRUM MINUTUM	32	0.3	2.15	0.0	0.42	0.0	0	0.0
COCCOID GREENS	64	0.7	6.30	0.1	1.18	0.2	0	0.0
BACILLARIOPHYCEAE	1202	13.8	654.82	14.3	45.97	8.2	0	0.0
MELOSIRA AMBIGUA	80	0.9	270.34	5.9	14.32	2.5	0	0.0
MELOSIRA DISTANS	80	0.9	27.49	0.6	2.53	0.4	0	0.0
MELOSIRA ITALICA	128	1.4	194.99	4.2	12.52	2.2	0	0.0
MELOSIRA SPP.	48	0.5	18.86	0.4	1.68	0.3	0	0.0
SKELETONEMA POTAMOS	449	5.1	24.02	0.5	3.46	0.6	0	0.0
STEPHANODISCUS SPP.	32	0.3	7.55	0.1	0.76	0.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	385	4.4	111.58	2.4	10.70	1.9	0	0.0
CHRYSOPHYCEAE	1522	17.4	517.18	11.3	77.58	13.8	0	0.0
ERKENIA SUBAEQUICILIATA	208	2.3	9.18	0.2	1.91	0.3	0	0.0
MALLONONAS ACAROIDES	64	0.7	120.38	2.6	15.20	2.7	0	0.0
MALLONONAS ALPINA	16	0.1	18.58	0.4	2.50	0.4	0	0.0
MALLONONAS TONSURATA	64	0.7	44.58	0.9	6.43	1.1	0	0.0
OCHROMONAS SPP.	208	2.3	45.53	0.9	7.67	1.3	0	0.0
SYNURA SPINOSA	545	6.2	248.22	5.4	37.89	6.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	417	4.7	30.71	0.6	5.98	1.0	0	0.0
CRYPTOPHYCEAE	4261	48.9	1552.93	33.9	220.99	39.4	0	0.0
CRYPTOMONAS EROSA	64	0.7	32.31	0.7	4.86	0.8	0	0.0
CRYPTOMONAS OVATA	625	7.1	826.61	18.0	109.39	19.5	0	0.0
CRYPTOMONAS REFLEXA	48	0.5	271.09	5.9	29.54	5.2	0	0.0
RHODOMONAS MINUTA	3524	40.5	422.93	9.2	77.20	13.7	0	0.0
MYXOPHYCEAE	192	2.2	28.05	0.6	4.40	0.7	0	0.0
CHROOCOCCUS SPP.	64	0.7	26.65	0.5	4.11	0.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	128	1.4	1.41	0.0	0.35	0.0	0	0.0
DINOPHYCEAE	16	0.1	543.36	11.8	46.55	8.3	0	0.0
PERIDINIUM ACICULIFERUM	16	0.1	543.36	11.8	46.55	8.3	0	0.0
SAMPLE TOTALS	8698		4574.26		559.79		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 04/14/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	272	8.4	327.98	22.4	40.79	21.9	0	0.0
ANKISTRODESMUS FALCATUS	16	0.4	1.04	0.0	0.20	0.1	0	0.0
CHLAMYDOMONAS	128	3.9	34.87	2.3	5.70	3.0	0	0.0
OOCYSTIS BORGEI	16	0.4	2.58	0.1	0.45	0.2	0	0.0
PANDORINA MORUM	96	2.9	287.92	19.6	34.15	18.3	0	0.0
COCCOID GREENS	16	0.4	1.57	0.1	0.29	0.1	0	0.0
BACILLARIOPHYCEAE	528	16.4	324.35	22.1	22.80	12.2	0	0.0
MELOSIRA GRANULATA	32	0.9	82.53	5.6	4.66	2.5	0	0.0
MELOSIRA ITALICA	96	2.9	146.17	9.9	9.39	5.0	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	96	2.9	59.17	4.0	4.73	2.5	0	0.0
SKELETONEMA POTAMUS	224	6.9	12.01	0.8	1.73	0.9	0	0.0
STEPHANODISCUS SPP.	32	0.9	7.55	0.5	0.76	0.4	0	0.0
SYNEDRA RUMPENS	16	0.4	7.64	0.5	0.64	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	32	0.9	9.29	0.6	0.89	0.4	0	0.0
CHRYSOPHYCEAE	1009	31.3	281.10	19.2	44.07	23.7	0	0.0
DINOBRYON SPP.	16	0.4	3.53	0.2	0.59	0.3	0	0.0
EPKENIA SUBAEQUICILIATA	192	5.9	8.47	0.5	1.76	0.9	0	0.0
MALLONONAS ALLANTOIDES	16	0.4	10.01	0.6	1.46	0.7	0	0.0
MALLONONAS ALPINA	16	0.4	18.58	1.2	2.50	1.3	0	0.0
MALLONONAS TONSURATA	16	0.4	11.13	0.7	1.60	0.8	0	0.0
OCHROMONAS SPP.	144	4.4	31.52	2.1	5.31	2.8	0	0.0
SYNURA SPINOSA	401	12.4	182.51	12.4	27.86	15.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	208	6.4	15.36	1.0	2.99	1.6	0	0.0
CRYPTOPHYCEAE	1393	43.2	523.22	35.7	76.99	41.4	0	0.0
CRYPTOMONAS EROSA	224	6.9	113.05	7.7	17.02	9.1	0	0.0
CRYPTOMONAS OVATA	224	6.9	296.75	20.2	39.27	21.1	0	0.0
RHODOMONAS MINUTA	945	29.3	113.42	7.7	20.70	11.1	0	0.0
MYXOPHYCEAE	16	0.4	6.65	0.4	1.02	0.5	0	0.0
CHROCOCCUS SPP.	16	0.4	6.65	0.4	1.02	0.5	0	0.0
SAMPLE TOTALS	5218		1463.29		185.67		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 04/14/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	32	4.1	5.40	0.7	0.91	1.9	0	0.0
AMBISTRODESMUS FALCATUS	16	2.0	1.04	0.1	0.20	0.4	0	0.0
CHLAMYDOMONAS	16	2.0	4.35	0.6	0.71	1.5	0	0.0
BACILLARIOPHYCEAE	592	77.0	650.52	95.8	42.16	89.7	0	0.0
MELOSIRA GRANULATA	160	20.8	413.16	60.8	23.36	49.7	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	256	33.3	157.80	23.2	12.62	26.8	0	0.0
MELOSIRA SPP.	64	8.3	25.13	3.7	2.24	4.7	0	0.0
NITZSCHIA AGNITA	16	2.0	2.40	0.3	0.27	0.5	0	0.0
NITZSCHIA PALEA	16	2.0	6.48	0.9	0.57	1.2	0	0.0
RHIZOSOLENIA SPP.	16	2.0	34.54	5.0	2.03	4.3	0	0.0
SKELETONEMA POTAMOS	48	6.2	2.58	0.3	0.37	0.7	0	0.0
SYNEEDRA PLANKTONICA	16	2.0	6.44	1.2	0.70	1.4	0	0.0
CHRYSOPHYCEAE	16	2.0	7.29	1.0	1.11	2.3	0	0.0
SYBURA SPINDSA	16	2.0	7.29	1.0	1.11	2.3	0	0.0
CRYPTOPHYCEAE	128	16.6	15.38	2.2	2.80	5.9	0	0.0
RHODOMONAS MINUTA	128	16.6	15.38	2.2	2.80	5.9	0	0.0
SAMPLE TOTALS	768		678.59		46.98		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 04/14/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	32	3.6	4.76	0.5	0.82	1.3	0	0.0
ANKISTRODESMUS FALCATUS	16	1.8	1.04	0.1	0.20	0.3	0	0.0
SCENEDESMUS QUADRICAUDA	16	1.8	3.72	0.4	0.62	1.0	0	0.0
BACILLARIOPHYCEAE	617	92.7	857.04	99.0	57.21	97.6	0	0.0
MELOSIRA GRANULATA	192	21.7	495.68	57.3	28.03	47.8	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	545	61.8	335.37	38.7	26.82	45.7	0	0.0
MELOSIRA SPP.	64	7.2	25.13	2.9	2.24	3.8	0	0.0
SKELETONEMA POTAMOS	16	1.8	0.86	0.0	0.12	0.2	0	0.0
CHRYSOPHYCEAE	16	1.8	1.18	0.1	0.22	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	16	1.8	1.18	0.1	0.22	0.3	0	0.0
CRYPTOPHYCEAE	16	1.8	1.92	0.2	0.35	0.5	0	0.0
RHODOSPORUS MINUTA	16	1.8	1.92	0.2	0.35	0.5	0	0.0

SAMPLE TOTALS 891 864.69 58.60 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 05/12/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1241	8.1	478.11	15.8	68.38	15.1	0	0.0
ANKISTRODESMUS FALCATUS	73	0.4	4.76	0.1	0.94	0.2	0	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	219	1.4	333.89	11.0	43.35	9.6	0	0.0
MICRACTINIUM PUSILLUM	73	0.4	33.10	1.0	5.05	1.1	0	0.0
MONORAPHIDIUM CONTORTUM	146	0.9	6.46	0.2	1.34	0.2	0	0.0
SCENEDESMUS BIJUGA	146	0.9	32.08	1.0	5.39	1.1	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.4	16.93	0.5	2.82	0.6	0	0.0
SELENASTRUM MINUTUM	73	0.4	4.89	0.1	0.96	0.2	0	0.0
TREUBARIA SETIGERUM	73	0.4	10.17	0.3	1.81	0.4	0	0.0
COCCOID GREENS	365	2.4	35.85	1.1	6.72	1.4	0	0.0
BACILLARIOPHYCEAE	3647	24.0	516.27	17.1	55.36	12.2	0	0.0
NITZSCHIA AGNITA	146	0.9	21.87	0.7	2.46	0.5	0	0.0
SKELETONEMA POTAMOS	2261	14.9	121.03	4.0	17.47	3.8	0	0.0
SYNEDRA RUMPENS	73	0.4	34.80	1.1	2.95	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1167	7.6	338.58	11.2	32.48	7.2	0	0.0
CHRYSOPHYCEAE	3209	21.1	224.78	7.4	43.22	9.5	0	0.0
ERKENIA SUBAEQUICILIATA	1823	12.0	80.36	2.6	16.77	3.7	0	0.0
OCHROMONAS SPP.	292	1.9	63.77	2.1	10.74	2.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	1094	7.2	80.66	2.6	15.71	3.4	0	0.0
XANTHOPHYCEAE	219	1.4	14.44	0.4	2.85	0.6	0	0.0
DICHOTOMOCOCCUS SPP.	219	1.4	14.44	0.4	2.85	0.6	0	0.0
CRYPTOPHYCEAE	2042	13.4	564.22	18.7	86.11	19.1	0	0.0
CRYPTOMONAS EROSA	146	0.9	73.48	2.4	11.06	2.4	0	0.0
CRYPTOMONAS OVATA	219	1.4	289.47	9.6	38.31	8.5	0	0.0
RHODOMONAS MINUTA	1677	11.0	201.26	6.6	36.74	8.1	0	0.0
MYXOPHYCEAE	4740	31.2	1018.68	33.8	171.28	38.0	0	0.0
CHROOCOCCUS SPP.	219	1.4	90.96	3.0	14.05	3.1	0	0.0
OSCILLATORIA GEMINATA	146	0.9	69.31	2.3	10.52	2.3	0	0.0
OSCILLATORIA LIMNETICA	4375	28.8	858.41	28.5	146.71	32.5	0	0.0
DINOPHYCEAE	73	0.4	192.24	6.3	23.19	5.1	0	0.0
PERIDINIUM INCONSPICUUM	73	0.4	192.24	6.3	23.19	5.1	0	0.0
SAMPLE TOTALS	15171		5008.73		450.39		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 05/12/87 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	2335	17.8	976.61	32.2	137.75	33.2	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	219	1.6	10.06	0.3	2.08	0.5	0	0.0
ANKISTRODESMUS FALCATUS	146	1.1	9.52	0.3	1.88	0.4	0	0.0
ANKISTRODESMUS FALCATUS MIRABILIS	146	1.1	23.43	0.7	4.11	0.9	0	0.0
CHLAMYDOMONAS	146	1.1	39.66	1.3	6.48	1.5	0	0.0
CHLOROGONIUM SPIRALE	73	0.5	12.49	0.4	2.17	0.5	0	0.0
COELASTRUM SPHAERICUM	73	0.5	98.41	3.2	12.98	3.1	0	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	438	3.3	667.62	22.0	86.68	20.9	0	0.0
KIRCHNERIELLA SUBSOLITARIA	73	0.5	15.03	0.4	2.55	0.6	0	0.0
COCCOID GREENS	1021	7.8	100.39	3.3	18.82	4.5	0	0.0
BACILLARIOPHYCEAE	6052	46.3	923.21	30.4	97.89	23.6	0	0.0
NITZSCHIA AGNITA	73	0.5	10.93	0.3	1.23	0.2	0	0.0
SKELETONEMA POTAMUS	3427	26.2	183.49	6.0	26.50	6.3	0	0.0
STEPHANODISCUS SPP.	219	1.6	51.64	1.7	5.20	1.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	2333	17.8	677.15	22.3	64.96	15.6	0	0.0
CHRYSOPHYCEAE	1605	12.2	305.91	10.0	49.17	11.8	0	0.0
ERKENIA SUBAEQUICILIATA	1021	7.8	45.00	1.4	9.39	2.2	0	0.0
MALLONNAS ALLANTOIDES	73	0.5	45.61	1.5	6.67	1.6	0	0.0
OCHROMONAS SPP.	73	0.5	15.94	0.5	2.68	0.6	0	0.0
SYNURA SPINOSA	438	3.3	199.37	6.5	30.43	7.3	0	0.0
CRYPTOPHYCEAE	1240	9.4	467.95	15.4	68.53	16.5	0	0.0
CRYPTOMONAS EROSA	146	1.1	73.48	2.4	11.06	2.6	0	0.0
CRYPTOMONAS OVATA	219	1.6	289.47	9.5	38.31	9.2	0	0.0
RHODOMONAS MINUTA	875	6.7	105.00	3.4	19.16	4.6	0	0.0
MYXOPHYCEAE	1823	13.9	357.67	11.7	61.12	14.7	0	0.0
OSCILLATORIA LIMNETICA	1750	13.4	343.37	11.3	58.68	14.1	0	0.0
OSCILLATORIA LIMNETICA	73	0.5	14.30	0.4	2.44	0.5	0	0.0
SAMPLE TOTALS	15055		3031.36		414.46		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 05/12/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	48	3.7	7.93	2.2	1.37	4.1	0	0.0
SCENEDESMUS QUADRICAUDA	24	1.8	5.57	1.5	0.93	2.8	0	0.0
COCCOID GREENS	24	1.8	2.36	0.6	0.44	1.3	0	0.0
BACILLARIOPHYCEAE	793	62.2	277.22	78.6	20.38	61.6	0	0.0
HELOSIRA GRANULATA	48	3.7	124.05	35.1	7.01	21.2	0	0.0
NITZSCHIA AGNITA	24	1.8	3.60	1.0	0.40	1.2	0	0.0
NITZSCHIA PALEA	24	1.8	9.72	2.7	0.85	2.5	0	0.0
PINNULARIA SPP.	24	1.8	65.33	18.5	3.64	11.0	0	0.0
SKELETONEMA POTAMOS	505	39.6	27.02	7.6	3.90	11.8	0	0.0
STEPHANODISCUS SPP.	24	1.8	5.66	1.6	0.57	1.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	144	11.3	41.85	11.8	4.01	12.1	0	0.0
CHRYSOPHYCEAE	312	24.5	21.51	6.1	4.21	12.7	0	0.0
ERKENIA SUBAEQUICILIATA	72	5.6	3.18	0.9	0.66	1.9	0	0.0
URDLEMPIS AMERICANA	48	3.7	4.16	1.1	0.79	2.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	192	15.0	14.17	4.0	2.76	8.5	0	0.0
CRYPTOPHYCEAE	72	5.6	36.34	10.3	5.47	16.5	0	0.0
CRYPTOMONAS EROSA	24	1.8	12.10	3.4	1.82	5.5	0	0.0
CRYPTOMONAS EROSA	48	3.7	24.24	6.8	3.65	11.0	0	0.0
MYXOPHYCEAE	48	3.7	9.44	2.6	1.61	4.8	0	0.0
OSCILLATORIA LIMNETICA	48	3.7	9.44	2.6	1.61	4.8	0	0.0
SAMPLE TOTALS	1273		352.43		33.04		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 05/17/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	96	12.7	12.03	6.3	2.09	10.8	0	0.0
ACTINASTRUM GRACILIPAKI	16	2.1	0.86	0.4	0.17	0.8	0	0.0
ANKISTRODESMUS FALCATUS	16	2.1	1.04	0.5	0.20	1.0	0	0.0
MICRACTINIUM PUSILLUM	8	1.0	3.63	1.9	0.55	2.8	0	0.0
SCENEDESMUS BIJUGA	8	1.0	1.76	0.9	0.29	1.5	0	0.0
COCCOID GREENS	48	6.3	4.73	2.4	0.88	4.5	0	0.0
RACILLARIOPHYCEAE	480	63.8	151.45	79.5	12.57	65.0	0	0.0
ACHNANTHES MICROCEPHALA	8	1.0	1.72	0.9	0.17	0.8	0	0.0
MELOSIRA DISTANS	32	4.2	10.98	5.7	1.01	5.2	0	0.0
MELOSIRA GRANULATA	16	2.1	41.26	21.6	2.33	12.0	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	88	11.7	54.24	28.4	4.33	22.4	0	0.0
NITZSCHIA AGNITA	16	2.1	2.40	1.2	0.27	1.3	0	0.0
SKELETONEMA POTAMIS	224	29.7	12.01	6.3	1.73	8.9	0	0.0
STEPHANODISCUS SPP.	8	1.0	1.89	0.9	0.19	0.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	80	10.6	23.24	12.2	2.23	11.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	8	1.0	3.70	1.9	0.31	1.6	0	0.0
CHRYSOPHYCEAE	56	7.4	3.42	1.7	0.67	3.4	0	0.0
ERKENIA SUBAEQUICILIATA	24	3.1	1.06	0.5	0.22	1.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	32	4.2	2.36	1.2	0.45	2.3	0	0.0
CRYPTOPHYCEAE	40	5.3	7.87	4.1	1.30	6.7	0	0.0
CRYPTOMONAS EROSA	8	1.0	4.03	2.1	0.60	3.1	0	0.0
RHODOMONAS MINUTA	32	4.2	3.84	2.0	0.70	3.6	0	0.0
MYXOPHYCEAE	80	10.6	15.72	8.2	2.68	13.8	0	0.0
OSCILLATORIA LIMNETICA	80	10.6	15.72	8.2	2.68	13.8	0	0.0
SAMPLE TOTALS	752		190.48		19.31		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 05/12/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /H	% TOTAL	MG/H	% TOTAL	MM ² /H	% TOTAL
CHLOROPHYCEAE	1460	10.0	204.52	6.2	35.90	7.2	0	0.0
AMLISTRODESPIUS FALCATUS	438	3.0	28.56	0.8	5.65	1.1	0	0.0
AMLISTRODESPIUS FALCATUS MIRABILIS	73	0.5	11.72	0.3	2.05	0.4	0	0.0
CHLAMYDOPHYTAS	292	2.0	79.34	2.4	12.97	2.6	0	0.0
CRUXIGENIA IRREGULARIS	73	0.5	9.84	0.3	1.76	0.3	0	0.0
SCENEDESPIUS QUADRICAUDA	73	0.5	16.93	0.5	2.82	0.5	0	0.0
TETRAEORON LIPNETICUM	73	0.5	9.11	0.2	1.65	0.3	0	0.0
TREUBARIA SETIGERUM	146	1.0	20.34	0.6	3.63	0.7	0	0.0
COCCOID GREENS	292	2.0	28.68	0.8	5.37	1.0	0	0.0
BACILLARIOPHYCEAE	1458	9.9	301.87	9.2	30.15	6.1	0	0.0
NITZSCHIA AGNITA	73	0.5	10.93	0.3	1.23	0.2	0	0.0
SKELETONEMA POTAMOS	510	3.4	27.33	0.8	3.94	0.7	0	0.0
STEPHANODISCUS SPP.	73	0.5	17.20	0.5	1.73	0.3	0	0.0
SYNEIOSA RUBRIS	73	0.5	34.80	1.0	2.95	0.5	0	0.0
UNIDENTIFIED / ENTRATE DIATOMS	729	4.9	211.61	6.4	20.30	4.1	0	0.0
CHRYSOPHYCEAE	3063	20.9	321.45	9.8	56.17	11.3	0	0.0
ERKENIA SUBAEQUICILIATA	1949	13.4	86.78	2.6	18.11	3.6	0	0.0
MALLORNAS TONGURATA	146	1.0	101.39	3.0	14.62	2.9	0	0.0
OCHRORNAS SPP.	458	3.0	95.64	2.9	16.11	3.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	510	3.4	37.64	1.1	7.33	1.4	0	0.0
CRYPTOPHYCEAE	7657	52.4	2262.63	69.0	339.21	68.7	0	0.0
CRYPTORNAS EROSA	73	0.5	36.74	1.1	5.53	1.1	0	0.0
CRYPTORNAS OVATA	1094	7.5	1447.10	44.1	191.51	38.8	0	0.0
RHODORNAS MINUTA	6490	44.4	778.79	23.7	142.17	28.8	0	0.0
MYXOPHYCEAE	948	6.4	188.48	5.7	31.77	6.4	0	0.0
CHROCOCCUS SPP.	73	0.5	30.30	0.9	4.68	0.9	0	0.0
OSCILLATORIA LIPNETICA	802	5.4	157.37	4.7	26.89	5.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	73	0.5	0.80	0.0	0.20	0.0	0	0.0
SAMPLE TOTALS	14586		3278.94		493.20		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 05/12/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	511	6.7	67.79	2.0	11.97	3.9	0	0.0
ANKISTRODESMUS FALCATUS	146	1.9	9.52	0.2	1.88	0.6	0	0.0
CHLAMYDOMONAS	73	0.9	19.83	0.5	3.24	1.0	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.9	16.93	0.5	2.82	0.9	0	0.0
COCCOID GREENS	219	2.8	21.51	0.6	4.03	1.3	0	0.0
BACILLARIOPHYCEAE	3792	49.9	2377.67	70.5	149.04	49.7	0	0.0
MELOSIRA AMBIGUA	583	7.6	1968.98	58.4	104.32	34.8	0	0.0
SKELETONEMA POTAMOS	2261	29.8	121.03	3.5	17.47	5.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	875	11.5	253.92	7.5	24.36	8.1	0	0.0
UNIDENTIFIED PENNATE DIATOMS	73	0.9	33.75	1.0	2.89	0.9	0	0.0
CHRYSOPHYCEAE	875	11.5	55.88	1.6	11.06	3.6	0	0.0
ERKENIA SUBAEQUICILIATA	292	3.8	12.86	0.3	2.68	0.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	583	7.6	43.02	1.2	8.38	2.7	0	0.0
CRYPTOPHYCEAE	1678	22.1	695.85	20.6	100.44	33.5	0	0.0
CRYPTOMONAS EROSA	146	1.9	73.48	2.1	11.06	3.6	0	0.0
CRYPTOMONAS OVATA	365	4.8	482.37	14.3	63.83	21.2	0	0.0
RHODOMONAS MINUTA	1167	15.3	140.09	4.1	25.55	8.5	0	0.0
MYXOPHYCEAE	730	9.6	170.94	5.0	27.24	9.0	0	0.0
CHROCOCCUS SPP.	219	2.8	90.96	2.7	14.05	4.6	0	0.0
OSCILLATORIA GEMINATA	73	0.9	34.66	1.0	5.26	1.7	0	0.0
OSCILLATORIA LIMNETICA	219	2.8	42.93	1.2	7.33	2.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	219	2.8	2.40	0.0	0.60	0.2	0	0.0
SAMPLE TOTALS	7586		3368.13		299.75		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 05/12/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	96	7.6	11.60	3.6	2.06	6.3	0	0.0
ANKISTRODESMIUS FALCATUS	24	1.9	1.57	0.4	0.31	0.9	0	0.0
SCENEDESMIUS ARMATUS VAR. BICAUDATUS	12	0.9	2.90	0.9	0.48	1.4	0	0.0
SCENEDESMIUS QUADRICAUDA	12	0.9	2.79	0.8	0.46	1.4	0	0.0
SELFNASTRUM MINUTUM	12	0.9	0.80	0.2	0.15	0.4	0	0.0
COCCOID GREENS	36	2.8	3.54	1.1	0.66	2.0	0	0.0
BACILLARIOPHYCEAE	960	76.9	264.99	82.5	23.32	72.1	0	0.0
MELOSIRA DISTANS	108	8.6	37.10	11.5	3.41	10.5	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	120	9.6	73.95	23.0	5.91	18.2	0	0.0
NITZSCHIA AGNITA	24	1.9	3.60	1.1	0.40	1.2	0	0.0
RHIZOSOLENIA SPP.	24	1.9	51.82	16.1	3.05	9.4	0	0.0
SKELETONEMA POTAMUS	420	33.6	22.51	7.0	3.25	10.0	0	0.0
STEPHANODISCUS SPP.	12	0.9	2.83	0.8	0.28	0.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	252	20.1	73.19	22.7	7.02	21.7	0	0.0
CHRYSOPHYCEAE	120	9.6	10.90	3.3	2.00	6.1	0	0.0
ERKENIA SUBAEQUICILIATA	48	3.8	2.12	0.6	0.44	1.3	0	0.0
OCHROMONAS SPP.	24	1.9	5.25	1.6	0.88	2.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	48	3.8	3.54	1.1	0.68	2.1	0	0.0
CRYPTOPHYCEAE	12	0.9	15.88	4.9	2.10	6.4	0	0.0
CRYPTOMONAS OVATA	12	0.9	15.88	4.9	2.10	6.4	0	0.0
MYXOPHYCEAE	60	4.8	17.76	5.5	2.83	8.7	0	0.0
CHROOCOCCUS SPP.	12	0.9	4.99	1.5	0.77	2.3	0	0.0
OSCILLATORIA GEMINATA	12	0.9	5.70	1.7	0.86	2.6	0	0.0
OSCILLATORIA LIMNETICA	36	2.8	7.06	2.1	1.20	3.7	0	0.0
SAMPLE TOTALS	1248		321.11		32.31		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/12/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1751	10.4	512.09	6.3	75.42	10.2	0	0.0
ACTINASTRUM GRACILIMUM	73	0.4	3.94	0.0	0.79	0.1	0	0.0
ANKISTRODECMUS FALCATUS	510	3.0	33.32	0.4	6.59	0.8	0	0.0
CHLAMYDOMONAS	219	1.3	59.51	0.7	9.73	1.3	0	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	219	1.3	333.89	4.1	43.35	5.8	0	0.0
SELENASTRUM MINUTUM	73	0.4	4.89	0.0	0.96	0.1	0	0.0
TREUBARIA SETIGERUM	292	1.7	40.69	0.5	7.28	0.9	0	0.0
COCCOID GREENS	365	2.1	35.85	0.4	6.72	0.9	0	0.0
BACILLARIOPHYCEAE	6855	40.8	5344.53	66.0	335.93	45.5	0	0.0
HELOSIRA AMBIGUA	1094	6.5	3691.58	45.6	195.59	26.5	0	0.0
NITZSCHIA AGNITA	146	0.8	21.87	0.2	2.46	0.3	0	0.0
SKELETONEMA POTAMOS	1896	11.3	101.51	1.2	14.66	1.9	0	0.0
SYNEDRA ULNA	73	0.4	460.58	5.6	20.96	2.8	0	0.0
SYNEDRA SPP.	73	0.4	32.09	0.3	2.78	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	3573	21.3	1036.91	12.8	99.48	13.4	0	0.0
CHRYSOPHYCEAE	1239	7.3	86.83	1.0	16.80	2.2	0	0.0
ERKENIA SUBAEQUICILIATA	510	3.0	22.50	0.2	4.69	0.6	0	0.0
OCHROMONAS SPP.	73	0.4	15.94	0.1	2.68	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	656	3.9	48.40	0.5	9.43	1.2	0	0.0
CRYPTOPHYCEAE	4668	27.8	1082.66	13.3	169.88	23.0	0	0.0
CRYPTOMONAS EROSA	219	1.3	110.28	1.3	16.60	2.2	0	0.0
CRYPTOMONAS OVATA	365	2.1	482.37	5.9	63.83	8.6	0	0.0
RHODOMONAS MINUTA	4084	24.3	490.02	6.0	89.45	12.1	0	0.0
MYXOPHYCEAE	2188	13.0	468.71	5.7	77.81	10.5	0	0.0
CHROCOCCUS SPP.	365	2.1	151.56	1.8	23.42	3.1	0	0.0
OSCILLATORIA LIMNETICA	1604	9.5	314.74	3.8	53.79	7.2	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	219	1.3	2.40	0.0	0.60	0.0	0	0.0
DINOPHYCEAE	73	0.4	596.39	7.3	61.83	8.3	0	0.0
PERIDINIUM SPP.	73	0.4	596.39	7.3	61.83	8.3	0	0.0
SAMPLE TOTALS	16774		8091.21		737.67		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/12/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	2189	20.2	355.99	17.4	58.82	22.9	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	73	0.6	3.94	0.1	0.79	0.3	0	0.0
ANKISTRODESMUS FALCATUS	292	2.7	19.04	0.9	3.77	1.4	0	0.0
DICTYOSPHAERIUM EHREBERGIANUM	73	0.6	111.25	5.4	14.44	5.6	0	0.0
KIRCHNERIELLA SPP.	73	0.6	14.09	0.6	2.41	0.9	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	73	0.6	17.63	0.8	2.93	1.1	0	0.0
SCENEDESMUS QUADRICAUDA	219	2.0	50.81	2.4	8.48	3.3	0	0.0
TREUBARIA SETIGERUM	73	0.6	10.17	0.4	1.81	0.7	0	0.0
COCCOID GREENS	1313	12.1	129.07	6.3	24.19	9.4	0	0.0
BACILLARIOPHYCEAE	5032	46.6	1010.45	49.3	88.21	34.3	0	0.0
CYCLOTELLA SPP.	365	3.3	154.81	7.5	13.54	5.2	0	0.0
NITZSCHIA AGNITA	73	0.6	10.93	0.5	1.23	0.4	0	0.0
RHIZOSOLENIA SPP.	219	2.0	472.39	23.0	27.88	10.8	0	0.0
SKELETONEMA POTAMOS	3792	35.1	203.01	9.9	29.32	11.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	583	5.4	169.30	8.2	16.24	6.3	0	0.0
CHRYSOPHYCEAE	584	5.4	38.69	1.8	7.62	2.9	0	0.0
ERKENIA SUBAEQUICILIATA	146	1.3	6.43	0.3	1.34	0.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	438	4.0	32.26	1.5	6.28	2.4	0	0.0
XANTHOPHYCEAE	146	1.3	44.00	2.1	7.09	2.7	0	0.0
DICHTOMOCOCCLUS SPP.	146	1.3	44.00	2.1	7.09	2.7	0	0.0
CRYPTOPHYCEAE	1678	15.5	432.64	21.1	66.93	26.0	0	0.0
CRYPTOMONAS EROSA	146	1.3	73.48	3.5	11.06	4.3	0	0.0
CRYPTOMONAS OVATA	146	1.3	192.89	9.4	25.52	9.9	0	0.0
RHOZOMONAS MINUTA	1386	12.8	166.26	8.1	30.35	11.8	0	0.0
MYXOPHYCEAE	1167	10.8	163.87	8.0	27.88	10.8	0	0.0
CHROCOCCUS SPP.	73	0.6	30.30	1.4	4.68	1.8	0	0.0
OSCILLATORIA LIMNETICA	656	6.0	128.77	6.2	22.00	8.5	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	438	4.0	4.80	0.2	1.20	0.4	0	0.0
SAMPLE TOTALS	10796		2045.63		256.55		0	

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PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/12/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	192	9.5	20.09	2.7	3.68	5.5	0	0.0
ANKISTRODESMUS FALCATUS	72	3.5	4.71	0.6	0.93	1.3	0	0.0
KIRCHNERIELLA SUBSOLITARIA	24	1.1	4.95	0.6	0.84	1.2	0	0.0
TREUBARIA SETIGERUM	24	1.1	3.35	0.4	0.59	0.8	0	0.0
COCCOID GREENS	72	3.5	7.09	0.9	1.32	1.9	0	0.0
BACILLARIOPHYCEAE	1369	67.8	531.86	73.6	38.54	57.7	0	0.0
GOMPHONEMA SPP.	24	1.1	125.38	17.3	5.97	8.9	0	0.0
MELOSIRA DISTANS	168	8.3	57.73	7.9	5.31	7.9	0	0.0
SKELETONEMA POTAMUS	865	42.8	46.32	6.4	6.68	10.0	0	0.0
SYNEDRA RUMPENS	24	1.1	11.46	1.5	0.97	1.4	0	0.0
TABELLARIA FENESTRATA	144	7.1	245.00	33.9	15.32	22.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	120	5.9	34.88	4.8	3.34	5.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	24	1.1	11.11	1.5	0.95	1.4	0	0.0
CHRYSOPHYCEAE	192	9.5	16.94	2.3	3.17	4.7	0	0.0
ERKENIA SUBAEQUICILIATA	24	1.1	1.06	0.1	0.22	0.3	0	0.0
OCHROCHONAS SPP.	24	1.1	5.25	0.7	0.88	1.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	144	7.1	10.63	1.4	2.07	3.1	0	0.0
CRYPTOPHYCEAE	192	9.5	138.67	19.2	18.92	28.3	0	0.0
CRYPTOMONAS OVATA	96	4.7	127.14	17.6	16.82	25.2	0	0.0
RHODOMONAS MINUTA	96	4.7	11.53	1.5	2.10	3.1	0	0.0
MYXOPHYCEAE	72	3.5	14.15	1.9	2.41	3.6	0	0.0
OSCILLATORIA LIMNETICA	72	3.5	14.15	1.9	2.41	3.6	0	0.0
SAMPLE TOTALS	2017		721.70		66.72		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 05/12/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYLAE	36	4.9	4.71	2.7	0.82	4.8	0	0.0
ANKISTRODESNIUS FALCATUS	24	3.2	1.57	0.6	0.31	1.8	0	0.0
TETRASTRUM STAUROGENIAEFORME	12	1.6	3.14	1.1	0.51	3.0	0	0.0
BACILLARIOPHYCEAE	540	73.7	147.40	87.2	13.17	77.6	0	0.0
ACHRANTHES MICROCEPHALA	12	1.6	2.58	1.5	0.26	1.5	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	144	19.6	88.72	52.5	7.09	41.8	0	0.0
MELOSIRA SPP.	12	1.6	4.70	2.7	0.41	2.4	0	0.0
NITZSCHIA AGNITA	12	1.6	1.80	1.0	0.20	1.1	0	0.0
NITZSCHIA PALEA	12	1.6	4.86	2.8	0.42	2.4	0	0.0
SKELETONEMA POTAMIS	264	36.0	14.15	8.3	2.04	12.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	48	6.5	13.93	8.2	1.33	7.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	36	4.9	16.66	9.8	1.42	8.3	0	0.0
CHRYSOPHYCEAE	72	9.8	8.79	5.2	1.56	9.1	0	0.0
OCHRONOKAS SPP.	24	3.2	5.25	3.1	0.88	5.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	48	6.5	3.54	2.0	0.68	4.0	0	0.0
CRYPTOPHYCEAE	24	3.2	2.88	1.7	0.52	3.0	0	0.0
RHODONOKAS MINUTA	24	3.2	2.88	1.7	0.52	3.0	0	0.0
MYXOPHYCEAE	60	8.1	5.10	3.0	0.89	5.2	0	0.0
OSILLATORIA LIMNETICA	24	3.2	4.71	2.7	0.80	4.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	36	4.9	0.40	0.2	0.09	0.5	0	0.0
SAMPLE TOTALS	732		168.68		16.96		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/09/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1314	8.6	543.71	11.2	75.89	13.3	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	146	0.9	7.87	0.1	1.59	0.2	0	0.0
ANKISTRODESMUS FALCATUS	146	0.9	9.52	0.1	1.88	0.3	0	0.0
ANKISTRODESMUS SPIRALLIS	219	1.4	14.44	0.2	2.85	0.5	0	0.0
ARTHRODESMUS INCUS RALFSII	73	0.4	164.97	3.4	20.31	3.6	0	0.0
CLOSTERIOPSIS LONGISSIMA VAR. TROPICA	73	0.4	42.86	0.8	6.32	1.1	0	0.0
COCHARIUM ASPHAEROSPORUM VAR. STRIGOSUM	73	0.4	12.41	0.2	2.16	0.3	0	0.0
CRUCIGENIA IRREGULARIS	73	0.4	9.84	0.2	1.76	0.3	0	0.0
PANDORINA MORUM	73	0.4	218.41	4.5	25.90	4.6	0	0.0
PLANKTOSPHAERIA GELATINOSA	73	0.4	16.37	0.3	2.74	0.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	73	0.4	17.63	0.3	2.93	0.5	0	0.0
SELENASTRUM MINUTUM	73	0.4	4.89	0.1	0.96	0.1	0	0.0
TREUBARIA SETIGERUM	73	0.4	10.17	0.2	1.81	0.3	0	0.0
COCCOID GREENS	146	0.9	14.34	0.2	2.68	0.4	0	0.0
BACILLARIOPHYCEAE	2846	18.6	2367.12	48.8	162.73	29.2	0	0.0
CYCLOTELLA MENECHINIANA	73	0.4	18.08	0.3	1.80	0.3	0	0.0
MELOSIRA AMBIGUA	219	1.4	738.45	15.2	39.12	7.0	0	0.0
MELOSIRA DISTANS	292	1.9	100.11	2.0	9.22	1.6	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	656	4.3	566.65	11.6	41.75	7.5	0	0.0
NITZSCHIA AGNITA	73	0.4	10.93	0.2	1.23	0.2	0	0.0
NITZSCHIA HOLSATICA	365	2.3	123.93	2.5	11.44	2.0	0	0.0
RHIZOSOLENIA SPP.	219	1.4	472.39	9.7	27.88	5.0	0	0.0
SKELETONEMA POTAMOS	73	0.4	3.90	0.0	0.56	0.1	0	0.0
SYNEDRA RUMPENS	219	1.4	104.43	2.1	8.88	1.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	438	2.8	126.96	2.6	12.18	2.1	0	0.0
UNIDENTIFIED PENNATE DIATOMS	219	1.4	101.28	2.0	8.67	1.5	0	0.0
CHRYSOPHYCEAE	1094	7.1	59.03	1.2	11.94	2.1	0	0.0
ERKENIA SUBAEQUICILIATA	729	4.7	32.14	0.6	6.71	1.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	365	2.3	26.89	0.5	5.23	0.9	0	0.0
XANTHOPHYCEAE	438	2.8	132.04	2.7	21.30	3.8	0	0.0
DICHOTOMOCOCCLUS SPP.	438	2.8	132.04	2.7	21.30	3.8	0	0.0
CRYPTOPHYCEAE	3063	20.0	854.76	17.6	132.10	23.7	0	0.0
CRYPTOMONAS EROSA	583	3.8	294.03	6.0	44.28	7.9	0	0.0
CRYPTOMONAS OVATA	219	1.4	287.47	5.9	38.31	6.8	0	0.0
RHODOMONAS MINUTA	2261	14.8	271.26	5.6	49.51	8.9	0	0.0
MYXOPHYCEAE	6491	42.5	887.15	18.3	153.57	27.6	0	0.0
AGMENELLUM QUADRIDUPLICATUM	73	0.4	0.07	0.0	0.02	0.0	0	0.0
CHROCOCCUS DISPERSUS	146	0.9	2.93	0.0	0.68	0.1	0	0.0
CHROCOCCUS SPP.	802	5.2	333.43	6.8	51.53	9.2	0	0.0
OSCELLATORIA GEMINATA	146	0.9	69.31	1.4	10.52	1.8	0	0.0
OSCELLATORIA LIMNETICA	146	0.9	28.61	0.5	4.88	0.8	0	0.0
RABDODERMA LINEARE	4959	32.5	450.39	9.2	85.34	15.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	219	1.4	2.40	0.0	0.60	0.1	0	0.0

	MEAN DENSITY	MEAN BIODVOLUME	MEAN ALGAL CARBON	MEAN SURFACE AREA
	UNITS/ML	MM ³ /M	MG/M	MM ²
SAMPLE TOTALS	15246	4893.81	555.53	0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/09/67 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	649	28.7	145.05	12.1	21.56	18.5	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	385	17.0	20.76	1.7	4.21	3.6	0	0.0
ANKISTRODESMUS FALCATUS	24	1.0	1.57	0.1	0.51	0.2	0	0.0
GOLENKINIA RADIATA	72	3.1	25.60	2.1	4.04	3.4	0	0.0
KIRCHNERIELLA SPP.	48	2.1	9.30	0.7	1.59	1.4	0	0.0
PANDORINA CHARKONIENSIS	24	1.0	69.02	5.7	1.2*	2.0	0	0.0
SCENEDESMUS BIJUGA	24	1.0	5.28	0.4	0.88	0.2	0	0.0
SCENEDESMUS QUADRICAUDA	48	2.1	11.17	0.9	1.86	1.5	0	0.0
COCCOID GREENS	24	1.0	2.36	0.1	0.4*	0.3	0	0.0
BACILLARIOPHYCEAE	1105	48.9	791.37	66.0	58.09	57.9	0	0.0
MELOSIRA GRANULATA	96	4.2	247.84	20.6	14.01	12.0	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	144	6.3	124.50	10.3	5.17	7.4	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	481	21.3	295.91	24.7	23.66	26.5	0	0.0
NETZSCHIA AGNITA	24	1.0	3.60	0.3	0.40	0.3	0	0.0
SKELETONEMA POTANUS	48	2.1	2.58	0.2	0.37	0.3	0	0.0
SYNEDRA RUMPENS	96	4.2	45.87	3.8	3.90	3.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	168	7.4	48.81	4.0	4.68	4.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	48	2.1	22.27	1.8	1.90	1.6	0	0.0
CHRYSOPHYCEAE	72	3.1	8.79	0.7	1.57	1.3	0	0.0
OCHROMONAS SPP.	24	1.0	5.25	0.4	0.88	0.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	48	2.1	3.55	0.2	0.69	0.5	0	0.0
CRYPTOPHYCEAE	288	12.7	139.81	11.6	19.95	17.1	0	0.0
CRYPTOMONAS EROSA	48	2.1	24.24	2.0	3.65	3.1	0	0.0
CRYPTOMONAS OVATA	72	3.1	95.39	7.9	12.62	10.8	0	0.0
RHODOMONAS MINUTA	168	7.4	20.18	1.6	3.68	3.1	0	0.0
MYXOPHYCEAE	120	5.3	49.14	4.1	7.54	6.4	0	0.0
OSCELLATORIA GEMINATA	96	4.2	45.69	3.8	6.93	5.9	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	24	1.0	3.46	0.2	0.61	0.5	0	0.0
DINOPHYCEAE	24	1.0	63.29	5.2	7.63	6.5	0	0.0
PERIDINIUM INCONSPICUUM	24	1.0	63.29	5.2	7.63	6.5	0	0.0
SAMPLE TOTALS	2258		1197.45		116.34		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/09/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	78	14.9	10.33	2.0	1.79	4.7	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	36	6.8	1.94	0.3	0.39	1.0	0	0.0
CRUCIGENIA IRREGULARIS	12	2.2	1.62	0.3	0.29	0.7	0	0.0
CRUCIGENIA TETRAPEDIA	6	1.1	1.25	0.2	0.21	0.5	0	0.0
GOLENKINIA RADIALIS	6	1.1	2.13	0.4	0.33	0.8	0	0.0
SCENEDESMUS QUADRICAUDA	12	2.2	2.79	0.5	0.46	1.2	0	0.0
TETRAEDRON REGULARE VAR. INCUS	6	1.1	0.60	0.1	0.11	0.2	0	0.0
BACILLARIOPHYCEAE	366	70.1	407.75	81.4	26.20	69.4	0	0.0
FRAGILARIA CROTONENSIS	18	3.4	16.04	3.2	1.17	3.0	0	0.0
MELOSIRA DISTANS	18	3.4	6.18	1.2	0.56	1.4	0	0.0
MELOSIRA GRANULATA	78	14.9	201.16	40.2	11.37	30.1	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	66	12.6	56.98	11.3	4.19	11.0	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	42	8.0	25.86	5.1	2.06	5.4	0	0.0
NITZSCHIA HOLSATICA	12	2.2	4.08	0.8	0.37	0.9	0	0.0
RHIZOCOLENIA SPP.	6	1.1	12.95	2.5	0.76	2.0	0	0.0
STEPHANODISCUS SPP.	24	4.5	5.66	1.1	0.57	1.5	0	0.0
SYNEDRA PLANKTONICA	6	1.1	3.17	0.6	0.26	0.6	0	0.0
SYNEDRA RUPPENS	6	1.1	2.86	0.5	0.24	0.6	0	0.0
SYNEDRA ULNA	6	1.1	37.91	7.5	1.72	4.5	0	0.0
TABELLARIA FENESTRATA	6	1.1	10.17	2.0	0.63	1.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	66	12.6	19.15	3.8	1.83	4.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	12	2.2	5.55	1.1	0.47	1.2	0	0.0
CHRYSOPHYCEAE	6	1.1	1.31	0.2	0.22	0.5	0	0.0
OCHROMONAS SPP.	6	1.1	1.31	0.2	0.22	0.5	0	0.0
CRYPTOPHYCEAE	12	2.2	6.05	1.2	0.91	2.4	0	0.0
CRYPTOMONAS ERNSA	12	2.2	6.05	1.2	0.91	2.4	0	0.0
MYXOPHYCEAE	54	10.3	18.59	3.7	2.90	7.6	0	0.0
CHROOCOCCUS SPP.	24	4.5	9.98	1.9	1.54	4.0	0	0.0
OSCELLATORIA GEMINATA	12	2.2	5.70	1.1	0.86	2.2	0	0.0
OSCELLATORIA LIMNETICA	6	1.1	1.18	0.2	0.26	0.5	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	12	2.2	1.73	0.3	0.30	0.7	0	0.0
DINOPHYCEAE	6	1.1	56.34	11.2	5.73	15.1	0	0.0
PERIDINIUM SPP.	6	1.1	56.34	11.2	5.73	15.1	0	0.0
SAMPLE TOTALS	522		500.36		37.75		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/09/67 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	54	17.6	16.95	7.0	2.49	13.2	0	0.0
ACTINASTRUM HAMTZSCHII VAR. FLUVIATILE	18	5.8	0.97	0.4	0.19	1.0	0	0.0
CRUCIGENIA IRREGULARIS	6	1.9	0.81	0.3	0.14	0.7	0	0.0
PEDIASTRUM DUPLEX	6	1.9	9.60	3.9	1.23	6.5	0	0.0
SCENEDESMUS QUADRICAUDA	24	7.8	5.57	2.3	0.93	4.9	0	0.0
BACILLARIOPHYCEAE	210	68.6	202.17	84.1	13.20	70.3	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	6	1.9	5.18	2.1	0.38	2.0	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	120	39.2	73.88	30.7	5.90	31.4	0	0.0
SYNEDRA ULNA	12	3.9	75.82	31.5	3.45	18.3	0	0.0
TABELLARIA FENESTRATA	18	5.8	30.58	12.7	1.91	10.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	48	15.6	13.93	5.8	1.33	7.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	6	1.9	2.78	1.1	0.23	1.2	0	0.0
CHRYSOPHYCEAE	12	3.9	3.63	1.5	0.58	3.0	0	0.0
CHRYSOCOCCUS RUFESCENS	6	1.9	2.32	0.9	0.36	1.9	0	0.0
OCHRONOMAS SPP.	6	1.9	1.31	0.5	0.22	1.1	0	0.0
CRYPTOPHYCEAE	6	1.9	7.94	3.3	1.05	5.5	0	0.0
CRYPTONEMAS OVATA	6	1.9	7.94	3.3	1.05	5.5	0	0.0
MYXOPHYCEAE	24	7.8	9.42	3.9	1.44	7.6	0	0.0
OSCELLATORIA GEMINATA	18	5.8	8.56	3.5	1.29	6.8	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	6	1.9	0.86	0.3	0.15	0.7	0	0.0

