DATA ON PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS OF HYDRILLA BEDS, MIXED VEGETATION BEDS, AND UNVEGETATED SITES IN THE TIDAL POTOMAC RIVER, MARYLAND AND VIRGINIA, 1987

U.S. GEOLOGICAL SURVEY

Open-File Report 88-709

Prepared in cooperation with the

NATIONAL PARK SERVICE,

the U.S. ARMY CORPS OF ENGINEERS WATERWAYS EXPERIMENT STATION

and GEORGE MASON UNIVERSITY

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Reston, Virginia
1987

DEPARTMENT OF THE INTERIOR

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U.S. GEOLOGICAL SURVEY

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CONTENTS

ILLUSTRATIONS

TABLES

APPENDIXES

CONVERSION FACTORS

For the convenience of readers who prefer inch-pound units rather than the metric (International System) units used in this report, the following conversion factors may be used:

Multiply metric unit	By	To obtain inch-pound unit
Length		
millimeter (mm)	0.03937	inch (in)
meter (m)	3.281	foot (ft)
square meter (m^2)	10.76	square foot (ft^2)
centimeter (cm)	0.3937	inch (in)
square centimeter (cm^2)	0.1550	square inch (in^2)
kilometer (km)	0.6214	mile (mi)
Volume		
cubic meter (m^3)	35.31	cubic foot (ft^3)
liter (L)	1.057	quart (qt)
Mass		
milligram (mg)	0.00003527	ounce (oz)
gram per square meter (g/m^2)	8.922	pound per acre (lb/acre)
Temperature		
degrees Celsius	1.8 (+32)	degrees Fahrenheit(°F)
Concentration		
milligram per liter (mg/L)	1.0	parts per million (ppm)

Symbol	Meaning	Conversion
PAR	Photosynthetically active radiation (400 to 700 nanometer waveband). Measured in micro-einsteins per square meter per second [$\mu E/m^2)/s$]	full sunlight is approximately 2,000 ($\mu E/m^2)/s$, foot candle $=1.78X10^{-21}\mu E$
$(E/m^2)/s$	Radiometric unit of measure	1 ($\mu E/m^2)/s$ = 0.2174 watts/m^2 assuming a flat spectral distribution curve for the light over the 400 to 700 nanometer range

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ABSTRACT

This report summarizes data on the physical, chemical and biological characteristics of three types of sites--submersed aquatic vegetation beds dominated by *Hydrilla verticillata*, beds containing a diversity of submersed macrophyte species, and sites without vegetation. The data were collected diurnally and seasonally in the tidal Potomac River during 1987. Plant species were identified and dry weight determined for samples from each vegetated site. Bed structure and velocity were measured. Water-quality characteristics measured include temperature, specific conductance, dissolved oxygen, pH, chlorophyll-*a* and suspended-sediment concentration. Light penetration was measured at vegetated and unvegetated sites. Nutrient and metal concentrations (phosphate, ammonia, nitrate, potassium, iron and manganese) were measured at high and low tide. Samples were collected to analyze algal species composition. Algal photosynthetic rate and bacterial activity and growth were measured in the laboratory. Icthyoplankton, zooplankton and vegetation-associated invertebrates were sampled and enumerated. Benthic invertebrates were sampled on three transects. Data are summarized in tables in five Appendixes.

INTRODUCTION

The tidal Potomac River has experienced a number of rather important environmental changes in the period from 1979-88, mostly because of changes in waste-water treatment at the Blue Plains waste-treatment facility (fig. 1). These changes include decreased phosphorus and total suspended solid loads and a change in the major nitrogen species from ammonia (NH_4) to nitrate (NO_3). In the 1978-81 U.S. Geological Survey (USGS) study of the tidal Potomac River and Estuary, Carter and others (1985, p. 12) reported that submersed aquatic vegetation was virtually absent from the tidal river. Since 1983, numerous species of submersed aquatic plants have been found in the tidal Potomac River (Carter and Rybicki, 1986). In many locations, the exotic species *Hydrilla verticillata* has crowded out the indigenous species and formed nearly-monotypic beds. These beds may have different physical, chemical and biological characteristics from beds containing a more diverse species composition. Sites with vegetation also would be expected to differ significantly from those without plants.

P.V. Dresler (U.S. Geological Survey, written commun., 1988) found that from 1977-79, the benthic-invertebrate community of the tidal Potomac River was partitioned into two segments. One distinct community resided within the Wilson Bridge area and was composed primarily of the oligochaete, *Limnodrilus hoffmeisteri*, and a recent immigrant, the Asiatic clam, *Corbicula fluminea.* A second community composed of oligochaetes, chironomids, and sphaeracean clams was found in the reach downstream from the Wilson Bridge area. In addition to the return of submersed aquatic vegetation, surveys of Asiatic clam populations conducted in 1983 indicated approximately a 10-fold increase in abundance and biomass over values obtained in 1979 (Cohen and others, 1984). Resampling the benthic transects in this reach during this study should indicate whether significant differences in the composition of the benthic biological community have occurred since the original study.

In 1987, the U.S. Geological Survey, the National Park Service, George Mason University and the U.S. Army Corps of Engineers Waterways Experiment Station initiated a cooperative effort to study vegetated and unvegetated sites in the tidal Potomac River. The Park Service requires comparative information to determine best-management practices and to address concerns for balanced ecology and water-based recreation for areas within its responsibility. The primary objective of the study was to gather comparative information on the chemical, physical and biological characteristics of *Hydrilla* beds, mixed vegetation beds and unvegetated sites including:

(1) seasonal, diurnal, and tidally-related changes in water quality at all sites;
(2) species composition, biomass, and bed structure at vegetated sites;
(3) velocity and water clarity at all sites;
(4) algal photosynthetic rate and species composition;
(5) bacterial activity and growth rate;
(6) zooplankton species composition and density;
(7) vegetation-associated macroinvertebrate species and biomass; and
(8) icthyoplankton species composition and density.

A second objective was to resample the benthic community to determine whether significant changes have occurred since 1977-79. This report summarizes data collected to meet these study objectives.

ACKNOWLEDGMENTS

This work was partially supported by the National Park Service and the U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi. We thank all the volunteers who gave so generously of their time during the diurnal study: Frank Dawson, Maryland Department of Natural Resources; Diane Ingrams, Hank Snyder, Kathy Koveleski, Carol Scott, Carol Sporko, Christine Haggerty, Steve Syphax and John Hadidian, National Park Service; Mark Alling, Virginia State Water Control Board; and Joseph Allard. Also, we thank Harry L. Eakin, U.S. Army Corps of Engineers, Waterways Experiment Stations, for diligence in analyses of nutrients and metals in water samples.

DESCRIPTION OF STUDY AREA

The freshwater tidal Potomac River has a deep channel flanked on either side by wide shallow flats or shoals suitable for the growth of submersed aquatic plants (fig. 1). The large plant populations found on these flats are dominated in many areas by *Hydrilla verticillata*. Figure 1 shows the location of the sites sampled for this study. In June, H-PY was the *Hydrilla*-dominated site, M-MH was the mixed site, and sites EC and MH/GF were unvegetated. Site MH/GF was located somewhat further downstream on June 10 than on June 17. The mixed site (M-MH) was overgrown by *Hydrilla* in July and August so new sites were chosen for the August and November sampling; HYD is the *Hydrilla* site, MIXED is the mixed site and NV is the unvegetated site. Site BH was located in a dense *Hydrilla* bed across the river from the other sites. Occasional measurements were made at this site in August and October-November to observe variability which might result from site location (orientation, fetch). Figure 1 also shows the location of transects used for benthic sampling.

METHODS

Sites were chosen on the basis of species composition (nearly monotypic *Hydrilla* or diverse species) with the requirement that they be located close together to facilitate sampling and minimize variation in water quality due to location. Sites were a minimum of 1 m (meter) in depth (table 1). Diurnal measurements were made during three time periods to assess seasonal changes (table 2); June (early growing season), August (maximum biomass), and November (for onset of senescence). Sampling in each period was done on 2 days approximately 1 week apart so that low tide was near noon on 1 day and high tide was near noon on the other day. After the June and August diurnal samplings were completed, biomass samples were collected, bed structure was determined, and velocities were measured. In November, senescence precluded the collection of biomass and structure at the *Hydrilla* site. During senescence, *Hydrilla* detaches from the sediment and forms a dense floating mat. In all tables in this report, sites are listed in downstream order.

Dissolved oxygen, Temperature, pH, and Specific Conductance

Dissolved oxygen (DO), temperature, pH and specific conductance were measured with three Hydrolab[1] 4041 four-parameter field meters and sondes. In June, measurements were made at 0.5-m intervals from the bottom so the number of measurements made in the water column depended on site depth and tidal stage. All June measurements were made from Boston Whaler boats. On June 10, wide separation of sites and problems with scheduling resulted in fewer samples than planned at some stations and extended sampling periods (table A-1[2]); the June 17 sampling was better coordinated, sampling was

[1]Use of brand names is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

[2]Table numbers preceded by a letter are in the corresponding appendix in the back of this report.

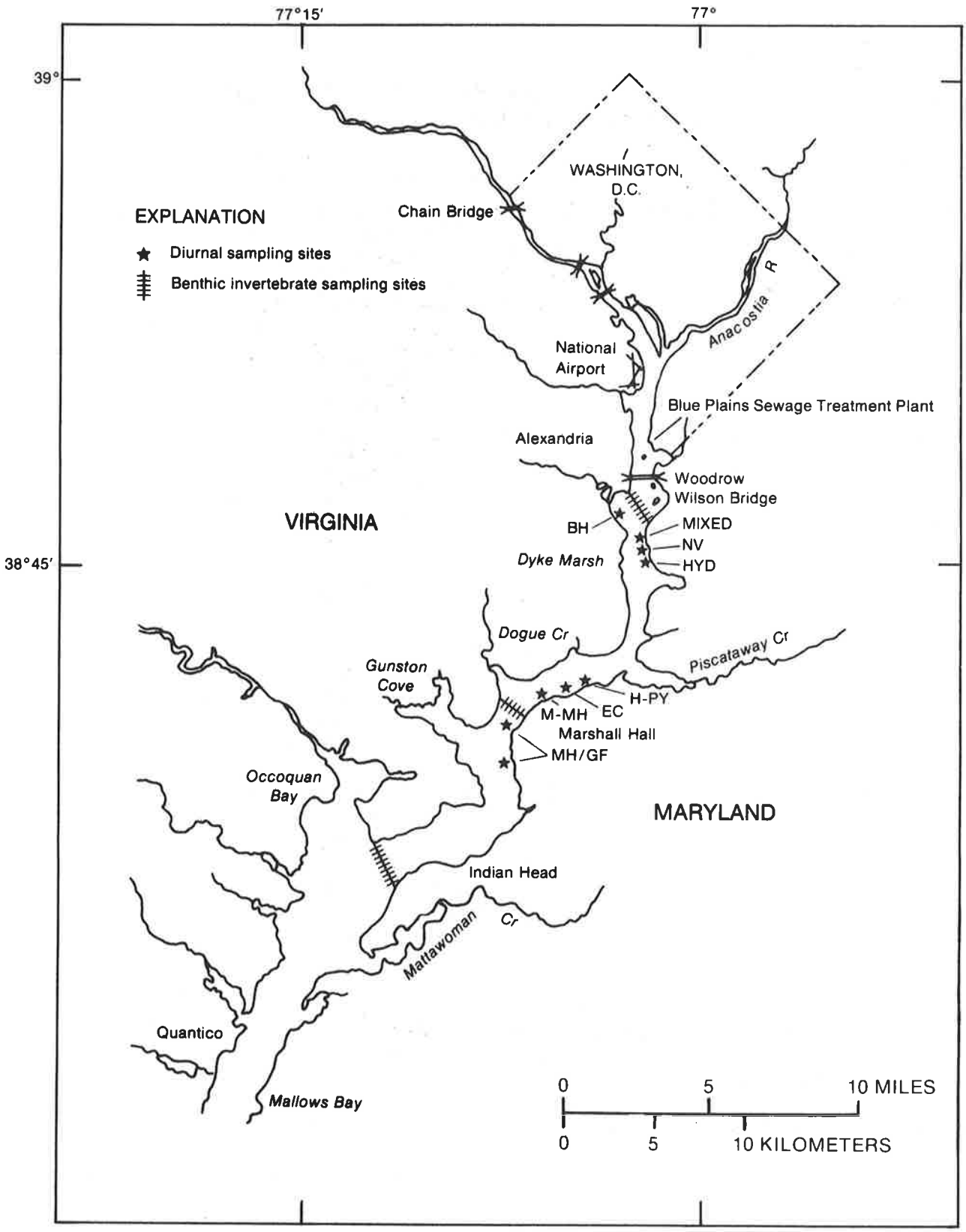

Figure 1. Map showing location of sampling sites in the tidal Potomac River.
[H-PY is the Hydrilla site, M-MH is the mixed vegetation site and EC and MH/GF are the unvegetated sites for June; HYD and BH are the Hydrilla sites, MIXED is the mixed vegetation site and NV is the unvegetated site for August and October.]

Table 1.--Water depth at vegetated (H-PY, M-MH, BH, MIXED, HYD) and unvegetated (EC, MH/GF, NV) sites, 1987

Date	Site[1]	Depth range (m)
June 6	H-PY	0.8-1.5
	EC	1.3-1.9
	M-MH	0.7-1.6
	MH/GF	0.4-1.0
June 17	H-PY	1.2-2.0
	EC	1.7-2.5
	M-MH	0.9-1.7
	MH/GF	1.2-2.0
August 20	MIXED	1.0-1.7
	HYD	1.4-2.1
	NV	1.7-2.8
August 31	MIXED	1.1-1.9
	HYD	1.5-2.0
	NV	1.8-3.1
	BH	1.6-2.0
October 29	MIXED	0.9-1.8
	HYD	1.1-1.7
	NV	1.5-2.5
	BH	1.4-2.1
November 4	MIXED	1.0-1.9
	HYD	1.2-2.1
	NV	1.8-3.0

[1]See fig. 1 for site location.

Table 2.--Tidal stage, time, and climatological data for diurnal study sampling dates, 1987

[Average temperature in degrees Celsius; average wind speed in miles per hour; sunshine in percent of total possible]

Sampling date	Tide	Time[1]	Average temperature	Average wind speed	Wind direction	Sunshine
June 10	High	0608	19	12	Northwest	97
	Low	1334				
	High	1851				
June 17	Low	0701	26	8	East	82
	High	1236				
	Low	1935				
August 20	High	0540	27	10	Northwest	95
	Low	1247				
	High	1820				
August 31	Low	0749	27	11	South	29
	High	1304				
	Low	1927				
October 29	Low	0728	9	8	West	36
	High	1241				
	Low	1927				
November 4	High	0623	18	7	South	64
	Low	1255				
	High	1839				

[1]From NOAA tidal prediction table, corrected for site locations and for daylight savings time (04/25/87 - 10/25/87).

accomplished within discrete time periods, and uniform procedures were followed (table A-2). In August and November, measurements were made at 0.1 and 0.5 m from the surface and then at 0.5-m increments with the last measurement as close to the bottom as possible (tables A-3 to A-6). All August and November sampling in vegetated beds was done by canoe.

Chlorophyll-*a* and Suspended Sediment

Three to six depth-integrated chlorophyll-*a* samples were collected at each site at all five sampling times during June (tables A-7 to A-8). Severe problems were encountered with dislodged epiphytes in vegetated sites on both days: these epiphytes caused very large chlorophyll-*a* values which have been eliminated from the data tables. To minimize this problem in August and November, water samples were pumped through previously-placed tubes. Poles were embedded vertically in the middle of each vegetated bed. Flexible plastic tubes were attached to the poles at 0.7 m above the bottom and then run horizontally to the edge of the bed. Two samples were collected from each tube at each sampling time (tables A-9 to A-12). At the unvegetated site, a measured pole with tubing attached was used to collect similar samples. Samples were pumped into bottles with a portable Masterflex peristaltic pump. All samples were collected by Boston Whaler. In August and November, three surface chlorophyll-*a* samples also were collected at each site at midmorning, noon, and afternoon (tables A-13 to A-16).

Depth-integrated suspended-sediment samples were collected at each site at low and high tide during June (tables A-7 to A-8). During August and November, suspended-sediment samples were collected by pump using the same tubing set-up described for chlorophyll-*a*. Duplicate samples were collected from each tube at dawn, noon and dusk in August and at dawn, noon, and midafternoon in November at each site (tables A-9 to A-13).

Chlorophyll-*a* was extracted from 4.25-mm (millimeter) glass microfiber filters (effective retention 1.2 μm (micrometer) with a 90-percent acetone solution. Chlorophyll-*a* concentration, corrected for phaeophytin, was determined according to the fluorometric procedures of Strickland and Parsons (1972) as modified by Blanchard and others (1982). Modifications include elimination of magnesium carbonate during filtration and use of hydrochloric acid for the acidification step. Suspended-sediment samples were vacuum-filtered through tared 4.25-mm-diameter glass microfiber filters, freeze dried for 3 hours, and reweighed to determine total suspended sediment content. Filters were baked in a muffle oven for 2 to 3 hours at 500 °C (degrees Celsius) and reweighed to determine the mass of the organic fraction.

Velocity and Light Measurements

Velocities were measured at low, flood, high, and ebb tides in June and August at all sites with a Price type AA current meter using the three-point method (Rantz and others, 1982, p. 135)(tables A-17 and A-18). Light measurements were made at all sites at ebb and flood tides with a Licor photometer (tables A-19 to A-23). Measurements were made in 0.25-m increments

in June. In August, measurements were made at 0.25-m increments in holes in the vegetated beds created by harvesting plants and at 0.1-m intervals directly through the vegetation mat. In November, readings were made in the harvested area just adjacent to the bed because holes could not be kept open. Secchi depth was measured at all sites during June, but, in August and November, the Secchi disk reached the bottom in the vegetation beds before a reading could be taken (table A-24).

Statistics and Calculations

Means and standard errors were calculated by sampling time, tide and site, for the water-quality, chlorophyll-*a*, and suspended-sediment data using the SAS General Linear Model (GLM) statistical package (SAS Institute, Inc., 1985, p. 433). Temperature and specific conductance means are shown in tables B-1 to B-6; DO and pH means in tables B-7 to B-12; chlorophyll-*a* and suspended-sediment means for June in tables B-13 and B-14; chlorophyll-*a* and suspended-sediment means for August and November in tables B-15 to B-18; and surface chlorophyll-*a* means in tables B-19 to B-22. Extinction coefficients were calculated for depths of 0 to 0.05 m, 0 to 1.0 m and 0.5 to 1.0 m when data were available (tables B-23 to B-28).

Plant Biomass and Bed Structure

Plant biomass was sampled in June, August, and November by divers using one-foot-squares randomly placed in the beds. The square had a removeable side so that it could be slid into place on the bottom and all plant material including roots and rhizomes pulled up. Plant material was sorted by species and air dried. Bed structure was measured with a 1-m-square, 2.5-m-high frame constructed of conduit and angle iron with wooden bracing. Structure was measured during flood tide in June and during low and high tide in August. Vegetation within the frame was clipped at 0.5 m intervals from the water surface at high and low tide, collected, and the volume of plant material was measured by displacement of water. Samples were sorted by species, and air dried. All plant material was oven dried at 100° C for 12-24 hours and weighed. Tables C-1 to C-3 show biomass and species composition by sample at the vegetated sites. Tables C-4 shows the mean biomass and species composition by depth interval at each site. Tables C-5 and C-6 show vegetation structure in June and August.

Phytoplankton Enumeration

Depth-integrated water samples for phytoplankton enumeration were collected three times during the day on June 10 (table C-7 to C-10), whereas point samples were collected just below the water surface twice during the day on August 20 and October 29 (tables C-11 to C-16). Samples were preserved with a 1-percent solution of lugols and sent to a contract laboratory for identification.

Nutrient Analyses

Water samples for nutrient analyses were collected with a Niskin bottle in June and by pumping in August and November. Samples were collected for nutrient analyses two to three times a day at each site (tables D-1 to D-4). Three samples were collected from just below the water surface and three samples from just above the sediment-water interface. Mean concentrations are shown in tables D-5 to D-12. In November, because the *Hydrilla* bed was a thick floating mat, a 1-m^2 hole would not remain open, so samples were collected directly adjacent to the bed in a 10-m-wide lane cut through the bed by a mechanical harvester. Samples were filtered through 0.45-μm filter assemblies and then acidified with concentrated H_2SO_4. Samples were frozen and shipped to the Waterways Experiment Station for analysis.

Analysis of nutrients was performed on a Technicon Autoanalyzer II system. Samples were compared to standards at the beginning and end of each sample set. Standards were prepared from commercially available primary solutions. Filtered samples were analyzed for soluble reactive phosphorus (SRP) by automated ascorbic acid reduction (detection limit, 0.005 mg/L SRP), for nitrate plus nitrite nitrogen (N) (reported as nitrate) colorimetrically by cadmium reduction (detection limit, 0.04 mg/L N) and for ammonium nitrogen colorimetrically using phenol-hypochlorite (phenate) (detection limit, 0.04 mg/L N)(American Public Health Association, 1985). The metals potassium (K) iron (Fe) and manganese (Mn) were measured with flame absorption spectrophotometry (detection limit for K, 0.005 mg K/L; detection limit for Fe and and Mn, 0.01 mg/L)(American Public Health Association, 1985). For metals, samples were compared to standards prepared from commercially available primary standard solutions.

Benthic Invertebrates

Benthic invertebrates were sampled seasonally at three transects, each containing six stations, which spanned the river to include nearshore, shelf and channel locations. Transects were placed at locations containing both monotypic *Hydrilla* and diverse vegetation (Wilson Bridge, Dogue Creek) and in an unvegetated reach (Indian Head)(fig. 1). Each transect was sampled at the following three times: (1) full vegetative emergence, August, 1987, (2) postvegetative growth, November 1987; and (3) prevegetative emergence, April 1988. Transects located at the Wilson Bridge and Indian Head areas correspond to the same transect locations used in the 1977-79 survey.

At the time of invertebrate sampling the specific conductance, temperature, dissolved oxygen concentration and pH were measured at the surface and 0.3 m from the bottom at each station (data not shown). Biological samples were collected using a Van-Veen hydraulic grab, which samples 0.152 m^2 (square meters) of unconsolidated bottom sediments to a depth of 30 cm (centimeter). The contents of the grab were sieved through a 0.5-mm mesh screen. Materials retained by the screen were preserved in a 4-percent formalin solution laced with Rose Bengal, a vital stain, added to facilitate laboratory sorting. Sediments and biota retained by the 0.5-mm sieve were taken to the laboratory to be hand-picked, sorted, identified, and enumerated. Following the identification of organisms to the species level where possible,

all samples will be partitioned by phyla and weighed to determine the total wet-weight biomass per phyla per station.

Phytoplankton Photosynthetic Rate and Bacterial Activity and Growth

Samples for determination of photosynthetic rate of phytoplankton and bacterial activity and growth rate were collected by the method described earlier for chlorophyll-*a* and suspended sediment. One sample per tide was collected at each of two subsites at each site. These were stored in the dark at ambient temperature for transport to the lab. Sample analysis generally began about 2 hours after the collection of the last sample.

Photosynthetic rate was determined using the carbon-14 (^{14}C) bicarbonate-uptake method. To 50 mL (milliters) of water sample from each station was added 100 µL (microliters) of ^{14}C-labelled sodium bicarbonate (20 µCi/mL (microcuries/milliliter)). After mixing well, two 25 mL glass scintillation vials were filled, capped and placed in a constant temperature water bath held at *in situ* river temperature. One vial was incubated at a light intensity of about 1200 µmol/m^2/s (light saturation) and the other at about 100 µmol/m^2/s. Light levels were set to within 10 percent of the stated value using a photon sensor. After an incubation of 1 hour, an aliquot from each vial was filtered through a 0.45-µm membrane filter and the filter stored immediately in the freezer at -20 °C. To determine radiocarbon uptake, frozen filters were thawed and placed in concentrated HCl fumes for 10 minutes to drive off residual inorganic carbon. Then, each filter was placed in a scintillation vial, cocktail was added, and vials were counted 10 minutes each with a Packard Tri-carb Model 300C liquid scintillation counter. Efficiency was determined by the external standard ratio method and used to convert counts per minute (CPM) to ^{14}C activity (DPM). Photosynthetic rate was determined using the following equation:

$$\text{Photosynthetic Rate} = \frac{(\text{DPM}) \times (\text{ALK}) \times (\text{CF}) \times (1.06)}{(\text{DPMWAT}) \times (\text{TIME})}$$

where: DPM = ^{14}C activity in algae, (dpm/L);

ALK = Total alkalinity, (mg/L as $CaCO_3$);

CF = Conversion factor from total alkalinity as mg/L $CaCO_3$ to dissolved inorganic carbon (Sanders and others, 1962);

DPMWAT = ^{14}C activity in incubation water (dpm/L); and

TIME = incubation time (hours).

Results of photosynthetic-rate measurements are shown in tables E-1 to E-3.

Chorophyll and phaeopigment were also measured on photosynthetic-rate samples. Two 15 mL aliquots of each sample were filtered through a 0.45-µm membrane filter; 1 mL of $MgCO_3$ suspension (1 percent) was added to each filter during the final stages of filtration. Filters were placed in plastic scintillation vials and placed in the freezer to await extraction. For

extraction, each filter was placed in a ground-glass tissue grinder to which mL of dimethyl sulfoxide (DMSO) was added. The filter disintegrated in the DMSO and was ground for 1 minute. Ground samples were stored overnight in the refrigerator. Samples were centrifuged for 5 minutes to remove residual particulates. Chlorophyll concentrations in the extracts were determined by fluorometry using a Turner Designs Model 10 field fluorometer. Fluorescence was determined before and after acidification with two drops of 10-percent HC1. The fluorometer was calibrated with reference samples from the U.S. Environmental Protection Agency Environmental Monitoring and Support Laboratory. An F_s value of 60 and an R_s value of 2.0 were used for calculations as follows:

F_s = concentration of chlorophyll-*a* per unit of florescence.

R_s = florescence before acid/florescence after acid for pure chlorophyll-*a*.

Chlorophyll-*a* (μg/L) = $F_s * R_s * (R_b - R_a)/(R_s - 1)$

where F_s and R_s are as indicated above

R_b = fluorescence of sample before acid, and

R_a = fluorescence of sample after acid.

Results of chlorophyll-*a* and pheopigment measurements are presented in tables E-4 to E-9.

Natural rates of microbial amino acid metabolism and thymidine uptake were determined by a dual labeling technique. The incubation containers for this analysis were acid washed polypropylene 20 mL scintillation vials fitted with gas tight caps. Small polypropylene cups were suspended from the inside of each of the caps. Accordion-folded 3 x 1-cm filter paper wicks saturated with 200 μL of phenethylamine were placed in the suspended cups to trap respired $^{14}CO_2$. Ten mL aliquots of well-mixed sample were placed in each of four vials. Activity in one vial was stopped by addition of 100 μL of 1.2N H_2SO_4 as an abiotic control. Each sample was inoculated with 0.1 μCi of ^{14}C glutamate and 0.5 μCi of ^{3}H methyl thymidine and incubated in the dark for exactly 30 minutes. Samples were then treated with 10 mL of 10 percent trichloroacetic acid to stop biological activity and liberate respired CO_2. The vials were shaken at 100 revolutions per minute (rpm) for 1 hour on ice to trap the residual respired $^{14}CO_2$. The CO_2-trapping filter wicks were placed in scintillation vials containing 10 mL of scintillation cocktail and the filter cups rinsed with cocktail. The contents of each vial were filtered through a 0.2 μm membrane filter and rinsed with 4 mL of 5-percent trichloroacetic acid; the filters were placed in scintillation vials with cocktail. DPM of ^{14}C and ^{3}H were determined by dual-label counting using external standard ratio for quench correction. Turnover rate for the *in situ* glutamic acid pool was determined from the following equation:

$$\text{Glutamate turnover} = \frac{(\text{DPM assimilated}) + (\text{DPM respired})}{(\text{DPM added} * (\text{TIME})} \times 100$$

Thymidine incorporation was computed as follows:

$$\text{Thymidine incorporation (picomole/L/hr)} = \frac{(\text{DPM assimilated})}{(\text{specific activity}) * (\text{TIME})}$$

Results of bacterial activity and growth rate measurements are shown in tables E-10 to E-15.

Zooplankton

Zooplankton were sampled by pumping equal amounts of water from near surface (0.3 m depth) and near bottom (0.3 m above bottom) using a battery-powered submersible bilge pump. The pumped water was filtered through a 62-μm mesh nylon net and into a bucket for volume measurement. Samples were preserved in buffered formalin for later analysis. Two stations were sampled at each site at high and low tide.

Zooplankton were enumerated by species in the lab using a Sedgewick-Rafter counting cell. In some cases, concentrations in preserved samples were too dilute for efficient counting and they were concentrated by carefully decanting supernatant with a syringe after overnight settling. Using a compound microscope at 100X, whole slides were analyzed until at least 200 organisms were identified and enumerated. A minimum of two slides were examined for each sample. References for identification were Ward and Whipple (1959), Pennak (1978), Merritt and Cummins (1978) and Rutner-Kolisko (1974). Zooplankton counts were converted to numbers of animals per liter with the following formula:

$$\text{Zooplankton (number/liter)} = \frac{N \times VS}{VC \times VF},$$

where N = number of animals counted,

VS = total volume (mL) of preserved sample,

VC = volume (mL) of preserved sample counted, and

VF = volume (L) of river water filtered.

A list of all zooplankton samples collected is shown in table E-16. Results of zooplankton counts completed to date are presented in table E-17.

Vegetation-Associated Invertebrates

Submersed aquatic vegetation (SAV)-associated invertebrates were collected with a 0.5-mm mesh bag. The bag was approximately 2 m tall, and its mouth was attached to a 1-m square quadrat. The bag was quickly lowered, quadrat side down, over the vegetation. A diver then entered the water, pulled up or broke off the vegetation, forced the vegetation and quadrat into the bag, and cinched off the bottom with a draw string. The contents were transferred to a large plastic garbage bag and brought back to the lab for sorting. The material was washed by hand in small batches with running water to remove the invertebrates from the plant material. In some cases, small batches of plant material were placed over a section of 0.5-mm mesh nylon net made into a large sieve and the associated invertebrates rinsed from the plants onto the sieve with running water. In other cases, small batches of plant material were washed over a large garbage pail with running tap water. When the garbage can filled, it was emptied through a 0.5-mm mesh nylon net sieve. The animals and some small pieces of plant material were preserved with 10-percent formalin. The plants were separated by species for each sample and dried at 70 °C for dry weight determination. All samples were processed within 48 hours of collection. Later, the preserved animal samples were sorted by taxa into ethanol, identified, and enumerated. A list of all SAV-associated macroinvertebrate samples collected is presented in table E-18. Results to date (1988) are shown in table E-19.

Ichthyoplankton

Ichthyoplankton were sampled in June by towing a 0.333-mm mesh conical net (30-cm diameter mouth) through the water at two depths (near surface and near bottom) for 3 minutes at each depth. A flow meter attached within the mouth of the net measured the total volume of water passing through the net. All samples were preserved in 5-percent formalin immediately after collection. Samples were scanned under a stereo dissecting microscope, and ichthyoplankton were removed with forceps. Larval fish were transferred to vials and stored in 70-percent ethanol with glycerin. Identification was made to family or to genus and species where possible. The works of Hogue and others (1976), Jones and others (1978), Lippson and Moran (1974), and Mansueti and Hardy (1967) were used as references for identification. The number of ichthyoplankton in each sample was converted to number of animals per 10 m^3 (cubic meters) using the following formula:

$$C = N / V * 10,$$

where N = number of ichthyoplankton in sample;

V = volume of water filtered, in m^3; and

C = number per 10 m^3.

Results of ichthyoplankton tows are shown in tables E-20 to E-21.

