HYDROBIOLOGICAL MONITORING PROGRAM DATA REPORT JANUARY 1994 - DECEMBER 1994 OF THE LOWER PEACE RIVER AND CHARLOTTE HARBOR

as per

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CONSUMPTIVE USE PERMIT 2010420.01

for the

PEACE RIVER REGIONAL WATER SUPPLY FACILITY

PEACE RIVER / MANASOTA REGIONAL
WATER SUPPLY AUTHORITY

by

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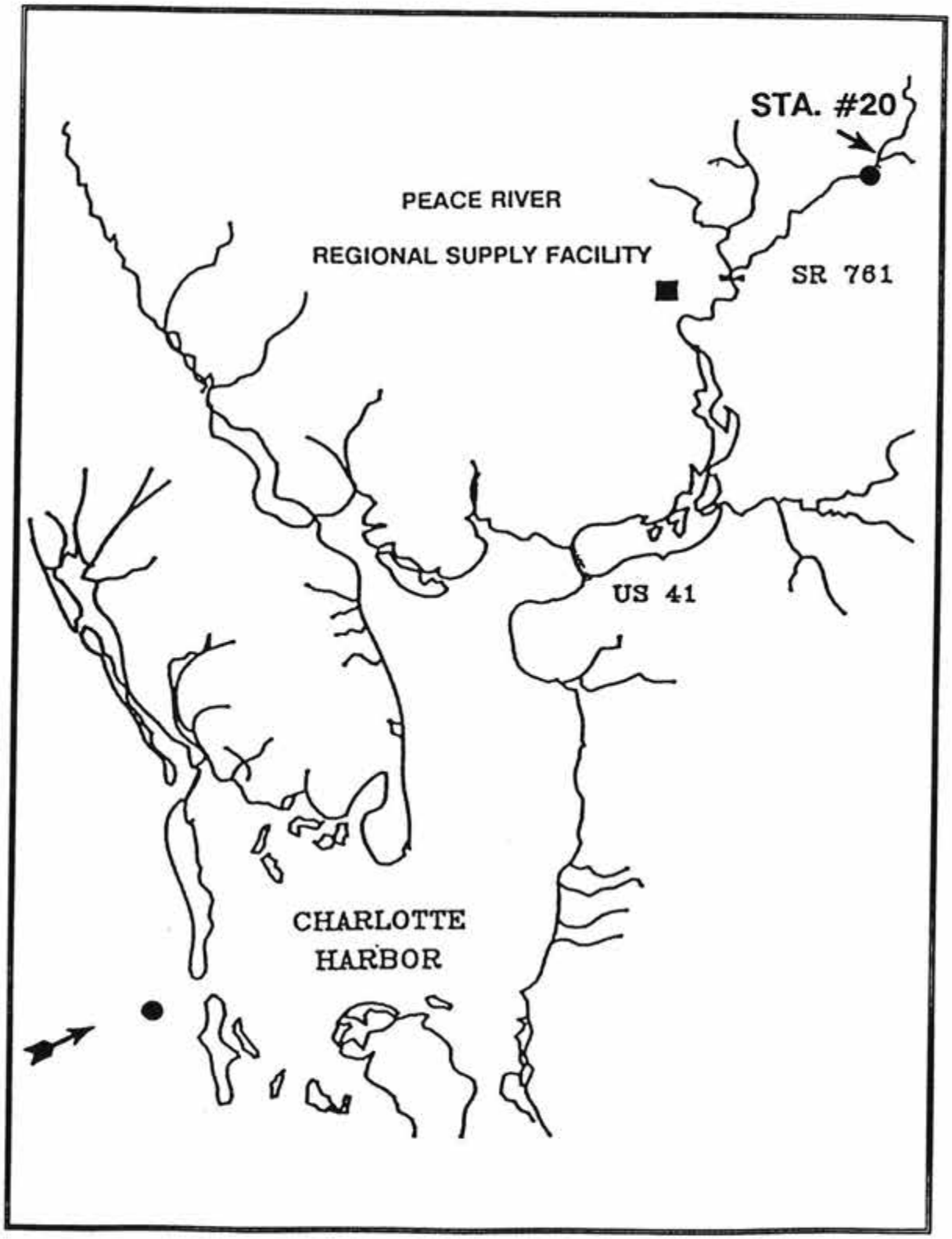
1.0 INTRODUCTION

On December 10, 1975 the consumptive use permit #7500016 for the Peace River Regional Water Supply Facility was signed between General Development Utilities, Inc. and the Southwest Florida Water Management District (SWFWMD). In conjunction with this agreement, a comprehensive hydrobiological monitoring program, was set forth to assess the responses of various physical, chemical and biological characteristics of the Charlotte Harbor estuary to changes in Peace River flow. The program was designed to evaluate the impacts and significance of natural salinity changes on the aquatic fauna and flora in upper Charlotte Harbor, and to determine if freshwater withdrawals by the Peace River Water Supply Facility could be shown to alter these patterns. The area of study is shown in Figure 1.1.

A series of sixteen previous reports have been filed (February 1979, December 1980, July 1981, August 1982, September 1983, August 1984, July 1985, August 1986, August 1987, September 1989, December 1990, August 1991, August 1992 , December 1992, July 1993, and July 1994) with the SWFWMD, documenting the results of the hydrobiological monitoring program during the period from January 1976 through December 1993. These reports include summarizations of data collected during the first four years of baseline monitoring, prior to the start of freshwater withdrawals, as well as comparisons of these data to the results obtained from the hydrobiological monitoring programs during subsequent years of water treatment plant operation. The period covered within this data report follows directly upon that contained within the report submitted in July of 1994 (for the period 1/93 through 12/93), and includes unreported

FIGURE 1.1
STUDY AREA



data collected from January 1994 through December 1994. This represents the fifth year of data collection under the newest Peace River Water Supply Facility WUP #2010420.01.

The initial hydrobiological monitoring program was designed to provide answers to specific questions raised by SWFWMD staff during the original permit process dealing with possible salinity changes in Charlotte Harbor. Analysis of data from pre and post water treatment plant operation presented in the August 1982 report indicated the need to revise the monitoring program in order to better evaluate possible changes in the Charlotte Harbor system as related to flow. Further modifications of the hydrobiological monitoring program were made in 1985 and in conjunction with the most recent renewal of the consumptive use permit in November 1988. Under the existing permit, data reports are to be submitted for the first through fifth years of the monitoring program. In addition, an expanded, comprehensive report which included a comparative analysis of the data reported over the previous years (1983-1991) was submitted in December 1993. A second comprehensive summary report was filed in Draft Form in 1994, and as a Final Report in April 1995. This second comprehensive report documented and evaluated the results of the monitoring programs between 1976 and 1993.

2.0 PRIMARY PRODUCTIVITY

2.1 INTRODUCTION

The development of a comprehensive understanding of primary production and the related structure of the phytoplankton communities within the Charlotte Harbor system is fundamental to the development of knowledge of other interrelated systems and processes within the estuary, such as secondary production and nutrient cycling. A thorough understanding of those processes controlling phytoplankton primary production within Charlotte Harbor is necessary to quantify the estuary's immediate and long-term responses to various external inputs. A thorough long-term investigation of that portion of the upper Harbor's production attributable to phytoplankton assemblages meets the previous cited criteria by providing both: 1) measurement of populations which quickly respond acting as sensitive barometers of external change; and 2) insight into basic processes not only affecting water quality but having secondary widespread interrelations and effects upon other estuarine system components. Phytoplankton production generally represents an immediately available food resource, unlike other estuarine production such as that associated with seagrass, mangrove and saltmarsh habitats, where much of the resource becomes available through secondary processes. Of the various inputs into Charlotte Harbor estuarine system, phytoplankton production represents both the largest single component of primary production and a food source directly accessible to many filter and detrital feeding organisms. Phytoplankton production and composition, due to the short generation times involved, have also been shown to be effective in

demonstrating ephemeral, seasonal and long-term changes in water quality. Phytoplankton production represents a highly integrated estuarine component and can be used to provide information on both direct and predictive secondary impacts of external influences.

Beyond the importance of phytoplankton as a major component of the estuary's food web, there are three principal reasons that continued long-term information concerning rates of phytoplankton primary production within the Charlotte Harbor system are important:

> 1) It may be possible that production rates can be modeled and incorporated into generalized circulation and other generalized basin water quality models used to predict the effects of flow related changes in circulation and water quality within the harbor system. The applications of such models has been investigated by the Tampa office of the U.S. Geological Service and SWFWMD's Charlotte Harbor SWIM study.
>
> 2) Excessive phytoplankton production may reduce light penetration of the water column by increasing turbidity and absorbance. High levels of phytoplankton production may further affect factors which in turn can influence the dominance of estuarine species. An example would be potential extreme diurnal oscillations in dissolved oxygen levels in the water column caused by high phytoplankton densities.
>
> 3) Trend analysis of inorganic nutrient inputs and their respective ratios, from freshwater sources such as the Peace, Myakka and Caloosahatchee Rivers, as well as localized non-point runoff, may also be interpreted more accurately once the factors influencing phytoplankton production in specific areas of the Charlotte Harbor system are thoroughly understood.

2.1.1 Current Long-Term Studies of Primary Production

The current studies of primary production in Upper Charlotte Harbor, conducted as part of the Peace River Regional Water Supply facility's ongoing SWFWMD hydrobiological monitoring program, are designed to develop the needed long-term base of data necessary to evaluate both short and long-term cycles in phytoplankton production

in the upper estuarine system. Statistically comparable levels of phytoplankton ^{14}C fixation rates have been determined monthly at four salinity based stations since June 1983. These investigations have included determinations of phytoplankton population structure, related physical parameters, water column light profiles and analysis of the major chemical constituents associated with phytoplankton growth. The four sampling locations in this study represent non-fixed surface salinity zones, such that the monthly location of each station is dependent upon the preceding amount of freshwater inflow from the Peace River. The four sampling zones are:

Station 101 = 0 o/oo Station 102 = 5-7 o/oo Station 103 = 11-13 o/oo Station 104 = 20-22 o/oo

To date, the furthest upstream occurrence of the station at 0 o/oo has been approximately one half mile below Horse Creek (March, 1985), and the furthest occurrence of the downstream 20-22 o/oo station has been in the Gulf just off Boca Grande (April, 1987), see arrows, Fig. 1.1.

This report presents data collected during the twelfth year (1994) of this unique long-term study of the relationships between phytoplankton productivity and Peace River flow into Upper Charlotte Harbor. Under the existing SWFWMD withdrawal permit, phytoplankton studies will continue for at least through 1995, in order to continue development of a data base sufficiently large that current statistical evaluation of trends and developed predictive models can be enhanced. In addition, the existing permit includes the collection and thorough taxonomic evaluation of the seasonal abundance and

dominance of observed phytoplankton species. This portion of the study seeks to quantify the specific responses of major phytoplankton taxonomic groups to variations in the periodicity of freshwater inflow.

2.2 PRIMARY PRODUCTIVITY METHODS

The methodologies used to measure and evaluate the physical, chemical and biological parameters encompassed within this investigation are outlined and described within the following sections.

2.2.1 In Situ Measurements of Physical Parameters

Depth, temperature, dissolved oxygen, conductivity and pH were measured in situ with a Hydrolab TM Model 8000 system or Surveyor Model II system. Profiles were made from the surface to the bottom in 0.5m increments at each sampling station location. Depth measurements were determined on the basis of pre-measured marks on the unit's cable.

Pre-sampling instrument calibrations were conducted within 24 hours prior to use. Temperature was measured with a linear resistance thermistor, factory calibrated and accurate to within +/-0.2 oC. Dissolved oxygen (D.O.) was measured with a temperature-compensated, passive, polarographic cell, which measures the partial pressure of oxygen as parts per million (ppm or mg/l) of oxygen, +/-0.2 ppm. The probe was calibrated using the oxygen tension of water-saturated air (temperature corrected) as a standard.

The conductivity probes are six electrode cells and were calibrated against a KCl solution of known conductivity. Probe response was then tested with a solution of

known, low conductivity to ensure that the reading is +/-1.0% of the range selected. The probes are automatically temperature compensated to provide conductivity at 25°C.

The Hydrolab™ pH probes are glass, KCl filled with silver/silver chloride reference electrodes and refillable junctions. They are automatically temperature compensated. Two buffer solutions of 7.0 and 10.0 pH (+/- 0.1) were used to calibrate the accuracy of the probe.

Oxidation-reduction potential (ORP) was measured using a platinum-tipped glass ORP probe and standard pH/ORP silver/silver chloride reference probe. Conversion of these ORP values to those of a standard hydrogen electrode can be approximated by adding 300 mV to the results from the silver/silver chloride electrode.

2.2.2 Light Profile

Light intensity profiles utilized both to determine the 50% light depth and calculate the water column extinction coefficient were conducted at each station. A LI-COR (model LI-185B) quantum/radiometer/photometer equipped with an underwater LI-1925B quantum sensor was used to measure photosynthetically active radiation (400-700 nanometers). Light intensities (microeinsteins/m_2/sec) were measured in the air just above the water surface, again just below the surface, and at six selected depths (20, 40, 60, 80, and 100 cm).

2.2.3 Primary Productivity Measurements

Five subsurface water samples were collected at each of the salinity based station locations. These were randomly collected to account for phytoplankton patchiness. The subsurface samples were placed in five replicate "light" and two (black plastic dipped) "dark" acid-rinsed, 450ml glass incubation bottles. Each bottle was then inoculated with

10 microcuries of trace metal-free ^{14}C (to obtain counts of approximately ten thousand counts per minute or CPM, depending on phytoplankton levels). The bottles were quickly placed on an adjustable rack (Figure 2.1) and incubated in situ at the depth where, during the light profile determination, 50% of incident surface radiation was found to remain.

All incubations were conducted within two hours of apparent noon to standardize for known patterns of diurnal periodicity in phytoplankton production. Cumulative light levels during the incubation periods were recorded using a LI-COR integrating quantum photometer. After incubation all samples were placed in the dark, in cool ice chests and quickly returned to the laboratory and prepared for scintillation counting.

2.2.4 Determinations of Rates of Radioactive Carbon Uptake

The following procedures were undertaken to determine both the overall rates of ^{14}C fixation, as well as those proportions attributable to the net- (> 20 microns), nano- (< 20 and > 5 microns) and pico- (< 5 microns) size fractions. Three separate subsamples were taken from each of the "light" sample bottles and processed as follows:

1) 50 ml was filtered through a 2.4 cm Whatman GF/C glass fiber filter using low vacuum (less than 2 PSI). The wet fiber filter was then placed in a scintillation vial and frozen until ready for analysis.

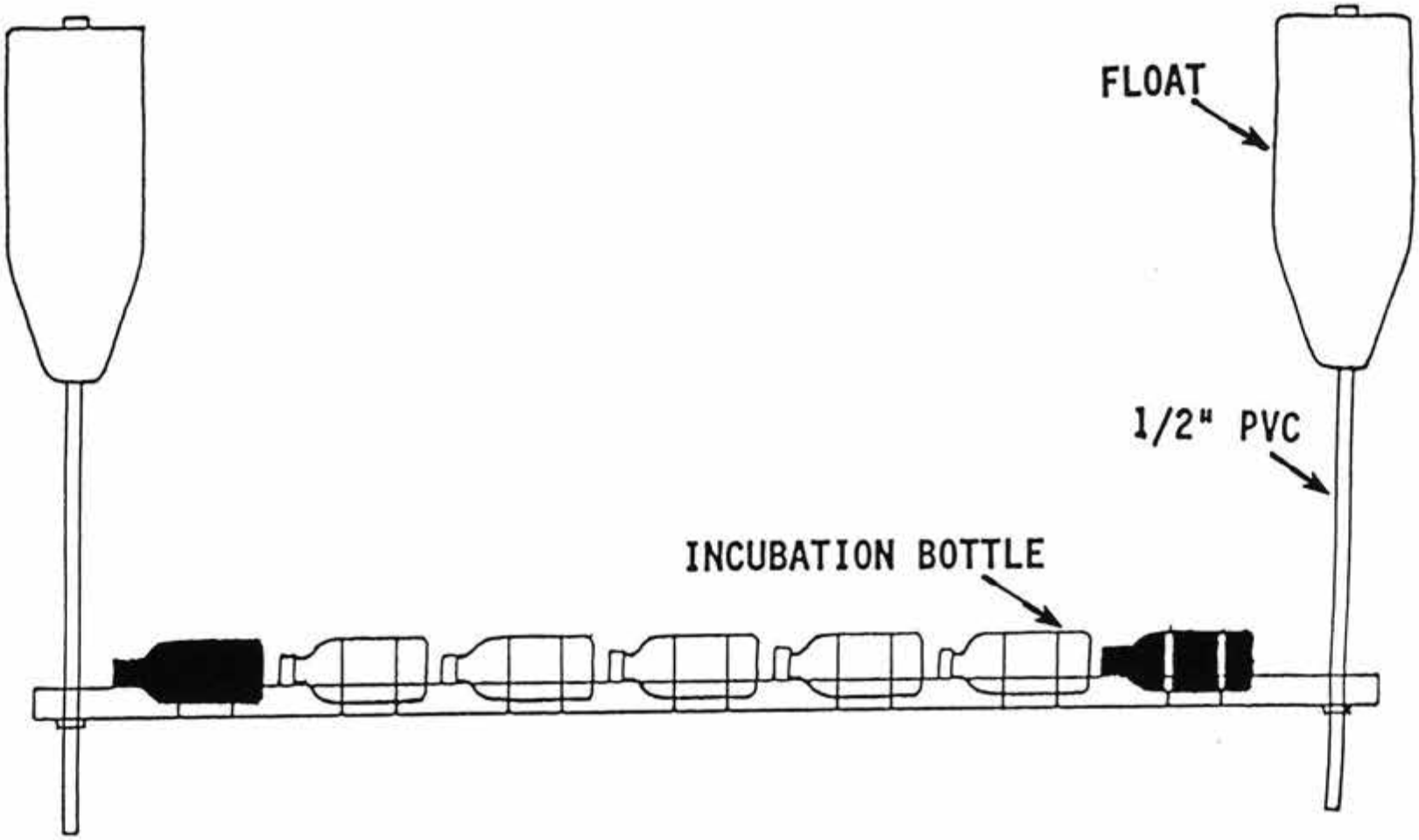
2) A second subsample was prepared in the same manner as the first, except prior to filtering, the 50 ml subsample was passed through 20 micron Nitex screening.

3) The third subsample was prepared in a likewise manner, but passed through 5 micron Nitex screening prior to filtering.

4) 50 ml sub-samples from each of the two dark bottles incubated at each station were filtered as in (1) above. Three corresponding filter blanks for each station were prepared by adding ten microcuries ^{14}C to a 450 ml ice stored water sample taken at the same station, and then immediately taking three 50 ml subsamples. These were also filtered as in (1) above.

FIGURE 2.1

IN SITU INCUBATION RACKS



5) To begin analysis 0.5 ml of 0.1 NHC1 was added to each vial and the vials were then allowed to stand for 3 hours before the addition of 10.0 ml of scintillation fluor. The vials were then placed in the liquid scintillation counter and allowed to dark adapt for at least 24 hours before being counted.

6) Background and known ^{14}C standards were run to check and validate the performance of the laboratory's Packard liquid scintillation system. Verification of the activity of the ^{14}C inoculation solution was also conducted monthly.

7) Each sample vial was counted for 30 minutes, or until the CPM in spectral region A had a standard deviation of less than 0.2%. Counts per minute were then converted to disintegrations per minute using the filter standardization channels ratio method.

2.2.5 Chlorophyll a

Ambient chlorophyll a levels are widely used to estimate phytoplankton biomass. For these investigations, chlorophyll a concentrations were determined fluorometrically for the: 1) greater than 20 micron; 2) 5 to 20 micron; and 3) less than 5 micron size fractions, from samples collected simultaneously with those for primary productivity estimates. Chlorophyll a levels were determined for each of the three size fractions, both uncorrected and corrected for pheophytin, using the same filtering procedures as described above for the determination of carbon-14 incorporation. Comparable estimates were thus made for comparison of both phytoplankton biomass and productivity rates for each of three measured phytoplankton size fractions.

2.2.6 Water Chemistry

Surface water samples were collected for analysis at each salinity based station in pre-labeled, one liter polyethylene containers. The containers were rinsed with sample water, filled and immediately placed in the dark on ice until returned to the laboratory following standard chain of custody and quality assurance procedures. Specific methods

of analyses are listed in Table 2.1.

2.2.7 Population Structure

Surface water samples are collected for taxonomic analysis at each salinity based station in conjunction with primary productivity measurements. Samples for microscopic investigation are placed in one liter polyethylene containers and immediately fixed with 4 ml of Lugol's solution, which is the preferred preservative for samples which may include significant numbers of flagellates. The samples are placed on ice in the dark for transportation back to the lab, where they are held in a refrigerator at 4 °C until prepared for counting. Extensive work has been completed in preparing a thorough photographic taxonomic inventory of the phytoplankton taxa seasonally present at the four salinity zones. To date over 500 taxa have been identified from samples collected. Samples are prepared for observation using a Zeiss inverted microscope utilizing the following settling procedures:

- Samples are removed from the refrigerator and gently shaken to assure resuspension of all material.

- Randomly selected subsamples totaling 5-200 ml (depending on the concentration of the material in the samples) is withdrawn and placed in 50 ml conical glass centrifuge tubes.

- The tubes are then spun at approximately 50 x gravity for 45 minutes. Three to four drops of iodine solution are then added at the top of the tubes, which are then allowed to stand for at least 24 hrs.

- At the end of the first settling period, the settled material in the bottom 2.5 ml and any cells adhering to the surface tension of each centrifuge tube is drawn off and placed in a 10 ml Zeiss inverted microscope settling chamber.

- Two drops of iodine solution is again added to promote settling, and the composite samples are again allowed to

TABLE 2.1

WATER CHEMISTRY METHODS

Parameter	APHA*
Color	2120 C. pg 2-5
Chloride	4500 Cl B. pg 4-68
Turbidity	2130 B. pg 2-13
Alkalinity	2320 B. pg 2-35
NO_2+NO_3-N	4500 NO_3 F. pg 4-137
NH_3+NH_4-N	4500-NH_3 pg 4-126
Total Kjeldahl Nitrogen	4500 N_{org} pg 4-147
Ortho-phosphorus	4500-P pg 4-177 (non-digested)
Total Phosphorus	4500-P pg 4-177 (digested)
Silica	4500-Si E. 4-188
Inorganic Carbon	5310 B. pg 5-18
Total Organic Carbon	5310 B. pg 5-18
Dissolved Organic Carbon	5310 B. pg 5-18
Iron	3500-Fe B. pg 3-102

*Reference:
APHA - Standard Methods for the Examination of Water and Wastewater, 1989.

stand undisturbed for 24 hrs.

Once the samples have been prepared, the counting chambers are placed on a Zeiss inverted microscope for phytoplankton identification. Taxonomic determinations to the lowest practical taxonomy level are conducted from random fields using a modified strip method. To determine community structure, a standardized number of cells are identified (500). The majority of the taxonomic work is conducted using a 100X objective and 16X wide field oculars. As each observation is made, assigned genus and species codes are recorded. After having recorded the taxonomic determinations of 500 cells, additional notes on each sample will be compiled using a combination of low and high power objectives. Determinations of the number of cells per unit volume are conducted or the same samples using a 10x ocular grid and 100x objective. The total number of cells in randomly selected fields, taken in a modified strip method are recorded on a data

sheet and appropriate dilution calculations made.

2.2.8 Taxonomic Determinations of Phytoplankton Community Structure

In 1989 the collection of monthly samples for the analysis of phytoplankton community structure was begun in conjunction with the long-term study of physical/chemical water quality and primary production at the four monitored salinity zones. Phytoplankton community structure has long been used in other studies as a tool in assessing both temporal and long-term changes in water quality in estuarine system. A complete presentation of all the phytoplankton taxonomic data collected during 1993, listing: 1) the taxonomic structure; 2) percent composition of the major taxonomic groups; and 3) species diversity and evenness indices, are presented by salinity zone,

month and year in Appendix D.

Microscopic survey of phytoplankton samples collected concurrently with carbon uptake productivity and chlorophyll a biomass estimates generally indicate the relative dominance of the following groups. At the stations characterized by intermediate and higher salinities, the smallest phytoplankton size fraction (<5 um) is often dominated by Cryptophyceae species (Chroomanas spp. and Cryptomonas spp.). Small Bacillariphyceae (Thalossiosira spp., Nitzschia spp. Navicula spp.) may also be significant portions of the nano-plankton components at these salinities. At the higher salinity stations, which are under greater influences from Gulf waters, chain-forming and larger diatoms frequently dominate the net-plankton size fraction. Seasonally important diatoms at these locations are Skeletonema costatum, Asterionella glacialis, Odentella sinensis, Corethron criophilum, Coscinodiscus centralis and Coscinodiscus eccentricus, as well as species of Chaetoceros and Rizosolenia. Dinophyceae (Ceratium spp. and Peridinum spp.) are often seasonally common in the largest size fraction during the summer months at some of the higher salinity stations.

At intermediate salinities, blooms of Skeletonema costatum are commonly associated with relative increases in carbon uptake and chlorophyll a within the largest size fraction. In certain instances, however, dinoflagellates (Prorocentrum micans, P. minimum, Gymnodinium spp. and Gyrodinium spp.) can be major components of the largest size fraction. Specifically, at 6 and 12 o/oo salinity at the mouth of the Peace River, the larger size fractions are seasonally dominated by blooms of Gyrodinium splendens.

The pico-plankton size fraction, at the lower salinity stations, often contain

significant numbers of non-flagellated, smooth, circular to ovoid, green cells. Taxonomically, such cells probably include both Cyanophyceae (Synechoccus spp., Chroococcus spp., Anacystis spp.) as well as Chlorophyceae (Nannochloris spp., Chlorella spp.). Small phytoflagellates (Chlamydomans spp., Carteria spp., Chroomonas spp., Cryptomonas spp.) are also common components of the pico-plankton at the lowest salinities. The larger size fractions in the riverine portions of the estuary are generally characterized by mixtures of both Chlorophyceae (Ankistrodesmus spp., Coelastrum spp., Crucigenia spp., Pediastrum spp., Scenedesmus spp., Tetraedron spp.), Bacillariophyceae (Cyclotella spp., Nitschia spp., Navicula spp., Fragillaria spp.) and Cyanophyceae (Anabaena spp., Anacystis spp.).

2.3 1994 PRIMARY PRODUCTIVITY DATA

Data collected for the primary productivity studies in 1994 are presented in the following pages. Table 2.3.1 through 2.3.5 summarize the determinations of a number of the key physical, chemical and biological measurements. Seasonal representations of selected parameters are further graphically presented in Figures 2.3.1 through 2.3.14. Complete in situ physical water column profiles are present in Table 2.3.6. Surface water chemistry results at each of the four salinity zones during each month are presented in Table 2.3.7.

Complete analysis of water column profile light levels is contained within Appendix A, while thorough analysis of carbon uptake and chlorophyll a determinations are presented in Appendix B.