SAMPLE TOTALS 306 240.11 18.76 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/09/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	PM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	3210	26.8	822.54	14.5	132.70	22.9	0	0.0
ACTINASTRUM HANTSCHII VAR. FLUVIATILE	219	1.8	35.45	0.6	6.21	1.0	0	0.0
AMNISTRODESMUS FALCATUS	73	0.6	4.76	0.0	0.94	0.1	0	0.0
CHLAMYDOMONAS	968	7.9	257.86	4.5	62.18	7.2	0	0.0
COXIAURUM SPP.	73	0.6	31.34	0.5	4.82	0.8	0	0.0
CRUCIGENIA IRREGULARIS	73	0.6	9.84	0.1	1.76	0.3	0	0.0
FRANCEIA DROESCHERI	73	0.6	12.40	0.2	2.16	0.3	0	0.0
GOLEKINIA RADIATA	438	3.6	155.31	2.7	24.51	4.2	0	0.0
MESOSTIGMA VIRIDE	146	1.2	61.82	1.0	9.52	1.6	0	0.0
MICRACTINIUM PUSILLUM	73	0.6	33.10	0.5	5.05	0.8	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	146	1.2	35.27	0.6	5.86	1.0	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	73	0.6	86.61	1.5	11.62	2.0	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.6	16.93	0.2	2.82	0.4	0	0.0
TREUBARIA SETIGERUM	73	0.6	10.17	0.1	1.81	0.3	0	0.0
COCCOID GREENS	729	6.0	71.70	1.2	13.44	2.3	0	0.0
BACILLARIOPHYCEAE	2772	23.1	3219.28	56.8	193.43	33.4	0	0.0
HELOSIRA GRANULATA VAR. ANGLUSTISSIMA	219	1.8	188.91	3.3	13.92	2.4	0	0.0
NITZSCHIA HOLSATICA	219	1.8	74.37	1.3	6.86	1.1	0	0.0
RHIZOSOLENIA SPP.	510	4.2	1101.95	19.4	65.05	11.2	0	0.0
SKELETONEMA POTAMUS	73	0.6	3.90	0.0	0.56	0.0	0	0.0
STEPHANODISCUS SPP.	292	2.4	68.84	1.2	6.94	1.1	0	0.0
SYNEDRA PLANKTONICA	73	0.6	38.48	0.6	3.19	0.5	0	0.0
SYNEDRA ULNA	219	1.8	1382.38	24.4	62.93	10.8	0	0.0
SYNEDRA SPP.	146	1.2	64.13	1.1	5.56	0.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1021	8.5	296.26	5.2	28.42	4.9	0	0.0
CHRYSOPHYCEAE	1094	9.1	121.20	2.1	21.11	3.6	0	0.0
ERHENIA SUBAEQUICILIATA	510	4.2	22.50	0.3	4.69	0.8	0	0.0
SYNEURA SPINDSA	146	1.2	66.44	1.1	10.14	1.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	438	3.6	32.26	0.5	6.28	1.0	0	0.0
CRYPTOPHYCEAE	3063	25.6	686.71	12.1	108.47	18.7	0	0.0
CRYPTOPHYTAS EROSA	146	1.2	73.48	1.2	11.06	1.9	0	0.0
CRYPTOPHYTAS OVATA	219	1.8	289.47	5.1	38.31	6.6	0	0.0
RHODOPHYTAS MINUTA	2698	22.5	323.76	5.7	59.10	10.2	0	0.0
MYXOPHYCEAE	1823	15.2	608.15	14.2	123.10	21.2	0	0.0
AMABAENA SPP.	73	0.6	72.39	1.2	9.95	1.7	0	0.0
CHROCOCCUS SPP.	802	6.7	333.43	5.8	51.53	8.9	0	0.0
OSCILLATORIA GEMINATA	802	6.7	381.32	6.7	57.88	9.9	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	146	1.2	21.01	0.3	3.74	0.6	0	0.0

SAMPLE TOTALS

11962

5657.88

576.61

0

PHYTOPLANKTON STATIONING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/09/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	360	25.4	52.07	12.1	8.96	18.5	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	192	13.5	10.38	2.4	2.10	4.3	0	0.0
CHLAMYDOMONAS	48	3.3	13.08	3.0	2.14	4.4	0	0.0
GOLENKINIA RADIATA	24	1.6	8.52	1.9	1.34	2.7	0	0.0
SCENEDESMUS QUADRICAUDA	72	5.0	16.74	3.9	2.79	5.7	0	0.0
TREUBARIA SETIGERUM	24	1.6	3.35	0.7	0.59	1.2	0	0.0
BACILLARIOPHYCEAE	480	33.8	261.41	60.9	20.63	42.6	0	0.0
HELOSIRA GRANULATA VAR. ANGSTISSIMA	72	5.0	62.25	14.5	4.58	9.4	0	0.0
HELOSIRA ITALICA VAR. TENUISSIMA	120	8.4	74.01	17.2	5.91	12.2	0	0.0
NITZSCHIA AGNITA	24	1.6	3.60	0.8	0.40	0.8	0	0.0
RHIZOSOLENIA SPP.	24	1.6	51.82	12.0	3.05	6.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	240	16.9	69.73	16.2	6.69	13.8	0	0.0
CHRYSOPHYCEAE	216	15.2	16.57	3.8	3.14	6.4	0	0.0
ERKENIA SUBAEQUICILIATA	96	6.7	4.24	0.9	0.88	1.8	0	0.0
OCHROBONAS SPP.	24	1.6	5.25	1.2	0.88	1.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	96	6.7	7.09	1.6	1.38	2.8	0	0.0
CRYPTOPHYCEAE	168	11.8	20.18	4.7	3.68	7.6	0	0.0
RHODONONAS MINUTA	168	11.8	20.18	4.7	3.68	7.6	0	0.0
MYXOPHYCEAE	192	13.5	78.55	18.3	11.94	24.6	0	0.0
AGRENELLUM QUADRIDUPLICATUM	24	1.6	0.02	0.0	0.00	0.0	0	0.0
CHROCOCCUS SPP.	24	1.6	9.98	2.3	1.54	3.1	0	0.0
OSCELLATORIA GEMINATA	144	10.1	68.55	15.9	10.40	21.5	0	0.0
SAMPLE TOTALS	1416		428.78		48.35		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/09/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	132	18.6	41.66	7.2	6.27	14.8	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	24	3.3	1.30	0.2	0.26	0.6	0	0.0
CHLAMYDOMONAS	12	1.6	3.26	0.5	0.53	1.2	0	0.0
CRUCIGENIA IRREGULARIS	12	1.6	1.62	0.2	0.29	0.6	0	0.0
PEDIASTRUM DUPLEX	12	1.6	19.20	3.3	2.47	5.8	0	0.0
SCENEDESMUS BIJUGA	36	5.0	7.92	1.3	1.33	3.1	0	0.0
SCENEDESMUS QUADRICAUDA	36	5.0	8.36	1.4	1.39	3.2	0	0.0
BACILLARIOPHYCEAE	444	62.7	513.48	88.7	32.01	75.8	0	0.0
FRAGILARIA CROTONENSIS	12	1.6	10.70	1.8	0.78	1.8	0	0.0
MELOSIRA AMBIGUA	36	5.0	121.50	21.0	6.43	15.2	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	84	11.8	72.61	12.5	5.35	12.6	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	120	16.9	73.95	12.7	5.91	14.0	0	0.0
MELOSIRA SPP.	48	6.7	18.82	3.2	1.67	3.9	0	0.0
NAVICULA SPP.	12	1.6	7.04	1.2	0.56	1.3	0	0.0
NITZSCHIA PALEA	12	1.6	4.86	0.8	0.42	0.9	0	0.0
RHIZOSOLENIA SPP.	12	1.6	25.91	4.4	1.52	3.6	0	0.0
SYNEDRA ULNA	24	3.3	151.63	26.2	6.90	16.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	72	10.1	20.92	3.6	2.00	4.7	0	0.0
UNIDENTIFIED PENNATE DIATOMS	12	1.6	5.55	0.9	0.47	1.1	0	0.0
CHRYSOPHYCEAE	60	8.4	4.43	0.7	0.86	2.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	60	8.4	4.43	0.7	0.86	2.0	0	0.0
CRYPTOPHYCEAE	24	3.3	2.88	0.4	0.52	1.2	0	0.0
RHODOMONAS MINUTA	24	3.3	2.88	0.4	0.52	1.2	0	0.0
MYXOPHYCEAE	48	6.7	16.12	2.7	2.53	5.9	0	0.0
OSCILLATORIA GEMINATA	24	3.3	11.41	1.9	1.73	4.1	0	0.0
OSCILLATORIA LIMNETICA	24	3.3	4.71	0.8	0.80	1.8	0	0.0
SAMPLE TOTALS	708		578.56		42.19		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 06/09/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1606	15.9	555.61	18.6	77.21	19.0	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	438	4.3	23.63	0.7	4.79	1.1	0	0.0
ANKISTRODESMUS FALCATUS	219	2.1	14.28	0.4	2.82	0.6	0	0.0
COELASTRUM MICROPORUM	73	0.7	254.06	8.5	29.53	7.2	0	0.0
CRUCIGENIA IRREGULARIS	73	0.7	9.84	0.3	1.76	0.4	0	0.0
GOLENKINIA RADIATA	73	0.7	25.88	0.8	4.08	1.0	0	0.0
KIRCHNERIELLA SUBSOLITARIA	73	0.7	15.03	0.5	2.55	0.6	0	0.0
MESOSTIGMA VIRIDE	73	0.7	20.56	0.6	3.34	0.8	0	0.0
PEDIASTRUM DUPLEX	73	0.7	116.64	3.9	15.04	3.7	0	0.0
SCENEDES MUS ARMATUS VAR. BICAUDATUS	73	0.7	17.63	0.5	2.93	0.7	0	0.0
SCENEDES MUS BIJUGA	73	0.7	16.04	0.5	2.69	0.6	0	0.0
TETRAEDRON REGULARE	73	0.7	10.34	0.3	1.84	0.4	0	0.0
TREUBARIA SETIGERUM	73	0.7	10.17	0.3	1.81	0.4	0	0.0
COCCOID GREENS	219	2.1	21.51	0.7	4.03	0.9	0	0.0
BACILLARIOPHYCEAE	1022	10.1	679.52	22.7	48.15	11.8	0	0.0
ACHNANTHES MICROCEPHALA	146	1.4	31.36	1.0	3.23	0.7	0	0.0
NITZSCHIA ACICULARIS	73	0.7	30.89	1.0	2.70	0.6	0	0.0
NITZSCHIA AGNETA	146	1.4	21.87	0.7	2.46	0.6	0	0.0
RHIZOSOLENIA SPP.	219	2.1	472.39	15.8	27.88	6.8	0	0.0
STEPHANODISCUS SPP.	73	0.7	17.20	0.5	1.73	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	365	3.6	105.81	3.5	10.15	2.4	0	0.0
CHRYSOPHYCEAE	875	8.6	55.88	1.8	11.06	2.7	0	0.0
ERKENIA SUBAEQUICILIATA	292	2.9	12.86	0.4	2.68	0.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	583	5.7	43.02	1.4	8.38	2.0	0	0.0
XANTHOPHYCEAE	73	0.7	3.64	0.1	0.74	0.1	0	0.0
DICHTOMOCOCCLUS SPP.	73	0.7	3.64	0.1	0.74	0.1	0	0.0
CRYPTOPHYCEAE	2261	22.4	446.66	14.9	71.84	17.6	0	0.0
CRYPTOMONAS OVATA	146	1.4	192.89	6.4	25.52	6.2	0	0.0
RHODOMONAS MINUTA	2115	21.0	253.76	8.5	46.32	11.4	0	0.0
MYXOPHYCEAE	4230	42.0	1241.54	41.6	197.01	48.5	0	0.0
ACHENELLUM QUADRIDUPLICATUM	73	0.7	0.07	0.0	0.02	0.0	0	0.0
ANABAENA SPP.	73	0.7	72.39	2.4	9.95	2.4	0	0.0
CHROCOCCUS SPP.	1604	15.9	666.87	22.3	103.06	25.3	0	0.0
OSCILLATORIA GEMINATA	438	4.3	207.99	6.9	31.57	7.7	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	2042	20.2	294.22	9.8	52.41	12.9	0	0.0
SAMPLE TOTALS	10067		2982.84		406.01		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 06/09/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1751	16.0	239.92	6.7	41.27	11.3	0	0.0
ACTINASTRUM HANTZ SCHI VAR. FLUVIATILE	510	4.6	14.80	0.4	3.26	0.8	0	0.0
ANKISTRODESPIRUS FAL. 'TUS	365	3.3	23.80	0.6	4.71	1.2	0	0.0
CHLAMYDOMONAS	292	2.6	79.34	2.2	12.97	3.5	0	0.0
FRANCEIA BRUESCHEP*	73	0.6	12.40	0.3	2.16	0.5	0	0.0
GOLENKINIA RAUATA	146	1.3	51.76	1.4	8.17	2.2	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.6	16.93	0.4	2.82	0.7	0	0.0
SELENASTRUM MINUTUM	73	0.6	4.89	0.1	0.96	0.2	0	0.0
TETRAEDRON CAUDATUM VAR. LONGISPINUM	73	0.6	18.66	0.5	3.07	0.8	0	0.0
TREUBARIA SETIGERUM	73	0.6	10.17	0.2	1.81	0.4	0	0.0
COCCOID GREENS	73	0.6	7.17	0.2	1.34	0.3	0	0.0
BACILLARIOPHYCEAE	2335	21.3	2212.62	62.4	136.93	37.7	0	0.0
MELOSIRA SPP.	73	0.6	28.58	0.8	2.54	0.7	0	0.0
NAVICULA EXIGUA	73	0.6	41.75	1.1	3.39	0.9	0	0.0
NITZSCHIA AGNITA	292	2.6	43.75	1.2	4.92	1.3	0	0.0
RHIZOSOLENIA SPP.	365	3.3	787.17	22.2	46.47	12.8	0	0.0
STEPHANODISCU'S SPP.	219	2.0	51.44	1.4	5.20	1.4	0	0.0
SYNEDRA ULNA	146	1.3	921.16	25.9	41.93	11.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1167	10.6	338.58	9.5	32.48	8.9	0	0.0
CHRYSOPHYCEAE	1896	17.3	83.57	2.3	17.44	4.8	0	0.0
CRKENIA SUBAEQUICILIATA	1896	17.3	83.57	2.3	17.44	4.8	0	0.0
XANTHOPHYCEAE	73	0.6	3.64	0.1	0.74	0.2	0	0.0
DICHTOMYCOCCUS SPP.	73	0.6	3.64	0.1	0.74	0.2	0	0.0
CRYPTOPHYCEAE	1750	15.9	265.99	7.5	46.20	12.7	0	0.0
CRYPTOMONAS EROSA	146	1.3	73.48	2.0	11.06	3.0	0	0.0
RHOODONAS MINUTA	1604	14.6	192.50	5.4	35.14	9.6	0	0.0
MYXOPHYCEAE	3136	28.6	737.20	20.8	119.97	33.0	0	0.0
CHROCOCCUS SPP.	802	7.3	333.43	9.4	51.53	14.2	0	0.0
OSCILLATORIA GEMINATA	292	2.6	138.67	3.9	21.05	5.8	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	219	2.0	2.40	0.0	0.60	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	1823	16.6	262.69	7.4	46.79	12.9	0	0.0
SAMPLE TOTALS	10941		3542.94		342.55		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 06/09/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	%/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	168	17.9	115.72	34.6	14.55	37.8	0	0.0
AMBISTRODOSPUS FALCATUS	24	2.5	1.57	0.4	.31	0.8	0	0.0
EUDORINA ELEGANS	24	2.5	92.93	27.8	11.65	27.6	0	0.0
GOLEMINIA RADIATA	24	2.5	8.52	2.5	1.34	3.4	0	0.0
SCENEDESPUS QUADRICAUDA	24	2.5	5.57	1.6	0.95	2.4	0	0.0
COCCOID GREENS	72	7.6	7.09	2.1	1.32	3.4	0	0.0
BACILLARIOPHYCEAE	288	30.7	144.63	43.3	11.48	29.8	0	0.0
PELODIRA ITALICA VAR. TENUISSIMA	24	2.5	14.78	4.4	1.18	3.0	0	0.0
RHIZOLENIA SPP.	24	2.5	51.82	15.5	3.05	7.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	192	20.5	55.78	16.7	5.35	13.9	0	0.0
UNIDENTIFIED PENNATE DIATOMS	48	5.1	22.27	6.6	1.90	4.9	0	0.0
CHRYSOPHYCEAE	168	17.9	12.60	3.7	2.43	6.3	0	0.0
ERLENIA SUBAEQUICILIATA	24	2.5	1.06	0.3	0.22	0.5	0	0.0
UROLENOPSIS AMERICANA	72	7.6	6.23	1.8	1.18	3.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	72	7.6	5.32	1.5	1.03	2.6	0	0.0
XANTHOPHYCEAE	24	2.5	0.36	0.1	0.08	0.2	0	0.0
DICHTODONOCUS SPP.	24	2.5	0.36	0.1	0.08	0.2	0	0.0
CRYPTOPHYCEAE	216	23.0	25.96	7.7	4.73	12.2	0	0.0
RHODONAS MINUTA	216	23.0	25.96	7.7	4.73	12.2	0	0.0
MYXOPHYCEAE	72	7.6	34.28	10.2	5.20	13.5	0	0.0
OSCILLATORIA GEMINATA	72	7.6	34.28	10.2	5.20	13.5	0	0.0

SAMPLE TOTALS 936 333.55 38.47 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 06/09/87 TIME: 1106 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	CM ² /M	% TOTAL
CHLOROPHYCEAE	208	27.2	41.72	1.8	7.04	19.6	0	0.0
ACTINASTRUM Hantzschii var. fluviale	96	9.0	5.19	1.4	1.05	2.9	0	0.0
ANKISTRODESMUS FALCATUS	48	4.5	3.14	0.8	0.62	1.7	0	0.0
COELASTRUM SPP.	24	2.2	16.10	4.5	2.33	5.5	0	0.0
KIRCHNERIELLA LUNARIS var. dianae	24	2.2	4.62	1.3	0.79	2.2	0	0.0
SCENEDESMUS QUADRICAUDA	24	2.2	5.57	1.5	0.93	2.5	0	0.0
COCCOID GREENS	72	6.8	7.09	2.0	1.32	3.6	0	0.0
BACILLARIOPHYCEAE	504	47.7	268.18	75.9	21.64	60.4	0	0.0
ACHNANTHES MICROCEPHALA	96	9.0	20.67	5.8	2.13	5.9	0	0.0
MELOSIRA GRANULATA var. angustissima	168	15.9	145.22	41.1	10.70	29.9	0	0.0
MELOSIRA ITALICA var. tenuissima	72	6.8	44.39	12.5	3.55	9.9	0	0.0
NITZSCHIA AGNITA	24	2.2	3.60	1.0	0.40	1.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	72	6.8	20.92	5.9	2.00	5.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	72	6.8	33.38	9.4	2.86	7.9	0	0.0
CHRYSOPHYCEAE	72	6.8	5.32	1.5	1.03	2.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	72	6.8	5.32	1.5	1.03	2.8	0	0.0
CRYPTOPHYCEAE	48	4.5	5.77	1.6	1.05	2.9	0	0.0
RHODOMONAS MINUTA	48	4.5	5.77	1.6	1.05	2.9	0	0.0
MYXOPHYCEAE	144	13.6	32.20	9.1	5.01	14.0	0	0.0
CHRODOCCUS SPP.	48	4.5	20.00	5.6	3.09	8.6	0	0.0
OSCELLATORIA GEMINATA	24	2.2	11.41	3.2	1.73	4.8	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	72	6.8	0.79	0.2	0.19	0.5	0	0.0
SAMPLE TOTALS	1056		353.18		35.77		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 07/14/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	2261	20.9	514.55	11.9	83.53	15.4	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	73	0.6	3.94	0.0	0.79	0.1	0	0.0
ANKISTRODESMUS FALCATUS	219	2.0	14.28	0.3	2.82	0.5	0	0.0
CHLAMYDOMONAS	729	6.7	198.34	4.5	32.44	5.9	0	0.0
GOLENKINIA RADIATA	73	0.6	25.88	0.5	4.08	0.7	0	0.0
PLANKTOSPHAERIA GELATINOSA	219	2.0	49.14	1.1	8.24	1.5	0	0.0
SCENEDESMUS DENTICULATUS	73	0.6	65.69	1.5	9.15	1.6	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.6	16.93	0.3	2.82	0.5	0	0.0
SCHROEDERIA SETIGERA	73	0.6	19.41	0.4	3.18	0.5	0	0.0
SELENASTRUM MINUTUM	73	0.6	4.89	0.1	0.96	0.1	0	0.0
STAUENASTRUM PARADOXUM	73	0.6	58.68	1.3	8.30	1.5	0	0.0
COCCOID GREENS	583	5.4	57.37	1.3	10.75	1.9	0	0.0
BACILLARIOPHYCEAE	2626	24.3	1408.09	32.5	109.51	20.2	0	0.0
ACHNANTHES MICROCEPHALA	73	0.6	15.68	0.3	1.61	0.2	0	0.0
MELOSIRA GRANULATA VAR. ANGSTISSIMA	438	4.0	377.74	8.7	27.83	5.1	0	0.0
RHIZOSOLENIA SPP.	219	2.0	472.39	10.9	27.88	5.1	0	0.0
STEPHANODISCUS SP.	146	1.3	34.41	0.7	3.47	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1750	16.2	507.88	11.7	48.72	9.0	0	0.0
CHRYSOPHYCEAE	438	4.0	77.58	1.7	12.54	2.3	0	0.0
MALLONONAS TONGURATA	73	0.6	50.69	1.1	7.31	1.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	365	3.3	26.89	0.6	5.23	0.9	0	0.0
XANTHOPHYLEAE	146	1.3	17.93	0.4	3.26	0.6	0	0.0
DICHTOMOCOCCLUS SPP.	146	1.3	17.93	0.4	3.26	0.6	0	0.0
CRYPTOPHYCEAE	1604	14.8	1069.73	24.7	146.83	27.1	0	0.0
CRYPTOMONAS OVATA	729	6.7	964.73	22.3	127.67	23.5	0	0.0
RHODOMONAS MINUTA	875	8.1	105.00	2.4	19.16	3.5	0	0.0
MYXOPHYCEAE	3647	33.7	1042.29	24.1	162.20	29.9	0	0.0
GHENELLUM QUADRIDUPLICATUM	219	2.0	0.22	0.0	0.07	0.0	0	0.0
ANABAENA SPIROIDES	73	0.6	109.35	2.5	14.23	2.6	0	0.0
CHROCOCCUS SPP.	1896	17.5	788.13	18.2	121.80	22.5	0	0.0
OSCILLATORIA LIMNETICA	365	3.3	71.53	1.6	12.22	2.2	0	0.0
RAPHIDIOPSIS CURVATA	583	5.4	57.76	1.3	10.81	1.9	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	438	4.0	4.80	0.1	1.20	0.2	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	73	0.6	10.50	0.2	1.87	0.3	0	0.0
DINOPHYCEAE	73	0.6	192.24	4.4	23.19	4.2	0	0.0
PERIDINIUM INCONSPICUUM	73	0.6	192.24	4.4	23.19	4.2	0	0.0
SAMPLE TOTALS	10795		4322.41		541.06		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 07/14/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	224	31.1	96.07	20.8	13.85	31.8	0	0.0
CINASTRUM HANTZSCHII VAR. FLUVIATILE	16	2.2	2.93	0.6	0.50	1.1	0	0.0
ANKISTRODESMUS FALCATUS	40	5.5	2.62	0.5	0.51	1.1	0	0.0
CHLAMYDOMONAS	32	4.4	8.70	1.8	1.42	3.2	0	0.0
COSMARIVM TENUE	8	1.1	4.16	0.9	0.62	1.4	0	0.0
COLENKINIA RADIATA	16	2.2	5.68	1.2	0.89	2.0	0	0.0
PANDORINA MORUM	8	1.1	23.97	5.1	2.84	6.5	0	0.0
SCENEDESMUS BIJUGA	8	1.1	1.76	0.3	0.29	0.6	0	0.0
SCENEDESMUS DENTICULATUS	32	4.4	28.84	6.2	4.01	9.2	0	0.0
SCENEDESMUS QUADRICAUDA	32	4.4	7.43	1.6	1.24	2.8	0	0.0
SCHROEDERIA SETIGERA	8	1.1	2.13	0.4	0.34	0.7	0	0.0
SPHAEROZOSMA GRANULATA	8	1.1	1.32	0.2	0.23	0.5	0	0.0
WESTELLA LINEARIS	8	1.1	5.75	1.2	0.82	1.8	0	0.0
COCCOID GREENS	8	1.1	0.79	0.1	0.14	0.3	0	0.0
BACILLARIOPHYCEAE	352	48.8	292.60	63.4	19.19	44.0	0	0.0
ACHNANTHES SPP.	8	1.1	1.23	0.2	0.13	0.2	0	0.0
MELOSIRA GRANULATA	48	6.6	124.05	26.9	7.01	16.1	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	40	5.5	34.62	7.5	2.55	5.8	0	0.0
NITZSCHIA HOLSATICA	64	8.8	21.79	4.7	2.01	4.6	0	0.0
RHIZOSOLENIA SPP.	8	1.1	17.27	3.7	1.31	2.3	0	0.0
SKELETONEMA POTAMUS	40	5.5	2.15	0.4	0.31	0.7	0	0.0
STEPHANODISCUS SPP.	24	3.3	5.66	1.2	0.57	1.3	0	0.0
SYNEDRA ULNA	8	1.1	50.54	10.9	2.30	5.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	96	13.3	27.89	6.0	2.67	6.1	0	0.0
UNIDENTIFIED PENNATE DIATOMS	16	2.2	7.41	1.6	0.63	1.4	0	0.0
CHRYSOPHYCEAE	16	2.2	1.18	0.2	0.22	0.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	16	2.2	1.18	0.2	0.22	0.5	0	0.0
XANTHOPHYCEAE	8	1.1	0.90	0.1	0.16	0.3	0	0.0
DICHOTOMOCOCCLUS SPP.	8	1.1	0.90	0.1	0.16	0.3	0	0.0
CRYPTOPHYCEAE	24	3.3	31.75	6.8	4.20	9.6	0	0.0
CRYPTOMONAS OVATA	24	3.3	31.75	6.8	4.20	9.6	0	0.0
MYXOPHYCEAE	96	13.3	38.54	8.3	5.90	13.5	0	0.0
AGMENELLUM QUADRIDUPLICATUM	8	1.1	0.01	0.0	0.00	0.0	0	0.0
CHROOCOCCUS SPP.	56	7.7	23.32	5.0	3.60	8.2	0	0.0
OSCILLATORIA GEMINATA	32	4.4	15.21	3.2	2.30	5.2	0	0.0
SAMPLE TOTALS	720		461.03		43.52		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 07/14/67 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/M	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	1679	20.7	294.28	11.6	50.33	16.3	0	0.0
ANKISTRODESMUS FALCATUS	146	1.8	9.52	0.3	1.88	0.6	0	0.0
CHLAMYDOMONAS	146	1.8	39.66	1.5	6.48	2.1	0	0.0
CRUCIGENIA IRREGULARIS	73	0.9	9.84	0.3	1.76	0.5	0	0.0
GOLENKINIA RADIATA	73	0.9	25.88	1.0	4.08	1.3	0	0.0
MESOSTIGMA VIRIDE	146	1.8	33.68	1.3	5.63	1.8	0	0.0
PLANKTOSPHAERIA GELATINOSA	73	0.9	16.37	0.6	2.74	0.8	0	0.0
SCENEDESMUS QUADRICAUDA	73	0.9	16.93	0.6	2.82	0.9	0	0.0
SCHROEDERIA SETIGERA	73	0.9	19.41	0.7	3.18	1.0	0	0.0
SELENASTRUM MINUTUM	73	0.9	4.89	0.1	0.96	0.3	0	0.0
SELENASTRUM NESTII	219	2.7	49.89	1.9	8.35	2.7	0	0.0
SPHAEROZOSMA GRANULATA	73	0.9	12.04	0.4	2.10	0.6	0	0.0
TREUBARIA SETIGERUM	146	1.8	20.34	0.8	3.63	1.1	0	0.0
COCCOID GREENS	365	4.5	35.85	1.4	6.72	2.1	0	0.0
BACILLARIOPHYCEAE	2626	32.4	1129.02	44.8	91.31	29.6	0	0.0
RHIZOSOLENIA SPP.	219	2.7	472.39	18.7	27.88	9.0	0	0.0
SKELETONEMA POTAMUS	146	1.8	7.81	0.3	1.12	0.3	0	0.0
STEPHANODISCUS SPP.	365	4.5	86.05	3.4	8.67	2.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1823	22.5	529.03	21.0	50.75	16.4	0	0.0
UNIDENTIFIED PENNATE DIATOMS	73	0.9	33.75	1.3	2.89	0.9	0	0.0
CHRYSOPHYCEAE	729	9.0	53.77	2.1	10.47	3.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	729	9.0	53.77	2.1	10.47	3.3	0	0.0
XANTHOPHYCEAE	219	2.7	24.72	0.9	4.54	1.4	0	0.0
DICHOCHOCOCUS SPP.	219	2.7	24.72	0.9	4.54	1.4	0	0.0
CRYPTOPHYCEAE	730	9.0	438.42	17.4	60.65	19.6	0	0.0
CRYPTOPHNAS OVATA	292	3.6	385.52	15.3	51.07	16.5	0	0.0
RHODOMONAS MINUTA	438	5.4	52.50	2.0	9.58	3.1	0	0.0
MYXOPHYCEAE	2116	26.1	578.67	22.9	90.78	29.4	0	0.0
AGHENELLUM QUADRIDUPPLICATUM	146	1.8	0.14	0.0	0.05	0.0	0	0.0
CHROCOCCUS SPP.	1313	16.2	545.65	21.6	84.33	27.3	0	0.0
RAPHIDIOPSIS CURVATA	292	3.6	28.88	1.1	5.40	1.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	365	4.5	4.00	0.1	1.00	0.3	0	0.0
SAMPLE TOTALS	8099		2518.89		308.08		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 07/14/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	288	27.2	67.54	19.2	10.71	24.3	0	0.0
ANKISTRODESPIRUS FALCATUS	48	4.5	3.13	0.8	0.62	1.4	0	0.0
CHLAMYDOMONAS	48	4.5	13.06	3.7	2.13	4.8	0	0.0
FRANCEIA DROESCHERI	24	2.2	4.08	1.1	0.71	1.6	0	0.0
LACERHEIMIA LONGISETA	12	1.1	1.84	0.5	0.32	0.7	0	0.0
PEDIASTRUM DUPLEX	12	1.1	19.20	5.4	2.47	5.5	0	0.0
SCENEDESMUS QUADRIKAUDA	84	7.9	19.53	5.5	3.26	7.4	0	0.0
SELENASTRUM MINUTUM	24	2.2	1.61	0.4	0.31	0.7	0	0.0
SELENASTRUM MESTII	12	1.1	2.74	0.7	0.45	1.0	0	0.0
COCCOID GREENS	24	2.2	2.36	0.6	0.44	1.0	0	0.0
BACILLARIOPHYCEAE	336	31.8	147.26	41.9	11.92	27.1	0	0.0
ACHNANTHES MICROCEPHALA	12	1.1	2.58	0.7	0.26	0.5	0	0.0
FRAGILARIA CROTONENSIS	36	3.4	32.09	9.1	2.34	5.3	0	0.0
HELOSIRA GRANULATA VAR. ANGSTISSIMA	24	2.2	20.72	5.9	1.52	3.4	0	0.0
NITZSCHIA ACICULARIS	12	1.1	5.08	1.4	0.44	1.0	0	0.0
RHIZOSOLENIA SPP.	12	1.1	25.91	7.3	1.52	3.4	0	0.0
SKELETONEMA POTAMIS	60	5.6	3.22	0.9	0.46	1.0	0	0.0
SYNEDRA SPP.	36	3.4	15.85	4.5	1.37	3.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	144	13.6	41.82	11.9	4.01	9.1	0	0.0
CHRYSOPHYCEAE	12	1.1	0.88	0.2	0.17	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	12	1.1	0.88	0.2	0.17	0.3	0	0.0
XANTHOPHYCEAE	24	2.2	2.69	0.7	0.49	1.1	0	0.0
DICHTOMYCOCCUS SPP.	24	2.2	2.69	0.7	0.49	1.1	0	0.0
CRYPTOPHYCEAE	48	4.5	20.19	5.7	2.88	6.5	0	0.0
CRYPTOMONAS OVATA	12	1.1	15.88	4.5	2.10	4.7	0	0.0
RHODOMONAS MINUTA	36	3.4	4.32	1.2	0.76	1.7	0	0.0
MYXOPHYCEAE	368	32.9	112.63	32.0	17.74	40.4	0	0.0
CHROCOCCUS SPP.	96	9.0	39.95	11.3	6.17	14.0	0	0.0
LYNGBYA OCHRACEA	36	3.4	3.43	0.9	0.64	1.4	0	0.0
OSCILLATORIA GEMINATA	96	9.0	45.69	13.0	6.93	15.7	0	0.0
OSCILLATORIA LIMNETICA	120	11.3	23.56	6.7	4.02	9.1	0	0.0
SAMPLE TOTALS	1056		351.19		43.93		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 07/14/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOPPOPHYCEAE	1824	73.5	471.32	11.0	74.56	15.0	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	292	3.7	15.75	0.3	3.20	0.6	0	0.0
CHLAMYDOMONAS	656	8.4	178.51	4.1	29.20	5.8	0	0.0
KIRCHNERIELLA SUBSOLITARIA	73	0.9	15.03	0.3	2.55	0.5	0	0.0
MESOSTIGMA VIRIDE	73	0.9	21.58	0.5	3.49	0.7	0	0.0
PEDIASTRUM DUPLEX	73	0.9	116.64	2.7	15.04	3.0	0	0.0
SCENEDESMUS QUADRICAUDA	438	5.6	101.59	2.3	16.97	3.4	0	0.0
SELENASTRUM MINUTUM	73	0.9	4.89	0.1	0.96	0.1	0	0.0
TREUBARIA SETIGERUM	73	0.9	10.17	0.2	1.81	0.3	0	0.0
COCCOID GREENS	73	0.9	7.17	0.1	1.34	0.2	0	0.0
BACILLARIUSPHYCEAE	1532	19.8	1480.05	34.3	95.64	19.3	0	0.0
HELOSIRA s. RANULATA	292	3.7	752.29	17.6	42.54	8.5	0	0.0
NITZSCHIA AGNITA	292	3.7	43.75	1.0	4.92	0.9	0	0.0
RHIZOSOLENIA SPP.	219	2.8	472.39	11.1	27.88	5.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	729	9.4	211.61	4.9	20.30	4.0	0	0.0
CHRYSOPHYCEAE	510	6.5	37.64	0.8	7.33	1.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	510	6.5	37.64	0.8	7.33	1.4	0	0.0
XANTHOPHYCEAE	73	0.9	22.00	0.5	3.54	0.7	0	0.0
DICHTOMYOCOCUS SPP.	73	0.9	22.00	0.5	3.54	0.7	0	0.0
CRYPTOPHYCEAE	1167	15.0	1017.23	23.9	137.25	27.6	0	0.0
CRYPTOMONAS OVATA	729	9.4	964.73	22.6	127.67	25.7	0	0.0
RHODOMONAS MINUTA	438	5.6	52.50	1.2	9.58	1.9	0	0.0
MYXOPHYCEAE	2408	31.1	765.05	17.9	120.35	24.2	0	0.0
CHROOCOCCUS SPP.	1386	17.9	575.95	13.5	89.01	17.9	0	0.0
LYNGBYA OCHRACEA	73	0.9	6.95	0.1	1.30	0.2	0	0.0
LYNGBYA SPIRULENTOIDES	146	1.8	25.75	0.6	4.46	0.9	0	0.0
LYNGBYA SPP.	292	3.7	16.41	0.3	3.31	0.6	0	0.0
OSCILLATORIA GEMINATA	219	2.8	104.02	2.4	15.78	3.1	0	0.0
OSCILLATORIA LIMNETICA	73	0.9	14.36	0.3	2.44	0.4	0	0.0
RAPHIDIOPSIS CURVATA	219	2.8	21.66	0.5	4.05	0.8	0	0.0
EUGLENOPHYCEAE	73	0.9	188.15	4.4	22.76	4.5	0	0.0
TRACHELOMONAS VOLVOICINA	73	0.9	188.15	4.4	22.76	4.5	0	0.0
CHLOROMONADOPHYCEAE	146	1.8	269.58	6.3	34.11	6.8	0	0.0
GONYOSTOMUM LATUM	146	1.8	269.58	6.3	34.11	6.8	0	0.0
SAMPLE TOTALS	7733		4251.02		495.54		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 07/14/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	960	21.0	236.53	5.8	38.09	14.5	0	0.0
ACTINASTRUM HAMTZSCHII VAR. FLUVIATILE	48	1.0	8.18	0.3	1.42	0.5	0	0.0
AMBISTRIPSUS FALCATUS	24	0.5	1.57	0.0	0.31	0.1	0	0.0
CHLAMYDOMONAS	96	2.1	26.14	1.0	4.27	1.6	0	0.0
CRUCIGENIA IRREGULARIS	24	0.5	3.24	0.1	0.58	0.2	0	0.0
ELAKATOTRIX GELATINOSA	24	0.5	17.23	0.7	2.47	0.9	0	0.0
GOLENKINIA PAUCISPINA	48	1.0	14.57	0.6	2.35	0.8	0	0.0
GOLENKINIA RADIATA	48	1.0	17.08	0.7	2.69	1.0	0	0.0
LAGERHEIMIA LONGISETA	24	0.5	3.68	0.1	0.64	0.2	0	0.0
MESOSTIGMA VIRIDE	120	2.7	37.02	1.5	5.95	2.2	0	0.0
SCENEDESMUS BIJUGA	48	1.0	10.58	0.4	1.78	0.6	0	0.0
SCENEDESMUS DENTICULATUS	48	1.0	43.34	1.8	6.03	2.3	0	0.0
SCENEDESMUS QUADRICAUDA	72	1.6	16.74	0.6	2.79	1.0	0	0.0
SELENASTRUM MESTII	24	0.5	5.47	0.2	0.91	0.3	0	0.0
TREUBARIA SETIGERUM	24	0.5	3.35	0.1	0.59	0.2	0	0.0
COCCOID GREENS	288	6.5	28.36	1.1	5.31	2.0	0	0.0
BACILLARIOPHYCEAE	1321	30.0	486.06	28.5	52.24	19.9	0	0.0
CYCLOTELLA SPP.	96	2.1	18.45	0.7	1.95	0.7	0	0.0
MELOSIRA DISTANS	96	2.1	32.98	1.3	3.03	1.1	0	0.0
MELOSIRA GRANULATA	96	2.1	247.84	10.3	14.01	5.3	0	0.0
MITZSCHIA AGNITA	24	0.5	3.60	0.1	0.40	0.1	0	0.0
RHIZOLENIA SPP.	48	1.0	103.85	4.3	6.13	2.3	0	0.0
STEPHANODISCUS SPP.	192	4.3	45.36	1.8	4.57	1.7	0	0.0
SYNEDRA SPP.	72	1.6	31.74	1.3	2.75	1.0	0	0.0
UNIDENTIFIED CENTRATE DIATOM	697	15.8	202.24	8.4	19.40	7.4	0	0.0
CHRYSOPHYCEAE	312	7.1	714.53	29.7	64.83	24.7	0	0.0
URBLEMPHYSIS AMERICANA	24	0.5	693.26	28.8	60.69	23.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	288	6.5	21.27	0.8	4.14	1.5	0	0.0
XANTHOPHYCEAE	72	1.6	2.67	0.1	0.57	0.2	0	0.0
DICHTOCOCOCUS SPP.	72	1.6	2.67	0.1	0.57	0.2	0	0.0
CRYPTOPHYCEAE	216	4.9	64.03	2.6	9.70	3.7	0	0.0
CRYPTOMONAS EROSA	24	0.5	12.10	0.5	1.82	0.6	0	0.0
CRYPTOMONAS OVATA	24	0.5	31.75	1.3	4.20	1.6	0	0.0
RHODOMONAS MINUTA	168	3.8	20.18	0.8	3.68	1.4	0	0.0
MYXOPHYCEAE	1417	32.2	300.43	15.8	59.01	22.8	0	0.0
AGNELLUM QUADRIPPLICATUM	48	1.0	0.05	0.0	0.01	0.0	0	0.0
ANABAENA SPIROIDES	24	0.5	36.00	1.4	4.68	1.7	0	0.0
CHROCOCCUS SPP.	649	14.7	269.71	11.2	41.62	15.9	0	0.0
LYNGBYA SPIRALENTIDES	72	1.6	12.73	0.5	2.20	0.8	0	0.0
LYNGBYA SPP.	120	2.7	6.76	0.2	1.36	0.5	0	0.0
OSCILLATORIA LIMBETICA	24	0.5	4.71	0.1	0.80	0.3	0	0.0
RAPHIDIOPSIS CURVATA	144	3.2	21.20	0.8	3.76	1.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	144	3.2	1.58	0.0	0.39	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
FURLEHOPHYCEAE	40	1.0	86.87	3.6	11.02	4.2	0	0.0
EUGLENA SPP.	40	1.0	86.87	3.6	11.02	4.2	0	0.0
DINOPHYCEAE	24	0.5	63.29	2.6	7.63	2.9	0	0.0
PERIDINIUM INCONSPICUUM	24	0.5	63.29	2.6	7.63	2.9	0	0.0
CHLOROPHYCEAE	24	0.5	166.37	6.9	17.63	6.7	6	0.0
GONYOSTERUM LATUM	24	0.5	166.37	6.9	17.63	6.7	0	0.0
SAMPLE TOTALS	43%		2400.77		261.52		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 07/14/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	526	18.9	126.39	14.9	20.38	19.7	0	0.0
ANKISTROBESMUS FALCATUS	24	0.8	1.57	0.1	0.31	0.2	0	0.0
CHLAMYDOMONAS	48	1.7	13.08	1.5	2.14	2.0	0	0.0
FRANCEIA BROESCHERI	24	0.8	4.08	0.4	0.71	0.6	0	0.0
GOLENKINIA PAUCISPINA	24	0.8	7.27	0.8	1.17	1.1	0	0.0
SCENEDESMUS ACUMINATUS	24	0.8	13.51	1.5	2.00	1.9	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	24	0.8	5.81	0.6	0.96	0.9	0	0.0
SCENEDESMUS BIJUGA	48	1.7	10.58	1.7	1.78	1.7	0	0.0
SCENEDESMUS DENTICULATUS	24	0.8	21.63	2.5	3.01	2.9	0	0.0
SCENEDESMUS GR. DRICAUDA	72	2.5	16.74	1.9	2.79	2.6	0	0.0
SELENASTRUM MINUTUM	24	0.8	1.61	0.1	0.31	0.2	0	0.0
STAUROSTRUM TETRACERUM	24	0.8	11.97	1.4	1.80	1.7	0	0.0
TETRAEDRON CAUDATUM	24	0.8	4.37	0.5	0.75	0.7	0	0.0
COCCOID GREENS	144	5.1	14.10	1.6	2.65	2.5	0	0.0
BACILLARIOPHYCEAE	936	33.6	412.46	48.6	34.43	33.2	0	0.0
ACHNANTHES MICROCEPHALA	72	2.5	15.51	1.8	1.59	1.5	0	0.0
CYCLOTELLA SPP.	72	2.5	19.39	2.2	1.89	1.8	0	0.0
FRAGILARIA CROTONENSIS	48	1.7	42.87	5.0	3.13	3.0	0	0.0
MELOSIRA GRANULATA VAR. ANGUSTISSIMA	72	2.5	62.25	7.3	4.58	4.4	0	0.0
NITZSCHIA ACICULARIS	168	6.0	71.27	8.4	6.23	6.0	0	0.0
NITZSCHIA AGNITA	48	1.7	7.21	0.8	0.81	0.7	0	0.0
NITZSCHIA HOLSATICA	96	3.4	32.66	3.8	3.01	2.9	0	0.0
NITZSCHIA PALEA	24	0.8	9.72	1.1	0.85	0.8	0	0.0
NITZSCHIA SPP.	24	0.8	10.37	1.2	0.90	0.8	0	0.0
RHIZOSOLENIA SPP.	24	0.8	51.82	6.1	3.05	2.9	0	0.0
STEPHANODISCUS SPP.	48	1.7	11.35	1.3	1.14	1.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	192	6.8	55.78	6.5	5.35	5.1	0	0.0
UNIDENTIFIED PENNATE DIATOMS	48	1.7	22.27	2.6	1.90	1.8	0	0.0
CHRYSOPHYCEAE	216	7.7	19.42	2.2	3.64	3.5	0	0.0
OCHROMONAS SPP.	24	0.8	5.25	0.6	0.88	0.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	192	6.8	14.17	1.6	2.76	2.6	0	0.0
XANTHOPHYCEAE	96	3.4	3.56	0.4	0.75	0.7	0	0.0
DICHOHOMOCOCUS SPP.	96	3.4	3.56	0.4	0.75	0.7	0	0.0
CRYPTOPHYCEAE	96	3.4	48.43	5.7	7.29	7.0	0	0.0
CRYPTOMONAS EROSA	96	3.4	48.43	5.7	7.29	7.0	0	0.0
MYXOPHYCEAE	912	32.7	237.21	27.9	36.92	35.7	0	0.0
ANABAENA HIS. JONGINENSE	24	0.8	42.84	5.0	5.44	5.2	0	0.0
CHROCOCCUS LIMNETICUS	48	1.7	0.70	0.0	0.16	0.1	0	0.0
CHROCOCCUS SPP.	336	12.0	137.84	16.5	21.61	20.8	0	0.0
LYNGBYA SPP.	168	6.0	9.46	1.1	1.91	1.8	0	0.0
OSCILLATORIA LIMNETICA	96	3.4	18.85	2.2	3.22	3.1	0	0.0
RAPIHIDIOPSIS CURVATA	168	6.0	24.73	2.9	4.39	4.2	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	72	2.5	0.79	0.0	0.19	0.1	0	0.0