Fish

Adults and juvenile fishes were sampled by a combination of techniques. In June trawling was used because the weedbeds were less developed and concentrated near the bottom. A try-net bottom trawl with a 4.9-m horizontal opening, 19-mm-square mesh, and a 6.4-mm-square cod end mesh was used. The otter boards were 30.5 cm by 70 cm. Towing speed was 2 to 3 miles per hour and tow duration was 3 minutes. Separate trawls were made at sites M-MH and MH/GF. However, a single trawl passed through sites H-PY and EC. In October, fish were collected using pop nets, which are 3m x 3m-square enclosures made of 4.8-mm mesh diameter nylon netting. Each enclosure was 2.7 m high. The netting was held in place by frames of 76-mm PVC pipe at top and 12.7-mm steel reinforcing rod at the bottom. The top frame was buoyant and the bottom frame weighted. The net was set by trying the top frame to the bottom and lowering both to the sediment surface. The area was then evacuated for several hours to allow fish to recolonize the area to be enclosed by the net. The net was tripped by releasing the ties on the top frame, which allowed it to float to the surface and trap fish within the net. The fish were then seined out, identified, measured, and counted. Fish collected in macroinvertebrate bag samplers also were identified and enumerated. Results of trawl samples are presented in table E-22. Pop net results are shown in table E-23. Fish collected in the macroinvertebrate bag sampler are shown in table E-24.

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Appendix A. Water-Quality Data

Table A-1.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
H-PY	1	0.5	23.0	7.5	308	6.9	0650
		1.0	23.1	7.5	308	6.4	
	2	.5	23.1	7.5	307	6.5	0801
		1.0	23.2	7.5	307	6.3	
	3	.5	22.8	7.3	307	6.4	0811
		1.0	23.2	7.5	305	6.4	
	4	.5	23.3	7.5	305	6.4	0826
		1.3	23.4	7.5	305	6.3	
	5	.5	23.5	7.4	307	6.5	0836
		1.3	23.5	7.4	306	6.3	
	6	.5	23.5	7.4	306	6.5	0845
		1.0	23.6	7.4	306	6.3	
	1	.5	24.2	7.5	305	7.0	1033
		1.0	24.3	7.5	305	6.7	
	2	.5	24.6	7.5	301	6.9	1053
		1.0	24.5	7.6	302	7.3	
	3	.5	24.6	7.6	298	7.0	1105
		1.0	24.6	7.6	302	7.2	
	4	.5	24.7	7.6	303	6.9	1115
		.8	24.7	7.6	302	7.3	
	5	.5	24.8	7.6	302	7.3	1120
		.7	24.8	7.6	301	7.7	
	6	.5	24.9	7.6	301	7.2	1128
		1.0	24.8	7.8	300	7.8	
	1	.5	26.2	8.0	297	8.8	1430
		.8	26.3	7.9	298	8.9	
	2	.5	26.2	8.1	298	9.4	1446
		.8	26.2	8.1	296	9.5	
	3	.5	26.2	7.9	297	8.7	1455
		.8	26.2	7.9	297	8.8	
	4	.3	26.5	7.9	298	8.4	1507
		.5	26.4	7.8	298	8.8	
		.8	26.3	7.9	298	8.8	
	5	.3	26.3	7.8	298	8.6	1510
		.5	26.5	7.8	299	8.3	
		.8	26.4	7.8	299	8.5	
	6	.3	26.4	7.7	299	8.5	1518
		.5	26.4	7.8	299	8.3	
		1.0	26.5	7.9	298	8.3	
	1	.5	26.5	7.9	295	8.8	1618
		1.0	26.5	7.9	295	8.6	

Table A-1.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
H-PY	2	0.5	26.2	7.7	301	7.7	1625
		1.0	26.2	7.7	299	7.9	
	3	.5	26.7	8.4	292	10.5	1638
		1.0	26.6	8.3	293	10.1	
	4	.5	26.8	8.4	292	11.1	1650
		1.0	26.7	8.4	293	10.6	
	5	.5	26.7	8.6	290	11.8	1657
		1.0	26.7	8.6	290	11.7	
	6	.5	26.7	8.5	290	11.8	1706
		1.0	26.7	8.6	298	11.8	
	1	.5	26.1	8.1	297	9.1	1915
		1.0	26.1	8.0	298	8.9	
		1.3	26.1	7.8	298	8.3	
	2	.5	26.1	7.9	296	8.6	1918
		1.0	26.1	7.9	298	8.0	
		1.3	26.0	7.5	300	7.0	
	3	.5	26.0	7.8	299	8.4	1927
		1.0	26.1	7.8	299	8.2	
		1.3	26.1	7.8	298	7.8	
	4	.5	25.9	7.7	296	7.8	1932
		1.0	25.9	7.7	299	7.6	
		1.3	25.9	7.6	299	7.6	
	5	.5	26.0	7.8	299	8.0	1941
		1.0	26.0	7.7	298	7.8	
		1.3	26.0	7.7	298	7.7	
	6	.5	26.1	8.1	296	9.0	1950
		1.0	26.1	7.9	297	8.3	
		1.3	26.0	7.8	298	8.2	
EC	1	.5	23.5	7.5	305	6.5	0853
		1.0	23.6	7.5	304	6.4	
	2	.5	23.4	7.4	305	6.8	0903
		1.0	23.5	7.5	306	6.6	
		1.5	23.5	7.5	305	6.4	
	3	.5	23.4	7.5	304	6.7	0912
		1.0	23.3	7.5	304	6.5	
		1.4	23.3	7.5	304	6.4	
	1	.5	24.8	7.5	303	6.6	1151
		1.0	24.8	7.5	301	6.8	
	2	.5	24.9	7.5	302	6.9	1153
		1.0	24.6	7.6	300	7.5	

Table A-1.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
EC	3	0.5	24.7	7.6	301	6.8	1202
		1.0	24.5	7.7	300	7.6	
	1	.5	25.7	7.4	300	6.8	1322
		1.0	25.4	7.7	294	8.3	
	2	.5	25.7	7.5	300	7.1	1350
		1.0	25.5	7.6	298	7.4	
	3	.5	25.8	7.7	300	7.5	1400
		1.0	25.7	7.8	298	7.4	
	1	.5	25.8	7.3	300	6.2	1715
		1.0	25.9	7.3	300	6.1	
	2	.5	25.9	7.3	300	6.1	1726
		1.0	25.9	7.4	299	6.0	
		1.3	25.9	7.3	299	6.1	
	3	.5	25.9	7.3	299	6.3	1733
		1.0	25.9	7.3	299	6.1	
		1.4	25.9	7.3	299	6.0	
	1	.5	25.9	7.4	302	5.8	1830
		1.0	25.9	7.3	301	5.9	
	2	.5	25.9	7.3	301	5.8	1841
		1.0	25.9	7.3	300	5.7	
		1.5	25.9	7.3	300	5.7	
	3	.5	25.9	7.3	300	5.7	1848
		1.0	25.9	7.3	300	5.6	
		1.5	25.9	7.3	300	5.6	
M-MH	1	1.0	22.6	7.2	296	5.5	0700
	2	1.1	22.6	7.3	296	5.7	0710
	6	1.3	22.8	7.5	297	6.2	0830
	1	.5	23.6	7.9	294	8.3	1100
	2	.1	23.6	8.0	294	8.6	1130
	4	.5	24.1	8.3	292	9.7	
	5	.1	24.2	8.3	291	9.8	
	5	.5	26.5	9.0	285	15.2	1430
	2	.1	27.7	9.3	277	17.3	
		.5	26.6	9.1	283	15.9	
	5	.1	27.2	9.0	282	13.5	1705
		.6	27.0	8.8	285	12.5	
	2	.2	27.0	8.8	286	13.3	1710
		.7	26.9	8.8	287	13.2	
	4	.1	26.6	8.6	283	11.9	2015
		.5	26.6	8.6	284	12.0	
		1.0	26.6	8.5	284	11.7	

Table A-1.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MH/GF	2	0.9	22.4	7.6	291	6.9	0920
	1	.2	24.2	7.7	288	8.2	1330
	3	.1	25.1	7.7	288	8.1	1400
	1	.2	26.1	7.8	287	8.3	1615
	1	.4	26.0	7.9	286	8.4	1830

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
H-PY	1	0.4	26.2	7.5	305	4.9	0715
		.9	26.3	7.5	304	4.9	
	2	.2	26.4	7.6	307	4.7	0730
		.7	26.7	7.6	302	5.5	
	3	.1	26.1	6.8	302	6.4	0910
		.5	26.2	6.8	301	6.3	
		1.0	26.2	6.8	301	6.1	
	4	.4	25.9	6.8	291	6.7	0915
		.9	25.9	6.9	291	6.7	
	5	.1	26.0	6.9	291	6.9	0925
		.5	26.0	n.d.	291	6.7	
		1.0	26.0	n.d.	291	6.6	
	6	.1	26.0	6.9	290	7.1	0941
		.5	26.0	7.0	290	7.0	
		1.0	26.0	7.0	288	7.5	
	1	.1	27.2	7.3	307	8.8	1150
		.5	27.2	7.4	305	8.8	
		1.0	27.0	7.3	307	8.5	
		1.5	26.9	7.4	304	9.2	
	2	.4	27.2	7.4	306	8.3	1205
		.9	27.2	7.4	308	8.0	
		1.5	27.0	7.5	306	8.7	
	4	.5	26.9	7.3	306	7.3	1230
		1.0	27.1	7.2	304	7.1	
		1.5	26.9	7.2	303	7.4	
	1	.1	27.4	7.3	301	8.4	1340
		.5	27.3	7.3	301	8.1	
		1.0	27.3	7.3	300	8.3	
		1.5	27.3	7.3	300	8.0	
	2	.2	28.0	8.1	292	12.3	1447
		.7	27.8	7.9	289	11.3	
		1.2	27.5	7.8	292	10.2	
	3	.4	27.6	7.4	299	9.0	1415
		.9	27.5	7.3	298	8.4	
		1.4	27.3	7.3	298	7.7	
	1	.1	27.6	7.6	288	8.9	1710
		.6	27.4	7.6	290	8.3	
		1.1	27.3	7.5	291	7.6	
	2	.1	27.6	7.7	291	9.9	1720
		.5	27.5	7.6	291	9.4	
		1.0	27.2	7.6	293	7.0	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
H-PY	3	0.1	27.6	7.7	293	9.0	1730
		.5	27.3	7.6	294	7.0	
		1.0	27.1	7.5	294	6.6	
	4	.1	27.4	7.5	293	8.0	1735
		.5	27.2	7.6	293	7.1	
		1.0	27.1	7.5	294	6.5	
	5	.1	28.1	8.2	285	12.3	1745
		.4	27.5	7.8	290	7.4	
		.9	27.2	7.6	294	7.4	
	6	.1	28.0	7.9	288	10.5	1750
		.4	27.7	7.8	290	7.3	
		.9	27.2	7.6	292	7.1	
	1	.3	28.0	8.3	287	11.5	1850
		.8	27.3	7.9	287	8.1	
	2	.3	27.9	7.3	280	12.1	1855
		.8	27.3	7.4	293	8.2	
	3	.3	28.2	8.3	283	12.3	1910
		.8	27.3	7.9	293	8.3	
	4	.1	28.1	8.4	276	15.7	1915
		.4	27.9	8.4	284	11.0	
		.9	27.2	7.8	295	6.9	
	5	.1	27.6	8.4	275	17.0	1923
		.3	27.9	8.7	281	11.1	
		.8	27.4	7.7	293	8.3	
	6	.1	27.8	8.4	281	14.4	1930
		.4	27.7	8.2	290	10.0	
		.9	27.1	7.7	296	7.1	
EC	1	.2	26.4	6.6	311	6.0	0830
		.7	26.4	6.7	310	6.0	
		1.2	26.4	6.7	311	6.2	
	2	.3	26.5	6.7	309	5.9	0844
		.8	26.5	6.7	309	5.8	
		1.3	26.5	6.7	309	5.9	
	3	.3	26.5	6.7	309	5.8	0856
		.8	26.5	6.7	309	5.5	
		1.3	26.5	6.7	309	5.7	
	1	.2	26.3	6.8	285	5.6	1020
		.7	26.3	6.8	295	5.8	
		1.2	26.3	6.8	295	5.6	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
EC	2	0.4	26.3	6.7	291	5.8	1040
		.9	26.3	6.8	291	5.5	
		1.4	26.3	6.8	291	5.5	
	3	.3	26.3	6.8	290	5.6	1045
		.8	26.3	6.8	290	5.3	
		1.3	26.3	6.8	290	5.2	
		1.8	26.3	6.8	290	5.2	
	4	.4	26.4	6.8	290	5.8	1100
		.9	26.4	6.8	290	5.5	
		1.4	26.4	6.8	288	5.5	
	5	.2	26.4	7.1	294	6.6	1120
		.7	26.7	7.0	294	6.7	
		1.2	26.4	7.0	294	6.7	
		1.7	26.6	7.0	295	6.7	
	1	.1	27.4	7.2	295	7.5	1300
		.5	27.4	7.1	294	7.0	
		1.0	27.1	7.1	295	6.9	
		1.5	26.9	7.1	296	6.8	
		2.0	26.5	7.1	296	6.4	
	2	.4	27.2	7.1	295	7.4	1305
		.9	27.4	7.1	294	7.0	
		1.4	26.7	7.1	296	6.8	
		1.9	26.6	7.1	295	6.2	
	3	.1	27.5	7.1	295	7.1	1310
		.5	27.3	7.1	293	7.2	
		1.0	27.2	7.1	296	7.0	
		1.5	26.8	7.1	297	6.5	
		2.0	26.6	7.1	295	6.2	
	1	.2	27.9	7.5	298	7.5	1600
		.7	27.7	7.5	298	7.6	
		1.2	27.2	7.4	300	6.2	
		1.7	27.0	7.4	300	5.9	
	2	.2	28.0	7.4	292	8.3	1620
		.7	27.4	7.4	293	6.6	
		1.2	27.0	7.3	294	5.8	
		1.7	26.9	7.3	294	5.7	
	3	.5	27.8	7.5	293	8.2	1640
		1.0	27.0	7.5	293	5.9	
		1.5	26.9	7.4	294	5.8	
		.1	27.8	7.6	294	8.9	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
EC	4	0.1	27.7	7.5	295	9.2	1650
		.5	27.4	7.5	295	7.4	
		1.0	27.2	7.4	295	6.2	
		1.5	26.9	7.4	295	5.7	
	5	.1	28.1	7.7	288	9.4	1700
		.6	27.5	7.5	292	7.2	
		1.1	26.9	7.4	292	5.5	
		1.6	26.9	7.4	296	5.4	
	6	.1	28.2	7.6	293	9.2	1705
		.6	28.2	7.6	291	7.9	
		1.1	27.3	7.5	292	6.1	
		1.6	27.0	7.3	294	5.6	
	1	.1	28.2	8.7	281	12.2	1935
		.2	28.1	8.7	283	14.2	
		.7	27.4	7.9	298	7.0	
		1.2	27.1	7.6	299	5.6	
	2	.1	27.9	8.7	280	14.1	1945
		.5	27.9	8.4	287	13.0	
		1.0	27.4	7.8	300	7.0	
		1.5	27.1	7.5	303	5.5	
	3	.1	27.7	8.6	286	13.3	2000
		.2	27.8	8.5	289	13.2	
		.7	27.5	7.9	294	6.6	
		1.2	27.1	7.4	305	5.2	
		1.7	27.0	7.4	305	5.2	
	4	.1	27.6	8.2	293	11.9	2015
		.5	27.4	7.8	299	6.2	
		1.0	27.1	7.4	304	5.5	
		1.5	27.1	7.4	303	5.4	
	5	.1	27.3	7.8	298	9.8	2030
		.3	27.2	7.7	299	7.0	
		.8	27.1	7.5	306	5.7	
		1.3	27.1	7.4	306	5.3	
	6	.1	27.1	7.5	302	6.1	2040
		.3	27.1	7.5	303	6.4	
		.8	27.1	7.4	304	6.4	
		1.3	27.1	7.4	304	6.0	
M-MH	1	.4	25.5	7.3	299	5.2	0720
	2	.1	25.8	7.2	299	4.7	0735
		.5	25.7	7.2	299	4.6	
	3	.4	25.8	7.2	299	4.6	0743

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
M-MH	4	0.1	25.8	7.2	296	4.6	0750
		.5	25.8	7.2	299	4.6	
	5	.1	25.9	7.3	297	5.6	0811
		.6	25.9	7.2	297	5.2	
	6	.1	25.9	7.3	297	5.2	0820
		.5	25.8	7.3	297	5.1	
	1	.3	26.6	7.5	304	7.6	0955
		.8	26.4	7.5	300	7.2	
	2	.4	26.8	7.5	305	7.3	1017
		.9	26.6	7.4	304	6.5	
	3	.4	27.0	7.8	304	8.2	1031
		.9	26.5	7.4	304	6.3	
	4	.1	26.8	7.5	303	7.3	1037
		.5	26.8	7.4	302	7.0	
	5	1.0	26.5	7.3	302	6.2	
		.4	26.9	7.6	302	7.4	1045
		.9	26.5	7.4	300	6.3	
	6	.1	26.8	7.6	302	7.9	1051
		.5	26.9	7.6	301	8.0	
		1.0	26.4	7.6	297	8.0	
	1	.2	27.5	7.7	297	8.8	1240
		.7	27.5	7.7	298	8.9	
		1.2	27.2	7.8	299	10.0	
	2	.2	27.7	7.7	297	9.2	1300
		.7	27.7	7.8	297	9.2	
		1.2	27.3	7.7	297	8.9	
	3	.2	27.8	7.8	298	9.4	1307
		.7	27.8	7.8	297	9.1	
		1.2	27.2	7.7	297	8.6	
	4	.2	27.6	7.5	295	7.7	1314
		.7	27.6	7.4	295	7.5	
		1.2	27.2	7.4	296	7.2	
	5	.2	28.0	7.6	294	8.2	1330
		.7	27.8	7.5	294	7.7	
		1.2	27.5	7.6	294	8.2	
	6	.2	28.0	7.6	294	8.6	1337
		.7	27.9	7.6	294	8.5	
		1.2	27.5	7.7	294	8.9	
	1	.3	28.7	8.5	292	11.7	1602
		.8	28.4	8.4	293	11.8	
	2	.4	28.8	8.6	290	12.8	1619
		.9	28.0	7.8	293	8.9	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
M-MH	3	0.4	28.5	8.6	289	12.7	1629
		.9	27.7	7.6	293	8.4	
	4	.3	28.4	8.4	290	10.8	1637
		.8	27.8	7.9	292	9.8	
	5	.3	28.6	8.6	290	12.3	1644
		.8	27.9	7.8	294	9.2	
	6	.2	28.9	8.8	288	13.8	1651
		.7	27.9	8.4	292	11.7	
	1	.1	29.0	8.5	294	14.0	1847
		.5	28.4	8.3	298	10.9	
	2	.1	29.0	8.8	293	13.5	1857
		.6	27.8	7.7	301	8.6	
	3	.1	26.5	8.7	293	15.6	1905
		.5	28.2	8.3	298	11.0	
	4	.1	28.7	9.0	292	14.0	1911
		.5	27.9	7.9	302	8.2	
	5	.1	28.7	8.9	293	13.8	1925
		.5	28.3	8.8	297	13.1	
	6	.1	28.6	8.9	295	13.8	1931
		.5	27.9	8.5	298	12.1	
MH/GF	1	.1	26.0	7.2	295	4.9	0830
		.6	26.0	7.1	295	4.8	
		1.0	26.0	7.2	295	4.8	
	2	.1	26.0	7.2	294	4.9	0837
		.6	26.0	7.2	293	5.2	
	3	.1	26.1	7.1	292	5.0	0845
		.6	26.1	7.2	293	5.0	
	4	.2	26.2	7.2	295	4.8	0850
		.7	26.1	7.1	295	4.8	
	5	.4	26.2	7.2	294	4.9	0905
		.9	26.2	7.1	295	4.8	
	6	.1	26.2	7.2	288	5.3	0910
		.5	26.2	7.2	286	5.6	
		1.0	26.3	7.2	288	5.3	
	1	.1	26.8	7.1	279	5.7	1103
		.5	26.8	7.2	281	5.9	
		1.0	26.6	7.4	283	6.5	
	2	.1	27.0	7.1	279	5.7	1114
		.6	26.9	7.1	279	5.8	
		1.1	26.8	7.1	282	6.3	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MH/GF	3	0.2	27.1	7.1	279	5.7	1121
		.7	27.0	7.1	279	5.9	
		1.2	26.8	7.2	278	6.1	
	4	.3	27.1	7.0	278	5.8	1127
		.8	27.0	7.1	278	5.7	
		1.3	26.9	7.2	279	5.7	
	5	.4	27.1	7.0	278	5.7	1133
		.9	27.1	7.0	278	5.6	
		1.4	27.0	7.2	278	5.4	
	6	.1	27.1	7.1	279	5.5	1139
		.5	27.2	7.1	279	5.5	
		1.0	27.1	7.1	280	5.4	
		1.5	27.0	7.2	279	5.3	
	1	.2	27.6	7.2	290	6.4	1347
		.7	27.5	7.2	290	6.2	
		1.2	27.4	7.3	289	6.1	
	2	.3	27.5	7.2	291	5.7	1357
		.8	27.4	7.1	290	5.7	
		1.3	27.4	7.3	290	5.8	
	3	.4	27.4	7.1	288	5.4	1403
		.9	27.4	7.1	290	5.3	
		1.4	27.4	7.2	291	5.3	
	4	.4	27.4	7.1	291	5.3	1409
		.9	27.4	7.1	291	5.2	
		1.4	27.4	7.2	291	5.2	
	5	.4	27.5	7.1	291	5.2	1422
		.9	27.5	7.1	289	5.3	
		1.4	27.4	7.1	291	5.2	
	6	.4	27.6	7.1	292	5.1	1428
		.9	27.5	7.1	292	5.0	
		1.4	27.4	7.1	291	4.9	
	1	.2	28.3	7.5	293	8.4	1702
		.7	27.7	7.2	296	5.6	
	2	.3	27.9	7.3	295	6.0	1711
		.8	27.6	7.3	295	5.6	
	3	.3	28.2	7.5	294	8.2	1718
		.8	27.6	7.2	295	5.3	
	4	.1	28.4	7.5	294	7.4	1726
		.5	27.8	7.3	295	5.6	
		1.0	27.5	7.2	297	4.9	

Table A-2.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MH/GF	5	0.1	28.3	7.5	293	8.2	1735
		.5	27.6	7.1	295	5.3	
		1.0	27.5	7.2	297	4.9	
	6	.4	27.8	7.2	296	5.7	1744
		.9	27.5	7.1	297	4.7	
	1	.1	27.4	7.1	306	5.3	1945
		.5	27.3	7.2	308	4.8	
	2	.1	27.2	7.2	307	5.1	1952
		.6	27.2	7.2	308	5.0	
	3	.2	27.2	7.1	308	4.9	1958
		.7	27.2	7.1	308	5.0	
	4	.3	27.2	7.1	307	5.0	2003
		.8	27.2	7.2	309	4.9	
	5	.4	27.3	7.1	307	5.1	2014
		.9	27.2	7.1	307	5.5	
	6	.3	27.3	7.1	307	5.2	2020
		.8	27.3	7.1	307	5.5	

Table A-3.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED HYD) and unvegetated (NV) sites on August 20, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	1	0.1	27.7	7.4	421	5.3	0713
		.5	27.8	7.4	425	5.1	
		1.0	27.8	7.4	426	5.0	
		1.5	27.8	7.4	427	4.7	
	2	.1	27.8	7.4	427	5.3	0724
		.5	27.8	7.4	426	4.9	
		1.0	27.8	7.4	429	4.4	
		1.5	27.8	7.3	431	4.2	
	3	.1	27.7	7.5	425	5.4	0724
		.5	27.8	7.5	425	5.0	
		1.0	27.8	7.4	426	4.7	
		1.5	27.6	7.4	426	4.4	
	4	.1	27.8	7.5	421	5.6	0739
		.5	27.8	7.4	421	5.3	
		1.0	27.8	7.4	423	5.0	
		1.5	27.8	7.4	422	4.9	
	1	.1	27.6	7.4	433	5.6	0905
		.5	27.5	7.4	434	4.9	
		1.0	27.5	7.4	435	4.7	
	2	.1	27.5	7.5	430	5.4	0915
		.5	27.5	7.4	433	4.8	
		1.0	27.5	7.3	437	4.3	
	3	.1	27.5	7.1	423	5.6	0920
		.5	27.6	7.3	424	5.4	
		1.0	27.6	7.4	421	4.7	
	4	.1	27.6	7.4	422	5.8	0930
		.5	27.6	7.1	427	5.0	
		1.0	27.6	7.3	429	4.8	
	1	.1	29.3	8.9	n.d.	12.1	1235
		.5	27.9	7.5	431	5.5	
	2	.1	29.6	8.9	405	12.6	1247
		.5	27.8	7.8	429	5.9	
	3	.1	29.1	8.6	424	9.8	1255
		.5	27.7	7.6	431	5.9	
	4	.1	29.5	8.9	412	11.0	1300
		.5	27.5	7.5	429	6.0	
	1	.1	30.2	8.9	405	12.0	1445
		.5	29.1	8.0	437	7.8	
		1.0	28.1	7.4	434	4.6	
	2	.1	30.0	8.8	424	12.0	1455
		.5	29.3	8.3	440	8.9	
		1.0	27.9	7.5	436	5.5	

Table A-3.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	3	0.1	30.4	9.1	409	13.3	1505
		.5	29.5	8.5	435	10.0	
		1.0	27.8	7.5	429	5.5	
	4	.1	29.9	8.8	429	11.6	1510
		.5	28.9	8.1	436	8.6	
		1.0	27.8	7.5	428	6.3	
	1	.1	29.7	8.8	418	12.0	1806
		.5	29.4	8.4	430	10.2	
		1.0	26.9	7.6	438	7.0	
		1.5	27.7	7.4	480	6.3	
	2	.1	29.5	8.8	417	12.3	1812
		.5	29.4	8.4	430	10.1	
		1.0	27.2	7.7	444	7.7	
		1.5	27.9	7.4	438	7.2	
	3	.1	29.3	8.8	419	12.2	1821
		.5	29.4	8.8	417	12.0	
		1.0	26.5	8.1	457	9.7	
		1.5	25.5	7.4	455	6.2	
	4	.1	29.6	8.8	417	12.5	1828
		.5	29.3	8.4	432	10.1	
		1.0	28.7	7.5	436	7.8	
		1.5	28.2	7.3	430	5.8	
NV	1	.1	28.3	7.0	399	6.1	0655
		.5	28.4	7.1	400	5.9	
		1.0	28.4	7.1	400	5.7	
		1.5	28.4	7.1	400	5.7	
		2.0	28.3	7.1	402	5.6	
		2.5	28.4	7.1	401	5.7	
	2	.1	28.2	7.1	428	5.8	0730
		.5	28.4	7.1	427	5.7	
		1.0	28.3	7.2	420	5.5	
		1.5	28.3	7.1	425	5.6	
		2.0	28.3	7.2	426	5.6	
	3	.1	28.2	7.1	424	5.9	0755
		.5	28.4	7.1	423	5.6	
		1.0	28.3	7.2	423	5.5	
		1.5	28.3	7.2	427	5.6	
		2.0	28.3	7.2	428	5.5	

Table A-3.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	4	0.1	28.3	7.2	426	5.5	0810
		.5	28.2	7.2	424	5.5	
		1.0	28.3	7.2	425	5.4	
		1.5	28.3	7.2	429	5.5	
		2.0	28.3	7.2	429	5.4	0900
	1	.1	28.2	7.2	434	5.8	
		.5	28.3	7.3	436	5.6	
		1.0	28.3	7.3	438	5.3	
		1.5	28.3	7.3	435	5.3	
	2	.1	28.2	7.2	440	5.8	0920
		.5	28.3	7.3	440	5.4	
		1.0	28.3	7.3	440	5.2	
		1.5	28.3	7.3	442	5.3	
	3	.1	28.3	7.2	440	5.8	0935
		.5	28.4	7.3	441	5.7	
		1.0	28.4	7.3	444	5.6	
		1.5	28.3	7.3	440	5.4	
	4	.1	28.3	7.2	438	5.8	0945
		.5	28.4	7.2	442	5.8	
		1.0	28.4	7.3	442	5.7	
		1.5	28.3	7.3	441	5.4	
	1	.1	29.1	7.6	433	6.9	1230
		.5	29.0	7.5	435	6.5	
		1.0	29.0	7.5	434	6.5	
	2	.1	29.0	7.5	436	6.6	1245
		.5	29.0	7.5	437	6.4	
		1.0	29.0	7.5	437	6.5	
	3	.1	29.0	7.5	437	6.3	1300
		.5	29.0	7.5	439	6.3	
		1.0	29.0	7.5	439	6.1	
		1.5	29.0	7.5	439	6.1	
		2.0	28.9	7.5	436	6.0	
	4	.1	29.0	7.5	437	6.7	1315
		.5	29.0	7.5	437	6.5	
		1.0	29.1	7.5	439	6.5	
		1.5	29.0	7.5	438	6.1	
	1	.1	29.3	7.9	431	8.1	1445
		.5	29.2	7.9	427	8.1	
		1.0	29.1	7.9	425	7.9	

Table A-3.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	2	0.1	28.9	7.8	418	8.1	1510
		.5	28.8	7.8	421	8.0	
		1.0	29.0	7.9	423	8.0	
		1.5	29.0	7.9	424	7.9	
	3	.1	29.0	7.7	426	8.1	1515
		.5	29.1	7.8	422	8.1	
		1.0	28.9	7.9	422	7.9	
		1.5	28.9	7.9	423	7.9	
	4	.1	29.0	7.7	427	8.0	1525
		.5	29.0	7.8	426	7.7	
		1.0	29.0	8.0	422	8.0	
		1.5	29.0	8.0	422	7.8	
	1	.1	28.9	7.8	420	8.9	1805
		.5	28.9	7.9	415	8.2	
		1.0	28.9	7.9	419	7.8	
		1.5	28.9	7.9	418	7.8	
		2.0	28.9	7.8	416	7.1	
	2	.1	28.8	7.8	417	8.2	1815
		.5	28.8	7.7	415	7.5	
		1.0	28.7	7.7	414	7.3	
		1.5	28.8	7.7	414	7.4	
		2.0	28.8	7.7	415	7.1	
	3	.1	28.7	7.7	417	8.1	1820
		.5	28.8	7.8	417	8.0	
		1.0	28.9	7.8	418	7.8	
		1.5	28.9	7.8	416	7.5	
		2.0	28.9	7.8	417	7.6	
	4	.1	28.7	7.7	411	7.6	1830
		.5	28.7	7.6	411	7.3	
		1.0	28.7	7.7	411	7.0	
		1.5	28.7	7.7	412	7.1	
		2.0	28.7	7.7	412	7.1	
		2.5	28.7	7.7	412	7.3	
HYD	1	.1	27.4	7.4	412	6.9	0725
		.5	27.5	8.9	411	10.8	
		1.0	27.5	9.0	411	10.7	
		1.5	27.5	9.0	411	10.6	
		~2.0	27.4	9.0	407	9.4	

Table A-3.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	2	0.1	27.2	7.5	411	6.7	0733
		.5	27.4	9.2	409	11.3	
		1.0	27.4	9.3	408	11.3	
		1.5	27.3	9.3	404	11.0	
		2.0	27.3	9.2	401	9.8	
	3	.1	27.2	7.4	403	6.5	0745
		.5	27.3	9.5	402	11.7	
		1.0	27.3	9.6	398	12.0	
		1.5	27.2	9.6	396	10.9	
	4	.1	27.6	7.9	411	8.7	0710
		.5	27.6	8.0	411	8.7	
		1.0	27.7	8.1	411	8.8	
		1.5	27.6	8.2	411	8.8	
		2.0	27.6	8.2	410	8.4	
	1	.1	27.7	8.0	406	8.0	1005
		.5	27.5	7.6	403	5.9	
		1.0	27.1	7.3	397	3.5	
		1.5	27.1	7.2	398	2.2	
	2	.1	27.5	8.6	391	8.3	1010
		.5	27.3	7.6	402	5.5	
		1.0	27.1	7.3	397	2.7	
	3	.1	27.6	8.1	397	6.9	1020
		.5	27.3	7.6	400	5.3	
		1.0	27.1	7.3	396	3.3	
	4	.1	27.4	7.8	395	6.5	1030
		.5	27.2	7.6	396	4.9	
		1.0	27.1	7.3	391	3.7	
	1	.1	29.6	9.5	382	9.5	1234
		.5	27.7	10.0	394	12.0	
		1.0	27.0	9.8	390	10.8	
	2	.1	29.7	9.2	374	9.0	1246
		.5	27.9	8.4	390	6.7	
		1.0	27.0	7.7	390	4.7	
	3	.1	29.3	8.9	379	8.4	1300
		.5	27.7	8.1	392	6.6	
		1.0	27.1	7.7	393	5.6	
	4	.1	28.8	8.5	386	7.0	1307
		.5	28.0	9.0	394	9.1	
		1.0	27.1	7.7	393	5.8	