TABLE 2.3.1
PHYSICAL AND CHEMICAL PARAMETERS (1994)

Month	Sample Location	Temperature (C)	Color (CPU)	Ammonia/Ammonium (mg/l)	Nitrite/Nitrate (mg/l)	Orthophosphorus (mg/l)	Silica (mg/l)	Available N/P Atomic Ratio
JAN	0 o/oo	20.1	87	0.085	0.675	0.560	1.80	3.1
JAN	6 o/oo	20.2	64	0.009	0.346	0.363	1.43	2.2
JAN	12 o/oo	21.0	46	0.034	0.174	0.234	1.22	2.0
JAN	20 o/oo	18.8	27	0.009	0.023	0.073	0.88	1.0
FEB	0 o/oo	21.6	95	0.013	0.596	0.608	1.64	2.3
FEB	6 o/oo	22.4	75	0.037	0.419	0.462	1.47	2.3
FEB	12 o/oo	22.2	59	0.033	0.241	0.305	1.27	2.1
FEB	20 o/oo	21.6	37	0.023	0.084	0.160	0.78	1.5
MAR	0 o/oo	21.5	181	0.103	0.626	0.735	2.21	2.3
MAR	6 o/oo	21.5	105	0.049	0.345	0.554	1.87	1.6
MAR	12 o/oo	22.2	64	0.020	0.026	0.296	1.27	0.4
MAR	20 o/oo	20.8	41	0.024	0.052	0.156	0.85	1.1
APR	0 o/oo	23.5	71	0.029	0.361	0.778	1.23	1.1
APR	6 o/oo	23.7	91	0.009	0.116	0.569	1.65	0.5
APR	12 o/oo	22.8	71	0.009	0.014	0.440	0.99	0.1
APR	20 o/oo	23.9	48	0.009	0.003	0.181	0.19	0.2
MAY	0 o/oo	30.2	74	0.054	0.182	0.867	1.34	0.6
MAY	6 o/oo	29.7	77	0.024	0.013	0.680	1.97	0.1
MAY	12 o/oo	30.4	62	0.038	0.012	0.601	1.43	0.2
MAY	20 o/oo	30.2	37	0.026	0.030	0.374	0.38	0.3
JUN	0 o/oo	30.2	97	0.132	0.864	0.591	2.39	3.9
JUN	6 o/oo	29.9	74	0.060	0.012	0.601	2.44	0.3
JUN	12 o/oo	29.4	63	0.043	0.005	0.409	2.27	0.3
JUN	20 o/oo	30.0	42	0.037	0.013	0.221	1.35	0.5
JUL	0 o/oo	30.4	280	0.068	0.535	0.722	3.65	1.9
JUL	6 o/oo	29.9	151	0.090	0.241	0.423	3.47	1.8
JUL	12 o/oo	29.3	127	0.030	0.141	0.330	3.02	1.2
JUL	20 o/oo	29.2	62	0.060	0.024	0.163	1.68	1.2
AUG	0 o/oo	26.7	273	0.074	0.459	0.625	3.60	1.9
AUG	6 o/oo	27.9	177	0.116	0.230	0.423	3.89	1.9
AUG	12 o/oo	27.3	143	0.012	0.001	0.293	3.69	0.1
AUG	20 o/oo	30.4	72	0.011	0.001	0.116	3.37	0.2
SEPT	0 o/oo	28.3	244	0.043	0.266	0.480	3.01	1.5
SEPT	6 o/oo	29.4	192	0.112	0.192	0.425	3.35	1.6
SEPT	12 o/oo	30.8	129	0.132	0.076	0.300	3.40	1.6
SEPT	20 o/oo	30.0	67	0.010	0.006	0.168	3.11	0.2
OCT	0 o/oo	27.9	210	0.071	0.146	0.491	3.26	1.0
OCT	6 o/oo	27.8	200	0.313	0.101	0.405	3.20	2.3
OCT	12 o/oo	27.7	120	0.347	0.072	0.272	2.93	3.5
OCT	20 o/oo	28.1	60	0.231	0.082	0.195	2.27	3.7

TABLE 2.3.1 (continued)
PHYSICAL AND CHEMICAL PARAMETERS (1994)

Month	Sample Location	Temperature (C)	Color (CPU)	Ammonia/Ammonium (mg/l)	Nitrite/Nitrate (mg/l)	Orthophosphorus (mg/l)	Silica (mg/l)	Available N/P Atomic Ratio
NOV	0 o/oo	24.7	120	0.010	0.274	0.490	4.05	1.3
NOV	6 o/oo	24.9	120	0.010	0.202	0.562	3.37	0.9
NOV	12 o/oo	24.8	125	0.037	0.074	0.359	2.68	0.7
NOV	20 o/oo	25.2	100	0.019	0.024	0.188	1.12	0.5
DEC	0 o/oo	23.9	160	0.010	0.405	0.683	2.85	1.4
DEC	6 o/oo	25.6	160	0.010	0.172	0.507	2.93	0.8
DEC	12 o/oo	24.0	90	0.010	0.020	0.346	2.47	0.2
DEC	20 o/oo	24.2	55	0.010	0.003	0.168	1.49	0.2

TABLE 2.3.2
MEASURMENTS OF AMBIENT SOLAR RADIATION AND WATER COLUMN EXTINCTION (1994)

Month	Sample Location	Light Level During Incubation Period (E)	Light Level During Day (Einsteins)	Light Level During Month (Einsteins)	Light Extinction Coefficient	Depth 1% of Surface Light Remains (m)	Depth 10% of Surface Light Remains (m)	Depth 50% of Surface Light Remains (m)
JAN	0 o/oo	5.92	25.47	596.8	2.17	2.10	1.06	0.32
JAN	6 o/oo	5.23	25.47	596.8	2.50	1.80	0.92	0.28
JAN	12 o/oo	4.64	25.47	596.8	1.85	2.50	1.25	0.37
JAN	20 o/oo	4.40	25.47	596.8	1.06	4.40	2.18	0.66
FEB	0 o/oo	7.37	30.02	686.8	2.47	1.90	0.93	0.28
FEB	6 o/oo	6.88	30.02	686.8	3.67	1.30	0.63	0.19
FEB	12 o/oo	5.87	30.02	686.8	2.85	1.60	0.81	0.24
FEB	20 o/oo	5.21	30.02	686.8	2.37	1.90	0.97	0.29
MAR	0 o/oo	8.09	28.52	970.3	4.01	1.10	0.57	0.17
MAR	6 o/oo	8.10	28.52	970.3	2.54	1.80	0.91	0.27
MAR	12 o/oo	8.52	28.52	970.3	2.21	2.10	1.04	0.31
MAR	20 o/oo	7.43	28.52	970.3	1.20	3.80	1.91	0.58
APR	0 o/oo	8.48	39.20	1047.7	1.82	2.50	1.26	0.38
APR	6 o/oo	8.19	39.20	1047.7	2.37	1.90	0.97	0.29
APR	12 o/oo	8.12	39.20	1047.7	2.41	1.90	0.96	0.29
APR	20 o/oo	7.77	39.20	1047.7	1.20	3.80	1.92	0.58
MAY	0 o/oo	7.51	29.29	1125.1	2.28	2.00	1.01	0.30
MAY	6 o/oo	7.21	29.29	1125.1	2.65	1.70	0.87	0.26
MAY	12 o/oo	6.89	29.29	1125.1	2.02	2.30	1.14	0.34
MAY	20 o/oo	5.89	29.29	1125.1	1.53	3.00	1.51	0.45
JUN	0 o/oo	9.63	41.79	967.7	2.28	2.00	1.01	0.30
JUN	6 o/oo	9.68	41.79	967.7	2.44	1.90	0.94	0.28
JUN	12 o/oo	9.33	41.79	967.7	1.89	2.40	1.22	0.37
JUN	20 o/oo	9.37	41.79	967.7	1.51	3.10	1.53	0.46
JUL	0 o/oo	9.10	36.99	913.0	6.22	0.70	0.37	0.11
JUL	6 o/oo	9.28	36.99	913.0	5.88	0.80	0.39	0.12
JUL	12 o/oo	9.55	36.99	913.0	5.78	0.80	0.40	0.12
JUL	20 o/oo	8.74	36.99	913.0	2.33	2.00	0.99	0.30
AUG	0 o/oo	8.66	35.06	847.4	5.82	0.80	0.40	0.12
AUG	6 o/oo	8.47	35.06	847.4	4.18	1.10	0.55	0.17
AUG	12 o/oo	8.36	35.06	847.4	5.75	0.80	0.40	0.12
AUG	20 o/oo	8.63	35.06	847.4	1.25	3.70	1.85	0.56
SEPT	0 o/oo	5.35	24.74	672.4	1.34	3.40	1.72	0.52
SEPT	6 o/oo	5.58	24.74	672.4	1.31	3.50	1.76	0.53
SEPT	12 o/oo	5.44	24.74	672.4	2.61	1.80	0.88	0.27
SEPT	20 o/oo	5.38	24.74	672.4	2.25	2.00	1.02	0.31
OCT	0 o/oo	5.95	25.34	706.4	2.64	1.70	0.87	0.26
OCT	6 o/oo	6.86	25.34	706.4	3.79	1.20	0.61	0.18
OCT	12 o/oo	5.60	25.34	706.4	2.49	1.90	0.93	0.28
OCT	20 o/oo	5.46	25.34	706.4	2.36	2.00	0.98	0.29

TABLE 2.3.2
MEASURMENTS OF AMBIENT SOLAR RADIATION AND WATER COLUMN EXTINCTION (1994)

Month	Sample Location	Light Level During Incubation Period (E)	Light Level During Day (Einsteins)	Light Level During Month (Einsteins)	Light Extinction Coefficient	Depth 1% of Surface Light Remains (m)	Depth 10% of Surface Light Remains (m)	Depth 50% of Surface Light Remains (m)
NOV	0 o/oo	7.71	19.40	598.1	3.26	1.40	0.71	0.21
NOV	6 o/oo	7.72	19.40	598.1	4.14	1.10	0.56	0.17
NOV	12 o/oo	7.59	19.40	598.1	2.62	1.80	0.88	0.26
NOV	20 o/oo	7.20	19.40	598.1	2.05	2.20	1.12	0.34
DEC	0 o/oo	5.94	15.47	517.4	4.39	1.00	0.52	0.16
DEC	6 o/oo	6.04	15.47	517.4	4.15	1.10	0.55	0.17
DEC	12 o/oo	6.04	15.47	517.4	4.40	1.00	0.52	0.16
DEC	20 o/oo	5.86	15.47	517.4	1.90	2.40	1.21	0.37

TABLE 2.3.3
MEASURED RATES OF PRIMARY PRODUCTION (1994)
(based on mean values of replicates)

Month	Sample Location	Carbon Uptake (mg Carbon/m3/E)	Carbon Uptake (mg Carbon/m3/E/Chla)	Carbon Uptake (mg Carbon/m3/hr)	Carbon Uptake (mg Carbon/m3/hr/Chla)	Estimated Production (g Carbon/m3/Day)	Estimated Production (g Carbon/m3/Month)	Estimated Production (g Carbon/m2/Day)	Estimated Production (g Carbon/m2/Month)
JAN	0 o/oo	2.23	1.06	6.59	3.14	0.1	1.3	0.0	0.7
JAN	6 o/oo	64.65	1.29	168.98	3.38	1.6	38.6	3.0	71.1
JAN	12 o/oo	5.91	1.60	13.70	3.70	0.2	3.5	0.4	8.8
JAN	20 o/oo	7.58	1.52	14.81	2.96	0.2	4.5	0.8	19.7
FEB	0 o/oo	5.34	1.24	19.70	4.58	0.2	3.7	0.3	6.8
FEB	6 o/oo	9.24	3.18	31.78	10.96	0.3	6.3	0.3	7.9
FEB	12 o/oo	8.57	2.76	25.16	8.12	0.3	5.9	0.4	9.5
FEB	20 o/oo	15.06	4.07	39.19	10.59	0.5	10.3	0.9	20.1
MAR	0 o/oo	3.77	1.14	15.24	4.62	0.1	3.7	0.1	4.2
MAR	6 o/oo	15.91	1.81	64.45	7.32	0.5	15.4	0.8	28.0
MAR	12 o/oo	156.15	3.74	665.49	15.92	4.5	151.5	2.2	75.8
MAR	20 o/oo	11.15	3.28	39.27	11.55	0.3	10.8	1.2	41.4
APR	0 o/oo	2.34	0.44	9.92	1.87	0.1	2.4	0.2	6.2
APR	6 o/oo	11.85	0.74	48.55	3.03	0.5	12.4	0.9	24.2
APR	12 o/oo	16.54	1.02	67.14	4.12	0.6	17.3	1.2	33.1
APR	20 o/oo	5.01	1.14	19.47	4.43	0.2	5.3	0.8	20.2
MAY	0 o/oo	10.67	1.01	40.09	3.78	0.3	12.0	0.6	24.2
MAY	6 o/oo	26.53	1.14	95.60	4.12	0.8	29.8	1.4	51.9
MAY	12 o/oo	21.80	0.22	75.16	0.74	0.6	24.5	1.5	55.9
MAY	20 o/oo	9.84	1.25	28.99	3.67	0.3	11.1	0.9	33.4
JUN	0 o/oo	2.40	0.71	11.55	3.40	0.1	2.3	0.2	4.7
JUN	6 o/oo	49.12	3.23	237.78	15.64	2.1	47.5	3.9	89.8
JUN	12 o/oo	26.47	2.94	123.42	13.71	1.1	25.6	2.7	62.3
JUN	20 o/oo	24.79	4.27	116.16	20.03	1.0	24.0	3.2	73.4
JUL	0 o/oo	0.79	0.39	3.57	1.79	0.0	0.7	0.0	0.5
JUL	6 o/oo	6.43	0.25	29.82	1.16	0.2	5.9	0.2	4.6
JUL	12 o/oo	14.73	0.72	70.35	3.41	0.5	13.4	0.4	10.7
JUL	20 o/oo	29.76	2.48	130.09	10.84	1.1	27.2	2.2	53.6
AUG	0 o/oo	1.74	0.62	7.55	2.70	0.1	1.5	0.0	1.2
AUG	6 o/oo	8.42	0.70	35.66	2.95	0.3	7.1	0.3	7.9
AUG	12 o/oo	52.51	1.17	190.93	4.25	1.8	44.5	1.5	35.7
AUG	20 o/oo	22.04	4.79	95.06	20.66	0.8	18.7	2.9	69.0
SEPT	0 o/oo	5.66	1.07	15.14	2.86	0.1	3.8	0.5	13.1
SEPT	6 o/oo	8.29	1.80	23.15	5.03	0.2	5.6	0.7	19.6
SEPT	12 o/oo	51.44	3.24	139.91	8.80	1.3	34.6	2.2	61.0
SEPT	20 o/oo	179.92	3.26	483.86	8.77	4.5	121.0	9.1	247.4
OCT	0 o/oo	0.09	0.04	0.28	0.12	0.0	0.1	0.0	0.1
OCT	6 o/oo	0.63	0.30	2.17	1.03	0.0	0.4	0.0	0.5
OCT	12 o/oo	0.11	0.02	0.30	0.06	0.0	0.1	0.0	0.1
OCT	20 o/oo	8.34	2.53	22.77	6.90	0.2	5.9	0.4	11.5

TABLE 2.3.3 (continued)
MEASURED RATES OF PRIMARY PRODUCTION (1994)
(based on mean values of replicates)

Month	Sample Location	Carbon Uptake (mg Carbon/m3/E)	Carbon Uptake (mg Carbon/m3/E/Chla)	Carbon Uptake (mg Carbon/m3/hr)	Carbon Uptake (mg Carbon/m3/hr/Chla)	Estimated Production (g Carbon/m3/Day)	Estimated Production (g Carbon/m3/Month)	Estimated Production (g Carbon/m2/Day)	Estimated Production (g Carbon/m2/Month)
NOV	0 o/oo	5.28	0.42	20.33	1.61	0.1	3.2	0.1	4.5
NOV	6 o/oo	10.31	0.07	39.80	0.28	0.2	6.2	0.2	6.9
NOV	12 o/oo	9.28	0.30	35.24	1.15	0.2	5.6	0.2	5.6
NOV	20 o/oo	42.19	2.51	151.81	9.04	0.8	25.2	1.8	56.6
DEC	0 o/oo	15.64	1.34	46.44	3.97	0.2	8.1	0.3	8.5
DEC	6 o/oo	3.32	0.04	10.04	0.11	0.1	1.7	0.1	1.9
DEC	12 o/oo	4.20	0.25	12.67	0.75	0.1	2.2	0.1	2.3
DEC	20 o/oo	18.66	2.19	50.61	5.95	0.3	9.7	0.7	23.4

TABLE 2.3.4
DETERMINATION OF CARBON UPTAKE BY SIZE FRACTION (1994)

Month	Sample Location	Uptake >20 um Fraction (mg Carbon/m3/E)	Uptake 20><5 um Fract. (mg Carbon/m3/E)	Uptake 5> um Fraction (mg Carbon/m3/E)	% Carbon Uptake >20 um Size Fraction	% Carbon Uptake 20><5 um Size Fraction	% Carbon Uptake 5> um Size Fraction
JAN	0 o/oo	0.10	0.02	2.11	4.3	1.1	94.6
JAN	6 o/oo	1.26	0.49	62.90	1.9	0.8	97.3
JAN	12 o/oo	0.19	0.17	5.54	3.2	3.0	93.8
JAN	20 o/oo	0.43	0.59	6.56	5.7	7.8	86.5
FEB	0 o/oo	0.24	0.52	4.59	4.5	9.7	85.9
FEB	6 o/oo	0.27	0.94	8.02	3.0	10.2	86.8
FEB	12 o/oo	0.57	0.68	7.31	6.7	7.9	85.4
FEB	20 o/oo	2.16	1.17	11.73	14.4	7.7	77.9
MAR	0 o/oo	0.12	0.71	2.93	3.2	18.9	77.8
MAR	6 o/oo	6.50	2.07	7.34	40.9	13.0	46.1
MAR	12 o/oo	62.71	78.50	14.93	40.2	50.3	9.6
MAR	20 o/oo	0.43	0.79	9.92	3.9	7.1	89.0
APR	0 o/oo	0.63	0.33	1.38	26.9	14.2	58.8
APR	6 o/oo	2.16	2.57	7.13	18.2	21.7	60.1
APR	12 o/oo	11.66	1.81	3.08	70.4	11.0	18.6
APR	20 o/oo	3.06	0.70	1.25	61.1	13.9	25.0
MAY	0 o/oo	0.58	0.14	9.95	5.4	1.4	93.2
MAY	6 o/oo	4.98	4.47	17.08	18.8	16.9	64.4
MAY	12 o/oo	1.02	2.59	18.19	4.7	11.9	83.4
MAY	20 o/oo	3.95	1.42	4.47	40.1	14.4	45.5
JUN	0 o/oo	0.11	0.17	2.12	4.5	7.0	88.5
JUN	6 o/oo	2.75	26.44	19.93	5.6	53.8	40.6
JUN	12 o/oo	2.07	1.40	22.99	7.8	5.3	86.9
JUN	20 o/oo	1.82	2.33	20.64	7.3	9.4	83.3
JUL	0 o/oo	0.11	0.07	0.61	14.0	8.5	77.4
JUL	6 o/oo	1.73	0.69	4.01	27.0	10.7	62.3
JUL	12 o/oo	2.54	1.03	11.16	17.3	7.0	75.8
JUL	20 o/oo	4.02	6.06	19.68	13.5	20.4	66.1
AUG	0 o/oo	0.19	0.47	1.09	10.6	26.9	62.5
AUG	6 o/oo	3.46	0.40	4.56	41.1	4.7	54.2
AUG	12 o/oo	42.85	1.39	8.26	81.6	2.6	15.7
AUG	20 o/oo	0.90	0.83	20.31	4.1	3.8	92.1
SEPT	0 o/oo	0.45	1.81	3.39	8.0	32.1	59.9
SEPT	6 o/oo	1.97	0.26	6.06	23.8	3.1	73.1
SEPT	12 o/oo	5.09	12.79	33.56	9.9	24.9	65.2
SEPT	20 o/oo	122.33	24.39	33.19	68.0	13.6	18.4
OCT	0 o/oo	0.02	0.01	0.06	22.4	11.5	66.1
OCT	6 o/oo	0.02	0.08	0.54	2.7	12.3	85.0
OCT	12 o/oo	0.03	0.02	0.05	30.8	20.7	48.5
OCT	20 o/oo	4.70	1.05	2.59	56.3	12.6	31.1

TABLE 2.3.4
DETERMINATION OF CARBON UPTAKE BY SIZE FRACTION (1994)

Month	Sample Location	Uptake >20 um Fraction (mg Carbon/m3/E)	Uptake 20><5 um Fract. (mg Carbon/m3/E)	Uptake 5> um Fraction (mg Carbon/m3/E)	% Carbon Uptake >20 um Size Fraction	% Carbon Uptake 20><5 um Size Fraction	% Carbon Uptake 5> um Size Fraction
NOV	0 o/oo	0.71	0.57	4.00	13.4	10.9	75.7
NOV	6 o/oo	5.26	1.00	4.05	51.0	9.7	39.3
NOV	12 o/oo	4.74	2.05	2.50	51.1	22.1	26.9
NOV	20 o/oo	31.19	4.82	6.19	73.9	11.4	14.7
DEC	0 o/oo	1.37	3.28	10.99	8.8	21.0	70.3
DEC	6 o/oo	0.57	0.49	2.27	17.2	14.7	68.1
DEC	12 o/oo	2.42	0.61	1.16	57.7	14.6	27.6
DEC	20 o/oo	10.58	4.25	3.82	56.7	22.8	20.5

TABLE 2.3.5
DETERMINATION OF CHLOROPHYLL a BY SIZE FRACTION (1994)

Month	Sample Location	Chlorophyll a >20 um Fraction (mg/m3)	Chlorophyll a 20><5 um Fraction (mg/m3)	Chlorophyll a 5> um Fraction (mg/m3)	% Chlorophyll a >20 um Size Fraction	% Chlorophyll a 20><5 um Size Fraction	% Chlorophyll a 5> um Size Fraction
JAN	0 o/oo	0.1	0.0	2.0	4.8	0.0	95.2
JAN	6 o/oo	2.7	4.0	43.3	5.4	8.0	86.6
JAN	12 o/oo	0.0	0.3	3.4	0.0	8.1	91.9
JAN	20 o/oo	0.6	0.6	3.8	12.0	12.0	76.0
FEB	0 o/oo	0.2	0.9	3.2	4.7	20.9	74.4
FEB	6 o/oo	0.0	0.2	2.7	0.0	6.9	93.1
FEB	12 o/oo	0.0	0.4	2.7	0.0	12.9	87.1
FEB	20 o/oo	0.6	0.2	2.9	16.2	5.4	78.4
MAR	0 o/oo	0.2	0.1	3.0	6.1	3.0	90.9
MAR	6 o/oo	3.1	1.0	4.7	35.2	11.4	53.4
MAR	12 o/oo	5.6	22.3	13.9	13.4	53.3	33.3
MAR	20 o/oo	0.5	0.1	2.8	14.7	2.9	82.4
APR	0 o/oo	1.1	2.2	2.0	20.8	41.5	37.7
APR	6 o/oo	0.0	2.0	14.0	0.0	12.5	87.5
APR	12 o/oo	10.1	1.6	4.6	62.0	9.8	28.2
APR	20 o/oo	1.7	0.2	2.5	38.6	4.5	56.8
MAY	0 o/oo	0.3	0.0	10.3	2.8	0.0	97.2
MAY	6 o/oo	1.4	9.7	12.1	6.0	41.8	52.2
MAY	12 o/oo	20.5	45.7	34.7	20.3	45.3	34.4
MAY	20 o/oo	4.6	0.1	3.2	58.2	1.3	40.5
JUN	0 o/oo	1.8	1.0	0.6	52.9	29.4	17.6
JUN	6 o/oo	0.0	8.2	7.0	0.0	53.9	46.1
JUN	12 o/oo	0.0	1.0	8.0	0.0	11.1	88.9
JUN	20 o/oo	1.2	0.4	4.2	20.7	6.9	72.4
JUL	0 o/oo	0.0	0.9	1.1	0.0	45.0	55.0
JUL	6 o/oo	14.4	4.7	6.5	56.2	18.4	25.4
JUL	12 o/oo	3.3	7.9	9.4	16.0	38.3	45.6
JUL	20 o/oo	1.0	5.0	6.0	8.3	41.7	50.0
AUG	0 o/oo	0.0	1.2	1.6	0.0	42.9	57.1
AUG	6 o/oo	2.7	5.9	3.5	22.3	48.8	28.9
AUG	12 o/oo	7.1	4.7	33.1	15.8	10.5	73.7
AUG	20 o/oo	1.0	0.0	3.6	21.7	0.0	78.3
SEPT	0 o/oo	1.2	1.6	2.5	22.6	30.2	47.2
SEPT	6 o/oo	0.0	0.2	4.4	0.0	4.3	95.7
SEPT	12 o/oo	1.8	0.4	13.7	11.3	2.5	86.2
SEPT	20 o/oo	41.8	4.7	8.7	75.7	8.5	15.8
OCT	0 o/oo	0.3	0.3	1.7	13.0	13.0	73.9
OCT	6 o/oo	0.2	0.0	1.9	9.5	0.0	90.5
OCT	12 o/oo	1.3	1.0	2.3	28.3	21.7	50.0
OCT	20 o/oo	1.3	0.7	1.3	39.4	21.2	39.4

TABLE 2.3.5
DETERMINATION OF CHLOROPHYLL a BY SIZE FRACTION (1994)

Month	Sample Location	Chlorophyll a >20 um Fraction (mg/m3)	Chlorophyll a 20><5 um Fraction (mg/m3)	Chlorophyll a 5> um Fraction (mg/m3)	% Chlorophyll a >20 um Size Fraction	% Chlorophyll a 20><5 um Size Fraction	% Chlorophyll a 5> um Size Fraction
NOV	0 o/oo	1.5	4.3	6.8	11.9	34.1	54.0
NOV	6 o/oo	100.0	9.5	32.3	70.5	6.7	22.8
NOV	12 o/oo	14.9	8.7	7.1	48.5	28.3	23.1
NOV	20 o/oo	8.9	3.2	4.7	53.0	19.0	28.0
DEC	0 o/oo	3.3	0.0	8.4	28.2	0.0	71.8
DEC	6 o/oo	14.2	21.2	54.4	15.8	23.6	60.6
DEC	12 o/oo	11.5	1.2	4.1	68.5	7.1	24.4
DEC	20 o/oo	2.1	2.6	3.8	24.7	30.6	44.7

FIGURE 2.3.1

CHARLOTTE HARBOR 1994

Temperature

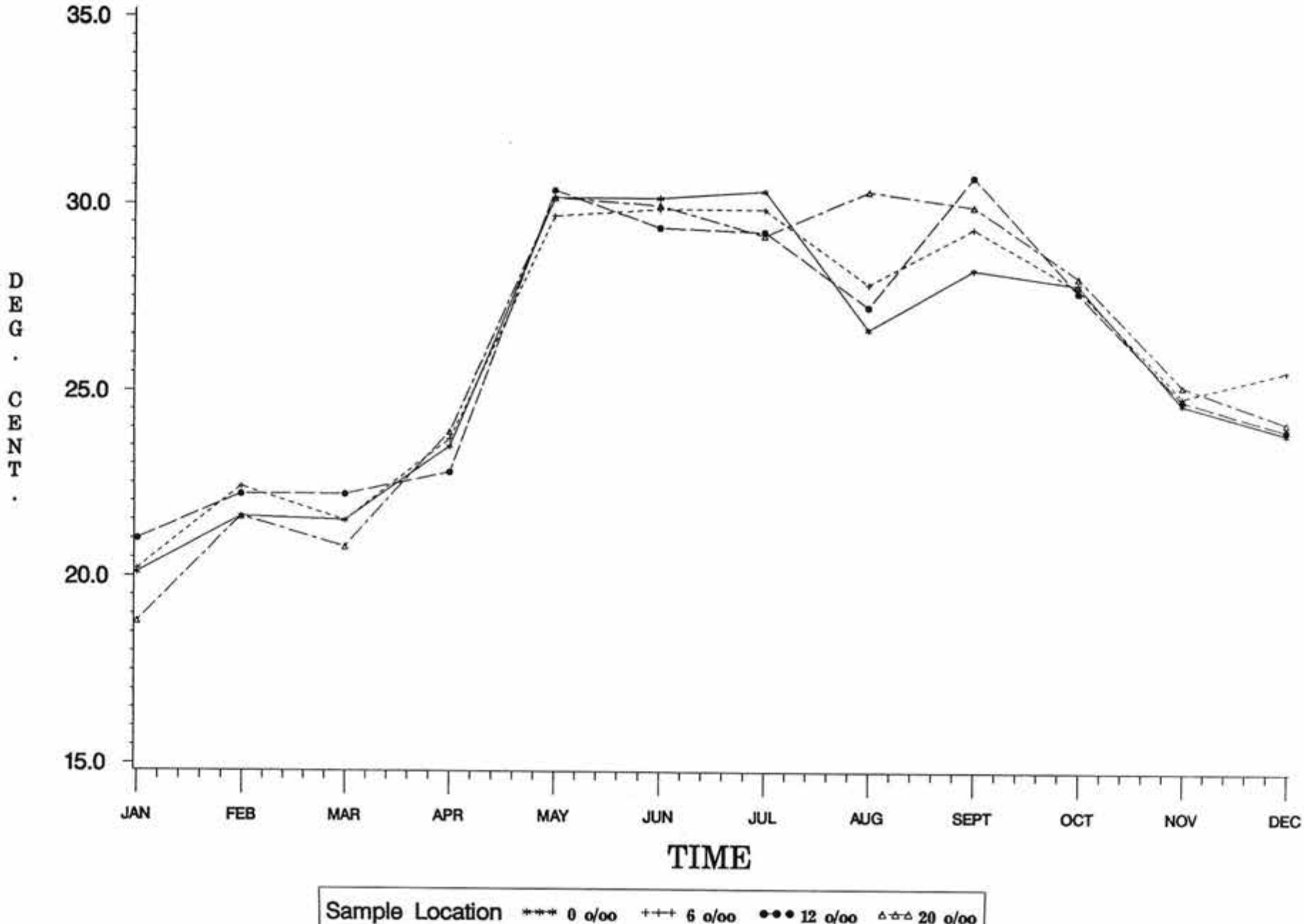
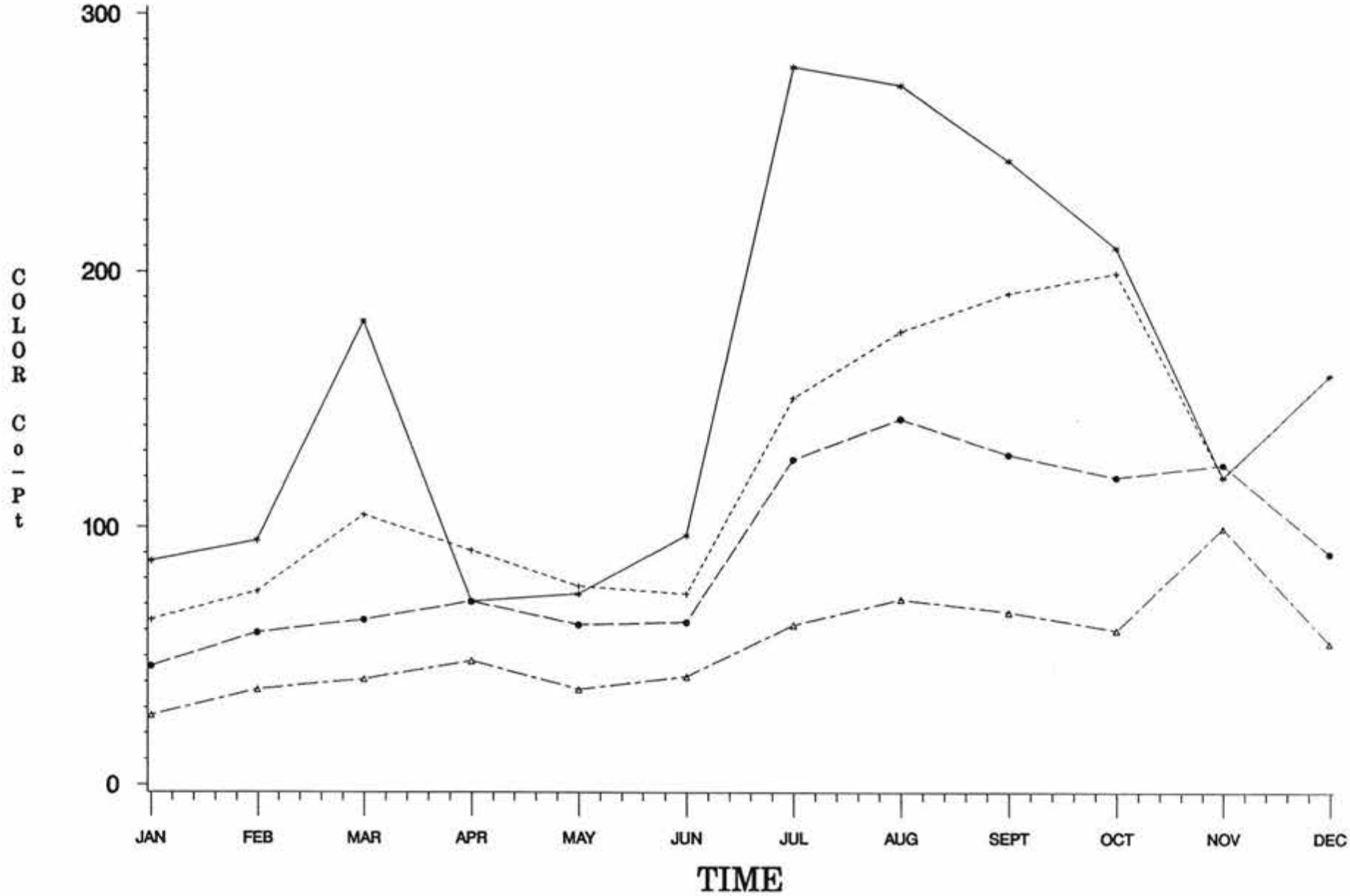