MEAN DENSITY MEAN BIOVOLUME MEAN ALGAL CARBON MEAN SURFACE AREA
 UNITS/ML % MM³/L % MG/M % MM²/M %

Z TOTAL Z TOTAL Z TOTAL Z TOTAL Z TOTAL Z TOTAL Z TOTAL Z TOTAL

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2784

103.41

847.97

0

SAMPLE TOTALS

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 07/14/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/ML	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	3547	18.9	751.35	12.1	125.75	15.4	0	0.0
ANKISTRODESHPUS SPIRALLIS	127	0.6	10.38	0.1	1.99	0.2	0	0.0
CHLAMYDOMONAS	1012	5.4	275.37	4.4	45.04	5.5	0	0.0
CHLOROCOINIUM SPIRALE	380	2.0	65.04	1.0	11.32	1.3	0	0.0
FRANCEIA DROESCHERI	127	0.6	21.53	0.3	3.75	0.4	0	0.0
GOLENKINIA PAUCISPINA	127	0.6	38.36	0.6	6.18	0.7	0	0.0
GOLENKINIA RADIATA	127	0.6	44.94	0.7	7.09	0.8	0	0.0
HESSSTIGMA VIRIDE	127	0.6	50.89	0.8	7.90	0.9	0	0.0
SCENEDESPUS ARMATUS VAR. BICAUDATUS	127	0.6	30.62	0.4	5.08	0.6	0	0.0
SCENEDESPUS QUADRICAUDA	380	2.0	88.17	1.4	14.73	1.8	0	0.0
SCHROEDERIA SETIGERA	127	0.6	33.71	0.5	5.53	0.6	0	0.0
TREUBARIA SETIGERUM	127	0.6	17.66	0.2	3.15	0.3	0	0.0
COCCOID GREENS	759	4.0	74.66	1.2	13.99	1.7	0	0.0
BACILLARIOPHYCEAE	4937	26.3	1516.73	24.4	136.73	16.7	0	0.0
CYCLOTELLA SPP.	2278	12.1	437.36	7.0	46.37	5.6	0	0.0
FRAGILARIA CROTONENSIS	127	0.6	112.84	1.8	8.25	1.0	0	0.0
NITZSCHIA ACICULARIS	127	0.6	53.64	0.8	4.69	0.5	0	0.0
NITZSCHIA SPP.	253	1.3	109.34	1.7	9.52	1.1	0	0.0
RHIZOSOLENIA SPP.	127	0.6	273.33	4.4	16.13	1.9	0	0.0
SKELETONEMA POTAMUS	127	0.6	6.78	0.1	0.97	0.1	0	0.0
STEPHANODISCUS SPP.	506	2.7	119.46	1.9	12.04	1.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1392	7.4	403.99	6.5	38.76	4.7	0	0.0
CHRYSOPHYCEAE	1645	8.7	234.06	3.7	39.48	4.8	0	0.0
ERKENIA SUBAEQUICILIATA	253	1.3	11.16	0.1	2.32	0.2	0	0.0
OCHROMONAS SPP.	253	1.3	55.33	0.8	9.32	1.1	0	0.0
UROGLENOPSIS AMERICANA	127	0.6	92.92	1.4	13.30	1.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	1012	5.4	74.65	1.2	14.54	1.7	0	0.0
XANTHOPHYCEAE	380	2.0	69.49	1.1	11.98	1.4	0	0.0
DICHOTOMOCOCCUS SPP.	380	2.0	69.49	1.1	11.98	1.4	0	0.0
CRYPTOPHYCEAE	1519	8.1	937.01	15.1	131.31	16.1	0	0.0
CRYPTOMONAS EROSA	380	2.0	191.37	3.0	28.82	3.5	0	0.0
CRYPTOMONAS OVATA	506	2.7	669.70	10.8	88.63	10.8	0	0.0
RHODOMONAS MINUTA	633	3.3	75.54	1.2	13.86	1.6	0	0.0
MYXOPHYCEAE	6330	33.7	1399.44	22.5	224.17	27.4	0	0.0
AGHENELLUM QUADRIDUPLICATUM	380	2.0	0.38	0.0	0.13	0.0	0	0.0
CHROCOCCUS LIMNETICUS	127	0.6	1.84	0.0	0.44	0.0	0	0.0
CHROCOCCUS PRESCOTTII	633	3.3	171.55	2.7	28.07	3.4	0	0.0
CHROCOCCUS SPP.	2278	12.1	946.92	15.2	146.35	17.9	0	0.0
LYNGBYA SPP.	253	1.3	14.24	0.2	2.87	0.3	0	0.0
OSCILLATORIA GEMINATA	127	0.6	60.19	0.9	9.13	1.1	0	0.0
OSCILLATORIA LIMNETICA	127	0.6	24.84	0.4	4.24	0.5	0	0.0
RAPHIDIOPSIS CURVATA	506	2.7	74.41	1.2	13.21	1.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	1266	6.7	13.90	0.2	3.49	0.4	0	0.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
DIMORPHYCEAE	255	1.3	610.53	6.6	52.86	6.4	0	0.0
PERIDINIUM PUSILLUM	255	1.3	610.53	6.6	52.86	6.4	0	0.0
CHLOROPHYCEAE	127	0.6	677.59	14.1	93.02	11.4	0	0.0
GONIOSPORUM LATUM	127	0.6	677.59	14.1	93.02	11.4	0	0.0
SAME TOTALS	18750		6196.19		815.30		0	

PHYTOPLANKTON SAMPLING CROP II

LOCATION: 220.0 SAMPLE DATE: 07/14/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /ML	% TOTAL	MG/M	% TOTAL	MM ² /ML	% TOTAL
CHLOROPHYCEAE	2408	23.7	916.76	18.3	151.73	22.1	0	0.0
ANKISTRODESMUS FALCATUS	219	2.1	14.28	0.2	2.82	0.4	0	0.0
CHLAMYDOMONAS	510	5.0	138.83	2.7	22.71	3.8	0	0.0
COELASTRUM MICROPORUM	73	0.7	254.06	5.0	29.53	4.9	0	0.0
FRANCEIA DROESCHERI	73	0.7	12.40	0.2	2.16	0.3	0	0.0
GOLEKINIA RADIATA	146	1.4	51.76	1.0	8.17	1.3	0	0.0
KIRCHNERIELLA SUBSOLITARIA	73	0.7	15.03	0.3	2.55	0.4	0	0.0
MESOSTIGNA VIRIDE	146	1.4	48.84	0.9	7.77	1.3	0	0.0
PEDIASTRUM DUPLEX	146	1.4	233.28	4.6	30.09	5.0	0	0.0
SCENEDESMUS BIJUGA	73	0.7	16.04	0.3	2.69	0.4	0	0.0
SCENEDESMUS QUADRICAUDA	292	2.8	67.73	1.3	11.11	1.9	0	0.0
SELENASTRUM MINUTUM	365	3.5	24.44	0.4	4.82	0.8	0	0.0
SELENASTRUM MESTII	73	0.7	16.62	0.3	2.78	0.4	0	0.0
TETRAEDRON ARTHRODESMIFORME	73	0.7	9.11	0.1	1.65	0.2	0	0.0
COCCOID GREENS	146	1.4	14.39	0.2	2.68	0.4	0	0.0
BACILLARIOPHYCEAE	2335	23.0	1667.53	33.4	117.11	19.7	0	0.0
ACHNANTHES MICROCEPHALA	73	0.7	15.68	0.3	1.61	0.2	0	0.0
CYCLOTIELLA SPP.	73	0.7	13.12	0.2	1.41	0.2	0	0.0
HELOSIRA GRANULATA	292	2.8	752.29	15.0	42.50	7.1	0	0.0
NITZSCHIA AGNITA	73	0.7	10.93	0.2	1.23	0.2	0	0.0
NITZSCHIA HOLSATICA	219	2.1	74.37	1.4	6.86	1.1	0	0.0
NITZSCHIA SPP.	146	1.4	42.99	1.2	5.48	0.9	0	0.0
RHIZOSOLENIA SPP.	146	1.4	314.78	6.3	18.58	3.1	0	0.0
STEPHANODISCUS SPP.	146	1.4	34.41	0.6	3.47	0.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	875	8.6	153.92	3.0	24.36	4.1	0	0.0
UNIDENTIFIED PENNATE DIATOMS	292	2.8	135.05	2.7	11.57	1.9	0	0.0
CHRYSOPHYCEAE	146	1.4	37.62	0.7	5.89	0.9	0	0.0
ERKENIA SUBAEQUICILIATA	73	0.7	3.21	0.0	0.67	0.1	0	0.0
UROGLENOPSIS AMERICANA	73	0.7	34.41	0.6	5.22	0.8	0	0.0
XANTHOPHYCEAE	219	2.1	40.04	0.8	6.90	1.1	0	0.0
DICHOTOMOCOCUS SPP.	219	2.1	40.04	0.8	6.90	1.1	0	0.0
CRYPTOPHYCEAE	1921	18.8	297.89	5.9	44.68	7.5	0	0.0
CRYPTOMONAS OVATA	146	1.4	192.89	3.8	25.52	4.3	0	0.0
RHOZOMONAS MINUTA	875	8.6	105.00	2.1	19.16	3.2	0	0.0
MYXOPHYCEAE	3721	36.6	1376.27	27.6	207.45	34.9	0	0.0
AGHENELLUM QUADRIDUPLICATUM	365	3.5	0.36	0.0	0.12	0.0	0	0.0
ANABAENA SPIROIDES	73	0.7	109.35	2.1	14.23	2.3	0	0.0
ANABAENA MISCANSINENSE	73	0.7	130.13	2.6	16.54	2.7	0	0.0
CHROCOCCUS PRESCOTTII	73	0.7	19.76	0.3	3.23	0.5	0	0.0
CHROCOCCUS SPP.	1240	12.2	515.30	10.3	79.64	13.4	0	0.0
LYNGBYA SPP.	146	1.4	8.20	0.1	1.65	0.2	0	0.0
LYNGBYA SPP.	73	0.7	4.10	0.0	0.82	0.1	0	0.0
OSILLATORIA GEMINATA	1021	10.0	485.34	9.7	73.67	12.4	0	0.0

	MEAN DENSITY		MEAN FLOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
OSCILLATORIA LIMBETICA	75	0.7	14.76	0.2	2.44	0.4	0	0.0
PAPHIOPSIS CURVATA	219	2.1	32.76	0.6	5.71	0.9	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	346	1.4	1.0	0.0	0.40	0.0	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	346	1.4	21.01	0.4	3.74	0.6	0	0.0
EUGLEPHYCEAE	146	1.4	375.83	7.5	45.26	7.6	0	0.0
TRACHELOPHUS ACANTHOSOMA	73	0.7	165.66	3.7	22.50	3.7	0	0.0
TRACHELOPHUS VOLVOCINA	73	0.7	169.15	3.7	22.76	3.8	0	0.0
DINOPHYCEAE	73	0.7	118.24	2.3	15.22	2.5	0	0.0
PERIDINIUM PUSILLUM	73	0.7	118.24	2.3	15.22	2.5	0	0.0
CHLOROPHYCEAE	73	0.7	154.91	3.1	19.24	3.2	0	0.0
GONOSTOMUM SPP.	73	0.7	154.91	3.1	19.24	3.2	0	0.0
SAMPLE TOTALS	10142		4983.09		593.48		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 07/14/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	288	22.6	54.60	13.3	9.05	21.0	0	0.0
ACTINASTRUM Hantzschii var. FLUVIATILE	48	3.7	2.60	0.6	0.52	1.2	0	0.0
ANKISTRODESMUS FALCATUS	24	1.8	1.57	0.3	0.51	0.7	0	0.0
COELASTRUM CAMBRICUM	24	1.8	3.24	0.7	0.56	1.3	0	0.0
COLENKINIA RADIATA	24	1.8	8.52	2.0	1.34	3.1	0	0.0
KIRCHNERIELLA LUNARIS	24	1.8	13.58	3.3	2.01	4.6	0	0.0
MESOSTIGMA VIRIDE	24	1.8	6.04	1.6	1.11	2.5	0	0.0
SENEDESMUS QUADRICAUDA	48	3.7	11.17	2.7	1.84	4.3	0	0.0
COCCOID GREENS	72	5.6	7.09	1.7	1.32	3.0	0	0.0
BACILLARIOPHYCEAE	600	47.1	293.39	71.9	23.98	55.8	0	0.0
ACHNANTHES MICROCEPHALA	48	3.7	10.35	2.5	1.04	2.4	0	0.0
FRAGILARIA CROTONENSIS	72	5.6	64.26	15.7	4.69	10.9	0	0.0
HELOSIRA GRANULATA var. ANGUSTISSIMA	144	11.3	124.50	30.5	9.17	21.3	0	0.0
NITZSCHIA AGNITA	48	3.7	7.21	1.7	0.81	1.8	0	0.0
NITZSCHIA SPP.	24	1.8	10.37	2.5	0.90	2.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	264	20.7	76.70	18.8	7.35	17.1	0	0.0
CHRYSOPHYCEAE	96	7.5	7.09	1.7	1.38	3.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	96	7.5	7.09	1.7	1.38	3.2	0	0.0
CRYPTOPHYCEAE	48	3.7	5.77	1.4	1.05	2.4	0	0.0
RHODOPHYCIAS MINUTA	48	3.7	5.77	1.4	1.05	2.4	0	0.0
MYXOPHYCEAE	240	18.8	46.74	11.4	7.51	17.4	0	0.0
AGNENELLUM QUADRIDUPLICATUM	24	1.8	0.02	0.0	0.00	0.0	0	0.0
CHRODOCCUS PRESCOTTII	24	1.8	6.51	1.5	1.06	2.4	0	0.0
CHRODOCCUS SPP.	48	3.7	20.00	4.9	3.09	7.1	0	0.0
LYNGBYA SPP.	24	1.8	1.35	0.3	0.27	0.6	0	0.0
OSCILLATORIA GEMINATA	24	1.8	11.41	2.7	1.73	4.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	48	3.7	0.53	0.1	0.13	0.3	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	48	3.7	6.93	1.7	1.23	2.8	0	0.0
SAMPLE TOTALS	1272		407.59		42.97		0	

PHYTOPLANKTON STANDING CROP II

LOCALITY: 220.0 SAMPLE DATE: 07/14/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	208	37.5	92.48	35.4	14.56	43.2	0	0.0
CHLAMYDOMONAS	24	3.1	6.53	2.5	1.06	3.1	0	0.0
COCHARIUM TENUE	24	3.1	12.43	4.7	1.87	5.5	0	0.0
SCHEDESMUS ARMATUS VAR. BICAUDIATUS	168	21.8	40.69	15.5	6.76	20.1	0	0.0
SCHEDESMUS DENTICULATUS	24	3.1	21.65	8.2	3.01	8.9	0	0.0
SCHEDESMUS QUADRICAUDA	48	6.2	11.17	4.2	1.86	5.5	0	0.0
BACILLARIOPHYCEAE	216	28.1	105.72	40.5	8.84	26.2	0	0.0
MELOSIRA DISTANS	72	9.3	24.74	9.4	2.27	6.7	0	0.0
MELOSIRA ITALICA VAR. TENUISSIMA	120	15.6	74.01	28.3	5.91	17.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	24	3.1	6.96	2.6	0.66	1.9	0	0.0
CHRYSOPHYCEAE	24	3.1	1.77	0.6	0.34	1.0	7	0.0
UNIDENTIFIED CHRYSOPHYCEAE	24	3.1	1.77	0.6	0.34	1.0	0	0.0
XANTHOPHYCEAE	24	3.1	2.95	1.1	0.53	1.5	0	0.0
DICHOTYDLOCOCUS SPP.	24	5.1	2.95	1.1	0.53	1.5	0	0.0
CRYPTOPHYCEAE	24	3.1	2.88	1.1	0.52	1.5	0	0.0
RHODOSPORA MINUTA	24	3.1	2.88	1.1	0.52	1.5	0	0.0
MYXOPHYCEAE	192	25.0	55.15	21.1	8.84	26.2	0	0.0
CHROCOCCUS SPP.	24	3.1	9.98	3.8	1.54	4.5	0	0.0
OSCILLATORIA GEMINATA	48	6.2	22.87	8.7	3.47	10.3	0	0.0
OSCILLATORIA LIMBETICA	96	12.5	18.85	7.2	3.22	9.5	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	24	3.1	3.46	1.3	0.61	1.8	0	0.0

SAMPLE TOTALS 768 260.95 33.63 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/11/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	6458	34.4	1622.25	26.9	262.50	32.9	0	0.0
ANKISTRODESMMUS FALCATUS	506	2.7	33.04	0.5	6.54	0.8	0	0.0
CHLAMYDOMONAS	2658	14.1	733.50	12.1	119.74	15.0	0	0.0
CHLORODONIA: SPIRALE	506	2.7	86.71	1.4	15.09	1.8	0	0.0
GOLENKINIA RADIATA	633	3.3	224.64	3.7	35.46	4.4	0	0.0
KIRCHNERIELLA OBESA	127	0.6	29.24	0.4	4.89	0.6	0	0.0
MICRACTINIUM PUSILLUM	127	0.6	57.48	0.9	8.77	1.1	0	0.0
NEPHROCYTIUM AGARDHIANUM	253	1.3	84.05	1.3	13.38	1.6	0	0.0
SCENEDESMMUS BRASILIENSIS	127	0.6	74.20	1.2	10.95	1.3	0	0.0
SCENEDESMMUS DIMORPHUS	127	0.6	140.38	2.4	19.95	2.5	0	0.0
SCENEDESMMUS QUADRICAUDA	127	0.6	29.40	0.4	4.91	0.6	0	0.0
SELENASTRUM MINUTUM	127	0.6	8.49	0.1	1.67	0.2	0	0.0
TETRAEDRON ARTHRODESMMIFORME	127	0.6	8.36	0.1	1.65	0.2	0	0.0
TREUBARIA SETIGERUM	127	0.6	17.66	0.2	3.15	0.3	0	0.0
COCCOID GREENS	886	4.7	87.11	1.4	16.33	2.0	0	0.0
BACILLARIOPHYCEAE	3292	17.5	1777.62	29.5	134.40	16.8	0	0.0
ACHNANTHE: SPP.	127	0.6	19.42	0.3	2.17	0.2	0	0.0
HELOSIRA GRANULATA	253	1.3	652.74	10.8	36.91	4.6	0	0.0
NITZSCHIA PALEACEA	127	0.6	41.90	0.6	3.89	0.4	0	0.0
OSOLENIA SPP.	127	0.6	273.33	4.5	16.13	2.0	0	0.0
SYNEDRA SPP.	127	0.6	55.73	0.9	4.83	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	2531	13.5	734.50	12.1	70.47	8.8	0	0.0
CHRYSOPHYCEAE	1266	6.7	329.37	5.4	50.81	6.3	0	0.0
PALLOMONAS TONSURATA	380	2.0	264.04	4.3	38.09	4.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	886	4.7	65.33	1.0	12.72	1.5	0	0.0
CRYPTOPHYCEAE	2152	11.4	556.28	9.2	87.02	10.9	0	0.0
CRYPTOMONAS EROSA	380	2.0	191.37	3.1	28.82	3.6	0	0.0
CRYPTOMONAS OVATA	127	0.6	167.49	2.7	22.16	2.7	0	0.0
RHODOMONAS MINUTA	1645	8.7	197.42	3.2	36.04	4.5	0	0.0
MYXOPHYCEAE	5315	28.3	1342.40	22.2	212.20	26.6	0	0.0
AGMENELLUM QUADRIDUPLICATUM	380	2.0	0.38	0.0	0.13	0.0	0	0.0
CHROCOCCUS SPP.	1012	5.4	420.85	6.9	65.04	8.1	0	0.0
OSCELLATORIA GEMINATA	1392	7.4	661.80	10.9	100.46	12.6	0	0.0
OSCELLATORIA LIMNETICA	127	0.6	24.84	0.4	4.24	0.5	0	0.0
RAPHIDOPSIS CURVATA	1012	5.4	151.86	2.5	26.90	3.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	886	4.7	9.73	0.1	2.44	0.3	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	506	2.7	72.94	1.2	12.99	1.6	0	0.0
EUGLENOPHYCEAE	127	0.6	59.50	0.9	9.04	1.1	0	0.0
LEPOCINCLIS SPP.	127	0.6	59.50	0.9	9.04	1.1	0	0.0
DINOPHYCEAE	127	0.6	333.84	5.5	40.28	5.0	0	0.0
PERIDINIUM INCONSPICUUM	127	0.6	333.84	5.5	40.28	5.0	0	0.0

MEAN DENSITY	MEAN BIODVOLUME	MEAN ALGAL CARBON	MEAN SURFACE AREA
UNITS/ML	MM ³ /ML	MG/M	MM ² /ML
Z TOTAL	Z TOTAL	Z TOTAL	Z TOTAL
18737	6021.27	796.25	0

SAMPLE TOTALS

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 08/11/87 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	1200	20.3	270.72	11.2	45.72	18.3	0	0.0
ACTINASTRUM HAMTZSCHII VAR. FLUVIATILE	24	0.5	2.59	0.1	0.47	0.1	0	0.0
ANKISTROBESMUS FALCATUS	120	2.0	7.85	0.3	1.55	0.6	0	0.0
CHLAMYDOMYXAS	264	4.2	71.89	2.9	11.76	4.7	0	0.0
CHLORODONIUM SPIRALE	24	0.5	4.11	0.1	0.71	0.2	0	0.0
COSMARION SPP.	24	0.5	10.32	0.4	1.58	0.6	0	0.0
CROCIGENIA IRREGULARIS	24	0.5	3.24	0.1	0.58	0.2	0	0.0
GOLEKINIA RADIATA	120	2.0	42.67	1.7	6.73	2.6	0	0.0
KIRCHERIELLA SUBSOLIARIA	24	0.5	4.95	0.2	0.84	0.2	0	0.0
MESOSTIOMA VIRIDE	24	0.5	10.18	0.4	1.56	0.6	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	24	0.5	5.81	0.2	0.96	0.3	0	0.0
SCENEDESMUS BRASILIENSIS	24	0.5	5.28	0.2	0.88	0.3	0	0.0
SCENEDESMUS QUADRICAUDA	48	1.1	28.19	1.1	6.16	1.6	0	0.0
SCHROEDERIA SETIGERA	144	3.4	33.68	1.3	5.59	2.2	0	0.0
SELENASTRUM MINUTUM	72	1.7	19.20	0.7	3.14	1.2	0	0.0
SELENASTRUM MESTII	24	0.5	1.61	0.0	0.31	0.1	0	0.0
TETRAEDRON CAUDATUM	24	0.5	5.47	0.2	0.91	0.3	0	0.0
TREUBARIA SETIGERUM	24	0.5	4.37	0.1	0.75	0.3	0	0.0
COCCOID GREENS	24	0.5	3.55	0.1	0.59	0.2	0	0.0
	144	3.4	14.18	0.5	2.65	1.0	0	0.0
BACILLARIOPHYCEAE	1561	36.9	1233.01	49.9	82.80	33.1	0	0.0
ACHNANTHES SPP.	288	6.8	44.24	1.7	4.95	1.9	0	0.0
MELOSIRA GRABIELATA	312	7.3	805.68	32.6	45.54	18.2	0	0.0
NITZSCHIA ACICULARIS	24	0.5	10.17	0.4	0.89	0.3	0	0.0
NITZSCHIA PALFA	24	0.5	9.72	0.3	0.85	0.3	0	0.0
RHIZOLENIA SPP.	48	1.1	103.85	4.2	6.13	2.4	0	0.0
SKELETOBEMA POTAMOS	48	1.1	2.58	0.1	0.37	0.1	0	0.0
SITOPHANTHUS SPP.	96	2.2	22.68	0.9	2.28	0.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	577	13.6	167.36	6.7	16.05	6.4	0	0.0
UNIDENTIFIED PENNATE DIATOMS	144	3.4	66.75	2.7	5.72	2.2	0	0.0
CHRYSOPHYCEAE	192	4.5	29.09	1.1	4.01	1.9	0	0.0
MALLOBIUM TORCIGATA	24	0.5	16.69	0.6	2.40	0.9	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	168	5.9	12.40	0.5	2.61	0.9	0	0.0
XANTHOPHYCEAE	24	0.5	1.20	0.0	0.24	0.0	0	0.0
DICHOPTEROCOCUS SPP.	24	0.5	1.20	0.0	0.24	0.0	0	0.0
CRYPTOPHYCEAE	168	3.9	190.64	7.7	22.24	9.1	0	0.0
CRYPTOPHYCIS ERGATA	24	0.5	12.10	0.4	1.82	0.7	0	0.0
CRYPTOSOMAS OVATA	24	0.5	31.75	1.2	4.20	1.6	0	0.0
CRYPTOSOMAS REFLEXA	24	0.5	135.26	5.4	14.74	5.9	0	0.0
RHODOSOMAS MINUTA	96	2.2	11.53	0.4	2.10	0.8	0	0.0
MYXOPHYCEAE	961	22.7	268.82	10.8	42.69	17.1	0	0.0
CHROCOCCUS SPP.	192	4.5	79.90	3.2	12.34	4.9	0	0.0
LYNCBYA SPP.	24	0.5	1.35	0.0	0.27	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
RAPHIDIOPSIS CURVATA	505	9.1	57.68	2.3	10.21	4.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	72	1.7	0.79	0.0	0.19	0.0	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	24	0.5	3.46	0.1	0.61	0.2	0	0.0
EUGLENOPHYCEAE	72	1.7	112.68	4.5	14.17	5.6	0	0.0
EUGLENA SPP.	24	0.5	43.34	1.7	5.50	2.2	0	0.0
LEPTOCYCLUS SPP.	24	0.5	7.39	0.2	1.18	0.4	0	0.0
TRACHELOMUS VOLVOLINA	24	0.5	61.94	2.5	7.49	3.0	0	0.0
DINOPHYCEAE	48	1.1	353.04	14.3	34.14	14.4	0	0.0
PERIDINIUM INCONSPICUUM	24	0.5	63.29	2.5	7.63	3.0	0	0.0
PERIDINIUM SPP.	24	0.5	289.75	11.7	26.51	11.4	0	0.0
SAMPLE TOTALS	4226		2467.20		269.43		0	

PHYTOPLANKTON STANDINA CRUP II

LOCATION: 210.0 SAMPL DATE: 08/11/87 TIME: 0900 DEPTH: 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
CHLOROPHYCEAE	956	39.7	278.43	32.2	42.89	39.8	0	0.0
ANASTRODESPLUS FALCATUS	72	3.0	4.71	0.5	0.93	0.8	0	0.0
CHLAMYDOMONAS	168	7.1	46.42	5.3	7.57	7.0	0	0.0
COSMARION ASPHAEROSPORUM VAR. STRIGOSUM	48	2.0	8.19	0.9	1.42	1.3	0	0.0
CRUCIGENIA CRUCIFERA	24	1.0	3.29	0.3	0.59	0.5	0	0.0
CRUCIGENIA IRREGULARIS	24	1.0	3.24	0.3	0.58	0.5	0	0.0
GOLEMNINIA PAUCISPINA	24	1.0	7.27	0.8	1.17	1.0	0	0.0
GOLEMNINIA RADIATA	72	3.0	25.60	2.9	4.04	3.7	0	0.0
KIRCHBERGIIA SUBSOLITARIA	24	1.0	4.95	0.5	0.84	0.7	0	0.0
MEGOSTIGMA VIRIDE	24	1.0	11.28	1.3	1.71	1.5	0	0.0
MOROPHIDIUM BRAUNII	24	1.0	2.02	0.2	0.38	0.3	0	0.0
SCENEDESPLUS ARUNDANS	24	1.0	15.12	1.7	2.20	2.0	0	0.0
SCENEDESPLUS ACUMINATUS	24	1.0	13.51	1.5	2.00	1.8	0	0.0
SCENEDESPLUS ARCUATUS VAR. PLATYDISCA	24	1.0	51.05	5.9	6.33	5.8	0	0.0
SCENEDESPLUS ARATUS VAR. BICAUDATUS	24	1.0	5.81	0.6	0.96	0.8	0	0.0
SCENEDESPLUS BIJUGA	24	1.0	5.28	0.6	0.88	0.8	0	0.0
SCENEDESPLUS QUADRICAUDA	48	2.0	11.17	1.2	1.84	1.7	0	0.0
SCHROEBERIA SETIGERA	72	3.0	19.20	2.2	3.14	2.9	0	0.0
SELENASTRUM MINUTUM	24	1.0	1.61	0.1	0.31	0.2	0	0.0
STRAUSTRUM AMERICANUM	24	1.0	25.15	2.9	3.43	3.1	0	0.0
TETRAEDRON TRIGONUM VAR. SETIGERUM	24	1.0	1.76	0.2	0.34	0.3	0	0.0
COCCOLI GREENS	120	5.1	11.82	1.3	2.21	2.0	0	0.0
BACILLARIOPHYCEAE	672	28.5	294.03	34.0	23.81	22.0	0	0.0
ACHNANTHES SPP.	96	4.0	14.74	1.7	1.65	1.5	0	0.0
MELOSIRA GRABIELATA	24	1.0	61.90	7.1	3.50	3.2	0	0.0
NITZSCHIA PALEA	72	3.0	29.19	3.3	2.58	2.3	0	0.0
NITZSCHIA SUBLINEARIS	24	1.0	36.00	4.1	2.32	2.1	0	0.0
SKELETONEMA POTAMOS	72	3.0	3.86	0.4	0.55	0.5	0	0.0
SYNEURA SPP.	24	1.0	10.56	1.2	0.91	0.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	168	7.1	48.81	5.6	4.68	4.3	0	0.0
UNIDENTIFIED PENNATE DIATOMS	192	8.1	88.97	10.3	7.62	7.0	0	0.0
CHRYSOHYCEAE	144	6.1	11.57	1.3	2.21	2.0	0	0.0
CHROMONAS MUTABILIS	24	1.0	2.70	0.3	0.49	0.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	120	5.1	8.86	1.0	1.72	1.5	0	0.0
MYXOPHYCEAE	528	22.4	128.18	14.8	20.18	18.7	0	0.0
CHROOKIUS SPP.	192	8.1	79.90	9.2	12.34	11.4	0	0.0
LYMBBYA SPP.	24	1.0	1.35	0.1	0.27	0.2	0	0.0
OSCELLATORIA GEMINATA	72	3.0	34.20	3.9	5.28	4.8	0	0.0
RAPHIIDOPSIS CURVATA	72	3.0	10.81	1.2	1.91	1.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	168	7.1	1.85	0.2	0.46	0.4	0	0.0
EUCLEMPHYCEAE	48	2.0	86.87	10.6	11.02	10.2	0	0.0
EUCLEMA SPP.	48	2.0	86.87	10.6	11.02	10.2	0	0.0
DIMORPHYCEAE	24	1.0	63.29	7.3	7.65	7.0	0	0.0

	MEAN DENSITY (MG/CM ³)	MEAN BIOVOLUME (MM ³ /M)	MEAN ALGAL CARBON (MG/M ³)	MEAN SURFACE AREA (CM ² /M ³)
	Z TOTAL	Z TOTAL	Z TOTAL	Z TOTAL
SAMPLE TOTALS	9952	842.36	107.74	0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 06/11/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	120	9.9	24.67	5.1	4.16	7.7	0	0.0
SCENEDESMUS QUADRICAUDA	96	7.9	22.31	4.6	3.72	6.9	0	0.0
COCCOID GREENS	24	1.9	2.36	0.4	0.44	0.8	0	0.0
BACILLARIOPHYCEAE	552	45.9	278.56	57.6	21.38	39.7	0	0.0
ACHNANTHES SPP.	24	1.9	3.68	0.7	0.41	0.7	0	0.0
HELOSIRA GRANULATA	48	3.9	124.05	25.6	7.01	13.0	0	0.0
NITZSCHIA PALEA	24	1.9	9.72	2.0	0.85	1.5	0	0.0
NITZSCHIA SPP.	24	1.9	10.37	2.1	0.90	1.6	0	0.0
SKELETONEMA POTAMUS	48	3.9	2.58	0.5	0.37	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	288	23.9	83.69	17.3	8.03	14.9	0	0.0
UNIDENTIFIED PENNATE DIATOMS	96	7.9	44.48	9.2	3.81	7.0	0	0.0
CRYPTOPHYCEAE	48	3.9	14.97	3.0	2.34	4.3	0	0.0
CRYPTOMONAS EROSA	24	1.9	12.10	2.5	1.82	3.3	0	0.0
RHODOMONAS MINUTA	24	1.9	2.88	0.5	0.52	0.9	0	0.0
MYXOPHYCEAE	480	39.9	165.31	34.1	25.91	48.1	0	0.0
CHROCOCCUS SPP.	288	23.9	119.89	24.7	18.52	34.4	0	0.0
LYNGBYA SPP.	24	1.9	1.35	0.2	0.27	0.5	0	0.0
OSCILLATORIA GEMINATA	48	3.9	22.87	4.7	3.47	6.4	0	0.0
OSCILLATORIA LIMNETICA	72	5.9	14.15	2.9	2.41	4.4	0	0.0
RAPIHIDIOPSIS CURVATA	24	1.9	3.60	0.7	0.63	1.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	24	1.9	3.46	0.7	0.61	1.1	0	0.0
SAMPLE TOTALS	1200		483.52		53.79		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 08/11/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	5571	38.2	1754.42	31.5	264.03	42.0	0	0.0
ANKISTRODESPIUS FALCATUS	253	1.7	14.52	0.2	3.27	0.5	0	0.0
CHLAMYDOMONAS	2025	13.9	550.75	9.9	90.09	14.3	0	0.0
CHLOROGONIUM SPIRALE	127	0.8	37.47	0.6	6.04	0.9	0	0.0
COSMARIVM ASPHAEROSPORUM VAR. STRIGOSUM	127	0.8	21.55	0.3	3.75	0.5	0	0.0
COSMARIVM SUBTUMIDUM	127	0.8	95.46	1.7	13.62	2.1	0	0.0
EUDORINA ELEGANS	127	0.8	490.45	8.8	56.20	8.9	0	0.0
GOLENKINIA PAUCISPINA	253	1.7	76.69	1.3	12.34	1.9	0	0.0
GOLENKINIA RADIATA	506	3.4	179.70	3.2	28.36	4.5	0	0.0
MESOSTIGMA VIRIDE	127	0.8	43.68	0.7	6.92	1.1	0	0.0
MICRACTINIUM PUSILLUM	253	1.7	25.04	0.4	4.69	0.7	0	0.0
SCENEDESMUS QUADRICAUDA	380	2.6	88.17	1.5	14.73	2.3	0	0.0
SELENASTRUM MINUTUM	127	0.8	8.49	0.1	1.67	0.2	0	0.0
SPHAEROCYSTA GRANULATA	127	0.8	20.90	0.3	3.45	0.5	0	0.0
COCCOID GREENS	1012	6.9	99.55	1.7	18.66	2.9	0	0.0
BACILLARIOPHYCEAE	2911	19.9	2511.62	45.2	165.14	26.2	0	0.0
ACHNANTHES MICROCEPHALA	252	1.7	54.44	0.9	5.61	0.8	0	0.0
ACHNANTHES SPP.	380	2.6	58.25	1.0	6.52	1.0	0	0.0
HELOSIRA GRANULATA	754	5.2	1958.23	35.2	110.73	17.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1519	10.4	440.70	7.9	42.28	6.7	0	0.0
CHRYSOPHYCEAE	633	4.3	46.66	0.8	9.09	1.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	633	4.3	46.66	0.8	9.09	1.4	0	0.0
CRYPTOPHYCEAE	1342	9.5	167.05	3.0	30.49	4.8	0	0.0
RHODONIAS MINUTA	1342	9.5	167.05	3.0	30.49	4.8	0	0.0
MYXOPHYCEAE	3925	26.9	738.96	13.3	119.40	18.9	0	0.0
AGHENELLUM QUADRIDUPLICATUM	127	0.8	0.13	0.0	0.04	0.0	0	0.0
ANABAENA SPIROIDES	127	0.8	94.95	1.7	13.55	2.1	0	0.0
CHROCOCCUS SPP.	886	6.0	368.27	6.6	56.91	9.0	0	0.0
LYNGBYA SPP.	633	4.3	35.61	0.6	7.19	1.1	0	0.0
OSCILLATORIA GEMINATA	127	0.8	60.19	1.0	9.13	1.4	0	0.0
RAPHIDIOPSIS CURVATA	1012	6.9	151.84	2.7	26.90	4.2	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	886	6.0	9.73	0.1	2.44	0.3	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	127	0.8	18.24	0.3	3.24	0.5	0	0.0
DINOPHYCEAE	127	0.8	333.84	6.0	40.28	6.4	0	0.0
PERIDINIUM INCONSPICUUM	127	0.8	333.84	6.0	40.28	6.4	0	0.0
SAMPLE TOTALS	14559		5552.55		628.43		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/11/67 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	816	29.0	208.20	19.0	42.45	24.0	0	0.0
ACTINASTUM HANTZSCHII VAR. FLUVIATILE	48	1.7	2.60	0.1	0.52	0.2	0	0.0
AKNISTRODESMUS FALCATUS	24	0.8	1.57	0.1	0.31	0.1	0	0.0
CYLAMYDOPHYCEAE	96	3.4	26.14	1.7	4.27	2.4	0	0.0
COELASTRUM MICROSPORUM	24	0.8	83.64	5.5	9.72	5.4	0	0.0
COSPIRIUM ASPHEROSPORUM VAR. STRIGOSUM	72	2.5	12.27	0.8	2.13	1.2	0	0.0
COXIDIUM TINCTUM	24	0.8	21.83	1.4	3.03	1.7	0	0.0
ELAVATODIUM GELATINOSA	24	0.8	17.23	1.1	2.47	1.3	0	0.0
FRANCOIA DROESCHERI	24	0.8	4.08	0.2	0.71	0.4	0	0.0
GOLEMNIERIA RADIATA	24	0.8	8.52	0.5	1.34	0.7	0	0.0
KIRCHNERIELLA OBESA	14	0.6	12.40	0.8	1.86	1.0	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	48	1.7	11.64	0.7	1.93	1.0	0	0.0
SCENEDESMUS BIJUGA	48	1.7	10.58	0.7	1.78	1.0	0	0.0
SCENEDESMUS BRASILIENSIS	24	0.8	14.07	0.9	2.07	1.1	0	0.0
SCENEDESMUS BRASILIENSIS	24	0.8	14.07	0.9	2.07	1.1	0	0.0
SCENEDESMUS QUADRICAUDA	144	5.1	33.48	2.2	5.59	3.1	0	0.0
COCCOID GREENS	144	5.1	14.18	0.9	2.65	1.4	0	0.0
BACILLARIOPHYCEAE	1009	55.9	205.20	18.8	27.26	15.4	0	0.0
ACHNANTHES MICROCEPHALA	48	1.7	10.35	0.6	1.04	0.5	0	0.0
ACHNANTHES SPP.	192	6.8	29.46	1.9	3.30	1.8	0	0.0
NITZSCHIA PALEA	24	0.8	9.72	0.6	0.85	0.4	0	0.0
STEPHANODISCUS SPP.	24	0.8	5.64	0.3	0.57	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	401	21.3	174.35	11.5	16.72	9.4	0	0.0
UNIDENTIFIED PENNATE DIATOMS	120	4.2	55.64	3.6	4.76	2.6	0	0.0
CHRYSOPHYCEAE	96	3.4	7.09	0.4	1.38	0.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	96	3.4	7.09	0.4	1.38	0.7	0	0.0
XANTHOPHYCEAE	48	1.7	2.69	0.1	0.54	0.3	0	0.0
DICHOCHROOCOCUS SPP.	48	1.7	2.69	0.1	0.54	0.3	0	0.0
CRYPTOPHYCEAE	24	0.8	31.75	2.1	4.20	2.3	0	0.0
CRYPTOPHYCEAE	24	0.8	31.75	2.1	4.20	2.3	0	0.0
MYXOPHYCEAE	720	25.6	198.13	13.1	31.00	17.5	0	0.0
ANABAENA SPP.	24	0.8	23.83	1.5	3.27	1.8	0	0.0
CHROOCOCCUS LIMBATICUS	48	1.7	0.70	0.0	0.14	0.0	0	0.0
CHROOCOCCUS SPP.	192	6.8	79.90	5.2	12.34	6.9	0	0.0
LYNGBYA SPIROLENTIDES	24	0.8	4.24	0.2	0.73	0.4	0	0.0
LYNGBYA SPP.	48	1.7	2.71	0.1	0.54	0.3	0	0.0
OSILLATORIA GEMINATA	120	4.2	57.14	3.7	6.67	4.9	0	0.0
RAPHIDIOPSIS CURVATA	192	6.8	28.83	1.9	5.10	2.8	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	72	2.5	0.79	0.0	0.19	0.1	0	0.0
EUGLENOPHYCEAE	48	1.7	216.70	14.3	23.23	13.1	0	0.0
LEPOTHECIS SPP.	24	0.8	23.12	1.3	2.95	1.6	0	0.0
PHACUS SPP.	24	0.8	195.58	12.9	20.28	11.4	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
DIMORPHYCTAE	48	1.7	401.44	31.8	46.80	26.4	0	0.0
PERIDINIUM THEOROPICUM	24	0.8	63.29	4.1	7.63	4.3	0	0.0
PERIDINIUM SPP.	24	0.8	418.15	27.6	59.17	22.1	0	0.0
SAMPLE TOTALS	209		1511.27		176.86		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 06/11/67 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ²	Z TOTAL
CHLOROPHYCEAE	768	52.5	220.55	22.5	34.90	30.5	0	0.0
ANKISTRIDIOPSIS FALCATUS	24	1.0	1.57	0.1	0.31	0.2	0	0.0
CHLOROPHYCIAS	216	9.0	56.83	5.9	9.62	8.3	0	0.0
CHLOROPHYCIUM SPIRALE	24	1.0	4.11	0.4	0.71	0.6	0	0.0
COSPHARIUM ASPHAEROSPORUM VAR. STRIGOSUM	48	2.0	8.19	0.8	1.62	1.2	0	0.0
COSPHARIUM SPP.	24	1.0	10.32	1.0	1.58	1.3	0	0.0
FLAKATOTRIK DELATINDA	24	1.0	17.23	1.7	2.67	2.1	0	0.0
GOLTERINIA RADIATA	24	1.0	8.52	0.8	1.34	1.1	0	0.0
KIRCHBERGELLA SUBGLOTTARIA	24	1.0	4.95	0.5	0.84	0.7	0	0.0
LAGERHEIMIA SUBSALSA	24	1.0	3.97	0.4	0.69	0.6	0	0.0
MICRACTINIUM PUSILLUM	24	1.0	10.90	1.1	1.66	1.4	0	0.0
SCENEDESPUS ABUNDANS	24	1.0	15.12	1.5	2.20	1.9	0	0.0
SCENEDESPUS BI-RUBA	24	1.0	5.28	0.5	0.88	0.7	0	0.0
SCENEDESPUS BRASILIENSIS	24	1.0	14.07	1.4	2.07	1.8	0	0.0
SCENEDESPUS QUADRICAUGA	96	4.0	22.31	2.2	3.72	3.2	0	0.0
SELENASTRUM MINUTUM	24	1.0	1.61	0.1	0.31	0.2	0	0.0
SODASTRUM SPIRALIUM	24	1.0	24.14	2.4	3.51	2.8	0	0.0
COCCOID GREENS	96	4.0	9.45	0.9	1.77	1.5	0	0.0
BACILLARIOPHYCEAE	624	26.2	369.00	37.4	26.85	23.3	0	0.0
ACRANTHUS SPP.	24	1.0	3.68	0.3	0.41	0.3	0	0.0
MELOSIRA GRANULATA	72	3.0	185.95	18.8	10.51	9.1	0	0.0
NITZSCHIA ACICULARIS	48	2.0	20.38	2.0	1.78	1.5	0	0.0
NITZSCHIA SUBLINEARIS	24	1.0	32.40	3.2	2.14	1.8	0	0.0
SKELETOEMA POTIANS	72	3.0	3.86	0.3	0.55	0.4	0	0.0
STEPHANODISCUS SPP.	24	1.0	5.64	0.5	0.57	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	288	12.1	83.69	8.4	6.03	4.9	0	0.0
UNIDENTIFIED PENNATE DIATOMS	72	3.0	33.38	3.3	2.86	2.4	0	0.0
CHRYSOPHYCEAE	144	6.0	18.45	1.8	3.21	2.7	0	0.0
CHRYSOCOCCUS RUFESCENS	24	1.0	9.29	0.9	1.44	1.2	0	0.0
UROGLEMPHIS AMERICANA	24	1.0	2.07	0.2	0.39	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	96	4.0	7.09	0.7	1.38	1.2	0	0.0
XANTHOPHYCEAE	48	2.0	2.69	0.2	0.54	0.4	0	0.0
DICHOTOMOCOCUS SPP.	48	2.0	2.69	0.2	0.54	0.4	0	0.0
CRYPTOPHYCEAE	24	1.0	2.88	0.2	0.52	0.4	0	0.0
RHODOSPIRAS MINUTA	24	1.0	2.88	0.2	0.52	0.4	0	0.0
MYXOPHYCEAE	720	30.3	152.79	15.4	24.44	21.2	0	0.0
ACHEMELLUM QUADRIFOLIATUM	24	1.0	0.02	0.0	0.00	0.0	0	0.0
ANABAENA SPIROIDES	24	1.0	16.00	1.6	2.57	2.2	0	0.0
CHROCOCCUS LIMNETICUS	24	1.0	0.35	0.0	0.06	0.0	0	0.0
CHROCOCCUS SPP.	216	9.0	89.92	9.1	13.89	12.0	0	0.0
LYNGBYA SPP.	192	8.0	10.82	1.0	2.18	1.8	0	0.0
OSCILLATORIA GYMNIATA	24	1.0	11.41	1.1	1.73	1.5	0	0.0
RAPHIIDOPSIS CURVATA	120	5.0	16.03	1.6	3.19	2.7	0	0.0

	MEAN DENSITY		MEAN BIODIVLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
UNIDENTIFIED FILAMENTOUS BLUE GREENS	26	1.0	5.46	0.5	0.61	0.5	0	0.0
EUGLEMPHYCEAE	26	1.0	156.76	15.8	16.76	14.5	0	0.0
TRACHELOPHAS HISPIDA	26	1.0	156.76	15.8	16.76	14.5	0	0.0
CHROPHYCEAE	26	1.0	63.29	6.4	7.63	6.6	0	0.0
PERIDINIUM INCONGPICUM	26	1.0	63.29	6.4	7.63	6.6	0	0.0
SAMPLE TOTALS	2376		906.58		114.83		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 08/11/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	6456	35.4	7741.49	26.9	281.38	34.7	0	0.0
ANKISTRODESMUS FALCATUS	253	1.3	16.52	0.2	3.27	0.4	0	0.0
CARTERIA SP	253	1.3	210.00	3.2	29.58	3.6	0	0.0
CHLAMYDOMONAS	3543	19.4	963.80	14.9	157.67	19.4	0	0.0
CHLOROGONIUM SPIRALE	253	1.3	43.56	0.6	7.54	0.9	0	0.0
FRANCEIA DROESCHERI	127	0.6	21.23	0.3	3.75	0.4	0	0.0
GOLENKINIA RADIATA	127	0.6	44.94	0.6	7.09	0.8	0	0.0
MICRACTINIUM PUSILLUM	127	0.6	57.48	0.8	8.77	1.0	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	253	1.3	61.22	0.9	10.17	1.2	0	0.0
SCENEDESMUS BIJUGA	253	1.3	55.68	0.8	9.37	1.1	0	0.0
SCENEDESMUS BRASILIENSIS	127	0.6	74.20	1.1	10.95	1.3	0	0.0
SCENEDESMUS QUADRICAUDA	633	3.4	146.94	2.2	24.55	3.0	0	0.0
SELENASTRUM MINUTUM	127	0.6	8.49	0.1	2.67	0.2	0	0.0
COCCOID GREENS	380	2.0	37.34	0.5	7.00	0.8	0	0.0
BACILLARIOPHYCEAE	5696	31.2	2328.23	36.0	187.54	23.1	0	0.0
ACHNANTHES SPP.	1898	10.4	291.20	4.5	32.60	4.0	0	0.0
MELOSIRA GRANULATA	380	2.0	979.25	15.1	55.37	6.8	0	0.0
NITZSCHIA PALEA	253	1.3	102.1	1.5	9.06	1.1	0	0.0
NITZSCHIA SPP.	253	1.3	109.34	1.6	9.52	1.1	0	0.0
STEPHANODISCU? SPP.	380	2.0	89.61	1.3	9.03	1.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	2405	13.1	697.79	10.8	66.94	8.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	127	0.6	58.60	0.9	5.02	0.6	0	0.0
CHRYSOPHYCEAE	886	4.8	83.66	1.2	15.57	1.9	0	0.0
OCHROMONAS SPP.	127	0.6	27.67	0.4	4.66	0.5	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	759	4.1	55.99	0.8	10.91	1.3	0	0.0
XANTHOPHYCEAE	380	2.0	38.35	0.5	7.16	0.8	0	0.0
DICHTOMOCOCCUS SPP.	380	2.0	38.35	0.5	7.16	0.8	0	0.0
CRYPTOPHYCEAE	1772	9.7	1064.57	16.4	150.52	18.5	0	0.0
CRYPTOMONAS EROSA	633	3.4	318.93	4.9	48.03	5.9	0	0.0
CRYPTOMONAS OVATA	506	2.7	669.70	10.3	88.63	10.9	0	0.0
RHODOMONAS MINUTA	633	3.4	75.94	1.1	13.86	1.7	0	0.0
MYXOPHYCEAE	2786	15.2	540.91	8.3	87.28	10.7	0	0.0
AGMENELLUM QUADRIDUPLICATUM	253	1.3	0.25	0.0	0.08	0.0	0	0.0
ANABAZENA SPIROIDES	127	0.6	96.95	1.4	13.55	1.6	0	0.0
CHROCOCCUS LIMNETICUS	127	0.6	1.84	0.0	0.44	0.0	0	0.0
CHROCOCCUS SPP.	127	0.6	52.63	0.8	8.13	1.0	0	0.0
OSCELLATORIA GEMINATA	380	2.0	160.51	2.7	27.40	3.3	0	0.0
RAPHIDIOPSIS CURVATA	1012	5.5	151.86	2.3	26.90	3.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	380	2.0	4.17	0.0	1.04	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	380	2.0	54.71	0.8	9.74	1.2	0	0.0
EUGLENOPHYCEAE	127	0.6	326.75	5.0	39.54	4.8	0	0.0
TRACHELONAS VOLVOICINA	127	0.6	326.75	5.0	39.54	4.8	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/MIL	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
DINOPHYCEAE	127	0.6	333.84	5.1	40.28	4.9	0	0.0
PERIDINIUM INCONSPICUUM	127	0.6	333.84	5.1	40.28	4.9	0	0.0
SAMPLE TOTALS	16230		6457.62		809.27		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 08/11/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	3575	28.6	884.10	19.1	144.07	27.7	0	0.0
ANKISTRODESMEUS FALCATUS	73	0.5	4.76	0.1	0.94	0.1	0	0.0
CHLAMYDOMONAS	1896	15.2	515.68	11.1	84.36	16.2	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	73	0.5	12.41	0.2	2.16	0.4	0	0.0
GOLENKINIA RADIATA	73	0.5	25.88	0.5	4.08	0.7	0	0.0
PANDORINA CHARKOVIENSIS	73	0.5	91.71	1.9	12.21	2.3	0	0.0
POLYEDRIOPSIS SPINULOSA	73	0.5	19.10	0.4	3.14	0.6	0	0.0
SCENEDESMUS BIJUGA	73	0.5	16.04	0.3	2.69	0.5	0	0.0
SCENEDESMUS QUADRICAUDA	219	1.7	50.81	1.1	8.48	1.6	0	0.0
SCHROEDERIA SETIGERA	73	0.5	19.41	0.4	3.18	0.6	0	0.0
SELENASTRUM MINUTUM	73	0.5	4.89	0.1	0.96	0.1	0	0.0
SELENASTRUM NESTIT	219	1.7	49.89	1.0	8.35	1.6	0	0.0
TREUBARIA SETIGERUM	219	1.7	30.52	0.6	5.46	1.0	0	0.0
COCCOID GREENS	438	3.5	43.02	0.9	8.06	1.5	0	0.0
BACILLARIOPHYCEAE	4521	36.2	2472.13	53.5	180.44	34.7	0	0.0
ACHNANTHES SPP.	1458	11.6	223.72	4.8	25.04	4.8	0	0.0
MELOSIRA GRANULATA	510	4.0	1316.31	28.5	74.43	14.3	0	0.0
NITZSCHIA HOLSATICA	219	1.7	74.37	1.6	6.86	1.3	0	0.0
RHIZOSOLENIA SPP.	73	0.5	157.39	3.4	9.29	1.7	0	0.0
SKELETONEMA POTAMUS	292	2.3	15.62	0.3	2.25	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1313	10.5	380.92	8.2	36.54	7.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	656	5.2	303.80	6.5	26.03	5.0	0	0.0
CHRYSOPHYCEAE	365	2.9	26.89	0.5	5.23	1.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	365	2.9	26.89	0.5	5.23	1.0	0	0.0
XANTHOPHYCEAE	219	1.7	10.94	0.2		0.4	0	0.0
DICHTOMOCOCCUS SPP.	219	1.7	10.94	0.2		0.4	0	0.0
CRYPTOPHYCEAE	1459	11.6	518.39	11.2	77.1	15.0	0	0.0
CRYPTOMONAS EROSA	438	3.5	220.50	4.7	33.1	6.4	0	0.0
CRYPTOMONAS OVATA	146	1.1	192.89	4.1	25.22	4.9	0	0.0
RHODOMONAS MINUTA	875	7.0	105.00	2.2	19.16	3.6	0	0.0
MYXOPHYCEAE	2334	18.7	702.39	15.2	108.66	20.9	0	0.0
ANABAENA SPIROIDES	73	0.5	54.67	1.1	7.80	1.5	0	0.0
CHROCOCCUS LIMNETICUS	73	0.5	1.06	0.0	0.25	0.0	0	0.0
CHROCOCCUS SPP.	219	1.7	90.96	1.9	14.05	2.7	0	0.0
OSCILLATORIA GEMINATA	1021	8.1	485.34	10.5	73.67	14.2	0	0.0
RAPHIDIOPSIS CURVATA	292	2.3	43.75	0.9	7.75	1.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	510	4.0	5.60	0.1	1.40	0.2	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	146	1.1	21.01	0.4	3.74	0.7	0	0.0