Table A-3.--Diurnal temperature, pH, conductivity, and dissolved oxygen (DO) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is conductivity in microsiemens per centimeter; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	1	0.1	30.3	9.3	386	10.3	1445
		.5	29.3	8.4	417	8.7	
		1.0	28.9	8.2	424	8.2	
	2	.1	30.9	9.6	386	10.1	1530
		.5	28.8	8.5	412	9.1	
		1.0	28.8	8.1	423	7.7	
	3	.1	30.8	9.6	384	9.7	1545
		.5	29.4	8.9	406	9.0	
		1.0	28.8	8.1	425	7.9	
	4	.1	30.8	9.4	383	8.5	1600
		.5	28.9	8.2	421	8.1	
		1.0	28.8	8.0	425	7.7	
	1	.1	29.1	8.5	426	9.6	1800
		.5	29.0	8.5	427	9.6	
		1.0	29.1	8.4	425	9.6	
		1.5	29.1	8.5	428	9.5	
	2	.1	29.5	9.3	390	9.8	1820
		.5	29.7	8.9	397	9.1	
		1.0	29.4	8.6	414	9.0	
		1.5	29.0	8.8	420	9.0	
	3	.1	29.2	8.9	408	9.4	1850
		.5	29.3	8.6	420	8.8	
		1.0	29.3	8.4	421	8.6	
		1.5	29.0	8.0	420	7.2	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	1	0.1	24.8	7.4	493	7.5	0833
		.5	24.8	7.3	492	7.2	
	2	.1	24.7	7.3	493	6.5	0828
		.5	24.5	7.2	478	5.7	
	3	.1	24.4	7.2	473	5.8	0824
		.5	24.4	7.2	474	5.7	
	4	.1	24.3	7.1	473	5.9	0828
		.5	24.4	7.2	476	5.5	
	1	.1	25.1	7.5	492	7.2	1026
		.5	25.1	7.4	492	6.8	
		1.0	25.0	7.4	492	6.3	
	2	.1	25.1	7.6	493	8.4	1019
		.5	25.1	7.5	493	7.3	
		1.0	25.0	7.4	491	7.3	
	3	.1	25.0	7.6	492	8.6	1013
		.5	25.0	7.5	493	7.2	
		1.0	25.0	7.5	493	7.0	
	4	.1	24.9	7.5	491	8.8	1005
		.5	24.9	7.5	491	8.6	
		1.0	24.7	7.4	482	6.5	
	1	.1	25.1	7.5	477	7.8	1315
		.5	25.1	7.5	478	7.3	
		1.0	25.1	7.5	478	7.2	
		1.5	25.1	7.4	482	6.8	
	2	.1	25.1	7.7	482	8.2	1305
		.5	25.1	7.6	481	7.9	
		1.0	25.1	7.6	483	7.3	
		1.5	25.0	7.6	483	7.0	
	3	.1	25.0	7.6	481	8.3	1255
		.5	25.0	7.5	482	8.2	
		1.0	25.0	7.5	482	7.9	
		1.5	25.0	7.5	482	7.2	
	4	.1	25.0	7.6	483	8.7	1245
		.5	25.0	7.6	483	8.3	
		1.0	25.0	7.6	484	7.7	
	1	.1	25.5	8.3	478	10.2	1620
		.5	25.5	8.2	478	10.0	
		1.0	25.3	7.9	487	6.8	
	2	.1	25.5	8.4	477	10.5	1610
		.5	25.5	8.3	476	9.6	
		1.0	24.9	7.5	489	5.9	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	3	0.1	25.4	8.3	476	9.8	1555
		.5	25.5	8.2	477	9.7	
		1.0	25.1	7.6	484	6.0	
	4	.1	25.5	8.0	476	9.8	1530
		.5	25.5	8.1	476	9.6	
		1.0	25.3	7.9	482	8.0	
	1	.1	25.1	8.1	485	9.6	1925
		.5	25.1	8.0	486	8.4	
	2	.1	25.1	8.3	483	9.9	1920
		.5	25.2	8.1	484	9.2	
	3	.1	25.1	8.3	480	10.2	1915
		.5	25.1	8.3	482	10.2	
	4	.1	25.2	8.4	527	10.8	1905
		.5	25.2	8.3	482	9.7	
NV	1	.1	25.3	7.3	483	6.9	0825
		.5	25.4	7.4	483	6.8	
		1.0	25.4	7.4	483	6.8	
		1.5	25.3	7.4	483	6.8	
		2.0	25.3	7.4	481	6.6	
	2	.1	25.4	7.4	483	6.8	0830
		.5	25.4	7.3	483	6.8	
		1.0	25.3	7.4	482	6.8	
		1.5	25.3	7.4	481	6.7	
	3	.1	25.2	7.4	480	6.5	0835
		.5	25.3	7.4	481	6.5	
		1.0	25.2	7.4	480	6.6	
		1.5	25.2	7.4	480	6.5	
		2.0	25.1	7.4	478	6.5	
	4	.1	25.4	7.3	481	6.8	0845
		.5	25.5	7.5	481	6.8	
		1.0	25.4	7.4	481	6.7	
		1.5	25.4	7.4	480	6.7	
	1	.1	25.2	7.5	468	7.2	1002
		.5	24.9	7.5	465	6.8	
		1.0	24.9	7.5	463	6.8	
		1.5	24.6	7.5	457	6.7	
		2.0	24.7	7.5	465	6.6	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	2	0.1	24.9	7.5	462	6.7	1017
		.5	24.7	7.5	464	6.7	
		1.0	24.6	7.5	458	6.5	
		1.5	24.6	7.5	457	6.4	
		2.0	24.7	7.5	460	6.5	
	3	.1	25.0	7.6	463	7.0	1051
		.5	24.8	7.5	464	7.0	
		1.0	24.8	7.5	468	6.9	
		1.5	24.8	7.5	458	6.5	
		2.0	24.7	7.5	459	6.5	
	4	.1	24.4	7.5	448	6.2	1035
		.5	24.4	7.5	448	6.2	
		1.0	24.4	7.5	448	6.2	
		1.5	24.4	7.3	450	6.3	
		2.0	24.4	7.5	449	6.2	
	1	.1	25.3	7.1	451	7.1	1300
		.5	25.3	7.2	451	6.9	
		1.0	25.3	7.3	450	6.8	
		1.5	25.3	7.3	450	6.8	
		2.0	25.3	7.4	451	6.8	
		2.5	25.2	7.4	452	6.8	
	2	.1	25.3	7.4	451	6.9	1305
		.5	25.3	7.4	451	6.8	
		1.0	25.3	7.4	451	6.8	
		1.5	25.3	7.4	451	6.6	
		2.0	25.3	7.4	451	6.8	
	3	.1	25.3	7.5	450	7.1	1310
		.5	25.3	7.4	450	6.9	
		1.0	25.3	7.4	450	6.9	
		1.5	25.3	7.4	450	6.8	
		2.0	25.3	7.4	451	6.8	
	4	.1	25.3	7.5	451	6.9	1315
		.5	25.3	7.4	450	6.9	
		1.0	25.3	7.4	450	6.8	
		1.5	25.3	7.4	450	6.8	
		2.0	25.3	7.4	449	6.8	
	1	.1	25.3	6.9	475	7.8	1545
		.5	25.3	7.3	474	7.6	
		1.0	25.3	7.4	472	7.6	
		1.5	25.3	7.5	467	8.0	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is conductivity in microsiemens per centimeter at 25 degrees Cesius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	2	0.1	25.3	7.4	482	7.4	1550
		.5	25.3	7.4	484	7.3	
		1.0	25.3	7.4	483	7.4	
		1.5	25.3	7.4	481	7.3	
		2.0	25.3	7.4	480	7.4	
		2.5	25.3	7.4	479	7.4	
	3	.1	25.3	7.5	477	7.5	1600
		.5	25.3	7.5	473	7.8	
		1.0	25.3	7.6	474	7.7	
		1.5	25.3	7.5	477	7.5	
		2.0	25.7	7.5	475	7.7	
	4	.1	25.3	7.5	479	7.5	1610
		.5	25.3	7.5	480	7.5	
		1.0	25.3	7.5	479	7.5	
		1.5	25.3	7.5	479	7.5	
	1	.1	25.3	7.6	485	8.1	1910
		.5	25.3	7.5	484	8.0	
		1.0	25.3	7.5	484	8.0	
		1.5	25.3	7.6	481	8.1	
	2	.1	25.3	7.6	483	8.0	1915
		.5	25.3	7.6	481	7.8	
		1.0	25.3	7.6	483	7.9	
		1.5	25.3	7.6	483	7.8	
	3	.1	25.3	7.6	485	7.8	
		.5	25.3	7.6	485	7.8	
		1.0	25.3	7.6	484	7.8	
		1.5	25.3	7.6	483	7.8	
		2.0	25.4	7.6	483	7.8	
	4	.1	25.3	7.6	482	8.1	1925
		.5	25.3	7.6	482	7.9	
		1.0	25.3	7.6	480	8.0	
		1.5	25.3	7.6	482	7.9	
		2.0	25.3	7.6	482	8.0	
HYD	1	.1	23.7	8.3	430	6.7	0830
		.5	23.7	8.1	431	6.0	
		1.0	23.8	7.8	432	4.7	
		1.5	23.8	7.6	433	4.4	
	2	.1	23.7	8.6	426	7.5	0840
		.5	23.8	7.7	432	4.5	
		1.0	23.9	7.4	432	4.1	
		1.5	23.8	7.4	432	3.9	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	3	0.1	23.8	7.9	427	6.6	0849
		.5	23.9	7.5	432	4.3	
		1.0	23.9	7.4	432	4.0	
		1.5	23.9	7.3	432	3.8	
	4	.1	24.0	8.6	417	9.2	0855
		.5	23.9	8.4	421	8.0	
		1.0	23.9	7.5	433	4.1	
		1.5	23.9	7.3	433	3.6	
	1	.1	24.4	8.8	486	11.1	1010
		.5	24.5	8.4	440	8.5	
		1.0	24.6	7.6	440	6.4	
		1.5	24.5	7.4	439	5.5	
	2	.1	24.7	8.1	434	8.1	1030
		.5	24.7	7.5	440	6.2	
		1.0	24.6	7.4	438	5.8	
		1.5	24.5	7.3	438	5.1	
	3	.1	24.7	7.7	439	7.2	1040
		.5	24.7	7.5	440	6.1	
		1.0	24.6	7.4	437	5.7	
		1.5	24.6	7.3	437	5.0	
	4	.1	24.8	7.8	432	7.4	1045
		.5	24.8	7.6	439	6.5	
		1.0	24.6	7.4	430	5.9	
		1.5	24.6	7.3	436	5.2	
	1	.1	25.6	9.4	405	13.4	1137
		.5	25.4	8.5	430	8.2	
		1.0	25.1	7.8	439	6.8	
		1.5	25.0	7.5	440	6.5	
		2.0	24.9	7.5	436	6.3	
	2	.1	25.2	8.5	428	8.6	1252
		.5	25.0	7.8	438	7.2	
		1.0	24.9	7.5	438	6.6	
		1.5	24.8	7.5	438	6.2	
		2.0	24.6	7.4	433	5.6	
	3	.1	25.6	9.5	406	12.8	1300
		.5	25.2	8.1	438	7.1	
		1.0	25.1	7.6	441	6.8	
		1.5	25.0	7.5	441	6.4	
		2.0	24.7	7.4	437	5.6	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	4	0.1	25.6	8.8	423	9.3	1310
		.5	25.5	8.7	423	9.3	
		1.0	25.2	7.7	440	6.8	
		1.5	25.1	7.5	440	6.5	
		2.0	25.0	7.5	440	6.2	
	1	.1	26.3	9.2	407	12.1	1540
		.5	25.7	7.9	436	7.8	
		1.0	25.0	7.6	437	6.8	
		1.5	24.6	7.3	434	4.4	
	2	.1	26.4	9.4	410	12.9	1550
		.5	25.8	8.5	429	9.6	
		1.0	24.5	7.4	426	3.4	
		1.5	24.5	7.4	435	3.8	
	3	.1	26.3	9.2	399	12.8	1558
		.5	26.2	9.0	416	10.6	
		1.0	25.0	7.8	437	6.4	
		1.5	24.4	7.3	436	3.6	
	4	.1	26.2	9.0	412	12.8	1605
		.5	25.7	8.6	428	9.2	
		1.0	24.7	7.4	433	5.3	
		1.5	24.4	7.2	434	2.9	
	1	.1	24.9	8.3	418	9.1	1900
		.5	24.9	8.1	422	8.1	
		1.0	24.4	7.4	430	5.3	
		1.5	24.2	7.2	430	3.3	
	2	.1	24.9	8.8	414	10.3	1910
		.5	25.1	8.7	414	9.7	
		1.0	24.7	7.8	431	5.5	
		1.5	24.2	7.3	431	4.4	
	3	.1	24.8	8.7	414	9.6	1923
		.5	24.9	8.6	415	9.2	
		1.0	24.7	7.9	430	4.6	
		1.5	24.0	7.1	430	2.8	
	4	.1	24.5	8.0	422	8.3	1933
		.5	24.6	7.9	423	8.0	
		1.0	24.4	7.5	429	5.1	
		1.5	23.9	7.1	429	3.5	
BH	1	.1	23.0	7.1	488	3.8	0904
		.5	23.0	7.0	487	3.4	
		1.0	22.7	7.0	483	3.3	

Table A-4.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter]

Site	Station	Depth	Temp	pH	Cond	DO	Time
BH	1	0.1	25.2	7.8	460	7.0	1125
		.5	24.6	7.6	465	6.2	
		1.0	24.6	7.4	466	6.0	
		1.5	24.6	7.3	465	5.9	
	1	.1	25.3	9.1	442	12.5	1325
		.5	24.9	8.0	458	8.1	
		1.0	24.8	7.5	461	6.3	
		1.5	24.7	7.4	461	5.3	
	bottom	2.0	24.0	7.2	461	3.0	
	1	.1	25.3	8.6	447	10.7	1620
		.5	25.0	7.8	459	6.4	
		1.0	24.3	7.2	464	4.2	
		1.5	23.2	7.1	467	2.8	
	1	.1	24.2	7.3	449	9.3	2020
		.5	23.8	7.4	466	5.2	
		1.0	22.5	7.1	476	1.8	

Table A-5.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on October 29, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	1	0.1	11.8	7.0	476	7.0	0725
		.5	11.9	7.1	477	6.9	
		.8	11.9	7.2	476	6.8	
	2	.1	11.8	7.4	470	7.3	0733
		.5	12.0	7.3	474	7.0	
		.8	12.0	7.3	474	7.0	
	3	.1	12.1	7.4	468	8.0	0739
		.5	12.2	7.4	469	7.8	
		.8	12.2	7.4	469	7.5	
	4	.1	12.4	7.5	472	8.3	0742
		.5	12.4	7.5	472	7.9	
		.8	12.3	7.4	472	7.2	
	1	.1	12.8	7.4	460	8.3	0954
		.5	12.8	7.4	461	8.3	
		1.0	12.9	7.4	461	8.3	
	2	.1	12.8	7.6	463	8.3	1003
		.5	12.7	7.5	463	8.3	
		1.0	12.7	7.5	461	8.2	
	3	.1	12.7	7.3	463	8.1	1010
		.5	12.7	7.3	464	7.7	
		1.0	12.5	7.2	465	7.1	
	4	.1	12.7	7.3	463	7.7	1022
		.5	12.7	7.3	464	7.8	
		1.0	12.5	7.2	464	6.9	
	1	.1	13.6	7.7	452	8.6	1221
		.5	13.6	7.7	454	8.2	
		1.0	13.6	7.8	454	8.2	
		1.5	13.6	7.8	454	8.2	
	2	.1	13.5	7.8	433	8.9	1259
		.5	13.6	7.8	436	8.8	
		1.0	13.5	7.9	437	8.8	
		1.5	13.5	7.9	437	8.7	
	3	.1	13.5	8.0	429	8.9	1305
		.5	13.6	7.9	437	8.7	
		1.0	13.5	7.9	437	8.7	
		1.5	13.5	7.9	437	8.7	
	4	.1	13.5	8.0	435	8.9	1312
		.5	13.6	7.9	436	8.7	
		1.0	13.6	7.9	436	8.8	
		1.5	13.5	7.9	436	8.7	

Table A-5.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on October 29, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	1	0.1	13.7	7.9	443	8.6	1505
		.5	13.7	7.9	443	8.5	
		1.0	13.7	7.8	443	8.5	
		1.3	13.7	7.8	443	8.5	
	2	.1	13.7	7.8	434	9.1	1459
		.5	13.7	7.8	434	8.8	
		1.0	13.7	7.8	434	8.7	
	3	.1	13.7	7.9	441	8.8	1513
		.5	13.7	7.9	442	8.7	
		1.0	13.7	7.9	442	8.7	
	4	.1	13.6	8.0	437	8.7	1517
		.5	13.7	7.9	441	8.6	
		1.0	13.7	7.9	428	8.6	
NV	1	.1	12.9	8.0	459	9.3	0747
		.5	13.1	8.0	461	9.3	
		1.0	13.1	7.9	460	9.2	
		1.5	12.9	7.9	458	9.0	
	2	.1	13.0	8.0	458	8.7	0754
		.5	13.0	7.9	457	8.7	
		1.0	12.9	8.0	455	8.4	
	3	.1	13.0	7.9	456	8.6	0801
		.5	12.9	7.9	457	8.3	
		1.0	13.0	7.5	457	8.2	
		1.5	12.9	7.9	456	8.1	
	4	.1	12.9	7.9	457	8.7	0734
		.5	13.0	8.4	465	8.8	
		1.0	13.2	8.1	466	8.6	
		1.5	13.2	7.1	466	8.6	
		2.0	13.3	8.0	466	8.6	
	1	.1	12.8	7.8	444	8.3	0948
		.5	12.7	7.8	441	8.2	
		1.0	12.7	7.8	439	8.2	
		1.5	12.6	7.8	439	8.2	
	2	.1	12.3	7.9	417	8.3	1006
		.5	12.3	7.9	417	8.2	
		1.0	12.3	7.9	419	8.2	
		1.5	12.3	7.8	418	8.1	
	3	.1	12.2	7.9	411	8.3	1023
		.5	12.2	7.9	410	8.3	
		1.0	12.2	7.9	410	8.3	
		1.5	12.2	7.9	411	8.3	

Table A-5.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on October 29, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	4	0.1	12.3	7.8	418	8.5	1015
		.5	12.3	7.8	418	8.2	
		1.0	12.3	7.8	418	8.2	
		1.5	12.3	7.8	419	8.1	
	1	.1	13.5	7.8	437	8.9	1217
		.5	13.5	7.8	438	8.7	
		1.0	13.5	7.9	437	8.7	
		1.5	13.3	7.9	435	8.7	
	2	.1	13.4	7.5	436	8.7	1225
		.5	13.4	7.7	435	8.7	
		1.0	13.4	7.7	427	8.6	
		1.5	13.4	7.8	434	8.6	
	3	.1	13.5	8.0	436	8.8	1245
		.5	13.4	7.9	436	8.8	
		1.0	13.4	7.9	436	8.8	
		1.5	13.4	7.9	434	8.8	
	4	.1	13.4	7.9	433	8.7	1237
		.5	13.4	7.8	435	8.6	
		1.0	13.3	7.8	431	8.6	
		1.5	13.0	7.8	426	8.5	
	1	.1	13.3	7.6	451	8.8	1537
		.5	13.4	7.6	451	8.7	
		1.0	13.3	7.5	453	8.6	
		1.5	13.3	7.5	453	8.6	
	2	.1	13.3	7.5	453	8.6	1540
		.5	13.3	7.5	452	8.6	
		1.0	13.3	7.5	453	8.6	
		1.5	13.3	7.5	451	8.5	
	3	.1	13.7	7.8	438	8.8	1525
		.5	13.7	7.8	440	8.7	
		1.0	13.7	7.8	439	8.7	
		1.5	13.7	7.8	440	8.6	
	4	.1	13.7	7.9	441	8.8	1532
		.5	13.7	7.9	441	8.7	
		1.0	13.7	7.9	440	8.6	
		1.5	13.6	7.9	441	8.6	

Table A-5.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on October 29, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	1	0.1	10.4	7.6	472	5.7	0757
		.5	11.6	7.6	474	4.9	
		.8	11.6	7.5	475	4.6	
	2	.1	11.5	7.7	449	6.8	0749
		.5	11.6	7.5	475	5.0	
		1.0	11.7	7.5	475	4.6	
	3	.1	11.4	7.4	475	3.5	0729
		.5	11.7	7.3	477	3.3	
		1.0	11.7	7.3	476	3.7	
	4	.1	10.9	7.6	479	1.9	0740
		.5	11.7	7.4	476	3.6	
		1.0	11.7	7.5	480	4.2	
	1	.1	13.0	7.6	469	7.5	0952
		.5	12.9	7.7	471	7.8	
		1.0	12.9	7.7	471	7.5	
	2	.1	13.6	7.7	472	7.7	0959
		.5	13.0	7.7	473	7.3	
		1.0	12.9	7.7	472	7.5	
		1.3	12.9	7.7	471	7.4	
	3	.1	13.3	7.8	469	8.0	1009
		.5	12.9	7.7	471	7.8	
		1.0	12.9	7.7	471	7.8	
		1.3	12.9	7.7	470	7.6	
	4	.1	13.0	7.7	469	7.4	1016
		.5	12.9	7.7	471	7.0	
		1.0	12.8	7.7	471	7.5	
		1.5	12.8	7.7	471	7.1	
	1	.1	14.4	7.2	450	5.0	1224
		.5	13.0	7.1	448	4.9	
		1.0	12.8	7.2	438	8.0	
		1.5	12.9	7.3	437	8.4	
	2	.1	13.8	7.7	442	9.2	1232
		.5	13.3	7.5	441	8.1	
		1.0	12.9	7.4	438	8.4	
		1.5	12.8	7.4	436	8.5	
	3	.1	14.4	7.6	447	9.1	1242
		.5	13.8	7.6	446	8.6	
		1.0	13.0	7.4	441	8.7	
		1.5	12.9	7.4	441	8.6	

Table A-5.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on October 29, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	4	0.1	14.3	7.7	452	9.2	1250
		.5	13.9	7.5	450	8.6	
		1.0	13.4	7.5	444	8.5	
		1.5	13.1	7.5	442	8.6	
	1	.1	14.6	7.6	444	7.0	1456
		.5	14.2	7.3	452	5.0	
		1.0	13.2	7.2	451	6.0	
		1.5	13.1	7.2	445	6.6	
	2	.1	13.9	7.9	442	8.5	1504
		.5	13.6	7.5	444	6.8	
		1.0	13.7	7.4	444	6.7	
		1.5	13.5	7.3	445	6.9	
	3	.1	14.7	7.7	450	6.9	1516
		.5	13.7	7.6	450	7.9	
		1.0	13.1	7.5	441	8.2	
		1.4	12.7	7.5	439	8.0	
	4	.1	14.2	7.4	460	7.6	1524
		.5	14.0	7.3	461	6.9	
		1.0	13.4	7.3	450	7.4	
		1.3	13.3	7.4	447	7.6	
BH	1	.1	9.9	7.1	414	4.0	0816
		.5	9.9	7.1	414	3.8	
		1.0	9.9	7.1	414	3.6	
	1	.1	12.3	7.5	393	6.2	1040
		.5	12.3	7.4	396	5.8	
		1.0	12.3	7.4	396	5.7	
		1.5	12.1	7.3	392	4.9	
	1	.1	12.3	7.2	n.d.	4.0	1040
		.5	12.3	7.1	402	5.4	
		1.0	12.2	7.1	400	4.3	
		1.5	12.2	7.1	397	4.8	
	1	.1	13.9	n.d.	270	5.6	1345
		.5	12.7	n.d.	n.d.	4.5	
		1.0	12.5	n.d.	n.d.	4.2	
		1.5	12.1	n.d.	n.d.	3.7	
	1	.1	13.3	n.d.	270	3.0	1622
		.5	11.7	n.d.	n.d.	2.2	
		.1	10.3	n.d.	n.d.	1.8	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	1	0.1	13.8	6.8	439	6.3	0643
		.5	13.8	7.1	438	6.3	
		1.0	13.8	7.1	440	6.3	
		1.5	13.8	7.2	437	6.6	
	2	.1	13.7	7.3	438	6.7	0650
		.5	13.7	7.3	438	6.8	
		1.0	13.7	7.3	438	6.8	
		1.5	13.7	7.3	438	6.8	
	3	.1	13.7	7.4	438	6.9	0654
		.5	13.7	7.3	438	7.0	
		1.0	13.7	7.3	438	6.9	
		1.5	13.7	7.3	438	6.9	
	4	.1	13.7	7.5	438	7.2	0702
		.5	13.7	7.4	439	7.1	
		1.0	13.7	7.3	438	7.0	
		1.5	13.7	7.3	438	7.0	
	1	.1	14.0	7.3	446	6.5	0910
		.5	14.0	7.3	445	6.4	
		1.0	13.9	7.2	445	6.4	
		1.3	13.9	7.2	445	6.3	
	2	.1	14.0	7.2	446	6.0	0915
		.5	13.9	7.2	445	6.1	
		1.0	14.0	7.2	447	6.1	
		1.2	13.9	7.2	443	6.1	
	3	.1	14.0	7.2	445	6.3	0922
		.5	14.0	7.2	445	6.3	
		1.0	14.0	7.2	445	6.2	
	4	.1	14.0	7.3	444	6.7	0927
		.5	14.0	7.3	444	6.6	
		1.0	14.0	7.2	445	6.5	
	1	.1	15.1	7.7	435	6.4	1235
		.5	15.1	7.6	434	6.2	
		.8	15.0	7.6	440	6.1	
	2	.1	15.2	7.7	439	6.8	1245
		.5	15.0	7.7	438	6.5	
		.8	14.9	7.7	437	6.4	
	3	.1	15.2	7.7	441	6.8	1253
		.5	15.1	7.7	442	6.7	
		.8	15.0	7.7	442	6.7	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
MIXED	4	0.1	15.2	7.7	444	6.8	1300
		.5	15.2	7.7	443	6.7	
		.8	15.1	7.6	443	6.7	
	1	.1	15.2	7.6	430	6.8	1518
		.5	14.6	7.6	431	6.7	
		1.0	14.9	7.6	435	6.7	
		1.5	15.2	7.6	432	6.9	
	2	.1	15.1	7.8	432	6.7	1525
		.5	14.4	7.7	447	7.2	
		1.0	13.4	7.6	414	7.5	
		1.5	13.9	7.1	425	6.9	
	3	.1	15.2	7.6	429	6.6	1532
		.5	15.2	7.6	429	6.6	
		1.0	15.1	7.6	427	6.6	
		1.5	15.1	7.6	427	6.5	
	4	.1	14.5	7.6	435	6.6	1540
		.5	14.6	7.6	438	6.6	
		1.0	14.3	7.6	436	6.7	
		1.3	14.2	7.6	435	6.7	
NV	1	.1	13.7	7.4	439	7.3	0710
		.5	13.7	7.4	440	7.3	
		1.0	13.7	7.3	440	7.2	
		1.5	13.7	7.3	440	7.2	
		2.0	13.8	7.3	440	7.2	
	2	.1	14.0	7.8	423	6.9	0711
		.5	14.1	7.7	426	6.9	
		1.0	14.1	7.7	428	7.0	
		1.5	14.1	7.7	427	6.9	
		1.8	14.0	7.7	425	6.9	
	3	.1	13.7	7.3	435	7.3	0718
		.5	13.8	7.3	439	7.2	
		1.0	13.8	7.3	440	7.2	
		1.5	13.8	7.3	440	7.2	
		2.0	13.8	7.3	440	7.1	
		2.5	13.8	7.3	440	7.1	
	4	.1	14.0	9.8	430	7.1	0725
		.5	14.1	7.7	427	7.0	
		1.0	14.1	7.7	427	7.0	
		1.5	14.1	7.7	428	6.9	
		2.0	14.1	7.7	428	7.0	
		2.5	14.1	7.7	428	7.0	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	1	0.1	14.1	7.3	447	6.9	0938
		.5	14.1	7.2	445	6.9	
		1.0	14.1	7.2	445	6.9	
		1.5	14.1	7.2	445	6.8	
	2	.1	14.1	7.2	450	7.2	0947
		.5	14.1	7.2	451	7.2	
		1.0	14.1	7.2	451	7.2	
		1.5	14.1	7.2	451	7.2	
		2.0	14.1	7.2	451	7.2	
		2.5	14.1	7.2	451	7.1	
	3	.1	14.5	9.1	443	7.1	0950
		.5	14.5	9.1	437	7.0	
		1.0	14.4	8.9	442	6.9	
		1.5	14.4	8.8	443	6.9	
		2.0	14.4	8.7	443	6.9	
	4	.1	14.4	9.1	443	6.9	1000
		.5	14.4	7.7	439	6.8	
		1.0	14.4	7.7	440	6.8	
		1.5	14.4	7.7	440	6.8	
		2.0	14.4	7.7	440	6.7	
	1	.1	15.4	7.3	446	6.8	1318
		.5	15.1	7.2	444	6.7	
		1.0	14.7	7.2	449	6.7	
		1.5	14.6	7.2	451	6.8	
	2	.1	15.4	7.2	447	6.9	1322
		.5	15.0	7.2	447	6.7	
		1.0	14.6	7.2	450	6.9	
		1.5	14.5	7.2	451	6.9	
	3	.1	15.7	7.6	433	6.3	1306
		.5	15.1	7.6	440	6.5	
		1.0	14.8	7.6	443	6.6	
		1.5	14.8	7.6	444	6.5	
	4	.1	15.7	7.6	440	6.6	1318
		.5	15.2	7.1	440	6.6	
		1.0	14.9	7.2	443	6.6	
		1.5	14.9	7.2	442	6.6	
		1.9	14.7	7.1	443	6.6	
	1	.1	14.7	7.7	412	8.2	1550
		.5	14.7	7.8	411	8.2	
		1.0	14.8	7.8	410	8.2	
		1.5	14.7	7.8	411	8.1	
		2.0	14.8	7.8	412	8.0	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
NV	2	0.1	15.0	7.5	413	8.4	1550
		.5	14.9	7.5	413	8.3	
		1.0	15.0	7.5	415	8.3	
		1.5	14.9	7.4	415	8.2	
		1.8	14.9	7.5	415	8.1	
	3	.1	14.8	7.3	426	7.7	1559
		.5	14.9	7.4	424	7.8	
		1.0	14.9	7.4	424	7.7	
		1.5	14.9	7.4	424	7.7	
		2.0	15.0	7.4	424	7.7	
		2.5	15.0	7.4	424	7.7	
HYD	2	.1	13.7	7.6	421	6.7	0635
		.5	14.0	7.6	425	6.6	
		1.0	14.0	7.6	426	6.6	
		1.5	14.0	7.7	426	6.6	
	3	.1	13.6	7.8	416	5.9	0645
		.5	13.8	7.7	418	6.4	
		1.0	14.0	7.7	424	6.6	
		1.5	14.0	7.7	425	6.6	
	4	.1	13.8	7.9	423	7.0	0650
		.5	14.0	7.8	423	6.6	
		1.0	14.0	7.8	423	6.7	
		1.5	14.0	7.8	424	6.7	
	1	.1	13.7	7.7	415	5.7	0700
		.5	13.8	7.7	416	5.9	
		1.0	13.9	7.7	420	6.3	
		1.5	14.0	7.7	420	6.5	
	1	.1	14.8	8.1	414	7.4	0902
		.5	14.4	7.9	414	6.1	
		1.0	14.1	7.7	413	5.9	
		1.5	14.0	7.7	411	5.9	
	2	.1	15.2	7.9	417	7.3	0912
		.5	14.6	7.7	415	5.8	
		1.0	14.1	7.7	413	5.8	
	3	.1	14.8	7.8	412	7.3	0920
		.5	14.3	7.8	416	5.9	
		1.0	14.1	7.7	415	5.8	
		1.4	14.1	7.7	412	5.8	
	4	.1	15.1	7.8	419	6.2	0936
		.5	14.1	7.7	414	5.9	
		1.0	14.1	7.7	413	5.8	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
HYD	1	0.1	19.1	8.6	411	8.1	1240
		.5	14.6	7.3	415	3.3	
		.9	13.7	7.3	432	2.6	
	2	.1	19.1	8.1	414	8.2	1250
		.5	15.2	7.4	430	3.5	
		.9	13.7	7.2	435	2.7	
	3	.1	19.4	8.5	406	6.3	1257
		.5	15.0	7.4	427	2.8	
		.9	13.7	7.2	433	2.6	
	4	.1	20.7	8.9	395	9.4	1307
		.5	15.3	7.6	423	4.0	
		.9	14.1	7.3	428	3.0	
	1	.1	19.4	8.7	409	9.7	1518
		.5	16.8	7.7	425	4.2	
		1.0	15.9	7.4	430	4.6	
		1.3	15.5	7.3	430	4.7	
	2	.1	19.2	8.4	408	9.8	1525
		.5	17.4	7.8	422	6.3	
		1.0	15.5	7.4	431	6.6	
		1.3	15.4	7.4	433	6.6	
	3	.1	18.7	7.9	418	7.3	1533
		.5	17.9	7.6	424	5.2	
		1.0	15.9	7.3	429	5.8	
		1.3	15.5	7.3	423	6.1	
	4	.1	18.0	7.8	419	8.0	1540
		.5	17.3	7.7	424	6.8	
		1.0	15.2	7.4	432	7.0	
		1.3	15.0	7.4	434	6.8	
BH	1	.2	14.5	n.d.	n.d.	3.5	0945
		1.3	14.1	n.d.	325	2.5	
	2	.1	14.1	n.d.	330	2.5	
		1.3	13.7	n.d.	n.d.	1.2	
	1	.2	16.4	n.d.	320	4.8	1400
		1.3	14.5	n.d.	n.d.	1.2	
	2	.2	16.4	n.d.	330	4.5	
		1.3	14.4	n.d.	n.d.	2.3	
	3	.2	15.7	n.d.	325	2.6	
		1.3	14.4	n.d.	n.d.	1.8	