FIGURE 2.3.2

CHARLOTTE HARBOR 1994

Color



Sample Location *** 0 o/oo +++ 6 o/oo ••• 12 o/oo △△△ 20 o/oo

FIGURE 2.3.3

CHARLOTTE HARBOR 1994

Extinction Coefficient

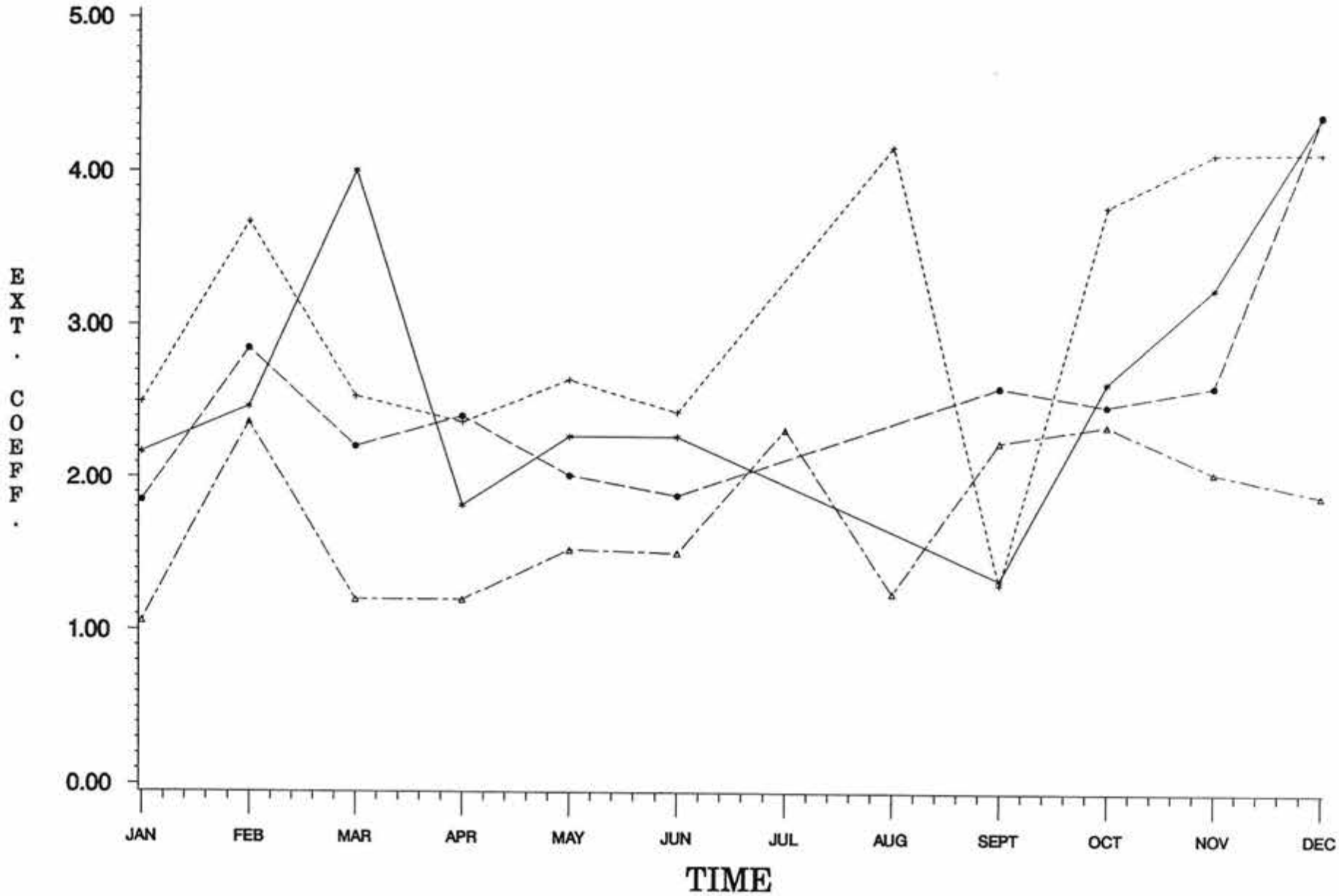


FIGURE 2.3.4

CHARLOTTE HARBOR 1994

Nitrate/Nitrite

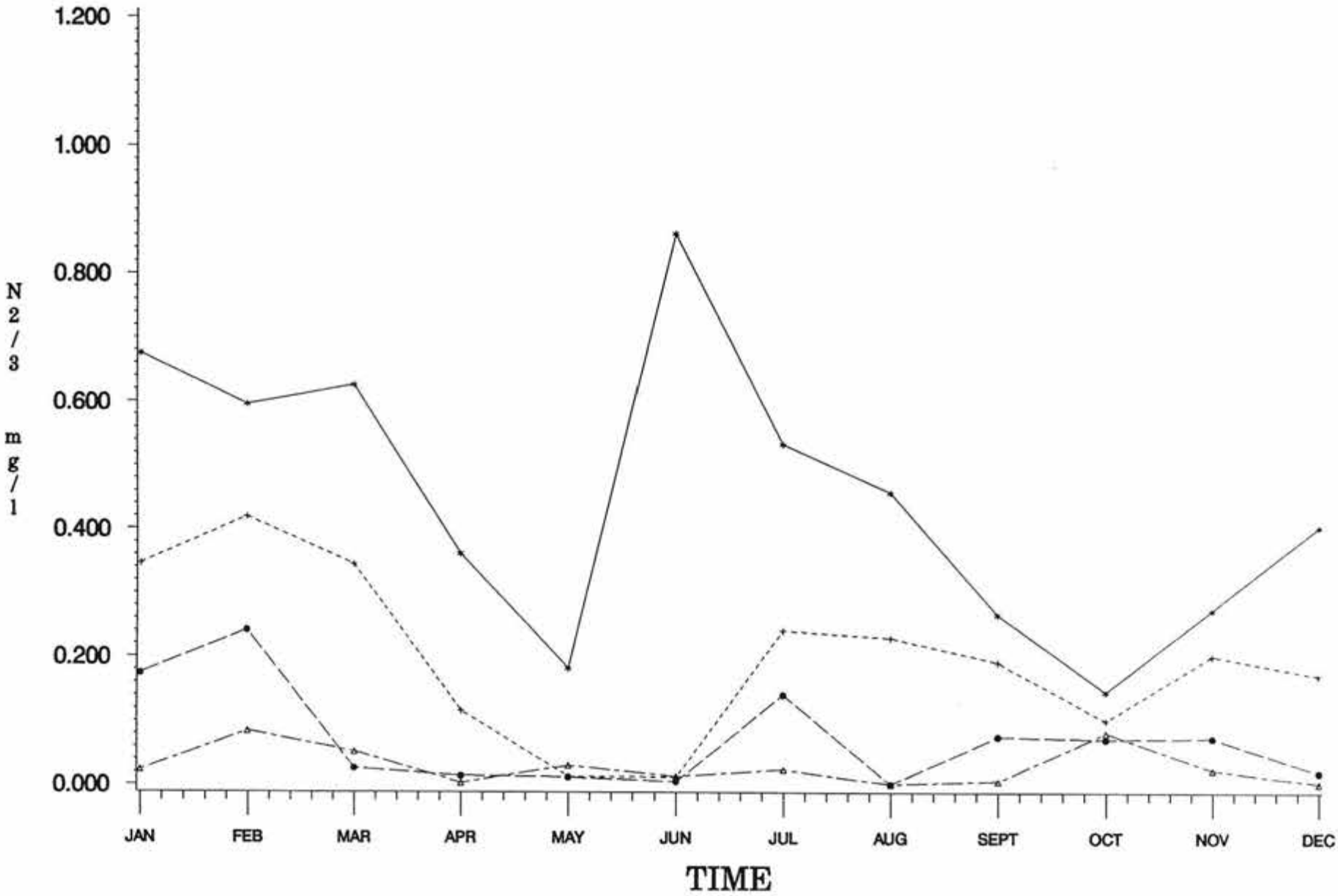


FIGURE 2.3.5

CHARLOTTE HARBOR 1994

Ortho – Phosphorus

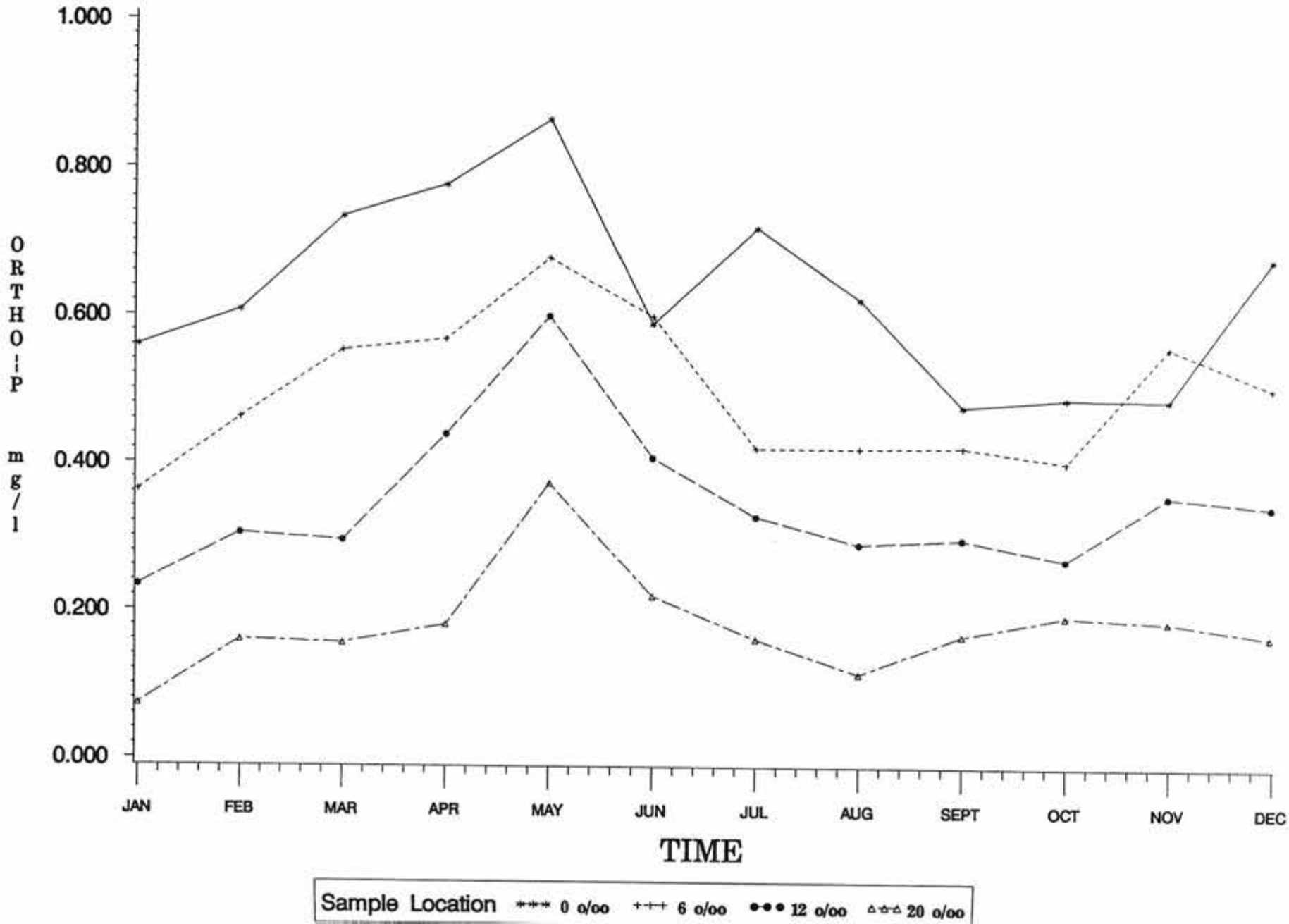
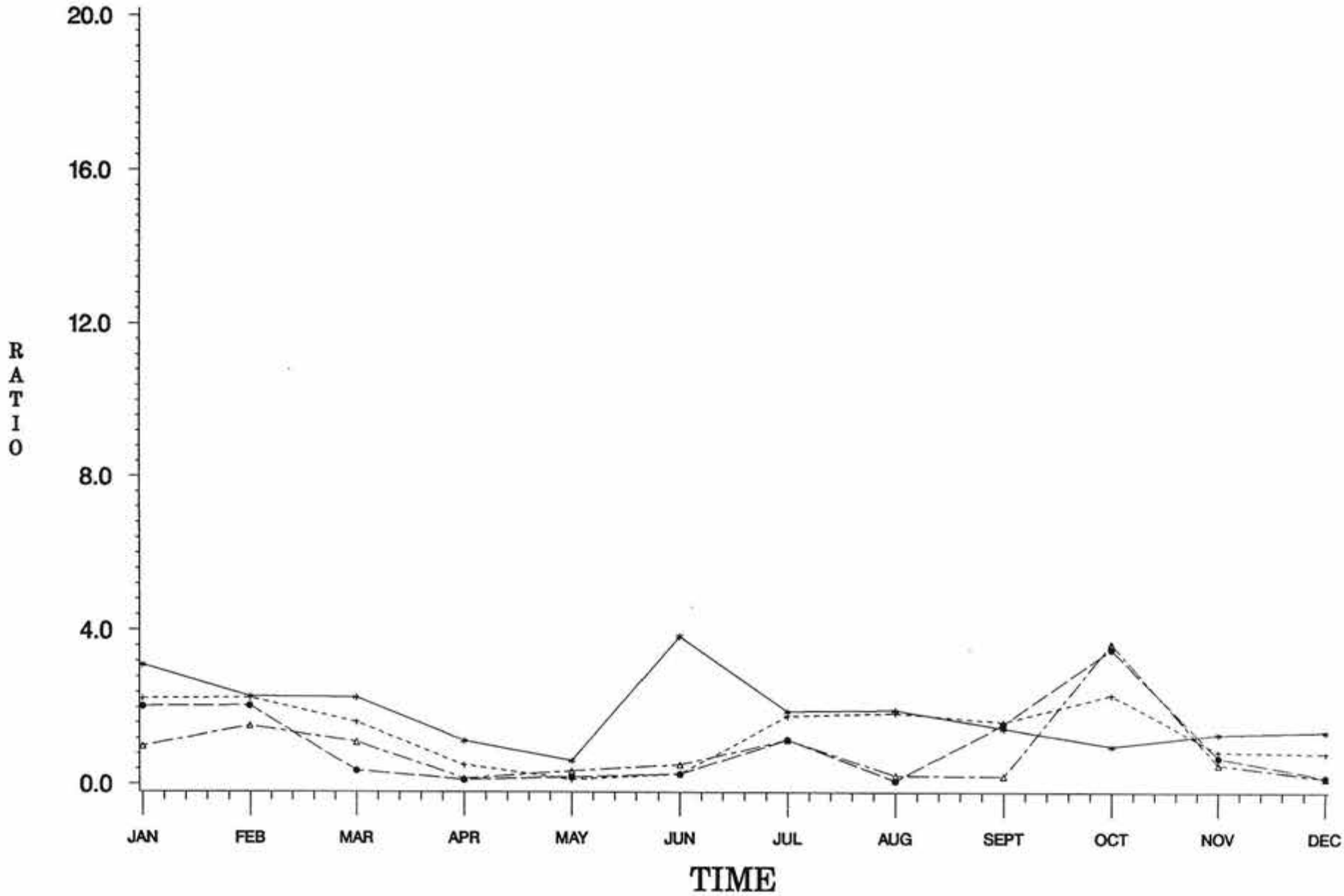