SAMPLE TOTALS

12473

4614.84

518.53

0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 06/11/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	600	30.8	133.02	23.6	21.50	35.2	0	0.0
ANKISTRODESMUS FALCATUS	72	3.7	4.71	0.8	0.93	1.5	0	0.0
CHLAMYDOMONAS	120	6.1	32.69	5.8	5.34	8.7	0	0.0
COSMARIVM TENUE	24	1.2	12.48	2.2	1.87	3.0	0	0.0
CRUCIGENIA CRUCIFERA	24	1.2	3.29	0.5	0.59	0.9	0	0.0
FRANCEIA DROESCHERI	24	1.2	4.08	0.7	0.71	1.1	0	0.0
LAGERHEIMIA SUBSALSA	72	3.7	11.93	2.1	2.08	3.4	0	0.0
POLYEDRIOPSIS SPINULOSA	24	1.2	2.47	0.4	0.46	0.7	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	24	1.2	5.81	1.0	0.96	1.5	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	24	1.2	28.51	5.0	3.82	6.2	0	0.0
SCENEDESMUS QUADRICAUDA	72	3.7	16.74	2.9	2.79	4.5	0	0.0
SELENASTRUM MINUTUM	48	2.4	3.22	0.5	0.63	1.0	0	0.0
COCCOID GREENS	72	3.7	7.09	1.2	1.32	2.1	0	0.0
BACILLARIOPHYCEAE	984	50.6	379.65	67.6	31.19	51.1	0	0.0
ACHINANTHES SPP.	336	17.2	51.60	9.1	5.77	9.4	0	0.0
MELOSIRA GRANULATA	48	2.4	124.05	22.0	7.01	11.5	0	0.0
NITZSCHIA AGNITA	24	1.2	3.60	0.6	0.40	0.6	0	0.0
NITZSCHIA PALEA	72	3.7	29.19	5.1	2.58	4.2	0	0.0
SKELETONEMA POTAMOS	24	1.2	1.28	0.2	0.18	0.2	0	0.0
STEPHANODISCUS SPP.	48	2.4	11.35	2.0	1.14	1.8	0	0.0
SYNEDRA ACUS	24	1.2	27.58	4.9	1.89	3.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	336	17.2	97.62	17.3	9.36	15.3	0	0.0
UNIDENTIFIED PENNATE DIATOMS	72	3.7	33.38	5.9	2.86	4.6	0	0.0
CHRYSOPHYCEAE	96	4.9	7.09	1.2	1.38	2.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	96	4.9	7.09	1.2	1.38	2.2	0	0.0
XANTHOPHYCEAE	24	1.2	1.20	0.2	0.24	0.3	0	0.0
DYCHOTOMOCOCCUS SPP.	24	1.2	1.20	0.2	0.24	0.3	0	0.0
CRYPTOPHYCEAE	48	2.4	5.77	1.0	1.05	1.7	0	0.0
RHODOMONAS MINUTA	48	2.4	5.77	1.0	1.05	1.7	0	0.0
MYXOPHYCEAE	192	9.8	34.59	6.1	5.56	9.1	0	0.0
AGMENELLUM QUADRIDUPLICATUM	48	2.4	0.05	0.0	0.01	0.0	0	0.0
CHROCOCCUS SPP.	24	1.2	9.98	1.7	1.54	2.5	0	0.0
OSCILLATORIA GEMINATA	24	1.2	11.41	2.0	1.73	2.8	0	0.0
OSCILLATORIA LIMNETICA	48	2.4	9.44	1.6	1.61	2.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	24	1.2	0.26	0.0	0.06	0.0	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	24	1.2	3.46	0.6	0.61	1.0	0	0.0
SAMPLE TOTALS	1944		561.32		60.92		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 08/11/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	240	19.2	43.06	12.3	7.33	15.8	0	0.0
ANKISTRODESMUS FALCATUS	72	5.7	4.71	1.3	0.93	2.0	0	0.0
CHLAMYDOMONAS	48	3.8	13.08	3.7	2.14	4.6	0	0.0
LAGERHEIMIA SUBCALSIA	48	3.8	7.96	2.2	1.39	3.0	0	0.0
SCENEDESMUS QUADRICALDA	48	3.8	11.17	3.2	1.86	4.0	0	0.0
TETRAEDRON CAUDATUM VAR. LONGISPINA	24	1.9	6.14	1.7	1.01	2.1	0	0.0
BACILLARIOPHYCEAE	528	42.3	137.72	39.3	13.36	28.9	0	0.0
ACTININES SPP.	120	9.6	18.44	5.2	2.06	4.4	0	0.0
SKELETONEMA POTAMOS	24	1.9	1.28	0.3	0.18	0.3	0	0.0
STEPHANODISCUS SPP.	24	1.9	5.66	1.6	0.57	1.2	0	0.0
SYNEDRA SPP.	24	1.9	10.56	3.0	0.91	1.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	312	25.0	90.66	26.0	8.69	18.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	24	1.9	11.11	3.1	0.95	2.0	0	0.0
CRYPTOPHYCEAE	24	1.9	31.75	9.1	4.20	9.0	0	0.0
CRYPTOMONAS OVATA	24	1.9	31.75	9.1	4.20	9.0	0	0.0
MYXOPHYCEAE	456	36.5	136.14	39.0	21.29	46.1	0	0.0
AGYS-HELLUM QUADRIDUPLICATUM	48	3.8	0.05	0.0	0.01	0.0	0	0.0
CHROCOCCUS LIMNETICUS	24	1.9	0.35	0.0	0.08	0.1	0	0.0
CHROCOCCUS SPP.	240	19.2	99.89	28.6	15.43	33.4	0	0.0
LYNGBYA SPP.	24	1.9	1.35	0.3	0.27	0.5	0	0.0
OSCILLATORIA GEMINATA	48	3.8	22.87	6.5	3.47	7.5	0	0.0
OSCILLATORIA LIMNETICA	24	1.9	11.71	3.3	0.80	1.7	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	48	3.8	6.93	1.9	1.23	2.6	0	0.0

SAMPLE TOTALS 1248 548.67 46.18 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 09/15/87 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	2204	35.1	871.85	29.2	128.26	38.3	0	0.0
ANKISTRODESPIUM FALCATUS	82	1.1	5.33	0.1	1.05	0.3	0	0.0
CHLAMYDOMONAS	756	11.0	171.59	5.7	28.75	8.5	0	0.0
COSMARIDIUM ASPHAEROSPORUM VAR. STRIGOSUM	41	0.5	6.96	0.2	1.21	0.3	0	0.0
COSMARIDIUM TUMIDUM	20	0.2	8.47	0.2	1.30	0.3	0	0.0
COSMARIDIUM SPP.	61	0.8	26.35	0.8	4.05	1.2	0	0.0
XYCTYSPHAERIUM EHRENB. S. LARVAE	204	2.9	311.76	10.4	40.47	12.0	0	0.0
AKATOTHRIX GELATINOSA	41	0.5	29.36	0.9	4.21	1.2	0	0.0
GOLENKINIA RADIATA	82	1.1	29.00	0.9	4.57	1.3	0	0.0
MESOSTIGMA VIRIDE	41	0.5	12.92	0.4	2.07	0.6	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.2	5.34	0.1	0.87	0.2	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	20	0.2	4.93	0.1	0.82	0.2	0	0.0
SCENEDESMUS BIJUGA	225	3.2	49.43	1.6	8.32	2.4	0	0.0
SCENEDESMUS BRASILIENSIS	61	0.8	35.93	1.2	5.30	1.5	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.2	24.24	0.8	3.25	0.9	0	0.0
SCENEDESMUS QUADRICAUDA	163	2.3	37.94	1.2	5.33	1.8	0	0.0
SELENASTRUM MENTUM	41	0.5	2.74	0.0	0.54	0.1	0	0.0
SELENASTRUM MESTII	41	0.5	9.33	0.3	1.56	0.4	0	0.0
SPHAROXYSTIS SCHROETERI	20	0.2	71.58	2.4	8.31	2.4	0	0.0
TREUBARIA SETIGERUM	61	0.8	8.55	0.2	1.52	0.4	0	0.0
COCCOID GREENS	204	2.5	20.09	0.6	3.76	1.1	0	0.0
BACILLARIOPHYCEAE	1920	27.9	1398.17	46.9	95.93	28.6	0	0.0
ACHNANTHES SPP.	61	0.8	9.40	0.3	1.52	0.3	0	0.0
CYCLOTILLA SPP.	204	2.9	15.32	0.5	2.03	0.6	0	0.0
FRAGILARIA CROTONEINSIS	204	2.9	182.09	6.1	13.31	4.0	0	0.0
MELOSIRA GRANULATA	295	3.5	632.37	21.2	35.76	10.6	0	0.0
NITZSCHIA HOLSATICA	82	1.1	27.77	0.9	2.56	0.7	0	0.0
NITZSCHIA PALEA	20	0.2	8.26	0.2	0.73	0.2	0	0.0
RHIZOLENIA SPP.	123	1.7	264.69	8.8	15.62	4.6	0	0.0
SKELETONEMA POTAMUS	143	2.0	7.66	0.2	1.10	0.3	0	0.0
STEPHANODISCUS SPP.	143	2.0	33.75	1.1	3.40	1.0	0	0.0
SYNEURA PUMPHENS	82	1.1	39.00	1.3	3.31	0.9	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	613	8.9	177.86	5.9	17.06	5.0	0	0.0
CHRYSOPHYCEAE	470	6.8	47.33	1.5	8.49	2.5	0	0.0
MALLOMONAS TONGURATA	20	0.2	14.19	0.4	2.04	0.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	450	6.5	33.15	1.1	6.45	1.9	0	0.0
CRYPTOPHYCEAE	102	1.4	12.26	0.4	2.23	0.6	0	0.0
RHODOMONAS MINUTA	102	1.4	12.26	0.4	2.23	0.6	0	0.0
MYXOPHYCEAE	2124	30.9	544.19	18.2	86.91	25.9	0	0.0
ANABAENA SPP.	20	0.2	20.26	0.6	2.78	0.8	0	0.0
CHROCOCCUS LIMBETICUS	123	1.7	1.78	0.0	0.43	0.1	0	0.0
CHROCOCCUS PRESCOTTII	61	0.8	16.62	0.5	2.71	0.8	0	0.0
CHROCOCCUS SPP.	695	10.1	288.75	9.6	44.62	13.3	0	0.0
LYMBGYA SPP.	41	0.5	2.30	0.0	0.46	0.1	0	0.0

	MEAN DENSITY		MEAN BLOOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
OSCILLATORIA GEMINATA	41	0.5	19.44	0.6	2.95	0.8	0	0.0
RAPHIDIOPSIS CURVATA	776	11.3	116.44	3.9	20.63	6.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	163	2.3	1.79	0.0	0.45	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	61	0.8	8.83	0.2	1.57	0.4	0	0.0
EUGLENOPHYCEAE	41	0.5	105.56	3.5	12.77	3.8	0	0.0
TRACHELOPHORAS VOLVOCCINA	41	0.5	105.56	3.5	12.77	3.8	0	0.0
SAMPLE TOTALS	6861		2979.37		334.59		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 09/15/87 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	2240	28.9	947.18	28.0	137.13	35.6	0	0.0
ANKISTRODESMIUS FALCATUS	41	0.5	2.67	0.0	0.52	0.1	0	0.0
CHLAMYDOMONAS	654	8.4	148.41	4.4	24.87	6.4	0	0.0
CHLOROCONIUM SPIRALE	20	0.2	3.49	0.1	0.60	0.1	0	0.0
CLOSTERIOPSIS LONGISSIMA VAR. TROPICA	20	0.2	11.99	0.3	1.76	0.4	0	0.0
COELASTRUM MICROPORUM	20	0.2	71.09	2.1	8.26	2.1	0	0.0
COSMARIUM ANGULOSUM VAR. CONCINNUM	20	0.2	3.27	0.0	0.57	0.1	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	41	0.5	6.96	0.2	1.21	0.3	0	0.0
COSMARIUM PHASEOLUS F. MINOR	61	0.7	30.04	0.8	4.54	1.1	0	0.0
COSMARIUM SPP.	61	0.7	26.35	0.7	4.05	1.0	0	0.0
CRUCIENIA CRUCIFERA	20	0.2	2.80	0.0	0.50	0.1	0	0.0
CRUCIGENIA IRREGULARIS	41	0.5	5.52	0.1	0.99	0.2	0	0.0
DICTYOSPHAERIUM EHRENERGIANUM	61	0.7	93.54	2.7	12.14	3.1	0	0.0
DICTYOSPHAERIUM PULCHELLUM	20	0.2	18.49	0.5	2.57	0.6	0	0.0
ELAKATOTHRIX GELATINOSA	20	0.2	14.64	0.4	2.10	0.5	0	0.0
EUDORINA ELEGANS	20	0.2	79.03	2.3	9.05	2.3	0	0.0
GOLENKINIA RADIATA	61	0.7	21.76	0.6	3.43	0.8	0	0.0
GONIUM SOCIALE	20	0.2	6.98	0.2	1.10	0.2	0	0.0
HAEMATOCOCCUS LACUSTRIS	20	0.2	10.69	0.3	1.60	0.4	0	0.0
LAGERHEIMIA SUBSALSA	20	0.2	3.38	0.1	0.59	0.1	0	0.0
MESOSTIGMA VIRIDE	20	0.2	6.45	0.1	1.03	0.2	0	0.0
PEDIASTRUM TETRAS	41	0.5	105.19	3.1	12.73	3.3	0	0.0
POLYEDRIOPSIS SPINULOSA	20	0.2	5.98	0.1	0.96	0.2	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	61	0.7	14.83	0.4	2.46	0.6	0	0.0
SCENEDESMUS BIJUGA	102	1.3	22.48	0.6	3.78	0.9	0	0.0
SCENEDESMUS BRASILIENSIS	163	2.1	95.77	2.8	16.13	3.6	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	41	0.5	48.59	1.4	6.52	1.6	0	0.0
SCENEDESMUS QUADRICAUDA	184	2.3	42.70	1.2	7.13	1.8	0	0.0
SCHROEDERIA SETIGERA	41	0.5	10.89	0.3	1.78	0.4	0	0.0
SELENIUM MINUTUM	41	0.5	2.74	0.0	0.54	0.1	0	0.0
TETRAEDRON MINIMUM	20	0.2	3.49	0.1	0.60	0.1	0	0.0
TREUBARIA SETIGERUM	20	0.2	2.85	0.0	0.50	0.1	0	0.0
COCCOID GREENS	245	3.1	24.11	0.7	4.52	1.1	0	0.0
BACILLARIOPHYCEAE	2695	34.8	1520.75	45.0	111.42	28.9	0	0.0
ACHNANTHES SPP.	163	2.1	25.07	0.7	2.80	0.7	0	0.0
CYCLOTELLA SPP.	266	3.4	60.03	1.7	6.11	1.5	0	0.0
FRAGILARIA CROTONENSIS	143	1.8	127.46	3.7	9.32	2.4	0	0.0
MELOSIRA GRANULATA	245	3.1	632.37	18.7	35.76	9.3	0	0.0
NITZSCHIA HOLSATICA	102	1.3	34.74	1.0	3.20	0.8	0	0.0
NITZSCHIA SUBTILIS	41	0.5	36.20	1.0	2.65	0.6	0	0.0
RHIZOLENIA SPP.	82	1.0	176.39	5.2	10.41	2.7	0	0.0
SKELETONEMA POTAMOS	286	3.6	15.31	0.4	2.21	0.5	0	0.0
STEPHANODISCUS SPP.	163	2.1	38.56	1.1	3.88	1.0	0	0.0
SYNEURA ACUS	20	0.2	23.44	0.6	1.61	0.4	0	0.0
SYNEURA RUPPENS	20	0.2	9.74	0.2	0.82	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1144	14.7	332.02	9.8	31.85	8.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.2	9.44	0.2	0.80	0.2	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHRYSOPHYCEAE	409	5.2	64.48	1.9	10.75	2.7	0	0.0
DINOBRYON SPP.	20	0.2	4.50	0.1	0.75	0.1	0	0.0
MALLOMONAS TONGURATA	41	0.5	28.44	0.8	4.10	1.0	0	0.0
OCHROMONAS SPP.	41	0.5	8.94	0.2	1.50	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	307	3.9	22.60	0.6	4.40	1.1	0	0.0
CRYPTOPHYCEAE	143	1.8	73.07	2.1	10.66	2.7	0	0.0
CRYPTOMONAS EROSA	82	1.0	41.18	1.2	6.20	1.6	0	0.0
CRYPTOMONAS OVATA	20	0.2	26.99	0.8	3.57	0.9	0	0.0
RHODOMONAS MINUTA	41	0.5	4.91	0.1	0.89	0.2	0	0.0
MYXOPHYCEAE	2163	27.9	554.68	16.4	88.78	23.0	0	0.0
CHROCOCCUS LIMNETICUS	163	2.1	2.37	0.0	0.57	0.1	0	0.0
CHROCOCCUS PRESCOTII	20	0.2	5.53	0.1	0.90	0.2	0	0.0
CHROCOCCUS SPP.	1001	12.9	416.16	12.3	64.31	16.7	0	0.0
LYNGBYA SPP.	20	0.2	1.15	0.0	0.23	0.0	0	0.0
OSCILLATORIA GEMINATA	20	0.2	9.70	0.2	1.47	0.3	0	0.0
OSCILLATORIA LIMNETICA	41	0.5	8.02	0.2	1.37	0.3	0	0.0
RAPHIDIOPSIS CURVATA	674	8.7	101.13	2.9	17.91	4.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	163	2.1	1.79	0.0	0.45	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	61	0.7	8.83	0.2	1.57	0.4	0	0.0
EUGLENOPHYCEAE	61	0.7	158.22	4.6	19.14	4.9	0	0.0
TRACHELONAS VOLVOCINA	61	0.7	158.22	4.6	19.14	4.9	0	0.0
DINOPHYCEAE	20	0.2	53.79	1.5	6.49	1.6	0	0.0
PERIDINIUM INCONSPICUUM	20	0.2	53.79	1.5	6.49	1.6	0	0.0
SAMPLE TOTALS	7731		3372.17		384.37		0	

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/AL	Z TOTAL	MM ³ /N	Z TOTAL	MG/M ³	Z TOTAL	MM ² /M ³	Z TOTAL
EUGLENA SPP.	20	0.7	36.84	2.0	4.67	3.0	0	0.0
SAMPLE TOTALS	2711		1815.88		154.95		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 09/15/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	753	41.3	165.65	14.2	27.10	26.0	0	0.0
ANKISTRODESMUS FALCATUS	20	1.1	1.33	0.1	0.26	0.2	0	0.0
CHLAMYDOMONAS	41	2.3	9.28	0.7	1.55	1.4	0	0.0
CRUCIGENIA IRREGULARIS	20	1.1	2.75	0.2	0.49	0.4	0	0.0
KIRCHNERIELLA SUBSOLITARIA	41	2.3	8.43	0.7	1.43	1.3	0	0.0
MESOSTIGMA VIRIDE	20	1.1	6.45	0.5	1.03	0.9	0	0.0
ODCYSTIS PARVA	20	1.1	14.01	1.2	2.02	1.9	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	20	1.1	4.93	0.4	0.82	0.7	0	0.0
SCENEDESMUS BIJUGA	82	4.6	17.97	1.5	3.02	2.8	0	0.0
SCENEDESMUS BRASILIENSIS	61	3.4	35.93	3.0	5.30	5.0	0	0.0
SCENEDESMUS QUADRICAUDA	143	8.0	33.20	2.8	5.54	5.3	0	0.0
SELENASTRUM MINUTUM	61	3.4	4.11	0.3	0.81	0.7	0	0.0
TETRAEDRON MUTICUM	20	1.1	1.63	0.1	0.31	0.2	0	0.0
TETRASTRUM STAUROGENIAEFORME	41	2.3	10.72	0.9	1.76	1.6	0	0.0
TREUBARIA SETIGERUM	20	1.1	2.85	0.2	0.50	0.4	0	0.0
COCCOID GREENS	123	6.9	12.06	1.0	2.26	2.1	0	0.0
BACILLARIOPHYCEAE	795	44.8	757.81	65.0	48.85	46.9	0	0.0
ACHNANTHES SPP.	163	9.1	25.07	2.1	2.80	2.6	0	0.0
MELOSIRA GRANULATA	225	12.6	579.50	49.7	32.77	31.4	0	0.0
NITZSCHIA AGNITA	20	1.1	3.06	0.2	0.34	0.3	0	0.0
SKELETONEMA POTAMOS	20	1.1	1.09	0.0	0.15	0.1	0	0.0
STEPHANODISCUS SPP.	20	1.1	4.81	0.4	0.48	0.4	0	0.0
SYNEDRA ACUS	41	2.3	46.99	4.0	3.23	3.1	0	0.0
SYNEDRA PLANKTONICA	20	1.1	10.77	0.9	0.89	0.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	266	15.0	77.08	6.6	7.39	7.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	1.1	9.44	0.8	0.80	0.7	0	0.0
CHRYSOPHYCEAE	123	6.9	9.04	0.7	1.76	1.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	123	6.9	9.04	0.7	1.76	1.6	0	0.0
MYXOPHYCEAE	81	4.5	28.54	2.4	4.47	4.2	0	0.0
CHROCOCCUS SPP.	61	3.4	25.48	2.1	3.93	3.7	0	0.0
RAPHIDIOPSIS CURVATA	20	1.1	3.06	0.2	0.54	0.5	0	0.0
EUGLENOPHYCEAE	20	1.1	36.84	3.1	4.67	4.4	0	0.0
EUGLENA SPP.	20	1.1	36.84	3.1	4.67	4.4	0	0.0
DINOPHYCEAE	20	1.1	166.89	14.3	17.30	16.6	0	0.0
PERIDINIUM SPP.	20	1.1	166.89	14.3	17.30	16.6	0	0.0
SAMPLE TOTALS	1772		1164.78		104.15		0	

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PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 09/15/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIODV ₃ ME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	3427	33.7	973.47	20.6	152.68	25.6	0	0.0
ANKISTRODESMUS FALCATUS	41	0.4	2.67	0.0	0.52	0.0	0	0.0
CHLAMYDOMONAS	1573	15.4	357.09	7.5	59.85	10.0	0	0.0
CHLOROGONIUM SPIRALE	41	0.4	7.01	0.1	1.21	0.2	0	0.0
COSPHARIUM ASPHAEROSPORUM VAR. STRIGOSUM	61	0.6	10.43	0.2	1.81	0.3	0	0.0
COSPHARIUM TENUE	20	0.1	10.60	0.2	1.59	0.2	0	0.0
COSPHARIUM SPP.	20	0.1	8.77	0.1	1.34	0.2	0	0.0
CRUCIGENIA IRREGULARIS	82	0.8	11.05	0.2	1.98	0.3	0	0.0
DICTYOSPHAERIUM EHREBERGIANUM	61	0.6	93.54	1.9	12.14	2.0	0	0.0
FRANCEIA DROESCHERI	20	0.1	3.47	0.0	0.60	0.1	0	0.0
GOLENKINIA PAUCISPINA	61	0.6	18.57	0.3	2.99	0.5	0	0.0
HAEMATOCOCCLUS LACUSTRIS	20	0.1	18.46	0.3	2.57	0.4	0	0.0
KIRCHNERIELLA LUNARIS VAR. DIANAE	20	0.1	3.93	0.0	0.67	0.1	0	0.0
KIRCHNERIELLA SPP.	20	0.1	3.94	0.0	0.59	0.1	0	0.0
LAGERHEIMIA SUBSALSIA	20	0.1	3.38	0.0	0.59	0.0	0	0.0
MESOSTIGNA VIRIDE	41	0.4	12.92	0.2	2.07	0.3	0	0.0
MICRACTINIUM PUSILLUM	20	0.1	9.26	0.1	1.41	0.2	0	0.0
PEDIASTRUM TETRAS	41	0.4	105.19	2.2	12.73	2.1	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	143	1.4	34.59	0.7	5.74	0.9	0	0.0
SCENEDESMUS BIJUGA	245	2.4	53.94	1.1	9.07	1.5	0	0.0
SCENEDESMUS BRASILIENSIS	163	1.6	95.77	2.0	14.13	2.3	0	0.0
SCENEDESMUS QUADRICAUDA	163	1.6	37.94	0.8	6.33	1.0	0	0.0
SCHROEDERIA SETIGERA	41	0.4	10.89	0.2	1.78	0.2	0	0.0
SCHROEDERIA SETIGERA	20	0.1	5.43	0.1	0.89	0.1	0	0.0
SELENASTRUM MINUTUM	20	0.1	1.37	0.0	0.26	0.0	0	0.0
SELENASTRUM MESTII	20	0.1	4.65	0.0	0.77	0.1	0	0.0
SPIAEROSOMA GRANULATA	41	0.4	6.75	0.1	1.18	0.1	0	0.0
TREUBARIA SETIGERUM	41	0.4	5.71	0.1	1.02	0.1	0	0.0
COCCOID GREENS	368	3.6	36.16	0.7	6.77	1.1	0	0.0
BACILLARIOPHYCEAE	1898	18.6	969.45	20.5	73.33	12.3	0	0.0
ACHANTHES SPP.	123	1.2	18.81	0.3	2.10	0.3	0	0.0
CYCLOTELLA SPP.	266	2.6	36.39	0.7	4.18	0.7	0	0.0
FRAGILARIA CROTONEENSIS	102	1.0	91.09	1.9	6.66	1.1	0	0.0
MELOSIRA DISTANS	61	0.6	9.19	0.1	1.03	0.1	0	0.0
MELOSIRA GRANULATA	143	1.4	368.80	7.8	20.85	3.4	0	0.0
NITZSCHIA ACICULARIS	41	0.4	17.33	0.3	1.51	0.2	0	0.0
NITZSCHIA PALEA	20	0.1	8.26	0.1	0.73	0.1	0	0.0
RHIZOSOLEMIA SPP.	41	0.4	88.30	1.8	5.21	0.8	0	0.0
SKELETONEMA POTAMOS	41	0.4	2.19	0.0	0.31	0.0	0	0.0
STEPHANODISCUS SPP.	163	1.6	38.56	0.8	3.89	0.6	0	0.0
SYNDRA ACUS	20	0.1	23.44	0.4	1.61	0.2	0	0.0
SYNDRA PLANKTONICA	20	0.1	10.77	0.2	0.89	0.1	0	0.0
SYNDRA RUPPENS	20	0.1	9.74	0.2	0.82	0.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	817	8.0	237.15	5.0	22.75	3.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.1	9.44	0.1	0.80	0.1	0	0.0
CHRYSOPHYCEAE	571	5.6	164.04	3.4	24.89	4.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
MALLONNAS PSEUDOCORONATA	20	0.1	19.07	0.4	2.64	0.4	0	0.0
MALLONNAS TONCOURATA	123	1.2	85.26	1.8	12.29	2.0	0	0.0
OCHRONAS SPP.	20	0.1	4.46	0.0	0.75	0.1	0	0.0
OCHRONAS SPP.	20	0.1	4.46	0.0	0.75	0.1	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	368	3.6	27.11	0.5	5.28	0.8	0	0.0
XANTHOPHYCEAE	20	0.1	0.59	0.0	0.13	0.0	0	0.0
DICHTOMYCEUS SPP.	20	0.1	0.59	0.0	0.13	0.0	0	0.0
CRYPTOPHYCEAE	1123	11.0	678.82	14.3	92.46	15.5	0	0.0
CRYPTONAS EROSA	163	1.6	82.35	1.7	12.40	2.0	0	0.0
CRYPTONAS OVATA	307	3.0	405.50	8.5	53.66	9.0	0	0.0
CRYPTONAS REFLEXA	20	0.1	114.97	2.4	12.53	2.1	0	0.0
RHODONAS MINUTA	633	6.2	76.00	1.6	13.87	2.3	0	0.0
MYXOPHYCEAE	2040	27.9	723.41	15.3	115.09	19.3	0	0.0
AGMELLUM QUADRUPPLICATUM	163	1.6	0.16	0.0	0.05	0.0	0	0.0
CHROCOCCUS LIMNETICUS	225	2.2	3.26	0.0	0.78	0.1	0	0.0
CHROCOCCUS SPP.	1308	12.8	543.53	11.5	84.00	14.0	0	0.0
LYNGBYA SPP.	20	0.1	1.15	0.0	0.23	0.0	0	0.0
OSCILLATORIA GEMINATA	82	0.8	38.84	0.8	5.89	0.9	0	0.0
OSCILLATORIA LIMNETICA	163	1.6	32.06	0.6	5.47	0.9	0	0.0
RAPHIDOPSIS CURVATA	388	3.8	58.23	1.2	10.31	1.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	184	1.8	2.02	0.0	0.50	0.0	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	307	3.0	44.17	0.9	7.86	1.3	0	0.0
EUGLENOPHYCEAE	41	0.4	105.56	2.2	12.77	2.1	0	0.0
TRACHELONAS VOLVOICINA	41	0.4	105.56	2.2	12.77	2.1	0	0.0
CHLORONADOPHYCEAE	245	2.4	1110.02	23.4	124.58	20.9	0	0.0
GONYOSTOMUM LATUM	245	2.4	1110.02	23.4	124.58	20.9	0	0.0
SAMPLE TOTALS	10165		4725.36		595.93		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 09/15/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	3563	33.0	1106.24	24.1	166.86	29.5	0	0.0
ANKISTRODESMUS FALCATUS	184	1.8	12.00	0.2	2.37	0.4	0	0.0
ANKISTRODESMUS NANNOSELENE	41	0.4	3.12	0.0	0.60	0.1	0	0.0
CHLAMYDOMONAS	1226	12.0	278.26	6.0	46.63	8.2	0	0.0
CHLORODIUM SPIRALE	41	0.4	7.01	0.1	1.21	0.2	0	0.0
COELASTRUM MICROPORUM	20	0.1	71.09	1.5	8.26	1.4	0	0.0
COSMARUM ASPHAEROSPORUM VAR. STRIGOSUM	163	1.6	27.81	0.6	4.84	0.8	0	0.0
COSMARUM TINCTUM	20	0.1	18.56	0.4	2.58	0.4	0	0.0
COSMARUM TUMIDUM	20	0.1	3.59	0.0	0.62	0.1	0	0.0
CRUCIGENIA IRREGULARIS	20	0.1	2.75	0.0	0.49	0.0	0	0.0
CRUCIGENIA TETRAPEDIA	20	0.1	4.26	0.0	0.72	0.1	0	0.0
DICTYOSPHAERIUM EHREBERGIANUM	61	0.6	93.54	2.0	12.14	2.1	0	0.0
ELAKATOPHYX GELATINOSA	20	0.1	14.64	0.3	2.10	0.3	0	0.0
FRANCEIA DROESCHERI	20	0.1	3.47	0.0	0.60	0.1	0	0.0
GOLENKINIA RADIATA	20	0.1	7.24	0.1	1.14	0.2	0	0.0
GONIUM PECTORALE	20	0.1	26.79	0.5	3.54	0.6	0	0.0
KIRCHNERIELLA SUBSOLITARIA	20	0.1	4.21	0.0	0.71	0.1	0	0.0
LAGERHEIMIA SUBSALSA	20	0.1	3.38	0.0	0.59	0.1	0	0.0
LAGERHEIMIA SUBSALSA	41	0.4	6.77	0.1	1.18	0.2	0	0.0
MESOSTICHA VIRIDE	82	0.8	25.82	0.5	4.13	0.7	0	0.0
PEDIASTRUM DUPLEX	20	0.1	52.64	0.7	4.21	0.7	0	0.0
PEDIASTRUM TETRAS	41	0.4	105.19	2.3	12.73	2.2	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.1	5.54	0.1	0.87	0.1	0	0.0
SCENEDESMUS ACUMINATUS	20	0.1	11.49	0.2	1.70	0.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	61	0.6	14.83	0.3	2.46	0.4	0	0.0
SCENEDESMUS BIJUGA	123	1.2	26.97	0.5	4.53	0.8	0	0.0
SCENEDESMUS BRASILIENSIS	225	2.2	131.70	2.8	19.43	3.4	0	0.0
SCENEDESMUS DENTICULATUS	20	0.1	18.38	0.4	2.56	0.4	0	0.0
SCENEDESMUS QUADRICAUDA	184	1.8	42.70	0.9	7.13	1.2	0	0.0
SCHROEDERIA SETIGERA	20	0.1	5.43	0.1	0.99	0.1	0	0.0
SELENASTRUM MINUTUM	20	0.1	1.37	0.0	0.26	0.0	0	0.0
SELENASTRUM MESTII	20	0.1	4.65	0.1	0.77	0.1	0	0.0
SORASTRUM SPINULOSUM	20	0.1	33.52	0.7	4.30	0.7	0	0.0
SPHAEROSOMA GRANULATA	82	0.8	13.49	0.2	2.35	0.4	0	0.0
TETRAEDRON REGULARE	20	0.1	2.89	0.0	0.51	0.0	0	0.0
TETRAEDRON TRIGONUM VAR SETIGERUM	20	0.1	1.50	0.0	0.29	0.0	0	0.0
TREUBARIA TRIGONUM	41	0.4	5.71	0.1	1.02	0.1	0	0.0
COLLOID GREENS	347	3.4	34.15	0.7	6.40	1.1	0	0.0
BACILLARIOPHYCEAE	2246	22.0	1052.08	23.0	83.36	14.7	0	0.0
ACHANTHES SPP.	143	1.4	21.94	0.4	2.45	0.4	0	0.0
CYCLOTILLA SPP.	163	1.6	69.38	1.5	6.07	1.0	0	0.0
FRAGILARIA CROTONENSIS	61	0.6	54.64	1.1	3.99	0.7	0	0.0
MELOSIRA DISTANS	102	1.0	35.08	0.7	3.23	0.5	0	0.0
MELOSIRA GRANULATA	92	0.8	210.70	4.6	11.91	2.1	0	0.0
NITZSCHIA ACICULARIS	102	1.0	43.30	0.9	3.79	0.6	0	0.0
NITZSCHIA NOLSATICA	266	2.6	90.28	1.9	8.33	1.4	0	0.0
NITZSCHIA PALEA	20	0.1	8.26	0.1	0.73	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M ³	% TOTAL	MG/M ³	% TOTAL	MM ² /MM ³	% TOTAL
RHIZOSOLENIA SPP.	61	0.6	132.35	2.8	7.81	1.3	0	0.0
SKELETONEMA POTAMOS	194	1.8	9.85	0.2	1.42	0.2	0	0.0
STEPHANODISCUS SPP.	82	0.8	19.28	0.4	1.94	0.3	0	0.0
SYNEDRA ACUS	20	0.1	23.44	0.5	1.61	0.2	0	0.0
SYNEDRA RUMPENS	41	0.4	19.52	0.4	1.66	0.2	0	0.0
SYNEDRA RUMPENS VAR. FRAGILARIOIDES	41	0.4	37.01	0.8	2.69	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	858	8.4	249.02	5.4	23.89	4.2	0	0.0
CHRYSOPHYCEAE	531	5.2	124.88	2.7	19.30	3.4	0	0.0
MALLOMONAS ALPINA	20	0.1	23.68	0.5	3.18	0.5	0	0.0
MALLOMONAS TONSURATA	102	1.0	71.07	1.5	10.25	1.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	409	4.0	30.13	0.6	5.87	1.0	0	0.0
XANTHOPHYCEAE	20	0.1	4.10	0.0	0.69	0.1	0	0.0
PSEUDOTETROEGRON NEGLECTUM	20	0.1	4.10	0.0	0.69	0.1	0	0.0
CRYPTOPHYCEAE	1002	9.8	304.09	6.6	46.56	8.2	0	0.0
CRYPTOMONAS EROSA	225	2.2	133.25	2.4	17.05	3.0	0	0.0
CRYPTOMONAS OVATA	82	0.8	108.09	2.3	14.30	2.5	0	0.0
RHODOMONAS MINUTA	695	6.8	83.35	1.8	15.21	2.6	0	0.0
MYXOPHYCEAE	2758	27.1	659.54	14.4	105.30	18.6	0	0.0
AGMENELLUM QUADRIDUPLICATUM	143	1.4	0.14	0.0	0.04	0.0	0	0.0
CHRODOCCUS LIMNETICUS	163	1.6	2.37	0.0	0.57	0.1	0	0.0
CHRODOCCUS SPP.	1267	12.4	526.57	11.5	81.38	14.4	0	0.0
LYNGBYA SPP.	20	0.1	1.15	0.0	0.23	0.0	0	0.0
OSCILLATORIA LIMNETICA	102	1.0	20.05	0.4	3.42	0.6	0	0.0
RAPHIDIOPSIS CURVATA	409	4.0	61.29	1.3	1.85	1.9	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	347	3.4	3.81	0.0	0.95	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	307	3.0	44.17	0.9	7.86	1.3	0	0.0
EUGLENOPHYCEAE	41	0.4	121.96	2.6	14.47	2.5	0	0.0
TRACHELONAS SPP.	41	0.4	121.96	2.6	14.47	2.5	0	0.0
DINOPHYCEAE	53	0.6	274.75	6.0	30.31	5.3	0	0.0
PERIDINIUM INCONSPICUUM	41	0.4	107.85	2.3	13.01	2.3	0	0.0
PERIDINIUM SPP.	20	0.1	166.89	3.6	17.30	3.0	0	0.0
CHLOROMONADOPHYCEAE	143	1.4	924.44	20.2	98.23	17.3	0	0.0
GONYOSTOMUM LATUM	82	0.8	369.86	8.0	41.51	7.3	0	0.0
GONYOSTOMUM SEMEN	61	0.6	554.58	12.1	56.72	10.0	0	0.0
SAMPLE TOTALS	10165		4572.68		565.08		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 09/15/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	ML/M ³	% TOTAL	MG/M ³	% TOTAL	MM ² /M ³	% TOTAL
CHLOROPHYCEAE	814	39.9	205.63	21.6	32.64	32.0	0	0.0
ANKISTRODESPIUS FALCATUS	102	5.0	6.67	0.7	1.32	1.2	0	0.0
CHLAMYDOMONAS	102	5.0	23.20	2.4	3.88	3.8	0	0.0
COSMARUM ASPHAEROSPORUM VAR. STRIGOSUM	41	2.0	6.96	0.7	1.21	1.1	0	0.0
CRUCIGENIA IRREGULARIS	41	2.0	5.52	0.5	0.99	0.9	0	0.0
GOLENINIA PAUCISPINA	20	0.9	6.18	0.6	0.99	0.9	0	0.0
MESOFICHA VIRIDE	20	0.9	6.45	0.6	1.03	1.0	0	0.0
PEDIASTRUM DUPLEX	20	0.9	32.64	3.4	4.21	4.1	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	20	0.9	4.93	0.5	0.82	0.8	0	0.0
SCENEDESMUS BRASILIENSIS	41	2.0	23.97	2.5	3.53	3.4	0	0.0
SCENEDESMUS DENTICULATUS	20	0.9	18.38	1.9	2.56	2.5	0	0.0
SCENEDESMUS QUADRICALDA	204	10.0	47.44	4.9	7.92	7.7	0	0.0
SPHAEROSOMA GRANULATA	41	2.0	6.75	0.7	1.18	1.1	0	0.0
TETRAEDRON MINIMUM	20	0.9	3.49	0.3	0.60	0.5	0	0.0
TETRAEDRON REGULARE VAR. IPULUS	20	0.9	2.03	0.2	0.37	0.3	0	0.0
TETRAEDRON TRICORNUM	20	0.9	2.98	0.3	0.53	0.5	0	0.0
COCCOID GREENS	82	4.0	8.03	0.8	1.50	1.4	0	0.0
BACILLARIOPHYCEAE	572	26.0	491.01	51.6	32.47	31.8	0	0.0
MELOSIRA GRANULATA	143	7.0	368.80	38.5	20.85	20.4	0	0.0
NITZSCHIA HOLSATICA	20	0.9	6.93	0.7	0.64	0.6	0	0.0
NITZSCHIA KUTZINGIANA	20	0.9	7.59	0.7	0.68	0.6	0	0.0
NITZSCHIA PALEA	41	2.0	16.56	1.7	1.46	1.4	0	0.0
SKELETONEMA POTAMOS	41	2.0	2.19	0.2	0.31	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	307	15.0	88.95	9.3	8.53	8.3	0	0.0
CHRYSOPHYCEAE	61	2.9	4.52	0.4	0.88	0.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	61	2.9	4.52	0.4	0.88	0.8	0	0.0
MYXOPHYCEAE	551	27.0	158.52	16.6	24.78	24.3	0	0.0
ANABAENA SPP.	20	0.9	20.26	2.1	2.78	2.7	0	0.0
CHROCOCCUS LIMNETICUS	20	0.9	0.30	0.0	0.07	0.0	0	0.0
CHROCOCCUS SPP.	225	11.0	93.41	9.8	14.43	14.1	0	0.0
LYNGBYA SPP.	61	2.9	3.45	0.3	0.69	0.6	0	0.0
OSCILLATORIA GEMINATA	41	2.0	19.44	2.0	2.95	2.8	0	0.0
RAPHIDIOPSIS CURVATA	102	5.0	15.33	1.6	2.71	2.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	41	2.0	0.45	0.0	0.11	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	41	2.0	5.89	0.6	1.04	1.0	0	0.0
EUGLENOPHYCEAE	20	0.9	36.84	3.8	4.67	4.5	0	0.0
EUGLENA SPP.	20	0.9	36.84	3.8	4.67	4.5	0	0.0
DIMORPHYCEAE	20	0.9	53.79	5.6	6.49	6.3	0	0.0
PERIDINIUM INCONSPICUUM	20	0.9	53.79	5.6	6.49	6.3	0	0.0

Sample totals

2040

950

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 09/15/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	4533	33.4	1350.33	24.1	209.08	33.5	0	0.0
ANKISTRODESMUS FALCATUS	245	1.8	16.01	0.2	3.17	0.5	0	0.0
ANKISTRODESMUS SPIRALLIS	41	0.3	1.23	0.0	0.26	0.0	0	0.0
ASTEROCOCCUS LIMNETICUS	20	0.1	19.40	0.3	2.68	0.4	0	0.0
CARTERIA SP	41	0.3	33.93	0.6	4.78	0.7	0	0.0
CHLAMYDOMONAS	1777	13.1	403.47	7.2	67.62	10.8	0	0.0
CHLOROGONIUM SPIRALE	225	1.6	38.49	0.6	6.69	1.0	0	0.0
COSMARIUM ASPHAEROSPOUM VAR. STRIGOSUM	20	0.1	3.47	0.0	0.60	0.0	0	0.0
COSMARIUM TENUE	41	0.3	21.26	0.3	3.18	0.5	0	0.0
CRUCIGENIA IRREGULARIS	143	1.0	19.30	0.3	3.46	0.5	0	0.0
DICTYOSPHAERIUM EHRENBERGIANUM	102	0.7	155.96	2.7	20.24	3.2	0	0.0
GOLENKINIA RADIATA	41	0.3	14.52	0.2	2.29	0.3	0	0.0
HAEMATOCOCCUS LACUSTRIS	41	0.3	37.01	0.6	5.15	0.8	0	0.0
KIRCHNERIELLA SUBSOLITARIA	82	0.6	16.85	0.3	2.86	0.4	0	0.0
LAGERHEIMIA SUBSALSA	20	0.1	3.38	0.0	0.59	0.0	0	0.0
MESOSTIGMA VIRIDE	123	0.9	38.74	0.6	6.21	0.9	0	0.0
MICRACTINIUM PUSILLUM	20	0.1	9.26	0.1	1.41	0.2	0	0.0
OOCYSTIS PARVA	41	0.3	28.09	0.5	4.05	0.6	0	0.0
POLYEDRIOPSIS SPINULOSA	41	0.3	8.67	0.1	1.46	0.2	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.1	5.34	0.0	0.87	0.1	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	102	0.7	24.72	0.4	4.10	0.6	0	0.0
SCENEDESMUS BIJUGA	143	1.0	31.46	0.5	5.29	0.8	0	0.0
SCENEDESMUS BRASILIENSIS	123	0.9	71.86	1.2	10.60	1.7	0	0.0
SCENEDESMUS DENTICULATUS	41	0.3	36.85	0.6	5.13	0.8	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.1	24.24	0.4	3.25	0.5	0	0.0
SCENEDESMUS QUADRIKAUDA	327	2.4	75.91	1.3	12.68	2.0	0	0.0
SCHROEDERIA SETIGERA	41	0.3	10.89	0.1	1.78	0.2	0	0.0
SELENASTRUM MINUTUM	41	0.3	2.74	0.0	0.54	0.0	0	0.0
SELENASTRUM NESTII	61	0.4	13.98	0.2	2.34	0.3	0	0.0
SORASTRUM SPINULOSUM	20	0.1	33.52	0.6	4.30	0.6	0	0.0
STAUROSTRUM DICKIEI VAR. RHOMBOIDEUM	41	0.3	98.77	1.7	12.05	1.9	0	0.0
TETRAEDRON MINIMUM	20	0.1	3.49	0.0	0.60	0.0	0	0.0
TETRAEDRON MUTICUM	20	0.1	1.63	0.0	0.31	0.0	0	0.0
TETRAEDRON REGULARE VAR. INCUS	20	0.1	2.03	0.0	0.37	0.0	0	0.0
TREUBARIA SETIGERUM	41	0.3	5.71	0.1	1.02	0.1	0	0.0
COCCOID GREENS	388	2.8	38.17	0.6	7.15	1.1	0	0.0
BACILLARIOPHYCEAE	5313	39.1	2725.22	48.8	201.52	32.3	0	0.0
ACHNANTHES SPP.	695	5.1	106.55	1.9	11.92	1.9	0	0.0
CYCLOTELLA SPP.	286	2.1	56.63	1.0	5.95	0.9	0	0.0
MELOSIRA DISTANS	82	0.6	28.04	0.5	2.58	0.4	0	0.0
MELOSIRA GRANULATA	593	4.3	1528.06	27.3	86.41	13.8	0	0.0
NITZSCHIA HOLSATICA	266	1.9	90.28	1.6	8.33	1.3	0	0.0
NITZSCHIA KUTZINGIANA	41	0.3	15.21	0.2	1.37	0.2	0	0.0
NITZSCHIA PALEA	20	0.1	8.26	0.1	0.73	0.1	0	0.0
NITZSCHIA SUBLINEARIS	20	0.1	27.54	0.4	1.82	0.2	0	0.0
NITZSCHIA SPP.	82	0.6	35.29	0.6	3.07	0.4	0	0.0
RHIZOSOLENIA SPP.	20	0.1	44.04	0.7	2.60	0.4	0	0.0