Table A-6.--Diurnal temperature, pH, specific conductance, and dissolved oxygen (DO) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on November 4, 1987, continued

[Depth in meters; Temp is temperature in degrees Celsius; Cond is specific conductance in microsiemens per centimeter at 25 degrees Celsius; DO is dissolved oxygen in milligrams per liter; n.d. is no data]

Site	Station	Depth	Temp	pH	Cond	DO	Time
BH	1	0.1	17.0	7.3	429	4.1	1620
		.5	15.3	7.3	445	2.3	
		1.0	14.9	7.0	445	1.3	
		1.5	14.2	6.8	447	0.1	
	2	.2	16.1	n.d.	305	3.3	
		1.5	14.2	n.d.	n.d.	0.5	

Table A-7.--Chlorophyll-*a* and suspended-sediment concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987 [n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples are depth integrated]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)
H-PY	0650	High	4.62	11
	0801		4.77	17
	0811		5.89	18
	0826		6.86	7
	n.d.		6.22	5
	1033	Ebb	1.85	n.d.
	1053		.84	n.d.
	1105		.70	n.d.
	1115		1.19	n.d.
	1120		.87	n.d.
	1128		.83	n.d.
	1430	Low	9.07	21
	1446		7.80	18
	1455		7.80	25
	1507		13.84	-
	1510		19.10	-
	1518		10.66	-
	1618	Flood	8.43	30
	1625		14.32	-
	1638		22.75	23
	1706		8.27	-
	1918	High	8.49	10
	1927		8.77	12
	1938		6.05	11
	1941		5.09	10
	1950		7.48	-
EC	0853	High	5.73	14
	0903		5.73	17
	0912		5.39	17
	1151	Ebb	1.57	n.d.
	1153		3.34	n.d.
	1202		3.34	n.d.
	1322	Low	7.55	14
	1350		8.43	15
	1400		8.12	15
	1715	Flood	8.27	n.d.
	1726		11.46	n.d.
	1733		5.89	n.d.
	1830	High	5.57	20

Table A-7.--Chlorophyll-*a* and suspended-sediment concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued

[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples are depth integrated]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)
EC	1841	High	4.01	14
	1848		8.01	20
M-MH	0700	High	2.69	17
	0710		5.82	21
	0715		1.59	19
	0720		9.85	-
	0745		6.26	12
	0830		1.85	17
	1130	Ebb	2.98	n.d.
	1130		1.79	n.d.
	1130		7.46	n.d.
	1145		4.77	n.d.
	1150		3.18	n.d.
	1430	Low	-	19
	1530		23.12	14
	1545		18.48	29
	1700	Flood	4.16	n.d.
	1700		6.01	n.d.
	1715		7.09	n.d.
	1730		14.64	n.d.
	1705		9.55	n.d.
	1900	High	7.30	4
	1845		2.93	1
	1910		7.16	6
	2015		12.73	4
	1945		11.46	12
MH/GF	0900	High	3.85	31
	0920		4.30	-
	0930		8.40	5
	1320	Low	1.69	-
	1330		1.39	-
	1400		1.43	32
	1615	Flood	5.70	n.d.
	1630		2.56	n.d.
	1645		5.76	n.d.
	1830	High	10.86	-
	1840		7.39	20
	1845		10.63	13

Table A-8.--Chlorophyll-*a* and suspended-sediment concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, [n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples are depth integrated]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)
H-PY	0715	Low	2.11	15
	0730		4.93	27
	0910		6.46	-
	0915		13.62	26
	0925		9.29	16
	0941		23.87	20
	1150	Flood	8.10	n.d.
	1205		8.32	n.d.
	1230		14.00	n.d.
	1340	High	6.02	15
	1447		7.34	29
	1415		16.18	15
	1710	Ebb	9.42	n.d.
	1720		9.87	n.d.
	1730		9.58	n.d.
	1735		11.40	n.d.
	1745		14.99	n.d.
	1750		11.40	n.d.
	1850	Low	17.25	21
	1855		11.03	13
	1910		14.48	18
	1915		7.30	28
	1923		12.25	15
	1930		13.24	11
EC	0830	Low	3.49	11
	0844		3.18	15
	0856		3.88	22
	1020	Flood	2.77	n.d.
	1045		2.53	n.d.
	1100		2.16	n.d.
	1120		4.77	n.d.
	1300	High	7.67	18
	1305		5.70	17
	1314		5.85	18
	1600	Ebb	8.78	n.d.
	1620		9.80	n.d.
	1640		9.48	n.d.
	1645		7.67	n.d.
	1700		10.66	n.d.

Table A-8.--Chlorophyll-*a* and suspended-sediment concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987 continued

[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples are depth integrated]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)
EC	1705	Ebb	10.78	
	1935	Low	7.85	22
	1945		7.32	20
	2000		8.12	17
	2015		7.48	21
	2030		8.12	-
	2040		7.11	17
M-MH	0720	Low	31.19	17
	0735		27.10	-
	0750		10.12	12
	0811		7.89	5
	0820		7.29	6
	0955	Flood	34.19	n.d.
	1017		2.62	n.d.
	1037		7.32	n.d.
	1045		15.59	n.d.
	1051		30.80	n.d.
	1240	High	2.00	-
	1300		20.37	-
	1307		2.13	12
	1314		1.02	12
	1330		8.12	21
	1337		7.85	13
	1602	Ebb	8.59	n.d.
	1629		8.16	n.d.
	1637		8.10	n.d.
	1644		7.91	n.d.
	1651		20.50	n.d.
	1857	Low	19.10	16
	1931		18.59	20
MH/GF	0830	Low	5.76	10
	0837		5.41	8
	0845		5.51	10
	0850		5.30	11
	0905		6.68	13
	0910		7.73	18
	1103	Flood	3.56	n.d.
	1114		3.85	n.d.
	1121		4.87	n.d.

Table A-8.--Chlorophyll-*a* and suspended-sediment concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples are depth integrated]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)
MH/GF	1127	Flood	5.39	n.d.
	1133		7.05	n.d.
	1139		9.87	n.d.
	1347	High	2.10	16
	1357		4.31	17
	1403		4.45	21
	1409		4.46	32
	1422		4.81	33
	1428		7.64	40
	1702	Ebb	7.86	n.d.
	1711		6.51	n.d.
	1718		6.08	n.d.
	1726		8.54	n.d.
	1735		7.72	n.d.
	1744		10.16	n.d.
	1945	Low	9.48	30
	1952		7.64	34
	1958		6.55	34
	2003		6.90	34
	2014		7.81	31
	2020		7.76	22

Table A-9.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987
[Samples taken at 0.75m above bottom; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; n.d. is no data]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
MIXED	0750	High	13.37	8	3
	0750		16.94	8	3
	0815		21.99	8	3
	0815		23.10	9	4
	0833		24.64	10	5
	0833		31.28	n.d.	n.d.
	1005	Ebb	22.60	n.d.	n.d.
	1009		17.19	n.d.	n.d.
	1015		28.64	n.d.	n.d.
	1018		34.37	n.d.	n.d.
	1023		60.15	n.d.	n.d.
	1029		42.96	n.d.	n.d.
	1238	Low	36.96	8	3
	1238		29.19	7	3
	1254		37.66	9	4
	1254		40.10	10	4
	1306		46.37	8	4
	1306		45.41	13	6
	1457	Flood	54.37	n.d.	n.d.
	1457		55.44	n.d.	n.d.
	1505		59.13	n.d.	n.d.
	1505		59.67	n.d.	n.d.
	1515		55.84	n.d.	n.d.
	1515		48.32	n.d.	n.d.
	1744	High	46.92	24	18
	1744		51.45	20	13
	1752		51.11	12	5
	1752		48.63	-	-
	1804		48.00	12	5
	1804		51.51	12	5
NV	0656	High	27.69	19	7
	0656		27.58	14	4
	0719		29.77	-	-
	0719		32.22	18	5
	0729		26.73	22	6
	0729		31.25	21	5
	1007	Ebb	40.24	n.d.	n.d.
	1007		37.53	n.d.	n.d.
	1001		32.29	n.d.	n.d.
	1001		34.05	n.d.	n.d.

Table A-9.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
NV	0946	Ebb	27.05	n.d.	n.d.
	0946		38.87	n.d.	n.d.
	1316	Low	46.10	22	7
	1316		48.32	18	5
	1326		55.58	20	5
	1326		55.44	23	6
	1336		48.08	19	6
	1336		49.01	18	6
	1523	Flood	54.56	n.d.	n.d.
	1523		52.38	n.d.	n.d.
	1536		49.18	n.d.	n.d.
	1536		49.80	n.d.	n.d.
	1544		48.80	n.d.	n.d.
	1544		52.21	n.d.	n.d.
	1830	High	58.06	17	4
	1830		55.32	36	24
	1822		57.28	-	-
	1822		44.63	16	5
	1815		56.99	15	5
	1815		53.67	16	4
HYD	0901	High	11.60	5	2
	0901		12.07	7	3
	0918		10.27	13	10
	0927		8.53	6	4
	0927		6.00	8	5
	0927		5.85	2	2
	1020	Ebb	10.39	n.d.	n.d.
	1020		7.08	n.d.	n.d.
	1034		5.29	n.d.	n.d.
	1034		5.90	n.d.	n.d.
	1047		6.26	n.d.	n.d.
	1047		5.52	n.d.	n.d.
	1345	Low	28.08	9	4
	1345		28.34	8	3
	1400		30.18	-	-
	1400		27.80	6	3
	1412		21.56	9	4
	1412		17.13	7	5
	1552	Flood	36.21	n.d.	n.d.
	1552		35.50	n.d.	n.d.

Table A-9.--Chlorophyll-*a*, suspended-sediment and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
HYD	1606	Flood	41.58	n.d.	n.d.
	1606		36.74	n.d.	n.d.
	1620		37.89	n.d.	n.d.
	1620		37.03	n.d.	n.d.
	1845	High	50.60	-	-
	1845		52.97	-	-
	1855		39.55	23	16
	1855		44.46	9	4
	1905		42.33	-	-
	1905		44.46	-	-

Table A-10.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 31, 1987
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
MIXED	0809	Low	5.46	9	3
	0809		6.27	8	3
	0809		5.79	9	2
	0748		10.32	11	4
	0748		13.24	11	1
	0827		6.62	9	3
	1000	Flood	27.28	n.d.	n.d.
	1000		27.39	n.d.	n.d.
	1008		31.48	n.d.	n.d.
	1008		30.61	n.d.	n.d.
	1015		37.32	n.d.	n.d.
	1015		46.15	n.d.	n.d.
	1242	High	26.73	31	5
	1242		33.42	12	6
	1305		48.35	20	12
	1305		35.10	14	5
	1220		55.43	15	6
	1220		37.93	41	35
	1535	Ebb	32.85	n.d.	n.d.
	1535		34.92	n.d.	n.d.
	1525		33.68	n.d.	n.d.
	1525		55.10	n.d.	n.d.
	1520		48.53	n.d.	n.d.
	1520		57.03	n.d.	n.d.
	1921	Low	26.32	n.d.	n.d.
	1911		41.96	n.d.	n.d.
	1911		42.21	n.d.	n.d.
	1901		53.37	n.d.	n.d.
	1901		53.57	n.d.	n.d.
NV	0837	Low	27.45	18	5
	0837		31.03	18	5
	0848		30.01	16	5
	0848		27.75	20	6
	0859		34.31	18	5
	0859		24.71	17	5
	1045	Flood	24.01	n.d.	n.d.
	1045		23.15	n.d.	n.d.
	1037		22.68	n.d.	n.d.
	1037		20.83	n.d.	n.d.

Table A-10.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 31, 1987, continued
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
NV	1028	Flood	21.34	n.d.	n.d.
	1028		22.57	n.d.	n.d.
	1306	High	32.82	-	-
	1306		42.70	-	-
	1319		41.20	-	-
	1319		31.41	28	14
	1259		35.66	-	-
	1254		38.96	36	21
	1605	Ebb	55.06	n.d.	n.d.
	1605		52.12	n.d.	n.d.
	1555		50.39	n.d.	n.d.
	1555		73.99	n.d.	n.d.
	1543		46.05	n.d.	n.d.
	1543		58.26	n.d.	n.d.
	1950	Low	52.08	-	-
	1950		49.92	17	6
	1941		54.02	-	-
	1941		58.41	14	5
	1935		56.16	-	-
	1935		56.39	13	4
HYD	0927	Low	23.87	10	4
	0927		20.89	10	5
	0918		17.14	10	3
	0918		16.58	12	4
	0909		6.86	8	3
	0909		6.52	9	3
	1109	Flood	12.73	n.d.	n.d.
	1109		24.88	n.d.	n.d.
	1101		17.97	n.d.	n.d.
	1101		21.48	n.d.	n.d.
	1054		27.05	n.d.	n.d.
	1054		22.91	n.d.	n.d.
	1400	High	47.23	-	-
	1400		31.63	-	-
	1347		21.87	-	-
	1347		19.63	30	23
	1333		18.82	-	-
	1333		21.64	23	15
	1635	Ebb	26.46	n.d.	n.d.
	1635		27.01	n.d.	n.d.

Table A-10.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 31, 1987, continued

[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Nautical time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Organic carbon (mg/L)
HYD	1635	Ebb	13.60	n.d.	n.d.
	1630		15.18	n.d.	n.d.
	1620		6.16	-	-
	1620		6.24	-	-
	1850	Low	11.51	-	-
	1850		12.73	-	-
	1840		7.35	7	2
	1840		6.29	6	2
	1830		3.43	-	-
	1830		3.87	-	-

Table A-11.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
MIXED	0715	Low	9.86	13	4
	0730		9.90	12	3
	0740		6.14	10	3
	0730		6.25	12	4
	0715		8.43	4	3
	0740		7.15	6	2
	0940	Flood	3.43	n.d.	n.d.
	0945		4.00	n.d.	n.d.
	0940		1.95	n.d.	n.d.
	0945		6.85	n.d.	n.d.
	1000		9.86	n.d.	n.d.
	1000		10.83	n.d.	n.d.
	1200	High	4.74	12	4
	1210		6.55	-	-
	1200		6.64	10	2
	1220		2.92	10	2
	1220		7.81	9	2
	1210		5.56	7	3
	1455	Ebb	10.54	11	3
	1435		8.43	-	-
	1445		7.08	-	-
	1445		7.66	25	5
	1435		9.47	16	6
	1455		10.79	-	-
NV	0750	Low	7.91	11	6
	0800		6.04	10	3
	0805		9.67	11	3
	0800		4.58	8	1
	0805		7.29	9	2
	0750		6.93	10	14
	1025	Flood	6.45	n.d.	n.d.
	1010		17.89	n.d.	n.d.
	1020		5.35	n.d.	n.d.
	1020		5.33	n.d.	n.d.
	1025		7.46	n.d.	n.d.
	1010		5.77	n.d.	n.d.

Table A-11.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987, continued
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
NV	1240	High	8.71	14	6
	1250		8.40	10	3
	1230		8.06	9	2
	1240		5.12	7	3
	1230		4.46	9	-
	1250		8.39	8	5
	1500	Ebb	11.94	13	2
	1500		0.86	11	2
	1520		9.19	11	5
	1510		12.28	12	2
	1510		9.47	11	3
	1520		9.19	10	1
HYD	0840	Low	7.66	13	3
	0830		10.55	9	-
	0820		6.45	4	-
	0840		7.46	4	-
	0830		8.46	4	2
	0820		5.38	2	2
	1050	Flood	0.81	n.d.	n.d.
	1035		6.45	n.d.	n.d.
	1050		7.25	n.d.	n.d.
	1035		6.85	n.d.	n.d.
	1045		6.92	n.d.	n.d.
	1045		1.37	n.d.	n.d.
	1300	High	7.91	6	6
	1310		7.29	7	2
	1310		6.83	6	2
	1300		7.76	6	1
	1320		8.46	5	1
	1320		8.62	6	9
	1530	Ebb	10.58	11	3
	1530		7.32	11	2
	1545		12.12	9	3
	1540		7.50	3	3
	1545		13.14	11	5
	1540		7.50	10	2

Table A-12.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
MIXED	0650	High	14.32	11	1
	0645		12.45	10	1
	0635		12.45	12	2
	0645		12.25	11	2
	0650		13.83	13	3
	0635		14.25	12	2
	0900	Ebb	9.09	n.d.	n.d.
	0850		12.25	n.d.	n.d.
	0850		9.28	n.d.	n.d.
	0845		7.70	n.d.	n.d.
	0900		9.49	n.d.	n.d.
	0845		9.46	n.d.	n.d.
	1240	Low	8.30	4	1
	1230		4.78	5	1
	1235		5.07	6	2
	1240		7.66	5	-
	1230		4.86	6	5
	1235		9.28	5	1
	1510	Flood	10.27	24	4
	1515		10.82	24	3
	1515		9.57	24	3
	1520		9.82	23	4
	1520		11.87	25	3
	1510		11.46	24	15
NV	0710	High	12.79	16	4
	0715		10.21	13	1
	0710		13.78	15	9
	0715		11.06	11	3
	0705		13.68	15	4
	0705		11.48	12	1
	0905	Ebb	10.95	n.d.	n.d.
	0905		12.99	n.d.	n.d.
	0915		12.45	n.d.	n.d.
	0910		12.15	n.d.	n.d.
	0915		14.09	n.d.	n.d.
	0910		12.99	n.d.	n.d.
	1245	Low	8.69	6	4
	1250		12.80	7	2
	1250		10.77	10	2
	1255		6.91	8	2

Table A-12.--Chlorophyll-*a*, suspended-sediment, and suspended-sediment organic carbon concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites November 4, 1987, continued
[n.d. is no data; - is sample discarded because of epiphyte contamination; µg/L is micrograms per liter; mg/L is milligrams per liter; samples taken at 0.75m above bottom]

Site	Time	Tide	Chlorophyll-*a* (µg/L)	Suspended sediment (mg/L)	Suspended-sediment organic carbon (mg/L)
NV	1245	Flood	5.54	7	3
	1255		5.51	11	3
	1535		8.61	21	5
	1530		8.61	21	2
	1530		8.69	21	1
	1540		12.84	-	8
	1540		-	22	1
	1535		9.39	-	12
HYD	0730	High	8.23	14	4
	0735		11.69	-	2
	0735		9.28	8	2
	0730		8.30	9	4
	0925	Ebb	9.91	n.d.	n.d.
	0925		11.13	n.d.	n.d.
	0925		14.60	n.d.	n.d.
	0920		11.32	n.d.	n.d.
	0920		12.86	n.d.	n.d.
	0925		7.86	n.d.	n.d.
	1310	Low	6.59	3	2
	1300		10.33	3	5
	1300	Low	9.68	6	4
	1305		9.86	9	4
	1305		9.39	-	-
	1310		6.41	5	4
	1650	Flood	15.11	18	5
	1650		12.25	20	3
	1638		11.37	17	3
	1638		10.81	19	3
	1605		-	-	11
	1605		24.50	-	10

Table A-13.--Surface chlorophyll-*a* concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987
[µg/L is micrograms per liter]

Site	Time	Tide	Chlorophyll-*a* (µg/L)
MIXED	0900	Ebb	12.25
	0915		16.11
	0929		26.73
	1239	Low	32.78
	1249		33.88
	1254		24.01
	1448	Flood	30.43
	1456		40.74
	1504		24.82
NV	0656	High	29.76
	0930	Ebb	29.26
	0930		26.79
	0930		30.62
	1300	Low	28.64
	1300		33.12
	1300		39.46
	1500	Flood	70.01
	1500		61.10
	1500		69.38
	1500		58.78
HYD	0900	Ebb	20.37
	0912		13.87
	0930		38.75
	1234	Low	19.07
	1246		8.99
	1300		6.68
	1445	Flood	16.23
	1530		7.96
	1545		5.19

Table A-14.--Surface chlorophyll-*a* concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 31, 1987
[µg/L is micrograms per liter]

Site	Time	Tide	Chlorophyll-*a* (µg/L)
MIXED	1004	Flood	52.36
	1016		42.96
	1023		36.96
	1230	High	34.31
	1300		42.65
	1315		46.20
	1550	Ebb	60.18
	1625		38.49
NV	1050	Flood	14.04
	1050		15.22
	1058		41.89
	1300	High	38.83
	1300		32.78
	1300		41.37
	1600	Ebb	57.92
	1600		40.92
	1600		57.00
HYD	1010	Flood	12.56
	1025		15.59
	1035		18.17
	1237	High	10.11
	1252		24.17
	1300		27.33
	1540	Ebb	7.09
	1550		13.86
	1600		18.94

Table A-15.--Surface chlorophyll-*a* concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987
[µg/L is micrograms per liter]

Site	Time	Tide	Chlorophyll-*a* (µg/L)
MIXED	1015	Flood	13.90
	0958		10.51
	1005		11.52
	1229	High	12.08
	1220		11.21
	1300		12.29
	1503	Ebb	10.34
	1501		11.13
	1458		11.87
NV	1000	Flood	4.43
	1020		6.87
	1010		6.64
	1248	High	9.87
	1222		10.20
	1235		8.59
	1506	Ebb	9.95
	1520		8.71
HYD	0959	Flood	11.94
	1009		16.45
	0952		12.11
	1247	High	42.86
	1337		14.38
	1327		9.76
	1515	Ebb	7.29
	1511		45.80
	1524		55.17
BH	1015	Flood	11.24
	1345	Ebb	22.45

Table A-16.--Surface chlorophyll-*a* concentrations at vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987
[µg/L is micrograms per liter]

Site	Time	Tide	Chlorophyll-*a* (µg/L)
MIXED	0915	Ebb	9.19
	0910		10.00
	0922		9.59
	1235	Low	13.04
	1244		9.28
	1353		8.89
	1532	Flood	8.78
	1518		14.41
	1536		10.56
NV	0946	Ebb	11.23
	0950		20.88
	0950		21.86
	1310	Low	9.82
	1306		5.47
	1601	Flood	8.61
	1550		11.02
	1555		7.66
HYD	0912	Ebb	10.39
	0920		17.35
	0902		14.54
	1250	Low	17.95
	1255		13.33
	1237		24.40
	1518	Flood	24.95
	1535		37.36
	1526		21.32
	1535		23.92

Table A-17.--Velocity measured at four tidal stages at vegetated (H-PY, M-MH, MIXED, HYD) and unvegetated (EC, MH/GF, NV) sites on June 11, 1987, and August 27, 1987
[m/s is meters per second]

Date/ tide	Velocity (m/s)			
	H-PY	EC	M-MH	MH/GF
June 11, 1987				
High	0.11	0.17	0.18	0.26
Ebb	.06	.05	.06	.12
Low	.17	.19	.10	.16
Flood	.10	.25	.19	.24

	Velocity (m/s)		
	MIXED	NV	HYD
August 27, 1988			
High	0.13	0.20	0.01
Ebb	.10	.19	.06
Low	.07	.12	.03
Flood	.10	.35	.03

Table A-18.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, [PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
H-PY	1430	Flood	Below surface	1,700
			0.25	1,300
			.50	800
	1446	Flood	Below surface	1,700
			.25	1,300
			.50	860
	1455	Flood	Below surface	1,700
			.25	1,200
			.50	590
			.75	330
	1618	Flood	Below surface	1,100
			.25	750
			.50	340
			.75	150
			1.00	62
	1638	Flood	Below surface	1,200
			.25	800
			.50	540
			.75	190
			1.00	130
EC	1322	Flood	Below surface	1,900
			.25	1,200
			.50	370
			.75	300
			1.00	260
	1350	Flood	Below surface	1,800
			.25	1,300
			.50	790
			.75	500
			1.00	300
	1400	Flood	Below surface	1,800
			.25	1,200
			.50	750
			.75	450
			1.00	280

Table A-18.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued
[PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
EC	1715	Flood	Below surface	980
			0.25	700
			.50	370
			.75	230
			1.00	120
M-MH	1100	Ebb	Air	2,000
			.25	1,100
			.50	730
			.75	360
	1100	Ebb	Air	2,000
			.25	1,000
			.50	630
	1145	Ebb	Air	2,300
			.25	1,300
			.50	820
	1700	Flood	Air	1,100
			.25	750
			.50	600
MH/GF	0730	Ebb	Below surface	1,400
			.60	95
	1615	Flood	Air	1,300
			.25	500
			.50	250

Table A-19.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987
[PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
H-PY	1150	Flood	Air	1,860
			Below surface	1,660
			0.25	1,280
			.50	930
			.75	550
			1.00	530
			1.25	350
			1.50	100
	1447	Ebb	Air	2,300
			Below surface	1,600
			.25	1,200
			.50	750
			.75	510
			1.00	290
			1.25	120
			1.50	4.6
EC	1020	Flood	Below surface	1,400
			.25	780
			.50	500
			.75	320
			1.00	190
			1.25	110
			1.50	62
	1045	Flood	Air	2,100
			Below surface	1,200
			.25	950
			.50	400
			.75	300
			1.00	170
			1.25	110
			1.50	100
			1.75	35

Table A-19.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued
[PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
EC	1314	Ebb	Air	2,200
			Below surface	1,700
			0.25	1,200
			.50	770
			.75	520
			1.00	320
			1.25	230
			1.50	130
			1.75	66
	1620	Low	Air	1,760
			Below surface	1,100
			.25	750
			.50	480
			.75	210
			1.00	190
			1.25	110
			1.50	56
			1.75	15
	1645	Low	Air	1,500
			Below surface	990
			.25	720
			.50	430
			.75	270
			1.00	160
			1.25	92
			1.50	53
M-MH	0955	Flood		
			Air	1,500
			.30	1,200
			.50	750
			.75	500
			1.00	140
			1.25	120

Table A-19.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
M-MH	0955	Flood	Air	1,700
			0.30	1,100
			.50	800
			.75	300
			1.00	250
			1.25	175
	1017	Flood	Air	1,550
			.25	1,200
			.50	775
			.75	300
			1.00	110
	1017	Flood	Air	1,750
			.25	1,250
			.50	900
			.75	450
			1.00	140
	1240	Ebb	Air	2,000
			.25	875
			.50	700
			.75	450
			1.00	450
			1.25	350
			1.50	150
MH/GF	1103	Flood	Air	1,850
			.25	1,000
			.50	775
			.75	540
			1.00	420
			1.20	310

Table A-19.--Photosynthetically active radiation (PAR) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued
[PAR is in microeinsteins per square centimeter; depth in meters]

Site	Time	Tide	Depth	PAR
MH/GF	1139	Flood	Air	1,950
			0.25	1,050
			.50	570
			.75	320
			1.00	160
			1.25	130
			1.50	95
			1.75	59
	1347	Ebb	Air	1,950
			.25	1,200
			.50	700
			.75	500
			1.00	350
			1.25	190
	1602	Ebb	Air	1,500
			.25	770
			.50	450
			.75	280
			1.00	170
	1702	Ebb	Air	1,300
			.25	750
			.50	350
			.75	170

Table A-20.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987
[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1120	Ebb	V	Air	1,650
				Below surface	1,450
				0.1	1,100
				.2	200
				.3	150
				.4	95
				.5	49
				.6	47
				.7	22
				.8	6
				.9	4
				1.0	4.5
	1140	Ebb	V	Air	1,700
				Below surface	1,600
				.1	1,500
				.2	1,250
				.3	200
				.4	185
				.5	200
				.6	140
				.7	100
				.8	132
				.9	41
				1.0	16
	1118	Ebb	H	Air	1,750
				Below surface	1,500
				.5	490
				1.0	290
	1136	Ebb	H	Air	1,850
				Below surface	1,700
				.5	820
				1.0	300

Table A-20.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1335	Flood	V	Air	1,900
				Below surface	1,800
				0.1	1,200
				.2	1,100
				.3	1,000
				.4	550
				.5	360
				.6	320
				.7	200
				.8	40
				.9	4.5
	1352	Flood	V	Air	1,900
				Below surface	1,700
				.1	1,400
				.2	1,150
				.3	950
				.4	590
				.5	7.5
				.6	14
				.7	11
				.8	8
				.9	12
				1.0	2.8
	1344	Flood	H	Air	1,750
				Below surface	1,650
				.5	660
				1.0	150
	1350	Flood	H	Air	1,900
				Below surface	1,800
				.5	830
				1.0	320
NV	1151	Ebb	-	Air	1,750
				Below surface	1,600
				.5	630
				1.0	225
				1.5	75

Table A-20.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
NV	1153	Ebb	-	Air	1,600
				Below surface	1,500
				0.5	600
				1.0	200
				1.5	60
				2.0	20
	1407	Flood	-	Air	500
				Below surface	410
				.5	130
				1.0	38
				1.4	18
	1420	Flood	-	Air	1,850
				Below surface	1,650
				.5	570
				1.0	75
				1.5	60
				2.0	3.5
HYD	1117	Ebb	V	Air	1,725
				Below surface	1,600
				.1	1,450
				.2	450
				.3	42
				.4	20
				.5	12.5
	1130	Ebb	V	Air	1,723
				Below surface	1,700
				.1	1,100
				.2	60
				.3	2.8
	1106	Ebb	H	Air	1,750
				Below surface	500
				.5	920
				1.0	520
				1.4	400