FIGURE 2.3.6

CHARLOTTE HARBOR 1994

Atomic Nitrogen/Phosphorus Ratio

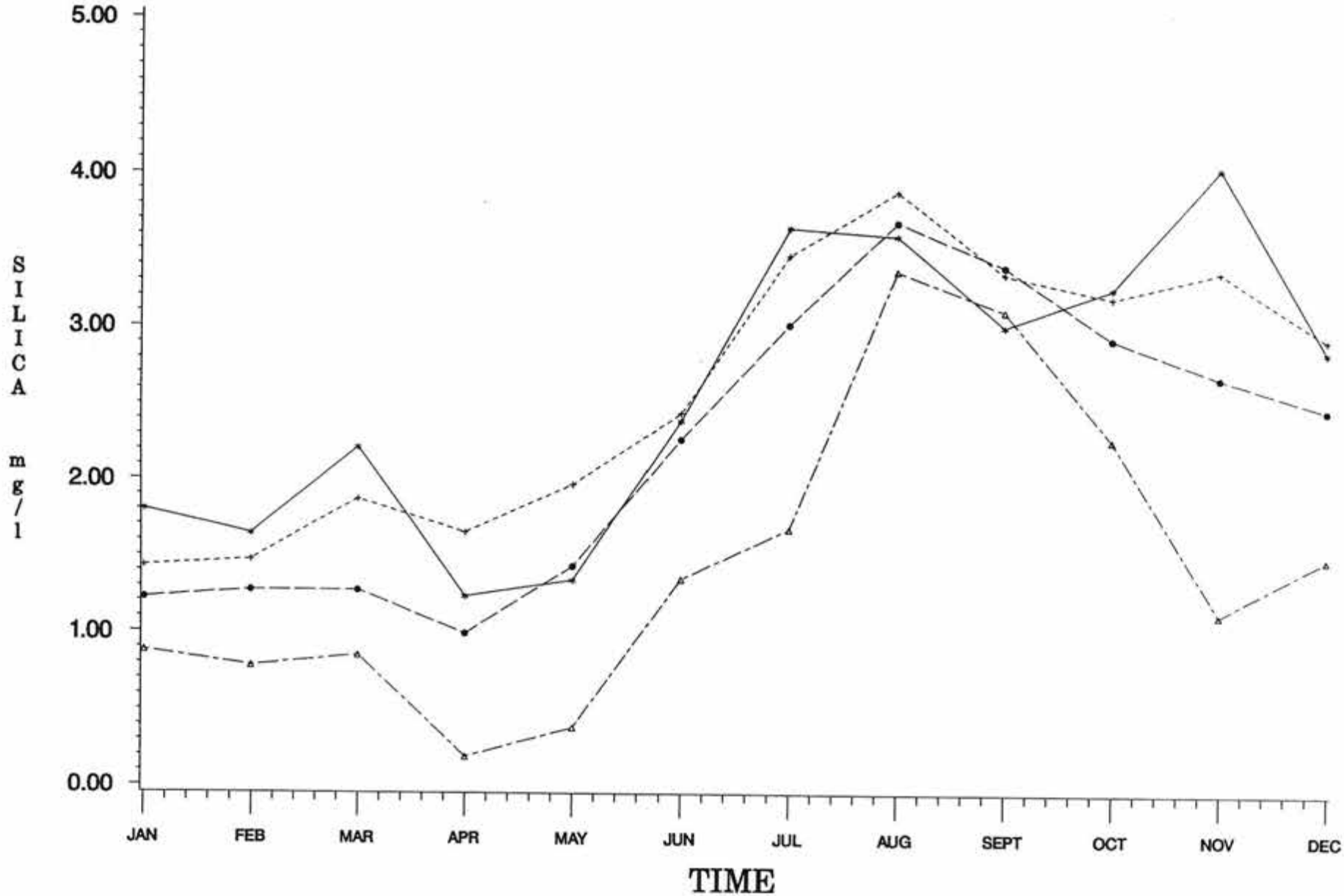


Sample Location *** 0 o/oo +++ 6 o/oo ••• 12 o/oo △△△ 20 o/oo

FIGURE 2.3.7

CHARLOTTE HARBOR 1994

Silica



Sample Location *** 0 o/oo +++ 6 o/oo ••• 12 o/oo △△△ 20 o/oo

FIGURE 2.3.8

CHARLOTTE HARBOR 1994

Carbon Uptake mg C/m3/hr

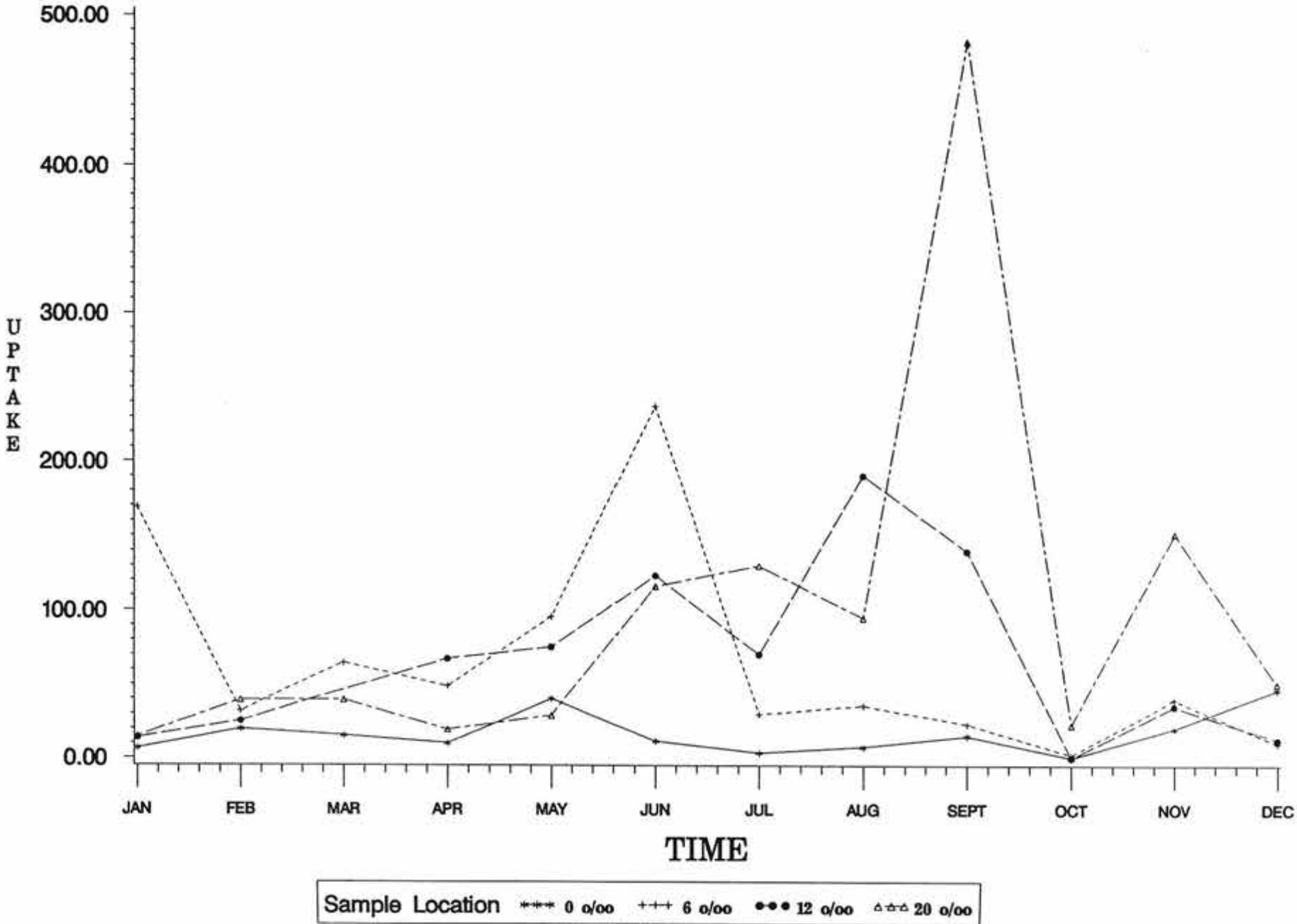


FIGURE 2.3.9

CHARLOTTE HARBOR 1994

Carbon Uptake mg C/m3/Einstein

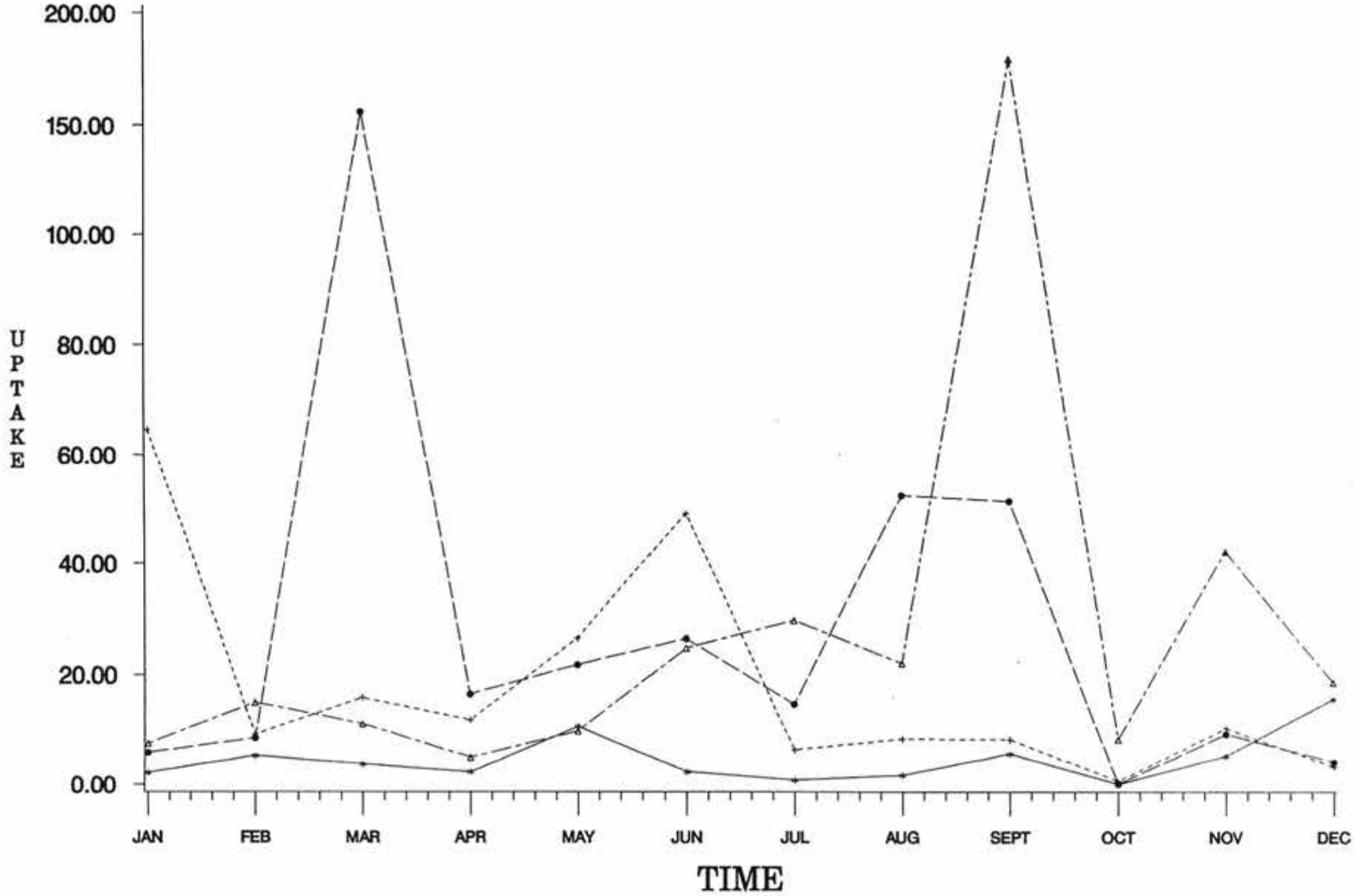


FIGURE 2.3.10

CARBON UPTAKE (mgC/m3/Einstein), BY DATE AND STATION

CHARLOTTE HARBOR 1994

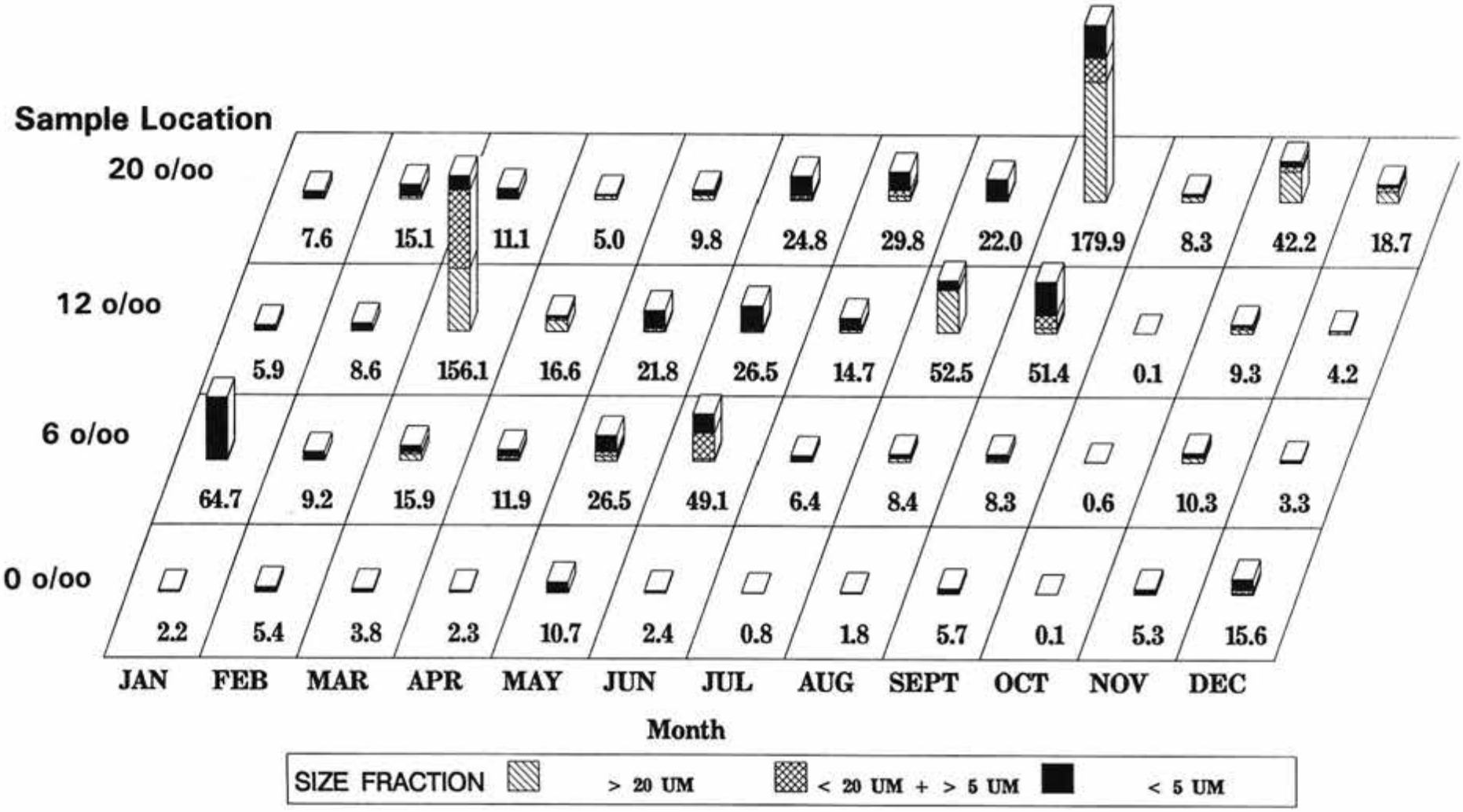


FIGURE 2.3.11

PERCENT CARBON UPTAKE AMONG SIZE FRACTIONS, BY DATE AND STATION

CHARLOTTE HARBOR 1994

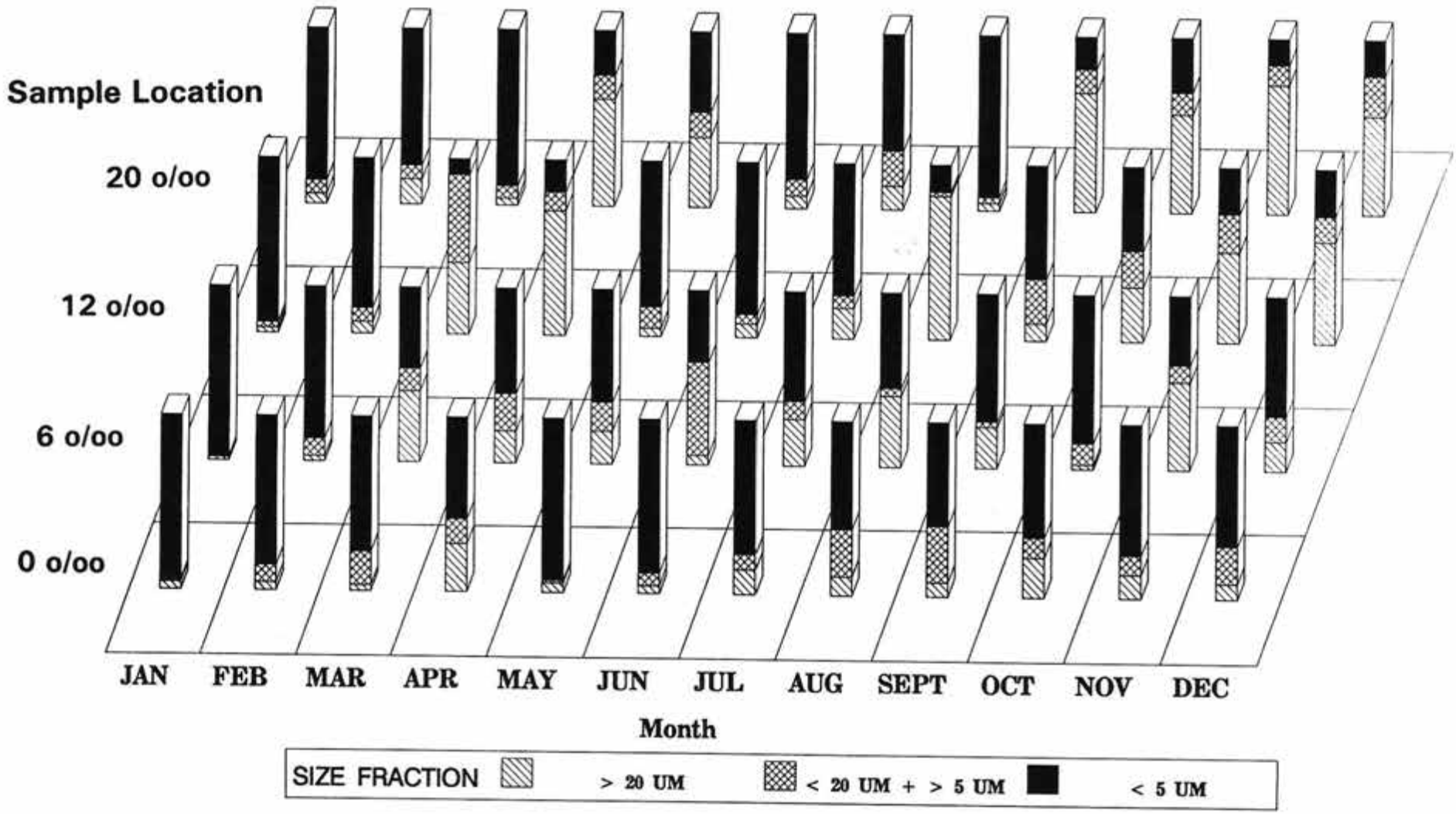


FIGURE 2.3.12

CHARLOTTE HARBOR 1994

Chlorophyll a

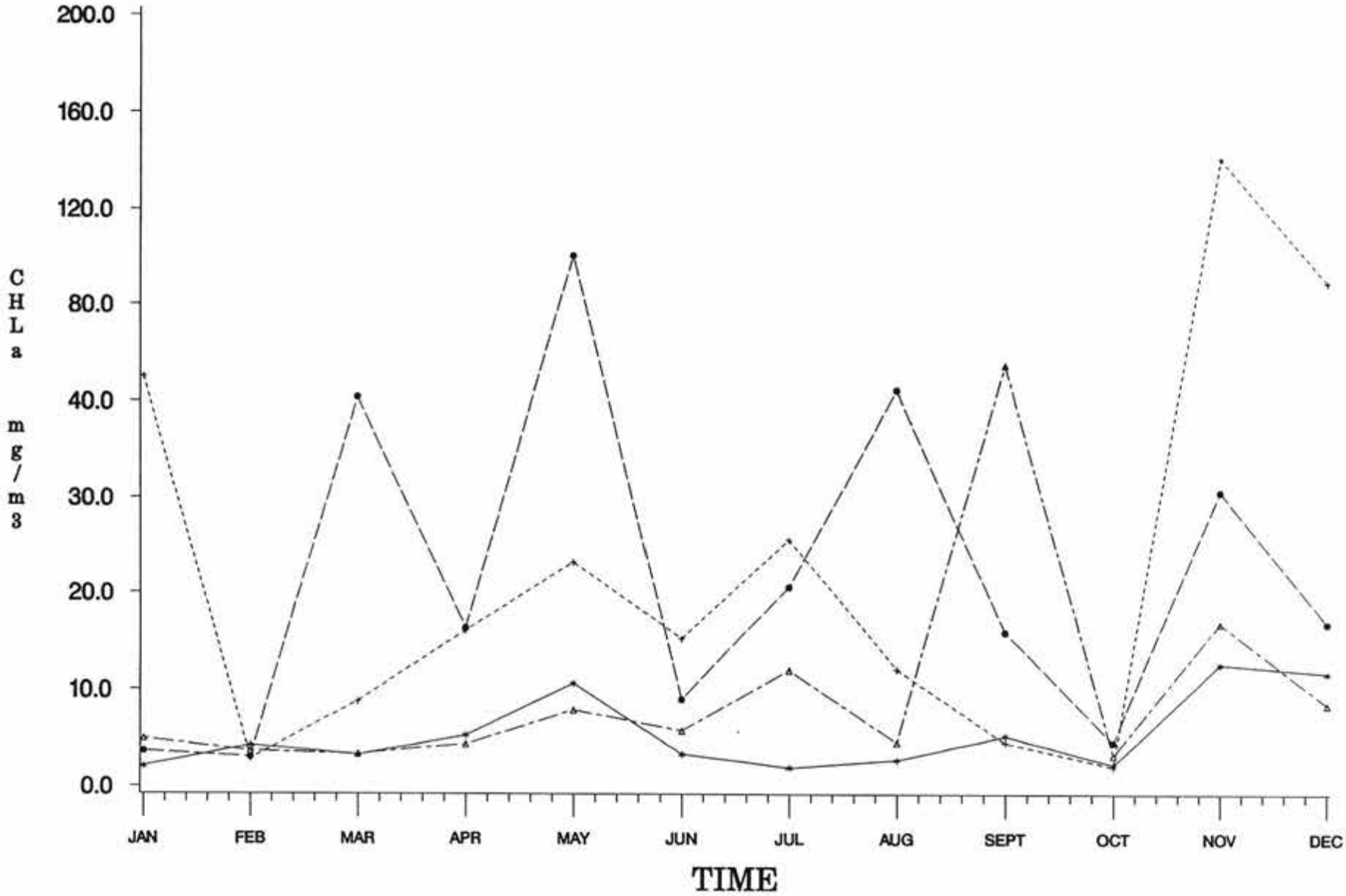


FIGURE 2.3.13

CHLOROPHYLL a (MG/M3), BY MONTH AND STATION

CHARLOTTE HARBOR 1994

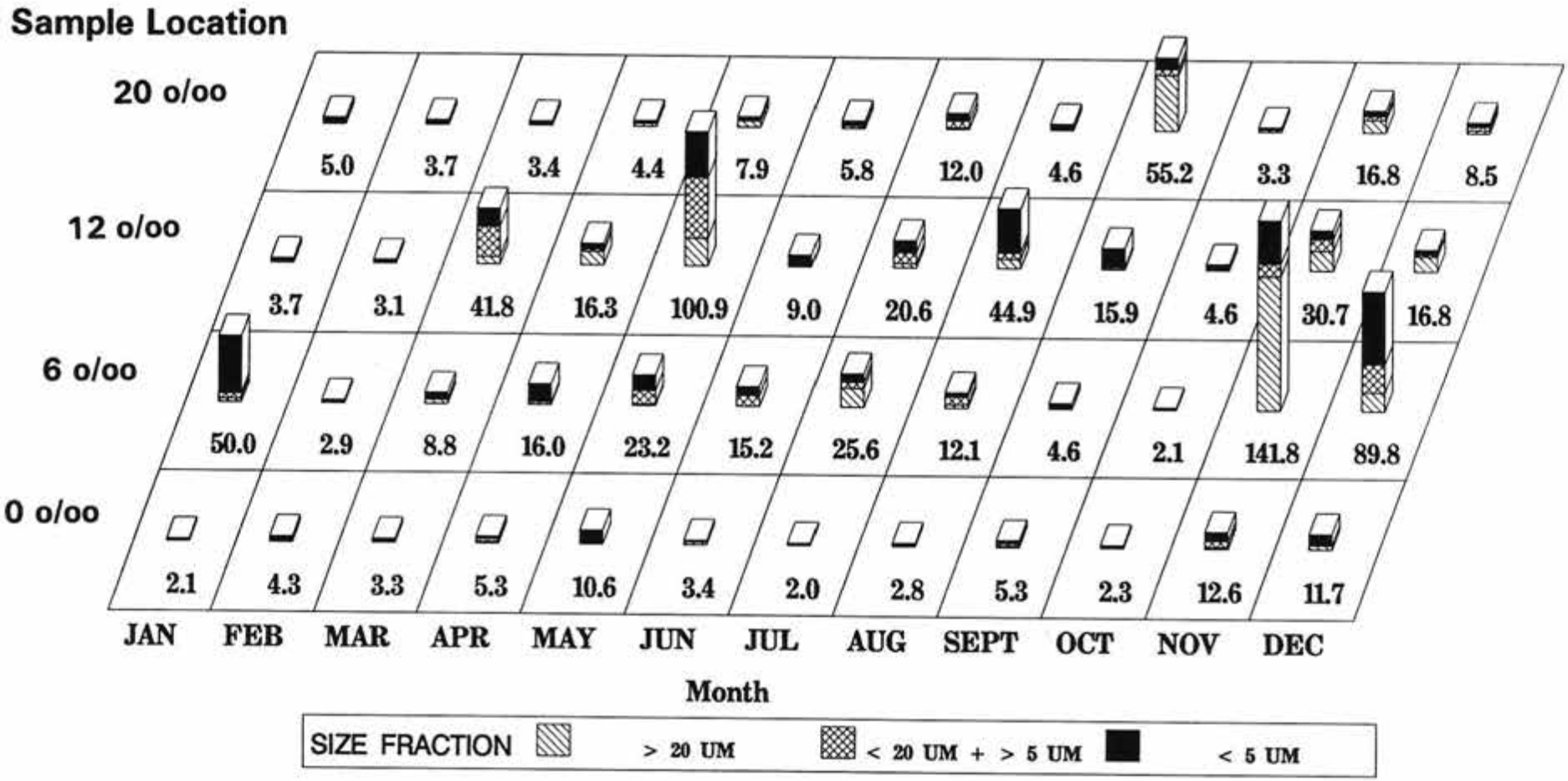


FIGURE 2.3.14

PERCENT CHLOROPHYLL a AMONG SIZE FRACTIONS, BY MONTH AND STATION

CHARLOTTE HARBOR 1994

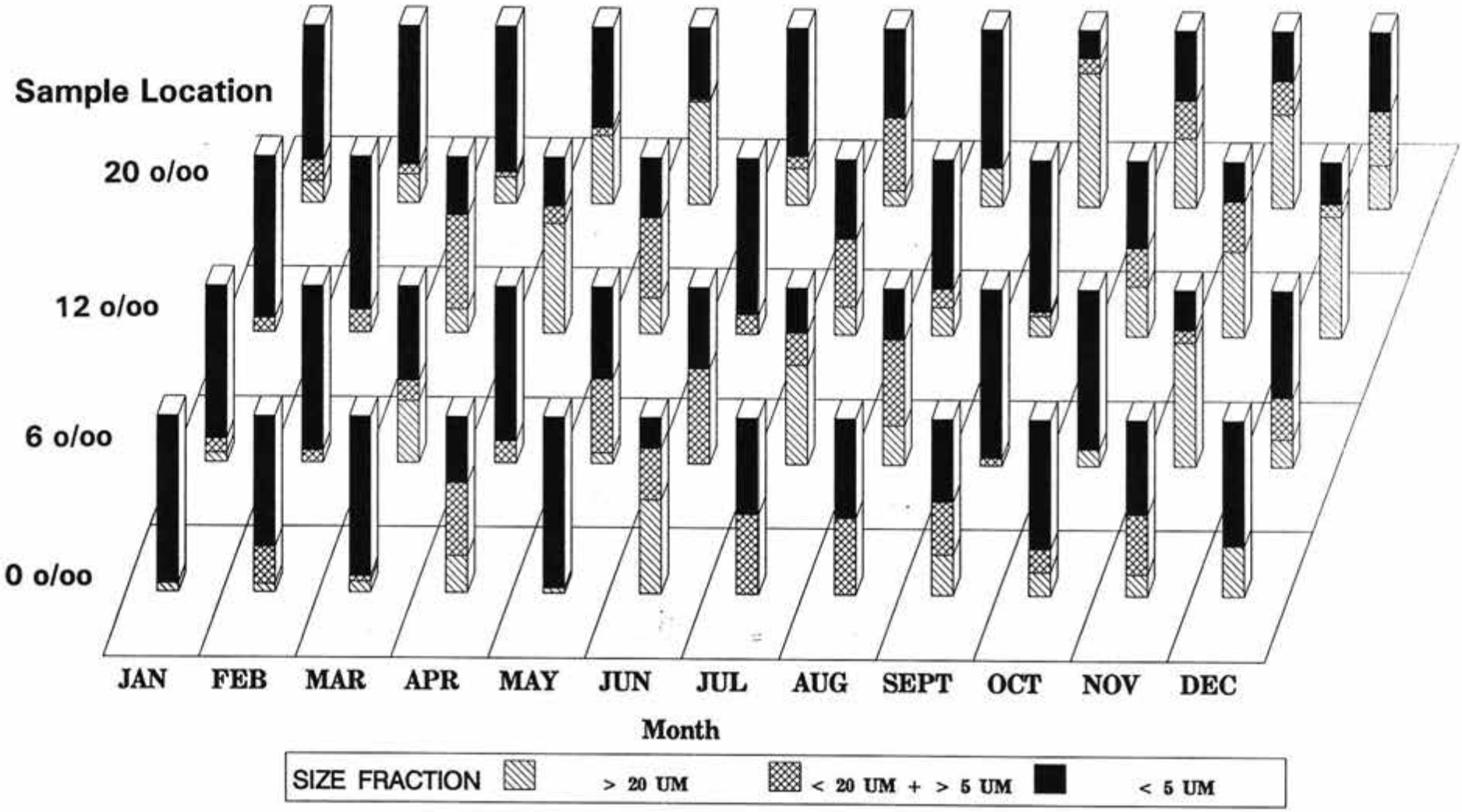


TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
DATE: January 12, 1994								
STATION 101	TIME 12:35							
		0.0	20.09	7.73	7.21	226.	0.059	< 0.01
		0.5	19.18	7.43	7.19	272.	1.720	0.65
		1.0	18.99	7.39	7.18	279.	2.170	0.90
		1.5	18.91	7.38	7.21	285.	2.350	1.00
		2.0	18.81	7.31	7.22	291.	2.660	1.17
		2.3	18.75	7.16	7.22	295.	3.090	1.41
STATION 102	TIME 12:09							
		0.0	20.20	8.58	7.62	226.	12.090	6.71
		0.5	19.60	8.07	7.66	242.	12.780	7.13
		1.0	19.32	7.49	7.59	251.	13.330	7.48
		1.3	19.27	7.10	7.60	259.	14.700	8.34
STATION 103	TIME 11:31							
		0.0	20.98	7.02	7.79	298.	21.900	13.00
		0.5	19.45	6.99	7.70	295.	22.100	13.13
		1.0	19.25	6.93	7.71	294.	22.100	13.13
		1.5	19.13	6.87	7.71	294.	22.400	13.33
		2.0	18.89	6.78	7.73	294.	25.100	15.14
		2.5	18.84	6.67	7.73	294.	25.600	15.48
STATION 104	TIME 10:46							
		0.0	18.76	7.37	7.82	285.	37.700	23.88
		0.5	18.03	7.28	7.80	284.	38.900	24.73
		1.0	17.76	7.22	7.89	288.	40.100	25.59
		1.5	17.70	7.17	7.89	290.	40.400	25.80
		2.0	17.66	7.16	7.89	291.	40.600	25.95
		2.5	17.62	7.13	7.89	291.	41.300	26.45
		3.0	17.60	7.08	7.88	293.	40.900	26.16
		3.3	17.58	7.06	7.88	295.	40.900	26.16
DATE: February 09, 1994								
STATION 101	TIME 11:30							
		0.0	21.61	7.28	7.46	142.	0.599	0.05
		0.5	21.43	6.96	7.27	172.	0.594	0.04
		1.0	21.34	6.87	7.18	191.	0.582	0.04
		1.5	21.27	6.74	7.10	210.	0.561	0.03
		2.1	21.26	6.69	7.06	221.	0.559	0.02

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
STATION 102	TIME 11:05							
		0.0	22.42	7.23	7.34	153.	10.860	5.95
		0.5	22.36	7.08	7.36	165.	10.890	5.97
		1.0	22.14	6.78	7.36	177.	11.330	6.24
		1.6	21.85	6.68	7.36	185.	12.320	6.85
STATION 103	TIME 10:42							
		0.0	22.21	7.12	7.49	155.	18.400	10.71
		0.5	22.16	6.85	7.53	164.	18.600	10.84
		1.0	21.89	6.78	7.57	173.	21.700	12.87
		1.5	21.81	6.64	7.64	179.	24.700	14.87
		2.0	21.72	6.57	7.60	185.	25.200	15.21
		2.6	21.69	6.51	7.68	189.	26.100	15.82
STATION 104	TIME 10:15							
		0.0	21.64	7.38	7.80	162.	31.200	19.31
		0.5	21.62	7.32	7.82	170.	31.100	19.24
		1.0	21.40	7.24	7.84	177.	32.100	19.94
		1.5	21.12	7.22	7.87	183.	33.100	20.64
		2.1	20.08	6.77	7.87	191.	40.000	25.52
DATE: March 07, 1994								
STATION 101	TIME 11:40							
		0.0	21.53	6.43	6.81	316.	0.269	< 0.01
		0.5	21.22	6.19	6.68	320.	0.536	0.01
		1.0	20.62	6.08	6.63	329.	0.511	< 0.01
		1.5	20.46	6.07	6.61	326.	0.508	< 0.01
		2.0	20.41	6.03	6.60	328.	0.502	< 0.01
		2.5	20.38	6.03	6.60	329.	0.496	< 0.01
		3.0	20.34	6.01	6.59	332.	0.493	< 0.01
		3.5	20.32	5.97	6.57	334.	0.498	< 0.01
STATION 102	TIME 11:09							
		0.0	21.50	7.58	7.39	366.	8.410	4.47
		0.5	20.99	7.32	7.37	361.	9.050	4.86
		1.0	20.80	7.22	7.41	358.	9.600	5.19
		1.5	20.74	7.06	7.43	356.	10.280	5.60
		1.9	20.75	7.09	7.44	352.	10.380	5.66

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
STATION 103	TIME 10:36							
		0.0	22.20	15.90	8.34	323.	21.200	12.54
		0.5	20.97	7.71	7.87	329.	33.700	21.06
		1.0	20.63	6.93	7.83	329.	36.400	22.96
		1.5	20.59	6.76	7.84	327.	37.900	24.02
		1.9	20.57	6.68	7.86	325.	38.000	24.09
STATION 104	TIME 9:55							
		0.0	20.82	8.08	7.68	411.	31.800	19.73
		0.5	20.55	7.84	7.81	395.	33.500	20.92
		1.0	20.12	7.22	7.88	385.	39.600	25.23
		1.5	20.11	6.22	7.87	381.	43.300	27.89
		2.0	20.09	6.19	7.88	376.	43.400	27.96
		2.5	20.09	6.16	7.89	375.	43.500	28.04
		3.0	20.08	6.16	7.89	373.	43.500	28.04
		3.5	20.08	6.13	7.89	370.	43.600	28.11
DATE: April 04, 1994								
STATION 101	TIME 12:05							
		0.0	23.50	6.55	6.95	235.	0.818	0.16
		0.5	23.54	6.48	6.95	249.	0.816	0.16
		1.1	23.55	6.43	6.94	268.	0.806	0.16
STATION 102	TIME 11:35							
		0.0	23.69	8.29	7.43	217.	12.190	6.77
		0.5	23.54	8.19	7.53	230.	12.800	7.15
		1.0	23.36	7.95	7.54	238.	13.450	7.55
		1.4	23.20	7.92	7.55	245.	13.610	7.65
STATION 103	TIME 11:18							
		0.0	22.79	8.15	7.80	199.	20.900	12.34
		0.5	22.79	8.11	7.86	207.	21.000	12.41
		1.0	22.74	7.95	7.88	214.	21.000	12.41
		1.5	22.75	7.68	7.88	222.	21.400	12.67

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

STATION	TIME	DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
104	10:58							
		0.0	23.86	7.87	8.01	215.	35.100	22.04
		0.5	23.36	7.99	8.14	227.	36.100	22.74
		1.0	22.98	7.87	8.11	235.	39.000	24.80
		1.5	23.07	7.13	8.06	241.	40.100	25.59
		2.0	23.17	6.66	8.03	246.	40.500	25.88
		2.5	23.08	5.92	7.96	250.	41.600	26.67