143

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
STEPHANODISCUS SPP.	102	0.7	24.12	0.4	2.43	0.3	0	0.0
SYNEDEIRA RUMPENS	41	0.3	19.52	0.3	1.66	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	2370	17.4	687.74	12.3	65.98	10.6	0	0.0
UNIDENTIFIED PENNATE DIATOMS	41	0.3	18.93	0.3	1.62	0.2	0	0.0
CHRYSTOPHYCEAE	674	4.9	105.66	1.8	17.69	2.8	0	0.0
DINOBRYON SPP.	41	0.3	9.01	0.1	1.51	0.2	0	0.0
MALLONONAS TONSURATA	61	0.4	42.63	0.7	6.14	0.9	0	0.0
OCHROMONAS SPP.	82	0.6	17.86	0.3	3.00	0.4	0	0.0
UNIDENTIFIED CHRYSTOPHYCEAE	490	3.6	36.15	0.6	7.04	1.1	0	0.0
CRYPTOPHYCEAE	1001	7.3	404.11	7.2	58.91	9.4	0	0.0
CRYPTOMONAS EROSA	163	1.2	82.35	1.4	12.40	1.9	0	0.0
CRYPTOMONAS OVATA	184	1.3	243.30	4.3	32.19	5.1	0	0.0
RHODOMONAS MINUTA	654	4.8	78.46	1.4	14.32	2.3	0	0.0
MYXOPHYCEAE	1981	14.6	610.30	10.9	93.89	15.0	0	0.0
AGMENELLUM QUADRIDUPLICATUM	123	0.9	0.12	0.0	0.04	0.0	0	0.0
ANABAENA SPP.	20	0.1	20.26	0.3	2.78	0.4	0	0.0
ANABAENA SPP.	82	0.6	81.13	1.4	11.15	1.7	0	0.0
CHROOCOCCUS LIMNETICUS	61	0.4	0.89	0.0	0.21	0.0	0	0.0
CHROOCOCCUS PRESCOTTII	41	0.3	11.09	0.1	1.81	0.2	0	0.0
CHROOCOCCUS SPP.	776	5.7	322.71	5.7	49.87	8.0	0	0.0
LYNGBYA SPIRULENOIDES	20	0.1	3.60	0.0	0.62	0.0	0	0.0
OSCILLATORIA GEMINATA	245	1.8	116.57	2.0	17.69	2.8	0	0.0
OSCILLATORIA LIMNETICA	41	0.3	8.02	0.1	1.37	0.2	0	0.0
RAPHIDIOPSIS CURVATA	266	1.9	39.84	0.7	7.05	1.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	286	2.1	3.14	0.0	0.78	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	20	0.1	2.94	0.0	0.52	0.0	0	0.0
DINOPHYCEAE	61	0.4	388.40	6.9	41.18	6.6	0	0.0
PERIDINIUM INCONSPIUUM	20	0.1	53.79	0.9	6.49	1.0	0	0.0
PERIDINIUM SPP.	41	0.3	334.60	5.9	34.69	5.5	0	0.0
SAMPLE TOTALS	13563		5584.01		622.27		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 09/15/67 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY	MEAN BLOOVOLUME	MEAN ALGAL CARBON	MEAN SURFACE AREA
	UNITS/ML	MM ³ / M	MG/M	MM ² / M
	% TOTAL	% TOTAL	% TOTAL	% TOTAL
CHLOROPHYCEAE	2569	689.27	106.15	22.7
ANKISTRODESMUS FALCATUS	307	20.01	3.96	0.8
ANKISTRODESMUS NANNOSELENE	20	1.56	0.30	0.0
CHLAMYDOMONAS	633	143.76	24.09	5.1
CHLOROGONIUM SPIRALE	20	3.49	0.60	0.1
COSMARUM ASPHAEROSPORUM VAR. STRIGOSUM	102	17.39	3.03	0.6
CRUCIGENIA CRUCIFERA	20	2.80	0.50	0.1
CRUCIGENIA IRREGULARIS	184	24.83	4.46	0.9
GOLENEMIA RADIATA	343	50.76	8.01	1.7
GONIUM FECTORALE	20	26.79	3.54	0.7
KIRCHNERIELLA SUBSOLITARIA	41	8.43	1.43	0.3
LAGERHEIMIA SUBGALSA	20	3.38	0.59	0.1
MESOSTIGMIA VIRIDE	102	32.30	5.17	1.1
PAHOORINA CHARKOVITENSIS	20	10.26	1.54	0.3
PEDIASIRUM TETRAS	63	105.19	12.73	2.7
SCENEDESMUS ARMATUS VAR. BICAUDATUS	145	34.59	5.74	1.2
SCENEDESMUS BIJAGA	61	13.49	2.26	0.4
SCENEDESMUS BRASILIENSIS	61	35.93	5.30	1.1
SCENEDESMUS QUADRICAUDA	102	23.73	3.96	0.8
SCHROEDERIA SETIGERA	20	5.43	0.89	0.1
SELENASTRUM MINUTUM	41	2.74	0.54	0.1
SELENASTRUM MESTII	20	4.65	0.77	0.1
SPHAROCESTIS SCHROETERI	20	71.58	6.31	1.7
SPHAROCESTIS GRANULATA	20	3.37	0.58	0.1
TETRAEDRON MUTICUM	20	1.63	0.31	0.0
TETRASTRUM STAUROGENIAEFORME	20	5.34	0.87	0.1
TREUBARIA SETIGERUM	42	5.71	1.02	0.2
COCCOID GREENS	307	30.14	5.65	1.2
BACILLARIOPHYCEAE	5187	3155.75	222.10	47.6
ACHRANTHES SPP.	879	134.76	15.08	3.2
CYCLOTILLA SPP.	327	44.79	5.15	1.1
FRAGILARIA CROTONEENSIS	20	18.18	1.32	0.2
MELOSIRA DISTANS	41	14.04	1.29	0.2
MELOSIRA GRANULATA	756	1949.47	110.24	23.6
NITZSCHIA AGNITA	20	3.06	0.34	0.0
NITZSCHIA HOLSATICA	288	97.21	8.97	1.9
NITZSCHIA PALEA	62	24.81	2.19	0.4
RHIZOLENIA SPP.	82	176.39	10.41	2.2
SKELETORHMA POTAMIS	490	26.25	3.79	0.8
STEPHANODISCUS SPP.	61	14.47	1.45	0.3
SYNEURA RUPPENS	20	9.74	0.82	0.1
SYNEURA RUPPENS VAR. FRAGILARIOIDES	29	15.42	1.17	0.2
UNIDENTIFIED CENTRATE DIATOMS	2063	598.80	57.45	12.3
UNIDENTIFIED PENNATE DIATOMS	61	28.38	2.43	0.5
CHRYSOPHYCEAE	572	67.61	11.73	2.5
MALLOMONAS TORIGURATA	41	28.44	4.10	0.8

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
XANTHOPHYCEAE	29	0.1	0.78	0.0	0.16	0.0	0	0.0
DICHTOCOCCLUS SPP.	20	0.1	0.78	0.0	0.16	0.0	0	0.0
CRYPTOPHYCEAE	511	4.6	118.53	2.4	18.54	3.9	0	0.0
CRYPTOMONAS EROSA	20	0.1	10.28	0.2	1.54	0.3	0	0.0
CRYPTOMONAS OVATA	41	0.3	54.11	1.1	7.16	1.5	0	0.0
RHODOMONAS MINUTA	450	4.0	53.94	1.1	9.84	2.1	0	0.0
MYXOPHYCEAE	2225	20.0	621.61	13.0	97.11	20.8	0	0.0
ACHENELLUM QUADRIDUPLICATUM	61	0.5	0.06	0.0	0.02	0.0	0	0.0
ARBAENA SPP.	20	0.1	20.26	0.4	2.78	0.5	0	0.0
ANABAENOPSIS SPP.	41	0.3	39.35	0.8	5.43	1.1	0	0.0
CHROCOCCUS LIMNETICUS	143	1.2	2.07	0.0	0.50	0.1	0	0.0
CHROCOCCUS PRISCOTTII	41	0.3	11.09	0.2	1.81	0.3	0	0.0
CHROCOCCUS SPP.	1062	9.5	441.64	9.3	68.25	14.6	0	0.0
LYNGBYA SPIRULENOIDES	20	0.1	3.60	0.0	0.62	0.1	0	0.0
OSCILLATORIA GEMINATA	61	0.5	29.14	0.6	4.42	0.9	0	0.0
OSCILLATORIA LIMNETICA	143	1.2	28.06	0.5	4.79	1.0	0	0.0
RAPHIDIOPSIS CURVATA	225	2.0	33.70	0.7	5.97	1.2	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	347	3.1	3.81	0.0	0.95	0.2	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	61	0.5	6.83	0.1	1.57	0.3	0	0.0
CHLOROMONADOPHYCEAE	20	0.1	92.68	1.9	10.39	2.2	0	0.0
CONYOSTOMUM LATUM	20	0.1	92.68	1.9	10.39	2.2	0	0.0
SAMPLE TOTALS	11084		4746.02		466.18		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 09/15/87 TIME: 1160 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	608	24.4	210.79	15.7	32.26	27.7	0	0.0
CHLAMYDOMONAS	102	4.1	23.20	1.7	3.60	3.3	0	0.0
COSMARUM ASPHAEROSPORUM VAR. STRIGOSUM	20	0.8	3.47	0.2	0.60	0.5	0	0.0
COSMARUM SPP.	20	0.8	8.77	0.6	1.34	1.1	0	0.0
CRUCIGENIA RUCIFERA	20	0.8	2.80	0.2	0.50	0.4	0	0.0
CRUCIGENIA TETRAPEDIA	20	0.8	4.26	0.3	0.72	0.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	61	2.4	55.57	4.1	7.73	6.6	0	0.0
GOLEKINIA RADIATA	20	0.8	7.24	0.5	1.14	0.9	0	0.0
KIRCHNERIELLA SUBSOLITARIA	20	0.8	4.21	0.3	0.71	0.6	0	0.0
SCENEDESMUS ACUMINATUS	20	0.8	11.49	0.8	1.70	1.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAURATUS	20	0.8	4.93	0.3	0.82	0.7	0	0.0
SCENEDESMUS BIJUGA	42	1.6	9.00	0.6	1.51	1.2	0	0.0
SCENEDESMUS BRASILIENSIS	41	1.6	23.97	1.7	3.53	3.0	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.8	24.24	1.8	3.25	2.7	0	0.0
SCENEDESMUS QUADRICAUDA	61	2.4	14.23	1.0	2.37	2.0	0	0.0
SPHAEROSOMA GRANULATA	20	0.8	3.37	0.2	0.58	0.4	0	0.0
COCCOID GREENS	102	4.1	10.05	0.7	1.88	1.6	0	0.0
BACILLARIOPHYCEAE	1265	50.9	1020.53	76.0	65.85	56.6	0	0.0
ACHNANTHES SPP.	163	6.5	25.07	1.8	2.80	2.4	0	0.0
CYCLOTHELLA SPP.	20	0.8	2.79	0.2	0.32	0.2	0	0.0
MELOSIRA AMBIGUA	123	4.9	413.77	30.8	21.92	18.8	0	0.0
MELOSIRA DISTANS	41	1.6	14.04	1.0	1.29	1.1	0	0.0
MELOSIRA GRANULATA	143	5.7	368.80	27.4	20.85	17.9	0	0.0
NITZSCHIA HOLSATICA	20	0.8	6.93	0.5	0.64	0.5	0	0.0
NITZSCHIA SPP.	20	0.8	8.81	0.6	0.76	0.6	0	0.0
SKELETONEMA POTAMOS	225	9.0	12.03	0.8	1.73	1.4	0	0.0
SYNEDRA RUPPENS VAR. FRAGILARTOIDES	20	0.8	15.42	1.1	1.17	1.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	423	17.2	124.50	9.2	11.94	10.2	0	0.0
UNIDENTIFIED PENNATE DIATOMS	61	2.4	28.38	2.1	2.43	2.0	0	0.0
CHRYSOPHYCEAE	245	9.8	21.07	1.5	3.97	3.4	0	0.0
DIMORPHON SPP.	20	0.8	4.50	0.3	0.75	0.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	225	9.0	16.57	1.2	3.22	2.7	0	0.0
CRYPTOPHYCEAE	123	4.9	14.71	1.0	2.68	2.3	0	0.0
RHODOMONAS MINUTA	123	4.9	14.71	1.0	2.68	2.3	0	0.0
MYXOPHYCEAE	243	9.7	74.42	5.5	11.47	9.8	0	0.0
AGMONELLUM QUADRIPPLICATUM	20	0.8	0.02	0.0	0.00	0.0	0	0.0
ANABAENOPSIS SPP.	20	0.8	14.71	1.0	2.11	1.8	0	0.0
CHROCOCCUS SPP.	102	4.1	42.48	3.1	6.54	5.6	0	0.0
OSCILLATORIA GEMINATA	20	0.8	9.70	0.7	1.47	1.2	0	0.0
OSCILLATORIA LIMNETICA	20	0.8	4.00	0.2	0.68	0.5	0	0.0
RAPHIDIOPSIS CURVATA	20	0.8	3.06	0.2	0.54	0.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	41	1.6	0.45	0.0	0.11	0.0	0	0.0

MEAN DENSITY	MEAN BIOVOLUME	MEAN ALGAL CARBON	MEAN SURFACE AREA
UNITS/ML	MM ³ /M	MG/M	MM ² /M
Z TOTAL	Z TOTAL	Z TOTAL	Z TOTAL
2404	1341.52	116.23	0

SAMPLE TOTALS

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 09/15/87 TIME: 1400 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1222	29.7	315.25	15.3	49.98	26.1	0	0.0
ACTINASTRUM HANTZSCHII VAR. FLUVIATILE	20	0.4	1.10	0.0	0.22	0.1	0	0.0
ANKISTRODESPIUS FALCATUS	82	1.9	5.33	0.2	1.05	0.5	0	0.0
CHLAMYDOMONAS	377	7.9	74.21	3.6	12.43	6.5	0	0.0
CHLORODIUM SPIRALE	61	1.4	10.50	0.5	1.82	0.9	0	0.0
COSMARUM ASPHAEROSPORUM VAR. STRIGOSUM	53	2.9	20.87	1.0	3.63	1.8	0	0.0
COSMARUM SPP.	26	0.4	8.77	0.4	1.34	0.7	0	0.0
CRUCIGENIA IRREGULARIS	41	0.9	5.52	0.2	0.99	0.5	0	0.0
DICTYOSPHAERIUM EHREBERGIANUM	20	0.4	31.13	1.5	4.04	2.1	0	0.0
GOMPHINIA RADIATA	20	0.4	7.24	0.3	1.14	0.5	0	0.0
MESOSTIGMA VIRIDE	41	0.9	12.92	0.6	2.07	1.0	0	0.0
PEDESTRIUM DUPLEX	20	0.4	32.64	1.5	4.21	2.2	0	0.0
SCENEDESPIUS ABUNDANS VAR. ASYMMETRICA	20	0.4	5.34	0.2	0.87	0.4	0	0.0
SCENEDESPIUS ARMATUS VAR. BICAUDATUS	41	0.9	9.89	0.4	1.64	0.8	0	0.0
SCENEDESPIUS BIJUGA	61	1.4	13.49	0.6	2.26	1.1	0	0.0
SCENEDESPIUS BRASILIENSIS	20	0.4	11.96	0.5	1.76	0.9	0	0.0
SCENEDESPIUS DENTICULATUS	20	0.4	18.38	0.8	2.56	1.3	0	0.0
SCENEDESPIUS QUADRICAUDA	82	1.9	18.97	0.9	3.16	1.6	0	0.0
SCHROEDERIA SETIGERA	70	0.4	5.43	0.2	0.89	0.4	0	0.0
SELENASTRUM WESTII	20	0.4	4.65	0.2	0.77	0.4	0	0.0
TREUDARIA SETIGERUM	20	0.4	2.85	0.1	0.50	0.2	0	0.0
COCCOID GREENS	143	3.4	14.06	0.6	2.63	1.3	0	0.0
BACILLARIOPHYCEAE	2106	51.3	1423.58	69.3	96.51	50.4	0	0.0
ACHNANTHES SPP.	368	8.9	56.41	2.7	6.31	3.2	0	0.0
CYCLOTELLA SPP.	41	0.9	5.60	0.2	0.64	0.3	0	0.0
MELOSIRA DISTANS	41	0.9	6.13	0.2	0.69	0.3	0	0.0
MELOSIRA GRANULATA	409	9.9	1053.78	51.3	59.59	31.1	0	0.0
NITZSCHIA ACICULARIS	41	0.9	17.33	0.8	1.51	0.7	0	0.0
SKELETOREMA POTAMOS	327	7.9	17.50	0.8	2.52	1.3	0	0.0
STEPHANODISCUS SPP.	41	0.9	9.65	0.4	0.97	0.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	756	18.4	219.36	10.6	21.04	11.0	0	0.0
UNIDENTIFIED PENNATE DIATOMS	82	1.9	37.82	1.8	3.24	1.6	0	0.0
CHRYSOPHYCEAE	163	3.9	24.73	1.2	4.09	2.1	0	0.0
MALLOPHOMAS TONSURATA	20	0.4	14.19	0.6	2.04	1.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	143	3.4	10.54	0.5	2.05	1.0	0	0.0
CRYPTOPHYCEAE	225	5.4	42.68	2.0	7.12	3.7	0	0.0
CRYPTOPHOMAS EROSA	41	0.9	20.61	1.0	3.10	1.6	0	0.0
RHOZOPHOMAS MINUTA	164	4.4	22.07	1.0	4.02	2.1	0	0.0
MYXOPHYCEAE	326	7.9	105.32	5.1	16.28	8.5	0	0.0
ANABAENA SPP.	20	0.4	20.26	0.9	2.78	1.4	0	0.0
CHROCOCCUS LIMNETICUS	41	0.9	0.59	0.0	0.14	0.0	0	0.0
CHROCOCCUS SPP.	143	3.4	59.45	2.8	9.18	4.8	0	0.0
OSCILLATORIA GELINATA	20	0.4	9.70	0.4	1.47	0.7	0	0.0
RAPHIDIOPSIS CURVATA	102	2.4	15.33	0.7	2.71	1.4	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
DINOPHYCEAE	60	1.4	140.60	6.0	17.24	9.0	0	0.0
PERIDINIUM INCOGNITICUM	20	0.4	53.79	2.6	6.49	3.3	0	0.0
PERIDINIUM INCOGNITICUM	20	0.4	53.79	2.6	6.49	3.3	0	0.0
PERIDINIUM PUSILLUM	20	0.4	53.09	1.6	4.26	2.2	0	0.0
SAMPLE TOTALS	4102		2052.24		191.22		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 10/15/87 TIME: 0900 DEPTH(M): 0.5

	MEAN DENSITY		MEAN BIODIVERSITY		MEAN TOTAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM	%	MM	% TOTAL	MM	% TOTAL
CHLOROPHYCEAE	1794	26.3	511.0	28.8	56.21	19.4	0	0.0
ACTINASTRUM HANTZSCHII	41	0.6	26.16	0.1	0.35	0.1	0	0.0
ANKISTRODESMUS FALCATUS	61	0.8	4.00	0.2	0.64	0.2	0	0.0
ANKISTRODESMUS SP. RALLIS	82	1.2	2.45	0.3	0.44	0.2	0	0.0
CHLAMYDOMONAS	123	1.8	27.83	0.2	0.64	0.2	0	0.0
CHLOROGONIUM SPIRALE	20	0.2	3.49	0.3	0.76	0.2	0	0.0
COSMARIMUM ASPHAEROSPOPIUM VAR. STRIGOSUM	184	2.7	31.30	1.5	2.66	0.9	0	0.0
CRUCIGENIA IRREGULARIS	20	0.2	2.75	0.1	0.1	0	0	0.0
DICTYOSPHAERIUM PULCHELLUM	61	0.8	55.57	2.3	7.75	2.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	225	3.3	14.83	0.6	2.93	1.0	0	0.0
FRANCEIA DROESCHERI	20	0.2	3.47	0.1	0.60	0.2	0	0.0
FRANCEIA OVALIS	20	0.2	5.60	0.2	0.91	0.3	0	0.0
GLOEOCYSTIS BOTRYOIDES	20	0.2	27.91	1.1	3.67	1.2	0	0.0
GOLENKINIA RADIATA	20	0.2	7.24	0.3	1.14	0.3	0	0.0
KIRCHNERFELLA SUBSOLITARIA	20	0.2	4.21	0.1	0.71	0.2	0	0.0
MICRACTINIUM PUSILLUM	20	0.2	9.26	0.3	1.41	0.4	0	0.0
PEDIASTRUM TETRAS	20	0.2	52.47	2.2	6.35	2.1	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	123	1.8	29.66	1.2	4.92	1.7	0	0.0
SCENEDESMUS BIJUGA	62	0.8	17.97	0.7	3.02	1.0	0	0.0
SCENEDESMUS BRASILIENSIS	62	0.8	35.93	1.5	5.30	1.6	0	0.0
SCENEDESMUS DENTICULATUS	61	0.8	55.24	2.3	7.69	2.6	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.2	24.24	1.0	3.25	1.1	0	0.0
SCENEDESMUS QUADRICAUDA	163	2.3	37.94	1.6	6.33	2.1	0	0.0
SELENASTRUM MINUTUM	20	0.2	1.37	0.0	0.26	0.0	0	0.0
COCCOID GREENS	307	4.5	30.14	1.2	5.65	1.7	0	0.0
BACILLARIOPHYCEAE	2532	37.2	670.60	28.8	56.21	19.4	0	0.0
ACHNANTHES SPP.	20	0.2	3.13	0.1	0.35	0.1	0	0.0
CYCLOTELLA STELLIGERA	123	1.8	71.65	3.0	5.80	2.0	0	0.0
CYCLOTELLA SPP.	42	0.6	5.60	0.2	0.64	0.2	0	0.0
FRAGILARIA CROTONENSIS	41	0.6	36.45	1.5	2.66	0.9	0	0.0
MELOSIRA DISTANS	20	0.2	7.00	0.3	0.44	0.2	0	0.0
MELOSIRA GRANULATA	82	1.2	210.70	9.0	11.91	4.1	0	0.0
NITZSCHIA SPP.	20	0.2	8.81	0.3	0.76	0.2	0	0.0
RHIZOSOLENIA SPP.	20	0.2	44.04	1.8	2.60	0.9	0	0.0
SKELETONEMA POTAMIS	1471	21.6	78.76	3.3	11.37	3.9	0	0.0
STEPHANODISCUS SPP.	82	1.2	19.28	0.8	1.94	0.6	0	0.0
SYNEDRA RUMPENS	20	0.2	9.74	0.4	0.82	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	572	8.4	165.99	7.1	15.92	5.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.2	9.44	0.4	0.80	0.2	0	0.0
CHRYSTOPHYCEAE	633	9.3	78.75	3.3	13.30	4.6	0	0.0
ERKENIA SUBAEQUICILIATA	204	3.0	9.01	0.3	1.88	0.5	0	0.0
MALLONNAS TONSURATA	61	0.8	42.63	1.8	6.14	2.1	0	0.0
UNIDENTIFIED CHRYSTOPHYCEAE	368	5.4	27.11	1.1	5.28	1.8	0	0.0
CRYPTOPHYCEAE	1102	16.2	391.69	16.8	58.01	20.0	0	0.0
CRYPTONNAS EROSA	163	2.3	82.35	3.5	12.40	4.2	0	0.0

	MEAN DENSITY		MEAN BLOOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
RHODOSPIRUM MINUTA	776	11.4	93.16	4.0	17.00	5.8	0	0.0
MYXOPHYCEAE	595	8.7	135.27	5.8	21.40	7.4	0	0.0
CHROOCOCCLUS SPP.	286	4.2	118.89	5.1	18.37	6.3	0	0.0
OSCILLATORIA LIMNETICA	41	0.6	8.02	0.3	1.37	0.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	225	3.3	2.47	0.1	0.62	0.2	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	41	0.6	5.89	0.2	1.04	0.3	0	0.0
EUGLENOPHYCEAE	60	0.5	69.48	2.9	8.88	3.0	0	0.0
EUGLENA SPP.	20	0.2	36.84	1.5	4.67	1.6	0	0.0
LEPOTHECIS OVALIS	20	0.2	32.64	1.4	4.21	1.4	0	0.0
CHLOROPHYCEAE	102	1.5	470.12	20.2	52.64	18.2	0	0.0
GONOSTOMUM LATUM	102	1.5	470.12	20.2	52.64	18.2	0	0.0
SAMPLE TOTALS	6794		2326.95		288.64		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 10.0 SAMPLE DATE: 10/13/67 TIME: 0900 DEPTH: 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	1466	28.0	349.34	20.2	54.98	24.4	0	0.0
ACTINASTRUM NANITZSCHII	20	0.3	2.20	0.1	0.40	0.1	0	0.0
ANKISTRODESMUS FALCATUS	20	0.3	1.33	0.0	0.26	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	61	1.1	6.13	0.3	1.14	0.5	0	0.0
CHLAMYDOMONAS	61	1.1	13.92	0.8	2.33	1.0	0	0.0
COSPHARIUM ASPHAEROSPORUM VAR. STRIGOSUM	102	1.9	17.39	1.0	3.03	1.3	0	0.0
CRUCIGENIA IRREGULARIS	61	1.1	8.28	0.4	1.48	0.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	41	0.7	37.08	2.1	5.16	2.2	0	0.0
DICTYOSPHAERIUM PULCHELLUM	245	4.6	16.18	0.9	3.20	1.4	0	0.0
KIRCHWIELLIA SUBSOLITARIA	20	0.3	4.21	0.2	0.71	0.3	0	0.0
MESOSTIGMA VIRIDE	61	1.1	19.37	1.1	3.10	1.3	0	0.0
PEDIASTRUM DUPLEX	41	0.7	65.44	3.7	8.44	3.7	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.3	5.34	0.3	0.87	0.3	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	82	1.5	19.76	1.1	3.28	1.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	20	0.3	4.49	0.2	0.75	0.3	0	0.0
SCENEDESMUS BIJUGA	41	0.7	23.97	1.3	3.53	1.5	0	0.0
SCENEDESMUS BRASILIENSIS	20	0.3	24.24	1.4	3.25	1.4	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	163	3.1	37.94	2.1	6.33	2.8	0	0.0
SCENEDESMUS QUADRICAUDA	41	0.7	2.74	0.1	0.54	0.2	0	0.0
SELENASTRUM MINUTUM	20	0.3	3.26	0.1	0.57	0.2	0	0.0
SPHAEROCYSTA GRANULATA	20	0.3	2.55	0.1	0.46	0.2	0	0.0
TETRAEDRON MINIMUM	41	0.7	4.06	0.2	0.76	0.3	0	0.0
TETRAEDRON REGULARE VAR. IMCENS	245	4.6	24.11	1.3	4.52	2.0	0	0.0
COCCOID GREENS								
BACILLARIOPHYCEAE	1239	37.1	300.64	17.3	30.57	13.5	0	0.0
CYCLOTILLA SPP.	102	1.9	14.00	0.8	1.61	0.7	0	0.0
RHIZOLENIA SPP.	20	0.3	44.04	2.5	2.60	1.1	0	0.0
SKELETONEMA POTAMOS	1205	23.0	64.54	3.7	9.32	4.1	0	0.0
STEPHANODISCUS SPP.	61	1.1	14.47	0.8	1.45	0.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	531	10.1	154.15	8.9	14.79	6.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.3	9.44	0.5	0.80	0.3	0	0.0
CHRYSOPHYCEAE	429	8.2	29.21	1.6	5.74	2.5	0	0.0
ERGENIA SUBAEQUICILIATA	82	1.5	3.60	0.2	0.75	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	347	6.6	25.61	1.4	4.99	2.2	0	0.0
CRYPTOPHYCEAE	755	14.4	398.80	23.0	53.84	23.9	0	0.0
CRYPTOMONAS EROSA	61	1.1	30.90	1.7	4.65	2.0	0	0.0
CRYPTOMONAS OVATA	163	2.7	189.19	10.9	25.03	11.1	0	0.0
CRYPTOMONAS REFLEXA	26	0.3	114.97	6.6	12.53	5.5	0	0.0
RHODOMONAS MINUTA	531	10.1	63.74	3.6	11.63	5.1	0	0.0
MYXOPHYCEAE	510	9.7	168.29	9.7	25.85	11.4	0	0.0
ANABAENA SPP.	20	0.3	20.26	1.1	2.78	1.2	0	0.0
ANABAENOPSIS SPP.	20	0.3	7.85	0.4	1.22	0.5	0	0.0
CHROOKOCOCUS SPP.	327	6.2	135.89	7.8	21.00	9.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	123	2.3	1.35	0.0	0.33	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
EUGLENOPHYCEAE	.1	0.7	73.07	4.2	9.37	4.1	0	0.0
EUGLENA SPP.	41	0.7	73.07	4.2	9.37	4.1	0	0.0
DINOPHYCEAE	40	0.7	220.69	12.7	23.79	10.5	0	0.0
PERIDINIUM IMCONSPICUUM	20	0.3	53.79	3.1	6.49	2.8	0	0.0
PERIDINIUM SPP.	20	0.3	166.89	9.6	17.30	7.6	0	0.0
CHLOROPHYCEAE	41	0.7	188.14	10.8	21.07	9.3	0	0.0
GONIOSPORUM LATUM	41	0.7	188.14	10.8	21.07	9.3	0	0.0
SAMPLE TOTALS	5211		1728.97		225.21		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 10/15/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1691	27.8	407.69	24.9	63.53	32.5	0	0.0
ANKISTRODESMUS FALCATUS	20	0.3	1.33	0.0	0.26	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	163	2.6	4.90	0.3	1.07	0.5	0	0.0
CHLAMYDOMONAS	163	2.6	37.09	2.2	6.21	3.1	0	0.0
CHLORODONIUM SPIRALE	20	0.3	3.49	0.2	0.60	0.3	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	225	3.7	39.24	2.3	6.66	3.4	0	0.0
COSMARIUM TENUE	82	1.3	42.47	2.6	6.36	3.2	0	0.0
CRUCIGENIA IRREGULARIS	41	0.6	5.52	0.3	0.99	0.5	0	0.0
DICTYOSPHAERIUM PULCHELLUM	10	0.3	18.49	1.1	2.57	1.3	0	0.0
DICTYOSPHAERIUM PULCHELLUM	327	5.3	21.58	1.3	4.26	2.1	0	0.0
EUASTRUM DENTICULATUM VAR. RECTANGULARE	20	0.3	24.48	1.5	3.28	1.6	0	0.0
KIRCHNERIELLA SUBSOLITARIA	41	0.6	8.43	0.5	1.43	0.7	0	0.0
KIRCHNERIELLA SPP.	20	0.3	7.94	0.2	0.67	0.3	0	0.0
MESOSTIGMA VIRIDE	20	0.3	6.45	0.3	1.03	0.5	0	0.0
PANDORINA MORUM	20	0.3	61.12	3.7	7.24	3.7	0	0.0
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.3	5.34	0.3	0.87	0.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	61	1.0	14.83	0.9	2.46	1.2	0	0.0
SCENEDESMUS BIJUGA	123	2.0	26.97	1.6	4.53	2.3	0	0.0
SCENEDESMUS BRASILIENSIS	20	0.3	11.96	0.7	1.76	0.9	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.3	24.24	1.4	3.25	1.6	0	0.0
SCENEDESMUS QUADRICAUDA	143	2.3	33.20	2.0	5.54	2.8	0	0.0
TETRAEDRON MUTICUM	20	0.3	3.57	0.2	0.61	0.3	0	0.0
COCCOID GREENS	102	1.6	10.05	0.6	1.88	0.9	0	0.0
BACILLARIOPHYCEAE	2552	41.9	736.97	45.1	58.01	29.7	0	0.0
ACHNANTHES SPP.	20	0.3	3.13	0.1	0.35	0.1	0	0.0
CYCLOTELLA STELLIGERA	102	1.6	59.73	3.6	4.83	2.4	0	0.0
CYCLOTELLA SPP.	102	1.6	14.00	0.8	1.61	0.8	0	0.0
MELOSIRA AMBIGUA	82	1.3	275.74	16.9	14.61	7.4	0	0.0
MELOSIRA GRANULATA	41	0.6	105.48	6.4	5.96	3.0	0	0.0
NITZSCHIA KUTZINGIANA	20	0.3	7.59	0.4	0.68	0.3	0	0.0
NITZSCHIA SPP.	20	0.3	8.81	0.5	0.76	0.3	0	0.0
SKELETONEMA POTAMUS	1532	25.1	82.04	5.0	11.84	6.0	0	0.0
STEPHANODISCUS SPP.	61	1.0	14.47	0.8	1.45	0.7	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	572	9.4	165.99	10.1	15.92	8.1	0	0.0
CHRYSOPHYCEAE	512	8.4	71.38	4.3	12.94	6.1	0	0.0
DINOBRYON SPP.	41	0.6	9.01	0.5	1.51	0.7	0	0.0
ERKENIA SUBAEQUICILIATA	123	2.0	5.40	0.3	1.12	0.5	0	0.0
HALLONIAS TONSURATA	41	0.6	28.44	1.7	4.10	2.1	0	0.0
OCHROMONAS SPP.	41	0.6	8.94	0.5	1.50	0.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	266	4.3	19.59	1.2	3.81	1.9	0	0.0
XANTHOPHYCEAE	20	0.3	1.31	0.0	0.25	0.1	0	0.0
DICHTONOCOCCLUS SPP.	20	0.3	1.31	0.0	0.25	0.1	0	0.0
CRYPTOPHYCEAE	1021	16.7	234.53	14.3	37.46	19.2	0	0.0
CRYPTOMONAS EROSA	163	2.6	82.35	5.0	12.40	6.3	0	0.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
RHIZOMYCES MINUTA	817	13.4	96.06	6.0	17.90	9.1	0	0.0
MYXOPHYCFEAE	265	4.3	65.40	5.2	13.23	6.7	0	0.0
AGHENEILLUM QUADRIDUPLICATUM	20	0.3	0.02	0.0	0.00	0.0	0	0.0
CHROCOCCUS SPP.	20%	3.3	84.95	5.2	13.12	6.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	41	0.6	0.45	0.0	0.11	0.0	0	0.0
CHLOROPHYCEAE	20	0.3	93.84	5.7	10.50	5.3	0	0.0
GORGYSTORIUM LATUM	20	0.3	93.84	5.7	10.50	5.3	0	0.0
SAMPLE TOTALS	6081		1631.11		195.02		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 10/13/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN 310VOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M ³	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1425	29.2	257.68	19.3	42.79	24.5	0	0.0
ANKISTRODESMUS FALCATUS	20	0.4	1.33	0.0	0.26	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	123	2.5	1.72	0.1	0.41	0.2	0	0.0
CARTERIA SP	20	0.4	16.93	1.2	2.38	1.3	0	0.0
CHLAMYDOMONAS	82	1.6	18.55	1.3	3.10	1.7	0	0.6
CHLOROCOCCUM SPIRALE	20	0.4	3.49	0.2	0.60	0.3	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	286	5.8	48.68	3.6	8.47	4.8	0	0.0
COSMARIUM TENUE	20	0.4	10.60	0.7	1.59	0.9	0	0.0
CRUCIGENIA CRUCIFERA	20	0.4	2.80	0.2	0.50	0.2	0	0.0
CRUCIGENIA IRREGULARIS	41	0.8	5.52	0.4	0.99	0.5	0	0.0
CRUCIGENIA TETRAPEBIA	20	0.4	4.26	0.3	0.72	0.4	0	0.0
DICTYOSPHAERUM PULCHRILLUM	286	5.8	18.88	1.4	3.73	2.1	0	0.0
GOLEWNIKIA RADIATA	20	0.4	7.24	0.5	1.14	0.6	0	0.0
LAGERHEIMIA SUBSALSA	20	0.4	3.38	0.2	0.59	0.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	61	1.2	14.83	1.1	2.46	1.4	0	0.0
SCENEDESMUS BIJAGA	61	1.2	13.49	1.0	2.26	1.2	0	0.0
SCENEDESMUS BRASILIENSIS	20	0.4	11.96	0.8	1.76	1.0	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.4	24.24	1.8	3.25	1.8	0	0.0
SCENEDESMUS QUADRICAUDA	163	3.3	37.94	2.8	6.33	3.6	0	0.0
TETRAEDRON REGULARE VAR. IMCUS	20	0.4	2.03	0.1	0.37	0.2	0	0.0
COCCOID GREENS	102	2.0	10.05	0.7	1.68	1.0	0	0.0
BACILLARIOPHYCEAE	1818	37.2	448.53	33.6	38.86	20.3	0	0.0
ACHAETHE'S SPP.	41	0.8	6.27	0.4	0.70	0.4	0	0.0
CYCLOTELLA STELLIGERA	123	2.5	71.65	5.3	5.80	3.3	0	0.0
CYCLOTELLA SPP.	20	0.4	2.79	0.2	0.32	0.1	0	0.0
MELOSIRA GRANULATA	41	0.8	105.48	7.9	5.96	3.4	0	0.0
RHIZOSOLENIA SPP.	20	0.4	44.04	3.3	2.60	1.4	0	0.0
SKELETONEMA POTAMUS	1022	20.9	54.64	4.1	7.89	4.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	531	10.8	154.15	11.5	14.79	8.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.4	9.44	0.7	0.80	0.4	0	0.0
CHRYSOPHYCEAE	245	5.0	38.80	2.9	6.72	3.8	0	0.0
ECHECERUS SPP.	143	2.9	31.26	2.3	5.26	3.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	102	2.0	7.54	0.5	1.46	0.8	0	0.0
CRYPTOPHYCEAE	736	15.0	306.36	22.9	64.81	25.7	0	0.0
CRYPTOPHYCIAS EROSA	184	3.7	92.69	6.9	13.96	8.0	0	0.0
CRYPTOPHYCIAS OVATA	123	2.5	162.20	12.1	21.46	12.3	0	0.0
RHODOPHYCIAS MINUTA	429	8.7	51.48	3.8	9.39	5.3	0	0.0
MYXOPHYCEAE	612	12.5	189.95	14.2	29.65	17.0	0	0.0
CHROCOCCUS SPP.	347	7.1	144.17	10.8	22.31	12.8	0	0.0
OSCELLATORIA GEMINATA	61	1.2	29.14	2.1	4.42	2.5	0	0.0
OSCELLATORIA LIMNETICA	61	1.2	12.03	0.9	2.05	1.1	0	0.0
RAPHIDIOPSIS CURVATA	20	0.4	3.06	0.2	0.54	0.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	123	2.5	1.35	0.1	0.33	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
EUGLENA SPP.	20	0.4	36.04	2.7	4.67	2.6	0	0.0
DINOPHYCEAE	20	0.4	53.79	4.0	6.49	3.7	0	0.0
PERIDINIUM INCONSPICUUM	20	0.4	53.79	4.0	6.49	3.7	0	0.0