Table A-20.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
HYD	1133	Ebb	H	Air	1,700
				Below surface	1,600
				0.5	1,000
				1.0	630
				1.5	420
	1339	Flood	V	Air	1,950
				Below surface	1,850
				.1	1,650
				.2	1,350
				.3	340
				.4	8
				.5	1.5
	1347	Flood	V	Air	1,800
				Below surface	1,700
				.1	1,300
				.2	130
				.3	3
	1300	Flood	H	Air	1,900
				Below surface	1,800
				.5	1,000
				1.0	490
	1350	Flood	H	Air	1,800
				Below surface	1,750
				.5	800
				1.0	30

Table A-21.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987 [PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1116	Flood	V	Air	950
				Below surface	520
				0.1	450
				.2	270
				.3	200
				.4	90
				.5	60
				.6	40
	1132	Flood	V	Air	850
				Below surface	450
				.1	370
				.2	290
				.3	110
				.4	110
				.5	75
				.6	50
				.7	25
	1116	Flood	H	Air	1,100
				Below surface	700
				.5	300
				1.0	90
	1132	Flood	H	Air	900
				Below surface	500
				.5	250
				1.0	100
				1.5	30
	1400	Ebb	V	Air	1,400
				Below surface	1,200
				.5	280
				1.0	45
				1.5	9
	1400	Ebb	V	Air	900
				Below surface	500
				.5	170
				1.0	50
				1.5	7

Table A-21.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued
[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1400	Ebb	H	Air	800
				Below surface	680
				0.5	200
				1.0	45
	1400	Ebb	H	Air	1,350
				Below surface	750
				.5	280
	1400	Ebb	H	Air	2,200
				Below surface	750
				.5	240
				1.0	70
				1.5	12
NV	1138	Flood	-	Air	1,100
				Below surface	550
				.5	200
				1.0	55
				1.5	25
				2.0	10
	1145	Flood	-	Air	820
				Below surface	700
				.5	300
				1.0	75
				1.5	30
				2.0	12
	1143	Flood	-	Air	1,000
				Below surface	730
				.5	230
				1.0	70
				1.5	25
				2.0	10
	1400	Ebb	-	Air	900
				Below surface	550
				.5	170
				1.0	65
				1.5	25
				2.0	10

Table A-21.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
NV	1412	Ebb	-	Air	780
				Below surface	550
				0.1	450
				.5	180
				1.0	80
				1.5	30
HYD	1135	Flood	V	Air	770
				Below surface	580
				.1	380
				.2	120
				.3	50
				.4	25
				.5	2.5
				.6	2.7
	1140	Flood	V	Air	600
				Below surface	560
				.1	500
				.2	390
				.3	230
				.4	210
				.5	170
				.6	125
				.7	68
				.8	92
	1127	Flood	H	Air	370
				Below surface	330
				.5	80
				1.0	28
				1.5	9
	1150	Flood	H	Air	600
				Below surface	550
				.1	450
				.5	200
				1.0	73
				1.5	12

Table A-21.--Photosynthetically active radiation (PAR) at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
HYD	1334	Ebb	V	Air	1,950
				Below surface	1,650
				0.1	1,250
				.2	700
				.3	470
				.4	470
				.5	390
				.6	280
				.7	220
				.8	150
				.9	100
				1.0	70
				1.1	41
				1.2	15
	1343	Ebb	H	Air	1,000
				Below surface	920
				.1	820
				.5	370
				1.0	200
				1.5	70
	1350	Ebb	H	Air	780
				Below surface	690
				.1	630
				.5	380
				1.0	210
				1.5	100
BH	1330	Ebb	V	Air	2,000
				Below surface	1,580
				.1	1,300
				.2	900
				.3	105
				.4	70
				.5	46
	1330	Ebb	H	Air	1,380
				Below surface	1,225
				.25	880
				.50	720
				.75	460
				1.0	390

Table A-22.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987 [PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1043	Flood	V	Air	800
				Below surface	750
				0.25	525
				.50	350
				.75	160
				1.00	100
				1.25	65
	1046	Flood	V	Air	740
				Below surface	660
				.25	500
				.50	330
				.75	240
				1.00	150
				1.25	80
	1054	Flood	V	Air	735
				Below surface	630
				.25	450
				.50	290
				.75	210
				1.00	120
				1.25	85
	1342	Ebb	V	Air	1,750
				Below surface	1,400
				.25	1,150
				.50	750
				1.00	375
				1.25	150
				1.50	45
	1351	Ebb	V	Air	1,700
				Below surface	1,600
				.25	1,100
				.50	700
				1.00	375
				1.25	265
				1.50	140

Table A-22.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1356	Ebb	V	Air	1,900
				Below surface	1,500
				0.25	1,200
				.50	820
				1.00	360
				1.25	195
				1.50	145
NV	1116	Flood	-	Air	1,100
				Below surface	1,100
				.25	550
				.50	470
				.75	340
				1.00	180
				1.25	120
				1.50	125
	1133	Flood	-	Air	1,500
				Below surface	1,700
				.25	700
				.50	550
				1.00	275
				1.25	275
				1.50	150
				1.75	125
				2.00	100
	1424	Ebb	-	Air	730
				Below surface	650
				.25	500
				.50	340
				.75	210
				1.00	140
				1.25	105
				1.50	80
				1.75	63

Table A-22.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
NV	1430	Ebb	-	Air	1,140
				Below surface	1,155
				0.25	1,000
				.50	700
				1.00	350
				1.25	250
				1.50	200
				1.75	140
HYD	1107	Flood	H	Air	2,000
				Below surface	1,500
				.1	1,000
				.2	275
				.3	400
				.4	250
				.5	50
	1119	Flood	H	Air	1,300
				Below surface	1,700
				.1	1,600
				.2	150
				.3	20
	1044	Flood	H	Air	2,000
				Below surface	1,400
				.25	1,200
				.50	700
				1.00	550
				1.25	475
				1.50	390
	1059	Flood	H	Air	1,600
				Below surface	1,400
				.25	1,100
				.50	900
				1.00	700
				1.25	575

Table A-22.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
HYD	1415	Ebb	V	Air	800
				Below surface	720
				0.1	560
				.2	110
				.3	35
				.4	16
				.5	9.5
				.6	3.0
				.7	2.4
	1415	Ebb	V	Air	760
				Below surface	690
				.1	600
				.2	150
				.3	72
				.4	30
				.5	14
				.6	7
				.7	2
	1347	Ebb	H	Air	750
				Below surface	750
				.25	530
				.50	235
				.75	190
				1.00	160
				1.25	4.2
				1.50	0.3
	1401	Ebb	H	Air	800
				Below surface	710
				.25	560
				.50	430
				.75	285
				1.00	260
				1.25	205
				1.50	170
				1.75	18

Table A-23.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987, [PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1031	Ebb	V	Air	800
				Below surface	750
				0.25	730
				.50	500
				.75	400
				1.00	310
				1.25	270
	1037	Ebb	V	Air	1,400
				Below surface	1,100
				.25	950
				.50	670
				.75	525
				1.00	425
	1043	Ebb	V	Air	1,450
				Below surface	1,200
				.25	900
				.50	525
				.75	410
				.90	140
	1355	Flood	V	Air	575
				Below surface	525
				.25	350
				.50	180
				.75	120
				1.00	60
	1404	Flood	V	Air	620
				Below surface	500
				.1	450
				.2	380
				.3	300
				.4	125
				.5	70
				.6	100
				.7	30

Table A-23.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
MIXED	1411	Flood	V	Air	450
				Below surface	400
				0.1	360
				.2	260
				.3	210
				.4	150
				.5	125
				.6	65
				.7	50
	1418	Flood	V	Air	300
				Below surface	275
				.25	170
				.50	90
				.75	50
				1.00	20
NV	1104	Ebb	-	Air	650
				Below surface	600
				.25	330
				.50	205
				.75	160
				1.00	95
				1.25	65
				1.50	40
				1.75	32
				2.00	20
	1107	Ebb	-	Air	1,350
				Below surface	1,250
				.25	1,000
				.50	660
				.75	440
				1.00	240
				1.25	160
				1.50	110
				1.75	85

Table A-23.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
NV	1430	Flood	-	Air	600
				Below surface	545
				0.25	360
				.50	180
				.75	120
				1.00	85
				1.25	37
				1.50	30
				1.75	40
				2.00	30
	1434	Flood	-	Air	1,015
				Below surface	750
				.25	420
				.50	275
				.75	120
				1.00	80
				1.25	40
				1.50	26
				1.75	15
HYD	1033	Ebb	H	Air	530
				Below surface	440
				.25	350
				.50	340
				.75	310
				1.00	255
	1041	Ebb	H	Air	680
				Below surface	625
				.25	480
				.50	400
				.75	335
				1.00	280
				1.25	230

Table A-23.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
HYD	1046	Ebb	H	Air	525
				Below surface	575
				0.1	550
				.2	525
				.3	490
				.4	450
				.5	410
				.6	340
				.7	310
				.8	300
				.9	275
				1.0	250
	1053	Ebb	H	Air	575
				Below surface	625
				.1	550
				.2	500
				.3	450
				.4	400
				.5	360
				.6	350
				.7	310
				.8	290
				.9	275
				1.0	250
	1402	Flood	H	Air	790
				Below surface	600
				.25	400
				.50	310
				.75	160
				1.00	150
	1412	Flood	H	Air	1,100
				Below surface	780
				.25	540
				.50	375
				.75	250
				1.00	160

Table A-23.--Photosynthetically active radiation (PAR) for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987, continued

[PAR is light in microeinsteins per square centimeter; V = in vegetation; H = through hole in vegetation; depth in meters]

Site	Time	Tide	H or V	Depth	PAR
HYD	1417	Flood	V	Air	1,120
				Below surface	900
				0.1	125
				.2	9
				.3	4
				.5	0.5
	1422	Flood	V	Air	850
				Below surface	760
				.1	290
				.2	65
				.3	17
				.4	13
				.5	1.8

Table A-24.--Secchi depths at vegetated (H-PY, M-MH, MIXED, HYD, BH) and unvegetated (EC, MH/GF, NV) sites, 1987
[cm is centimeter]

Site	Time	Tide	Secchi depth (cm)
		June 10, 1987	
H-PY	1022	Ebb	80
			80
			78
			89
			78
	1430	Low	78
			71
			52
			49
			26
			61
	1618	Flood	54
			50
			66
			65
			82
			89
	1915	High	86
			97
			73
			68
EC	1151	Ebb	64
			56
			70
	1322	Low	66
			69
			74
	1715	Flood	85
			96
			93
	1830	High	107
			97
			100
M-MH	0700	High	43
			62
	1100	Ebb	74

Table A-24.--Secchi depths at vegetated (H-PY, M-MH, MIXED, HYD, BH) and unvegetated (EC, MH/GF, NV) sites, 1987, continued
[cm is centimeter]

Site	Time	Tide	Secchi depth (cm)
		June 10, 1987	
M-MH	1430	Low	84
			70
			58
	1700	Flood	104
	1900	High	114
MH/GF	1015	High	34
	1330	Low	35
	1615	Flood	52
			48
	1830	High	62
		June 17, 1987	
H-PY	0715	Low	100
			120
	1205	Flood	120
			94
		High	82
			73
			90
	1710	Ebb	85
			75
			70
			71
			71
			70
EC	1020	Flood	70
			86
			65
			63
	1300	High	72
			75
			58

Table A-24.--Secchi depths at vegetated (H-PY, M-MH, MIXED, HYD, BH) and unvegetated (EC, MH/GF, NV) sites, 1987, continued
[cm is centimeter]

Site	Time	Tide	Secchi depth (cm)
		June 17, 1987	
EC	1600	Ebb	80
			72
			67
			58
			70
			71
	0955	Flood	128
			124
			99
			143
M-MH	1240	High	169
			158
			143
			123
			126
			124
	1602	Ebb	122
			124
			112
			107
			115
			115
MH/GF	1103	Flood	106
			110
			105
			90
			85
			84
	1347	High	97
			78
			65
			68
			61
			62
	1702	Ebb	81
			85
			78
			79
			78
			75

Table A-24.--Secchi depths at vegetated (H-PY, M-MH, MIXED, HYD, BH) and unvegetated (EC, MH/GF, NV) sites, 1987, continued
[cm is centimeter]

Site	Time	Tide	Secchi depth (cm)
		August 20, 1987	
MIXED	1118	Ebb	>110
			>110
NV	0655	Ebb	85
			80
	1151	Low	77
			77
			82
	1445	Flood	75
	1805	High	85
		August 31, 1987	
MIXED	1240	High	70
	1400	Ebb	70
NV	0825	Low	68
	1302	High	70
	1400	Ebb	68
HYD	1322	High	100
		October 29, 1987	
MIXED	1043	Flood	100
			87
			90
	1342	High	120
			120
			125
NV	0754	Low	90

Table A-24.--Secchi depths at vegetated (H-PY, M-MH, MIXED, HYD, BH) and unvegetated (EC, MH/GF, NV) sites, 1987, continued
[cm is centimeter]

Site	Time	Tide	Secchi depth (cm)
		October 29, 1987	
NV	1006	Flood	98
			80
			110
	1217	High	112
			110
			110
HYD	1044	Flood	157
	1347	High	127
			142
BH	1345	High	90
		November 4, 1987	
MIXED	1031	Ebb	90
			100
	1355	Flood	80
			68
			54
			60
NV	1104	Low	85
	1430	Flood	100
			110

Appendix B. Water-Quality Data Summaries

Table B-1.--Mean, standard error of mean and number of measurements of surface temperature and specific conductance for June 10, 1987, at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites
[Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; specific conductance in microsiemens per centimeter at 25 degrees Celsius; temperature in degrees Celsius; SE = standard error of the mean; N = number of samples; n.d. = no data; n.a. is not applicable]

Site	Time	Tide	Temperature			Conductivity		
			Mean	SE	N	Mean	SE	N
H-PY	1	High	23.2	0.116	6	307	0.4	6
	2	Ebb	24.6	.099	6	302	1.0	6
	3	Low	26.3	.052	6	298	.3	6
	4	Flood	26.6	.089	6	293	1.7	6
	5	High	26.0	.033	6	297	.6	6
EC	1	High	23.4	.033	3	305	.3	3
	2	Ebb	24.8	.058	3	302	.6	3
	3	Low	25.7	.033	3	300	.0	3
	4	Flood	25.9	.033	3	300	.3	3
	5	High	25.9	.000	3	301	.6	3
M-MH	1	High	22.7	.066	3	296	.3	3
	2	Ebb	23.9	.160	4	293	.8	4
	3	Low	27.1	.600	2	281	4.0	2
	4	Flood	27.1	.100	2	284	2.0	2
	5	High	26.6	n.a.	1	283	n.a.	1
MH/GF	1	High	22.4	n.a.	1	291	n.a.	1
	2	Ebb	n.d.	n.d.	n.d.	n.d.	n.d.	
	3	Low	24.7	.450	2	288	.0	2
	4	Flood	26.1	n.a.	1	287	n.a.	1
	5	High	26.0	n.a.	1	286	n.a.	1

Table B-2.--Mean, standard error of mean and number of measurements of surface temperature and specific conductance for June 17, 1987, at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites [Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; specific conductance in microsiemens per centimeter at 25 degrees Celsius; temperature in degrees Celsius, SE = standard error of the mean; N = number of samples]

Site	Time	Tide	Temperature			Conductivity		
			Mean	SE	N	Mean	SE	N
H-PY	1	Low	26.1	0.073	6	298	3.2	6
	2	Flood	27.1	.100	3	306	.3	3
	3	High	27.7	.176	3	297	2.7	3
	4	Ebb	27.7	.111	6	290	1.3	6
	5	Low	27.9	.088	6	280	1.8	6
EC	1	Low	26.5	.033	3	310	.7	3
	2	Flood	26.3	.024	5	290	1.5	5
	3	High	27.4	.088	3	295	.0	3
	4	Ebb	28.0	.076	6	293	1.4	6
	5	Low	27.6	.163	6	290	3.7	6
M-MH	1	Low	25.8	.060	6	298	.5	6
	2	Flood	26.8	.054	6	303	.5	6
	3	High	27.8	.084	6	296	.7	6
	4	Ebb	28.7	.076	6	290	.5	6
	5	Low	28.4	.389	6	293	.4	6
MH/GF	1	Low	26.1	.040	6	293	1.1	6
	2	Flood	27.0	.049	6	279	.2	6
	3	High	27.5	.037	6	291	.6	6
	4	Ebb	28.2	.099	6	294	.5	6
	5	Low	27.3	.033	6	307	.3	6

Table B-3.--Mean, standard error of mean and number of measurements of surface and bottom temperature and specific conductance means for August 20, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites [Surface samples taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = evening; specific conductance in microsiemens per centimeter at 25 degrees Celsius; temperature in degrees Celsius; SE is standard error of the mean; N is number of samples]

Site	Time	Tide	Depth	Temperature			Conductivity		
				Mean	SE	N	Mean	SE	N
MIXED	1	High	surface	27.8	0.029	4	424	1.5	4
			bottom	27.8	.050	4	427	1.9	4
	2	Ebb	surface	27.6	.029	4	427	2.7	4
			bottom	27.6	.029	4	430	3.6	4
	3	Low	surface	29.4	.112	4	414	5.5	3
			bottom	27.7	.086	4	430	.6	4
	4	Flood	surface	30.1	.111	4	417	5.8	4
			bottom	27.9	.071	4	432	2.0	4
	5	High	surface	29.5	.086	4	418	.5	4
			bottom	27.3	.617	4	451	11.1	4
NV	1	High	surface	28.3	.029	4	419	6.8	4
			bottom	28.3	.025	4	421	6.7	4
	2	Ebb	surface	28.3	.029	4	438	1.4	4
			bottom	28.3	.000	4	440	1.6	4
	3	Low	surface	29.0	.025	4	436	1.0	4
			bottom	29.0	.025	4	436	.9	4
	4	Flood	surface	29.0	.087	4	426	2.7	4
			bottom	29.0	.041	4	424	.7	4
	5	High	surface	28.8	.048	4	416	1.9	4
			bottom	28.8	.048	4	415	1.1	4
HYD	1	High	surface	27.4	.096	4	409	2.1	4
			bottom	27.4	.086	4	404	3.1	4
	2	Ebb	surface	27.6	.065	4	397	3.2	4
			bottom	27.1	.000	4	396	1.6	4
	3	Low	surface	29.4	.202	4	380	2.6	4
			bottom	27.0	.029	4	392	.9	4
	4	Flood	surface	30.7	.136	4	385	.8	4
			bottom	28.8	.025	4	424	.5	4
	5	High	surface	29.3	.105	3	408	10.4	3
			bottom	29.0	.029	3	423	1.0	3

Table B-4.--Mean, standard error of mean and number of measurements of surface and bottom temperature and specific conductance means for August 31, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites
[Surface samples taken at 0.1 meter below surface; time 1 = dawn, 2 = mid morning, 3 = noon, 4 = mid afternoon, 5 = evening; specific conductance in microsiemens per centimeter at 25 degrees Celsius; temperature in degrees Celsius; SE is standard error of the mean; N is number of samples]

Site	Time	Tide	Depth	Temperature			Conductivity		
				Mean	SE	N	Mean	SE	N
MIXED	1	Low	surface	24.6	0.119	4	483	5.8	4
			bottom	24.5	.095	4	480	4.1	4
	2	Flood	surface	25.0	.048	4	492	.4	4
			bottom	24.9	.075	4	490	2.6	4
	3	High	surface	25.1	.029	4	481	1.3	4
			bottom	25.0	.025	4	483	.5	4
	4	Ebb	surface	25.5	.025	4	477	.5	4
			bottom	25.2	.096	4	486	1.6	4
	5	Low	surface	25.1	.025	4	494	11.1	4
			bottom	25.2	.029	4	484	1.0	4
NV	1	Low	surface	25.3	.058	3	482	1.0	3
			bottom	25.3	.000	2	481	.0	2
	2	Flood	surface	25.0	.169	5	464	5.3	5
			bottom	24.8	.145	6	465	4.9	6
	3	High	surface	25.3	.000	4	451	.3	4
			bottom	25.3	.025	4	451	.6	4
	4	Ebb	surface	25.3	.000	4	478	1.5	4
			bottom	25.4	.100	4	475	2.9	4
	5	Low	surface	25.3	.000	4	484	.8	4
			bottom	25.3	.025	4	482	.5	4
HYD	1	Low	surface	23.8	.071	4	425	2.8	4
			bottom	23.9	.029	4	433	.3	4
	2	Flood	surface	24.7	.087	4	448	12.8	4
			bottom	24.6	.029	4	438	.7	4
	3	High	surface	25.5	.100	4	416	5.9	4
			bottom	24.8	.091	4	437	1.4	4
	4	Ebb	surface	26.3	.041	4	407	2.9	4
			bottom	24.5	.048	4	435	.5	4
	5	Low	surface	24.8	.095	4	417	1.9	4
			bottom	24.1	.075	4	430	.4	4

Table B-5.--Mean, standard error of mean and number of measurements of surface and bottom temperature and specific conductance for October 29, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites

[Surface samples taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; SE = standard error of the mean; N = number of samples; temperature in degrees Celsius; specific conductance in microsiemens per square centimeter at 25 degrees Celsius]

Site	Time	Tide	Depth	Temperature			Conductivity		
				Mean	SE	N	Mean	SE	N
MIXED	1	Low	surface	12.0	0.14	4	472	1.7	4
			bottom	12.1	.09	4	473	1.5	4
	2	Flood	surface	12.8	.03	4	462	.8	4
			bottom	12.7	.10	4	463	1.0	4
	3	High	surface	13.5	.03	4	437	5.1	4
			bottom	13.5	.03	4	441	4.3	4
	4	Ebb	surface	13.7	.03	4	439	2.0	4
			bottom	13.7	.00	4	437	3.5	4
NV	1	Low	surface	13.0	.03	4	458	.7	4
			bottom	13.0	.10	4	459	2.5	4
	2	Flood	surface	12.4	.14	4	423	7.3	4
			bottom	12.4	.09	4	422	6.0	4
	3	High	surface	13.5	.03	4	436	.9	4
			bottom	13.3	.09	4	432	2.1	4
	4	Ebb	surface	13.5	.12	4	446	3.7	4
			bottom	13.5	.10	4	446	3.4	4
HYD	1	Low	surface	11.1	.25	4	469	6.7	4
			bottom	11.7	.03	4	477	1.2	4
	2	Flood	surface	13.2	.14	4	470	.8	4
			bottom	12.9	.03	4	471	.3	4
	3	High	surface	14.2	.14	4	448	2.2	4
			bottom	12.9	.06	4	439	1.5	4
	4	Ebb	surface	14.4	.18	4	449	4.0	4
			bottom	13.2	.17	4	444	1.7	4

Table B-6.--Mean, standard error of mean and number of measurements of surface and bottom temperature and specific conductance for November 4, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites
[Surface samples taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; SE is standard error of the mean; N is number of samples; temperature in degrees Celcius; specific conductance in microsiemens per square centimeter]

Site	Time	Tide	Depth	Temperature			Conductivity		
				Mean	SE	N	Mean	SE	N
MIXED	1	High	surface	13.7	0.03	4	438	0.3	4
			bottom	13.7	.03	4	438	.3	4
	2	Ebb	surface	14.0	.00	4	445	.5	4
			bottom	14.0	.03	4	445	.5	4
	3	Low	surface	15.2	.03	4	440	1.9	4
			bottom	15.0	.04	4	441	1.3	4
	4	Flood	surface	15.0	.17	4	432	1.3	4
			bottom	14.6	.32	4	430	2.3	4
NV	1	High	surface	13.9	.09	4	432	3.5	4
			bottom	13.9	.08	4	433	3.9	4
	2	Ebb	surface	14.3	.10	4	446	1.7	4
			bottom	14.3	.09	4	445	2.3	4
	3	Low	surface	15.6	.09	4	442	3.2	4
			bottom	14.7	.06	4	447	2.2	4
	4	Flood	surface	14.8	.09	3	417	4.5	3
			bottom	14.9	.06	3	417	3.6	3
HYD	1	High	surface	13.7	.04	4	419	1.9	4
			bottom	14.0	.00	4	424	1.3	4
	2	Ebb	surface	15.0	.10	4	416	1.6	4
			bottom	14.1	.03	4	412	.5	4
	3	Low	surface	19.6	.38	4	407	4.2	4
			bottom	13.8	.10	4	432	1.5	4
	4	Flood	surface	18.8	.31	4	414	2.9	4
			bottom	15.4	.12	4	430	2.5	4

Table B-7.--Mean, standard error of mean and number of measurements of surface dissolved-oxygen concentrations and pH for June 10, 1987, at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites
[Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; DO = dissolved oxygen; SE = standard error of mean; N = number of samples; n.d. = no data; n.a. = not applicable; mg/L = milligrams per liter]

Site	Time	Tide	DO (mg/L)			pH		
			Mean	SE	N	Mean	SE	N
H-PY	1	High	6.5	0.076	6	7.4	0.033	6
	2	Ebb	7.1	.067	6	7.6	.021	6
	3	Low	8.7	.145	6	7.9	.058	6
	4	Flood	10.3	.688	6	8.3	.148	6
	5	High	8.5	.214	6	7.9	.068	6
EC	1	High	6.7	.088	3	7.5	.033	3
	2	Ebb	6.8	.088	3	7.5	.033	3
	3	Low	7.1	.203	3	7.5	.088	3
	4	Flood	6.2	.058	3	7.3	.000	3
	5	High	5.8	.033	3	7.3	.033	3
M-MH	1	High	5.8	.208	3	7.3	.088	3
	2	Ebb	9.1	.381	4	8.1	.103	4
	3	Low	16.3	1.050	2	9.2	.150	2
	4	Flood	13.4	.100	2	8.9	.100	2
	5	High	11.9	n.a.	1	8.6	n.a.	1
MH/GF	1	High	6.9	n.a.	1	7.6	n.a.	1
	2	Ebb	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
	3	Low	8.2	.050	2	7.7	.000	2
	4	Flood	8.3	n.a.	1	7.8	n.a.	1
	5	High	8.4	n.a.	1	7.9	n.a.	1

Table B-8.--Mean, standard error of mean and number of measurement of surface dissolved-oxygen concentrations and pH for June 17, 1987, at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites
[Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; DO = dissolved oxygen; SE = standard error of mean; N = number of samples; mg/L = milligrams per liter]

Site	Time	Tide	DO (mg/L)			pH		
			Mean	SE	N	Mean	SE	N
H-PY	1	Low	6.1	0.428	6	7.1	0.149	6
	2	Flood	8.1	.441	3	7.3	.033	3
	3	High	9.9	1.212	3	7.6	.252	3
	4	Ebb	9.8	.617	6	7.8	.102	6
	5	Low	13.8	.906	6	8.2	.178	6
EC	1	Low	5.9	.058	3	6.7	.033	3
	2	Flood	5.9	.185	5	6.8	.068	5
	3	High	7.3	.120	3	7.1	.033	3
	4	Ebb	8.8	.295	6	7.6	.043	6
	5	Low	11.2	1.187	6	8.3	.208	6
M-MH	1	Low	5.0	.168	6	7.3	.022	6
	2	Flood	7.6	.149	6	7.6	.048	6
	3	High	8.7	.258	6	7.7	.043	6
	4	Ebb	12.4	.419	6	8.6	.054	6
	5	Low	14.1	.306	6	8.8	.073	6
MH/GF	1	Low	5.0	.071	6	7.2	.017	6
	2	Flood	5.7	.040	6	7.1	.021	6
	3	High	5.5	.196	6	7.1	.021	6
	4	Ebb	7.3	.486	6	7.4	.054	6
	5	Low	5.1	.058	6	7.1	.017	6

Table B-9.--Mean, standard error of mean and number of measurement of surface and bottom dissolved-oxygen concentrations and pH for August 20, 1987, for vegetated (MIXED, HYD) and unvegetated (NV) sites [Surface sample taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = evening; DO = dissolved oxygen; SE = standard error of the mean; N = number of samples; mg/L = milligrams per liter]

				DO (mg/L)			pH		
Site	Time	Tide	Depth	Mean	Se	N	Mean	SE	N
MIXED	1	High	surface	5.4	0.071	4	7.5	0.029	4
			bottom	4.6	.156	4	7.4	.025	4
	2	Ebb	surface	5.6	.082	4	7.4	.087	4
			bottom	4.6	.111	4	7.4	.029	4
	3	Low	surface	11.4	.622	4	8.8	.075	4
			bottom	5.8	.111	4	7.6	.071	4
	4	Flood	surface	12.2	.371	4	8.9	.071	4
			bottom	5.5	.347	4	7.5	.025	4
	5	High	surface	12.3	.104	4	8.8	.000	4
			bottom	6.4	.296	4	7.4	.025	4
NV	1	High	surface	5.8	.125	4	7.1	.041	4
			bottom	5.6	.065	4	7.2	.025	4
	2	Ebb	surface	5.8	.000	4	7.2	.000	4
			bottom	5.4	.029	4	7.3	.000	4
	3	Low	surface	6.6	.125	4	7.5	.025	4
			bottom	6.3	.132	4	7.5	.000	4
	4	Flood	surface	8.1	.025	4	7.8	.048	4
			bottom	7.9	.025	4	7.9	.025	4
	5	High	surface	8.2	.268	4	7.6	.029	4
			bottom	7.3	.118	4	7.8	.029	4
HYD	1	High	surface	7.2*	.507	4	7.6	.119	4
			bottom	9.6	.517	4	9.0	.294	4
	2	Ebb	surface	7.4	.431	4	8.1	.170	4
			bottom	3.0	.330	4	7.3	.025	4
	3	Low	surface	8.5	.541	4	9.0	.214	4
			bottom	6.7	1.379	4	8.2	.525	4
	4	Flood	surface	9.7	.403	4	9.5	.075	4
			bottom	7.9	.118	4	8.1	.041	4
	5	High	surface	9.6	.115	3	8.9	.231	3
			bottom	8.6	.698	3	8.4	.233	3

*Maximum O_2 readings occurred at 0.5 or 1.0 m at this site at time 1.