DATE: May 17, 1994

STATION	TIME							
101	11:57							
		0.0	30.21	5.45	6.75	292.	0.734	0.12
		0.5	30.14	4.46	6.70	303.	0.926	0.22
		1.0	29.66	4.41	6.60	308.	1.023	0.27
		1.5	29.55	4.37	6.55	314.	1.122	0.33
STATION	TIME							
102	11:37							
		0.0	29.70	5.27	6.98	264.	12.380	6.89
		0.5	29.61	4.93	6.94	268.	12.530	6.98
		1.0	29.59	4.90	6.97	271.	12.560	7.00
		1.5	29.58	4.96	6.99	273.	12.590	7.02
		2.0	29.59	5.58	7.02	276.	12.630	7.04
		2.6	29.56	5.26	6.92	192.	12.720	7.10
STATION	TIME							
103	11:19							
		0.0	30.11	5.90	7.55	257.	22.500	13.40
		0.5	29.78	5.33	7.59	258.	23.600	14.13
		1.0	29.63	5.18	7.62	259.	23.900	14.33
		1.5	29.46	5.05	7.64	268.	24.600	14.80
		2.1	29.36	4.93	7.65	262.	24.900	15.01
STATION	TIME							
104	10:50							
		0.0	30.20	6.50	7.71	265.	32.300	20.08
		0.5	30.05	6.34	7.85	257.	32.800	20.43
		1.0	30.04	6.39	7.92	255.	33.400	20.85
		1.6	30.07	6.32	7.99	253.	33.800	21.13

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

	DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
DATE: June 09, 1994							
STATION TIME 101 12:55							
	0.0	30.18	5.36	7.13	227.	0.471	< 0.01
	0.5	29.60	5.17	7.09	234.	0.469	< 0.01
	1.0	29.47	4.87	7.06	234.	0.469	< 0.01
	1.3	28.95	4.64	7.02	242.	0.460	< 0.01
STATION TIME 102 12:27							
	0.0	29.92	7.26	7.37	219.	12.870	7.19
	0.5	29.92	7.10	7.38	220.	12.900	7.21
	1.0	29.75	6.20	7.26	225.	13.830	7.79
	1.5	29.17	5.42	7.12	233.	15.300	8.72
	2.0	29.15	5.29	7.14	233.	16.900	9.74
	2.6	29.10	5.20	7.15	235.	17.900	10.38
STATION TIME 103 11:50							
	0.0	29.44	6.43	7.42	210.	21.800	12.93
	0.5	29.42	6.37	7.42	213.	21.900	13.00
	1.0	29.20	6.10	7.39	218.	22.700	13.53
	1.5	29.02	5.85	7.36	220.	23.700	14.20
	2.1	28.75	5.03	7.31	224.	24.300	14.60
STATION TIME 104 11:24							
	0.0	30.01	6.18	7.55	214.	33.500	20.92
	0.5	29.60	6.11	7.58	212.	34.700	21.76
	1.0	29.66	6.08	7.60	213.	34.800	21.83
	1.5	29.77	6.11	7.61	214.	35.000	21.97
	2.0	29.85	6.13	7.62	217.	35.000	21.97
	2.5	29.75	5.63	7.59	220.	35.600	22.39
	2.8	29.58	5.40	7.57	222.	35.900	22.60
DATE: July 14, 1994							
STATION TIME 101 12:38							
	0.0	30.39	5.13	6.35	290.	0.364	< 0.01
	0.5	30.33	5.00	6.35	294.	0.364	< 0.01
	1.0	30.29	5.11	6.34	297.	0.364	< 0.01
	1.5	30.28	5.08	6.34	300.	0.364	< 0.01
	2.0	30.27	5.08	6.33	303.	0.365	< 0.01
	2.4	30.26	5.09	6.36	304.	0.365	< 0.01

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
STATION 102	TIME 11:54							
		0.0	29.87	4.41	6.98	237.	12.680	7.07
		0.5	29.54	3.79	6.96	240.	14.730	8.36
		1.0	29.39	2.87	6.97	243.	16.500	9.48
		1.5	29.69	0.64	6.91	246.	24.100	14.47
		2.1	29.77	0.43	6.94	243.	25.600	15.48
STATION 103	TIME 11:21							
		0.0	29.27	7.26	7.49	230.	20.500	12.08
		0.5	29.22	7.00	7.49	232.	21.400	12.67
		1.0	28.88	6.07	7.47	232.	23.400	14.00
		1.5	29.25	3.68	7.44	235.	29.800	18.35
		2.0	29.50	2.94	7.45	235.	35.200	22.11
		2.5	29.53	2.68	7.45	235.	35.900	22.60
STATION 104	TIME 10:48							
		0.0	29.20	5.76	7.60	222.	34.000	21.27
		0.5	29.19	5.72	7.64	223.	34.000	21.27
		1.0	29.12	4.67	7.62	225.	35.100	22.04
		1.5	29.12	4.00	7.60	226.	36.600	23.10

DATE: August 17, 1994

STATION 101	TIME 11:59							
		0.0	26.74	5.36	6.72	204.	0.429	< 0.01
		0.5	26.51	5.14	6.53	231.	0.407	< 0.01
		1.0	26.39	5.04	6.49	241.	0.404	< 0.01
		1.5	26.37	4.97	6.48	255.	0.401	< 0.01
		2.0	26.30	4.96	6.47	263.	0.399	< 0.01
		2.4	26.31	4.92	6.47	270.	0.397	< 0.01
STATION 102	TIME 11:33							
		0.0	27.91	5.76	7.29	190.	12.310	6.84
		0.5	27.83	5.62	7.32	198.	12.480	6.95
		1.0	27.55	4.00	7.31	205.	16.500	9.48
		1.5	27.62	3.65	7.37	206.	22.400	13.33
		2.0	27.63	3.62	7.39	205.	24.200	14.54
		2.4	27.62	3.59	7.40	205.	24.100	14.47

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
STATION 103	TIME 11:00							
		0.0	27.27	9.79	7.94	171.	21.200	12.54
		0.5	27.27	9.64	8.02	189.	21.300	12.60
		1.0	27.12	7.60	7.88	203.	23.100	13.80
		1.5	27.02	6.45	7.77	211.	25.200	15.21
		2.0	27.27	5.69	7.71	217.	26.600	16.16
		2.5	27.39	4.32	7.60	221.	27.200	16.56
STATION 104	TIME 11:30							
		0.0	30.35	6.76	7.65	246.	32.600	20.29
		0.5	29.54	6.29	7.63	249.	35.900	22.60
		1.0	28.85	6.04	7.64	250.	36.500	23.03
		1.5	28.60	5.91	7.64	251.	36.700	23.17
		2.0	28.51	6.04	7.66	253.	37.400	23.66
		2.5	28.49	6.06	7.66	256.	37.800	23.95
		3.1	28.48	6.03	7.66	257.	37.800	23.95

DATE: September 08, 1994

STATION 101	TIME 11:16							
		0.0	28.32	4.86	6.10	252.	0.485	< 0.01
		0.5	28.34	4.80	6.10	270.	0.484	< 0.01
		1.0	28.31	4.75	6.08	283.	0.483	< 0.01
		1.5	28.30	4.71	6.08	293.	0.486	< 0.01
		2.0	28.31	4.69	6.08	303.	0.488	< 0.01
		2.3	28.30	4.65	6.07	309.	0.489	< 0.01
STATION 102	TIME 10:40							
		0.0	29.40	3.48	6.67	232.	11.370	6.26
		0.5	29.35	3.41	6.72	241.	11.480	6.33
		1.0	29.29	3.31	6.75	249.	11.730	6.49
		1.5	29.23	3.26	6.79	252.	11.870	6.57
		2.0	29.22	3.00	6.80	255.	12.270	6.82
		2.4	29.14	2.81	6.87	257.	14.190	8.02
STATION 103	TIME 12:39							
		0.0	30.77	3.87	6.99	452.	20.400	12.01
		0.5	30.64	3.46	7.00	443.	20.700	12.21
		1.0	29.91	1.82	6.98	441.	23.500	14.07
		1.5	29.69	1.31	7.00	437.	26.300	15.95
		2.0	29.73	0.45	7.08	426.	29.800	18.35
		2.5	29.77	0.15	7.09	421.	30.900	19.11
		3.1	29.73	0.07	7.15	276.	31.700	19.66

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

STATION	TIME	DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
104	11:02							
		0.0	30.01	5.13	7.62	408.	32.400	20.15
		0.5	29.95	4.52	7.62	402.	32.500	20.22
		1.0	29.63	4.02	7.55	404.	33.800	21.13
		1.5	29.93	4.06	7.61	396.	35.300	22.18
		2.0	29.96	4.06	7.61	393.	36.600	23.10
		2.5	29.88	4.03	7.61	391.	38.000	24.09
		2.9	29.92	4.03	7.56	394.	40.100	25.59

DATE: October 04, 1994

STATION	TIME							
101	12:19							
		0.0	27.85	5.41	6.57	270.	0.983	0.25
		0.5	27.66	5.26	6.63	277.	1.920	0.76
		1.0	27.15	5.61	6.78	282.	4.180	2.02
		1.5	27.26	3.94	6.93	281.	7.510	3.94
		2.0	27.53	2.66	7.00	274.	19.400	11.36
		2.6	27.65	2.45	7.03	270.	24.300	14.60
STATION	TIME							
102	11:39							
		0.0	27.75	6.58	7.45	220.	11.950	6.62
		0.5	27.72	6.37	7.52	225.	17.200	9.93
		1.0	27.72	6.21	7.57	232.	23.600	14.13
		1.5	27.64	6.18	7.58	234.	27.400	16.70
		2.0	27.64	6.15	7.60	237.	28.700	17.59
		2.5	27.64	6.05	7.60	239.	28.800	17.66
		3.0	27.64	6.03	7.62	266.	29.200	17.93
		3.2	27.65	5.79	7.58	267.	29.400	18.07
STATION	TIME							
103	11:10							
		0.0	27.67	5.79	7.59	241.	23.000	13.73
		0.5	27.58	5.46	7.61	244.	26.300	15.95
		1.0	27.57	5.27	7.61	246.	26.800	16.29
		1.5	27.61	4.82	7.61	248.	29.100	17.86
		2.0	27.64	4.71	7.62	250.	29.900	18.41
		2.5	27.65	4.69	7.63	251.	29.900	18.41
		3.0	27.65	4.67	7.63	251.	30.100	18.55
		3.5	27.65	4.69	7.64	252.	30.200	18.62

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

STATION	TIME	DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
104	12:09							
		0.0	28.10	5.80	7.38	229.	34.400	21.55
		0.5	28.04	5.53	7.50	225.	34.700	21.76
		1.0	27.95	5.49	7.54	224.	34.700	21.76
		1.5	27.92	5.40	7.56	224.	34.900	21.90
		2.0	27.83	5.35	7.56	226.	35.600	22.39
		2.5	27.78	5.33	7.55	227.	35.700	22.46
		3.0	27.80	5.31	7.55	228.	35.800	22.53
		3.5	27.80	5.29	7.55	229.	36.000	22.67
		3.8	27.80	5.27	7.54	229.	36.100	22.74

DATE: November 03, 1994

STATION	TIME	DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
101	11:00							
		0.0	24.66	6.74	7.18	297.	0.713	0.11
		0.5	24.65	6.62	7.13	303.	0.747	0.12
		1.0	24.68	6.99	7.22	306.	0.927	0.22
		1.3	24.64	6.96	7.23	310.	0.995	0.26
102	10:36							
		0.0	24.89	6.78	7.21	292.	10.700	5.85
		0.5	24.84	5.61	7.14	299.	14.410	8.15
		1.0	24.88	4.43	7.02	305.	16.900	9.74
		1.5	24.96	4.54	7.15	303.	20.900	12.34
		2.0	25.46	3.69	7.21	303.	27.500	16.77
		2.3	25.64	3.65	7.22	302.	29.600	18.21
103	10:24							
		0.0	24.80	6.66	7.39	288.	21.600	12.80
		0.5	24.82	6.47	7.41	289.	21.800	12.93
		1.0	25.92	3.73	7.35	282.	30.600	18.90
		1.3	25.94	3.73	7.35	273.	30.700	18.97
104	10:02							
		0.0	25.20	6.43	7.72	262.	32.100	19.94
		0.5	25.19	6.30	7.73	262.	32.100	19.94
		1.0	25.18	6.25	7.75	261.	32.100	19.94
		1.5	25.19	6.14	7.77	261.	32.200	20.01
		2.0	25.23	5.60	7.76	261.	33.200	20.71
		2.5	25.66	4.78	7.76	261.	33.900	21.20
		2.8	25.86	4.59	7.75	260.	35.100	22.04

TABLE 2.3.6
CHARLOTTE HARBOR PRIMARY PRODUCTION
IN SITU HYDROLAB DATA (continued)

		DEPTH (m)	TEMP (c)	D.O. (ppm)	pH	ORP (mv)	COND (mmho)	SALINITY (o/oo)
DATE: December 07, 1994								
STATION 101	TIME 12:15							
		0.0	23.92	6.23	6.85	241.	0.340	< 0.01
		0.5	23.56	6.15	6.77	266.	0.340	< 0.01
		1.0	23.51	6.05	6.72	281.	0.339	< 0.01
		1.5	23.48	6.69	6.69	295.	0.337	< 0.01
		2.0	23.47	5.98	6.67	306.	0.337	< 0.01
STATION 102	TIME 11:52							
		0.0	25.56	8.51	7.74	228.	10.600	5.79
		0.5	24.18	4.20	7.42	248.	16.300	9.35
		1.0	24.13	2.11	7.38	257.	25.600	15.48
		1.3	24.12	1.55	7.39	256.	29.000	17.80
STATION 103	TIME 11:25							
		0.0	24.00	8.14	8.01	189.	23.400	14.00
		0.5	24.00	4.39	7.83	217.	27.700	16.91
		1.0	23.99	3.11	7.65	225.	31.900	19.80
		1.5	24.60	4.16	7.87	225.	35.700	22.46
		2.0	24.28	3.95	7.92	226.	36.100	22.74
		2.5	24.29	3.84	7.93	228.	36.400	22.96
STATION 104	TIME 10:54							
		0.0	24.19	8.06	8.14	227.	32.400	20.15
		0.5	23.81	7.77	8.21	230.	33.000	20.57
		1.0	23.69	6.69	8.15	237.	33.800	21.13
		1.5	24.03	5.10	8.02	244.	36.400	22.96
		2.0	24.07	4.94	8.04	246.	37.400	23.66
		2.5	24.06	4.92	8.06	247.	37.500	23.74

TABLE 2.3.7
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 32 Sample Date: 01/12/94
Station: 101

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		74.400	mg/L
Minerals				
	CHLORIDE		241.100	mg/L
Esthetic Properties				
	COLOR (Color Units)		87.500	Co-Pt
	TURBIDITY		2.250	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.675	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.085	mg/L
	TOT.KJEL.N		1.128	mg/L
	ORTHOPHOSPHATE P04-P		0.560	mg/L
	TOTAL PHOSPHORUS		0.579	mg/L
	SILICA-Si02		1.795	mg/L
	INORGANIC CARBON		11.100	mg/L
	TOTAL ORGANIC CARBON		16.850	mg/L
	DISSOLVED ORGANIC CARBON		16.670	mg/L
	Orthophosphate (Filtered)		0.541	mg/L
Trace Metals				
	IRON(AA)		0.137	mg/L
Extractables				
	Chla-A (F) unc.		2.125	mg/cuM
	Chla-A (F) corr.		2.107	mg/cuM
	Chla-A (F) pheo.	<	0.250	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 33 Sample Date: 01/12/94
Station: 102

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		90.400	mg/L
Minerals				
	CHLORIDE		3310.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		64.000	Co-Pt
	TURBIDITY		4.900	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.346	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		1.669	mg/L
	ORTHOPHOSPHATE P04-P		0.363	mg/L
	TOTAL PHOSPHORUS		0.469	mg/L
	SILICA-Si02		1.430	mg/L
	INORGANIC CARBON		14.270	mg/L
	TOTAL ORGANIC CARBON		15.100	mg/L
	DISSOLVED ORGANIC CARBON		14.810	mg/L
	Orthophosphate (Filtered)		0.351	mg/L
Trace Metals				
	IRON(AA)		0.087	mg/L
Extractables				
	Chla-A (F) unc.		50.038	mg/cuM
	Chla-A (F) corr.		72.812	mg/cuM
	Chla-A (F) pheo.		32.932	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 34 Sample Date: 01/12/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	105.800	mg/L
Minerals			
	CHLORIDE	6646.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	46.000	Co-Pt
	TURBIDITY	2.300	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.174	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.034	mg/L
	TOT.KJEL.N	1.006	mg/L
	ORTHOPHOSPHATE P04-P	0.234	mg/L
	TOTAL PHOSPHORUS	0.258	mg/L
	SILICA-Si02	1.220	mg/L
	INORGANIC CARBON	16.060	mg/L
	TOTAL ORGANIC CARBON	13.130	mg/L
	DISSOLVED ORGANIC CARBON	13.110	mg/L
	Orthophosphate (Filtered)	0.224	mg/L
Trace Metals			
	IRON(AA)	0.053	mg/L
Extractables			
	Chla-A (F) unc.	3.747	mg/cuM
	Chla-A (F) corr.	4.118	mg/cuM
	Chla-A (F) pheo.	0.537	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 35 Sample Date: 01/12/94
Station: 104

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		110.500	mg/L
Minerals				
	CHLORIDE		12655.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		27.000	Co-Pt
	TURBIDITY		1.540	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.023	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		0.693	mg/L
	ORTHOPHOSPHATE P04-P		0.073	mg/L
	TOTAL PHOSPHORUS		0.087	mg/L
	SILICA-Si02		0.880	mg/L
	INORGANIC CARBON		17.850	mg/L
	TOTAL ORGANIC CARBON		10.260	mg/L
	DISSOLVED ORGANIC CARBON		10.460	mg/L
	Orthophosphate (Filtered)		0.065	mg/L
Trace Metals				
	IRON(AA)		0.018	mg/L
Extractables				
	Chla-A (F) unc.		4.953	mg/cuM
	Chla-A (F) corr.		5.765	mg/cuM
	Chla-A (F) pheo.		1.173	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 796 Sample Date: 02/09/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	68.740	mg/L
Minerals			
	CHLORIDE	54.950	mg/L
Esthetic Properties			
	COLOR (Color Units)	95.000	Co-Pt
	TURBIDITY	2.900	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.596	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.013	mg/L
	TOT.KJEL.N	0.788	mg/L
	ORTHOPHOSPHATE P04-P	0.608	mg/L
	TOTAL PHOSPHORUS	0.655	mg/L
	SILICA-Si02	1.640	mg/L
	INORGANIC CARBON	15.585	mg/L
	TOTAL ORGANIC CARBON	14.550	mg/L
	DISSOLVED ORGANIC CARBON	14.220	mg/L
	Orthophosphate (Filtered)	0.586	mg/L
Trace Metals			
	IRON(AA)	0.161	mg/L
Extractables			
	Chla-A (F) unc.	4.318	mg/cuM
	Chla-A (F) corr.	4.941	mg/cuM
	Chla-A (F) pheo.	0.901	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 797 Sample Date: 02/09/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	84.500	mg/L
Minerals			
	CHLORIDE	3272.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	75.000	Co-Pt
	TURBIDITY	3.500	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.419	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.037	mg/L
	TOT.KJEL.N	0.881	mg/L
	ORTHOPHOSPHATE P04-P	0.462	mg/L
	TOTAL PHOSPHORUS	0.492	mg/L
	SILICA-Si02	1.470	mg/L
	INORGANIC CARBON	18.140	mg/L
	TOTAL ORGANIC CARBON	12.440	mg/L
	DISSOLVED ORGANIC CARBON	11.910	mg/L
	Orthophosphate (Filtered)	0.432	mg/L
Trace Metals			
	IRON(AA)	0.119	mg/L
Extractables			
	Chla-A (F) unc.	2.858	mg/cuM
	Chla-A (F) corr.	2.676	mg/cuM
	Chla-A (F) pheo.	0.262	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 798 Sample Date: 02/09/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	103.300	mg/L
Minerals			
	CHLORIDE	6016.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	59.000	Co-Pt
	TURBIDITY	3.600	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.241	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.033	mg/L
	TOT.KJEL.N	0.669	mg/L
	ORTHOPHOSPHATE P04-P	0.305	mg/L
	TOTAL PHOSPHORUS	0.331	mg/L
	SILICA-Si02	1.270	mg/L
	INORGANIC CARBON	21.330	mg/L
	TOTAL ORGANIC CARBON	10.810	mg/L
	DISSOLVED ORGANIC CARBON	10.370	mg/L
	Orthophosphate (Filtered)	0.273	mg/L
Trace Metals			
	IRON(AA)	0.094	mg/L
Extractables			
	Chla-A (F) unc.	3.112	mg/cuM
	Chla-A (F) corr.	2.882	mg/cuM
	Chla-A (F) pheo.	0.331	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 799 Sample Date: 02/09/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	112.600	mg/L
Minerals			
	CHLORIDE	10840.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	37.000	Co-Pt
	TURBIDITY	2.300	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.084	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.023	mg/L
	TOT.KJEL.N	0.764	mg/L
	ORTHOPHOSPHATE P04-P	0.160	mg/L
	TOTAL PHOSPHORUS	0.185	mg/L
	SILICA-Si02	0.780	mg/L
	INORGANIC CARBON	22.420	mg/L
	TOTAL ORGANIC CARBON	7.700	mg/L
	DISSOLVED ORGANIC CARBON	7.410	mg/L
	Orthophosphate (Filtered)	0.142	mg/L
Trace Metals			
	IRON(AA)	0.064	mg/L
Extractables			
	Chla-A (F) unc.	3.683	mg/cuM
	Chla-A (F) corr.	2.676	mg/cuM
	Chla-A (F) pheo.	1.456	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 1679 Sample Date: 03/07/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	45.840	mg/L
Minerals			
	CHLORIDE	75.700	mg/L
Esthetic Properties			
	COLOR (Color Units)	181.000	Co-Pt
	TURBIDITY	5.000	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.626	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.103	mg/L
	TOT.KJEL.N	1.087	mg/L
	ORTHOPHOSPHATE P04-P	0.735	mg/L
	TOTAL PHOSPHORUS	0.794	mg/L
	SILICA-Si02	2.210	mg/L
	INORGANIC CARBON	7.387	mg/L
	TOTAL ORGANIC CARBON	22.860	mg/L
	DISSOLVED ORGANIC CARBON	21.890	mg/L
	Orthophosphate (Filtered)	0.708	mg/L
Trace Metals			
	IRON(AA)	0.304	mg/L
Extractables			
	Chla-A (F) unc.	2.950	mg/cuM
	Chla-A (F) corr.	2.756	mg/cuM
	Chla-A (F) pheo.	0.281	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 1680 Sample Date: 03/07/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	75.560	mg/L
Minerals			
	CHLORIDE	2556.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	105.000	Co-Pt
	TURBIDITY	4.000	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.345	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.049	mg/L
	TOT.KJEL.N	1.027	mg/L
	ORTHOPHOSPHATE P04-P	0.554	mg/L
	TOTAL PHOSPHORUS	0.598	mg/L
	SILICA-Si02	1.870	mg/L
	INORGANIC CARBON	13.695	mg/L
	TOTAL ORGANIC CARBON	17.660	mg/L
	DISSOLVED ORGANIC CARBON	17.160	mg/L
	Orthophosphate (Filtered)	0.520	mg/L
Trace Metals			
	IRON(AA)	0.132	mg/L
Extractables			
	Chla-A (F) unc.	5.652	mg/cuM
	Chla-A (F) corr.	7.206	mg/cuM
	Chla-A (F) pheo.	2.247	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 1681 Sample Date: 03/07/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	100.700	mg/L
Minerals			
	CHLORIDE	7496.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	64.000	Co-Pt
	TURBIDITY	6.800	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.026	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.020	mg/L
	TOT.KJEL.N	1.382	mg/L
	ORTHOPHOSPHATE P04-P	0.296	mg/L
	TOTAL PHOSPHORUS	0.378	mg/L
	SILICA-Si02	1.270	mg/L
	INORGANIC CARBON	16.990	mg/L
	TOTAL ORGANIC CARBON	14.260	mg/L
	DISSOLVED ORGANIC CARBON	13.780	mg/L
	Orthophosphate (Filtered)	0.279	mg/L
Trace Metals			
	IRON(AA)	0.051	mg/L
Extractables			
	Chla-A (F) unc.	41.764	mg/cuM
	Chla-A (F) corr.	54.929	mg/cuM
	Chla-A (F) pheo.	19.036	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 1682 Sample Date: 03/07/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	105.500	mg/L
Minerals			
	CHLORIDE	10700.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	41.000	Co-Pt
	TURBIDITY	1.600	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.052	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.024	mg/L
	TOT.KJEL.N	0.661	mg/L
	ORTHOPHOSPHATE P04-P	0.156	mg/L
	TOTAL PHOSPHORUS	0.175	mg/L
	SILICA-Si02	0.845	mg/L
	INORGANIC CARBON	18.740	mg/L
	TOTAL ORGANIC CARBON	11.450	mg/L
	DISSOLVED ORGANIC CARBON	10.530	mg/L
	Orthophosphate (Filtered)	0.143	mg/L
Trace Metals			
	IRON(AA)	0.019	mg/L
Extractables			
	Chla-A (F) unc.	2.875	mg/cuM
	Chla-A (F) corr.	3.404	mg/cuM
	Chla-A (F) pheo.	0.765	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 2490 Sample Date: 04/01/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	80.440	mg/L
Minerals			
	CHLORIDE	109.100	mg/L
Esthetic Properties			
	COLOR (Color Units)	71.000	Co-Pt
	TURBIDITY	3.650	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.361	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.029	mg/L
	TOT.KJEL.N	0.683	mg/L
	ORTHOPHOSPHATE P04-P	0.778	mg/L
	TOTAL PHOSPHORUS	0.803	mg/L
	SILICA-Si02	1.225	mg/L
	INORGANIC CARBON	10.620	mg/L
	TOTAL ORGANIC CARBON	20.100	mg/L
	DISSOLVED ORGANIC CARBON	18.615	mg/L
	Orthophosphate (Filtered)	0.760	mg/L
Trace Metals			
	IRON(AA)	0.137	mg/L
Extractables			
	Chla-A (F) unc.	5.271	mg/cuM
	Chla-A (F) corr.	6.176	mg/cuM
	Chla-A (F) pheo.	1.310	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 2491 Sample Date: 04/01/94
Station: 102

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		73.520	mg/L
Minerals				
	CHLORIDE		3432.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		91.000	Co-Pt
	TURBIDITY		5.300	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.116	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		0.944	mg/L
	ORTHOPHOSPHATE P04-P		0.569	mg/L
	TOTAL PHOSPHORUS		0.580	mg/L
	SILICA-Si02		1.650	mg/L
	INORGANIC CARBON		9.503	mg/L
	TOTAL ORGANIC CARBON		20.505	mg/L
	DISSOLVED ORGANIC CARBON		19.700	mg/L
	Orthophosphate (Filtered)		0.539	mg/L
Trace Metals				
	IRON(AA)		0.156	mg/L
Extractables				
	Chla-A (F) unc.		14.112	mg/cuM
	Chla-A (F) corr.		18.111	mg/cuM
	Chla-A (F) pheo.		5.782	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 2492 Sample Date: 04/01/94
Station: 103

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		91.700	mg/L
Minerals				
	CHLORIDE		6404.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		71.000	Co-Pt
	TURBIDITY		6.300	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.014	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		1.101	mg/L
	ORTHOPHOSPHATE P04-P		0.440	mg/L
	TOTAL PHOSPHORUS		0.448	mg/L
	SILICA-Si02		0.985	mg/L
	INORGANIC CARBON		10.580	mg/L
	TOTAL ORGANIC CARBON		19.710	mg/L
	DISSOLVED ORGANIC CARBON		19.080	mg/L
	Orthophosphate (Filtered)		0.397	mg/L
Trace Metals				
	IRON(AA)		0.095	mg/L
Extractables				
	Chla-A (F) unc.		16.317	mg/cuM
	Chla-A (F) corr.		23.353	mg/cuM
	Chla-A (F) pheo.		10.174	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 2493 Sample Date: 04/01/94
Station: 104