SAMPLE TOTALS 4076 1332.15 173.99 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 10/13/67 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	1510	26.8	428.82	18.2	64.81	20.9	0	0.0
ANKISTRIDESMUS SPIRALLIS	41	0.7	1.23	0.0	0.26	0.0	0	0.0
CHLAMYDOMONAS	347	6.1	78.84	3.3	13.21	4.2	0	0.0
CHLOROCYONIUM SPIRALE	41	0.7	7.01	0.2	1.21	0.3	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	20	0.3	3.47	0.1	0.60	0.1	0	0.0
CRUCIGENIA CRUCIFERA	61	1.0	P 41	0.3	1.50	0.4	0	0.0
CRUCIGENIA IRREGULARIS	41	0.7	.52	0.2	0.99	0.3	0	0.0
DICTYOSPHAERIUM PULCHELLUM	41	0.7	37.08	1.5	5.16	1.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	143	2.5	9.44	0.4	1.86	0.6	0	0.0
GOLEKINIA PAUCISPINA	20	0.3	6.18	0.2	0.99	0.3	0	0.0
LAGERHEIMIA SUBSALSA	41	0.7	6.77	0.2	1.18	0.3	0	0.0
PANDORINA CHARONIENSIS	20	0.3	25.66	1.0	3.41	1.1	0	0.0
SCENEDESMUS ARMATUS VAR. ASYMMETRICA	20	0.3	5.34	0.2	0.87	0.2	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	82	1.4	19.76	0.8	3.28	1.0	0	0.0
SCENEDESMUS BIJUGA	82	1.4	17.97	0.7	3.02	0.9	0	0.0
SCENEDESMUS BRASILIENSIS	82	1.4	47.88	2.0	7.06	2.2	0	0.0
SCENEDESMUS QUADRICAUDA	123	2.1	28.47	1.2	4.75	1.5	0	0.0
SELENASTRUM MINUTUM	41	0.7	2.74	0.1	0.54	0.1	0	0.0
SPHAEROZOGMA GRANULATA	20	0.3	3.37	0.1	0.58	0.1	0	0.0
TETRAEDRUM TRIGRUM VAR. GRACILE	20	0.3	92.35	3.9	10.36	3.3	0	0.0
TETRAEDRUM HETERACANTHUS	20	0.3	0.40	0.0	0.09	0.0	0	0.0
TREUBARIA SETIGERUM	20	0.3	2.85	0.1	0.50	0.1	0	0.0
COCCOID GREENS	184	3.2	18.08	0.7	3.39	1.0	0	0.0
BACILLARIOPHYCEAE	1505	23.1	247.20	10.5	24.80	8.0	0	0.0
ACHANTHES SPP.	61	1.0	9.40	0.4	1.05	0.3	0	0.0
CYCLOTELLA STELLIGERA	20	0.3	11.92	0.5	0.96	0.3	0	0.0
CYCLOTELLA SPP.	41	0.7	5.60	0.2	0.64	0.2	0	0.0
FRAGILARIA CROTONEUSIS	20	0.3	18.18	0.7	1.32	0.4	0	0.0
NITZSCHIA AGHITA	20	0.3	3.06	0.1	0.34	0.1	0	0.0
SKELETONEMA POTAMOS	572	10.1	30.62	1.3	4.42	1.4	0	0.0
STEPHANODISCUS SPP.	20	0.3	4.81	0.2	0.48	0.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	531	9.4	154.15	6.5	14.79	4.7	0	0.0
UNIDENTIFIED PENNATE DIATOMS	70	0.3	9.44	0.4	0.80	0.2	0	0.0
CHRYSOPHYCEAE	327	5.8	93.57	3.9	14.39	4.6	0	0.0
MALLONAS TOROSURATA	302	1.8	71.07	3.0	10.25	3.3	0	0.0
OCCHROPIAS SPP.	41	0.7	8.94	0.3	1.50	0.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	184	3.2	13.56	0.5	2.64	0.8	0	0.0
CRYPTOPHYCEAE	1512	26.8	628.60	26.8	91.09	29.4	0	0.0
CRYPTOPHYTAS EROSA	204	3.6	102.97	4.3	15.50	5.0	0	0.0
CRYPTOPHYTAS OVATA	307	5.4	405.50	17.3	53.66	17.3	0	0.0
RHODOPHYTAS MINUTA	1001	17.7	120.13	5.1	21.93	7.0	0	0.0
MYXOPHYCEAE	816	14.4	211.86	9.0	33.27	10.7	0	0.0
CHROCOCCUS SPP.	450	7.9	186.86	7.9	28.97	9.3	0	0.0
CHROCOCCUS SPP.	20	0.3	8.48	0.3	1.31	0.4	0	0.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	µM ³ /M	% TOTAL	MG/M ³	% TOTAL	MM ² /M ³	% TOTAL
OSCILLATORIA LIMBETICA	20	0.3	4.00	0.1	0.68	0.2	0	0.0
RAPHIDIOPSIS CURVATA	20	0.3	3.06	0.1	0.54	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	266	4.7	2.92	0.1	0.73	0.2	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	20	0.3	2.94	0.1	0.52	0.1	0	0.0
DINOPHYCEAE	82	1.4	442.46	16.8	47.70	15.3	0	0.0
PERIDINIUM INCONSPICUUM	41	0.7	107.85	4.6	13.01	4.1	0	0.0
PERIDINIUM SPP.	41	0.7	339.60	14.2	34.69	11.1	0	0.0
CHLOROPHYCEAE	82	1.4	291.26	12.4	33.75	10.8	0	0.0
CONYOSTORIUM LATUM	82	1.4	291.26	12.4	33.75	10.8	0	0.0
SAMPLE TOTALS	5634		2343.75		309.81		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 10/13/87 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BICVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	1163	28.4	256.30	14.9	41.90	19.6	6	0.0
ANKISTRODESMUS FALCATUS	20	0.4	1.33	0.0	0.26	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	51	1.4	1.84	0.1	0.40	0.1	0	0.0
CHLAMYDOMONAS	163	3.9	37.09	2.1	6.21	2.9	0	0.0
CHLOROGONIUM SPIRALE	41	1.0	7.01	0.4	1.21	0.5	0	0.0
COSMARUM SPP.	20	0.4	6.77	0.5	1.34	0.6	0	0.0
CRUCIGENIA IRREGULARIS	41	1.0	5.52	0.3	0.99	0.4	0	0.0
DICTYOSPHAERIUM PULCHELLUM	20	0.4	18.49	1.0	2.57	1.2	0	0.0
DICTYOSPHAERIUM PULCHELLUM	123	3.0	8.09	0.4	1.60	0.7	0	0.0
GOLENKINIA PAUCISPINA	61	1.4	18.57	1.0	2.99	1.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	102	2.4	24.72	1.4	4.10	1.9	0	0.0
SCENEDESMUS BIJUGA	82	2.0	17.97	1.0	3.02	1.4	0	0.0
SCENEDESMUS BRASILIENSIS	82	2.0	67.88	2.7	7.06	3.3	0	0.0
SCENEDESMUS QUADRICAUDA	143	3.5	53.20	1.9	5.54	2.6	0	0.0
SCHROEDERIA SETIGERA	20	0.4	5.43	0.3	0.89	0.4	0	0.0
SELENASTRUM MINUTUM	41	1.0	2.74	0.1	0.54	0.2	0	0.0
SPHAEROCYSTA GRANULATA	41	1.0	6.75	0.3	1.18	0.5	0	0.0
TREUBARIA SETIGERUM	20	0.4	2.85	0.1	0.50	0.2	0	0.0
COCCOID GREENS	82	2.0	8.03	0.4	1.50	0.7	0	0.0
BACILLARIOPHYCEAE	1000	24.4	337.07	19.7	27.12	12.7	0	0.0
CYCLOTHELLA STELLIGERA	82	2.0	47.75	2.7	3.86	1.8	0	0.0
CYCLOTHELLA SPP.	82	2.0	11.19	0.6	1.26	0.6	0	0.0
FRAGILARIA CROTONEINSIS	20	0.4	18.18	1.0	1.32	0.6	0	0.0
HELOSIRA GRANULATA	20	0.4	52.61	3.0	2.97	1.3	0	0.0
NITZSCHIA PALEA	20	0.4	8.26	0.4	0.73	0.3	0	0.0
RHIZOLENIA SPP.	41	1.0	88.30	5.1	5.21	2.4	0	0.0
SKELETONEMA POTAMOS	429	10.5	72.97	1.3	3.31	1.5	0	0.0
STEPHANODISCUS SPP.	20	0.4	4.81	0.2	0.48	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	286	7.0	83.00	4.8	7.96	3.7	0	0.0
CHRYSOHYCEAE	204	4.9	35.63	2.1	6.05	2.3	0	0.0
MALLOPORUS TORQUATA	20	0.4	14.19	0.8	2.04	0.9	0	0.0
CHROONAS SPP.	61	1.4	13.40	0.7	2.25	1.0	0	0.0
UNIDENTIFIED CHRYSOHYCEAE	123	3.0	9.04	0.5	1.76	0.8	0	0.0
CRYPTOPHYCEAE	1062	26.0	371.12	21.6	54.91	25.8	0	0.0
CRYPTOPHYCES EROSA	123	3.0	61.79	3.6	9.30	4.3	0	0.0
CRYPTOPHYCES OVATA	163	3.9	216.18	12.6	28.61	13.4	0	0.0
RHODONAS MINUTA	776	19.0	93.16	5.4	17.00	7.9	0	0.0
MYXOPHYCEAE	572	14.0	145.00	8.4	22.84	10.7	0	0.0
CHROOCOCCUS LIMBETICUS	41	1.0	0.59	0.0	0.14	0.0	0	0.0
CHROOCOCCUS PRESCOTTII	20	0.4	5.53	0.3	0.90	0.4	0	0.0
CHROOCOCCUS SPP.	307	7.5	127.41	7.6	19.69	9.2	0	0.0
OSCELLATORIA LIMNETICA	20	0.4	4.00	0.2	0.60	0.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	143	3.5	1.57	0.0	0.39	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	41	1.0	5.89	0.3	1.04	0.4	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYLLA	82	2.0	564.71	33.0	59.88	28.1	0	0.0
CONYOSPORUM LATUM	82	2.0	564.71	33.0	59.88	28.1	0	0.0
SAMPLE TOTALS	4083		1710.83		212.70		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 10/13/67 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M ³	Z TOTAL	MG/M	Z TOTAL	MM ² /M ²	Z TOTAL
CHLOROPHYCEAE	1242	52.7	248.74	22.6	40.75	29.4	0	0.0
ACTINASTRUM HANTZSCHII	20	0.5	1.61	0.1	0.31	0.2	0	0.0
ANKISTRODESMUS FALCATUS	20	0.5	1.33	0.1	0.26	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	41	1.0	0.98	0.0	0.22	0.1	0	0.0
CHLAMYDOMONAS	163	4.2	37.09	3.2	6.21	4.4	0	0.0
CHLOROGONIUM SPIRALE	20	0.5	3.49	0.3	0.60	0.4	0	0.0
COSPHARIUM ASPHAEROSPORUM VAR. STRIGOSUM	41	1.0	6.96	0.6	1.21	0.8	0	0.0
COSPHARIUM TENUE	41	1.0	21.26	1.9	3.18	2.2	0	0.0
CRUCIGENIA CRUCIFERA	20	0.5	2.80	0.2	0.50	0.3	0	0.0
CRUCIGENIA IRREGULARIS	41	1.0	5.52	0.5	0.99	0.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	245	6.4	16.18	1.4	3.20	2.3	0	0.0
EUASTRUM SPP.	20	0.5	15.38	1.4	2.19	1.5	0	0.0
SCENEDESMUS ABUNDANS	20	0.5	12.85	1.1	1.87	1.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	20	0.5	4.93	0.4	0.82	0.5	0	0.0
SCENEDESMUS VIJUGA	82	2.1	17.97	1.6	3.02	2.1	0	0.0
SCENEDESMUS BRASILIENSIS	20	0.5	11.96	1.0	1.76	1.2	0	0.0
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.5	24.24	2.2	3.25	2.3	0	0.0
SCENEDESMUS QUADRICAUDA	184	4.8	42.70	3.8	7.13	5.1	0	0.0
SELENASTRUM BIRBRANUM	20	0.5	2.67	0.2	0.48	0.3	0	0.0
SELENASTRUM MINUTUM	41	1.0	2.74	0.2	0.54	0.3	0	0.0
COCCOID GREENS	163	4.2	16.07	1.4	3.01	2.1	0	0.0
BACILLARIOPHYCEAE	1102	29.0	359.22	32.7	29.22	21.0	0	0.0
CYCLOTELLA STELLIGERA	82	2.1	47.75	4.3	3.86	2.7	0	0.0
CYCLOTELLA SPP.	20	0.5	2.79	0.2	0.32	0.2	0	0.0
MELOSIRA GRANULATA	41	1.0	105.48	9.6	5.96	4.3	0	0.0
MELOSIRA SPP.	82	2.1	10.29	0.9	1.20	0.8	0	0.0
NITZSCHIA AGNITA	20	0.5	3.06	0.2	0.34	0.2	0	0.0
NITZSCHIA HOLSATICA	82	2.1	27.77	2.5	2.56	1.9	0	0.0
PHIZOLENIA SPP.	20	0.5	44.04	4.0	2.60	1.8	0	0.0
SKELETRONEMA POTAMUS	629	11.3	27.97	2.0	3.31	2.3	0	0.0
STEPHANODISCUS SPP.	61	1.6	14.47	1.3	1.45	1.0	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	245	6.4	71.16	6.4	6.82	4.9	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.5	9.44	0.8	0.80	0.5	0	0.0
CHRYSOPHYCEAE	205	6.9	18.02	1.6	3.53	2.5	0	0.0
ERKENIA SUBAEQUILATA	61	1.6	2.70	0.2	0.56	0.4	0	0.0
UROGLEHOPSIS AMERICANA	20	0.5	1.76	0.1	0.33	0.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	184	4.8	13.56	1.2	2.64	1.9	0	0.0
CRYPTOPHYCEAE	592	15.6	160.55	14.6	24.57	17.7	0	0.0
CRYPTOPHNAS EROSA	41	1.0	20.61	1.8	3.10	2.2	0	0.0
CRYPTOPHNAS OVATA	61	1.6	81.10	7.2	10.73	7.7	0	0.0
RHODOPHNAS MINUTA	490	12.9	58.84	5.3	10.74	7.7	6	0.0
PHYCOPHYCEAE	571	15.0	177.42	16.1	26.23	18.9	0	0.0
CHROOCOCCLUS SPP.	266	7.0	110.41	10.0	17.06	12.3	0	0.0
LYMBBYA SPIRILENTIDES	41	1.0	7.22	0.6	1.25	0.9	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
<i>OSCELLATORIA LIMNETICA</i>	20	0.5	4.00	7.5	0.68	0.4	0	0.0
<i>RAPHIDIOPSIS CURVATA</i>	20	0.5	3.06	0.2	0.54	0.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	204	5.5	2.24	0.2	0.56	0.4	0	0.0
EUGLENOPHYCEAE	20	0.5	133.23	12.1	14.23	10.2	0	0.0
TRACHELOPHORAS HISPIDA	20	0.5	133.23	12.1	14.23	10.2	0	0.0
SAMPLE TOTALS	3792		1097.16		156.53		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 10/13/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	µm ³ /µm	% TOTAL	µg/µm	% TOTAL	µm ² /µm	% TOTAL
CHLOROPHYCEAE	1590	19.2	296.74	13.3	49.28	17.0	0	0.0
ANKISTRODESMUS FALCATUS	41	0.4	2.67	0.1	0.52	0.1	0	0.0
ANKISTRODESMUS SPIRALLIS	41	0.4	0.66	0.0	0.19	0.0	0	0.0
CHLAMYDOMONAS	163	1.9	37.09	1.6	6.21	2.2	0	0.0
COSMARIUM ASPHAEROSPORUM VAR. STRIGOSUM	61	0.7	10.43	0.4	1.81	0.6	0	0.0
COSMARIUM TENUE	20	0.2	10.40	0.4	1.59	0.5	0	0.0
CRUCIGENIA IRREGULARIS	123	1.4	16.55	0.7	2.97	1.0	0	0.0
DICTYOSPHAERIUM PULCHELLUM	20	0.2	18.49	0.8	2.57	0.9	0	0.0
DICTYOSPHAERIUM PULCHELLUM	286	3.4	18.88	0.8	3.75	1.3	0	0.0
EUASTRUM SPP.	20	0.2	14.67	0.6	2.10	0.7	0	0.0
MESOSTIGMA VIRIDE	102	1.2	32.30	1.4	5.17	1.8	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	61	0.7	14.83	0.6	2.46	0.8	0	0.0
SCENEDESMUS BIJUGA	102	1.2	22.48	1.0	3.78	1.3	0	0.0
SCENEDESMUS BRASILIENSIS	20	0.2	11.96	0.5	1.76	0.6	0	0.0
SCENEDESMUS QUADRICAUDA	204	2.4	47.44	2.1	7.92	2.8	0	0.0
SELENASTRUM MINUTUM	20	0.2	1.37	0.0	0.26	0.0	0	0.0
SELENASTRUM HESTII	20	0.2	4.65	0.2	0.77	0.2	0	0.0
SPHAEROSOMA GRANULATA	20	0.2	3.37	0.1	0.58	0.2	0	0.0
COCCOID GREENS	266	3.2	26.12	1.1	4.89	1.7	0	0.0
BACILLARIOPHYCEAE	3922	47.4	882.54	39.7	81.09	29.3	0	0.0
ACHNANTHES SPP.	61	0.7	9.40	0.4	1.05	0.3	0	0.0
CYCLOTELLA STELLIGERA	123	1.4	71.65	3.2	5.80	2.0	0	0.0
CYCLOTELLA SPP.	163	1.9	22.39	1.0	2.57	0.9	0	0.0
MELOSIRA GRANULATA	61	0.7	158.09	7.1	8.94	3.2	0	0.0
MELOSIRA SPP.	266	3.2	30.54	1.3	3.66	1.3	0	0.0
NITZSCHIA ACICULARIS	41	0.4	17.33	0.7	1.51	0.5	0	0.0
NITZSCHIA AGNITA	20	0.2	3.06	0.1	0.34	0.1	0	0.0
RHIZOSOLENIA SPP.	20	0.2	44.04	1.9	2.60	0.9	0	0.0
SKELETONEMA POTANUS	1696	20.5	90.79	4.1	13.11	4.7	0	0.0
STEPHANODISCUS SPP.	41	0.4	9.65	0.4	0.97	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1369	16.5	397.23	17.9	38.11	13.7	0	0.0
UNIDENTIFIED PENNATE DIATOMS	61	0.7	28.38	1.2	2.43	0.8	0	0.0
CHRYSOPHYCEAE	552	6.6	103.27	4.6	16.56	5.9	0	0.0
ERKENIA SUBAEQUICILIATA	123	1.4	5.40	0.2	1.12	0.4	0	0.0
MALLONONAS TONSURATA	61	0.7	42.63	1.9	6.14	2.2	0	0.0
MALLONONAS SPP.	20	0.2	17.79	0.8	2.49	0.9	0	0.0
OCHROMONAS SPP.	82	0.9	17.86	0.8	3.00	1.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	266	3.2	19.59	0.8	3.81	1.3	0	0.0
CRYPTOPHYCEAE	1450	17.5	529.65	23.9	78.51	28.3	0	0.0
CRYPTONONAS EROSA	296	3.4	144.14	6.5	21.71	7.8	0	0.0
CRYPTONONAS OVATA	204	2.4	270.29	12.2	35.77	12.9	0	0.0
RHODONONAS MINUTA	60	11.6	115.22	5.2	21.03	7.6	0	0.0
MYXOPHYCEAE	694	8.3	150.76	6.8	23.67	8.5	0	0.0
AGHENELLUM QUADRIDUPLICATUM	41	0.4	0.04	0.0	0.01	0.0	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHROOCCUS SPP.	47	4.1	144.37	6.5	22.31	8.0	0	0.0
RAPHIDIOPSIS CURVATA	20	0.2	3.06	0.1	0.54	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	245	2.9	2.69	0.1	0.67	0.2	0	0.0
DIMORPHYCEAE	20	0.2	166.89	7.5	17.30	6.2	0	0.0
PERIDINIUM SPP.	20	0.2	166.89	7.5	17.30	6.2	0	0.0
CHLORONADOPHYCEAE	41	0.4	80.98	3.6	10.15	3.6	0	0.0
GORGOSTOMUM LATUM	41	0.4	80.98	3.6	10.15	3.6	0	0.0
SAMPLE TOTALS	8269		2208.83		276.56		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 10/13/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	1056	23.2	315.00	10.7	53.26	15.2	0	0.0
AKISTRODESPIUS FALCATUS	82	1.0	5.23	0.1	1.05	0.3	0	0.0
AKISTRODESPIUS SPIRALLIS	20	0.2	0.43	0.0	0.09	0.0	0	0.0
CHLAMYDOMONAS	163	2.0	37.09	1.2	6.21	1.7	0	0.0
CHLOROGOBBIUM SPIRALE	20	0.2	3.49	0.1	0.60	0.1	0	0.0
COCCIDIUM TENUE	20	0.2	10.60	0.3	1.59	0.4	0	0.0
CRUCIGENIA CRUCIFERA	20	0.2	2.80	0.0	0.50	0.1	0	0.0
CRUCIGENIA IRREGULARIS	20	0.2	2.75	0.0	0.49	0.1	0	0.0
DICTYOSPHAERIUM PULCHELLUM	20	0.2	18.49	0.6	2.57	0.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	450	5.6	29.67	1.0	5.86	1.6	0	0.0
GONIUM SOCIALE	41	0.5	14.00	0.4	2.22	0.6	0	0.0
MEOSOTICHA VIRIDE	61	0.7	19.37	0.6	3.10	0.8	0	0.0
SCHEDESMUS ARMATUS VAR. BICAUDATUS	82	1.0	19.76	0.6	3.28	0.9	0	0.0
SCHEDESMUS BIJUGA	82	1.0	17.97	0.6	3.02	0.8	0	0.0
SCHEDESMUS BRASILIENSIS	41	0.5	23.97	0.8	3.53	1.0	0	0.0
SCHEDESMUS QUADRICAUDA	104	2.3	42.70	1.4	7.13	2.0	0	0.0
SELENASTRUM MINUTUM	41	0.5	2.74	0.0	0.54	0.1	0	0.0
SELENASTRUM NESTII	20	0.2	4.65	0.1	0.77	0.2	0	0.0
SPHAEROPOTYCHA GRANULATA	102	1.2	16.86	0.5	2.94	0.8	0	0.0
TETRAEDRON CAUDATUM VAR. LONGISPINUM	20	0.2	5.22	0.1	0.86	0.2	0	0.0
TETRAEDRON MINIMUM	20	0.2	2.10	0.0	0.39	0.1	0	0.0
TREPIDARIA SETIGERUM	20	0.2	2.05	0.0	0.50	0.1	0	0.0
COCCOID GREENS	327	4.0	32.14	1.1	6.02	1.7	0	0.0
BACILLARIOPHYCEAE	3472	43.4	906.29	31.0	79.04	22.8	0	0.0
ACRANTHES SPP.	41	0.5	6.27	0.2	0.70	0.2	0	0.0
CYCLOTELLA STELLIGERA	123	1.5	71.65	2.4	5.80	1.6	0	0.0
CYCLOTELLA SPP.	20	0.2	2.79	0.0	0.32	0.0	0	0.0
MEOSIRA GRANULATA	82	1.0	210.70	7.2	11.91	3.4	0	0.0
MEOSIRA SPP.	82	1.0	8.17	0.2	1.01	0.2	0	0.0
NITZSCHIA PALEA	20	0.2	8.26	0.2	0.73	0.2	0	0.0
RHIZOLENIA SPP.	20	0.2	44.04	1.5	2.60	0.7	0	0.0
SKELETONEMA POTAMOS	1471	18.4	78.76	2.6	11.37	3.2	0	2.0
STEPHANODISCUS SPP.	61	0.7	14.47	0.4	1.45	0.4	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1491	18.6	432.80	14.8	41.52	11.8	0	0.0
UNIDENTIFIED PENNATE DIATOMS	61	0.7	28.38	0.9	2.43	0.6	0	0.0
CHRYSOPHYCEAE	551	6.9	86.46	2.9	14.33	4.0	0	0.0
EIKEMIA SUBAEQUICILIATA	41	0.5	1.80	0.0	0.37	0.1	0	0.0
MALLORNIUS TOROSURATA	61	0.7	42.63	1.4	6.14	1.7	0	0.0
OTHROBERNAS SPP.	61	0.7	13.40	0.4	2.25	0.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	308	4.8	28.63	0.9	5.57	1.5	0	0.0
CRYPTOPHYCEAE	1105	14.8	351.43	12.0	53.73	15.3	0	0.0
CRYPTOPHYTUS EROSA	225	2.8	113.25	3.8	17.05	4.8	0	0.0
CRYPTOPHYTUS OVATA	102	1.2	135.21	4.6	17.89	5.1	0	0.0
RHODOPHYTUS MINUTA	858	10.7	102.97	3.5	18.79	5.3	0	0.0

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
AGREHELLUM QUADRIDUPPLICATUM	41	0.5	0.04	0.0	0.01	0.0	0	0.0
CHROCOCCUS LIMBETICUS	82	1.0	1.18	0.0	0.28	0.0	0	0.0
CHROCOCCUS PRESCOTTII	41	0.5	11.09	0.3	1.81	0.5	0	0.0
CHROCOCCUS SPP.	266	3.3	110.41	3.7	17.06	4.8	0	0.0
RAPHIDIOPSIS CURVATA	20	0.2	3.06	0.1	0.54	0.1	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	104	2.3	2.02	0.0	0.50	0.1	0	0.0
EUGLENOPHYCEAE	20	0.2	36.84	1.2	4.67	1.3	0	0.0
EUGLENA SPP.	20	0.2	36.84	1.2	4.67	1.3	0	0.0
DINOPHYCEAE	41	0.5	334.60	11.4	34.69	9.9	0	0.0
PERIDINIUM SPP.	41	0.5	334.60	11.4	34.69	9.9	0	0.0
CHLOROPHYCEAE	225	2.8	763.08	26.1	89.00	25.4	0	0.0
CONYOSTORIUM LATUM	225	2.8	763.08	26.1	89.00	25.4	0	0.0
SAMPLE TOTALS	7904		2921.50		349.72		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 10/15/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ²	% TOTAL
CHLOROPHYCEAE	2017	27.5	404.52	10.7	64.19	23.6	0	0.0
AMRISTRODESPIUS FALCATUS	82	1.1	5.33	0.2	1.05	0.3	0	0.0
AMRISTRODESPIUS SPIRALLIS	104	2.5	6.99	0.3	1.48	0.5	0	0.0
CHLAMYDOMONAS	266	3.6	60.29	2.7	10.10	3.7	0	0.0
CHLOROSPIRIDIUM SPIRALE	20	0.2	3.49	0.1	0.60	0.2	0	0.0
CHLOROGONIUM SPP.	20	0.2	1.57	0.0	0.30	0.1	0	0.0
COELASTRUM CARPICUM	20	0.2	2.75	0.1	0.49	0.1	0	0.0
COCCIDIUM TENUE	41	0.5	21.26	0.9	3.18	1.1	0	0.0
CRUCIGENIA IRREGULARIS	41	0.5	5.52	0.2	0.99	0.3	0	0.0
DICTYOSPHAERIUM PULCHELLUM	20	0.2	18.49	0.8	2.57	0.9	0	0.0
DICTYOSPHAERIUM PULCHELLUM	308	5.2	25.62	1.1	5.06	1.8	0	0.0
EUAESTRUM SPP.	20	0.2	14.47	0.6	2.10	0.7	0	0.0
GOLENKINIA PAUCISPINA	41	0.5	12.39	0.5	1.99	0.7	0	0.0
KIRCHNERIELLA SUBSOLITARIA	20	0.2	4.21	0.1	0.71	0.2	0	0.0
MESOSTIOPA VIRIDE	20	0.2	3.06	0.1	0.54	0.1	0	0.0
PANDORINA CHADKOWIENSIS	20	0.2	3.43	0.1	0.59	0.2	0	0.0
PANDORINA MORUM	20	0.2	61.12	2.8	7.24	2.6	0	0.0
PEDIASTRUM DUPLEX	20	0.2	32.64	1.5	4.21	1.5	0	0.0
SCENEDESPIUS ABUNDANS VAR. ASYMMETRICA	20	0.2	5.34	0.2	0.87	0.3	0	0.0
SCENEDESPIUS ARMATUS VAR. BICAUDATUS	82	1.1	19.76	0.9	3.28	1.2	0	0.0
SCENEDESPIUS BIJUGA	41	0.5	9.00	0.4	1.51	0.5	0	0.0
SCENEDESPIUS BRASILIENSIS	20	0.2	11.96	0.5	1.76	0.6	0	0.0
SCENEDESPIUS QUADRICAUDA	102	1.3	23.73	1.0	3.96	1.4	0	0.0
SELENASTRUM BIBRAITUM	20	0.2	0.86	0.0	0.18	0.0	0	0.0
SELENASTRUM MINUTUM	20	0.2	1.37	0.0	0.26	0.0	0	0.0
SELENASTRUM WESTII	20	0.2	4.65	0.2	0.77	0.2	0	0.0
TREUBARIA SUTNERUM	20	0.2	2.85	0.1	0.50	0.1	0	0.0
COCCOID GREENS	429	5.8	42.18	1.9	7.90	2.9	0	0.0
BACILLARIOPHYCEAE	2635	35.9	800.30	37.0	67.40	24.8	0	0.0
ACHNANTHES SPP.	20	0.2	3.13	0.1	0.35	0.1	0	0.0
CYCLOTHELLA STELLIGERA	41	0.5	23.90	1.1	1.93	0.7	0	0.0
CYCLOTHELLA SPP.	82	1.1	11.19	0.5	1.28	0.4	0	0.0
MELOSIRA BISTANS	20	0.2	7.00	0.3	0.64	0.2	0	0.0
MELOSIRA GRANULATA	82	1.1	210.70	9.7	11.91	4.3	0	0.0
MELOSIRA SPP.	41	0.5	3.95	0.1	0.49	0.1	0	0.0
NETZSCHIA HOLSATICA	163	2.2	55.54	2.5	5.12	1.8	0	0.0
RHIZOSOLENIA SPP.	41	0.5	88.30	4.0	5.21	1.9	0	0.0
SKELETONEMA POTAMOS	960	13.1	51.41	2.3	7.42	2.7	0	0.0
STEPHANODISCUS SPP.	41	0.5	9.65	0.4	0.97	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	1124	15.3	326.10	15.1	31.28	11.5	0	0.0
UNIDENTIFIED PENNATE DIATOMS	20	0.2	9.44	0.4	0.80	0.2	0	0.0
CHRYSOPHYCEAE	530	7.2	78.14	3.6	13.42	4.9	0	0.0
ERGENIA SUBAEQUICILIATA	20	0.2	0.90	0.0	0.18	0.0	0	0.0
MALLOMONAS TOROSURATA	20	0.2	14.19	0.6	2.04	0.7	0	0.0
OCHROMONAS SPP.	104	2.5	40.20	1.8	6.77	2.4	0	0.0
UROBLEPHARIS AMERICANA	20	0.2	1.76	0.0	0.33	0.1	0	0.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CRYPTOPHYCEAE	1246	17.0	430.39	19.9	64.82	23.9	0	0.0
CRYPTOPHYCINUS EROSA	347	4.7	175.04	8.1	26.36	9.7	0	0.0
CRYPTOPHYCINUS OVATA	123	1.6	162.20	7.5	21.46	7.9	0	0.0
RHODOPHYCINUS MINUTA	776	10.5	93.16	4.3	17.00	6.2	0	0.0
MYXOPHYCEAE	837	11.4	258.55	11.0	37.09	13.6	0	0.0
ACHENELLUM QUADRIPPLICATUM	41	0.5	0.04	0.0	0.01	0.0	0	0.0
CHROCOCCUS LIMNETICUS	41	0.5	0.59	0.0	0.14	0.0	0	0.0
CHROCOCCUS SPP.	490	6.6	203.82	9.4	31.50	11.6	0	0.0
OSCILLATORIA GEMINATA	61	0.8	29.14	1.3	4.42	1.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	184	2.5	2.02	6.0	0.50	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	20	0.2	2.94	0.1	0.52	0.1	0	0.0
EUGLENIOPHYCEAE	20	0.2	57.47	2.6	6.87	2.5	0	0.0
TRACHELOPHANUS HISPIDA VAR PUNCTATA	20	0.2	57.47	2.6	6.87	2.5	0	0.0
CHLOROPHYCINOPHYCEAE	41	0.5	148.14	6.8	17.13	6.3	0	0.0
GONOSTOMUM LATUM	41	0.5	148.14	6.8	17.13	6.3	0	0.0
SAMPLE TOTALS	7326		2157.50		270.92		0	

PHYTOPLANKTON STANDING CROP XI

LOCATION: 220.0 SAMPLE DATE: 10/13/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME			MEAN ALGAL CARBON			MEAN SURFACE AREA		
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL	MM ² /M	Z TOTAL	
CHLOROPHYCEAE	2038	28.8	333.73	16.3	56.15	22.4	0	0.0			
ANKISTRODESMUS FALCATUS	20	0.2	1.33	0.0	0.26	0.1	0	0.0			
ANKISTRODESMUS SPIRALLIS	243	2.0	4.00	0.1	0.08	0.3	0	0.0			
CHLAMYDOMONAS	104	2.6	41.75	2.0	6.99	2.7	0	0.0			
CHLOROPHYCIUM SPIRALE	20	0.2	3.49	0.1	0.60	0.2	0	0.0			
COSMARION ASPHAEROTOPORUM VAR. STRIGOSUM	41	0.5	6.96	0.3	1.21	0.4	0	0.0			
CRUCIGERIA IRREGULARIS	20	0.2	2.75	0.1	0.49	0.1	0	0.0			
DICTYOSPHAERIUM PULCHELLUM	41	0.5	37.08	1.8	5.16	2.0	0	0.0			
DICTYOSPHAERIUM PULCHELLUM	409	5.7	26.97	1.3	5.33	2.1	0	0.0			
GOLENINIA PALUCISPINA	20	0.2	6.18	0.3	0.99	0.3	0	0.0			
GOLENINIA RADIATA	20	0.2	7.24	0.3	1.14	0.4	0	0.0			
KIRCHNERIELLA SUBSOLITARIA	20	0.2	4.21	0.2	0.71	0.2	0	0.0			
SCENEDESMUS ABUNDANS VAR. ASYMMETRICA	20	0.2	5.34	0.2	0.87	0.3	0	0.0			
SCENEDESMUS ARRATUS VAR. BICAUDATUS	243	2.0	34.59	1.6	5.74	2.2	0	0.0			
SCENEDESMUS BIJUGA	102	1.4	22.48	1.1	3.78	1.5	0	0.0			
SCENEDESMUS DENTICULATUS VAR. RECURVATUS	20	0.2	24.24	1.1	3.25	1.2	0	0.0			
SCENEDESMUS QUADRICAUDA	163	2.3	37.94	1.8	6.33	2.5	0	0.0			
SELENASTRUM MINUTUM	61	0.8	4.11	0.2	0.81	0.3	0	0.0			
SELENASTRUM WESTII	20	0.2	4.65	0.2	0.77	0.3	0	0.0			
SPHAEROSOMA GRANULATA	61	0.8	9.81	0.4	1.72	0.6	0	0.0			
TETRASTRUM HETERACANTHUM	20	0.2	0.40	0.0	0.09	0.0	0	0.0			
COCCOID GREENS	490	6.9	48.21	2.3	9.03	3.6	0	0.0			
BACILLARIOPHYCEAE	3145	44.5	649.49	31.8	58.00	23.1	0	0.0			
ACHNANTHES SPP.	20	0.2	3.13	0.1	0.35	0.1	0	0.0			
CYCLOTHELLA STELLIGERA	82	1.1	47.75	2.3	3.66	1.5	0	0.0			
MELOSIRA GRANULATA	82	1.1	210.70	10.3	11.91	4.7	0	0.0			
MELOSIRA SPP.	41	0.5	4.70	0.2	0.56	0.2	0	0.0			
NITZSCHIA AGNITA	20	0.2	3.06	0.1	0.34	0.1	0	0.0			
NITZSCHIA HOLSATICA	82	1.1	27.77	1.3	2.56	1.0	0	0.0			
SKELETONEMA POTAMOS	2043	28.9	109.38	5.3	15.79	6.3	0	0.0			
STEPHANODISCUS SPP.	61	0.8	14.47	0.7	1.45	0.5	0	0.0			
SYNEDERA ACUS	20	0.2	23.44	1.1	1.61	0.6	0	0.0			
UNIDENTIFIED CENTRATE DIATOMS	674	9.5	195.65	9.5	18.77	7.4	0	0.0			
UNIDENTIFIED PENNATE DIATOMS	20	0.2	9.44	0.4	0.80	0.3	0	0.0			
CHRYSOPHYCEAE	388	5.4	90.64	4.4	14.30	5.7	0	0.0			
ERKENIA SUBAEQUICILIATA	20	0.2	0.90	0.0	0.18	0.0	0	0.0			
HALLOPHRAS TONGURATA	82	1.1	56.81	2.7	8.19	3.2	0	0.0			
HEUROPHRAS SPP.	82	1.1	17.86	0.8	3.00	1.1	0	0.0			
UNIDENTIFIED CHRYSOPHYCEAE	204	2.8	15.07	0.7	2.93	1.1	0	0.0			
CRYPTOPHYCEAE	1063	15.0	400.50	19.6	59.69	23.8	0	0.0			
CRYPTOPHRAS FT ISA	327	4.6	164.76	8.0	24.81	9.9	0	0.0			
CRYPTOPHRAS C-ATA	123	1.7	162.20	7.9	21.46	8.5	0	0.0			
RHODOPHRAS MINUTA	613	8.6	73.55	3.6	13.42	5.3	0	0.0			
MYXOPHYCEAE	326	4.6	61.33	3.0	9.64	3.8	0	0.0			

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CYDODONIA V. LI-METICUS	20	0.2	0.30	0.0	0.07	0.0	0	0.0
CHROROCYCLUS SPP.	143	2.0	59.45	2.9	9.18	3.6	0	0.0
URIDINIFIED COCCOID BLUE GREENS	143	2.0	1.57	0.0	0.39	0.1	0	0.0
EUGLENOPHYCEAE	41	0.5	73.87	3.6	9.37	3.7	0	0.0
EUGLENA SPP.	41	0.5	73.87	3.6	9.37	3.7	0	0.0
DINOPHYCEAE	20	0.2	53.79	2.6	6.49	2.5	0	0.0
PERIDINIUM INCONSPICUUM	20	0.2	53.79	2.6	6.49	2.5	0	0.0
CHLOROPHYCEAE	40	0.5	378.66	18.5	36.73	14.6	0	0.0
GONVOSTOMUM LATUM	20	0.2	32.31	1.5	4.17	1.6	0	0.0
GONVOSTOMUM JEMEN	20	0.2	346.35	16.9	32.56	13.0	0	0.0
SAMPLE TOTALS	7061		2042.02		250.37		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 11/10/07 TIME: 0900 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	555	16.8	105.39	12.1	17.85	15.3	0	0.0
ACTINASTRUM HANTZSCHII	16	0.4	3.42	0.3	0.57	0.4	0	0.0
ANKISTRODESMUS FALCATUS	33	1.0	2.13	0.2	0.42	0.3	0	0.0
CHLAMYDOMONAS	16	0.4	4.43	0.5	0.72	0.6	0	0.0
DICYODOSPHAERIUM PULCHELLUM	147	4.4	16.62	1.9	3.05	2.6	0	0.0
EUASTRUM DENTICULATUM VAR. RECTANGULARE	33	1.0	11.07	1.2	1.75	1.5	0	0.0
GOLENKINIA RADIATA	16	0.4	5.79	0.6	0.91	0.7	0	0.0
LAGERHEIMIA SUBSALSA	16	0.4	2.70	0.3	0.47	0.4	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	82	2.4	19.76	2.2	3.28	2.8	0	0.0
SCENEDESMUS BIJUGA	16	0.4	3.59	0.4	0.60	0.5	0	0.0
SCENEDESMUS QUADRIKAUDA	131	3.9	30.35	3.4	5.07	4.3	0	0.0
TETRAEDRON REGULARE	16	0.4	2.31	0.2	0.41	0.3	0	0.0
COCCOID GREENS	33	1.0	3.22	0.3	0.60	0.5	0	0.0
BACILLARIOPHYCEAE	1405	42.5	140.59	16.1	16.36	14.0	0	0.0
HELOSIRA DISTANS	65	1.9	22.45	2.5	2.06	1.7	0	0.0
SKELETONEMA POTAMOS	1144	34.6	61.24	7.0	8.84	7.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	196	5.9	56.91	6.5	5.46	4.6	0	0.0
CHRYSOPHYCEAE	311	9.4	19.01	2.1	3.78	3.2	0	0.0
ERKENIA SUBAEQUICILIATA	131	3.9	5.76	0.6	1.20	1.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	180	5.4	13.25	1.5	2.58	2.2	0	0.0
CRYPTOPHYCEAE	751	22.7	175.13	20.1	27.35	23.4	0	0.0
CRYPTOMONAS EROSA	16	0.4	8.22	0.9	1.23	1.0	0	0.0
CRYPTOMONAS OVATA	65	1.9	86.52	9.9	11.45	9.8	0	0.0
RHODOMONAS MINUTA	670	20.3	80.39	9.2	14.67	12.5	0	0.0
MYXOPHYCEAE	196	5.9	68.28	7.8	10.58	9.0	0	0.0
CHROCOCCUS SPP.	163	4.9	67.93	7.8	10.49	9.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	33	1.0	0.36	0.0	0.09	0.0	0	0.0
CHLOROMONADOPHYCEAE	81	2.4	360.25	41.4	40.54	34.8	0	0.0
GONYOSTOMUM DEPRESSUM	16	0.4	86.10	9.9	9.44	8.1	0	0.0
GONYOSTOMUM SEMEN	65	1.9	274.16	31.5	31.08	26.6	0	0.0
SAMPLE TOTALS	3299		868.65		116.46		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 230.0 SAMPLE DATE: 11/10/87 TIME: 0900 DEPTH(M): 5.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	556	15.1	105.77	11.8	17.87	15.7	0	0.0
ANKISTRODESMS FALCATUS	65	1.7	4.27	0.4	0.84	0.7	0	0.0
CHLAMYDOMONAS	131	3.5	35.55	3.9	5.81	5.1	0	0.0
CRUCIGENIA FENESTRATA	16	0.4	4.37	0.4	0.71	0.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	82	2.2	9.23	1.0	1.69	1.4	0	0.0
MESOSTIGMA VIRIDE	16	0.4	6.45	0.7	1.00	0.8	0	0.0
SCENEDESMS ARMATUS VAR. BICAUDATUS	33	0.9	7.91	0.8	1.31	1.1	0	0.0
SCENEDESMS BIJUGA	33	0.9	7.19	0.8	1.21	1.0	0	0.0
SCENEDESMS QUADRICAUDA	98	2.6	22.76	2.5	3.80	3.3	0	0.0
COCCOID GREENS	82	2.2	8.03	0.8	1.50	1.3	0	0.0
BACILLARIOPHYCEAE	2074	56.6	254.52	28.4	26.88	23.6	0	0.0
MELOSIRA GRANULATA	16	0.4	42.04	4.7	2.37	2.0	0	0.0
NITZSCHIA HOLSATICA	131	3.5	44.42	4.9	4.10	3.6	0	0.0
SKELETONEMA POTANOS	1650	45.0	88.36	9.8	12.76	11.2	0	0.0
STEPHANODISCUS SPP.	16	0.4	3.85	0.4	0.38	0.3	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	261	7.1	75.86	8.4	7.27	6.4	0	0.0
CHRYSOPHYCEAE	343	9.3	28.62	3.2	5.31	4.6	0	0.0
ERKENIA SUBAEQUICILIATA	98	2.6	4.32	0.4	0.90	0.7	0	0.0
SYNURA SPINOSA	16	0.4	7.43	0.8	1.13	0.9	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	229	6.2	16.87	1.8	3.28	2.8	0	0.0
CRYPTOPHYCEAE	424	11.6	102.88	11.5	16.07	14.1	0	0.0
CRYPTOMONAS EROSA	33	0.9	16.48	1.8	1.48	2.1	0	0.0
CRYPTOMONAS OVATA	33	0.9	43.26	4.8	5.72	5.0	0	0.0
RHODOMONAS MINUTA	360	9.8	43.14	4.8	7.87	6.9	0	0.0
MYXOPHYCEAE	179	4.6	49.21	5.5	7.44	6.7	0	0.0
CHROCOCCUS SPP.	98	2.6	40.74	4.5	6.29	5.5	0	0.0
OSCELLATORIA GEMINATA	16	0.4	7.75	0.8	1.17	1.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	65	1.7	0.72	0.0	0.18	0.1	0	0.0
DINOPHYCEAE	16	0.4	42.98	4.8	5.18	4.5	0	0.0
PERIDINIUM INCONSPICUUM	16	0.4	42.98	4.8	5.18	4.5	0	0.0
CHLOROMONADOPHYCEAE	66	1.8	309.80	34.6	34.52	30.4	0	0.0
GONYOSTOMUM DEPRESSUM	33	0.9	172.72	19.3	18.98	16.7	0	0.0
GONYOSTOMUM SEMEN	33	0.9	137.08	15.3	15.54	13.6	0	0.0
SAMPLE TOTALS	3660		893.78		113.47		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 11/10/87 TIME: 0900 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	767	17.0	171.63	16.1	27.87	19.7	0	0.0
ANKISTROBESUS FALCATUS	90	2.1	6.40	0.6	1.26	0.6	0	0.0
CHLAMYDOMONAS	131	2.9	35.55	3.3	5.81	4.1	0	0.0
COSMARUM ASPHAEROSPORIUM VAR. STRIGOSUM	16	0.5	2.77	0.2	0.48	0.3	0	0.0
DICTYOSPHAERIUM PULCHELLUM	114	2.5	12.93	1.2	2.37	1.6	0	0.0
DIC. VOSPHERIUM PULCHELLUM	49	1.0	44.42	4.1	6.18	4.3	0	0.0
KIRCHNERIELLA SUBSOLITARIA	35	0.7	6.74	0.6	1.14	0.8	0	0.0
KIRCHNERIELLA SPP.	16	0.3	3.15	0.2	0.53	0.3	0	0.0
SCHEDESPUS ARMATUS V. L. BICAUDATUS	114	2.5	27.67	2.6	4.59	3.2	0	0.0
SCHEDESPUS BIAGA	49	1.0	10.70	1.0	1.81	1.2	0	0.0
SCHEDESPUS QUADRICAUDA	49	1.0	11.58	1.0	1.90	1.3	0	0.0
COCCOID GREENS	90	2.1	9.64	0.9	1.60	1.2	0	0.0
BACILLARIOPHYCEAE	2531	56.1	203.57	19.1	25.33	17.9	0	0.0
MELOSIRA SPP.	33	0.7	3.76	0.3	0.65	0.3	0	0.0
NITZSCHIA AGNITA	16	0.3	2.44	0.2	0.27	0.1	0	0.0
NITZSCHIA HOLGATICA	16	0.3	5.54	0.5	0.51	0.3	0	0.0
PIRULARIA SPP.	16	0.3	7.37	0.6	0.63	0.4	0	0.0
SKELETONEMA POTAMUS	2222	49.3	118.98	11.1	17.18	12.1	0	0.0
STEPHANODISCUS SPP.	16	0.3	3.85	0.3	0.58	0.2	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	212	4.7	67.64	5.7	5.91	4.1	0	0.0
CHRYSOPHYCEAE	294	6.5	41.63	3.9	6.93	4.9	0	0.0
ERKENIA SUBAEQUICILIATA	114	2.5	5.04	0.4	1.05	0.7	0	0.0
UROGLEPAPUS AMERICANA	49	1.0	26.95	2.5	4.01	2.8	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	131	2.9	9.64	0.9	1.87	1.3	0	0.0
XANTHOPHYCEAE	16	0.3	1.53	0.1	0.28	0.1	0	0.0
DICHOETOCOCUS SPP.	16	0.3	1.53	0.1	0.28	0.1	0	0.0
CRYPTOPHYCEAE	572	12.6	107.04	10.0	17.65	12.5	0	0.0
CRYPTOPHYCUM ERGSA	49	1.0	24.70	2.3	3.71	2.6	0	0.0
CRYPTOPHYCUM OVATA	16	0.3	21.56	2.0	2.85	2.0	0	0.0
RHOZOMONAS MINUTA	507	11.2	60.78	5.7	11.09	7.8	0	0.0
MYXOPHYCEAE	196	4.3	55.22	3.3	5.55	3.9	0	0.0
CHROCOCCUS SPP.	82	1.8	33.96	3.1	5.24	3.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	114	2.5	1.26	0.1	0.31	0.2	0	0.0
EUCLEMPHYCEAE	16	0.3	48.61	4.5	5.76	4.0	0	0.0
TRACHELONAS SPP.	16	0.3	48.61	4.5	5.76	4.0	0	0.0
DIMPHYCEAE	16	0.3	42.98	4.0	5.18	3.6	0	0.0
PERIDINIUM INCONSPICUUM	16	0.3	42.98	4.0	5.18	3.6	0	0.0
CHLOROBRAUOPHYCEAE	98	2.1	410.82	38.6	46.58	33.0	0	0.0
CONYOSTOMUM SEMEN	90	2.1	410.82	38.6	46.58	33.0	0	0.0

MEAN DENSITY	MEAN BIOVOLUME	MEAN ALGAL CARBON	MEAN SURFACE AREA
UNITS/ML	MM ³ /M	MG/M	MM ² /M
Z TOTAL	Z TOTAL	Z TOTAL	Z TOTAL
4506	1062.82	161.13	0
SAMPLE TOTALS			

PHYTOPLANKTON STANDING CROP II

LOCATION: 210.0 SAMPLE DATE: 11/10/87 TIME: 0900 DEPTH(M): 15.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	654	17.4	130.76	19.4	21.41	23.0	0	0.0
ANKISTRODESPIUS FALCATUS	147	3.9	9.40	1.4	1.90	2.0	0	0.0
CHLAMYDOMONAS	49	1.3	13.33	1.9	2.18	2.3	0	0.0
CRUCIGENIA TETRAPEDIA	16	0.4	3.40	0.5	0.57	0.6	0	0.0
DICTYOSPHAERIUM PULCHELLUM	65	1.7	7.39	1.1	1.36	1.4	0	0.0
DICTYOSPHAERIUM PULCHELLUM	33	0.8	29.65	4.4	4.12	4.4	0	0.0
MESOSTIGMA VIRIDE	33	0.8	12.95	1.9	2.01	2.1	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	45	1.7	15.82	2.3	2.62	2.8	0	0.0
SCENEDESMUS BIJUGA	33	0.8	7.19	1.0	1.21	1.3	0	0.0
SCENEDESMUS QUADRICAUDA	98	2.6	22.76	3.3	3.80	4.0	0	0.0
TETRASTRUM HETERACANTHUM	33	0.8	0.64	0.0	0.14	0.1	0	0.0
COCCOID GREENS	82	2.1	8.03	1.1	1.50	1.6	0	0.0
BACILLARIOPHYCEAE	1944	51.9	203.37	30.2	22.21	23.9	0	0.0
HELOSIRA DISTANS	16	0.4	5.59	0.8	0.51	0.5	0	0.0
HELOSIRA GRANULATA	16	0.4	42.04	6.2	2.37	2.5	0	0.0
HELOSIRA SPP.	16	0.4	1.87	0.2	0.22	0.2	0	0.0
SKELETONEMA POTAMUS	1667	44.5	89.24	13.2	12.88	13.8	0	0.0
STEPHANODISCUS SPP.	33	0.8	7.72	1.1	0.77	0.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	196	5.2	56.91	8.4	5.46	5.8	0	0.0
CHRYSOPHYCEAE	245	6.5	25.19	3.7	4.44	4.7	0	0.0
ERKENIA SUBAEQUICILIATA	131	3.5	5.76	0.8	1.20	1.2	0	0.0
SYNURA SPINOSA	16	0.4	7.43	1.1	1.13	1.2	0	0.0
UROGLENOPSIS AMERICANA	16	0.4	5.98	0.8	0.99	1.0	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	82	2.1	6.02	0.8	1.17	1.2	0	0.0
XANTHOPHYCEAE	16	0.4	0.24	0.0	0.05	0.0	0	0.0
DICHOETOCOCCLUS SPP.	16	0.4	0.24	0.0	0.05	0.0	0	0.0
CRYPTOPHYCEAE	711	19.2	222.18	33.0	33.54	36.1	0	0.0
CRYPTONONAS EROSA	98	2.6	49.39	7.3	7.43	8.0	0	0.0
CRYPTONONAS OVATA	82	2.1	108.09	16.0	14.30	15.4	0	0.0
RHODONONAS MINUTA	539	14.4	64.70	9.6	11.81	12.7	0	0.0
MYXOPHYCEAE	147	3.9	21.45	3.1	3.41	3.6	0	0.0
CHROCOCCUS SPP.	49	1.3	20.37	3.0	3.14	3.3	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	98	2.6	1.08	0.1	0.27	0.2	0	0.0
CHLOROMONADOPHYCEAE	16	0.4	68.33	10.1	7.74	8.3	0	0.0
CONVOSTOMUM SEMEN	16	0.4	68.33	10.1	7.74	8.3	0	0.0
SAMPLE TOTALS	3741		671.52		92.80		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 11/10/87 TIME: 1000 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIODVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	536	16.6	106.61	6.3	17.65	10.7	0	0.0
ANKISTRODESPIUS FALCATUS	65	2.0	4.27	0.3	0.84	0.5	0	0.0
CHLAMYDOMONAS	98	3.0	22.25	1.7	3.72	2.2	0	0.0
COSMARIIUM SPP.	16	0.4	7.01	0.5	1.07	0.6	0	0.0
CRUCIEMIA TETRAPEDIA	33	1.0	6.83	0.5	1.15	0.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	82	2.5	9.23	0.7	1.69	1.0	0	0.0
DICTYOSPHAERIUM PULCHELLUM	16	0.4	14.78	1.1	2.05	1.2	0	0.0
SCENEDESPIUS ARMATUS VAR. BICAUDATUS	33	1.0	7.91	0.6	1.31	0.7	0	0.0
SCENEDESPIUS BIJUGA	16	0.4	3.59	0.2	0.60	0.3	0	0.0
SCENEDESPIUS QUADRICAUDA	49	1.5	11.38	0.8	1.90	1.1	0	0.0
STAUROSTRUM TETRACERUM	16	0.4	8.13	0.6	1.22	0.7	0	0.0
COCCOID GREENS	114	3.5	11.25	0.8	2.10	1.2	0	0.0
BACILLARIOPHYCEAE	1163	35.7	91.32	7.1	11.43	6.9	0	0.0
MELOSIRA SPP.	49	1.5	5.64	0.4	0.67	0.4	0	0.0
SKELETONEMA POTAMUS	980	30.6	52.49	4.0	7.58	4.6	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	114	3.5	33.20	2.5	3.18	1.9	0	0.0
CHRYSOPHYCEAE	229	7.1	20.67	1.6	3.75	2.2	0	0.0
ERGENIA SUBAEQUICILIATA	82	2.5	3.60	0.2	0.75	0.4	0	0.0
SYMBIA SPINOSA	16	0.4	7.43	0.5	1.13	0.6	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	1.1	4.0	9.64	0.7	1.87	1.1	0	0.0
CRYPTOPHYCEAE	849	26.5	245.85	19.1	37.01	22.5	0	0.0
CRYPTOPHONAS EROSA	16	0.4	8.22	0.6	1.23	0.7	0	0.0
CRYPTOPHONAS OVATA	114	3.5	151.35	11.7	20.03	12.2	0	0.0
RHODOPHONAS MINUTA	719	22.4	86.28	6.7	15.75	9.5	0	0.0
MYXOPHYCEAE	245	7.6	22.52	1.7	3.68	2.2	0	0.0
CHROCOCCUS SPP.	49	1.5	20.37	1.5	3.14	1.9	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	196	6.1	2.15	0.1	0.54	0.3	0	0.0
DIMPHYCEAE	16	0.4	42.98	3.3	5.18	3.1	0	0.0
PERIDINIUM INCONSPICUUM	16	0.4	42.98	3.3	5.18	3.1	0	0.0
CHLOROPHYTIOPHYCEAE	180	5.6	753.30	58.7	85.42	52.0	0	0.0
GONYOSTOMUM SEMEN	180	5.6	753.30	58.7	85.42	52.0	0	0.0