Table B-10.--Mean, standard error of mean and number of measurement of surface and bottom dissolved-oxygen concentrations and pH for August 31, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites
[Surface sample taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = evening; DO = dissolved oxygen; SE = standard error of the mean; N = number of samples; mg/L = milligrams per liter]

Site	Time	Tide	Depth	DO			pH		
				Mean	SE	N	Mean	SE	N
MIXED	1	Low	surface	6.4	0.390	4	7.3	0.065	4
			bottom	6.0	.395	4	7.2	.025	4
	2	Flood	surface	8.3	.359	4	7.6	.029	4
			bottom	6.8	.229	4	7.4	.025	4
	3	High	surface	8.3	.185	4	7.6	.041	4
			bottom	7.2	.193	4	7.5	.048	4
	4	Ebb	surface	10.1	.170	4	8.3	.087	4
			bottom	6.7	.485	4	7.7	.103	4
	5	Low	surface	10.1	.256	4	8.3	.063	4
			bottom	9.4	.384	4	8.2	.075	4
NV	1	Low	surface	6.7	.120	3	7.4	.033	3
			bottom	6.7	.050	2	7.4	.000	2
	2	Flood	surface	6.8	.169	5	7.5	.049	5
			bottom	6.5	.068	6	7.5	.021	6
	3	High	surface	7.0	.058	4	7.4	.095	4
			bottom	6.8	.000	4	7.4	.000	4
	4	Ebb	surface	7.6	.087	4	7.3	.144	4
			bottom	7.7	.132	4	7.5	.025	4
	5	Low	surface	8.0	.071	4	7.6	.000	4
			bottom	7.9	.075	4	7.6	.000	4
HYD	1	Low	surface	7.5	.601	4	8.4	.166	4
			bottom	3.9	.170	4	7.4	.071	4
	2	Flood	surface	8.5	.904	4	8.1	.248	4
			bottom	5.2	.108	4	7.3	.025	4
	3	High	surface	11.0	1.213	4	9.1	.240	4
			bottom	5.9	.189	4	7.5	.029	4
	4	Ebb	surface	12.7	.185	4	9.2	.082	4
			bottom	3.7	.309	4	7.3	.041	4
	5	Low	surface	9.3	.421	4	8.5	.185	4
			bottom	3.5	.334	4	7.2	.048	4

Table B-11.--Mean, standard error of mean and number of measurement of surface and bottom dissolved-oxygen concentrations and pH for October 29, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites

[Surface sample taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; DO = dissolved oxygen; SE = standard error of mean; N = number of samples; mg/L = milligrams per liter]

Site	Time	Tide	Depth	DO (mg/L)			pH		
				Mean	SE	N	Mean	SE	N
MIXED	1	Low	surface	7.7	0.30	4	7.3	0.11	4
			bottom	7.1	.15	4	7.3	.05	4
	2	Flood	surface	8.1	.14	4	7.4	.07	4
			bottom	7.6	.36	4	7.3	.08	4
	3	High	surface	8.8	.08	4	7.9	.08	4
			bottom	8.6	.13	4	7.9	.03	4
	4	Ebb	surface	8.8	.13	4	7.9	.04	4
			bottom	8.6	.05	4	7.9	.03	4
NV	1	Low	surface	8.8	.16	4	8.0	.03	4
			bottom	8.5	.19	4	8.0	.03	4
	2	Flood	surface	8.4	.05	4	7.9	.03	4
			bottom	8.2	.05	4	7.8	.03	4
	3	High	surface	8.8	.05	4	7.8	.11	4
			bottom	8.7	.06	4	7.9	.03	4
	4	Ebb	surface	8.8	.05	4	7.7	.09	4
			bottom	8.6	.03	4	7.7	.10	4
HYD	1	Low	surface	4.5	1.10	4	7.6	.06	4
			bottom	4.3	.21	4	7.5	.05	4
	2	Flood	surface	7.7	.13	4	7.7	.04	4
			bottom	7.4	.11	4	7.7	.00	4
	3	High	surface	8.1	1.04	4	7.6	.12	4
			bottom	8.5	.05	4	7.4	.04	4
	4	Ebb	surface	7.5	.37	4	7.7	.10	4
			bottom	7.3	.32	4	7.4	.06	4

Table B-12.--Mean, standard error of mean and number of measurement of surface and bottom dissolved-oxygen concentrations and pH for November 4, 1987, at vegetated (MIXED, HYD) and unvegetated (NV) sites
[Surface samples taken at 0.1 meter below surface; time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; DO = dissolved oxygen; SE = standard error of mean; N = number of samples; mg/L = milligrams per liter]

Site	Time	Tide	Depth	DO (mg/L)			pH		
				Mean	SE	N	Mean	SE	N
MIXED	1	High	surface	6.8	0.19	4	7.3	0.16	4
			bottom	6.8	.09	4	7.3	.03	4
	2	Ebb	surface	6.4	.15	4	7.3	.03	4
			bottom	6.3	.09	4	7.2	.00	4
	3	Low	surface	6.7	.10	4	7.7	.00	4
			bottom	6.5	.14	4	7.7	.03	4
	4	Flood	surface	6.7	.05	4	7.7	.05	4
			bottom	6.8	.10	4	7.5	.13	4
NV	1	High	surface	7.2	.10	4	8.1	.59	4
			bottom	7.1	.06	4	7.5	.12	4
	2	Ebb	surface	7.0	.08	4	8.2	.53	4
			bottom	6.9	.09	4	7.7	.35	4
	3	Low	surface	6.7	.13	4	7.4	.10	4
			bottom	6.7	.09	4	7.3	.11	4
	4	Flood	surface	8.1	.21	3	7.5	.12	3
			bottom	7.9	.12	3	7.6	.12	3
HYD	1	High	surface	6.3	.31	4	7.8	.06	4
			bottom	6.6	.04	4	7.7	.03	4
	2	Ebb	surface	7.1	.28	4	7.9	.07	4
			bottom	5.8	.03	4	7.7	.00	4
	3	Low	surface	8.0	.64	4	8.5	.17	4
			bottom	2.7	.09	4	7.3	.03	4
	4	Flood	surface	8.7	.62	4	8.2	.21	4
			bottom	6.1	.47	4	7.4	.03	4

Table B-13.--Mean, standard error of mean and number of measurements of chlorophyll-*a* concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987
[Chlorophyll-*a* in milligrams per liter; SE is standard error of the mean; N is number of samples; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; 5 = dusk; n.d. = no data; samples are depth integrated]

Site	Time	Tide	Mean	SE	N
H-PY	1	High	5.67	0.429	5
	2	Ebb	1.05	.174	6
	3	Low	11.38	1.800	6
	4	Flood	13.44	3.407	4
	5	High	7.18	.706	5
EC	1	High	5.62	.113	3
	2	Ebb	2.75	.590	3
	3	Low	8.03	.258	3
	4	Flood	8.54	1.614	3
	5	High	5.86	1.164	3
M-MH	1	High	4.68	1.317	6
	2	Ebb	4.04	.979	5
	3	Low	20.80	2.320	2
	4	Flood	8.29	1.811	5
	5	High	8.22	1.703	5
MH/GF	1	High	5.52	1.448	3
	2	Ebb	n.d.		
	3	Low	1.50	.094	3
	4	Flood	4.67	1.057	3
	5	High	9.63	1.120	3

Table B-14.--Mean, standard error of mean and number of measurements of chlorophyll-*a* concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987

[Chlorophyll-*a* in milligrams per liter; SE is standard error of the mean; N is number of samples; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon; 5 = dusk; n.d. = no data; samples are depth integrated]

Site	Time	Tide	Mean	SE	N
H-PY	1	Low	10.05	3.196	6
	2	Flood	9.13	1.698	4
	3	High	11.76	4.420	2
	4	Ebb	11.11	.856	6
	5	Low	12.59	1.369	6
EC	1	Low	3.52	.203	3
	2	Flood	3.06	.585	4
	3	High	6.41	.633	3
	4	Ebb	9.53	.481	6
	5	Low	7.67	.174	6
M-MH	1	Low	8.43	.861	3
	2	Flood	6.88	3.136	4
	3	High	7.90	3.436	5
	4	Ebb	10.65	2.465	5
	5	Low	18.85	.255	2
MH/GF	1	Low	6.07	.390	6
	2	Flood	5.77	.966	6
	3	High	4.66	.884	5
	4	Ebb	7.81	.599	6
	5	Low	7.67	.424	6

Table B-15.--Mean, standard error of mean and number of measurements of chlorophyll-*a*, suspended-sediment organic carbon and suspended-sediment concentrations for vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987
[Point samples, taken at 0.7 m above sediment; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; SE is standard error of the mean; N is number of samples; chlorophyll-*a* in micro grams per liter; suspended-sediment organic carbon and suspended sediment in milligrams per liter]

Site	Time	Tide	Chlorophyll-*a*			Suspended sediment organic carbon			Suspended sediment		
			Mean	SE	N	Mean	SE	N	Mean	SE	N
MIXED	1	High	21.89	2.545	6	3.6	0.40	5	9	0.40	5
	2	Ebb	34.32	6.338	6						
	3	Low	39.28	2.571	6	4.0	.45	6	9	.87	6
	4	Flood	55.46	1.668	6						
	5	High	49.60	.817	6	9.2	2.69	5	16	2.53	5
NV	1	High	29.21	.907	6	5.4	.51	5	19	1.48	5
	2	Ebb	35.01	2.002	6						
	3	Low	50.42	1.657	6	5.8	.31	6	20	.86	6
	4	Flood	51.16	.922	6						
	5	High	54.33	2.043	6	8.4	3.91	5	20	4.01	5
HYD	1	High	9.05	1.110	6	4.3	1.23	6	7	1.49	6
	2	Ebb	6.74	.774	6						
	3	Low	25.52	2.062	6	3.8	.38	5	8	.58	5
	4	Flood	37.49	.881	6						
	5	High	45.73	2.075	6	10.0	6.00	2	16	7.00	2

Table B-16.--Mean, standard error of mean and number of samples of chlorophyll-*a*, suspended-sediment organic carbon and suspended-sediment concentrations for vegetated (MIXED, HYD) and unvegetated (NV) sites on August 31, 1987

[Point samples, taken at 0.7 m above sediment; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; SE is standard error of the mean; N is number of samples; chlorophyll-*a* in micrograms per liter; suspended-sediment organic carbon and suspended sediment in milligrams per liter]

Site	Time	Tide	Chlorophyll-*a*			Suspended sediment organic carbon			Suspended sediment		
			Mean	SE	N	Mean	SE	N	Mean	SE	N
MIXED	1	Low	7.95	1.279	6	2.7	0.42	6	10	0.50	6
	2	Flood	33.37	2.961	6						
	3	High	39.49	4.297	6	11.5	4.82	6	19	4.51	6
	4	Ebb	43.69	4.569	6						
	5	Low	43.49	4.990	5						
NV	1	Low	29.21	1.359	6	5.2	.17	6	18	.54	6
	2	Flood	22.43	.478	6						
	3	High	37.13	1.865	6	17.5	3.50	2	32	4.00	2
	4	Ebb	55.98	3.980	6						
	5	Low	54.50	1.274	6	5.0	.58	3	15	1.20	3
HYD	1	Low	15.31	2.933	6	3.7	.33	6	10	.54	6
	2	Flood	21.17	2.105	6						
	3	High	26.80	4.497	6	19.0	4.00	2	27	3.50	2
	4	Ebb	15.78	3.781	6						
	5	Low	7.53	1.578	6	2.0	.00	2	7	.50	2

Table B-17.--Mean, standard error of mean and number of samples of chlorophyll-*a*, suspended-sediment organic carbon and suspended-sediment concentrations for vegetated (MIXED< HYD) and unvegetated (NV) sites on October 29, 1987
[Point samples taken at 0.7 m above the sediment; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; SE is standard error of the mean; N is number of samples; chlorophyll-*a* is micrograms per liter; suspended-sediment organic carbon and suspended sediment in milligrams per liter]

			Chlorophyll-*a*			Suspended sediment organic carbon			Suspended sediment		
Site	Time	Tide	Mean	SE	N	Mean	SE	N	Mean	SE	N
MIXED	1	Low	7.96	0.695	6	3.2	0.31	6	10	1.5	6
	2	Flood	6.15	1.481	6						
	3	High	5.70	.701	6	2.6	.40	5	10	.8	5
	4	Ebb	9.00	.622	6	4.7	.88	3	17	4.1	3
NV	1	Low	7.07	.702	6	4.8	1.96	6	10	.5	6
	2	Flood	8.04	1.997	6						
	3	High	7.19	.768	6	3.8	.73	5	10	1.0	6
	4	Ebb	10.41	.696	6	2.5	.56	6	11	.4	6
HYD	1	Low	7.66	.723	6	2.3	.33	3	6	1.7	6
	2	Flood	5.77	1.107	5						
	3	High	7.81	.278	6	3.5	1.34	6	6	.3	6
	4	Ebb	9.69	1.062	6	3.0	.45	6	9	1.3	6

Table B-18.--Mean, standard error of mean and number of samples of chlorophyll-*a*, suspended-sediment organic carbon and suspend-sediment concentrations for vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987
[Point samples taken at 0.7 m above the sediment; Time 1 = dawn, 2 = midmorning, 3 = noon, 4 = midafternoon, 5 = dusk; SE is Standard error of the mean; N is number of samples; chlorophyll-*a* is micrograms per liter; suspended-sediment organic carbon and suspended sediment in milligrams per liter]

Site	Time	Tide	Chlorophyll-*a*			Suspended sediment organic carbon			Suspended sediment		
			Mean	SE	N	Mean	SE	N	Mean	SE	N
MIXED	1	High	13.26	0.398	6	1.8	0.37	5	11	.5	5
	2	Ebb	9.54	.606	6						
	3	Low	6.66	.814	6	2.0	.77	5	5	.3	6
	4	Flood	10.64	.373	6	5.3	1.94	6	24	.3	6
NV	1	High	12.17	.600	6	3.7	1.20	6	14	.8	6
	2	Ebb	12.60	.427	6						
	3	Low	8.37	1.208	6	2.7	.33	6	8	.8	6
	4	Flood	9.63	.816	5	2.3	.95	4	21	.3	4
HYD	1	High	9.38	.808	4	3.3	.67	3	10	1.9	3
	2	Ebb	11.28	.951	6						
	3	Low	8.71	.710	6	3.8	.49	5	5	1.1	5
	4	Flood	14.81	2.534	5	3.5	.50	4	19	.6	4

Table B-19.--Surface chlorophyll-*a* means for vegetated (MIXED, HYD) and unvegetated (NV) sites for August 20, 1987
[Surface chlorophyll-*a* in micrograms per liter; SE is standard error of the mean; N is number of samples; Time 1 is dawn, 2 is midmorning, 3 is noon, 4 is midafternoon; n.a. is not applicable]

Site	Time	Tide	Chlorophyll-*a*		
			Mean	SE	N
MIXED	2	Ebb	18.36	4.329	3
	3	Low	30.22	3.123	3
	4	Flood	32.00	4.662	3
NV	1	High	29.76	n.a.	1
	2	Ebb	28.89	1.121	3
	3	Low	33.74	3.139	3
	4	Flood	64.82	2.859	4
HYD	2	Ebb	24.33	7.450	3
	3	Low	11.58	3.804	3
	4	Flood	9.79	3.316	3

Table B-20.--Surface chlorophyll-*a* means for vegetated (MIXED, HYD) and unvegetated (NV) sites for August 31, 1987
[Surface chlorophyll-*a* in micrograms per liter; SE is standard error of the mean; N is number of samples; Time 2 is midmorning, 3 is noon, 4 is midafternoon]

Site	Time	Tide	Chlorophyll-*a*		
			Mean	SE	N
MIXED	2	Flood	44.09	4.482	3
	3	High	41.05	3.524	3
	4	Ebb	34.53	16.072	3
NV	2	Flood	23.72	9.093	3
	3	High	37.66	2.548	3
	4	Ebb	51.95	5.520	3
HYD	2	Flood	15.44	1.621	3
	3	High	20.54	5.293	3
	4	Ebb	13.30	3.432	3

Table B-21.--Surface chlorophyll-*a* means for vegetated (MIXED, HYD) and unvegetated (NV) sites for October 29, 1987
[Surface chlorophyll-*a* in micrograms per liter; SE is standard error of the mean; N is number of samples; Time 2 = midmorning, 3 = noon, 4 = midafternoon; n.a. is not applicable

Site	Time	Tide	Chlorophyll-*a*		
			Mean	SE	N
MIXED	2	Flood	11.98	1.004	3
	3	High	11.2	n.a.	1
	4	Ebb	11.11	.442	3
NV	2	Flood	5.98	.778	3
	3	High	11.86	.331	3
	4	Ebb	9.33	.620	2
HYD	2	Flood	13.5	1.476	3
	3	High	9.55	.491	3
	4	Ebb	36.09	14.650	3

Table B-22.--Surface chlorophyll-*a* means for vegetated (MIXED, HYD) and unvegetated (NV) sites for November 4, 1987
[Surface chlorophyll-*a* in micrograms per liter; SE is standard error of the mean; N is number of samples; Time 2 = midmorning, 3 = noon, 4 = midafternoon]

Site	Time	Tide	Chlorophyll-*a*		
			Mean	SE	N
MIXED	2	Ebb	9.59	0.234	3
	3	Low	10.40	1.323	3
	4	Flood	11.25	1.661	3
NV	2	Ebb	17.99	3.392	3
	3	Low	7.65	2.175	2
	4	Flood	9.10	1.000	3
HYD	2	Ebb	14.09	2.022	3
	3	Low	18.56	3.210	3
	4	Flood	26.89	3.573	4

Table B-23.--Summary of extinction coefficients and percent light reaching a depth of 0.5 m at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987
[$K_{0-0.5\ m}$ = extinction coefficient from 0 to 0.5-m depth; n.d. is no data]

Site	Nautical time	Tide	$K_{0-0.5\ m}$	$K_{0-1.0\ m}$	$K_{0.5-1.0\ m}$	Percent of surface light at 0.5 m
H-PY	1430-1445	Flood	1.5	n.d.	n.d.	47
	1430-1445	Flood	1.4	n.d.	n.d.	51
	1430-1445	Flood	2.1	n.d.	n.d.	35
	1625-1638	Flood	2.3	2.9	3.4	31
	1625-1638	Flood	1.6	2.2	2.8	45
EC	1322-1400	Low	3.3	2.0	0.7	20
	1322-1400	Low	0.8	1.8	1.9	44
	1322-1400	Low	1.8	1.6	2.0	42
	1715	Flood	1.9	2.1	2.3	38
M-MH	1100-1145	Ebb	2.1	n.d.	n.d.	36
	1100-1145	Ebb	1.5	n.d.	n.d.	33(0.75 m)
	1700	Flood	1.2	n.d.	n.d.	55
MH/GF	1615	Flood	3.3	n.d.	n.d.	50

Table B-24.--Summary of extinction coefficients and percent light reaching a depth of 0.5 m at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987

[$K_{0-0.5\ m}$ = extinction coefficient from 0 to 0.5-m depth; n.d. is no data]

Site	Time	Tide	$K_{0-0.5\ m}$	$K_{0-1.0\ m}$	$K_{0.5-1.0\ m}$	Percent of surface light at 0.5 m
H-PY	1150	Flood	1.2	1.1	1.1	56
	1447	Ebb	2.2	2.1	1.9	47
EC	1020-1045	Flood	2.1	2.0	1.9	36
	1020-1045	Flood	2.2	2.0	1.7	33
	1314	Ebb	1.6	1.7	1.8	45
	1620-1645	Ebb	1.7	1.8	1.7	44
	1620-1645	Ebb	1.7	1.8	2.0	43

Site	Nautical time	Tide	$K_{0.25-5.0}$	$K_{0.3-1.0}$	$K_{0.25-1.0}$	$K_{0.25-0.75}$	$K_{0.5-1.0}$
M/MH	0955	Flood	n.d.	3.1	n.d.	n.d.	3.4
	0955	Flood	n.d.	2.1	n.d.	n.d.	2.3
	1017	Flood	n.d.	n.d.	3.2	2.8	3.9
	1017	Flood	n.d.	n.d.	2.9	2.0	3.7
	1240	Ebb	n.d.	n.d.	.9	1.3	.9
MH/GF	1103	Flood	n.d.	n.d.	1.2	1.2	1.2
	1139	Flood	n.d.	n.d.	2.5	2.4	2.5
	1347	Ebb	n.d.	n.d.	1.6	1.8	1.4
	1602	Ebb	n.d.	n.d.	2.0	2.0	1.9
	1702	Ebb	n.d.	n.d.	n.d.	3.0	n.d.

Table B-25.--Summary of extinction coefficients and percent light reaching a depth of 0.5 meter at vegetated (MIXED, HYD) and unvegetated (NV) sites on August 20, 1987

[$K_{0\text{-}0.5\ m}$ = extinction coefficient from 0 to 0.5-m depth, V = in vegetation, H = through hole in vegetation; n.d. is no data]

Site	Time	Tide	V or H	$K_{0\text{-}0.5\ m}$	$K_{0\text{-}1.0\ m}$	$K_{0.5\text{-}1.0\ m}$	Percent of surface light at 0.5 m
MIXED	1120	Ebb	V	6.8			3
	1140	Ebb	V	4.2			13
	1118	Ebb	H	2.2	1.6	1.0	33
	1136	Ebb	H	1.5	1.7	2.0	48
	1335	Flood	V	3.2	6.7		20
	1352	Flood	V	10.8	6.2		.4
	1344	Flood	H	1.8	2.4	3.0	40
	1350	Flood	H	1.5	1.7	1.4	46
NV	1151	Ebb	n.d.	1.9	2.0		39
	1153	Ebb	n.d.	1.8	2.0		40
	1407	Flood	n.d.	2.3	2.4		32
	1420	Flood	n.d.	2.1	3.1	4.1	35
HYD	1117	Ebb	V	9.7[1]			.8
	1130	Ebb	V	21.4[1]			.2[1]
	1106	Ebb	H	1.0	1.1		61
	1133	Ebb	H	.9	.9		63
	1339	Flood	V	14.2			.1
	1347	Flood	V	21.1[1]			.2[1]
	1348	Flood	H	1.2	1.3		56
	1350	Flood	H	1.6	4.1	6.6	46

[1]Percent of light at 0.3 m

Table B-26.--Summary of extinction coefficients and percent light reaching a depth of 0.5 meter at vegetated (MIXED, HYD, BH) and unvegetated (NV) sites on August 31, 1987

[$K_{0-0.5\ m}$ = extinction coefficient between 0 and 0.5-m depth, V = in vegetation, H = through hole in vegetation; n.d. is no data]

Site	Time	Tide	V or H	$K_{0-0.5\ m}$	$K_{0-1.0\ m}$	$K_{0.5-1.0\ m}$	Percent of surface light at 0.5 m
MIXED	1116	Flood	V	4.3			12
	1132	Flood	V	3.6			17
	1116	Flood	H	1.7	2.1	2.4	43
	1132	Flood	H	1.4	1.6	1.8	50
	1400	Ebb	V	2.9	3.3	3.7	23
	1400	Ebb	V	2.2	2.3	2.4	34
	1400	Ebb	H	2.4	2.7	3.0	29
	1400	Ebb	H	2.0			37
	1400	Ebb	H	2.3	2.4	2.5	32
NV	1138	Flood	n.d.	2.0	2.3	2.6	36
	1145	Flood	n.d.	1.7	2.2	2.8	43
	1143	Flood	n.d.	2.9	2.7	2.4	32
	1400	Ebb	n.d.	2.3	2.1	1.9	31
	1412	Ebb	n.d.	2.2	1.9	1.6	33
HYD	1135	Flood	V	10.9			.4
	1140	Flood	V	2.3			31
	1127	Flood	H	2.8	2.5	2.1	24
	1150	Flood	H	2.0	2.0		36
	13__	Ebb	V	2.9	3.2		24
	1343	Ebb	V	12.9			.2
	1334	Ebb	H	1.8	1.5	1.2	40
	1350	Ebb	H	1.2	1.2		55
BH	1330	Ebb	V	7.1			2.9
	1330	Ebb	H	1.1	1.1		59

Table B-27.--Summary of extinction coefficients and percent light reaching a depth of 0.5 meter at vegetated (MIXED, HYD) and unvegetated (NV) sites on October 29, 1987

[$K_{0\text{-}0.5\ m}$ = extinction coefficient between 0 and 0.5-m depth; V = through vegetation; H = in hole in vegetation]

Site	Time	Tide	V or H	$K_{0\text{-}0.5\ m}$	$K_{0\text{-}1.0\ m}$	$K_{0.5\text{-}1.0\ m}$	Percent of surface light at 0.5 m
MIXED	1043	Flood	V	1.5	2.0	2.5	47
	1046	Flood	V	1.4	1.5	1.6	50
	1054	Flood	V	1.6	1.7	1.8	46
	1342	Ebb	V	1.2	1.3	1.4	54
	1351	Ebb	V	1.7	1.5	1.2	44
	1356	Ebb	V	1.2	1.4	1.6	55
NV	1116	Flood	n.d.	1.7	1.8	1.9	43
	1133	Flood	n.d.	2.3	1.8	1.4	32
	1424	Ebb	n.d.	1.3	1.5	1.8	52
	1430	Ebb	n.d.	1.0	1.2	1.4	61
HYD	1044	Flood	H	1.4	.9	.5	50
	1059	Flood	H	.9	.7	.5	64
	1107	Flood	V	6.8	n.d.	n.d.	3
	1119	Flood	V	14.8	n.d.	n.d.	1
	1347	Ebb	H	2.3	1.5	.8	31
	1401	Ebb	H	1.0	1.0	1.0	61
	1415	Ebb	V	7.8	n.d.	n.d.	2
	1415	Ebb	V	8.7	n.d.	n.d.	1

Table B-28.--Summary of extinction coefficients and percent light reaching a depth of 0.5 meter at vegetated (MIXED, HYD) and unvegetated (NV) sites on November 4, 1987

[$K_{0\text{-}0.5\ m}$ = extinction coefficient between 0 and 0.5-m depth; V = through vegetation; H = in hole in vegetation; n.d. is no data]

Site	Time	Tide	V or H	$K_{0\text{-}0.5\ m}$	$K_{0\text{-}1.0\ m}$	$K_{0.5\text{-}1.0\ m}$	Percent of surface light at 0.5 m
MIXED	1031	Ebb	V	0.8	0.9	1.0	67
	1037	Ebb	V	1.0	1.0	.9	61
	1043	Ebb	V	1.6	n.d.	n.d.	44
	1355	Flood	V	2.1	2.2	2.2	34
	1404	Flood	V	3.9	n.d.	n.d.	14
	1411	Flood	V	2.3	n.d.	n.d.	31
	1418	Flood	V	2.2	2.6	3.0	33
NV	1104	Ebb	n.d.	2.1	1.8	1.5	34
	1107	Ebb	n.d.	1.3	1.7	2.0	53
	1430	Flood	n.d.	2.2	1.8	1.5	33
	1434	Flood	n.d.	2.0	2.2	2.5	37
HYD	1033	Ebb	H	.5	.5	.5	77
	1041	Ebb	H	.9	.8	.7	64
	1046	Ebb	H?	.7	.8	1.0	71
	1053	Ebb	H?	1.1	.9	.7	58
	1402	Flood	H	1.3	1.4	1.5	52
	1412	Flood	H	1.5	1.6	1.7	48
	1417	Flood	V	18.7	n.d.	n.d.	<1
	1422	Flood	V	12.1	n.d.	n.d.	<1

Appendix C. Vegetation and Phytoplankton Data

Table C-1.--Species composition and biomass at vegetated sites (H-PY, M-MH) during June, 1987
[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Station	Grab	Species	Biomass (g/m^2)	Percent species in sample
H-PY	1	1	VAL	47	87
			HYD	7	13
		2	HYD	Tr	100
	2	1	Nm	1	100
		2	HYD	7	100
			CER	Tr	Tr
			Nm	Tr	Tr
	3	1	HYD	16	100
			Nm	Tr	Tr
		2	HYD	6	100
			MYR	Tr	Tr
			Nm	Tr	Tr
			Ng	Tr	Tr
	4	1	VAL	20	45
			CER	15	34
			HYD	10	22
			Ng	Tr	Tr
			Nm	Tr	Tr
		2	HYD	25	92
			CER	2	8
			VAL	Tr	Tr
	5	1	HYD	19	82
			CER	4	18
		2	HYD	10	100
			MYR	Tr	Tr
			CER	Tr	Tr
	6	1	HYD	16	87
			CER	2	13
			Nm	Tr	Tr
		2	HYD	7	100
			Nm	Tr	Tr

Table C-1.--Species composition and biomass at vegetated sites (H-PY, M-MH) during June, 1987, continued

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Station	Grab	Species	Biomass (g/m^2)	Percent species in sample
M-MH	1	1	VAL	76	86
			HYD	8	9
			MYR	4	5
			Nm	Tr	Tr
			CER	Tr	Tr
		2	CER	27	74
			MYR	6	15
			HYD	4	11
	2	1	CER	60	74
			HYD	13	16
			MYR	9	11
			HET	Tr	Tr
			Nm	Tr	Tr
			VAL	Tr	Tr
		2	HYD	61	56
			MYR	49	45
	3	1	MYR	49	87
			HYD	7	13
			Nm	Tr	Tr
		2	CER	25	81
			HYD	6	19
			MYR	Tr	Tr
	4	1	Nm	Tr	Tr
			HYD	Tr	Tr
		2	VAL	33	56
			MYR	17	28
			HYD	9	16
			CER	Tr	Tr
	5	1	CER	46	67
			MYR	18	27
			HY	5	7
			NM	Tr	Tr

Table C-1.--Species composition and biomass at vegetated sites (H-PY, M-MH) during June, 1987, continued

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m² is grams per square meter]

Site	Station	Grab	Species	Biomass (g/m²)	Percent species in sample
M-MH	5	2	HYD	57	86
			HET	9	14
	6	1	MYR	87	91
			HYD	9	9
			CER	Tr	Tr
		2	CER	42	53
			MYR	38	47
			HYD	Tr	Tr

Table C-2.--Species composition and biomass at vegetated sites (MIXED, HYD) during August, 1987

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Grab	Species	Biomass (g/m^2)	Percent species in sample
MIXED	1	HYD	19	100
	2	VAL	126	68
		MYR	57	31
		HYD	2	1
	3	HET	293	71
		VAL	114	28
		HYD	7	1
		Mn	Tr	Tr
		MYR	Tr	Tr
	4	VAL	512	96
		HYD	19	4
		Nm	Tr	Tr
	5	VAL	418	100
		HYD	Tr	Tr
		Nm	Tr	Tr
		MYR	Tr	Tr
	6	VAL	288	98
		HYD	5	2
		MYR	Tr	Tr
	7	None		
	8	VAL	267	91
		HYD	26	9
		Nm	Tr	Tr
		MYR	Tr	Tr
	9	VAL	81	69
		HYD	37	31
		CER	Tr	Tr
		MYR	Tr	Tr
	10	VAL	58	83
		HYD	12	17
		MYR	Tr	Tr

Table C-2.--Species composition and biomass at vegetated sites (MIXED, HYD) during August, 1987, continued

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Grab	Species	Biomass (g/m^2)	Percent species in sample
MIXED	11	VAL	208	76
		HYD	34	13
		MYR	30	11
	12	VAL	90	44
		MYR	80	39
		HYD	36	16
		CER	Tr	Tr
	13	HYD	36	59
		VAL	25	41
	14	MYR	98	73
		VAL	36	27
		HET	Tr	Tr
	15	HYD	33	100
		VAL	Tr	Tr
	16	HYD	510	96
		VAL	22	4
		MYR	Tr	Tr
HYD	1	HYD	353	100
		VAL	Tr	Tr
	2	MYR	563	90
		HYD	64	10
	3	HYD	71	100
	4	HYD	198	100
	5	HYD	522	100
	6	HYD	230	92
		MYR	19	8
	7	HYD	108	100
	8	MYR	1,016	95
		HYD	52	5

Table C-2.--Species composition and biomass at vegetated sites (MIXED, HYD) during August, 1987, continued

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Grab	Species	Biomass (g/m^2)	Percent species in sample
HYD	9	HYD	396	77
		MYR	116	23
	10	HYD	441	88
		MYR	59	12
	11	HYD	353	87
		MYR	51	13
	12	HYD	978	100

Table C-3.--Species composition and biomass at MIXED site during November, 1987 [HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Grab	Species	Biomass (g/m^2)	Percent species in sample
MIXED	1	HYD	28	100
	2	None		
	3	VAL	25	100
		HYD	Tr	Tr
	4	None		
	5	HYD	47	66
		MYR	19	26
		CER	6	8
		VAL	Tr	Tr
		HET	Tr	Tr
	6	VAL	12	100
		HYD	Tr	Tr
	7	VAL	Tr	Tr
		HYD	Tr	Tr
	8	VAL	254	100
	9	None		
	10	None		
	11	VAL	7	63
		MYR	4	37
		HYD	Tr	Tr
	12	VAL	3	63
		CER	2	37
		MYR	Tr	Tr
	13	VAL	7	63
		MYR	4	37
		HYD	Tr	Tr
	14	HET	226	65
		HYD	60	17
		MYR	60	17

Table C-3.--Species composition and biomass at MIXED site during November, 1987, continued

[HYD is *Hydrilla*, MYR is *Myriophyllum*, VAL is *Vallisneria*, CER is *Ceratophyllum*, Ng is *Najas guadalupensis*, Nm is *Najas minor*, HET is *Heteranthera*, Tr is trace; g/m^2 is grams per square meter]

Site	Grab	Species	Biomass (g/m^2)	Percent species in sample
MIXED	15	HET	Tr	Tr
		MYR	Tr	Tr
	16	VAL	26	100
		HYD	Tr	Tr
		MYR	Tr	Tr

Table C-4.--Mean biomass and species composition at the monotypic hydrilla sites (H-PY, HYD) and the diverse vegetation sites (M-MH, MIXED) in June, August, and November, 1987
[HYD = Hydrilla verticillata, VAL = Vallisneria americana, Nm = Najas minor, CER = Ceratophyllum demersum, MYR = Myriophyllum spicatum, Ng = Najas guadalupensis, HET = Heteranthera dubia; g/m^2 is grams per square meter; g is grams; < is less than]