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		100.600	mg/L
Minerals				
	CHLORIDE		10240.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		48.000	Co-Pt
	TURBIDITY		1.370	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.003	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		0.709	mg/L
	ORTHOPHOSPHATE P04-P		0.181	mg/L
	TOTAL PHOSPHORUS		0.186	mg/L
	SILICA-Si02		0.190	mg/L
	INORGANIC CARBON		11.920	mg/L
	TOTAL ORGANIC CARBON		17.280	mg/L
	DISSOLVED ORGANIC CARBON		17.460	mg/L
	Orthophosphate (Filtered)		0.172	mg/L
Trace Metals				
	IRON(AA)		0.021	mg/L
Extractables				
	Chla-A (F) unc.		4.445	mg/cuM
	Chla-A (F) corr.		5.353	mg/cuM
	Chla-A (F) pheo.		1.313	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 2494 Sample Date: 04/01/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	0.400	mg/L
Minerals				
	CHLORIDE	<	0.400	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.050	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.003	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N	<	0.003	mg/L
	ORTHOPHOSPHATE P04-P	<	0.004	mg/L
	TOTAL PHOSPHORUS	<	0.004	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON		0.067	mg/L
	TOTAL ORGANIC CARBON	<	0.400	mg/L
	DISSOLVED ORGANIC CARBON	<	0.400	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.009	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 3556 Sample Date: 05/17/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	80.500	mg/L
Minerals			
	CHLORIDE	116.400	mg/L
Esthetic Properties			
	COLOR (Color Units)	73.500	Co-Pt
	TURBIDITY	2.600	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.182	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.054	mg/L
	TOT.KJEL.N	0.859	mg/L
	ORTHOPHOSPHATE P04-P	0.867	mg/L
	TOTAL PHOSPHORUS	0.887	mg/L
	SILICA-Si02	1.337	mg/L
	INORGANIC CARBON	15.600	mg/L
	TOTAL ORGANIC CARBON	16.160	mg/L
	DISSOLVED ORGANIC CARBON	15.420	mg/L
	Orthophosphate (Filtered)	0.854	mg/L
Trace Metals			
	IRON(AA)	0.098	mg/L
Extractables			
	Chla-A (F) unc.	10.584	mg/cuM
	Chla-A (F) corr.	12.392	mg/cuM
	Chla-A (F) pheo.	2.614	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 3557 Sample Date: 05/17/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	79.800	mg/L
Minerals			
	CHLORIDE	3746.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	77.000	Co-Pt
	TURBIDITY	5.900	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.013	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.024	mg/L
	TOT.KJEL.N	0.813	mg/L
	ORTHOPHOSPHATE P04-P	0.680	mg/L
	TOTAL PHOSPHORUS	0.684	mg/L
	SILICA-Si02	1.970	mg/L
	INORGANIC CARBON	13.890	mg/L
	TOTAL ORGANIC CARBON	15.700	mg/L
	DISSOLVED ORGANIC CARBON	15.080	mg/L
	Orthophosphate (Filtered)	0.653	mg/L
Trace Metals			
	IRON(AA)	0.112	mg/L
Extractables			
	Chla-A (F) unc.	21.756	mg/cuM
	Chla-A (F) corr.	32.409	mg/cuM
	Chla-A (F) pheo.	15.404	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 3558 Sample Date: 05/17/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	95.700	mg/L
Minerals			
	CHLORIDE	7212.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	62.000	Co-Pt
	TURBIDITY	9.300	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.012	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.038	mg/L
	TOT.KJEL.N	1.316	mg/L
	ORTHOPHOSPHATE P04-P	0.601	mg/L
	TOTAL PHOSPHORUS	0.700	mg/L
	SILICA-Si02	1.430	mg/L
	INORGANIC CARBON	18.800	mg/L
	TOTAL ORGANIC CARBON	15.200	mg/L
	DISSOLVED ORGANIC CARBON	13.580	mg/L
	Orthophosphate (Filtered)	0.549	mg/L
Trace Metals			
	IRON(AA)	0.123	mg/L
Extractables			
	Chla-A (F) unc.	80.376	mg/cuM
	Chla-A (F) corr.	117.521	mg/cuM
	Chla-A (F) pheo.	53.712	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 3559 Sample Date: 05/17/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	110.400	mg/L
Minerals			
	CHLORIDE	10840.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	37.000	Co-Pt
	TURBIDITY	4.300	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.030	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.026	mg/L
	TOT.KJEL.N	0.794	mg/L
	ORTHOPHOSPHATE P04-P	0.374	mg/L
	TOTAL PHOSPHORUS	0.382	mg/L
	SILICA-Si02	0.375	mg/L
	INORGANIC CARBON	21.890	mg/L
	TOTAL ORGANIC CARBON	10.710	mg/L
	DISSOLVED ORGANIC CARBON	10.300	mg/L
	Orthophosphate (Filtered)	0.364	mg/L
Trace Metals			
	IRON(AA)	0.055	mg/L
Extractables			
	Chla-A (F) unc.	7.874	mg/cuM
	Chla-A (F) corr.	11.117	mg/cuM
	Chla-A (F) pheo.	4.690	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 3560 Sample Date: 05/17/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	0.400	mg/L
Minerals				
	CHLORIDE	<	0.400	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY		0.070	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.003	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N	<	0.009	mg/L
	ORTHOPHOSPHATE P04-P	<	0.004	mg/L
	TOTAL PHOSPHORUS	<	0.004	mg/L
	SILICA-SiO2	<	0.004	mg/L
	INORGANIC CARBON		0.548	mg/L
	TOTAL ORGANIC CARBON	<	0.400	mg/L
	DISSOLVED ORGANIC CARBON		0.521	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.003	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 4091 Sample Date: 06/09/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	44.800	mg/L
Minerals			
	CHLORIDE	41.575	mg/L
Esthetic Properties			
	COLOR (Color Units)	97.000	Co-Pt
	TURBIDITY	2.050	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.864	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.132	mg/L
	TOT.KJEL.N	0.935	mg/L
	ORTHOPHOSPHATE P04-P	0.591	mg/L
	TOTAL PHOSPHORUS	0.640	mg/L
	SILICA-Si02	2.385	mg/L
	INORGANIC CARBON	6.435	mg/L
	TOTAL ORGANIC CARBON	17.160	mg/L
	DISSOLVED ORGANIC CARBON	16.760	mg/L
	Orthophosphate (Filtered)	0.580	mg/L
Trace Metals			
	IRON(AA)	0.108	mg/L
Extractables			
	Chla-A (F) unc.	3.400	mg/cuM
	Chla-A (F) corr.	2.590	mg/cuM
	Chla-A (F) pheo.	1.160	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 4092 Sample Date: 06/09/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	70.300	mg/L
Minerals			
	CHLORIDE	3880.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	74.000	Co-Pt
	TURBIDITY	5.200	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.012	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.060	mg/L
	TOT.KJEL.N	1.074	mg/L
	ORTHOPHOSPHATE P04-P	0.601	mg/L
	TOTAL PHOSPHORUS	0.669	mg/L
	SILICA-Si02	2.440	mg/L
	INORGANIC CARBON	11.670	mg/L
	TOTAL ORGANIC CARBON	16.330	mg/L
	DISSOLVED ORGANIC CARBON	15.720	mg/L
	Orthophosphate (Filtered)	0.589	mg/L
Trace Metals			
	IRON(AA)	0.050	mg/L
Extractables			
	Chla-A (F) unc.	15.200	mg/cuM
	Chla-A (F) corr.	18.150	mg/cuM
	Chla-A (F) pheo.	6.000	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 4093 Sample Date: 06/09/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	89.950	mg/L
Minerals			
	CHLORIDE	6672.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	63.000	Co-Pt
	TURBIDITY	3.400	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.005	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.043	mg/L
	TOT.KJEL.N	1.018	mg/L
	ORTHOPHOSPHATE P04-P	0.409	mg/L
	TOTAL PHOSPHORUS	0.459	mg/L
	SILICA-Si02	2.270	mg/L
	INORGANIC CARBON	15.040	mg/L
	TOTAL ORGANIC CARBON	16.410	mg/L
	DISSOLVED ORGANIC CARBON	15.740	mg/L
	Orthophosphate (Filtered)	0.395	mg/L
Trace Metals			
	IRON(AA)	0.042	mg/L
Extractables			
	Chla-A (F) unc.	9.000	mg/cuM
	Chla-A (F) corr.	9.070	mg/cuM
	Chla-A (F) pheo.	0.980	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 4094 Sample Date: 06/09/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	100.700	mg/L
Minerals			
	CHLORIDE	11350.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	42.000	Co-Pt
	TURBIDITY	2.700	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.013	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.037	mg/L
	TOT.KJEL.N	0.831	mg/L
	ORTHOPHOSPHATE P04-P	0.221	mg/L
	TOTAL PHOSPHORUS	0.252	mg/L
	SILICA-Si02	1.350	mg/L
	INORGANIC CARBON	17.390	mg/L
	TOTAL ORGANIC CARBON	13.560	mg/L
	DISSOLVED ORGANIC CARBON	12.820	mg/L
	Orthophosphate (Filtered)	0.216	mg/L
Trace Metals			
	IRON(AA)	0.037	mg/L
Extractables			
	Chla-A (F) unc.	5.800	mg/cuM
	Chla-A (F) corr.	5.830	mg/cuM
	Chla-A (F) pheo.	0.050	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 4095 Sample Date: 06/09/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	0.400	mg/L
Minerals				
	CHLORIDE	<	0.400	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.050	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.004	mg/L
	TOT.KJEL.N	<	0.009	mg/L
	ORTHOPHOSPHATE P04-P	<	0.004	mg/L
	TOTAL PHOSPHORUS	<	0.004	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON		0.443	mg/L
	TOTAL ORGANIC CARBON		0.366	mg/L
	DISSOLVED ORGANIC CARBON		0.742	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.025	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 5433 Sample Date: 07/15/94
Station: 101

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		46.800	mg/L
Minerals				
	CHLORIDE		35.230	mg/L
Esthetic Properties				
	COLOR (Color Units)		280.000	Co-Pt
	TURBIDITY		2.700	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.535	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.068	mg/L
	TOT.KJEL.N		1.314	mg/L
	ORTHOPHOSPHATE P04-P		0.722	mg/L
	TOTAL PHOSPHORUS		0.760	mg/L
	SILICA-Si02		3.645	mg/L
	INORGANIC CARBON		8.648	mg/L
	TOTAL ORGANIC CARBON		28.250	mg/L
	DISSOLVED ORGANIC CARBON		27.230	mg/L
	Orthophosphate (Filtered)		0.662	mg/L
Trace Metals				
	IRON(AA)		0.503	mg/L
Extractables				
	Chla-A (F) unc.		1.600	mg/cuM
	Chla-A (F) corr.		1.621	mg/cuM
	Chla-A (F) pheo.	<	0.250	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 5434 Sample Date: 07/14/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	75.650	mg/L
Minerals			
	CHLORIDE	3576.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	150.500	Co-Pt
	TURBIDITY	4.150	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.241	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.090	mg/L
	TOT.KJEL.N	1.226	mg/L
	ORTHOPHOSPHATE P04-P	0.423	mg/L
	TOTAL PHOSPHORUS	0.468	mg/L
	SILICA-Si02	3.470	mg/L
	INORGANIC CARBON	14.670	mg/L
	TOTAL ORGANIC CARBON	19.330	mg/L
	DISSOLVED ORGANIC CARBON	18.560	mg/L
	Orthophosphate (Filtered)	0.337	mg/L
Trace Metals			
	IRON(AA)	0.199	mg/L
Extractables			
	Chla-A (F) unc.	25.578	mg/cuM
	Chla-A (F) corr.	40.987	mg/cuM
	Chla-A (F) pheo.	22.282	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 5435 Sample Date: 07/14/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	84.400	mg/L
Minerals			
	CHLORIDE	6332.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	127.000	Co-Pt
	TURBIDITY	3.500	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.141	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.030	mg/L
	TOT.KJEL.N	1.090	mg/L
	ORTHOPHOSPHATE P04-P	0.330	mg/L
	TOTAL PHOSPHORUS	0.370	mg/L
	SILICA-Si02	3.015	mg/L
	INORGANIC CARBON	16.020	mg/L
	TOTAL ORGANIC CARBON	16.780	mg/L
	DISSOLVED ORGANIC CARBON	16.530	mg/L
	Orthophosphate (Filtered)	0.267	mg/L
Trace Metals			
	IRON(AA)	0.098	mg/L
Extractables			
	Chla-A (F) unc.	20.580	mg/cuM
	Chla-A (F) corr.	26.689	mg/cuM
	Chla-A (F) pheo.	8.834	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 5436 Sample Date: 07/14/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	102.600	mg/L
Minerals			
	CHLORIDE	11130.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	62.000	Co-Pt
	TURBIDITY	2.000	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.024	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.060	mg/L
	TOT.KJEL.N	0.829	mg/L
	ORTHOPHOSPHATE P04-P	0.163	mg/L
	TOTAL PHOSPHORUS	0.166	mg/L
	SILICA-Si02	1.683	mg/L
	INORGANIC CARBON	19.360	mg/L
	TOTAL ORGANIC CARBON	10.250	mg/L
	DISSOLVED ORGANIC CARBON	10.740	mg/L
	Orthophosphate (Filtered)	0.122	mg/L
Trace Metals			
	IRON(AA)	0.041	mg/L
Extractables			
	Chla-A (F) unc.	7.874	mg/cuM
	Chla-A (F) corr.	11.529	mg/cuM
	Chla-A (F) pheo.	5.285	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 5437 Sample Date: 07/14/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	0.400	mg/L
Minerals				
	CHLORIDE	<	0.400	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.050	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.002	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.009	mg/L
	TOT.KJEL.N		0.109	mg/L
	ORTHOPHOSPHATE P04-P		0.013	mg/L
	TOTAL PHOSPHORUS		0.022	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON		0.381	mg/L
	TOTAL ORGANIC CARBON		0.144	mg/L
	DISSOLVED ORGANIC CARBON		0.437	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.005	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 6237 Sample Date: 08/17/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	46.000	mg/L
Minerals			
	CHLORIDE	49.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	273.000	Co-Pt
	TURBIDITY	4.200	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.459	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.074	mg/L
	TOT.KJEL.N	1.199	mg/L
	ORTHOPHOSPHATE P04-P	0.625	mg/L
	TOTAL PHOSPHORUS	0.675	mg/L
	SILICA-Si02	3.600	mg/L
	INORGANIC CARBON	8.297	mg/L
	TOTAL ORGANIC CARBON	29.100	mg/L
	DISSOLVED ORGANIC CARBON	27.300	mg/L
	Orthophosphate (Filtered)	0.579	mg/L
Trace Metals			
	IRON(AA)	0.578	mg/L
Extractables			
	Chla-A (F) unc.	2.800	mg/cuM
	Chla-A (F) corr.	3.242	mg/cuM
	Chla-A (F) pheo.	0.639	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 6238 Sample Date: 08/17/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	72.000	mg/L
Minerals			
	CHLORIDE	3540.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	177.000	Co-Pt
	TURBIDITY	4.900	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.230	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.116	mg/L
	TOT.KJEL.N	1.317	mg/L
	ORTHOPHOSPHATE P04-P	0.423	mg/L
	TOTAL PHOSPHORUS	0.468	mg/L
	SILICA-Si02	3.890	mg/L
	INORGANIC CARBON	13.840	mg/L
	TOTAL ORGANIC CARBON	20.300	mg/L
	DISSOLVED ORGANIC CARBON	19.300	mg/L
	Orthophosphate (Filtered)	0.384	mg/L
Trace Metals			
	IRON(AA)	0.269	mg/L
Extractables			
	Chla-A (F) unc.	12.054	mg/cuM
	Chla-A (F) corr.	15.251	mg/cuM
	Chla-A (F) pheo.	4.623	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 6239 Sample Date: 08/17/94
Station: 103

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		89.000	mg/L
Minerals				
	CHLORIDE		6400.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		143.000	Co-Pt
	TURBIDITY		27.500	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.012	mg/L
	TOT.KJEL.N		5.954	mg/L
	ORTHOPHOSPHATE P04-P		0.293	mg/L
	TOTAL PHOSPHORUS		0.662	mg/L
	SILICA-Si02		3.690	mg/L
	INORGANIC CARBON		17.190	mg/L
	TOTAL ORGANIC CARBON		20.800	mg/L
	DISSOLVED ORGANIC CARBON		19.800	mg/L
	Orthophosphate (Filtered)		0.237	mg/L
Trace Metals				
	IRON(AA)		0.164	mg/L
Extractables				
	Chla-A (F) unc.		226.944	mg/cuM
	Chla-A (F) corr.		321.907	mg/cuM
	Chla-A (F) pheo.		137.316	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 6240 Sample Date: 08/18/94
Station: 104

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		102.000	mg/L
Minerals				
	CHLORIDE		8980.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		72.000	Co-Pt
	TURBIDITY		2.500	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.011	mg/L
	TOT.KJEL.N		0.705	mg/L
	ORTHOPHOSPHATE P04-P		0.116	mg/L
	TOTAL PHOSPHORUS		0.140	mg/L
	SILICA-Si02		3.370	mg/L
	INORGANIC CARBON		20.560	mg/L
	TOTAL ORGANIC CARBON		10.600	mg/L
	DISSOLVED ORGANIC CARBON		9.900	mg/L
	Orthophosphate (Filtered)		0.116	mg/L
Trace Metals				
	IRON(AA)		0.147	mg/L
Extractables				
	Chla-A (F) unc.		4.572	mg/cuM
	Chla-A (F) corr.		5.765	mg/cuM
	Chla-A (F) pheo.		1.724	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 6241 Sample Date: 08/17/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	1.000	mg/L
Minerals				
	CHLORIDE	<	1.000	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N	<	0.020	mg/L
	ORTHOPHOSPHATE P04-P		0.006	mg/L
	TOTAL PHOSPHORUS		0.004	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON		0.684	mg/L
	TOTAL ORGANIC CARBON	<	0.400	mg/L
	DISSOLVED ORGANIC CARBON		0.018	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.004	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 7085 Sample Date: 09/08/94
Station: 101

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	54.000	mg/L
Minerals			
	CHLORIDE	69.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	243.500	Co-Pt
	TURBIDITY	4.150	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.266	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.043	mg/L
	TOT.KJEL.N	1.203	mg/L
	ORTHOPHOSPHATE P04-P	0.480	mg/L
	TOTAL PHOSPHORUS	0.564	mg/L
	SILICA-Si02	3.005	mg/L
	INORGANIC CARBON	6.754	mg/L
	TOTAL ORGANIC CARBON	28.200	mg/L
	DISSOLVED ORGANIC CARBON	27.400	mg/L
	Orthophosphate (Filtered)	0.440	mg/L
Trace Metals			
	IRON(AA)	0.399	mg/L
Extractables			
	Chla-A (F) unc.	5.334	mg/cuM
	Chla-A (F) corr.	7.000	mg/cuM
	Chla-A (F) pheo.	2.409	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 7086 Sample Date: 09/08/94
Station: 102

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	74.000	mg/L
Minerals			
	CHLORIDE	3116.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	192.000	Co-Pt
	TURBIDITY	2.600	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.192	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.112	mg/L
	TOT.KJEL.N	1.216	mg/L
	ORTHOPHOSPHATE P04-P	0.425	mg/L
	TOTAL PHOSPHORUS	0.498	mg/L
	SILICA-Si02	3.350	mg/L
	INORGANIC CARBON	10.300	mg/L
	TOTAL ORGANIC CARBON	23.500	mg/L
	DISSOLVED ORGANIC CARBON	22.810	mg/L
	Orthophosphate (Filtered)	0.414	mg/L
Trace Metals			
	IRON(AA)	0.242	mg/L
Extractables			
	Chla-A (F) unc.	4.064	mg/cuM
	Chla-A (F) corr.	4.941	mg/cuM
	Chla-A (F) pheo.	1.268	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 7087 Sample Date: 09/08/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	93.000	mg/L
Minerals			
	CHLORIDE	6830.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	129.000	Co-Pt
	TURBIDITY	1.900	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.076	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.132	mg/L
	TOT.KJEL.N	1.192	mg/L
	ORTHOPHOSPHATE P04-P	0.300	mg/L
	TOTAL PHOSPHORUS	0.364	mg/L
	SILICA-Si02	3.400	mg/L
	INORGANIC CARBON	15.040	mg/L
	TOTAL ORGANIC CARBON	17.600	mg/L
	DISSOLVED ORGANIC CARBON	16.900	mg/L
	Orthophosphate (Filtered)	0.291	mg/L
Trace Metals			
	IRON(AA)	0.202	mg/L
Extractables			
	Chla-A (F) unc.	15.876	mg/cuM
	Chla-A (F) corr.	23.830	mg/cuM
	Chla-A (F) pheo.	11.501	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 7088 Sample Date: 09/08/94
Station: 104

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		113.000	mg/L
Minerals				
	CHLORIDE		10040.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		67.000	Co-Pt
	TURBIDITY		5.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.006	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		1.330	mg/L
	ORTHOPHOSPHATE P04-P		0.168	mg/L
	TOTAL PHOSPHORUS		0.240	mg/L
	SILICA-Si02		3.110	mg/L
	INORGANIC CARBON		19.610	mg/L
	TOTAL ORGANIC CARBON		12.800	mg/L
	DISSOLVED ORGANIC CARBON		12.800	mg/L
	Orthophosphate (Filtered)		0.161	mg/L
Trace Metals				
	IRON(AA)		0.175	mg/L
Extractables				
	Chla-A (F) unc.		55.160	mg/cuM
	Chla-A (F) corr.		79.199	mg/cuM
	Chla-A (F) pheo.		34.761	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 7089 Sample Date: 09/08/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	1.000	mg/L
Minerals				
	CHLORIDE	<	1.000	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N	<	0.020	mg/L
	ORTHOPHOSPHATE P04-P	<	0.004	mg/L
	TOTAL PHOSPHORUS		0.014	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON		0.600	mg/L
	DISSOLVED ORGANIC CARBON		0.800	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.050	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 8197 Sample Date: 10/04/94
Station: 101

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		44.000	mg/L
Minerals				
	CHLORIDE		199.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		210.000	Co-Pt
	TURBIDITY		3.000	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.146	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.071	mg/L
	TOT.KJEL.N		1.510	mg/L
	TOTAL PHOSPHORUS		0.575	mg/L
	SILICA-Si02		3.260	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON		41.900	mg/L
	DISSOLVED ORGANIC CARBON		32.900	mg/L
	Orthophosphate (Filtered)		0.491	mg/L
Trace Metals				
	IRON(AA)		0.609	mg/L
Extractables				
	Chla-A (F) unc.		1.950	mg/cuM
	Chla-A (F) corr.		1.783	mg/cuM
	Chla-A (F) pheo.	<	0.250	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 8198 Sample Date: 10/04/94
Station: 102

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		64.000	mg/L
Minerals				
	CHLORIDE		3315.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		200.000	Co-Pt
	TURBIDITY		2.500	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.101	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.313	mg/L
	TOT.KJEL.N		1.430	mg/L
	TOTAL PHOSPHORUS		0.451	mg/L
	SILICA-SiO2		3.200	mg/L
	INORGANIC CARBON		3.720	mg/L
	TOTAL ORGANIC CARBON		27.900	mg/L
	DISSOLVED ORGANIC CARBON		23.500	mg/L
	Orthophosphate (Filtered)		0.405	mg/L
Trace Metals				
	IRON(AA)		0.318	mg/L
Extractables				
	Chla-A (F) unc.		2.050	mg/cuM
	Chla-A (F) corr.		2.107	mg/cuM
	Chla-A (F) pheo.	<	0.250	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 8199 Sample Date: 10/04/94
Station: 103

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		93.000	mg/L
Minerals				
	CHLORIDE		8550.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		120.000	Co-Pt
	TURBIDITY		2.700	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.072	mg/L
	AMMONIA/AMMONIUM-NITROGEN		0.347	mg/L
	TOT.KJEL.N		1.240	mg/L
	TOTAL PHOSPHORUS		0.288	mg/L
	SILICA-Si02		2.930	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON		23.000	mg/L
	DISSOLVED ORGANIC CARBON		19.000	mg/L
	Orthophosphate (Filtered)		0.272	mg/L
Trace Metals				
	IRON(AA)		0.317	mg/L
Extractables				
	Chla-A (F) unc.		4.572	mg/cuM
	Chla-A (F) corr.		4.118	mg/cuM
	Chla-A (F) pheo.		0.657	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 8200 Sample Date: 10/04/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	98.000	mg/L
Minerals			
	CHLORIDE	10900.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	60.000	Co-Pt
	TURBIDITY	2.500	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.082	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.231	mg/L
	TOT.KJEL.N	0.877	mg/L
	TOTAL PHOSPHORUS	0.195	mg/L
	SILICA-Si02	2.267	mg/L
	INORGANIC CARBON	11.000	mg/L
	TOTAL ORGANIC CARBON	15.200	mg/L
	DISSOLVED ORGANIC CARBON	13.800	mg/L
	Orthophosphate (Filtered)	0.195	mg/L
Trace Metals			
	IRON(AA)	0.343	mg/L
Extractables			
	Chla-A (F) unc.	3.250	mg/cuM
	Chla-A (F) corr.	4.053	mg/cuM
	Chla-A (F) pheo.	1.161	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 8201 Sample Date: 10/04/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	1.000	mg/L
Minerals				
	CHLORIDE	<	1.000	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N	<	0.020	mg/L
	TOTAL PHOSPHORUS	<	0.004	mg/L
	SILICA-Si02		0.004	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON	<	0.400	mg/L
	DISSOLVED ORGANIC CARBON	<	0.400	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.004	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9004 Sample Date: 11/03/94
Station: 101

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		91.000	mg/L
Minerals				
	CHLORIDE		208.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		120.000	Co-Pt
	TURBIDITY		3.600	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.274	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		1.270	mg/L
	ORTHOPHOSPHATE P04-P		0.490	mg/L
	TOTAL PHOSPHORUS		0.547	mg/L
	SILICA-Si02		4.050	mg/L
	INORGANIC CARBON		16.140	mg/L
	TOTAL ORGANIC CARBON		21.900	mg/L
	DISSOLVED ORGANIC CARBON		21.500	mg/L
	Orthophosphate (Filtered)		0.477	mg/L
Trace Metals				
	IRON(AA)		0.396	mg/L
Extractables				
	Chla-A (F) unc.		11.172	mg/cuM
	Chla-A (F) corr.		11.438	mg/cuM
	Chla-A (F) pheo.		0.385	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9005 Sample Date: 11/03/94
Station: 102

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		84.000	mg/L
Minerals				
	CHLORIDE		3468.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		120.000	Co-Pt
	TURBIDITY		10.300	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.202	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		1.960	mg/L
	ORTHOPHOSPHATE P04-P		0.562	mg/L
	TOTAL PHOSPHORUS		0.712	mg/L
	SILICA-Si02		3.370	mg/L
	INORGANIC CARBON		14.170	mg/L
	TOTAL ORGANIC CARBON		19.300	mg/L
	DISSOLVED ORGANIC CARBON		18.900	mg/L
	Orthophosphate (Filtered)		0.507	mg/L
Trace Metals				
	IRON(AA)		0.295	mg/L
Extractables				
	Chla-A (F) unc.		141.840	mg/cuM
	Chla-A (F) corr.		183.947	mg/cuM
	Chla-A (F) pheo.		60.886	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9006 Sample Date: 11/03/94
Station: 103

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	93.000	mg/L
Minerals			
	CHLORIDE	6770.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	125.000	Co-Pt
	TURBIDITY	3.950	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.074	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.037	mg/L
	TOT.KJEL.N	1.160	mg/L
	ORTHOPHOSPHATE P04-P	0.359	mg/L
	TOTAL PHOSPHORUS	0.420	mg/L
	SILICA-Si02	2.680	mg/L
	INORGANIC CARBON	16.930	mg/L
	TOTAL ORGANIC CARBON	15.100	mg/L
	DISSOLVED ORGANIC CARBON	14.800	mg/L
	Orthophosphate (Filtered)	0.326	mg/L
Trace Metals			
	IRON(AA)	0.252	mg/L
Extractables			
	Chla-A (F) unc.	30.732	mg/cuM
	Chla-A (F) corr.	38.322	mg/cuM
	Chla-A (F) pheo.	10.975	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9007 Sample Date: 11/03/94
Station: 104

Group	Analysis	Result	Units
Acid Base			
	ALKALINITY-CaC03	103.000	mg/L
Minerals			
	CHLORIDE	10400.000	mg/L
Esthetic Properties			
	COLOR (Color Units)	100.000	Co-Pt
	TURBIDITY	2.800	NTU
Nutrients			
	TOT. NITRATE+NITRITE	0.024	mg/L
	AMMONIA/AMMONIUM-NITROGEN	0.019	mg/L
	TOT.KJEL.N	0.891	mg/L
	ORTHOPHOSPHATE P04-P	0.188	mg/L
	TOTAL PHOSPHORUS	0.220	mg/L
	SILICA-Si02	1.120	mg/L
	INORGANIC CARBON	18.360	mg/L
	TOTAL ORGANIC CARBON	11.100	mg/L
	DISSOLVED ORGANIC CARBON	10.800	mg/L
	Orthophosphate (Filtered)	0.176	mg/L
Trace Metals			
	IRON(AA)	0.286	mg/L
Extractables			
	Chla-A (F) unc.	16.758	mg/cuM
	Chla-A (F) corr.	21.923	mg/cuM
	Chla-A (F) pheo.	7.469	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9008 Sample Date: 11/03/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	1.000	mg/L
Minerals				
	CHLORIDE		19.000	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N	<	0.020	mg/L
	ORTHOPHOSPHATE P04-P	<	0.004	mg/L
	TOTAL PHOSPHORUS	<	0.004	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON		4.410	mg/L
	DISSOLVED ORGANIC CARBON		4.640	mg/L
	Orthophosphate (Filtered)	<	0.004	mg/L
Trace Metals				
	IRON(AA)	<	0.004	mg/L