SAMPLE TOTALS 3200 1283.25 169.12 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 11/10/67 TIME: 1000 DEPTH(M): 5.0

	MEAN DENSITY			MEAN BIOVOLUME			MEAN ALGAL CARBON			MEAN SURFACE AREA		
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL	MM ²	Z TOTAL	MM ²	
CHLOROPHYCEAE	700	17.5	162.97	10.6	25.73	16.3	0	0.0	0	0.0	0	
AMPHICERCUS FALCATUS	65	1.6	4.27	0.2	0.04	0.5	0	0.0	0	0.0	0	
CHLAMYDOMONAS	90	2.4	22.25	1.4	3.72	2.3	0	0.0	0	0.0	0	
DICTYOSPHAERIUM PULCHELLUM	82	2.0	9.27	0.6	1.69	1.0	0	0.0	0	0.0	0	
GOLEMNHIA RADIATA	16	0.4	5.79	0.3	0.91	0.5	0	0.0	0	0.0	0	
LAGEHEIMIA SUBSALSA	16	0.4	2.70	0.1	0.47	0.2	0	0.0	0	0.0	0	
MICRACTINIUM PUSILLUM	16	0.4	7.60	0.4	1.13	0.7	0	0.0	0	0.0	0	
PEDIASTRUM TETRAS	16	0.4	41.92	2.7	5.07	3.2	0	0.0	0	0.0	0	
SCENEDESMUS ASUNDANS VAR. ASYMMETRICA	16	0.4	4.27	0.2	0.70	0.4	0	0.0	0	0.0	0	
SCENEDESMUS ARMATUS VAR. BICALCATUS	16	0.4	3.94	0.2	0.65	0.4	0	0.0	0	0.0	0	
SCENEDESMUS BIJACA	33	0.8	7.19	0.4	1.21	0.7	0	0.0	0	0.0	0	
SCENEDESMUS QUADRICAUDA	163	4.0	37.94	2.4	6.33	4.0	0	0.0	0	0.0	0	
COCCOID GREENS	163	4.0	16.07	1.0	3.01	1.9	0	0.0	0	0.0	0	
BACILLARIOPHYCEAE	1612	45.5	695.69	45.4	43.90	27.8	0	0.0	0	0.0	0	
MEIOSIRA AMBIGUA	49	1.2	165.38	10.8	8.74	5.5	0	0.0	0	0.0	0	
MEIOSIRA SPP.	16	0.4	1.87	0.1	0.22	0.1	0	0.0	0	0.0	0	
NITZSCHIA HOLSATICA	261	6.5	86.85	5.8	8.20	5.2	0	0.0	0	0.0	0	
NITZSCHIA SPP.	16	0.4	7.04	0.4	0.61	0.3	0	0.0	0	0.0	0	
PINNULARIA SPP.	16	0.4	302.43	19.8	10.60	6.7	0	0.0	0	0.0	0	
SKELETONEMA POTAMOS	1242	31.2	66.49	4.3	9.60	6.0	0	0.0	0	0.0	0	
UNIDENTIFIED CENTRATE DIATOMS	212	5.3	61.64	4.0	5.91	3.7	0	0.0	0	0.0	0	
CHRYSOPHYCEAE	588	14.7	58.30	3.8	10.12	6.4	0	0.0	0	0.0	0	
EPHEMIA SUBAEQUICILATA	392	9.8	17.29	1.1	3.60	2.2	0	0.0	0	0.0	0	
MALLOPHIAS YONGURATA	33	0.8	22.74	1.4	3.28	2.0	0	0.0	0	0.0	0	
SYMBIA SPINOSA	16	0.4	7.43	0.4	1.13	0.7	0	0.0	0	0.0	0	
UNIDENTIFIED CHRYSOPHYCEAE	147	3.4	10.85	0.7	2.11	1.3	0	0.0	0	0.0	0	
XANTHOPHYCEAE	16	0.4	1.65	0.1	0.30	0.1	0	0.0	0	0.0	0	
DICHOETHECOCCUS SPP.	16	0.4	1.65	0.1	0.30	0.1	0	0.0	0	0.0	0	
CRYPTOPHYCEAE	620	15.5	307.42	20.1	41.70	26.5	0	0.0	0	0.0	0	
CRYPTOPHOS ERGSA	65	1.6	32.96	2.1	4.96	3.1	0	0.0	0	0.0	0	
CRYPTOPHOS OVATA	90	2.4	17.65	6.4	17.15	10.8	0	0.0	0	0.0	0	
CRYPTOPHOS REFLEXA	16	0.4	41.87	6.0	10.01	6.3	0	0.0	0	0.0	0	
RHOZOPHOS MINUTA	441	11.0	52.96	3.4	9.66	6.1	0	0.0	0	0.0	0	
MYXOPHYCEAE	179	4.4	28.44	1.8	4.51	2.8	0	0.0	0	0.0	0	
CHROCOCCUS SPP.	65	1.6	27.19	1.7	4.20	2.6	0	0.0	0	0.0	0	
UNIDENTIFIED COCCOID BLUE GREENS	114	2.8	1.26	0.0	0.31	0.1	0	0.0	0	0.0	0	
CHLOROPHADOPHYCEAE	65	1.6	274.16	17.9	31.08	19.7	0	0.0	0	0.0	0	
GONVOSTORIUM SEMEN	65	1.6	274.16	17.9	31.08	19.7	0	0.0	0	0.0	0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 215.0 SAMPLE DATE: 11/10/87 TIME: 1000 DEPTH(M): 9.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	MM ³ /M	Z TOTAL	MG/M	Z TOTAL	MM ² /M	Z TOTAL
CHLOROPHYCEAE	620	10.9	92.20	6.0	16.13	9.2	0	0.0
ANKISTRODESPUS FALCATUS	82	2.5	5.33	0.3	1.05	0.6	0	0.0
COSPARIUM ASPHAEROSPORUM VAR. STRIGOSUM	16	0.4	2.77	0.2	0.40	0.2	0	0.0
BICTYSPHAERIUM PALCHRELLUM	100	5.5	20.31	1.5	3.73	2.1	0	0.0
SCHEDESPUS ARMATUS VAR. BICAUDATUS	65	1.9	15.82	1.1	2.62	1.5	0	0.0
SCHEDESPUS BIJUGA	16	0.4	3.59	0.2	0.50	0.3	0	0.0
SCHEDESPUS QUADRICAUDA	131	4.0	30.35	2.2	5.07	2.9	0	0.0
TETRAEDRUM MINIMUM	16	0.4	2.79	0.2	0.40	0.2	0	0.0
COCCOID GREENS	114	3.4	11.25	0.8	2.10	1.2	0	0.0
BACILLARIOPHYCEAE	1175	35.9	111.78	8.3	13.28	7.6	0	0.0
CYCLOTELLA SPP.	65	1.9	8.96	0.6	1.03	0.5	0	0.0
NETZSCHIA SOLSATICA	16	0.4	5.54	0.4	0.51	0.2	0	0.0
SKELETONEMA POTAMOS	931	28.5	49.87	3.7	7.20	4.1	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	165	4.9	47.42	3.5	4.54	2.6	0	0.0
CHRYSOPHYCEAE	130	3.9	20.67	1.5	3.38	1.9	0	0.0
ERKENIA SUBAEQUICILIATA	49	1.5	2.16	0.1	0.45	0.2	0	0.0
MALLOPHIAS TONGURATA	16	0.4	11.34	0.8	1.43	0.9	0	0.0
OCHRORHNAS SPP.	16	0.4	3.56	0.2	0.40	0.3	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	49	1.5	3.61	0.2	0.70	0.4	0	0.0
CRYPTOPHYCEAE	415	28.0	204.18	21.1	42.98	24.7	0	0.0
CRYPTOPHYTUS ERUSA	147	4.5	74.14	5.5	11.16	6.4	0	0.0
CRYPTOPHYTUS OVATA	98	3.0	129.65	9.4	17.15	9.8	0	0.0
RHODORHNAS MINUTA	670	20.5	80.39	5.9	14.67	8.4	0	0.0
MYXOPHYCEAE	228	6.9	62.55	4.4	9.77	5.6	0	0.0
CHROCOCCUS SPP.	167	4.5	61.15	4.5	9.45	5.4	0	0.0
PHOSIDILUM SPP.	16	0.4	0.68	0.0	0.14	0.0	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	65	1.9	0.72	0.0	0.18	0.1	0	0.0
DINOPHYCEAE	33	1.0	86.23	6.4	10.40	5.9	0	0.0
PERIDINIUM INCONSPICUUM	33	1.0	86.23	6.4	10.40	5.9	0	0.0
CHLOROPHYTIOPHYCEAE	163	4.9	604.97	51.0	77.67	44.7	0	0.0
COSYOSTORIUM SEMEN	163	4.9	504.97	51.0	77.67	44.7	0	0.0

SAMPLE TOTALS 3244 1342.59 173.61 0

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 11/10/87 TIME: 1100 DEPTH(M): 0.3

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	799	18.1	207.70	19.3	32.56	23.3	0	0.0
ANKISTRODESMTS FALCATUS	114	2.5	7.47	0.6	1.47	1.0	0	0.0
CHLAMYDOMONAS	163	3.6	37.09	3.4	6.21	4.4	0	0.0
COSMARIAL SPP.	16	0.3	7.01	0.6	1.07	0.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	33	0.7	3.70	0.3	0.60	0.4	0	0.0
GOLENKINIA RADIATA	33	0.7	11.61	1.0	1.85	1.3	0	0.0
KIRCHNERIELLA SUBSOLITARIA	16	0.3	3.36	0.3	0.57	0.4	0	0.0
MESOSTIGMA VIRIDE	65	1.4	25.90	2.4	4.02	2.8	0	0.0
MICRACTINIUM PUSILLUM	16	0.3	7.40	0.6	1.13	0.8	0	0.0
PEDIASTRUM TETRAS	16	0.3	41.92	3.9	5.07	3.6	0	0.0
SCENEDESMUS ARCUATUS VAR. PLATYDISCA	16	0.3	7.69	0.7	1.16	0.8	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	33	0.7	7.91	0.7	1.31	0.9	0	0.0
SCENEDESMUS BIJUGA	16	0.3	3.59	0.3	0.60	0.4	0	0.0
SCENEDESMUS QUADRICAUDA	98	2.2	22.76	2.1	3.80	2.7	0	0.0
SELENASTRUM WESTII	33	0.7	7.46	0.6	1.24	0.8	0	0.0
COCCOID GREENS	151	2.9	12.85	1.1	2.40	1.7	0	0.0
BACILLARIOPHYCEAE	2026	45.9	347.20	32.4	32.04	22.9	0	0.0
HELOSIRA GRANULATA	49	1.1	126.37	11.7	7.14	5.1	0	0.0
NITZSCHIA HOLSATICA	212	4.8	72.19	6.7	6.66	4.7	0	0.0
SKELETONEMA POTAMUS	1536	34.8	82.24	7.6	11.87	8.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	229	5.1	66.40	6.1	6.37	4.5	0	0.0
CHRYSOPHYCEAE	440	9.9	63.96	5.9	10.84	7.7	0	0.0
ERKENIA SUBAEQUICILIATA	147	3.3	6.46	0.6	1.35	0.9	0	0.0
MALLOMONAS TONSURATA	16	0.3	11.34	1.0	1.65	1.1	0	0.0
OCHROMONAS SPP.	65	1.4	14.30	1.3	2.40	1.7	0	0.0
UROGLENOPSIS AMERICANA	65	1.4	20.99	1.9	3.35	2.4	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	147	3.3	10.85	1.0	2.11	1.5	0	0.0
XANTHOPHYCEAE	16	0.3	4.92	0.4	0.79	0.5	0	0.0
DICHOHOMOCOCUS SPP.	16	0.3	4.92	0.4	0.79	0.5	0	0.0
CRYPTOPHYCEAE	883	20.0	300.74	28.0	44.62	32.0	0	0.0
CRYPTOMONAS EROSA	98	2.2	49.39	4.6	7.43	5.3	0	0.0
CRYPTOMONAS OVATA	131	2.9	172.92	16.1	22.88	16.4	0	0.0
RHODOMONAS MINUTA	654	14.8	78.45	7.3	14.31	10.2	0	0.0
MYXOPHYCEAE	212	4.8	35.23	3.2	5.55	3.9	0	0.0
AGHENELLUM QUADRIDUPLICATUM	16	0.3	0.02	0.0	0.00	0.0	0	0.0
CHROCOCCUS SPP.	82	1.8	33.96	3.1	5.24	3.7	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	114	2.5	1.26	0.1	0.31	0.2	0	0.0
DINOPHYCEAE	16	0.3	42.98	4.0	5.18	3.7	0	0.0
PERIDINIUM INCONSPICUUM	16	0.3	42.98	4.0	5.18	3.7	0	0.0
CHLOROMONADOPHYCEAE	16	0.3	68.33	6.3	7.74	5.5	0	0.0
GONYOSTOMUM SEMEN	16	0.3	68.33	6.3	7.74	5.5	0	0.0

MEAN DENSITY UNITS/ML	Z TOTAL	MEAN BIOCOLUME M ³ /M	Z TOTAL	MEAN ALGAL CARBON MG/M	Z TOTAL	MEAN S-FACE AREA Z M ²	Z TOTAL
4408		1073.06		139.32		0	

SAMPLE TOTALS

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 11/10/87 TIME: 1100 DEPTH(M): 5.0

	MEAN DENSITY		MEAN B. VOLUME		MEAN ALGAL CARBON		AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	653	20.7	139.21	22.3	22.60	26.1	0	0.0
ACTINASTRUM HANTZSCHII	33	1.0	8.34	1.3	1.37	1.5	0	0.0
ANKISTRODESMUS FALCATUS	49	1.5	3.29	0.6	0.63	0.7	0	0.0
CHLAMYDOMONAS	98	3.1	26.66	4.2	4.36	5.0	0	0.0
COSMARIVM TENUE	16	0.5	8.47	1.3	1.27	1.4	0	0.0
DICTYOSPHAERIUM PULCHELLUM	82	2.6	5.39	0.8	1.06	1.2	0	0.0
DICTYOSPHAERIUM PULCHELLUM	33	1.0	29.65	4.7	4.12	4.7	0	0.0
KIRCHNERIELLA CONTORTA	16	0.5	1.60	0.2	0.29	0.3	0	0.0
LAGERHEIMIA SUBSALSA	16	0.5	2.70	0.4	0.47	0.5	0	0.0
MESOSTIGMA VIRIDE	16	0.5	6.45	1.0	1.00	1.1	0	0.0
MICRACTINIUM PUSILLUM	16	0.5	7.40	1.1	1.13	1.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	49	1.5	11.85	1.9	1.96	2.2	0	0.0
SCENEDESMUS QUADRICAUDA	49	1.5	11.38	1.8	1.90	2.1	0	0.0
SELENASTRUM MINUTUM	49	1.5	3.28	0.5	0.64	0.7	0	0.0
COCCOID GREENS	131	4.1	12.85	2.0	2.40	2.7	0	0.0
BACILLARIOPHYCEAE	1552	49.2	129.35	20.7	15.72	18.1	0	0.0
HELOSIRA GRANULATA VAR. ANGUSTISSIMA	16	0.5	14.07	2.2	1.03	1.1	0	0.0
SKELETONEMA POTANOS	1389	44.0	74.36	11.9	10.74	12.4	0	0.0
STEPHANODISCUS SPP.	33	1.0	7.72	1.2	0.77	0.8	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	114	3.6	33.20	5.3	3.18	3.6	0	0.0
CHRYSOPHYCEAE	245	7.7	14.68	2.3	2.92	3.3	0	0.0
ERKENIA SUBAEQUICILIATA	114	3.6	5.04	0.8	1.05	1.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	131	4.1	9.64	1.5	1.87	2.1	0	0.0
XANTHOPHYCEAE	16	0.5	0.34	0.0	0.07	0.0	0	0.0
DICHTONOCOCCLUS SPP.	16	0.5	0.34	0.0	0.07	0.0	0	0.0
CRYPTOPHYCEAE	474	15.0	211.23	33.8	28.56	33.0	0	0.0
CRYPTOMONAS EROSA	65	2.0	32.96	5.2	4.96	5.7	0	0.0
CRYPTOMONAS OVATA	33	1.0	43.26	6.9	5.72	6.6	0	0.0
CRYPTOMONAS REFLEXA	16	0.5	91.87	14.7	10.01	11.5	0	0.0
RHODOMONAS MINUTA	360	11.4	43.14	6.9	7.87	9.0	0	0.0
MYXOPHYCEAE	195	6.1	51.47	8.2	8.07	9.3	0	0.0
CHROCOCCUS SPP.	114	3.6	47.56	7.6	7.35	8.4	0	0.0
OSCILLATORIA LIMNETICA	16	0.5	3.20	0.5	0.54	0.6	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	65	2.0	0.72	0.1	0.18	0.2	0	0.0
CHLOROMONADOPHYCEAE	16	0.5	76.87	12.3	8.58	9.9	0	0.0
GONYOSTOMUM SEMEN	16	0.5	76.87	12.3	8.58	9.9	0	0.0

SAMPLE TOTALS

3151

623.15

86.52

0

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PHYTOPLANKTON STANDING CROP II

LOCATION: 223.0 SAMPLE DATE: 11/10/87 TIME: 1100 DEPTH(M): 10.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	Z TOTAL	ML/M ³	Z TOTAL	MG/M ³	Z TOTAL	MM ² /M ³	Z TOTAL
CHLOROPHYCEAE	440	12.7	86.62	18.5	14.20	21.3	0	0.0
ANKISIRDESMS FALCATUS	98	2.8	6.40	1.1	1.26	1.8	0	0.0
DICTYOSPHALRIUM PULCHELLUM	16	0.4	4.78	3.1	2.05	3.0	0	0.0
DICTYOSPHAERIUM PULCHELLUM	65	1.8	4.32	0.9	0.85	1.2	0	0.0
MESOSTIGMA VIRIDE	65	1.8	25.90	5.5	4.02	6.0	0	0.0
SCENEDESMS ARHATUS VAR. BICAUDATUS	65	1.8	15.82	3.3	2.62	3.9	0	0.0
SCENEDESMS QUADRICAUDA	49	1.4	11.38	2.4	1.90	2.8	0	0.0
COCCOID GREENS	82	2.3	8.03	1.7	1.50	2.2	0	0.0
BACILLARIOPHYCEAE	2258	64.6	146.01	31.3	19.52	27.3	0	0.0
SKELETONEMA POTAMOS	2124	61.3	113.73	24.4	16.42	24.6	0	0.0
STEPHANODISCUS SPP.	16	0.4	3.85	0.8	0.38	0.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	98	2.8	28.44	6.1	2.72	4.0	0	0.0
CHRYSOPHYCEAE	294	8.4	15.87	3.4	3.20	4.8	0	0.0
ERKENIA SUBAEQUICILIATA	196	5.6	8.64	1.8	1.80	2.7	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	98	2.8	7.23	1.5	1.40	2.1	0	0.0
CRYPTOPHYCEAE	326	9.4	173.85	37.3	22.83	34.2	0	0.0
CRYPTOMONAS ERGSA	65	1.8	32.96	7.0	4.96	7.4	0	0.0
CRYPTOMONAS OVATA	16	0.4	21.56	4.6	2.85	4.2	0	0.0
CRYPTOMONAS REFLEXA	16	0.4	91.87	19.7	10.01	15.0	0	0.0
RHODOMONAS MINUTA	229	6.6	27.46	5.8	5.01	7.5	0	0.0
MYXOPHYCEAE	163	4.7	43.62	9.3	6.83	10.2	0	0.0
CHROCOCCUS SPP.	98	2.8	40.74	8.7	6.29	9.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	49	1.4	0.54	0.1	0.13	0.1	0	0.0
UNIDENTIFIED FILAMENTOUS BLUE GREENS	16	0.4	2.35	0.5	0.41	0.6	0	0.0
SAMPLE TOTALS	3461		465.97		66.58		0	

PHYTOPLANKTON STANDING CROP II

LOCATION: 220.0 SAMPLE DATE: 11/10/87 TIME: 1100 DEPTH(M): 14.0

	MEAN DENSITY		MEAN BIOVOLUME		MEAN ALGAL CARBON		MEAN SURFACE AREA	
	UNITS/ML	% TOTAL	MM ³ /M	% TOTAL	MG/M	% TOTAL	MM ² /M	% TOTAL
CHLOROPHYCEAE	635	20.6	136.74	25.2	22.49	30.5	0	0.0
ANKISTRODESMUS FALCATUS	49	1.5	3.20	0.5	0.63	0.8	0	0.0
CHLAMYDOMONAS	98	3.1	26.66	4.9	4.36	5.9	0	0.0
COSMARIIUM TENUE	16	0.5	8.47	1.5	1.27	1.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	16	0.5	14.78	2.7	2.05	2.7	0	0.0
DICTYOSPHAERIUM PULCHELLUM	49	1.5	3.25	0.5	0.63	0.8	0	0.0
GOLENKINIA RADIATA	16	0.5	5.7*	1.0	0.91	1.2	0	0.0
KIRCHNERIELLA SUBSOLITARIA	16	0.5	3.36	0.6	0.57	0.7	0	0.0
MESOSTIGMA VIRIDE	16	0.5	6.45	1.1	1.00	1.3	0	0.0
SCENEDESMUS ARMATUS VAR. BICAUDATUS	131	4.2	31.62	5.8	5.25	7.1	0	0.0
SCENEDESMUS BTJUGA	33	1.0	7.19	1.3	1.21	1.6	0	0.0
SCENEDESMUS QUADRICAUDA	49	1.5	11.38	2.0	1.90	2.5	0	0.0
SELENASTRUM MINUTUM	16	0.5	1.09	0.2	0.21	0.2	0	0.0
TREUBARIA SETIGERUM	16	0.5	2.27	0.4	0.40	0.5	0	0.0
COCCOID GREENS	114	3.7	11.25	2.0	2.10	2.8	0	0.0
BACILLARIOPHYCEAE	1797	58.5	141.72	26.1	17.75	24.1	0	0.0
MELOSIRA DISTANS	33	1.0	11.22	2.0	1.03	1.3	0	0.0
SKELETONEMA POTAMOS	1601	52.1	85.73	15.8	12.38	16.8	0	0.0
STEPHANODISCUS SPP.	49	1.5	11.56	2.1	1.16	1.5	0	0.0
UNIDENTIFIED CENTRATE DIATOMS	114	3.7	33.20	6.1	3.18	4.3	0	0.0
CHRYSOPHYCEAE	278	9.0	17.57	3.2	3.48	4.7	0	0.0
ERKENIA SUBAEQUICILIATA	98	3.1	4.32	0.7	0.90	1.2	0	0.0
UNIDENTIFIED CHRYSOPHYCEAE	180	5.8	13.25	2.4	2.58	3.5	0	0.0
XANTHOPHYCEAE	33	1.0	1.54	0.2	0.31	0.4	0	0.0
DICHOXANTHOCOCCLUS SPP.	33	1.0	1.54	0.2	0.31	0.4	0	0.0
CRYPTOPHYCEAE	261	8.5	237.61	43.8	28.45	38.6	0	0.0
CRYPTOMONAS ER...	16	0.5	8.22	1.5	1.23	1.6	0	0.0
CRYPTOMONAS OVATA	16	0.5	21.56	3.9	2.85	3.8	0	0.0
CRYPTOMONAS REFLEXA	33	1.0	184.30	33.9	20.08	27.2	0	0.0
RHODOMONAS MINUTA	196	6.3	23.53	4.3	4.29	5.8	0	0.0
HYXOPHYCEAE	65	2.1	7.31	1.3	1.17	1.5	0	0.0
CHROOCOCCUS SPP.	16	0.5	6.78	1.2	1.04	1.4	0	0.0
UNIDENTIFIED COCCOID BLUE GREENS	49	1.5	0.54	0.0	0.13	0.1	0	0.0
SAMPLE TOTALS	3067		542.48		73.65		0	

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Appendix 4-1 Monthly zooplankton densities (no./m³) and taxonomic composition for samples collected on Lake Wylie from December 1986 through November 1987.

Note: due to coding errors, Diaphanosoma leuchtenbergianum was reported as D. brachyurum during May, June, and July 1987.

Note: "11 EST" indicates a replicate; since only one bottom to surface net tow sample was taken at each location, the value in this column is the same as that listed as "TOT AVG".

ZOOPLANKTON STANDING: CROP II

STATION	DATE	TIME	DEPTH			
210.0	12/09/86	1042	13.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				8197	8197	23.816
COPEPODA				6434	6434	18.694
NAUPLII				3790	3790	11.012
CYCLOPOIDA				2027	2027	5.890
TROPOCYCLOPS PRASINUS				88	88	0.256
MESOCYCLOPS EDAX				441	441	1.280
CYCLOPOIDA COPEPODID				1498	1498	4.353
CALANOIDA				617	617	1.793
DIAPTOMUS MISSISSIPPIENSIS				529	529	1.536
CALANOIDA COPEPODID				88	88	0.256
CLADOCERA				1763	1763	5.122
BOSMINA LONGIROSTRIS				1675	1675	4.866
HOLCPEIDIUM GIBBERUM				88	88	0.256
ROTIFERA				26222	26222	76.184
CONCHILUS UNICORNIS				661	661	1.921
KERATELLA SPP.				13662	13662	39.693
POLYARTHRA SPP.				3746	3746	10.883
SYNCHAETA SPP.				7933	7933	23.047
COLLOTHECA SPP.				220	220	0.640
TOTAL ZOOPLANKTON				34420	34420	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH	II EST.	TOT AVG.	PCT COMP.
215.0	12/09/86	1106	7.0	5942	5942	5.028
CRUSTACEA						
COPEPODA				5383	5383	5.280
NAUPLII				4823	4823	4.731
CYCLOPOIDA				419	419	0.411
CYCLOPOIDA COPEPODID				280	280	0.274
TROPICOCYCLOPS PRASINUS				140	140	0.137
ALANOIDA				140	140	0.137
CALANOIDA COPEPODID				140	140	0.137
CLADOCERA				559	559	0.549
BOSMINA LONGIROSTRIS				559	559	0.549
ROTIFERA				96005	96005	94.172
KERATELLA SPP.				44039	44039	43.198
POLYARTHRA SPP.				881	881	0.864
SYNCHAETA SPP.				50205	50205	49.246
CONCHILUS UNICORNIS				881	881	0.864
TOTAL ZOOPLANKTON				101947	101947	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	12/09/86	1025	13.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				3878	3878	10.686
COPEPODA				3415	3415	9.410
NAUPLII				2257	2257	6.220
CYCLOPOIDA				1042	1042	2.871
TROPOCYCLOPS PRASINUS				58	58	0.159
MESOCYCLOPS EDAX				405	405	1.116
CYCLOPOIDA COPEPODID				579	579	1.595
CALANOIDA				116	116	0.319
DIAPTOMUS MISSISSIPPIENSIS				58	58	0.159
CALANOIDA COPEPODID				58	58	0.159
CLADOCERA				463	463	1.276
BOSMINA LONGIROSTRIS				463	463	1.276
ROTIFERA				32409	32409	89.314
HEXARTHRA SPP.				231	231	0.638
KEPATHELLA SPP.				4861	4861	13.397
POLYARTHRA SPP.				4861	4861	13.397
SYNCHAETA SPP.				21992	21992	60.606
CONOCHILUS UNICORNIS				463	463	1.276
TOTAL ZOOPLANKTON				36287	36287	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
210.0	01/13/87	1027	13.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				6406	6406	19.231
COPEPODA				2563	2563	7.692
NAUPLII				1873	1873	5.621
CYCLOPOIDA				99	99	0.296
CYCLOPOIDA COPEPODID				99	99	0.296
CALANOIDA				591	591	1.775
CALANOIDA COPEPODID				493	493	1.479
DIAPYCNUS PALLIDUS				99	99	0.296
CLADOCERA				3844	3844	11.538
BOSMINA LONGIROSTRIS				3844	3844	11.538
ROTIFERA				26907	26907	80.769
KELICOTTIA BOSTONIENSIS				296	296	0.888
GASTROPUS SPP.				296	296	0.888
ORDER BDELLOIDA				296	296	0.888
CONOCHILUS UNICORNIS				887	887	2.663
POLYARTHRA SPP.				1478	1478	4.438
TRICHO CERCA PORCELLUS				296	296	0.888
SYNCHAETA SPP.				23063	23063	69.231
ASPLANCHNA SPP.				296	296	0.888
TOTAL ZOOPLANKTON				33314	33314	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	01/13/87	1049	7.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				1771	1771	7.589
COPEPODA				1432	1432	6.136
NAUPLII				1276	1276	5.469
CYCLOPOIDA				78	78	0.335
TROPOCYCLOPS PRASINUS				52	52	0.223
CYCLOPOIDA COPEPODID				26	26	0.112
CALANOIDA				52	52	0.223
CALANOIDA COPEPODID				52	52	0.223
PARASITIC COPEPODA				26	26	0.112
UNIDENTIFIED PARASITIC COPEPODA				26	26	0.112
CLADOCERA				339	339	1.451
BOSMINA LONGIROSTRIS				339	339	1.451
ROTIFERA				21561	21561	92.411
CONOCHILUS UNICORNIS				156	156	0.670
KERATELLA SPP.				11874	11874	50.893
POLYARTHRA SPP.				1250	1250	5.357
SYNCHAETA SPP.				7968	7968	34.152
KELLICOTTIA BOSTONIENSIS				312	312	1.339
TOTAL ZOOPLANKTON				23331	23331	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	01/13/87	1004	12.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				3837	3837	10.796
COPEPODA				2516	2516	7.080
NAUPLII				1698	1698	4.779
CYCLOPOIDA				315	315	0.885
CYCLOPOIDA COPEPODID				252	252	0.708
TROPOCYCLOPS PRASINUS				63	63	0.177
CALANOIDA				503	503	1.416
DIAPTOMUS MISSISSIPPIENSIS				63	63	0.177
CALANOIDA COPEPODID				440	440	1.239
CLADOCERA				1321	1321	3.717
IMMATURE DAPHNIA SPP.				126	126	0.354
DAPHNIA PARVULA				126	126	0.354
BOSMINA LONGIROSTRIS				1069	1069	3.009
ROTIFERA				31704	31704	89.204
CONOCHILUS UNICORNIS				252	252	0.708
GASTROPUS SPP.				503	503	1.416
ORDER BDELLOIDA				252	252	0.708
KERATELLA SPP.				2013	2013	5.664
POLYARTHRA SPP.				1006	1006	2.832
TRICHOCERCA PORCELLUS				1510	1510	4.248
SYNCHAETA SPP.				26168	26168	73.628
TOTAL ZOOPLANKTON				35541	35541	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
210.0 02/10/87 1102 13.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	9358	9358	39.474
COPEPODA	4679	4679	19.737
NAUPLII	3119	3119	13.158
CYCLOPOIDA	1144	1144	4.825
TROPOCYCLOPS PRASINUS	104	104	0.439
CYCLOPOIDA COPEPODID	1040	1040	4.386
CALANOIDA	416	416	1.754
DIAPTOMUS MISSISSIPPIENSIS	208	208	0.877
CALANOIDA COPEPODID	208	208	0.877
CLADOCERA	4679	4679	19.737
BOSMINA LONGIROSTRIS	3951	3951	16.667
IMMATURE DAPHNIA SPP.	208	208	0.877
CERIODAPHNIA SPP.	104	104	0.439
DAPHNIA PARVULA	416	416	1.754
ROTIFERA	14349	14349	60.526
ASPLANCHNA SPP.	156	156	0.658
KELLICOTTIA BOSTONIENSIS	624	624	2.632
COLLOTHECA SPP.	156	156	0.658
CONOCHILUS UNICORNIS	312	312	1.316
KERATELLA SPP.	2807	2807	11.842
POLYARTHRA SPP.	3431	3431	14.474
TRICHOCERCA PORCELLUS	1716	1716	7.237
SYNCHAETA SPP.	3587	3587	15.132
GASTROPUS SPP.	156	156	0.658
BRACHIONUS CAUDATUS	1404	1404	5.921
TOTAL ZOOPLANKTON	23707	23707	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	02/10/87	1212	7.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				1804	1804	2.255
COPEPODA				1600	1600	2.000
NAUPLII				1309	1309	1.636
CYCLOPOIDA				233	233	0.291
TROPPOCYCLOPS PRASINUS				29	29	0.036
CYCLOPOIDA COPEPODID				204	204	0.255
CALANOIDA				58	58	0.073
CALANOIDA COPEPODID				58	58	0.073
CLADOCERA				204	204	0.255
BOSMINA LONGIROSTRIS				175	175	0.218
LEYDIGIA QUADRANGULARIS				29	29	0.036
ROTIFERA				78211	78211	97.745
KERATELLA SPP.				4888	4888	6.109
POLYARTHRA SPP.				9776	9776	12.218
SYNCHAETA SPP.				62150	62150	77.673
KELLCOTTIA BOSTONIENSIS				698	698	0.873
CONOCHILUS UNICORNIS				698	698	0.873
TOTAL ZOOPLANKTON				80014	80014	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	02/10/87	1036	12.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				7414	7414	37.984
COPEPODA				4766	4766	24.419
NAUPLII				3253	3253	16.667
CYCLOPOIDA				1210	1210	6.202
TROPOCYCLOPS PRASINUS				151	151	0.775
CYCLOPS THOMASI				76	76	0.388
CYCLOPOIDA COPEPODID				983	983	5.039
CALANOIDA				303	303	1.550
CALANOIDA COPEPODID				303	303	1.550
CLADOCERA				2648	2648	13.566
DAPHNIA PARVULA				76	76	0.363
BOSMINA LONGIROSTRIS				2572	2572	13.178
ROTIFERA				12104	12104	62.015
ASPLANCHNA SPP.				303	303	1.550
KELLICOTTIA BOSTONIENSIS				908	908	4.651
COLLOTHECA SPP.				151	151	0.775
CONOCHILUS UNICORNIS				151	151	0.775
KERATELLA SPP.				2270	2270	11.628
POLYARTHRA SPP.				2875	2875	14.729
TRICHOCERCA PORCELLUS				2723	2723	13.953
SYNCHAETA SPP.				1059	1059	5.426
GASTROPUS SPP.				151	151	0.775
BRACHIONUS CAUDATUS				1513	1513	7.752
TOTAL ZOOPLANKTON				19518	19518	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
210.0 03/13/87 1403 15.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	7085	7085	46.218
COPEPODA	5024	5024	32.773
NAUPLII	4251	4251	27.731
CYCLOPOIDA	644	644	4.202
CYCLOPOIDA COPEPODID	515	515	3.361
TROPOCYCLOPS PRASINUS	129	129	0.840
CALANOIDA	129	129	0.840
CALANOIDA COPEPODID	129	129	0.840
CLADOCERA	2061	2061	13.445
BOSMINA LONGIROSTRIS	1932	1932	12.605
DAPHNIA PARVULA	129	129	0.840
ROTIFERA	8244	8244	53.781
BRACHIONUS ANGULARIS	644	644	4.202
FILINIA SPP.	129	129	0.840
CEPHALODELLA SPP.	129	129	0.840
PORPHOLYX SPP.	129	129	0.840
KELLICOTTIA BOSTONIENSIS	773	773	5.042
COLLOTHECA SPP.	902	902	5.882
CONOCHILUS UNICORNIS	258	258	1.681
CONOCHILOIDES SPP.	129	129	0.840
KERATELLA SPP.	1288	1288	8.403
POLYARTHRA SPP.	902	902	5.882
TRICHOCERCA PORCELLUS	1159	1159	7.563
SYNCHAEIA SPP.	1803	1803	11.765
TOTAL ZOOPLANKTON	15329	15329	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 215.0 03/13/87 1450 7.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	7780	7780	17.966
COPEPODA	6019	6019	13.898
NAUPLII	4404	4404	10.169
CYCLOPOIDA	1321	1321	3.051
CYCLOPOIDA COPEPODID	881	881	2.034
CYCLOPS THOMASI	147	147	0.339
MESOCYCLOPS EDAX	294	294	0.678
CALANOIDA	294	294	0.678
CALANOIDA COPEPODID	294	294	0.678
CLADOCERA	1762	1762	4.068
BOGHINA LONGIROSTRIS	1762	1762	4.068
ROTIFERA	35526	35526	82.034
COLLOTHECA SPP.	294	294	0.678
CONOCHILUS UNICORNIS	3523	3523	8.136
ORDER BDELLOIDA	147	147	0.339
POMPHOLYX SPP.	294	294	0.678
BRACHIONUS ANGULARIS	147	147	0.339
BRACHIONUS CALYCIFLORUS	147	147	0.339
NOLTHOLCA SPP.	147	147	0.339
KERATELLA SPP.	12918	12918	29.831
POLYARTHRA SPP.	12184	12184	28.136
SYNCHAETA SPP.	3964	3964	9.153
KELLICOTTIA BOSTONIENSIS	1762	1762	4.068
TOTAL ZOOPLANKTON	43306	43306	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
220.0 03/13/87 1350 13.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	11027	11027	52.667
COPEPODA	7677	7677	36.667
NAUPLII	5723	5723	27.333
CYCLOPOIDA	1815	1815	8.667
CYCLOPOIDA COPEPODID	1256	1256	6.000
CYCLOPS THOMASI	279	279	1.333
MESOCYCLOPS EDAX	279	279	1.333
CALANOIDA	140	140	0.667
CALANOIDA COPEPODID	140	140	0.667
CLADOCERA	3350	3350	16.000
BOSMINA LONGIROSTRIS	3210	3210	15.333
CHYDORUS SPP.	140	140	0.667
ROTIFERA	9911	9911	47.333
CONOCHILUS UNICORNIS	419	419	2.000
GASTROPUS SPP.	140	140	0.667
BRACHIONUS ANGULARIS	838	838	4.000
UNIDENTIFIED ROTIFERA	279	279	1.333
FILINIA SPP.	279	279	1.333
KERATELLA SPP.	838	838	4.000
POLYARTHRA SPP.	2233	2233	10.667
TRICHOCEPCA PORCELLUS	838	838	4.000
SYNCHAETA SPP.	2373	2373	11.333
CONOCHILOIDES SPP.	140	140	0.667
KELICOTTIA BOSTONIENSIS	1117	1117	5.333
COLLOTHECA SPP.	419	419	2.000
TOTAL ZOOPLANKTON	20938	20938	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH	11 EST.	TOT AVG.	PCT COMP.
210.0	04/14/87	1125	15.0	23983	23983	23.017
CRUSTACEA						
COPEPODA				10883	10883	10.445
NAUPLII				5845	5845	5.609
CYCLOPOIDA				4031	4031	3.868
CYCLOPOIDA COPEPODID				3628	3628	3.482
CYCLOPS THOMASI				403	403	0.387
CALANOIDA				1008	1008	0.967
DIAPYCNUS PALLIUS				605	605	0.580
CALANOIDA COPEPODID				403	403	0.387
CLADOCERA				13100	13100	12.573
DAPHNIA PARVULA				2418	2418	2.321
BOSMINA LONGIROSTRIS				10681	10681	10.251
ROTIFERA				80212	80212	76.983
CONOCHILUS UNICORNIS				2015	2015	1.934
GASTROPUS SPP.				202	202	0.193
UNIDENTIFIED ROTIFERA				202	202	0.193
BRACHIONUS CALYCIFLORUS				202	202	0.193
KERATELLA SPP.				7457	7457	7.157
POLYARTHRA SPP.				28618	28618	27.466
TRICHOCCERCA PORCELLUS				17735	17735	17.021
SYNCHAETA SPP.				19348	19348	18.569
ASPLANCHNA SPP.				806	806	0.774
KELLICOTTIA BOSTONIENSIS				1814	1814	1.741
COLLOTHECA SPP.				1814	1814	1.741
TOTAL ZOOPLANKTON				104194	104194	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
215.0 04/14/87 1042 8.0

	II EST.	TGT AVG.	PCT COMP.
CRUSTACEA	35079	35079	20.180
COPEPODA	23177	23177	13.333
NAUPLII	18479	18479	10.631
CYCLOPOIDA	4072	4072	2.342
CYCLOPS THOMASI	313	313	0.180
CYCLOPOIDA COPEPODID	3758	3758	2.162
CALANOIDA	626	626	0.360
CALANOIDA COPEPODID	626	626	0.360
CLADOCERA	11902	11902	6.847
IMMATURE DAPHNIA SPP.	313	313	0.180
BOSMINA LONGIROSTRIS	9083	9083	5.225
DAPHNIA PARVULA	2506	2506	1.441
ROTIFERA	138749	138749	79.820
CONOCHILUS UNICORNIS	3132	3132	1.802
GASTROPUS SPP.	313	313	0.180
POMPHOLYX SULCATA	626	626	0.360
KERATELLA SPP.	22864	22864	13.153
POLYARTHRA SPP.	28501	28501	16.396
TRICHOCERCA PORCELLUS	4385	4385	2.523
SYNCHAETA SPP.	74542	74542	42.883
ASPLANCHNA SPP.	1566	1566	0.901
KELICOTTIA BOSTONIENSIS	626	626	0.360
COLLOTHECA SPP.	2192	2192	1.261
TOTAL ZOOPLANKTON	173827	173827	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 220.0 04/14/87 1020 14.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	19937	19937	12.849
COPEPODA	8451	8451	5.447
NAUPLII	6068	6068	3.911
CYCLOPOIDA	1950	1950	1.257
TROPOCYCLOPS PRASINUS	217	217	0.140
CYCLOPS THOMASI	217	217	0.140
CYCLOPOIDA COPEPODID	1517	1517	0.978
CALANOIDA	433	433	0.279
DIAPTOMUS PALLIDUS	217	217	0.140
CALANOIDA COPEPODID	217	217	0.140
CLADOCERA	11485	11485	7.402
BOSMINA LONGIROSTRIS	9752	9752	6.285
DAPHNIA PARVULA	1734	1734	1.117
ROTIFERA	135222	135222	87.151
ASPLANCHNA SPP.	1734	1734	1.117
KELICOTTIA BOSTONIENSIS	4334	4334	2.793
COLLOTHECA SPP.	2167	2167	1.397
CONCHILUS UNICORNIS	2600	2600	1.676
KERATELLA SPP.	7801	7801	5.028
POLYARTHRA SPP.	55909	55909	36.034
TRICHOCERCA PORCELLUS	23837	23837	15.363
SYNCHAETA SPP.	36406	36406	23.464
GASTROPUS SPP.	433	433	0.279
TOTAL ZOOPLANKTON	155159	155159	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
210.0 05/12/87 1155 14.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	21833	21833	12.987
COPEPODA	9956	9956	5.922
NAUPLII	5065	5065	3.013
CYCLOPOIDA	4716	4716	2.805
CYCLOPS THOMASI	175	175	0.104
MESOCYCLOPS EDAX	349	349	0.208
CYCLOPOIDA COPEPODID	4192	4192	2.494
CALANOIDA	175	175	0.104
DIAPTONUS PALLIDUS	175	175	0.104
CLADOCERA	11877	11877	7.065
IMMATURE DAPHNIA SPP.	873	873	0.519
CERIODAPHNIA LACUSTRIS	175	175	0.104
DIAPHANOSOMA BRACHYURUM	349	349	0.208
DAPHNIA AMBIGUA	175	175	0.104
DAPHNIA PARVULA	1048	1048	0.623
BOSMINA LONGIROSTRIS	9257	9257	5.506
ROTIFERA	146281	146281	87.013
KERATELLA SPP.	10043	10043	5.974
POLYARTHRA VULGARIS	37553	37553	22.338
SYNCHAETA SPP.	5240	5240	3.117
ASPLANCHNA SPP.	7423	7423	4.416
PLOESOMA TRUNCATUM	873	873	0.519
KELLICOTTIA BOSTONIENSIS	437	437	0.260
COLLOTHECA SPP.	1310	1310	0.779
CONOCHILUS UNICORNIS	81655	81655	48.571
TRICHO CERCA SPP.	1747	1747	1.039
TOTAL ZOOPLANKTON	168114	168114	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH	II EST.	TOT AVG.	PCI COMP.
210.0	05/12/87	1155	14.0	175	175	100.000
				175	175	100.000

INSECTA
CHAOBORUS SPP.

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	05/12/87	1309	8.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				57269	57269	15.385
COPEPODA				30729	30729	8.255
N. PLII				22349	22349	6.004
CYCLOPOIDA				8381	8381	2.251
CYCLOPOIDA COPEPODID				6286	6286	1.689
TROPOCYCLOPS PRASINUS				698	698	0.188
CYCLOPS THOMASI				698	698	0.188
MESOCYCLOPS EDAX				698	698	0.188
CLADOCERA				26539	26539	7.129
BOSMINA LONGIROSTRIS				19555	19555	5.253
DAPHNIA PARVULA				2794	2794	0.750
IMMATURE DAPHNIA SPP.				4190	4190	1.126
ROTIFERA				314977	314977	84.615
KERATELLA SPP.				13270	13270	3.565
POLYARTHRA VULGARIS				52380	52380	14.071
SYNCHAETA SPP.				16762	16762	4.503
ASPLANCHNA SPP.				12571	12571	3.377
PLOESOMA HUDSONI				698	698	0.188
KELLICOTTIA BOSTONIENSIS				698	698	0.188
CONOCYLUS UNICORNIS				215805	215805	57.974
TRICHOCERCA SPP.				2794	2794	0.750
TOTAL ZOOPLANKTON				372245	372245	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH		11 EST.	TOT AVG.	PCT COMP.
220.0	05/12/87	1142	14.0				
				CRUSTACEA	37393	37393	10.687
				COPEPODA	15355	15355	4.388
				NAUPLII	9393	9393	2.685
				CYCLOPOIDA	5781	5781	1.652
				CYCLOPOIDA COPEPODID	5058	5058	1.446
				CYCLOPS THOMASI	181	181	0.052
				MESOCYCLOPS EDAX	542	542	0.155
				CALANOIDA	181	181	0.052
				CALANOIDA COPEPODID	181	181	0.052
				CLADOCERA	22039	22039	6.298
				BOSMINA LONGIROSTRIS	21677	21677	6.195
				IMMATURE DAPHNIA SPP.	181	181	0.052
				HOLOPEIDIUM AMAZONICUM	181	181	0.052
				ROTIFERA	312514	312514	89.313
				HEXARTHRA SPP.	452	452	0.129
				TRICHOCERCA SPP.	1355	1355	0.387
				ORDER BDELLOIDA	452	452	0.129
				BRACHIONUS CALYCIFLORUS	452	452	0.129
				KERATELLA SPP.	5419	5419	1.549
				POLYARTHRA VULGARIS	132773	132773	37.945
				SYNCHAETA SPP.	11290	11290	3.227
				ASPLANCHNA SPP.	32968	32968	9.422
				PLOESOMA TRUNCATUM	452	452	0.129
				KELICOTTIA BOSTONIENSIS	452	452	0.129
				COLLOTHECA SPP.	2258	2258	0.645
				CONUCHILUS UNICORNIS	124193	124193	35.493
				TOTAL ZOOPLANKTON	349907	349907	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 220.0 05/12/87 1142 14.0

INSECTA
 CHABORUS SPP.

11 EST. TOT AVG. PCT COMP.
 181 181 100.000
 181 181 100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
210.0	06/05/87	1307	14.0			
				II EST.	TOT AVG.	PCT COMP.
CRUSTACEA				72098	72098	62.932
COPEPODA				54073	54073	47.199
NAUPLII				34290	34290	29.931
CYCLOPOIDA				18024	18024	15.733
CYCLOPOIDA COPEPODID				11430	11430	9.977
TROPOCYCLOPS PRASINUS				1319	1319	1.151
MESOCYCLOPS EDAX				5275	5275	4.605
CALANOIDA				1758	1758	1.535
CALANOIDA COPEPODID				1758	1758	1.535
CLADOCERA				18024	18024	15.733
BOSMINA LONGIROSTRIS				3077	3077	2.686
DAPHNIA PARVULA				440	440	0.384
IMMATURE DAPHNIA SPP.				2198	2198	1.919
DIAPHANOSOMA BRACHYURUM				8353	8353	7.291
DAPHNIA LAEVIS				3957	3957	3.454
ROTIFERA				42467	42467	37.368
COLLOTHECA SPP.				923	923	0.806
CONOCHILUS UNICORNIS				4001	4001	3.492
FILINIA SPP.				308	308	0.269
TRICHOCERCA CAPUCINA				308	308	0.269
BRACHIONUS CAUDATUS				308	308	0.269
BRACHIONUS BUDAPESTINENSIS				308	308	0.269
KERATELLA SPP.				4308	4308	3.761
POLYARTHRA VULGARIS				5847	5847	5.104
PLOESOMA TRUNCATUM				8001	8001	6.984
MELLICOTTIA BOSTONIENSIS				308	308	0.269
TRICHOCCERCA SPP.				923	923	0.806
CONOCHILOIDES SPP.				14464	14464	12.625
UNIDENTIFIED ROTIFERA				615	615	0.537
BRACHIONUS ANGULARIS				1846	1846	1.612
TOTAL ZOOPLANKTON				114565	114565	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 210.0 06/05/87 1307 14.0

II EST. TOT AVG. PCT COMP.
 440 440 100.000
 440 440 100.000

INSECTA
 CHAOBORUS SPP.