Date/ site	Mean biomass (g/m^2)	Total dry weight (g)	Percent species contribution to total dry weight							Frequency (percent)						
			HYD	VAL	Nm	CER	MYR	Ng	HET	HYD	VAL	Nm	CER	MYR	Ng	HET
June 1987																
H-PY	18	20	62	34	1	12	<1	<1	0	92	25	58	50	17	17	0
M-MH	64	72	28	14	<1	26	30	0	1	100	25	42	67	83	0	17
Aug. 1987																
HYD	466	519	67	0	0	0	33	0	0	100	8	0	0	50	0	0
MIXED	223	332	22	63	0	0	7	0	8	88	88	19	13	75	0	13
November 1987																
MIXED	52	78	16	46	0	1	10	0	27	50	63	0	38	19	0	13

Table C-5.--Vegetation structure at the hydrilla (H-PY) and diverse vegetation (M-MH) sites in June 1987

[Biomass collected at 0.5-meter intervals in one-square-meter area. CER = *Ceratophyllum demersum*, HYD = *Hydrilla verticillata*, Nm = *Najas minor*, MYR = *Myriophyllum spicatum*, VAL = *Vallisneria americana*, HET = *Heteranthera dubia*, Algae = filamentous algae; Tr is trace, less than 1 gram per square meter; g/m^2 is grams per square meter]

Site/ Tide	Depth from surface (m)	Species	Dry weight (g/m^2)	Total dry weight (g/m^2)
H-PY	0.5	CER	5	
		HYD	1	6
Flood				
	.5 - 1.0	HYD	57	
		Nm	Tr	
		CER	2	59
	1.0 - 1.5	HYD	39	
		Nm	Tr	
		CER	2	41
	1.5 - 2.0	HYD	29	
		Nm	Tr	
		CER	2	
		MYR	Tr	31
				137
M-MH	.0 - 0.5	VAL	19	
		CER	12	
Flood		MYR	46	
		Algae	61	
		HYD	1	
		HET	Tr	139
	.5 - 1.0	VAL	31	
		MYR	10	
		HYD	2	43
		CER	Tr	
		Algae	Tr	
		HET	Tr	
	1.0 - 1.5	VAL	78	
		HYD	1	
		MYR	4	83
		CER	Tr	
				265

Table C-6.--Vegetation structure at the hydrilla (HYD) and diverse vegetation (MIXED) sites in August 1987

[Biomass and plant volume collected at depth intervals in one-square-meter area. Tr is trace, less than one gram; CER = *Ceratophyllum demersum*, HET = *Heteranthera dubia*, HYD = *Hydrilla verticillata*, MYR = *Myriophyllum spicatum*, Nm = *Najas minor*, VAL = *Vallisneria americana*; m is meters; g is grams; mL is milliliters]

Site/ Tide	Depth from surface (m)	Total dry weight (g)	Total plant volume (mL)	Species	Dry weight (g)
MIXED-1	0-0.5	125	2,250	HET	42
				HYD	54
Low				MYR	2
				CER	4
				VAL	23
				Nm	Tr
	.5-1.0	89	1,750	HET	Tr
				HYD	14
				MYR	2
				CER	1
				VAL	72
				Nm	Tr
		214	4,000		
MIXED-2	-0.6	311	4,100	MYR	248
				HYD	44
Low				VAL	19
				HET	Tr
	.6-1.1	73	1,400	MYR	12
				HYD	8
				VAL	53
		384	5,500		

Table C-6.--Vegetation structure at the hydrilla (HYD) and diverse vegetation (MIXED) sites in August 1987, continued

[Biomass and plant volume collected at depth intervals in one-square-meter area. Tr is trace, less than one gram; CER = *Ceratophyllum demersum*, HET = *Heteranthera dubia*, HYD = *Hydrilla verticillata*, MYR = *Myriophyllum spicatum*, Nm = *Najas minor*, VAL = *Vallisneria americana*; m is meters; g is grams; mL is milliliters]

Site/ Tide	Depth from surface (m)	Total dry weight (g)	Total plant volume (mL)	Species	Dry weight (g)
MIXED-3	0-0.3	21	250	HYD	2
				MYR	18
High				HET	1
				VAL	Tr
	.3-0.8	52	900	HYD	26
				MYR	17
				VAL	1
				HET	8
				Nm	Tr
	.8-1.3	36	750	HYD	21
				MYR	9
				VAL	2
				CER	2
				HET	1
				Nm	1
	1.3-1.8	36	500	HYD	26
				MYR	7
				VAL	3
				Nm	Tr
		145	2,400		

Table C-6.--Vegetation structure at the hydrilla (HYD) and diverse vegetation (MIXED) sites in August 1987, continued

[Biomass and plant volume collected at depth intervals in one-square-meter area. Tr is trace, less than one gram; CER = *Ceratophyllum demersum*, HET = *Heteranthera dubia*, HYD = *Hydrilla verticillata*, MYR = *Myriophyllum spicatum*, Nm = *Najas minor*, VAL = *Vallisneria americana*; m is meters; g is grams; mL is milliliters]

Site/ Tide	Depth from surface (m)	Total dry weight (g)	Total plant volume (mL)	Species	Dry weight (g)
HYD-1					
Low	0-0.3	344	6800	HYD	324
				CER	13
				MYR	7
	.3-0.8	42	1300	HYD	32
				CER	0.4
				MYR	9
	.8-1.3	43	900	HYD	32
				MYR	11
		429	9000		
HYD-2	0-0.5	245	6,000	HYD	238
High				MYR	7
	.5-1.0	63	2,000	HYD	58
				MYR	5
	1.0-1.5	57	1,400	HYD	54
				MYR	3
	1.5-2.0	51	1,400	HYD	49
				MYR	2
		416	10,800		

Table C-7.--Phytoplankton numbers, by genus, at vegetated site, H-PY, on June 10, 1987.

Genus	Ebb Tide 0700-0800 hours			Ebb Tide 1030-1115 hours				Flood Tide 1430-1500 hours			Ebb Tide 1900-1930 hours		
	Subsite			Subsite				Subsite			Subsite		
	1	2	3	1	2	3	4	1	2	3	1	2	3
Agmenellum	0	1	0	0	1	2	1	0	1	3	6	1	3
Anabaena	0	0	0	0	0	0	1	0	0	0	0	0	0
Anacystis	0	0	0	0	2	0	0	0	0	0	0	0	0
Ankistrodesmus	0	1	2	1	6	12	2	1	4	7	4	1	5
Chlamydomonas	0	0	0	0	0	0	2	2	2	1	0	4	0
Chroomonas	0	3	5	16	8	8	8	3	11	16	10	16	7
Coccoid Green Cell	0	0	0	0	0	0	0	0	2	0	0	0	0
Cocconeis	0	0	1	0	0	0	0	0	0	0	0	0	0
Coscinodiscus	0	0	0	1	0	0	0	0	0	0	0	0	0
Crucigenia	1	0	0	1	0	3	2	0	0	0	0	0	0
Cryptomonas	0	0	4	2	2	0	1	3	6	3	0	0	0
Cyclotella	22	27	26	132	111	122	108	167	169	192	188	147	142
Kirchneriella	1	1	0	0	0	0	1	2	0	4	0	0	0
Melosira	4	10	10	32	26	25	17	16	25	33	32	46	24
Navicula	0	0	1	7	0	0	0	1	1	0	0	0	0
Nitzschia	13	14	19	16	6	13	12	10	11	6	6	7	4
Oocystis	0	0	0	0	2	0	0	1	0	1	0	1	1
Oscillatoria	0	0	0	0	0	0	0	0	0	0	0	0	1
Pediastrum	0	0	0	1	0	0	1	0	0	0	0	0	0
Scenedesmus	4	5	3	3	0	4	4	12	7	9	6	7	4
Schroederia	0	0	0	1	1	0	0	0	0	0	0	0	0
Selenastrum	2	0	0	1	14	2	1	3	1	3	1	0	6
Stephanodiscus	2	4	0	17	9	1	6	0	0	0	0	0	0
Synedra	0	0	0	0	0	0	1	0	0	0	0	0	0
Tetraedron	0	0	0	0	2	1	2	1	0	0	1	1	0
Thallasiosira	0	0	0	0	0	0	0	0	0	0	0	1	0
Trachelmonas	0	0	0	0	0	0	0	1	0	0	0	0	0

Table C-8.--Phytoplankton numbers, by genus, at unvegetated site, EC, on June 10, 1987.

Genus	Ebb Tide 0900-0915 hours			Low Tide 1315-1400 hours			High Tide 1830-1900 hours		
	Subsite			Subsite			Subsite		
	1	2	3	1	2	3	1	2	3
Agmenellum	0	2	2	0	1	2	0	2	1
Ankistrodesmus	0	4	2	5	8	2	0	1	3
Chlamydomonas	0	0	0	0	1	1	0	0	0
Chroomonas	6	5	6	0	15	13	0	3	4
Cocconeis	0	0	0	1	1	1	0	0	0
Crucigenia	0	0	0	0	0	0	0	0	1
Cryptomonas	0	0	2	5	3	1	0	0	0
Cyclotella	39	62	50	68	171	140	29	53	52
Euglena	0	0	0	1	0	0	0	0	0
Flagellates	0	0	0	0	1	0	0	0	0
Kirchneriella	1	0	1	0	1	0	0	0	0
Melosira	8	7	13	2	26	21	2	4	14
Navicula	0	2	1	1	0	0	0	1	0
Nitzschia	27	16	13	9	4	9	1	3	3
Oocystis	0	0	0	1	1	0	1	0	0
Pyramimonas	0	0	0	0	0	1	0	0	0
Scenedesmus	2	4	6	3	11	0	0	4	3
Selenastrum	1	1	1	5	5	4	1	0	0
Stephanodiscus	5	0	5	0	1	0	0	0	0
Tetrastrum	0	0	0	0	0	0	1	0	0
Thallasiosira	1	0	0	0	0	0	1	0	0
Trachelmonas	0	0	0	0	0	1	0	0	0

Table C-9.--Phytoplankton numbers, by genus, at vegetated site, M-MH, on June 10, 1987.

Genus	High Tide 0630-0715 hours			Flood Tide 1430-1500 hours			High Tide 1900-1915 hours		
	Subsite			Subsite			Subsite		
	1	2	3	1	2	3	1	2	3
Agmenellum	0	0	0	1	1	2	1	0	0
Ankistrodesmus	0	1	1	0	1	4	0	0	0
Chlamydomonas	0	0	0	5	0	0	0	0	0
Chroomonas	0	6	0	42	40	20	14	0	6
Cocconeis	0	0	0	2	1	8	0	1	0
Crucigenia	0	0	0	0	2	2	0	0	0
Cryptomonas	1	0	0	1	1	6	0	0	2
Cyclotella	14	73	11	80	70	24	34	5	54
Kirchneriella	0	0	0	1	1	0	0	0	0
Melosira	1	12	2	25	31	62	13	3	8
Navicula	9	5	20	15	32	58	1	12	4
Nitzschia	21	6	25	22	29	69	3	25	8
Oocystis	0	0	0	0	1	0	0	0	0
Oscillatoria	0	0	0	0	4	9	0	0	0
Phacus	1	0	0	0	0	0	0	0	0
Pleurosigma	0	0	0	0	0	1	0	0	0
Rhoicosphenia	0	0	0	1	0	0	0	0	0
Scenedesmus	2	1	0	5	8	4	3	0	1
Selenastrum	0	0	0	0	1	0	0	0	0
Stephanodiscus	0	0	2	0	3	1	0	1	0
Thalassiothrix	0	0	0	0	0	0	0	2	0
Thallasiosira	0	0	0	0	1	4	0	0	0

Table C-10.--Phytoplankton numbers, by genus, at unvegetated site, MH/GF, June 10, 1987.

Genus	Ebb Tide 0900-0930 hours			Low Tide 1315-1400 hours			High Tide 1830-1845 hours		
	Subsite			Subsite			Subsite		
	1	2	3	1	2	3	1	2	3
Agmenellum	1	0	0	0	1	2	0	0	0
Ankistrodesmus	0	0	2	0	0	0	0	0	0
Chroomonas	13	3	0	11	4	10	8	2	13
Cocconeis	0	0	1	0	0	2	0	0	0
Coscinodiscus	0	1	0	0	0	0	0	0	0
Cryptomonas	1	2	1	1	0	0	1	1	2
Cyclotella	156	128	32	145	130	140	139	131	207
Melosira	92	90	21	81	70	57	53	45	0
Navicula	0	4	1	3	0	3	4	1	0
Nitzschia	22	31	23	47	15	29	3	7	4
Oocystis	0	4	0	0	0	0	0	0	0
Oscillatoria	0	1	0	0	0	1	2	0	0
Pleurosigma	0	0	0	1	0	0	0	0	0
Scenedesmus	5	3	0	6	3	2	4	1	1
Schroederia	0	1	0	0	0	0	1	0	0
Selenastrum	0	0	0	0	0	0	1	0	1
Stephanodiscus	8	2	5	0	1	6	0	0	0
Tetrastrum	0	0	0	0	0	1	0	0	0
Thalassiothrix	0	0	0	0	0	0	0	0	1
Thallasiosira	0	0	0	4	2	0	0	0	1

Table C-11.--Phytoplankton numbers, by genus, at vegetated site, MIXED, on August 20, 1987.

Genus	Low Tide 1115-1145 hours						Flood Tide 1330-1400 hours				
	Subsite						Subsite				
	1	1	2	2	3	3	1	1	2	3	3
Actinastrum	1	0	0	2	0	0	0	0	0	0	0
Agmenellum	8	3	2	3	3	5	1	7	0	5	3
Anabaena	0	1	4	2	1	3	3	0	2	1	0
Anacystis	136	338	294	174	85	327	163	100	587	112	118
Ankistrodesmus	6	5	6	6	3	8	5	5	3	2	7
Aphanizomenom	0	0	2	0	0	0	1	0	0	0	1
Carteria	1	0	1	0	2	0	2	3	0	0	3
Chlamydomonas	6	5	7	18	1	8	9	5	13	3	5
Chlorogonium	0	0	0	0	0	0	0	1	0	0	0
Chroomonas	16	11	27	45	32	29	17	16	3	25	21
Closteriopsis	0	1	1	0	0	0	0	0	0	0	1
Coccoid Green Cell	3	2	10	3	10	5	8	10	4	8	8
Cocconeis	0	0	2	0	1	2	0	1	2	0	4
Coscinodiscus	2	0	8	2	3	7	3	3	0	4	1
Coelastrum	1	0	0	1	0	0	0	0	0	1	1
Cosmarium	1	0	2	0	0	1	0	0	0	0	0
Crucigenia	1	0	0	5	0	2	4	1	1	0	2
Cryptomonas	6	4	6	16	8	9	6	8	0	5	4
Cyclotella	10	9	24	26	26	24	17	17	4	31	14
Dictyosphaerium	2	0	0	0	0	0	0	0	0	1	0
Euastrum	0	0	1	0	0	0	0	0	0	0	0
Euglena	1	0	0	1	0	1	4	0	0	1	0
Gynodinium	0	0	1	0	0	0	0	0	0	0	1
Kirchneriella	0	0	1	0	0	0	0	0	0	0	0
Melosira	2	5	2	3	3	6	2	7	0	5	4
Navicula	0	0	3	2	2	5	0	0	4	0	0
Nitzschia	1	0	19	2	2	7	0	0	0	3	3
Ochromonas	1	3	0	3	2	2	3	2	0	3	5
Oocystis	2	0	1	3	4	2	2	2	0	1	2
Oscillatoria	8	6	20	22	9	15	16	9	13	13	7
Pediastrum	0	0	2	0	1	2	1	0	2	1	0
Scenedesmus	7	4	13	15	4	18	19	10	2	13	8
Selenastrum	2	4	2	5	4	8	11	4	1	11	7
Schroederia	0	0	0	0	1	0	0	0	1	0	0
Sorastrum	0	0	1	0	0	1	0	0	0	0	0
Synedra	0	0	0	0	0	0	1	0	0	0	0
Tetraedron	0	0	1	3	1	1	2	0	0	1	0
Tetrastrum	0	0	1	4	0	1	2	2	0	1	1
Treubaria	0	0	0	0	0	0	0	0	0	2	0
Westella	0	1	0	0	0	0	0	0	0	0	0

Table C-12.--Phytoplankton numbers, by genus, at vegetated site, HYD, on August 20, 1987.

Genus	Low Tide 1100-1130 hours						Flood Tide 1330-1400 hours					
	Subsite						Subsite					
	1	1	2	2	3	3	1	1	2	2	3	3
Achnanthes	0	0	0	0	0	0	0	0	0	0	0	1
Agmenellum	0	0	0	0	0	1	1	0	0	0	0	0
Anabaena	0	1	5	2	0	1	0	4	4	7	2	0
Anacystis	200	793	198	342	328	234	55	212	318	113	393	585
Ankistrodesmus	1	1	0	0	1	2	0	6	2	0	1	1
Characium	0	0	0	0	2	0	0	3	2	0	3	8
Chlamydomonas	0	3	2	0	1	3	0	0	1	10	0	0
Chroomonas	4	0	0	0	0	0	0	0	0	0	0	0
Coccoid Green Cell	0	0	0	1	0	0	0	10	11	4	1	35
Cocconeis	2	0	0	0	0	0	0	0	0	1	0	0
Cosmarium	0	0	0	0	0	0	1	0	0	0	0	0
Crucigenia	0	0	0	0	1	0	0	1	1	0	1	1
Cryptomonas	0	0	0	0	0	1	0	0	0	0	0	0
Cyclotella	2	1	4	1	2	0	3	4	0	2	2	2
Euastrum	0	0	0	0	0	0	0	0	0	1	0	0
Euglena	0	0	0	0	1	0	0	0	0	0	0	0
Flagellates	2	2	2	0	1	0	11	1	3	23	0	2
Gloeactinium	0	1	0	0	0	0	0	0	0	0	0	0
Gonium	0	0	0	0	1	0	0	0	1	0	0	0
Lyngbya	2	6	5	7	10	0	10	6	25	59	2	18
Micractinium	0	0	0	0	0	0	1	0	0	0	0	0
Navicula	2	1	1	0	0	0	0	0	0	0	0	0
Nitzschia	1	2	0	0	0	0	0	0	0	4	1	2
Oocystis	0	0	0	0	0	0	0	0	0	1	1	0
Oscillatoria	0	0	2	0	0	7	0	0	1	0	1	0
Pandorina	0	0	0	0	0	1	0	0	0	0	0	1
Pediastrum	0	0	1	0	1	0	0	0	0	0	0	0
Rhabdoderma	0	0	0	0	0	0	0	0	0	0	0	2
Scenedesmus	1	2	2	2	2	1	1	6	2	5	3	0
Sorastrum	0	0	0	0	0	0	2	0	0	5	0	0
Staurastrum	2	0	0	0	0	0	0	0	0	0	0	0
Tetrastrum	0	0	0	0	0	0	1	0	0	0	0	0

Table C-13.--Phytoplankton numbers, by genus, at unvegetated site, NV, on August 20, 1987.

Genus	Low Tide 1145-1200 hours						Flood Tide 1400-1415 hours					
	Subsite						Subsite					
	1	1	2	2	2	3	1	2	2	3	3	3
Actinastrum	1	0	1	1	1	2	0	0	2	0	1	1
Agmenellum	7	8	4	8	12	1	10	6	7	3	7	10
Anabaena	3	1	4	1	0	0	1	0	3	4	1	1
Anacystis	38	48	47	11	41	30	57	43	41	40	0	13
Ankistrodesmus	12	17	13	9	12	2	16	13	12	9	7	5
Aphanizomenom	0	0	0	0	0	0	0	0	0	1	0	0
Calycomonas	0	0	0	0	0	0	0	0	7	0	0	0
Carteria	1	2	3	1	15	4	13	0	1	7	0	1
Chlamydomonas	14	14	14	34	25	12	15	19	22	16	32	24
Chlorogonium	0	0	1	0	0	0	0	0	0	0	0	0
Chroomonas	37	72	55	42	70	31	87	49	80	45	41	39
Closteriopsis	0	0	0	0	1	0	0	0	0	0	1	0
Coccoid Green Cell	6	10	12	8	7	8	16	12	16	8	16	17
Coelastrum	0	0	0	0	2	0	0	0	0	0	0	0
Coscinodiscus	9	10	18	4	22	13	9	17	17	15	10	15
Cosmarium	0	0	0	0	0	1	0	0	0	0	0	0
Crucigenia	2	3	4	1	2	1	1	3	1	3	3	4
Cryptomonas	17	16	29	25	21	18	24	32	24	22	21	26
Cyclotella	46	31	41	49	59	32	54	25	46	39	26	33
Dictyosphaerium	2	2	1	1	3	3	1	3	1	3	0	4
Euglena	5	6	8	10	12	3	4	5	9	11	0	9
Flagellates	0	0	0	3	0	1	0	1	0	0	0	0
Gloeactinium	2	1	0	0	1	1	1	0	0	1	0	0
Gonium	0	0	0	1	0	0	0	0	0	0	0	0
Gynodinium	0	0	0	0	0	0	0	0	0	0	1	2
Kirchneriella	1	1	0	0	0	0	0	0	0	0	0	1
Melosira	11	10	10	18	9	7	14	18	15	7	9	12
Micractinium	0	0	0	1	0	0	0	2	1	0	2	0
Navicula	8	2	4	6	8	2	3	4	7	4	4	7
Nitzschia	6	5	4	7	4	5	0	6	3	2	2	3
Ochromonas	4	0	6	1	0	0	7	5	2	6	6	5
Oocystis	0	2	4	4	8	4	5	4	0	6	3	3
Oscillatoria	16	23	16	30	27	12	27	22	19	16	0	26
Pediastrum	1	0	1	0	2	1	0	1	0	1	2	2
Peridinium	0	0	0	1	0	0	1	0	0	0	1	0
Pteromonas	0	0	1	0	1	0	0	0	0	0	0	0
Scenedesmus	10	16	8	26	19	13	17	25	23	10	17	16
Schroederia	0	0	1	0	0	0	0	0	1	0	1	1
Selenastrum	5	6	6	4	11	4	16	2	8	2	7	5
Sorastrum	0	0	0	1	0	0	2	0	0	1	0	0
Synedra	1	0	0	0	0	0	2	2	0	0	0	0
Tetraedron	0	2	2	0	1	2	4	6	4	3	1	2
Tetrastrum	0	1	3	4	2	1	4	3	3	0	1	4
Trachelmonas	0	1	0	0	0	0	0	0	0	0	0	0

Table C-14.--Phytoplankton numbers, by genus, at vegetated site, MIXED, on October 29, 1987.

Genus	Flood Tide 1000-1030 hours			Ebb Tide 1500-1515 hours		
	Subsite			Subsite		
	1	2	3	1	2	3
Achnanthes	1	0	1	0	0	0
Amphora	0	0	0	0	0	1
Anacystis	1	1	0	0	0	0
Ankistrodesmus	4	3	11	3	1	3
Chlamydomonas	0	0	0	0	1	0
Chroomonas	14	6	16	6	7	15
Coccoid Green Cells	0	1	0	0	0	0
Cocconeis	1	1	2	0	0	0
Coscinodiscus	1	0	2	4	0	1
Crucigenia	0	0	0	1	0	0
Cryptomonas	2	1	6	1	4	3
Cyclotella	34	16	59	48	30	43
Diatoma	1	0	0	0	0	1
Dinobryon	1	0	0	0	0	0
Melosira	35	24	38	28	19	33
Navicula	1	2	0	0	0	1
Nitzschia	13	6	4	8	1	7
Ophiocytium	1	0	0	0	0	0
Oscillatoria	0	1	0	0	1	0
Scenedesmus	6	1	9	6	4	2
Schroederia	0	1	0	0	0	0
Sorastrum	0	1	0	0	0	0
Spermatozoopsis	0	0	1	0	0	0
Stephanodiscus	8	24	6	0	2	4
Synedra	1	1	1	2	0	0
Tetrastrum	2	2	1	1	0	2

Table C-15.--Phytoplankton numbers, by genus, at vegetated site, HYD, on October 29, 1987.

Genus	Flood Tide 0945-1015 hours			Ebb Tide 1500-1530 hours		
	Subsite			Subsite		
	1	2	3	1	2	3
Achnanthes	8	33	8	17	16	7
Agmenellum	0	0	0	1	0	0
Amphora	10	0	0	9	4	0
Anacystis	0	0	1	9	0	0
Ankistrodesmus	1	2	3	3	0	2
Chlamydomonas	5	5	31	8	2	2
Chroomonas	5	10	15	7	20	11
Cocconeis	2	1	2	2	1	1
Coscinodiscus	0	0	1	1	6	2
Cryptomonas	11	1	7	0	0	1
Cyclotella	20	14	14	11	1	11
Cymbella	7	1	7	13	0	4
Diploneis	0	0	0	1	0	0
Gomphonema	0	0	3	0	0	0
Kirchneriella	0	0	1	0	0	0
Lyngbya	1	3	2	4	0	0
Melosira	3	7	14	19	0	15
Navicula	2	2	17	11	4	0
Nitzschia	8	57	35	29	0	5
Oscillatoria	5	73	49	24	4	52
Rhodomonas	0	0	0	9	0	0
Rhoicosphenia	0	0	1	0	0	0
Scenedesmus	1	3	6	3	3	2
Sorastrum	0	0	1	0	0	0
Stephanodiscus	0	0	0	3	0	1
Surirella	2	0	0	0	0	0
Synedra	1	2	12	0	0	1
Tetrastrum	0	0	1	0	0	0

Table C-16.--Phytoplankton numbers, by genus, at unvegetated site, NV, on October 29, 1987.

Genus	Flood Tide 1000-1030 hours			Ebb Tide 1500-1515 hours		
	Subsite			Subsite		
	1	2	3	1	2	3
Agmenellum	1	0	0	0	0	0
Anacystis	0	0	0	0	0	1
Ankistrodesmus	1	3	0	2	1	2
Chlamydomonas	1	0	0	0	0	1
Chroomonas	13	8	12	11	4	9
Coccoid Green Cell	0	0	0	0	0	1
Cocconeis	0	0	0	2	0	0
Coscinodiscus	5	5	1	0	1	0
Cryptomonas	2	1	3	1	7	5
Cyclotella	36	25	23	24	43	40
Dictyosphaerium	0	1	0	0	0	0
Euglena	0	0	0	0	1	0
Melosira	13	10	23	14	22	25
Navicula	3	2	2	0	0	0
Nitzschia	17	14	16	2	4	10
Oscillatoria	0	1	0	0	0	0
Scenedesmus	4	4	3	3	2	4
Selenastrum	0	0	0	0	0	1
Stephanodiscus	0	0	0	0	2	10
Surirella	0	0	0	1	0	0
Synedra	0	0	0	1	0	1
Tetrastrum	0	0	1	2	0	1

Appendix D. Nutrient Data

Table D-1.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987

[All samples were filtered; Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
H-PY	1	High	B	0.35	1.39	0.09	0.03	2.931	0.042
			B	.32	1.36	.08	.03	2.865	.038
			B	.30	1.37	.10	.03	2.871	.040
			S	.34	1.39	.11	.04	2.916	.037
			S	.45	1.36	.12	.04	2.871	.040
			S	.31	1.38	.08	.04	2.964	.037
	3	Low	B	.36	1.37	.14	.05	3.075	.048
			B	.32	1.38	.06	.06	3.038	.047
			B	.39	1.38	.10	.05	3.053	.045
			S	.30	1.35	.10	.02	2.992	.039
			S	.37	1.38	.13	.04	3.137	.044
			S	.46	1.37	.10	.05	3.033	.042
EC	1	High	B	.40	1.38	.11	.02	2.961	.048
			B	.38	1.38	.08	.03	2.950	.039
			B	.43	1.38	.08	.02	2.924	.036
			S	.50	1.39	.10	.02	2.974	.040
			S	.47	1.38	.10	.03	2.932	.038
			S	.56	1.38	.07	.02	3.026	.046
	3	Low	B	.61	1.46	.20	.04	2.945	.043
			B	.42	1.43	.06	.04	2.967	.039
			B	.44	1.43	.09	.05	2.948	.037
			S	.53	1.45	.13	.04	3.214	.042
			S	.48	1.42	.07	.04	3.119	.040
			S	.46	1.43	.07	.04	3.120	.042
M-MH	1	High	B	.46	1.50	.15	.02	2.959	.037
			B	.37	1.49	.10	.03	2.932	.037
			B	.37	1.47	.13	.03	2.962	.036
			S	.47	1.68	.06	.01	3.053	.038
			S	.43	1.58	.10	.03	2.931	.043
			S	.64	1.56	.08	.02	2.909	.038

Table D-1.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987, continued

[All samples were filtered; Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
	3	Low	B	0.13	1.71	0.08	0.04	3.068	0.031
			B	.14	1.11	.34	.11	3.169	.069
			B	.16	1.86	.13	.04	2.833	.032
			S	.13	2.08	.10	.04	3.060	.036
			S	.13	2.04	.08	.05	3.017	.034
			S	.13	2.00	.07	.03	3.065	.033
MH/GF	1	High	B	.35	2.39	.11	.01	3.177	.035
			B	.32	2.04	.11	.01	3.154	.034
			B	.37	2.60	.08	.01	3.141	.032
			S	.27	2.85	.10	.01	3.114	.032
			S	.32	2.68	.12	.02	3.152	.037
			S	.28	2.14	.11	.01	2.773	.029
	3	Low	B	.32	3.03	.07	.03	3.437	.035
			B	.38	2.93	.07	.05	3.382	.037
			B	.26	2.89	.13	.02	3.412	.041
			S	.32	3.17	.09	.05	3.452	.046
			S	.33	3.37	.13	.06	3.431	.033
			S	.33	3.40	.24	.06	3.450	.041

Table D-2.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987

[All samples were filtered; Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
H-PY	1	Low	B	0.12	2.13	0.08	0.03	2.898	0.025
			B	.13	2.16	.70	.04	2.920	.028
			B	.15	1.98	.06	.02	2.941	.027
			S	.14	1.95	.05	.03	2.995	.038
			S	.14	2.03	.06	.03	2.938	.026
			S	.15	2.07	.15	.03	2.943	.027
H-PY	3	High	B	.24	1.89	.11	.05	3.266	.042
			B	.32	2.39	.07	.02	2.579	.034
			B	.28	2.31	.11	.03	3.190	.044
			S	.29	2.59	.10	.05	3.290	.040
			S	.38	2.56	.11	.05	3.276	.042
			S	.23	2.03	.17	.05	3.335	.046
H-PY	5	Low	B	.16	1.86	.09	.03	3.008	.037
			B	.20	1.82	.10	.03	2.947	.037
			B	.20	1.80	.13	.03	3.152	.039
			S	.16	1.90	.08	.03	3.110	.033
			S	.21	1.87	.09	.03	3.039	.035
			S	.17	1.81	.11	.04	3.120	.034
EC	1	Low	B	.50	1.84	.06	.05	3.508	.044
			B	.51	1.88	.06	.04	3.493	.044
			B	.50	1.95	.09	.05	3.493	.045
			S	.63	1.75	.09	.05	3.446	.045
			S	.52	1.85	.07	.04	3.505	.046
			S	.57	1.74	.13	.05	3.509	.048
EC	3	High	B	.23	2.65	.11	.06	3.289	.061
			B	.23	2.62	.10	.06	3.240	.056
			B	.24	2.68	.13	.07	3.345	.054
			S	.18	2.96	.15	.06	3.351	.045
			S	.18	2.94	.10	.06	3.321	.046
			S	.20	2.87	.13	.04	3.316	.047
EC	5	Low	B	.41	3.38	.10	.05	3.416	.051
			B	.43	3.34	.10	.04	3.444	.048
			B	.41	3.20	.11	.05	3.387	.046
			S	.17	3.38	.11	.02	3.078	.026
			S	.17	3.05	.09	.01	2.880	.026
			S	.18	3.15	.09	.03	3.045	.035