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9800 Sample Date: 12/07/94
Station: 101

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		5.000	mg/L
Minerals				
	CHLORIDE		26.500	mg/L
Esthetic Properties				
	COLOR (Color Units)		160.000	Co-Pt
	TURBIDITY		4.400	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.405	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		1.020	mg/L
	ORTHOPHOSPHATE P04-P		0.683	mg/L
	TOTAL PHOSPHORUS		0.764	mg/L
	SILICA-Si02		2.850	mg/L
	INORGANIC CARBON		10.600	mg/L
	TOTAL ORGANIC CARBON		20.500	mg/L
	DISSOLVED ORGANIC CARBON		19.500	mg/L
	Orthophosphate (Filtered)		0.649	mg/L
Trace Metals				
	IRON(AA)		0.373	mg/L
Extractables				
	Chla-A (F) unc.		8.128	mg/cuM
	Chla-A (F) corr.		10.706	mg/cuM
	Chla-A (F) pheo.		3.727	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9801 Sample Date: 12/07/94
Station: 102

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		76.000	mg/L
Minerals				
	CHLORIDE		3450.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		160.000	Co-Pt
	TURBIDITY		8.400	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.172	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		1.850	mg/L
	ORTHOPHOSPHATE P04-P		0.507	mg/L
	TOTAL PHOSPHORUS		0.670	mg/L
	SILICA-Si02		2.925	mg/L
	INORGANIC CARBON		13.800	mg/L
	TOTAL ORGANIC CARBON		20.800	mg/L
	DISSOLVED ORGANIC CARBON		17.700	mg/L
	Orthophosphate (Filtered)		0.444	mg/L
Trace Metals				
	IRON(AA)		0.241	mg/L
Extractables				
	Chla-A (F) unc.		75.648	mg/cuM
	Chla-A (F) corr.		102.193	mg/cuM
	Chla-A (F) pheo.		38.384	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9802 Sample Date: 12/07/94
Station: 103

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		93.000	mg/L
Minerals				
	CHLORIDE		7530.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		90.000	Co-Pt
	TURBIDITY		3.400	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.020	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		0.778	mg/L
	ORTHOPHOSPHATE P04-P		0.346	mg/L
	TOTAL PHOSPHORUS		0.389	mg/L
	SILICA-Si02		2.470	mg/L
	INORGANIC CARBON		16.900	mg/L
	TOTAL ORGANIC CARBON		13.000	mg/L
	DISSOLVED ORGANIC CARBON		11.800	mg/L
	Orthophosphate (Filtered)		0.275	mg/L
Trace Metals				
	IRON(AA)		0.236	mg/L
Extractables				
	Chla-A (F) unc.		16.758	mg/cuM
	Chla-A (F) corr.		22.877	mg/cuM
	Chla-A (F) pheo.		8.848	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9803 Sample Date: 12/07/94
Station: 104

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03		108.000	mg/L
Minerals				
	CHLORIDE		11700.000	mg/L
Esthetic Properties				
	COLOR (Color Units)		55.000	Co-Pt
	TURBIDITY		2.600	NTU
Nutrients				
	TOT. NITRATE+NITRITE		0.003	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N		0.638	mg/L
	ORTHOPHOSPHATE P04-P		0.168	mg/L
	TOTAL PHOSPHORUS		0.198	mg/L
	SILICA-Si02		1.490	mg/L
	INORGANIC CARBON		19.100	mg/L
	TOTAL ORGANIC CARBON		8.900	mg/L
	DISSOLVED ORGANIC CARBON		7.710	mg/L
	Orthophosphate (Filtered)		0.148	mg/L
Trace Metals				
	IRON(AA)		0.242	mg/L
Extractables				
	Chla-A (F) unc.		8.509	mg/cuM
	Chla-A (F) corr.		10.294	mg/cuM
	Chla-A (F) pheo.		2.581	mg/cuM

TABLE 2.3.7 (continued)
CHARLOTTE HARBOR PRIMARY PRODUCTION
SURFACE WATER CHEMISTRY DATA

Sample#: 9804 Sample Date: 12/07/94
Station: BLANK

Group	Analysis		Result	Units
Acid Base				
	ALKALINITY-CaC03	<	1.000	mg/L
Minerals				
	CHLORIDE	<	0.400	mg/L
Esthetic Properties				
	COLOR (Color Units)	<	1.000	Co-Pt
	TURBIDITY	<	0.100	NTU
Nutrients				
	TOT. NITRATE+NITRITE	<	0.001	mg/L
	AMMONIA/AMMONIUM-NITROGEN	<	0.010	mg/L
	TOT.KJEL.N	<	0.020	mg/L
	ORTHOPHOSPHATE P04-P	<	0.002	mg/L
	TOTAL PHOSPHORUS	<	0.002	mg/L
	SILICA-Si02	<	0.004	mg/L
	INORGANIC CARBON	<	0.400	mg/L
	TOTAL ORGANIC CARBON	<	0.400	mg/L
	DISSOLVED ORGANIC CARBON	<	0.400	mg/L
	Orthophosphate (Filtered)	<	0.002	mg/L
Trace Metals				
	IRON(AA)		0.007	mg/L

2.4 PERMANENT DATA

All raw data collected during 1994 under the hydrobiological program has been given to the Southwest Florida Water Management District and the Peace River/Manasota Regional Water Supply Authority on computer disk as either ASCII files and/or SAS data sets. Table 2.4 provides descriptions of the variables within the SAS data set "CH94.SSD".

2.5 SUMMARY

Since 1975 the monitoring program has been examined thoroughly by the staff's of GDU, SWFWMD, EQL, and most recently by the Authority. This has resulted in modifications in the program in an attempt to find those parameters that quickly respond to processes affecting water quality and quanitiy. It is believed that phytoplankton production and community structure continue to be valuable parameters in determining the response of an important element of the estuary's food-web to natural seasonal and long-term changes in Peace River flow, and the potential affects of freshwater withdrawal.

As part of this ongoing review process, a new expanded Hydrobiological Monitoring Program has been proposed for the next six year monitoring period.

TABLE 2.4

(parameter codes used in SAS data sets)

DESCRIPTORS

year = "Year"
day = "Day"
month = "Month"
mon = "Month Counter"
mdy = "Standardized Month, Day, Year Code"
sasdate = "SAS Date"
station = "Station Number"

PHYSICAL DATA

dis = "Distance of Sample Location Downstream from Station #20 (km)"
sal = "Salinity (ppt)"
temp = "Temperature (C)"
microe = "Light Level During Incubation Period (Einsteins)"
tote = "Light Level During Day (Einsteins)"
em = "Light Level During Month (Einsteins)"
exc = "Light Extinction Coefficient"
opd01 = "Depth in Water Column Where 1% of Surface Light Remains (m)"
opd10 = "Depth in Water Column Where 10% of Surface Light Remains (m)"
opd50 = "Depth in Water Column Where 50% of Surface Light Remains (m)"
light = "Light Same Day/Einsteins"
lt7 = "Light Over Preceding Seven Days/Einsteins"
lt14 = "Light Over Preceding Fourteen Days/Einsteins"
lt28 = "Light Over Preceding Twenty Eight Days/Einsteins"
prflow = "Same Day Peace River Flow at Arcadia/cfs"
tprf7 = "Sum Peace River Flow at Arcadia Over Preceding Seven Days/cfs"

TABLE 2.4 (continued)
(parameter codes used in SAS data sets)

PHYSICAL DATA (continued)

tprf14 = "Sum Peace River Flow at Arcadia Over Preceding Fourteen Days/cfs"
tprf28 = "Sum Peace River Flow at Arcadia Over Preceding Twenty Eight Days/cfs"
daf7 = "Average Peace River Flow at Arcadia Over Preceding Seven Days/cfs"
daf14 = "Average Peace River Flow at Arcadia Over Preceding Fourteen Days/cfs"
daf28 = "Average Peace River Flow at Arcadia Over Preceding Twenty Eight Days/cfs"
with = "Same Day Facility Withdrawal"
aw7 = "Average Facility Withdrawal Over Preceding Seven Days/mgd"
aw14 = "Average Facility Withdrawal Over Preceding Fourteen Days/mgd"
aw28 = "Average Facility Withdrawal Over Preceding Twenty Eight Days/mgd"

CHEMICAL DATA

akal = "Alkalinity (mg/l)"
color = "Color (CPU)"
ioc = "Inorganic Carbon (mg/l)"
n23 = "Nitrite/Nitrate (mg/l)"
nh4 = "Ammonia/Ammonium (mg/l)"
totn = "Total Kjeldahl Nitrogen (mg/l)"
totp = "Total Phosphorus (mg/l)"
op = "Orthophosphorus (mg/l)"
si = "Silica (mg/l)"
toc = "Total Organic Carbon (mg/l)"
doc = "Dissolved Organic Carbon (mg/l)"

TABLE 2.4 (continued)
(parameter codes used in SAS data sets)

CHEMICAL DATA (continued)

turb = "Turbidity"
iron = "Iron (mg/l)"
npa = "Available Nitrogen/Phosphorus Atomic Ratio"
np = "Available Nitrogen/Phosphorus Ratio"
tntp = "Total Nitrogen/Phosphorus Atomic Ratio"

PRIMARY PRODUCTION (values are means of five replicates at each Station)

p3 = "Primary Production (mg Carbon/m3/E)"
p10 = "Primary Production (mg Carbon/m3/E/Chla)"
p2 = "Primary Production (mg Carbon/m3/hr)"
p9 = "Primary Production (mg Carbon/m3/hr/Chla)"
p4 = "Estimated Production (g Carbon/m3/Day)"
p5 = "Estimated Production (g Carbon/m3/Month)"
p6 = "Estimated Production (g Carbon/m2/Day)"
p7 = "Estimated Production (g Carbon/m2/Month)"
f1 = "Production in >20 um Size Fraction (mg Carbon/m3/E)"
f2 = "Production in 20><5 um Size Fraction (mg Carbon/m3/E)"
f3 = "Production in <5 um Size Fraction (mg Carbon/m3/E)"
f4 = "Percent Production in >20 um Size Fraction"
f5 = "Percent Production in 20><5 um Size Fraction"
f6 = "Percent Production in <5 um Size Fraction"
pdk = "Percent Dark Carbon Fixation" (two replicates)
blank = "Non-production Carbon Measured" (three replicates)

TABLE 2.4 (continued)
(parameter codes used in SAS data sets)

CHLOROPHYLL a (single values per Station)

chla	= "Chlorophyll-a (ug/l)"
cf1	= "Chlorophyll a in >20 um Size Fraction (mg/m3)"
cf2	= "Chlorophyll a in 20><5 um Size Fraction (mg/m3)"
cf3	= "Chlorophyll a in <5 um Size Fraction (mg/m3)"
cf4	= "Percent Chlorophyll a in >20 um Size Fraction"
cf5	= "Percent Chlorophyll a in 20><5 um Size Fraction"
cf6	= "Percent Chlorophyll a in <5 um Size Fraction"

3.0 ZOOPLANKTON STUDIES

3.1 INTRODUCTION

Zooplankton represent an important link between the phytoplankton community and higher levels in the estuarine food chain. Many groups of organisms are represented in the zooplankton either as larvae or adults, encompassing a wide variety of sizes and motile capabilities and are typically dispersed in estuaries in patchy aggregates dependent on river flow, wind direction and phytoplankton distributions.

The function of the zooplankton community in the estuarine ecosystem is twofold. First, the role of estuaries as nursery and spawning areas for many organisms has been well established. Since many species of zooplankton are herbivorous, feeding on productive free floating phytoplankton, zooplankton convert phytoplankton biomass into concentrated, usable energy for higher level predators including ichthyoplankton. A second function of zooplankton in the estuarine ecosystem is that of nutrient recyclers. Zooplankton graze heavily on the phytoplankton community and it has been shown that through the excretion of vital nutrients, primary production of phytoplankton may be stimulated, thus enhancing estuarine productivity.

Various physical and chemical parameters have been shown to influence zooplankton distributions and abundances in estuaries. Such parameters include, salinity, river flows, nutrient concentrations by influencing phytoplankton dynamics, temperature, and predatory densities. Little is known of the zooplankton assemblages of the lower Peace River and Charlotte Harbor.

This program was designed to study flow-related population responses of zooplankton communities in upper Charlotte Harbor to phytoplankton levels. By

investigation of the role of zooplankton in the Charlotte Harbor estuary, insight may be gained into the relative effects of freshwater withdrawal on this important constituent of the estuarine system. Zooplankton were sampled in conjunction with phytoplankton at the same four estuarine station locations.

3.2 METHODS

3.2.1 Monthly Zooplankton Collections

Field Methods

Zooplankton are collected monthly from four stations in the Charlotte Harbor estuary. These collections are done concurrent with, and at the same salinity-based station locations as the phytoplankton study. Samples are collected from the water surface by filtering 75 liters of water through a 50 um mesh net at each station and collecting an oblique tow using a 1.0 m, 50 um mesh net raised at a constant rate from bottom to top at each station. Samples are preserved immediately in 5% unbuffered salinity appropriate formalin.

Laboratory Methods

Sample analyses are conducted using a 10-100X dissection microscope. Each sample is thoroughly mixed and aliquoted. Aliquot sizes (1-5 ml) depend on sample densities with counts conducted in a zooplankton counting wheel. Aliquots were counted until three successive counts yield no new taxa. A minimum of 500 plankters are counted for every sample. Zooplankton taxa are enumerated to the lowest taxonomic unit possible.

3.3 RESULTS

3.3.1 Monthly Zooplankton Collections

A comprehensive analysis of the population dynamics as related to physical and chemical water quality parameters, and the distribution and growth of phytoplankton populations within the upper portions of Charlotte Harbor from 1989 through 1993 was contained within the 1994 Summary Report. Results of the monthly zooplankton sampling, collected concurrently with primary productivity measures during 1994, are presented in Appendix C.

4.0 VEGETATION

4.1 INFRA-RED AERIAL MONITORING

Infra-red photography was flown in December, 1994. Such aerial surveys continue to be taken in conjunction with other vegetative studies conducted during other time periods of the monitoring program.

5.0 PEACE RIVER FLOW AND

REGIONAL WATER SUPPLY FACILITY WITHDRAWAL

Daily discharges (in cubic feet per second) at the U.S.G.S. gauging station at Arcadia, Florida, for January 1994 through December 1994, are depicted in Figure 5.1 (a). Daily Peace River flows between 1976, the beginning of the Hydrobiological Monitoring Program, and 1994 are shown in Figure 5.1 (b). This long-term period of river flow is further presented as Mean Monthly Values (Figure 5.1 (c)) and as the 3-Month Moving Average (Figure 5.1 (d). Peace River daily withdrawals (in cubic feet per second) for 1994, by the Peace River Water Treatment Plant are presented in Figure 5.2 (a). Daily withdrawals since plant startup are shown from 1980-1994 in Figure 5.2 (b). Plots of the Monthly Means and 3-Month Moving Average of withdrawal over this period are depicted in Figures 5.2 (c) and 5.2 (d). Various relationships between Peace River flow as measured at Arcadia and Water Supply Facility withdrawals are depicted in Figures 5.3 through 5.5.

FIGURE 5.1 (a)

PEACE RIVER FLOW

(At Arcadia Station)

1994

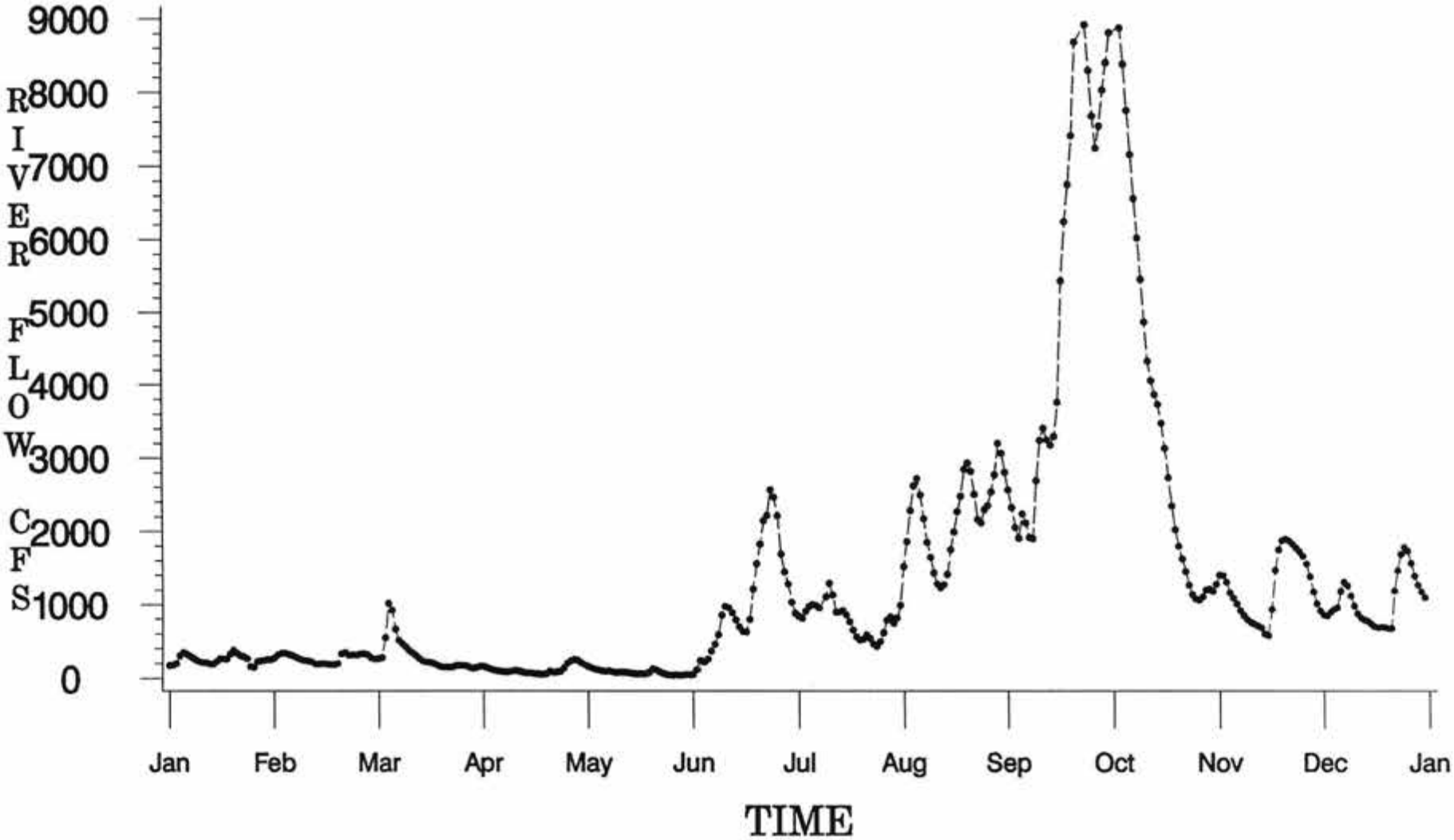


FIGURE 5.1 (b)

PEACE RIVER FLOW

1976 – 1994

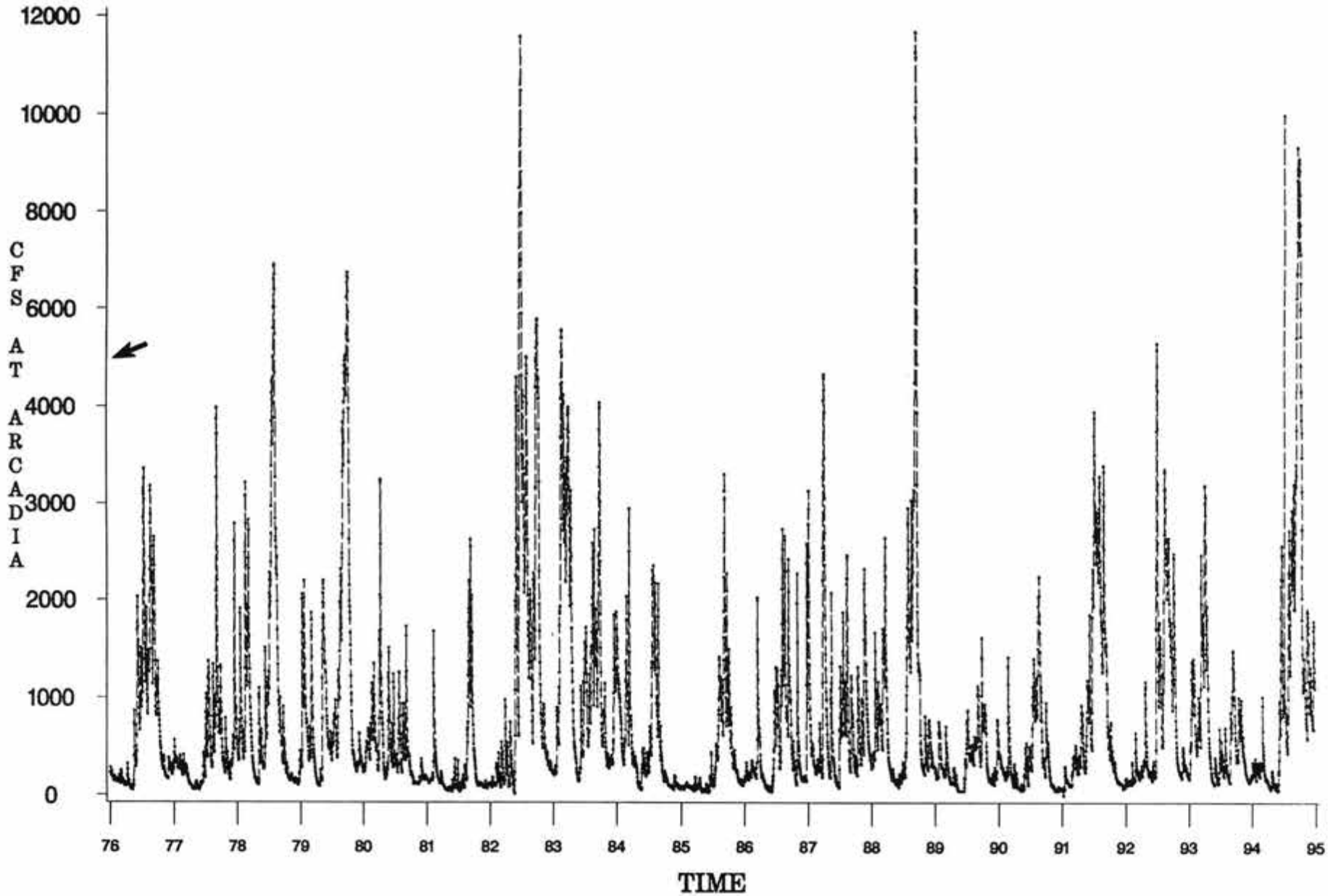


FIGURE 5.1 (c)

PEACE RIVER FLOW

1976 – 1994

Monthly Means

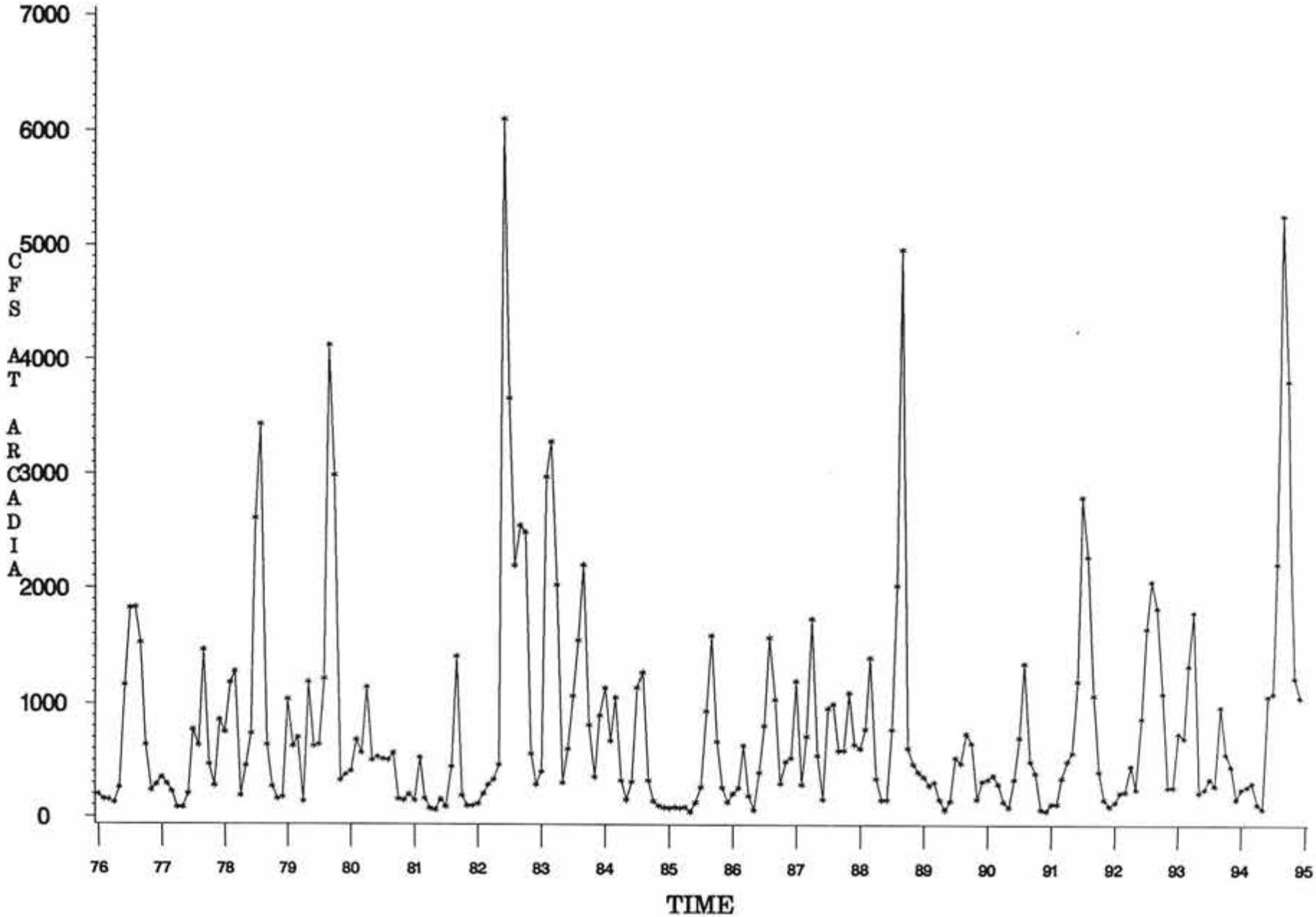


FIGURE 5.1 (d)