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	06/05/87	1325	8.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				161068	161068	69.006
COPEPODA				156290	156290	66.959
NAUPLII				111246	111246	47.661
CYCLOPOIDA				21040	21040	9.357
CYCLOPOIDA COPEPODID				19792	19792	8.480
TROPOCYCLOPS PRASINUS				1365	1365	0.585
MESOCYCLOPS EDAX				682	682	0.292
CALANOIDA				23205	23205	9.942
CALANOIDA COPEPODID				18427	18427	7.895
DIAPTOMUS MISSISSIPPIENSIS				4777	4777	2.047
CLADOCERA				4777	4777	2.047
BOSMINA LONGIROSTRIS				1365	1365	0.585
HOLOPEDIUM SPP.				682	682	0.292
DIAPHANOSOMA BRACHYURUM				2730	2730	1.170
ROTIFERA				72346	72346	30.594
COLLOTHECA SPP.				682	682	0.292
CONOCHILUS UNICORNIS				682	682	0.292
FILINIA SPP.				682	682	0.292
TRICHOCERCA SPP.				3412	3412	1.462
CONOCHILOIDES SPP.				682	682	0.292
BRACHIONUS CAUDATUS				2047	2047	0.877
BRACHIONUS BUDAPESTINENSIS				682	682	0.292
KERATELLA SPP.				47092	47092	20.175
POLYARTHRA VULGARIS				14332	14332	6.140
PLOESOMA TRUNCATUM				682	682	0.292
KELLICOTTIA BOSTONIENSIS				1365	1365	0.585
TOTAL ZOOPLANKTON				233412	233412	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	06/05/87	1245	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				51896	51896	40.201
COPEPODA				36976	36976	28.643
NAUPLII				23353	23353	18.090
CYCLOPOIDA				12325	12325	9.540
CYCLOPOIDA COPEPODID				9082	9082	7.035
TROPOCYCLOPS PRASINUS				649	649	0.503
MESOCYCLOPS EDAX				2595	2595	2.010
CALANOIDA				1297	1297	1.005
DIAPTOMUS MISSISSIPPIENSIS				1297	1297	1.005
CLADOCERA				14920	14920	11.550
DIAPHANOSOMA BRACHYURUM				9731	9731	7.538
BOSMINA LONGIROSTRIS				1946	1946	1.508
DAPHNIA AMBIGUA				1297	1297	1.005
DAPHNIA LAEVIS				1946	1946	1.508
ROTIFERA				77195	77195	59.799
COLLOTHECA SPP.				1297	1297	1.005
CONOCHILUS UNICORNIS				5190	5190	4.020
FILINIA SPP.				1297	1297	1.005
TRICHOCERCA SPP.				3244	3244	2.513
CONOCHILOIDES SPP.				22056	22056	17.085
BRACHIONUS CAUDATUS				7784	7784	6.030
BRACHIONUS ANGULARIS				7136	7136	5.528
BRACHIONUS BUDAPESTINENSIS				1946	1946	1.508
KERATELLA SPP.				5838	5838	4.523
POLYARTHRA VULGARIS				12325	12325	9.548
ASPLANCHNA SPP.				649	649	0.503
PLOESOMA TRUNCATUM				8433	8433	6.533
TOTAL ZOOPLANKTON				129091	129091	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH		II EST.	TOT AVG	PCT COMP.
210.0	07/15/87	1242	14.0				
				CRUSTACEA	28725	28725	25.344
				COPEPODA	18555	18555	16.372
				NAUPLII	13203	13203	11.649
				CYCLOPOIDA	4104	4104	3.621
				TROPOCYCLOPS PRASINUS	535	535	0.472
				MESOCYCLOPS EDAY	535	535	0.472
				CYCLOPOIDA COPEPODID	3033	3033	2.676
				CALANOIDA	1249	1249	1.102
				CALANOIDA COPEPODID	1249	1249	1.102
				CLADOCERA	10170	10170	8.973
				BOSMINA LONGIROSTRIS	2141	2141	1.889
				IMMATURE DAPHNIA SPP.	178	178	0.157
				DIAPHANOSOMA BRACHYURUM	7850	7850	6.926
				ROTIFERA	84614	84614	74.656
				BRACHIONUS SPP.	312	312	0.275
				KELICOTTIA BOSTONIENSIS	312	312	0.275
				COLLOTHECA SPP.	2810	2810	2.479
				CONCHILUS UNICORNIS	365	36531	32.231
				HEXARTHRA SPP.	2810	2810	2.479
				KERATELLA SPP.	686	6860	6.061
				POLYARTHRA VULGARIS	12170	12177	10.794
				SYNCHAETA SPP.	1561	1561	1.377
				PLOESOMA TRUNCATUM	18734	18754	16.529
				TRICHOCERCA CAPUCINA	624	624	0.551
				TRICHOCERCA SPP.	624	624	0.551
				CONOCHILOIDES SPP.	937	937	0.826
				FILINIA SPP.	312	312	0.275
				TOTAL ZOOPLANKTON	113339	113339	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
210.0 07/15/87 1242 14.0

INSECTA
CHAORORUS SPP.

11 EST. TOT AVG. PCT COMP.
178 178 100.000
178 178 100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
215.0 07/15/87 1301 7.0

	11 EST.	TOT AVG.	PCT CRSP.
CRUSTACEA	51769	51769	33.469
COPEPODA	45494	45494	29.412
NAUPLII	38278	38278	24.746
CYCLOPOIDA	6903	6903	4.462
CYCLOPOIDA COPEPODID	6589	6589	4.260
TROPOCYCLOPS PRASINUS	314	314	0.203
CALANOIDA	314	314	0.203
CALANOIDA COPEPODID	314	314	0.203
CLADOCERA	6275	6275	4.057
BOSMINA LONGIROSTRIS	3765	3765	2.434
DIAPHANOSOMA BRACHYURUM	2510	2510	1.623
ROTIFERA	102911	102911	66.531
CONOCHILUS UNICORNIS	65261	65261	42.191
POLYARTHRA EURYPTERA	628	628	0.406
HEXARTHRA SPP.	628	628	0.406
FILINIA SPP.	628	628	0.406
KERATELLA SPP.	8785	8785	5.680
POLYARTHRA VULGARIS	10668	10668	6.897
PLOESOMA TRUNCATUM	5648	5648	3.651
COLLOTHECA SPP.	5020	5020	3.245
TRICHOCERCA CAPUCINA	628	628	0.406
TRICHOCERCA SPP.	3138	3138	2.028
CONOCHILOIDES SPP.	1255	1255	0.811
LECANE SPP.	628	628	0.406
TOTAL ZOOPLANKTON	154680	154680	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	07/15/87	1210	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				25116	25116	38.670
COPEPODA				15642	15642	24.004
HAUPLII				11677	11677	17.978
CYCLOPOIDA				3305	3305	5.008
CYCLOPOIDA COPEPODID				2064	2064	4.410
CYCLOPS VERNALIS				220	220	0.339
MESOCYCLOPS EDAX				220	220	0.339
CALANOIDA				661	661	1.018
CALANOIDA COPEPODID				441	441	0.678
DIAPTOMUS MISSISSIPPIENSIS				220	220	0.339
CLADOCERA				9474	9474	14.586
BOSMINA LONGIROSTRIS				881	881	1.357
MOINA MICRURA				1763	1763	2.714
DAPHNIA PARVULA				881	881	1.357
IMMATURE DAPHNIA SPP.				441	441	0.678
DIAPHANOSOMA BRACHYURUM				5508	5508	8.480
ROTIFERA				39833	39833	61.330
COLLOTHECA SPP.				353	353	0.543
CONOCHILUS UNICORNIS				17273	17273	26.594
HEXARTHRA SPP.				1763	1763	2.714
TRICHO CERCA CAPUCINA				705	705	1.085
KERATELLA SPP.				1410	1410	2.171
POLYARTHRA VULGARIS				4935	4935	7.590
SYNCHAETA SPP.				1058	1058	1.628
PLOSOMA TRUNCATUM				4230	4230	6.513
TRICHO CERCA SPP.				1763	1763	2.714
CONOCHILOIDES SPP.				3173	3173	4.885
ANURAEOPSIS SPP.				353	353	0.543
BRACHIONUS ANGULARIS				2820	2820	4.342
TOTAL ZOOPLANKTON				64949	64949	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 220.0 07/15/67 1210 14.0

II EST. TOT AVG. PCT COMP.

INSECTA
 CHABORUS SPP.

441 441 100.000
 441 441 100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
210.0	08/11/87	1055	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				25459	25459	19.941
COPEPODA				19424	19424	15.214
NAUPLII				14898	14898	11.669
CYCLOPOIDA				4526	4526	3.545
CYCLOPOIDA COPEPODID				4149	4149	3.250
TROPOCYCLOPS PRASINUS				377	377	0.295
CLADOCERA				6035	6035	4.727
DIAPHANOSOMA LEUCHTENBERGIANUM				2452	2452	1.920
BOSMINOPSIS DEITERSI				3583	3583	2.807
TENTACULIFERA				102213	102213	80.059
KERATELLA SPP.				9952	9952	7.090
POLYARTHRA SPP.				22253	22253	17.430
SYNCHAETA SPP.				2640	2640	2.068
ASPLANCINA SPP.				377	377	0.295
PLOSOMA TRUNCATUM				4526	4526	3.545
KELLCOTTIA BOSTONIENSIS				754	754	0.591
COLLOTHECA SPP.				2263	2263	1.773
CONOCHILUS UNICORNIS				53935	53935	42.245
TRICHOCERCA SPP.				754	754	0.591
CONOCHILOIDES SPP.				3395	3395	2.659
BRACHIONUS CAUDATUS				2263	2263	1.773
TOTAL ZOOPLANKTON				127672	127672	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
215.0 08/11/87 1121 8.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	43284	43284	26.977
COPEPODA	39926	39926	24.884
NCUPLII	30597	30597	19.070
CYCLOPOIDA	9328	9328	5.814
CYCLOPOIDA COPEPODIO	9328	9328	5.814
CLADOCERA	3358	3358	2.093
BOSMINA LONGIROSTRIS	1866	1866	1.163
DIAPHANOSOMA LEUCHTENBERGIANUM	1493	1493	0.930
ROTIFERA	117166	117166	73.023
CONOCHILOIDES SPP.	2239	2239	1.395
BRACHIONUS CAUDATUS	746	746	0.465
CONOCHILUS UNICORNIS	81344	81344	50.698
TRICHOCERCA CAPUCINA	1493	1493	0.930
TRICHOCERCA CYLINDRICA	2239	2239	1.395
TRICHOCERCA SPP.	746	746	0.465
KERATELLA SPP.	8209	8209	5.116
POLYARTHRA SPP.	16418	16418	10.233
SYNCHAETA SPP.	2985	2985	1.860
PLOESOMA TRUNCATUM	746	746	0.465
TOTAL ZOOPLANKTON	160450	160450	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	08/11/87	1027	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				25590	25590	26.296
COPEPODA				21667	21667	22.265
NAUPLII				17371	17371	17.850
CYCLOPOIDA				4109	4109	4.223
CYCLOPOIDA COPEPODID				3736	3736	3.839
MESOCYCLOPS EDAX				374	374	0.384
CALANOIDA				187	187	0.192
CALANOIDA COPEPODID				187	187	0.192
CLADOCERA				3923	3923	4.031
DAPHNIA PARVULA				187	187	0.192
DIAPHANOSOMA LEUCHTENBERGIANUM				1868	1868	1.919
BOSMINOPSIS DEITERSI				1681	1681	1.727
BOSMINA LONGIROSTRIS				187	187	0.192
ROTIFERA				71726	71726	73.704
ORDER RDELLOIDA				374	374	0.384
CONOCHILOIDES SPP.				1121	1121	1.152
BRACHIONUS CAUDATUS				4483	4483	4.607
COLLOTHECA SPP.				374	374	0.384
CONOCHILUS UNICORNIS				41840	41840	42.994
HEXARTHRA SPP.				374	374	0.384
TRICHOCERCA SPP.				1868	1868	1.919
KERATELLA SPP.				3736	3736	3.839
POLYARTHRA SPP.				11954	11954	12.284
SYNCHAETA SPP.				2241	2241	2.303
PLOESOMA TRUNCATUM				3362	3362	3.455
TOTAL ZOOPLANKTON				97316	97316	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
210.0	09/15/87	1125	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				40540	40540	46.387
COPEPODA				28521	28521	32.634
NAUPLII				15483	15483	17.716
CYCLOPOIDA				12834	12834	14.685
CYCLOPOIDA COPEPODID				11612	11612	13.287
MESOCYCLOPS EDAX				1222	1222	1.399
CALANOIDA				204	204	0.233
DIAPTOMUS MISSISSIPPIENSIS				204	204	0.233
CLADOCERA				12020	12020	13.753
BOSMINOPSIS DEITERSI				204	204	0.233
IMMATURE DAPHNIA SPP.				204	204	0.233
CERIODAPHNIA SPP.				204	204	0.233
DIAPHANOSOMA LEUCHTENBERGIANUM				5908	5908	6.760
BOSMINA LONGIROSTRIS				5500	5500	6.299
ROTIFERA				46856	46856	53.613
BRACHIONUS CAUDATUS				407	407	0.466
CONOCHILUS UNICORNIS				19150	19150	21.911
TRICHOCERCA CYLINDRICA				2037	2037	2.331
TRICHOCERCA SPP.				407	407	0.466
CONOCHILOIDES SPP.				815	815	0.932
KERATELLA SPP.				407	407	0.466
POLYARTHRA VULGARIS				22409	22409	25.641
SYNCHAETA SPP.				815	815	0.932
PLOESOMA TRUNCATUM				407	407	0.466
TOTAL ZOOPLANKTON				87396	87396	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	09/15/87	1140	0.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				34998	34998	30.789
COPEPODA				32395	32395	28.499
NAUPLII				28924	28924	25.445
CYCLOPOIDA				3182	3182	2.799
CYCLOPOIDA COPEPODID				3182	3182	2.799
PARASITIC COPEPODA				289	289	0.254
UNIDENTIFIED PARASITIC COPEPODA				289	289	0.254
CLADOCERA				2603	2603	2.290
BOSMINA LONGIROSTRIS				578	578	0.509
DIAPHANOSOMA LEUCHTENBERGIANUM				1735	1735	1.527
BOSMINOPSIS DEITERSI				289	289	0.254
ROTIFERA				78673	78673	69.211
CONOCHILOIDES SPP.				5206	5206	4.500
UNIDENTIFIED ROTIFERA				578	578	0.509
CONOCHILUS UNICORNIS				35287	35287	31.043
TRICHOCERCA CAPUCINA				578	578	0.509
TRICHOCERCA CYLINDRICA				1735	1735	1.527
TRICHOCERCA SPP.				1157	1157	1.018
KERATELLA SPP.				1157	1157	1.018
POLYARTHRA SPP.				30081	30081	26.463
SYNCHAETA SPP.				1157	1157	1.018
PLOESOMA TRUNCATUM				1735	1735	1.527
TOTAL ZOOPLANKTON				113671	113671	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	09/15/87	1055	14.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				46812	46812	49.343
COPEPODA				34175	34175	36.023
NAUPLII				23139	23139	24.390
CYCLOPOIDA				10680	10680	11.257
CYCLOPOIDA COPEPODID				9968	9968	10.507
TROPOCYCLOPS PRASINUS				356	356	0.375
MESOCYCLOPS EDAX				356	356	0.375
CALANOIDA				356	356	0.375
CALANOIDA COPEPODID				356	356	0.375
CLADOCERA				12637	12637	13.321
BOSMINOPSIS DEITERSI				534	534	0.563
BOSMINA LONGIROSTRIS				4628	4628	4.878
IMMATURE DAPHNIA SPP.				178	178	0.188
DIAPHANOSOMA LEUCHTENBERGIANUM				7298	7298	7.692
ROTIFERA				48058	48058	50.657
HEXARTHRA SPP.				1068	1068	1.126
CONOCHILOIDES SPP.				1780	1780	1.876
BRACHIONUS ANGULARIS				1780	1780	1.876
BRACHIONUS CAUDATUS				356	356	0.375
POLYARTHRA VULGARIS				3560	3560	3.752
SYNCHAETA SPP.				3204	3204	3.377
PLOESOMA TRUNCATUM				2848	2848	3.002
CONOCHILUS UNICORNIS				33463	33463	35.272
TOTAL ZOOPLANKTON				94870	94870	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH		11 EST.	TOT AVG.	PCT COMP.
210.0	10/23/87	1010	14.0				
				CRUSTACEA	39350	39350	22.026
				COPEPODA	37973	37973	21.255
				NAUPLII	24003	24003	13.436
				CYCLOPOIDA	13379	13379	7.489
				TROPOCYCLOPS PRASINUS	197	197	0.110
				MESOCYCLOPS EDAX	590	590	0.330
				CYCLOPOIDA COPEPODID	12592	12592	7.048
				CALANOIDA	590	590	0.330
				DIAPTOMUS MISSISSIPPIENSIS	197	197	0.110
				CALANOIDA COPEPODID	393	393	0.220
				CLADOCERA	1377	1377	0.771
				BOSMINA LONGIROSTRIS	1180	1180	0.661
				DIAPHANUSOMA SPP.	197	197	0.110
				ROTIFERA	139299	139299	77.976
				CONOCHILUS UNICORNIS	17707	17707	9.912
				KERATELLA SPP.	11411	11411	6.388
				POLYARTHRA VULGARIS	103884	103884	58.150
				SYNCHAETA SPP.	5902	5902	3.304
				LOESONA TRUNCATUM	393	393	0.220
				TOTAL ZOOPLANKTON	178649	178649	100.000

ZOOPLANKTON STANDING CROP II

STATION DATE TIME DEPTH
 215.0 10/23/67 1020 8.0

	11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA	47992	47992	25.938
COPEPODA	46096	46096	22.977
NAUPLII	45397	45397	22.654
CYCLOPOIDA	699	699	0.324
CYCLOPOIDA COPEPODID	699	699	0.324
CLADOCERA	1966	1966	0.971
DIAPHANYSOMA SPP.	1297	1297	0.647
BOSMINA LONGIROSTRIS	669	669	0.324
ROTIFERA	152406	152406	76.052
UNIDENTIFIED ROTIFERA	1621	1621	0.809
CONOCHILUS UNICORNIS	55125	55125	27.508
TRICHOCERCA SPP.	1621	1621	0.809
ORDER BDELLOIDA	811	811	0.405
CONOCHILOIDES SPP.	811	811	0.405
KERATELLA SPP.	4864	4864	2.427
POLYARTHRA VULGARIS	85120	85120	42.476
SYNCHAETA SPP.	1621	1621	0.809
PLOESOMA TRUNCATUM	811	811	0.405
TOTAL ZOOPLANKTON	200397	200397	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	10/23/87	940	15.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				17280	17280	22.343
COPEPODA				16859	16859	21.798
NAUPLII				14752	14752	19.074
CYCLOPOIDA				2107	2107	2.725
CYCLOPOIDA COPEPODID				2107	2107	2.725
CLADOCERA				421	421	0.545
BOSMINA LONGIROSTRIS				421	421	0.545
ROTIFERA				40040	60040	77.657
CONOCHILUS UNICORNIS				5268	5268	6.812
UNIDENTIFIED ROTIFERA				527	527	0.681
KERATELLA SPP.				10537	10537	13.624
POLYARTHRA VULGARIS				37933	37933	49.046
SYNCHAETA SPP.				1581	1581	2.094
PLOESOMA TRUNCATUM				4215	4215	5.450
TOTAL ZOOPLANKTON				77340	77340	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH	II EST.	TOT AVG.	PCT COMP.
210.0	11/12/87	1035	14.0			
CRUSTACEA				7661	7661	8.751
COPEPODA				7474	7474	8.538
NAUPLII				6726	6726	7.684
CYCLOPOIDA				374	374	0.427
CYCLOPOIDA COPEPODID				374	374	0.427
CALANOIDA				187	187	0.213
CALANOIDA COPEPODID				187	187	0.213
PARASITIC COPEPODA				187	187	0.213
PARASITIC COPEPODA COPEPODID				187	187	0.213
CLADOCERA				187	187	0.213
BOHMIA LONGIROSTRIS				187	187	0.213
ROTIFERA				79875	79875	91.249
CONOCHILUS UNICORNIS				19618	19618	22.412
KERATELLA SPP.				23822	23822	27.215
POLYARTHRA VULGARIS				21487	21487	24.546
SYNCHAETA SPP.				14480	14480	16.542
PLOESOMA TRUNCATUM				467	467	0.534
TOTAL ZOOPLANKTON				87535	87535	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
215.0	11/12/87	1110	7.5			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				12155	12155	12.245
COPEPODA				10534	10534	10.612
NAUPLII				9724	9724	9.796
CYCLOPOIDA				810	810	0.816
MESOCYCLOPS EDAX				203	203	0.204
CYCLOPOIDA COPEPODID				608	608	0.612
CLADOCERA				1621	1621	1.633
BOSMINA LONGIROSTRIS				1621	1621	1.633
ROTIFERA				87110	87110	87.755
BRACHIONUS CALYCIFLORUS				1351	1351	1.361
KERATELLA SPP.				13505	13505	13.605
POLYARTHRA VULGARIS				31063	31063	31.293
SYNCHAETA SPP.				4727	4727	4.762
CONOCHILUS UNICORNIS				36465	36465	36.735
TOTAL ZOOPLANKTON				99265	99265	100.000

ZOOPLANKTON STANDING CROP II

STATION	DATE	TIME	DEPTH			
220.0	11/12/87	1020	12.0			
				11 EST.	TOT AVG.	PCT COMP.
CRUSTACEA				12773	12773	8.912
COPEPODA				11755	11755	8.202
NAUPLII				8930	8930	6.230
CYCLOPOIDA				2713	2713	1.893
CYCLOPOIDA COPEPODID				2487	2487	1.735
TROPICYCLOPS PRASINUS				113	113	0.079
MESOCYCLOPS EDAX				113	113	0.079
CALANOIDA				113	113	0.079
CALANOIDA COPEPODID				113	113	0.079
CLADOCERA				1017	1017	0.710
BOSHINA LONGIROSTRIS				904	904	0.631
DIAPHANOSOMA SPP.				113	113	0.079
ROTIFERA				130552	130552	91.088
KERATELLA SPP.				27693	27693	19.322
POLYARTHRA VULGARIS				43517	43517	30.363
SYNCHAETA SPP.				28258	28258	19.716
CONOCHILUS UNICORNIS				31084	31084	21.688
TOTAL ZOOPLANKTON				143325	143325	100.000

Appendix 5-1 Quarterly macroinvertebrate standing crop parameters (density in no./m², biomass in mg/m² blotted wet weight) and taxonomic composition for Petersen grab samples collected in the littoral zone (4.0 m) of locations on Lake Wylie in February, May, August, and November 1987.

MEAN DENSITY (IND/M(SQ.) +/- S.D.) OF MACROINVERTEBRATES
 AT LAKE WYLIE ON 02/01/87 TO 02/30/87 FROM PETERSEN GRAB 1.

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX		116.27 +/-	38.75	38.76 +/-
CHABORUS (SAYOMYIA) PUNCTIPENNIS		90.43 +/-	89.51	155.03 +/-
TRIBE TANYTARSINI		12.92 +/-	22.37	- +/-
CHIRONOMUS SPP		155.03 +/-	139.75	142.11 +/-
CLADOTANYTARSUS SPP		- +/-	-	59.20
CRYPTOCHIRONOMUS SPP		51.67 +/-	22.37	51.67 +/-
DICROTENDIPES SPP		25.83 +/-	22.37	12.92 +/-
DICROTENDIPES NEOMODESTUS		12.92 +/-	22.37	12.92 +/-
DICROTENDIPES NERVOSUS		12.92 +/-	22.37	12.92 +/-
GLYPTOTENDIPES SPP		- +/-	-	38.75 +/-
POLYPEDILUM SPP		- +/-	-	- +/-
PSEUDOCHIRONOMUS SPP		- +/-	-	- +/-
TANYTARSUS SPP		- +/-	-	- +/-
ABLABESMYIA (ABLABESMYIA) ANNULATA		90.43 +/-	59.20	- +/-
CLINTANYPUS SPP		12.92 +/-	22.37	- +/-
COELOTANYPUS SPP		258.39 +/-	97.54	180.87 +/-
COELOTANYPUS TRICOLOR		64.59 +/-	59.20	- +/-
PROCLADIUS SPP		12.92 +/-	22.37	38.75 +/-
CAENIS SPP		12.92 +/-	22.37	- +/-
HEXAGENIA SPP		38.75 +/-	38.75	- +/-
SIALIS SPP		- +/-	-	12.92 +/-
ORTHOTRICHIA SPP		- +/-	-	22.37
CYRNELLUS FRATERNUS		- +/-	-	12.92 +/-
CORBICULA SPP		633.07 +/-	274.97	116.27 +/-
OLIGOCHAETA		413.43 +/-	296.03	77.51 +/-
NEMATODA		- +/-	-	67.13
CHABORUS SUBTOTAL		90.44 +/-	89.51	155.04 +/-
CORBICULA SUBTOTAL		633.07 +/-	274.98	116.28 +/-
CHIRONOMIDAE SUBTOTAL		710.59 +/-	360.13	529.72 +/-
EPHEMEROPTERA SUBTOTAL		51.68 +/-	59.20	- +/-
TRICHOPTERA SUBTOTAL		- +/-	-	- +/-
OLIGOCHAETA SUBTOTAL		413.44 +/-	296.03	77.52 +/-
TOTAL BENTHOS		2015.50 +/-	387.59	943.15 +/-

MEAN BIOMASS DENSITY (MG/M2 +/- S.D.) OF MACROINVERTEBRATES COLLECTED AT
 LAKE WYLIE , BY PETERSEN GRAB , ON 02/01/87 TO 02/30/87

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX		40.95 +/-	24.31	15.24 +/-
CHABORUS (SAYOMYIA) PUNCTIPENNIS		44.57 +/-	69.14	79.19 +/-
TRIBE TANYTARSINI		0.00 +/-	0.00	- +/-
CHIRONOMUS SPP		0.00 +/-	0.00	0.00 +/-
CLADOTANYTARSUS SPP		- +/-	-	0.00 +/-
CRYPTOCHIRONOMUS SPP		0.00 +/-	0.00	0.00 +/-
DICROTENDIPES SPP		0.00 +/-	0.00	0.00 +/-
DICROTENDIPES NEOMODESTUS		0.00 +/-	0.00	0.00 +/-
DICROTENDIPES NERVOSUS		0.00 +/-	0.00	0.00 +/-
GLYPTOTENDIPES SPP		- +/-	-	0.00 +/-
POLYPEDILUM SPP		- +/-	-	- +/-
PSEUDOCHIRONOMUS SPP		- +/-	-	- +/-
TANYTARSUS SPP		- +/-	-	- +/-
ABLABESMYIA (ABLABESMYIA) ANNULATA		0.00 +/-	0.00	- +/-
CLINTANYPUS SPP		0.00 +/-	0.00	- +/-
COELOTANYPUS SPP		0.00 +/-	0.00	0.00 +/-
COELOTANYPUS TRICOLOR		0.00 +/-	0.00	- +/-
PROCLADIUS SPP		0.00 +/-	0.00	0.00 +/-
CAENIS SPP		6.72 +/-	11.63	- +/-
HEXAGENIA SPP		102.19 +/-	112.09	- +/-
SIALIS SPP		- +/-	-	282.56 +/-
ORTHOTRICHIA SPP		- +/-	-	489.40
CYRNELLUS FRATERNUS		- +/-	-	- +/-
CORBICULA SPP		97816.53 +/-	3265.31	53039.40 +/-
CHIRONOMIDAE		1192.89 +/-	493.34	1219.89 +/-
OLIGOCHAETA		466.40 +/-	467.37	104.00 +/-
NEMATODA		- +/-	-	6.52 +/-
TOTAL BENTHOS		78423.77 +/-	2092.94	54744.83 +/-

MEAN DENSITY (NO./M²) +/- S.D. OF MACROINVERTEBRATES
AT LAKE HYLIE ON 05/01/87 TO 05/30/87 FROM PETERSEN GRAB 1.

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA	-	0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX	51.67 +/-	59.20	25.84 +/-	44.75
CHAOBORUS (SAYOMYIA) PUNCTIPENNIS	1447.02 +/-	1050.33	516.79 +/-	313.29
CHIRONOMINI GENUS B	12.92 +/-	22.37	-	-
CHIRONOMUS SPP	64.59 +/-	59.20	155.03 +/-	116.27
CLADOTANYTARSUS SPP	-	-	12.92 +/-	22.37
CRYPTOCHIRONOMUS SPP	38.75 +/-	38.75	51.67 +/-	59.20
CLADOPELMA SPP	25.83 +/-	22.37	-	-
CRYPTOTENDIPIES SPP	12.92 +/-	22.37	-	-
MICROTENDIPIES SPP	-	-	-	-
GLYPTOTENDIPIES SPP	-	-	25.84 +/-	44.75
MICROCHIRONOMUS SPP	129.19 +/-	161.36	-	-
POLYPEDILUM SPP	12.92 +/-	22.37	-	-
TANYTARSUS SPP	12.92 +/-	22.37	12.92 +/-	22.37
ABLABESMYIA SPP	12.92 +/-	22.37	25.84 +/-	44.75
ABLABESMYIA (ABLABESMYIA) ANNULATA	-	-	-	-
COELOTANYPUS SPP	167.95 +/-	80.68	142.11 +/-	59.20
COELOTANYPUS TRICOLOR	193.79 +/-	139.75	12.92 +/-	22.37
PROCLADIUS SPP	12.92 +/-	22.37	-	-
SIMULIUM SPP	12.92 +/-	22.37	-	-
CAENIS SPP	-	-	-	-
HEXAGENIA SPP	12.92 +/-	22.37	-	-
CORBICULA SPP	193.79 +/-	116.27	193.79 +/-	77.51
SPONGILLIDAE	0.00 +/-	0.00	0.00 +/-	0.00
CHIRONOMIDAE	12.92 +/-	22.37	-	-
SPHAERIIDAE	-	-	12.92 +/-	22.37
OLIGOCHAETA	38.75 +/-	38.75	374.67 +/-	118.41
HEMATODA	12.92 +/-	22.37	116.27 +/-	139.74
CHAOBORUS SUBTOTAL	1447.03 +/-	1050.33	516.80 +/-	313.29
CORBICULA SUBTOTAL	193.80 +/-	116.27	193.80 +/-	77.51
CHIRONOMIDAE SUBTOTAL	710.59 +/-	263.83	439.28 +/-	161.36
PHLEBOTOMIDAE SUBTOTAL	12.92 +/-	22.37	-	-
OLIGOCHAETA SUBTOTAL	38.76 +/-	38.75	374.68 +/-	118.41
TOTAL BENTHOS	2440.62 +/-	504.66	1679.58 +/-	560.79

MEAN BIOMASS DENSITY (MG/M²) +/- S.D. OF MACROINVERTEBRATES COLLECTED AT
LAKE HYLIE , BY PETERSEN GRAB , ON 05/01/87 TO 05/30/87

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA	-	0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX	3.87 +/-	5.12	1.14 +/-	2.01
CHAOBORUS (SAYOMYIA) PUNCTIPENNIS	419.63 +/-	378.18	58.65 +/-	9.88
CHIRONOMINI GENUS B	0.00 +/-	0.00	-	-
CHIRONOMUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
CLADOTANYTARSUS SPP	-	-	0.00 +/-	0.00
CRYPTOCHIRONOMUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
CLADOPELMA SPP	0.00 +/-	0.00	-	-
CRYPTOTENDIPIES SPP	0.00 +/-	0.00	-	-
MICROTENDIPIES SPP	-	-	-	-
GLYPTOTENDIPIES SPP	-	-	0.00 +/-	0.00
MICROCHIRONOMUS SPP	0.00 +/-	0.00	-	-
POLYPEDILUM SPP	0.00 +/-	0.00	-	-
TANYTARSUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
ABLABESMYIA SPP	0.00 +/-	0.00	0.00 +/-	0.00
ABLABESMYIA (ABLABESMYIA) ANNULATA	-	-	-	-
COELOTANYPUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
COELOTANYPUS TRICOLOR	0.00 +/-	0.00	0.00 +/-	0.00
PROCLADIUS SPP	0.00 +/-	0.00	-	-
SIMULIUM SPP	9.04 +/-	15.66	-	-
CAENIS SPP	-	-	-	-
HEXAGENIA SPP	1220.80 +/-	2114.48	-	-
CORBICULA SPP	92100.77 +/-	6582.43	95018.21 +/-	1316.82
SPONGILLIDAE	0.00 +/-	0.00	0.00 +/-	0.00
CHIRONOMIDAE	1459.82 +/-	761.74	1029.71 +/-	914.45
SPHAERIIDAE	-	-	35.14 +/-	60.84
OLIGOCHAETA	34.62 +/-	49.18	94.70 +/-	28.89
HEMATODA	0.39 +/-	0.67	2.97 +/-	3.60
TOTAL BENTHOS	68450.25 +/-	1021.71	96240.56 +/-	1366.16

MEAN DENSITY (MG/M²) +/- S.D. OF MACROINVERTEBRATES
AT LAKE WYLIE ON 08/01/87 TO 08/30/87 FROM PETERSEN GRAB 1.

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
PALPOMYIA-BEZZIA COMPLEX		12.92 +/- 22.37	- +/- -	51.67 +/- 59.20
CHAOBORUS (SAYOMYIA) PUNCTIPENNIS	232.55 +/- 77.51	12.92 +/- 22.37	232.55 +/- 271.31	232.55 +/- 271.31
CHIRONOMUS SPP	- +/- -	12.92 +/- 22.37	25.84 +/- 44.75	38.75 +/- 38.75
CRYPTOCHIRONOMUS SPP	- +/- -	- +/- -	- +/- -	- +/- -
DICROTENDIPES SPP	- +/- -	- +/- -	12.92 +/- 22.37	- +/- -
DICROTENDIPES NEOMODESTUS	- +/- -	- +/- -	- +/- -	25.84 +/- 44.75
DICROTENDIPES NERVOSUS	- +/- -	- +/- -	25.84 +/- 44.75	- +/- -
GLYPTOTENDIPES SPP	- +/- -	- +/- -	25.83 +/- 22.37	12.92 +/- 22.37
MICROCHIRONOMUS SPP	12.92 +/- 22.37	- +/- -	- +/- -	12.92 +/- 22.37
POLYPEDILLUM SPP	12.92 +/- 22.37	- +/- -	- +/- -	38.76 +/- 67.13
PSEUDOCHIRONOMUS SPP	- +/- -	- +/- -	- +/- -	12.92 +/- 22.37
TANYTARSUS SPP	12.92 +/- 22.37	64.59 +/- 80.68	103.35 +/- 80.68	103.35 +/- 80.68
TANYTARSUS NEOFLLAVELLUS	12.92 +/- 22.37	12.92 +/- 22.37	22.37 +/- 22.37	12.92 +/- 22.37
ABLABESMYIA SPP	- +/- -	- +/- -	- +/- -	12.92 +/- 22.37
COELOTANYPUS SPP	219.63 +/- 156.64	103.35 +/- 22.37	180.87 +/- 161.36	180.87 +/- 161.36
COELOTANYPUS TRICOLOR	64.59 +/- 80.68	25.84 +/- 44.75	- +/- -	- +/- -
PROCLADIUS SPP	25.83 +/- 22.37	12.92 +/- 22.37	12.92 +/- 22.37	12.92 +/- 22.37
CAENIS SPP	12.92 +/- 22.37	- +/- -	- +/- -	12.92 +/- 22.37
HEXAGENIA SPP	12.92 +/- 22.37	- +/- -	- +/- -	12.92 +/- 22.37
SIALIS SPP	64.59 +/- 59.20	12.92 +/- 22.37	64.59 +/- 22.37	64.59 +/- 22.37
CYRNELLUS FRATERNUS	12.92 +/- 22.37	25.84 +/- 44.75	25.84 +/- 44.75	25.84 +/- 44.75
CORBICULA SPP	155.03 +/- 139.74	103.35 +/- 80.68	129.19 +/- 44.75	129.19 +/- 44.75
SPONGILLIDAE	0.00 +/- 0.00	- +/- -	- +/- -	- +/- -
CHIRONOMIDAE	- +/- -	38.76 +/- 67.13	- +/- -	- +/- -
SPHAERIIDAE	- +/- -	- +/- -	25.84 +/- 44.75	25.84 +/- 44.75
OLIGOCHAETA	77.51 +/- 38.76	607.23 +/- 372.44	1279.07 +/- 880.45	1279.07 +/- 880.45
NEMATODA	- +/- -	- +/- -	25.83 +/- 22.37	25.83 +/- 22.37
CHAOBORUS SUBTOTAL	232.56 +/- 77.51	12.92 +/- 22.37	232.56 +/- 271.31	232.56 +/- 271.31
CORBICULA SUBTOTAL	155.04 +/- 139.74	103.36 +/- 80.68	129.20 +/- 44.75	129.20 +/- 44.75
CHIRONOMIDAE SUBTOTAL	361.76 +/- 161.36	315.92 +/- 97.54	490.96 +/- 118.41	490.96 +/- 118.41
EPHEMEROPTERA SUBTOTAL	25.84 +/- 44.75	- +/- -	25.84 +/- 22.37	25.84 +/- 22.37
TRICHOPTERA SUBTOTAL	12.92 +/- 22.37	25.84 +/- 44.75	25.84 +/- 44.75	25.84 +/- 44.75
OLIGOCHAETA SUBTOTAL	77.52 +/- 38.75	607.23 +/- 372.44	1279.07 +/- 880.45	1279.07 +/- 880.45
TOTAL BENTHOS	943.15 +/- 191.19	1098.19 +/- 526.23	2351.42 +/- 880.59	2351.42 +/- 880.59

MEAN BIOMASS DENSITY (MG/M²) +/- S.D. OF MACROINVERTEBRATES COLLECTED AT
LAKE WYLIE , BY PETERSEN GRAB , ON 08/01/87 TO 08/30/87

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
PALPOMYIA-BEZZIA COMPLEX		2.84 +/- 4.92	- +/- -	28.55 +/- 33.81
CHAOBORUS (SAYOMYIA) PUNCTIPENNIS	53.48 +/- 19.42	4.00 +/- 6.93	29.45 +/- 10.45	29.45 +/- 10.45
CHIRONOMUS SPP	- +/- -	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
CRYPTOCHIRONOMUS SPP	- +/- -	- +/- -	- +/- -	0.00 +/- 0.00
DICROTENDIPES SPP	- +/- -	- +/- -	1.16 +/- 2.01	- +/- -
DICROTENDIPES NEOMODESTUS	- +/- -	- +/- -	- +/- -	0.00 +/- 0.00
DICROTENDIPES NERVOSUS	- +/- -	- +/- -	0.00 +/- 0.00	- +/- -
GLYPTOTENDIPES SPP	- +/- -	- +/- -	0.00 +/- 0.00	0.00 +/- 0.00
MICROCHIRONOMUS SPP	0.00 +/- 0.00	- +/- -	- +/- -	0.00 +/- 0.00
POLYPEDILLUM SPP	0.00 +/- 0.00	- +/- -	- +/- -	0.00 +/- 0.00
PSEUDOCHIRONOMUS SPP	- +/- -	- +/- -	- +/- -	0.00 +/- 0.00
TANYTARSUS SPP	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
TANYTARSUS NEOFLLAVELLUS	4.00 +/- 6.93	4.52 +/- 7.83	7.36 +/- 12.75	7.36 +/- 12.75
ABLABESMYIA SPP	- +/- -	- +/- -	3.00 +/- 0.00	3.00 +/- 0.00
COELOTANYPUS SPP	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
COELOTANYPUS TRICOLOR	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00	- +/- -
PROCLADIUS SPP	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00	0.00 +/- 0.00
CAENIS SPP	16.28 +/- 28.19	- +/- -	4.52 +/- 7.83	4.52 +/- 7.83
HEXAGENIA SPP	4003.62 +/- 6934.46	- +/- -	667.96 +/- 1156.93	667.96 +/- 1156.93
SIALIS SPP	313.56 +/- 282.45	80.23 +/- 138.96	722.60 +/- 345.37	722.60 +/- 345.37
CYRNELLUS FRATERNUS	3.42 +/- 6.26	28.94 +/- 50.12	31.76 +/- 55.04	31.76 +/- 55.04
CORBICULA SPP	78301.03 +/- 1883.51	84751.80 +/- 4009.75	30885.01 +/- 5018.96	30885.01 +/- 5018.96
SPONGILLIDAE	0.00 +/- 0.00	- +/- -	- +/- -	- +/- -
CHIRONOMIDAE	482.24 +/- 308.46	477.77 +/- 332.58	259.81 +/- 93.98	259.81 +/- 93.98
SPHAERIIDAE	- +/- -	- +/- -	28.16 +/- 48.78	28.16 +/- 48.78
OLIGOCHAETA	47.54 +/- 21.89	243.66 +/- 148.78	1759.55 +/- 697.03	1759.55 +/- 697.03
NEMATODA	- +/- -	- +/- -	1.42 +/- 1.83	1.42 +/- 1.83
TOTAL BENTHOS	75217.56 +/- 2055.18	90592.11 +/- 977.47	34426.22 +/- 1039.01	34426.22 +/- 1039.01

MEAN DENSITY (MG/MISQ.) +/- S.D.) OF MACROINVERTEBRATES
 AT LAKE WYLIE ON 11/01/87 TO 11/30/87 FROM (PETERSEN GRAB 1).

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX	129.19 +/-	59.20	12.92 +/-	22.37
CHABORUS (SAYOMYIA) PUNCTIPENNIS	- +/-	-	- +/-	-
CHIRONOMUS SPP	51.67 +/-	44.75	258.39 +/-	59.20
CLADOTANYTARSUS S/P	77.51 +/-	77.51	- +/-	-
CRYPTOCHIRONOMUS SPP	- +/-	-	77.51 +/-	67.13
DICROTENDIPES SPP	- +/-	-	- +/-	-
DICROTENDIPES NEOMODESTUS	64.59 +/-	59.20	- +/-	-
DICROTENDIPES NERVOSUS	- +/-	-	- +/-	-
GLYPTOTENDIPES SPP	- +/-	-	25.83 +/-	22.37
PHAENOPSECTRA SPP	103.35 +/-	118.41	- +/-	-
TRIBELOS SPP	25.84 +/-	44.75	- +/-	-
PSEUDOCHIRONOMUS SPP	64.59 +/-	59.20	- +/-	-
TANYTARSUS SPP	25.84 +/-	44.75	- +/-	-
TANYTARSUS N SP 1	- +/-	-	12.92 +/-	22.37
CRICOTOPUS SPP	- +/-	-	- +/-	-
ABLATESMYIA SPP	25.84 +/-	44.75	- +/-	-
ABLATESMYIA (ABLATESMYIA) ANNULATA	38.76 +/-	67.13	- +/-	-
COELOTANYPUS SPP	671.83 +/-	118.41	361.75 +/-	183.17
COELOTANYPUS TRICOLOR	297.15 +/-	191.19	12.92 +/-	22.37
PROCLADILUS SPP	77.51 +/-	0.01	- +/-	-
CAENIS SPP	25.84 +/-	44.75	- +/-	-
HEXAGENIA SPP	77.51 +/-	102.54	- +/-	-
SIALIS SPP	25.84 +/-	44.75	- +/-	-
ORTHOTRICHIA SPP	12.92 +/-	22.37	- +/-	-
OECETIS SPP	- +/-	-	12.92 +/-	22.37
CYRNELLUS SPP	- +/-	-	- +/-	-
CYRNELLUS FRATERNUS	12.92 +/-	22.37	25.84 +/-	44.75
CORBICULA SPP	219.63 +/-	89.51	155.03 +/-	134.26
COENAGRIONIDAE	- +/-	-	- +/-	-
TURBELLARIA	- +/-	-	- +/-	-
HIRUDINEA	- +/-	-	12.92 +/-	22.37
OLIGOCHAETA	90.43 +/-	22.37	788.11 +/-	118.41
GASTROPODA	- +/-	-	- +/-	-
NEMATODA	51.67 +/-	22.37	77.51 +/-	38.76
CHABORUS SUBTOTAL	- +/-	-	- +/-	-
CORBICULA SUBTOTAL	219.64 +/-	89.51	155.04 +/-	134.26
CHIRONOMIDAE SUBTOTAL	1524.55 +/-	220.39	749.35 +/-	227.11
EPHEMEROPTERA SUBTOTAL	103.36 +/-	80.68	- +/-	-
TRICHOPTERA SUBTOTAL	25.84 +/-	22.37	38.76 +/-	38.75
OLIGOCHAETA SUBTOTAL	90.44 +/-	22.37	788.11 +/-	118.41
TOTAL BENTHOS	2170.54 +/-	168.95	1834.62 +/-	280.59

MEAN BIOMASS DENSITY (MG/M2 +/- S.D.) OF MACROINVERTEBRATES COLLECTED AT
 LAKE WYLIE , BY PETERSEN GRAB , ON 11/01/87 TO 11/30/87

TAXON	STATION # REPS	210.0 03	215.0 03	220.0 03
PECTINATELLA MAGNIFICA		0.00 +/-	0.00	0.00 +/-
PALPOMYIA-BEZZIA COMPLEX	12.92 +/-	8.36	1.42 +/-	2.46
CHABORUS (SAYOMYIA) PUNCTIPENNIS	- +/-	-	- +/-	-
CHIRONOMUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
CLADOTANYTARSUS SPP	0.00 +/-	0.00	- +/-	-
CRYPTOCHIRONOMUS SPP	- +/-	-	0.00 +/-	0.00
DICROTENDIPES SPP	- +/-	-	- +/-	-
DICROTENDIPES NEOMODESTUS	0.00 +/-	0.00	- +/-	-
DICROTENDIPES NERVOSUS	- +/-	-	- +/-	-
GLYPTOTENDIPES SPP	- +/-	-	0.00 +/-	0.00
PHAENOPSECTRA SPP	0.00 +/-	0.00	- +/-	-
TRIBELOS SPP	0.00 +/-	0.00	- +/-	-
PSEUDOCHIRONOMUS SPP	0.00 +/-	0.00	- +/-	-
TANYTARSUS SPP	0.00 +/-	0.00	- +/-	-
TANYTARSUS N SP 1	- +/-	-	8.53 +/-	14.76
CRICOTOPUS SPP	- +/-	-	- +/-	-
ABLATESMYIA SPP	0.00 +/-	0.00	- +/-	-
ABLATESMYIA (ABLATESMYIA) ANNULATA	0.00 +/-	0.00	- +/-	-
COELOTANYPUS SPP	0.00 +/-	0.00	0.00 +/-	0.00
COELOTANYPUS TRICOLOR	0.00 +/-	0.00	0.00 +/-	0.00
PROCLADILUS SPP	0.00 +/-	0.00	- +/-	-
CAENIS SPP	5.94 +/-	10.29	- +/-	-
HEXAGENIA SPP	899.09 +/-	1332.08	- +/-	-
SIALIS SPP	405.68 +/-	702.66	- +/-	-
ORTHOTRICHIA SPP	1.16 +/-	2.01	- +/-	-
OECETIS SPP	- +/-	-	3.36 +/-	5.81
CYRNELLUS SPP	- +/-	-	- +/-	-
CYRNELLUS FRATERNUS	12.79 +/-	22.15	43.54 +/-	75.41
CORBICULA SPP	52966.41 +/-	4863.44	92347.93 +/-	5085.24
CHIRONOMIDAE	1846.38 +/-	723.85	958.65 +/-	434.24
COENAGRIONIDAE	- +/-	-	- +/-	-
TURBELLARIA	- +/-	-	- +/-	-
HIRUDINEA	- +/-	-	72.35 +/-	125.31
OLIGOCHAETA	53.36 +/-	45.56	791.47 +/-	295.34
GASTROPODA	- +/-	-	- +/-	-
NEMATODA	2.45 +/-	0.89	4.65 +/-	1.39
TOTAL BENTHOS	56206.19 +/-	2232.68	94281.91 +/-	1913.59