PEACE RIVER FLOW

1976 – 1994

3-Month Mean Moving Average

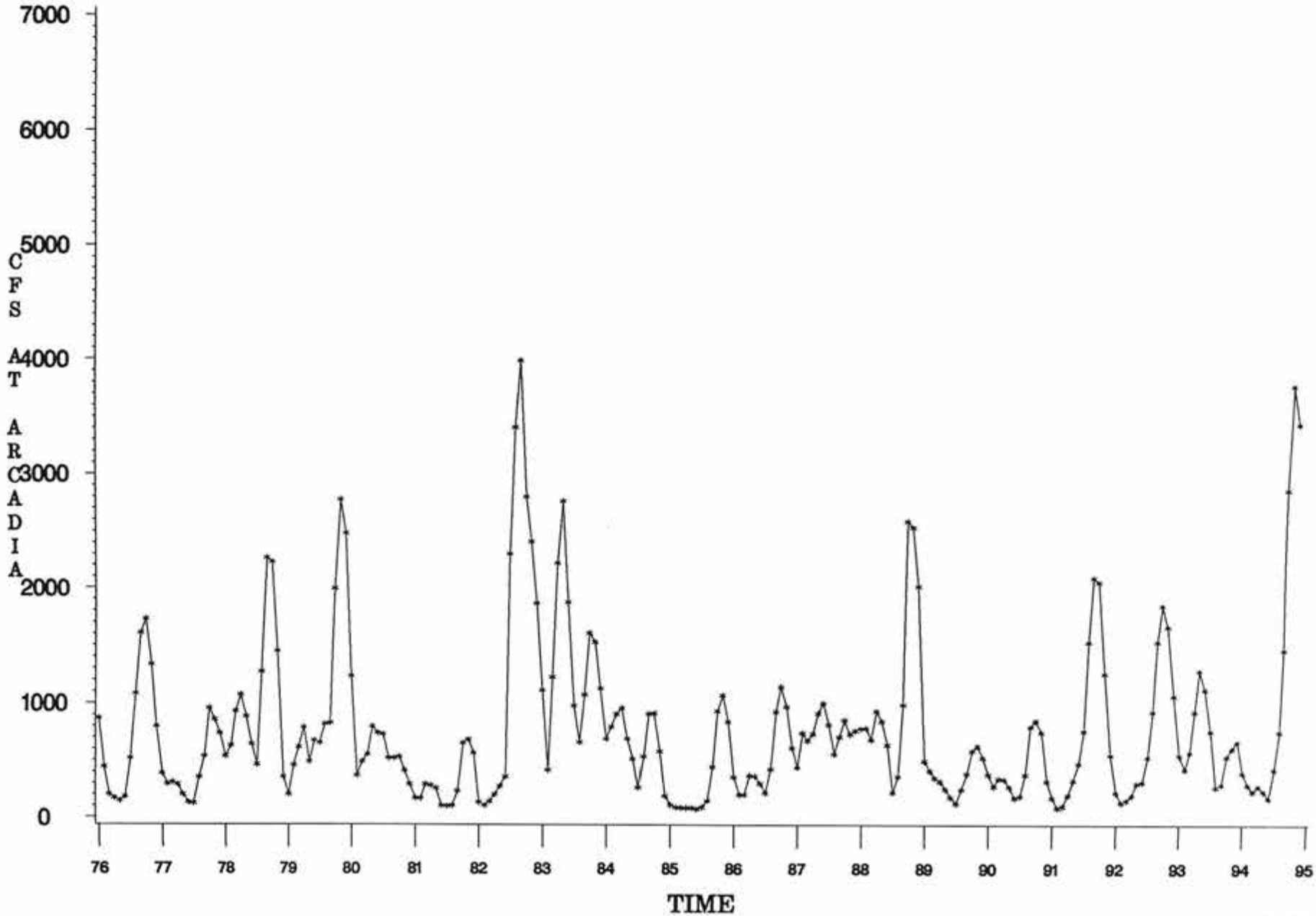


FIGURE 5.2 (a)

PEACE RIVER FACILITY WITHDRAWAL

1994

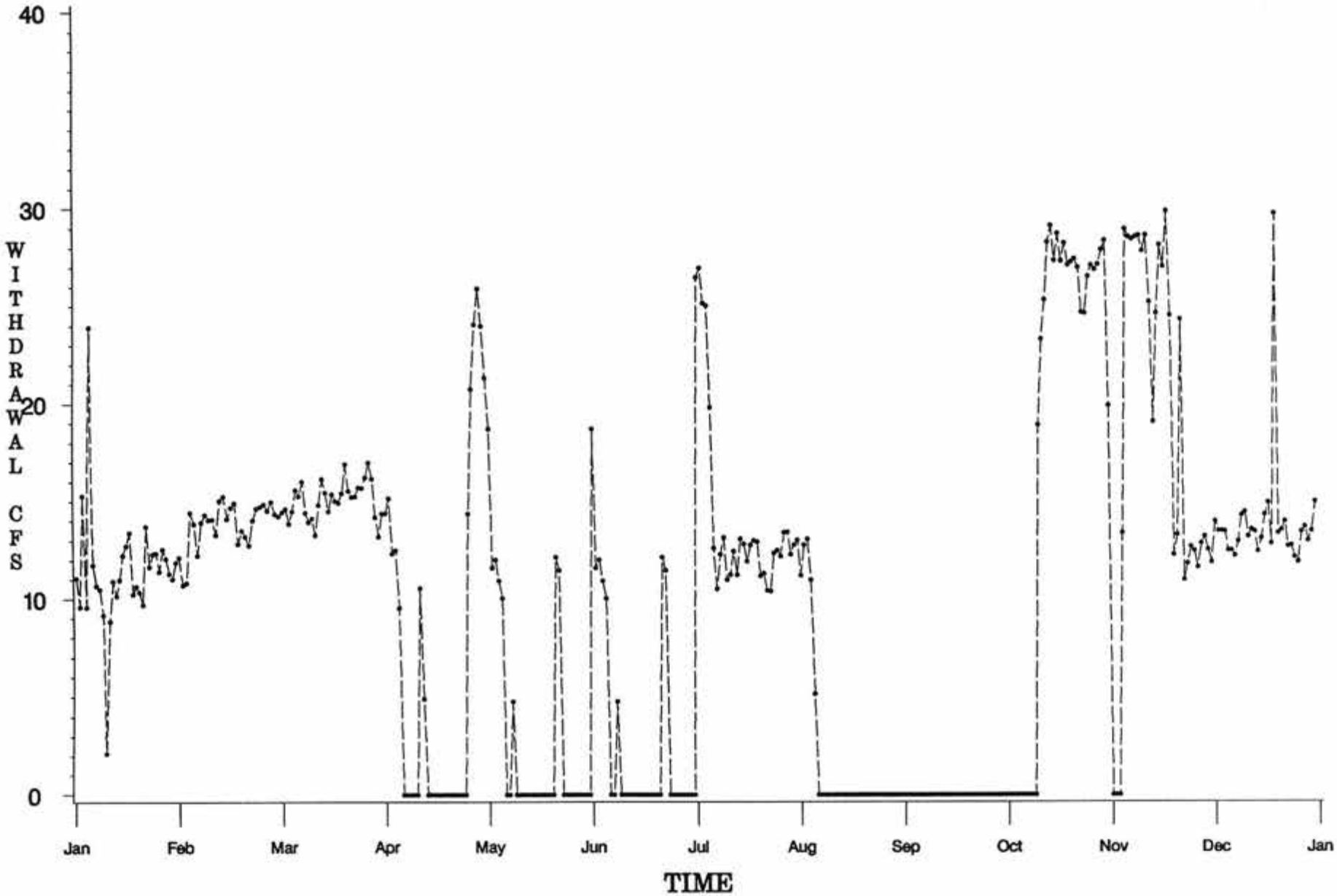


FIGURE 5.2 (b)

PEACE RIVER WITHDRAWAL

1980 – 1994

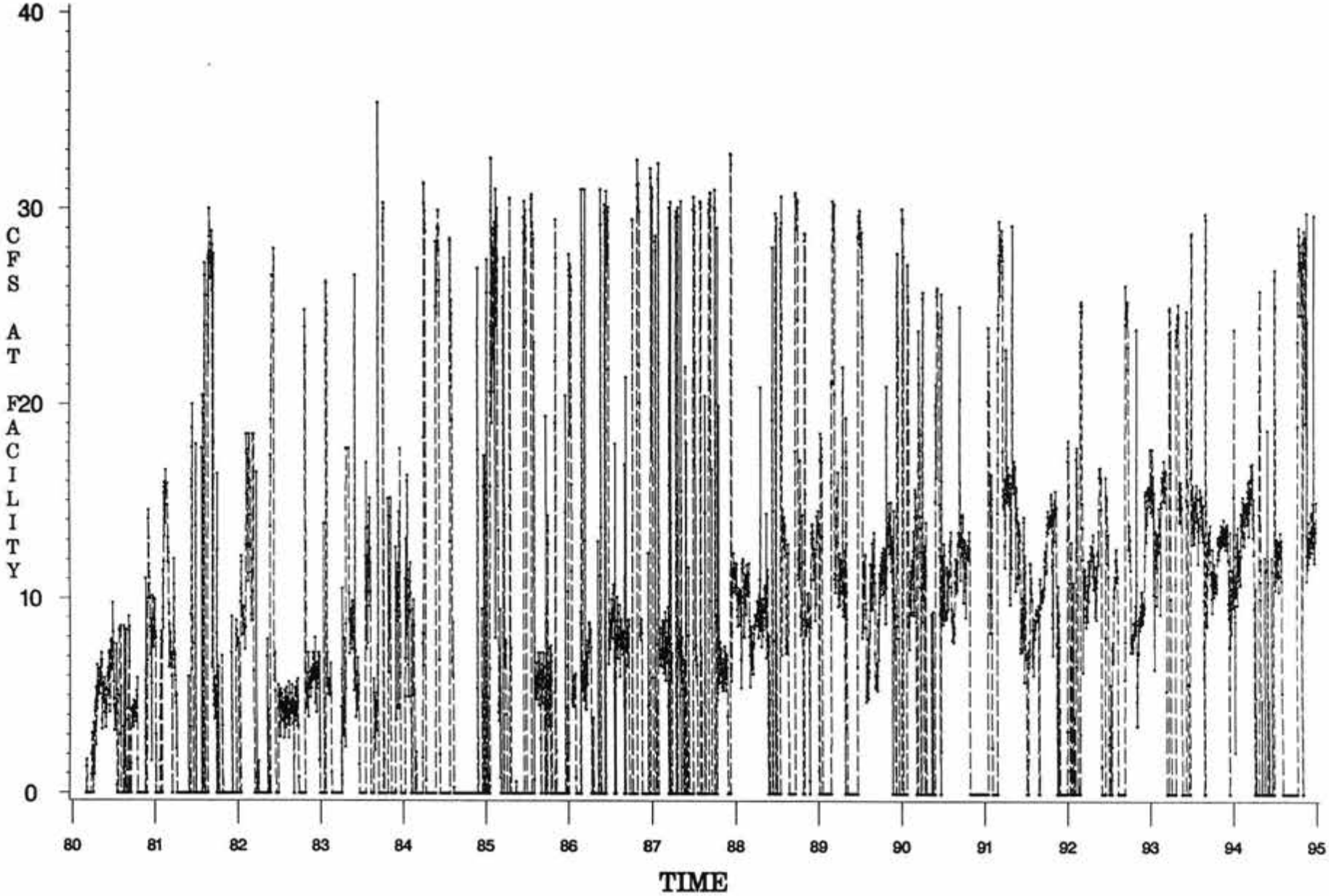


FIGURE 5.2 (c)

PEACE RIVER WITHDRAWAL

1980 – 1994

Monthly Means

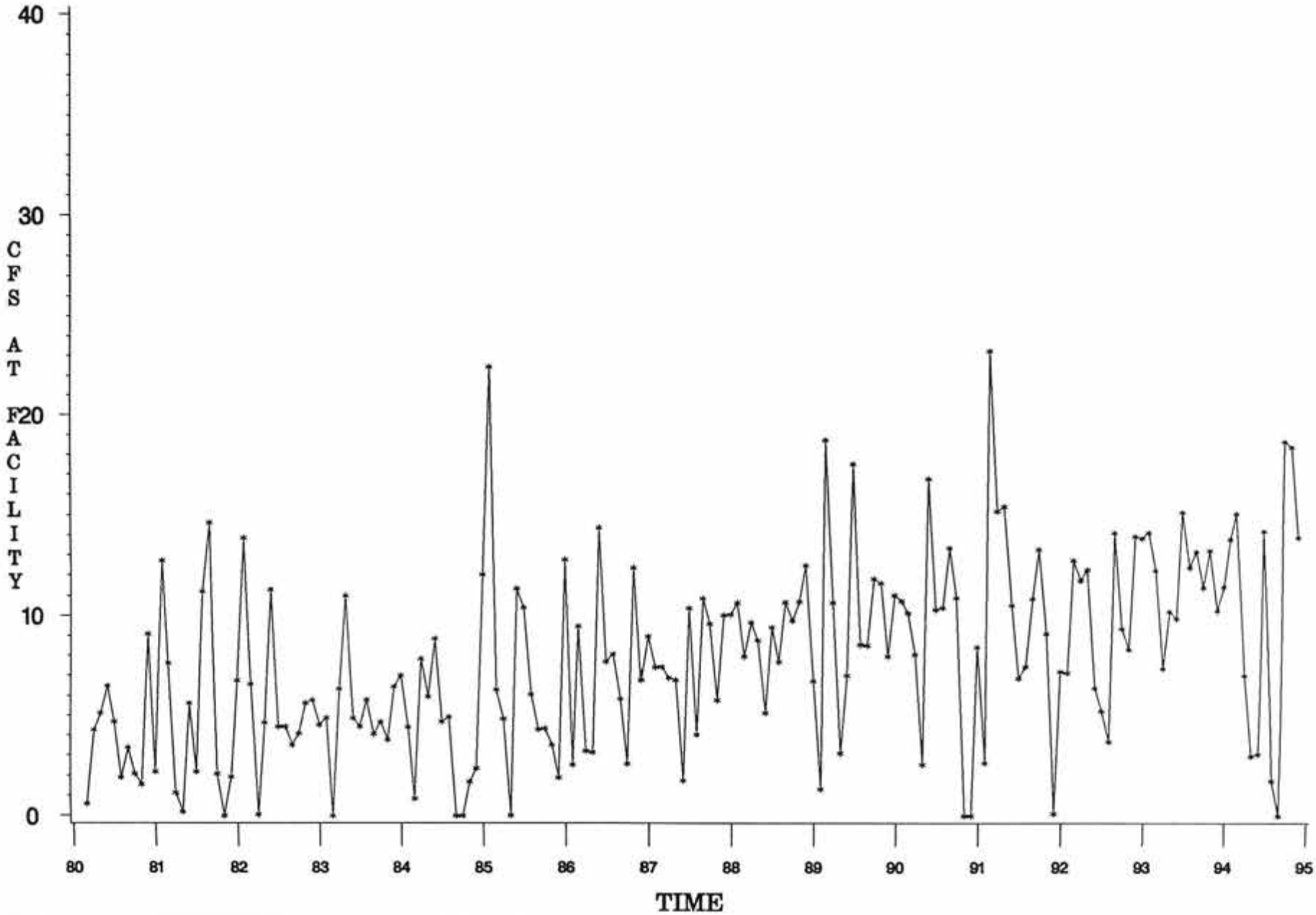


FIGURE 5.2 (d)

PEACE RIVER WITHDRAWAL

1980 – 1994

3–Month Mean Moving Average

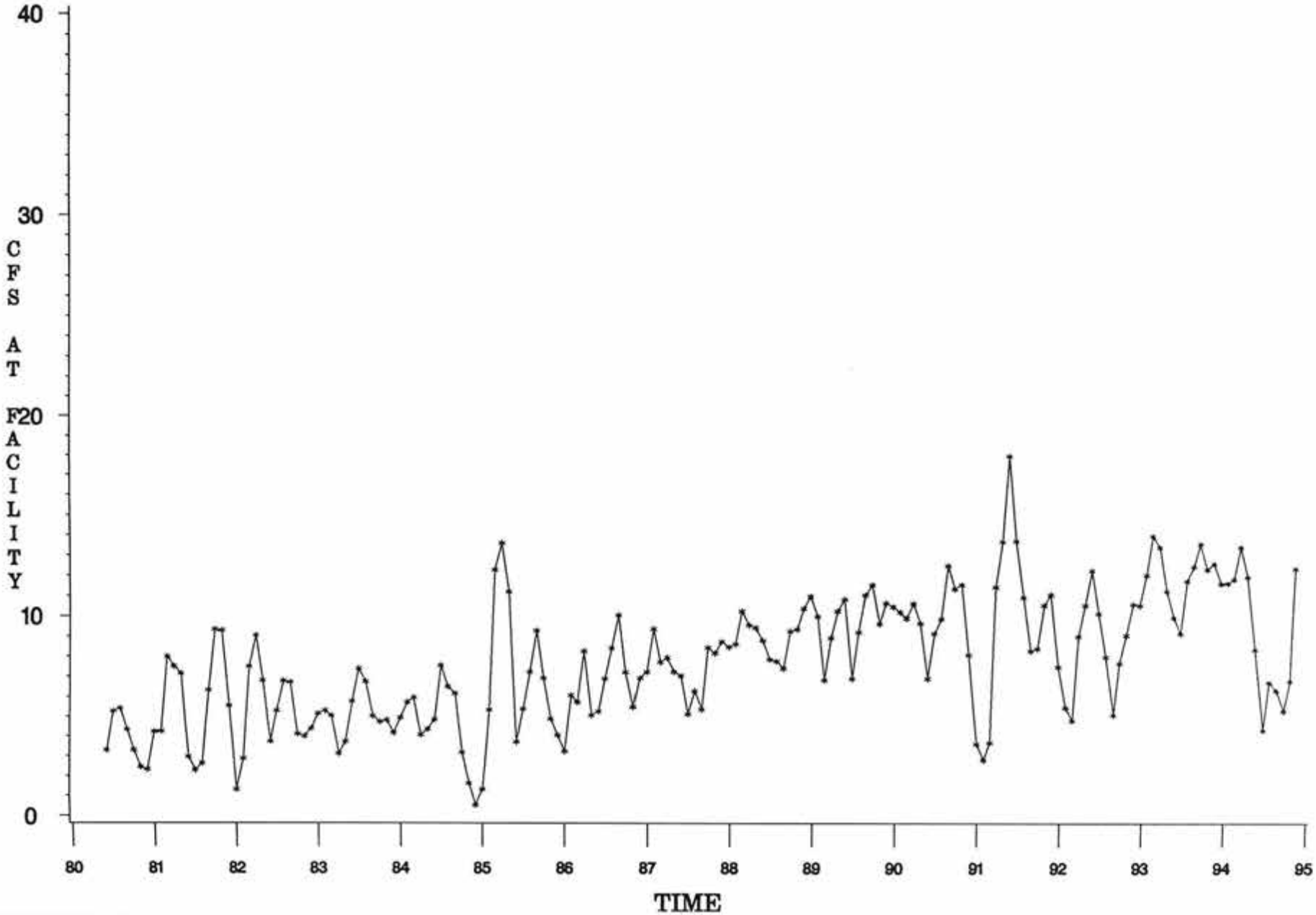


FIGURE 5.3

Peace River Flow at Arcadia Station

vs. Peace River Facility Withdrawals

1994

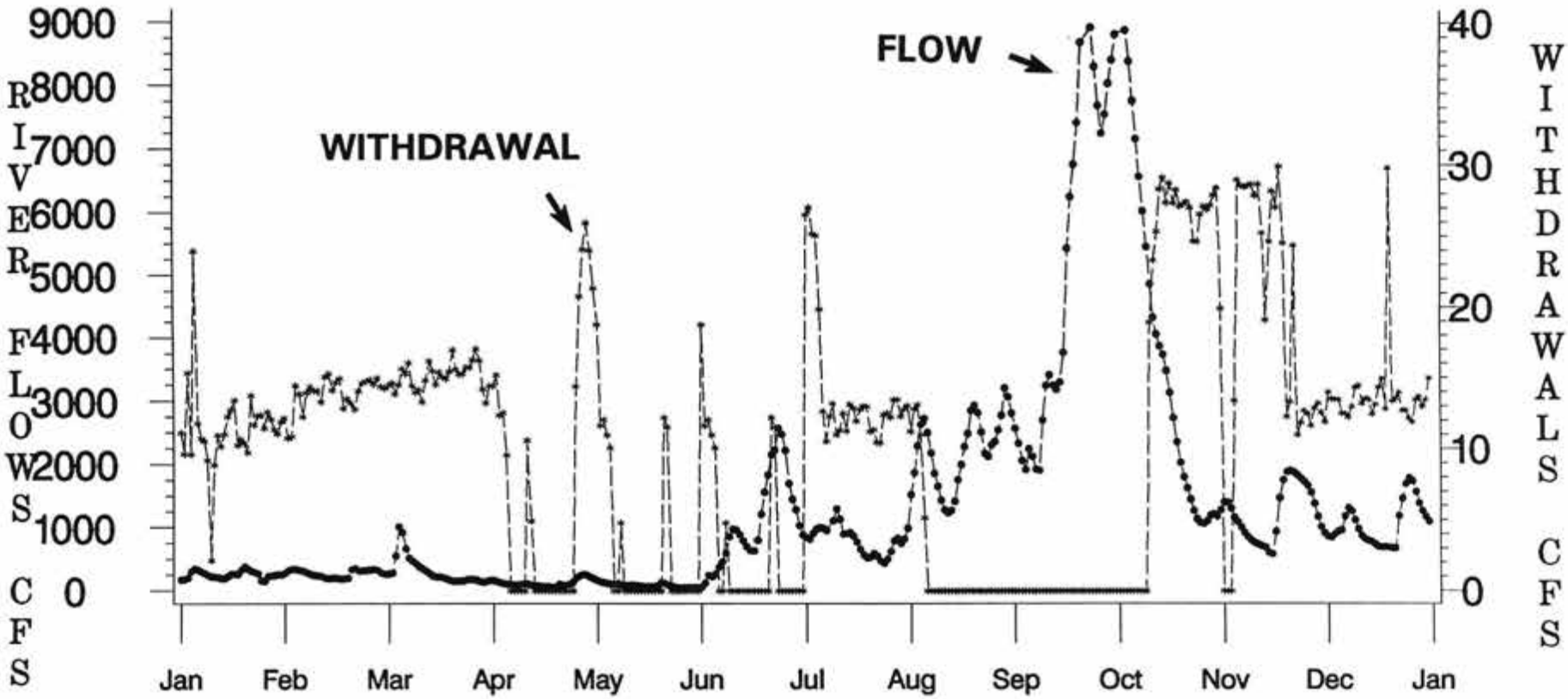


FIGURE 5.4
Peace River Flow At Arcadia
vs. Peace River Facility Withdrawals
1994

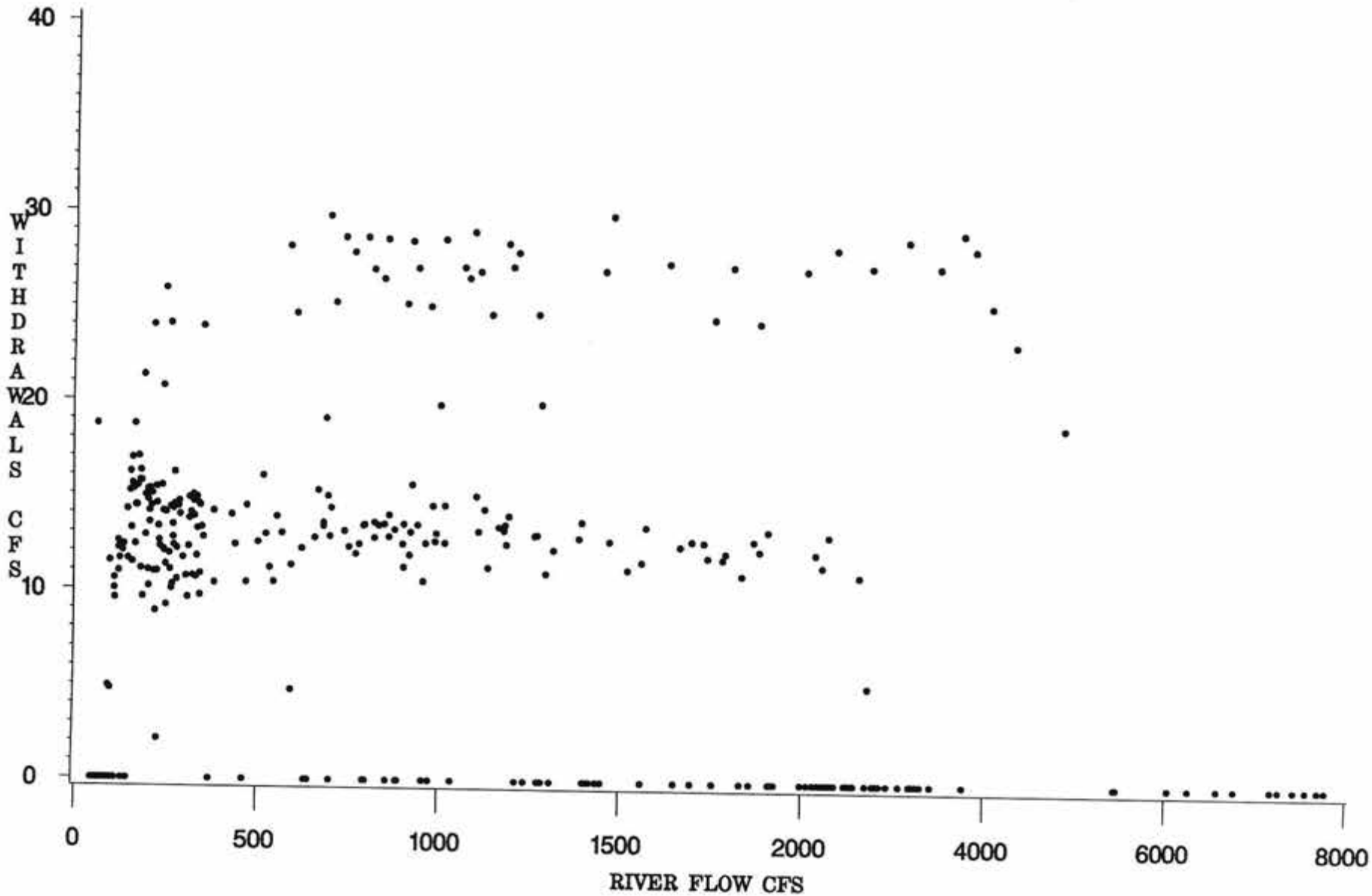
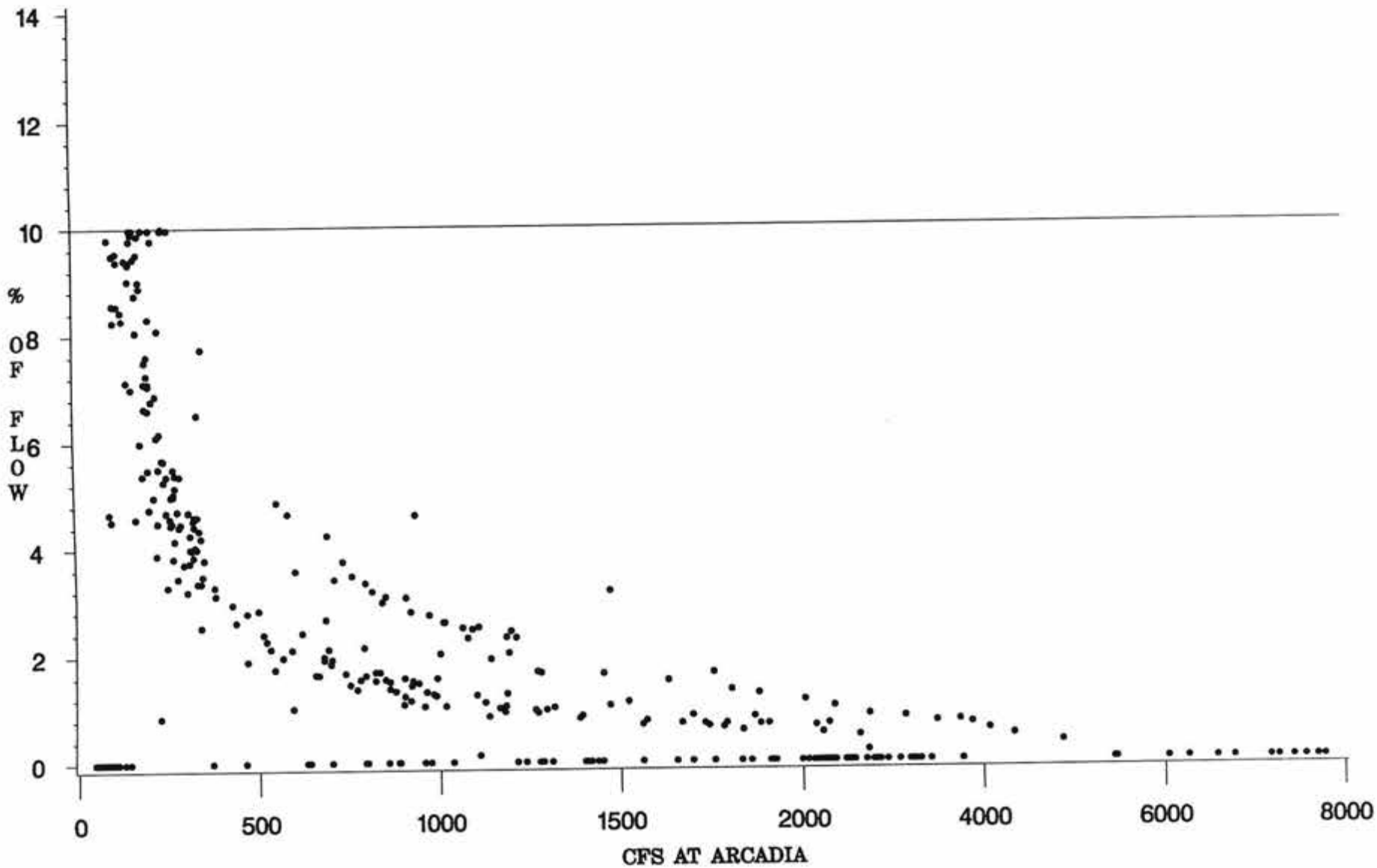



FIGURE 5.5
Peace River Flow At Arcadia
Withdrawals by Peace River Facility
1994