Table D-2.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987, continued

[All samples were filtered; Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
M-MH	1	Low	B	0.18	2.49	0.06	0.04	3.118	0.022
			B	.14	1.87	.07	.03	3.240	.030
			B	.20	2.37	.15	.04	3.184	.025
			S	.12	1.73	.05	.05	3.217	.022
			S	.12	1.73	.11	.04	3.209	.028
			S	.11	1.89	.09	.03	3.209	.023
M-MH	3	High	B	.13	1.66	.04	.02	3.247	.030
			B	.08	1.18	.07	.01	2.346	.023
			B	.13	1.82	.10	.02	3.246	.031
			S	.14	2.08	.14	.02	3.264	.023
			S	.15	2.06	.05	.01	3.278	.026
			S	.30	2.30	.19	.03	3.273	.031
M-MH	5	Low	B	.16	1.64	.09	.04	3.215	.037
			B	.15	1.78	.12	.05	3.186	.039
			B	.18	2.15	.10	.05	3.159	.041
			S	.09	2.27	.11	.00	3.115	.021
			S	.05	1.63	.09	.00	3.075	.018
			S	.11	1.98	.09	.00	3.128	.024
MH/GF	1	Low	B	.24	2.24	.06	.03	3.157	.045
			B	.20	1.90	.09	.04	3.118	.043
			B	.21	1.82	.12	.04	3.172	.047
			S	.27	2.26	.09	.04	3.100	.044
			S	.24	2.20	.06	.04	3.133	.048
			S	.29	2.60	.07	.04	3.065	.043
MH/GF	3	High	B	.16	1.75	.09	.03	3.295	.031
			B	.13	1.77	.13	.05	3.311	.034
			B	.30	1.55	.12	.04	3.308	.034
			S	.14	1.59	.08	.03	3.242	.035
			S	.13	1.70	.10	.04	3.304	.034
			S	.14	1.70	.08	.04	3.283	.033
MH/GF	5	Low	B	.34	2.29	.09	.04	3.363	.046
			B	.27	1.72	.19	.05	2.390	.055
			B	.51	2.54	.12	.05	3.367	.048
			S	.33	2.29	.13	.04	3.324	.048
			S	.34	1.70	.09	.04	3.389	.047
			S	.26	1.65	.14	.04	3.342	.047

Table D-3.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (HYD, MIXED) and unvegetated (NV) sites on August 31, 1987

[All samples were filtered; Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
HYD	1	Low	B	0.06	1.57	0.03	0.09	6.21	0.023
			B	.05	2.30	.03	.08	6.24	.022
			B	.03	2.46	.03	.06	3.48	.013
			S	.11	2.58	.03	.03	3.71	.014
			S	.26	2.54	.03	.03	5.50	.019
			S	.14	2.82	.03	.03	6.26	.019
HYD	3	High	B	.06	2.52	.03	.03	4.14	.017
			B	.03	1.43	.03	.03	6.10	.010
			B	.03	0.98	.03	.03	3.38	.007
			S	.03	0.90	.03	.03	1.94	.004
			S	.03	0.82	.03	.03	1.67	.004
			S	.03	1.53	.03	.03	3.38	.006
NV	1	Low	B	.10	2.02	.03	.03	4.43	.008
			B	.06	3.00	.03	.03	6.58	.018
			B	.03	1.59	.03	.03	3.67	.010
			S	.16	2.98	.03	.03	6.70	.009
			S	.14	3.00	.16	.03	6.74	.016
			S	.13	3.06	.03	.05	6.72	.011
NV	3	High	B	.07	2.68	.03	.03	6.46	.016
			B	.05	2.58	.03	.03	6.18	.012
			B	.06	2.60	.03	.03	6.12	.013
			S	.05	2.68	.03	.03	6.26	.013
			S	.07	2.34	.03	.03	5.69	.009
			S	.09	2.48	.03	.03	6.16	.010
MIXED	1	Low	B	.03	2.98	.03	.03	3.23	.009
			B	.03	4.08	.03	.03	4.51	.012
			B	.03	2.90	.03	.03	6.33	.017
			S	.09	2.07	.03	.03	4.56	.007
			S	.10	2.60	.03	.03	5.91	.009
			S	.11	2.36	.03	.03	5.10	.008
	3	High	B	.03	1.95	.03	.03	4.36	.007
			B	.06	2.46	.03	.03	5.58	.009
			B	.05	1.95	.03	.03	4.50	.008
			S	.03	1.79	.03	.03	4.22	.006
			S	.03	1.07	.03	.03	2.39	.004
			S	.04	2.22	.03	.03	5.44	.008

Table D-4.--Ammonia, nitrate, iron, manganese, potassium, and phosphate concentrations at vegetated (HYD, MIXED) and unvegetated (NV) sites on November 4, 1987

[All samples were filtered; Time: 1 = dawn, 3 = noon; all samples filtered; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron, Mn = manganese, K = potassium and PO_4 = phosphate; all concentrations in milligrams per liter]

Site	Time	Tide	S or B	NH_4	NO_3	Fe	Mn	K	PO_4
HYD	1	High	B	0.12	0.19	0.06	0.06	3.57	0.016
			B	.04	.25	.02	.04	4.18	.009
			B	.04	.24	.04	.02	4.15	.005
			S	.10	.27	.03	.01	3.39	.019
			S	.09	.15	.03	.01	2.65	.008
			S	.04	.26	.02	.01	4.13	.006
	3	Low	B	.04	.18	.01	.01	3.03	.005
			B	.04	.24	.04	.01	4.24	.008
			B	.04	.26	.01	.04	4.26	.007
			S	.05	.18	.01	.01	2.93	.006
			S	.04	.21	.01	.01	3.80	.005
			S	.04	.25	.02	.01	3.99	.005
NV	1	High	B	.27	.26	.03	.01	3.98	.017
			B	.23	.25	.03	.01	4.00	.016
			B	.24	.21	.03	.01	3.22	.017
			S	.24	.13	.03	.02	2.18	.010
			S	.25	.23	.06	.01	4.03	.017
			S	.25	.26	.03	.01	4.05	.018
	3	Low	B	.24	.28	.04	.02	4.21	.021
			B	.21	.28	.03	.03	4.23	.021
			B	.20	.22	.01	.02	2.96	.017
			S	.28	.26	.03	.02	3.79	.021
			S	.17	.15	.08	.02	2.09	.014
			S	.15	.29	.04	.02	4.18	.020
MIXED	1	High	B	.22	.30	.04	.01	4.07	.017
			B	.29	.31	.02	.01	4.02	.024
			B	.37	.32	.03	.01	4.11	.055
			S	.17	.25	.05	.02	4.12	.016
			S	.24	.27	.03	.02	4.11	.018
			S	.21	.26	.03	.01	4.11	.014
	3	Low	B	.18	.35	.03	.03	4.24	.021
			B	.26	.33	.03	.02	4.15	.023
			B	.20	.34	.03	.01	4.15	.063
			S	.19	.30	.03	.02	4.25	.020
			S	.24	.29	.03	.02	4.10	.022
			S	.23	.33	.03	.02	4.22	.021

Table D-5.--Mean and standard error of mean for ammonia, nitrate, and iron concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987
[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	NH_4		NO_3		Fe	
			Mean	SE	Mean	SE	Mean	SE
H-PY	1	B	0.32	0.013	1.37	0.009	0.09	0.007
	1	S	.37	.041	1.38	.009	.11	.011
	3	B	.36	.022	1.38	.003	.10	.021
	3	S	.38	.046	1.37	.009	.11	.012
EC	1	B	.40	.014	1.38	.000	.09	.011
	1	S	.51	.026	1.38	.003	.09	.008
	3	B	.49	.058	1.44	.010	.12	.042
	3	S	.49	.020	1.43	.009	.09	.020
M-MH	1	B	.40	.030	1.49	.009	.13	.015
	1	S	.51	.065	1.61	.037	.08	.012
	3	B	.14	.010	1.56	.229	.18	.081
	3	S	.13	.000	2.04	.023	.09	.009
MH/GF	1	B	.35	.017	2.34	.163	.10	.008
	1	S	.29	.015	2.56	.214	.11	.007
	3	B	.32	.034	2.95	.042	.09	.020
	3	S	.33	.005	3.31	.072	.15	.044

Table D-6.--Mean and standard error of mean for manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 10, 1987
[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; Mn = manganese, K = potassium, PO_4 = phosphate; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	Mn		K		PO_4	
			Mean	SE	Mean	SE	Mean	SE
H-PY	1	B	0.03	0.002	2.89	0.021	0.040	0.001
	1	S	.04	.002	2.92	.027	.038	.001
	3	B	.05	.002	3.06	.011	.047	.001
	3	S	.05	.003	3.05	.043	.042	.001
EC	1	B	.02	.003	2.95	.011	.041	.004
	1	S	.02	.003	2.98	.027	.041	.002
	3	B	.04	.002	2.95	.007	.040	.002
	3	S	.04	.001	3.15	.032	.041	.001
M-MH	1	B	.03	.002	2.95	.010	.037	.000
	1	S	.02	.006	2.96	.045	.040	.002
	3	B	.06	.023	3.02	.100	.044	.013
	3	S	.04	.005	3.05	.015	.034	.001
MH/GF	1	B	.01	.002	3.16	.011	.034	.001
	1	S	.01	.003	3.01	.121	.033	.002
	3	B	.03	.009	3.41	.016	.038	.002
	3	S	.06	.003	3.44	.007	.040	.004

Table D-7.--Mean and standard error of mean for ammonia, nitrate, and iron concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987

[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	NH_4		NO_3		Fe	
			Mean	SE	Mean	SE	Mean	SE
H-PY	1	B	0.13	0.006	2.09	0.056	0.07	0.006
	1	S	.14	.003	2.02	.035	.09	.030
	3	B	.28	.023	2.20	.155	.10	.015
	3	S	.30	.043	2.39	.182	.13	.024
	5	B	.18	.013	1.83	.018	.11	.011
	5	S	.18	.015	1.86	.026	.09	.010
EC	1	B	.51	.001	1.89	.032	.07	.011
	1	S	.57	.032	1.78	.035	.09	.018
	3	B	.23	.002	2.65	.017	.11	.008
	3	S	.19	.006	2.92	.027	.13	.016
	5	B	.42	.009	3.31	.055	.10	.002
	5	S	.17	.004	3.19	.098	.10	.006
M-MH	1	B	.17	.019	2.24	.190	.09	.028
	1	S	.11	.005	1.78	.053	.08	.019
	3	B	.11	.018	1.55	.192	.07	.018
	3	S	.20	.051	2.15	.077	.13	.041
	5	B	.16	.010	1.86	.152	.10	.009
	5	S	.08	.016	1.96	.185	.10	.008
MH/GF	1	B	.22	.013	1.99	.129	.09	.017
	1	S	.27	.015	2.35	.125	.07	.008
	3	B	.19	.052	1.69	.070	.11	.010
	3	S	.14	.004	1.66	.037	.09	.007
	5	B	.37	.072	2.18	.243	.13	.030
	5	S	.31	.023	1.88	.206	.12	.017

Table D-8.--Mean and standard error of mean for manganese, potassium, and phosphate concentrations at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites on June 17, 1987
[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; Mn = manganese, K = potassium, PO_4 = phosphate; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	Mn		K		PO_4	
			Mean	SE	Mean	SE	Mean	SE
H-PY	1	B	0.03	0.006	2.920	0.124	0.027	0.001
	1	S	.03	.001	2.959	.018	.030	.004
	3	B	.03	.008	3.012	.217	.040	.003
	3	S	.05	.002	3.300	.018	.043	.002
	5	B	.03	.001	3.036	.061	.038	.001
	5	S	.03	.004	3.090	.025	.034	.001
EC	1	B	.05	.001	3.498	.005	.044	.000
	1	S	.05	.003	3.487	.020	.046	.001
	3	B	.06	.003	3.291	.030	.057	.002
	3	S	.05	.005	3.329	.011	.046	.001
	5	B	.04	.003	3.416	.016	.048	.001
	5	S	.02	.004	3.001	.061	.029	.003
M-MH	1	B	.04	.001	3.181	.035	.026	.002
	1	S	.04	.004	3.212	.003	.024	.002
	3	B	.02	.003	2.946	.300	.028	.003
	3	S	.02	.005	3.272	.004	.027	.002
	5	B	.05	.001	3.187	.016	.039	.001
	5	S	.00	.001	3.106	.016	.021	.002
MH/GF	1	B	.03	.003	3.149	.016	.045	.001
	1	S	.04	.002	3.099	.020	.045	.002
	3	B	.04	.003	3.305	.005	.033	.001
	3	S	.04	.003	3.276	.018	.034	.001
	5	B	.05	.003	3.373	.008	.050	.003
	5	S	.04	.002	3.352	.019	.047	.000

Table D-9.--Mean and standard error of mean for ammonia, nitrate, and iron at vegetated (HYD, MIXED) and unvegetated (NV) sites on August 31, 1987

[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	NH_4		NO_3		Fe	
			Mean	SE	Mean	SE	Mean	SE
HYD	1	B	0.05	0.009	2.11	0.274	0.03	0.000
	1	S	.17	.046	2.65	.087	.03	.000
	3	B	.04	.010	1.64	.457	.03	.000
	3	S	.03	.000	1.08	.225	.03	.000
NV	1	B	.06	.020	2.20	.417	.03	.000
	1	S	.14	.009	3.01	.024	.07	.043
	3	B	.06	.006	2.62	.031	.03	.000
	3	S	.07	.012	2.50	.099	.03	.000
MIXED	1	B	.03	.000	3.32	.381	.03	.000
	1	S	.10	.006	2.34	.153	.03	.000
	3	B	.05	.009	2.12	.170	.03	.000
	3	S	.03	.003	1.69	.335	.03	.000

Table D-10.--Mean and standard error of mean for manganese, potassium, and phosphate concentrations at vegetated (HYD, MIXED) and unvegetated (NV) sites on August 31, 1987
[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; Mn = manganese, K = potassium, PO_4 = phosphate; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	Mn		K		PO_4	
			Mean	SE	Mean	SE	Mean	SE
HYD	1	B	0.08	0.009	5.310	0.915	0.019	0.003
	1	S	.03	.000	5.157	.756	.017	.002
	3	B	.03	.000	4.540	.810	.011	.003
	3	S	.03	.000	2.330	.531	.005	.001
NV	1	B	.03	.000	4.893	.871	.012	.003
	1	S	.04	.007	6.720	.012	.012	.002
	3	B	.03	.000	6.253	.105	.014	.001
	3	S	.03	.000	6.037	.176	.011	.001
MIXED	1	B	.03	.000	4.690	.899	.013	.002
	1	S	.03	.000	5.190	.392	.008	.001
	3	B	.03	.000	4.813	.385	.008	.001
	3	S	.03	.000	4.017	.886	.006	.001

Table D-11.--Mean and standard error of mean for ammonia, nitrate, and iron at vegetated (HYD, MIXED) and unvegetated (NV) sites on November 4, 1987

[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; NH_4 = ammonia, NO_3 = nitrate, Fe = iron; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	NH_4		NO_3		Fe	
			Mean	SE	Mean	SE	Mean	SE
HYD	1	B	0.07	0.027	0.23	0.019	0.04	0.012
	1	S	.08	.019	.23	.038	.03	.003
	3	B	.04	.000	.23	.024	.02	.010
	3	S	.04	.003	.21	.020	.01	.003
NV	1	B	.25	.012	.24	.015	.03	.000
	1	S	.25	.003	.21	.039	.04	.010
	3	B	.22	.012	.26	.020	.03	.009
	3	S	.23	.033	.23	.043	.05	.015
MIXED	1	B	.29	.043	.31	.006	.03	.006
	1	S	.21	.020	.26	.006	.04	.007
	3	B	.21	.024	.34	.006	.03	.000
	3	S	.22	.015	.31	.012	.03	.000

Table D-12.--Mean and standard error of mean for manganese, potassium, and phosphate concentrations at vegetated (HYD, MIXED) and unvegetated (NV) sites on November 4, 1987
[Time: 1 = dawn, 3 = noon; S = surface, B = bottom; Mn = manganese, K = potassium, PO_4 = phosphate; all concentrations in milligrams per liter, all samples filtered; n = 3; SE = standard error of mean]

Site	Time	S or B	Mn		K		PO_4	
			Mean	SE	Mean	SE	Mean	SE
HYD	1	B	0.04	0.012	3.967	0.199	0.010	0.003
	1	S	.01	.000	3.390	.427	.011	.004
	3	B	.02	.010	3.843	.407	.007	.001
	3	S	.01	.000	3.573	.326	.005	.000
NV	1	B	.01	.000	3.733	.257	.017	.000
	1	S	.01	.003	3.420	.620	.015	.003
	3	B	.02	.003	3.800	.420	.020	.001
	3	S	.02	.000	3.353	.642	.018	.002
MIXED	1	B	.01	.000	4.067	.026	.032	.012
	1	S	.02	.003	4.113	.003	.016	.001
	3	B	.02	.006	4.180	.030	.036	.014
	3	S	.02	.000	4.190	.046	.021	.001

Appendix E. Phytoplankton, Bacteria Ichthyoplankton, Vegetation-Associated Invertebrates and Zooplankton

Table E-1.--Photosynthetic rate of phytoplankton at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 10 and June 17, 1987. [Photosynthetic rate in micrograms carbon per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Date/Site	Time	Tide	Subsite	Photosynthetic rate	
				High light	Low light
June 10					
H-PY	1	High	1	78.7	14.2
			2	68.2	20.7
EC	1	High	1	75.6	21.9
			2	67.4	19.1
M-MH	1	High	1	82.1	23.6
			2	82.9	23.8
MH/GF	1	High	1	62.4	16.4
			2	66.9	17.4
June 17					
H-PY	1	Low	1	48.9	13.7
			2	46.4	13.4
	3	High	1	66.5	14.3
			2	75.5	14.1
EC	1	Low	1	44.5	12.7
			2	51.1	14.6
	3	High	1	102.7	21.2
			2	102.6	22.5
M-MH	1	Low	1	27.2	10.2
			2	41.6	12.1
	3	High	1	285.6	79.9
			2	91.3	33.6
MH/GF	1	Low	1	59.1	14.9
			2	62.0	14.7
	3	High	1	111.0	25.5
			2	120.5	22.8

Table E-2.--Photosynthetic rate of phytoplankton at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 20 and 31, 1987.
[Photosynthetic rate in micrograms carbon per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon.]

Date/Site	Time	Tide	Subsite	Photosynthetic rate	
				High light	Low light
August 20					
MIXED	1	High	1	192.2	60.2
			2	238.7	86.3
	3	Low	1	216.3	99.2
			2	235.7	117.1
NV	1	High	1	267.0	102.1
			2	276.9	92.6
	3	Low	1	341.3	133.6
			2	374.5	141.0
HYD	1	High	1	148.7	49.3
			2	92.7	95.4
	3	Low	1	175.9	69.5
			2	203.9	87.0
August 31					
MIXED	1	Low	1	155.5	43.9
			2	102.2	28.4
	3	High	1	368.2	114.8
			2	358.2	99.5
NV	1	Low	1	449.0	155.4
			2	469.0	158.8
	3	High	1	333.0	87.3
			2	361.2	100.4
HYD	1	Low	1	107.4	31.7
			2	74.0	22.9
	3	High	1	244.4	73.1
			2	257.1	76.8

Table E-3.--Photosynthetic rate of phytoplankton at vegetated (MIXED, HYD) and unvegetated (NV) sites, October 29 and November 4, 1987. [Photosynthetic rate in micrograms carbon per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Date/Site	Time	Tide	Subsite	Photosynthetic rate	
				High light	Low light
October 29					
MIXED	1	Low	1	13.2	5.5
			2	14.1	6.2
	3	High	1	12.3	5.2
			2	13.6	6.1
NV	1	Low	1	9.6	4.2
			2	9.4	3.9
	3	High	1	11.0	4.4
			2	11.8	4.4
HYD	1	Low	1	7.5	3.1
			2	11.9	5.0
	3	High	1	8.2	3.1
			2	7.7	3.4
November 4					
MIXED	1	High	1	17.6	5.1
			2	18.1	5.8
	3	Low	1	14.8	5.2
			2	12.4	5.1
NV	1	High	1	21.1	6.6
			2	23.6	7.1
	3	Low	1	20.6	10.6
			2	22.5	7.8
HYD	1	High	1	9.9	3.2
			2	10.5	3.2
	3	Low	1	9.6	3.4
			2	7.4	2.8

Table E-4.--Chlorophyll-a and pheopigment concentrations from photosynthetic rate samples at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 10, 1987.
[Chl-a = chlorophyll-a, Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Filter replicate	Chl-a	Pheo
H-PY	1	High	1	1	7.5	7.0
			1	2	7.7	6.5
			2	1	9.0	8.6
			2	2	9.2	8.5
EC	1	High	1	1	8.1	7.4
			1	2	7.2	7.0
			2	1	7.5	7.8
			2	2	7.9	7.7
M-MH	1	High	1	1	10.4	7.8
			1	2	10.4	7.6
			2	1	10.2	7.3
			2	2	10.0	6.5
MH/GF	1	High	1	1	7.5	5.6
			1	2	6.8	6.0
			2	1	7.5	6.2
			2	2	8.1	6.0

Table E-5.--Chlorophyll-a and pheopigment concentrations from photosynthetic rate samples at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 17, 1987.
[Chl-a = chlorophyll-a; Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Filter replicate	Chl-a	Pheo
H-PY	1	Low	1	1	5.6	6.9
			1	2	5.2	7.3
			2	1	5.0	6.3
			2	2	5.0	5.9
	3	High	1	1	4.8	3.5
			1	2	4.8	3.1
			2	1	6.3	4.0
			2	2	6.1	4.6
EC	1	Low	1	1	5.0	6.3
			1	2	5.2	6.2
			2	1	6.8	6.4
			2	2	6.8	7.1
	3	High	1	1	7.5	5.6
			1	2	8.3	4.7
			2	1	9.9	4.8
			2	2	9.5	5.0
M-MH	1	Low	1	1	5.1	5.9
			1	2	5.4	5.5
			2	1	4.7	5.8
			2	2	4.5	6.1
	3	High	1	1	22.4	11.5
			1	2	28.7	8.4
			2	1	17.0	5.9
			2	2	18.8	4.8
MH/GF	1	Low	1	1	5.4	4.6
			1	2	5.6	6.4
			2	1	5.4	6.8
			2	2	5.6	6.8
	3	High	1	1	10.0	4.6
			1	2	10.6	5.5
			2	1	10.9	4.8
			2	2	11.1	4.8

Table E-6.--Chlorophyll a and pheopigment concentrations from photosynthetic rate samples at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 20, 1987.
[Chl-a = chlorophyll-a; Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Filter replicate	Chl-a	Pheo
MIXED	1	High	1	1	26.5	14.6
			1	2	25.1	15.5
			2	1	27.8	17.2
			2	2	28.3	17.1
	3	Low	1	1	45.8	26.1
			1	2	44.9	16.7
			2	1	44.0	12.9
			2	2	39.5	14.2
NV	1	High	1	1	37.7	16.8
			1	2	35.9	20.2
			2	1	34.9	16.5
			2	2	34.1	20.4
	3	Low	1	1	55.6	21.0
			1	2	64.6	23.8
			2	1	62.8	21.7
			2	2	62.8	18.5
HYD	1	High	1	1	19.3	12.3
			1	2	20.6	10.9
			2	1	13.5	9.0
			2	2	13.5	9.8
	3	Low	1	1	29.6	11.4
			1	2	29.6	10.7
			2	1	30.5	10.6
			2	2	32.1	10.5

Table E-7.--Chlorophyll-a and pheopigment from photosynthetic rate samples at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 31, 1987

[Chl-a = chlorophyll-a; Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Filter replicate	Chl-a	Pheo
MIXED	1	Low	1	1	15.7	13.5
			1	2	16.2	12.7
			2	1	12.6	11.9
			2	2	12.6	12.3
	3	High	1	1	40.4	12.5
			1	2	39.5	14.2
			2	1	41.3	9.3
			2	2	40.4	13.3
NV	1	Low	1	1	39.5	14.2
			1	2	36.8	16.1
			2	1	38.6	15.9
			2	2	41.3	14.8
	3	High	1	1	54.7	10.8
			1	2	53.8	10.9
			2	1	52.9	12.6
			2	2	56.5	13.7
HYD	1	Low	1	1	10.8	10.2
			1	2	11.2	10.5
			2	1	8.5	12.0
			2	2	8.5	12.4
	3	High	1	1	27.8	11.7
			1	2	28.7	11.2
			2	1	26.5	11.0
			2	2	26.5	10.2

Table E-8.--Chlorophyll a and pheopigment concentrations from photosynthetic rate samples at vegetated (MIXED, HYD) and unvegetated (NV) sites, October 29, 1987.
[Chl-a = chlorophyll-a; Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon.]

Site	Time	Tide	Subsite	Filter replicate	Chl-a	Pheo
MIXED	1	Low	1	1	8.4	9.1
			1	2	8.1	9.1
			2	1	8.8	8.3
			2	2	8.6	8.9
	3	High	1	1	7.0	8.6
			1	2	7.0	8.6
			2	1	8.1	8.3
			2	2	7.9	8.7
NV	1	Low	1	1	6.1	10.0
			1	2	5.6	10.5
			2	1	6.3	10.8
			2	2	6.5	11.1
	3	High	1	1	6.6	6.3
			1	2	6.3	6.8
			2	1	2.9	3.6
			2	2	2.7	3.3
HYD	1	Low	1	1	5.0	7.9
			1	2	6.5	9.6
			2	1	9.9	12.9
			2	2	9.7	12.4
	3	High	1	1	5.9	9.9
			1	2	6.5	9.5
			2	1	5.6	6.6
			2	2	5.6	7.2

Table E-9.--Chlorophyll-*a* and pheopigment concentrations from photosynthetic rate samples at vegetated (MIXED, HYD) and unvegetated (NV) sites, November 4, 1987.
[Chl-*a* = chlorophyll-*a*, Pheo = pheopigment; all concentrations are in micrograms per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon.]

Site	Time	Tide	Subsite	Filter replicate	Chl-*a*	Pheo
MIXED	1	High	1	1	6.5	9.3
			1	2	6.6	9.3
			2	1	7.2	10.4
			2	2	8.3	10.9
	3	Low	1	1	5.9	6.1
			1	2	5.7	6.7
			2	1	5.0	7.0
			2	2	3.6	4.8
NV	1	High	1	1	6.8	9.1
			1	2	7.2	9.1
			2	1	7.7	9.3
			2	2	7.5	9.5
	3	Low	1	1	8.6	12.4
			1	2	8.8	12.1
			2	1	8.1	14.7
			2	2	8.3	15.0
HYD	1	High	1	1	5.2	7.7
			1	2	5.9	7.2
			2	1	5.2	9.2
			2	2	4.7	9.1
	3	Low	1	1	5.2	8.9
			1	2	5.9	9.7
			2	1	3.6	7.9
			2	2	3.1	8.3

Table E-10.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 10, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
H-PY	1	High	1	1	4.99	78.8
			2	1	6.09	73.9
EC	1	High	1	1	6.71	87.4
			2	1	9.17	97.0
M-MH	1	High	1	1	3.50	45.4
			2	1	3.95	32.3
MH/GF	1	High	1	1	0.08	11.5
			2	1	1.33	10.3

Table E-11.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 17, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
H-PY	1	Low	1	1	3.09	47.0
				2	3.13	68.3
				3	3.11	8.6
			2	1	4.34	80.4
				2	3.25	81.4
				3	7.67	125.9
	3	High	1	1	0.63	8.7
				2	0.38	12.8
				3	0.27	4.5
			2	1	0.55	6.3
				2	2.36	34.4
				3	0.59	14.5
EC	1	Low	1	1	8.04	148.8
				2	4.73	76.4
				3	2.12	53.3
			2	1	2.89	67.6
				2	2.02	42.5
				3	2.59	116.4
	3	High	1	1	0.43	11.3
				2	0.28	7.0
				3	0.47	15.2
			2	1	2.37	29.2
				2	2.76	35.4
				3	0.86	23.6
M-MH	1	Low	1	1	0.45	16.9
				2	0.33	13.6
				3	0.48	20.1
			2	1	3.40	84.7
				2	2.61	48.0
				3	3.39	65.2
	3	High	1	1	0.57	19.3
				2	1.37	48.3
				3	3.24	187.7
			2	1	0.07	6.3
				2	2.48	94.1
				3	0.57	34.0

Table E-11.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 17, 1987, continued.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
MH/GF	1	Low	1	1	1.36	44.5
				2	2.91	61.0
				3	2.80	64.2
			2	1	8.45	160.7
				2	3.12	88.0
				3	4.41	90.3
	3	High	1	1	2.12	39.3
				2	1.87	9.4
				3	1.61	65.4
			2	1	0.54	10.8
				2	0.99	49.1
				3	2.36	84.0

Table E-12.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 20, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
MIXED	1	High	1	1	30.80	268.0
			1	2	23.99	245.6
			1	3	20.88	249.7
			2	1	28.79	302.1
			2	2	20.62	227.3
			2	3	18.61	210.9
	3	Low	1	1	10.35	97.1
			1	2	5.80	58.2
			1	3	5.48	59.4
			2	1	2.17	30.6
			2	2	11.05	38.4
			2	3	4.41	43.7
NV	1	High	1	1	8.56	77.4
			1	2	1.73	27.1
			1	3	0.85	13.8
			2	1	6.82	131.1
			2	2	4.72	78.6
			2	3	11.96	146.0
	3	Low	1	1	1.46	30.8
			1	2	3.57	60.6
			1	3	1.41	36.2
			2	1	8.16	85.9
			2	2	6.72	91.3
			2	3	8.48	112.9
HYD	1	High	1	1	18.04	224.5
			1	2	15.04	173.3
			1	3	9.43	128.5
			2	1	2.57	17.7
			2	2	6.20	75.7
			2	3	3.07	68.0
	3	Low	1	1	16.43	126.5
			1	2	3.80	52.9
			1	3	1.46	32.1
			2	1	5.21	4.8
			2	2	5.83	78.6
			2	3	5.44	29.3

Table E-13.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 31, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
MIXED	1	Low	1	1	0.12	18.6
			1	2	0.29	13.6
			1	3	1.05	39.1
			2	1	2.91	117.6
			2	2	2.29	86.0
			2	3	1.47	63.3
	3	High	1	1	3.09	108.4
			1	2	3.50	92.7
			1	3	3.34	127.7
			2	1	2.07	75.3
			2	2	2.21	17.0
			2	3	2.36	98.0
NV	1	Low	1	1	1.84	72.8
			1	2	0.39	20.2
			1	3	0.50	9.9
			2	1	1.81	73.1
			2	2	1.64	58.1
			2	3	0.82	29.9
	3	High	1	1	0.95	40.6
			1	2	0.79	12.2
			1	3	4.74	75.7
			2	1	1.91	64.1
			2	2	1.20	33.5
			2	3	0.73	14.3
HYD	1	Low	1	1	0.68	27.5
			1	2	2.56	92.1
			1	3	0.10	2.4
			2	1	2.44	100.2
			2	2	0.35	15.2
			2	3	2.89	57.7
	3	High	1	1	2.58	91.7
			1	2	5.24	162.1
			1	3	3.01	115.3
			2	1	1.68	62.4
			2	2	1.10	27.2
			2	3	2.98	112.0

Table E-14.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (MIXED, HYD) and unvegetated (NV) sites, October 29, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
MIXED	1	Low	1	1	10.18	45.2
			1	2	9.72	42.1
			1	3	10.32	46.1
			2	1	10.56	106.9
			2	2	11.59	109.3
			2	3	10.69	108.6
	3	High	1	1	6.57	19.5
			1	2	8.23	19.2
			1	3	5.64	15.3
			2	1	4.54	55.3
			2	2	2.83	9.6
			2	3	4.46	10.1
NV	1	Low	1	1	7.90	74.7
			1	2	8.65	79.7
			1	3	5.76	40.4
			2	1	7.72	76.6
			2	2	7.35	57.7
			2	3	8.50	72.0
	3	High	1	1	1.63	6.2
			1	2	4.48	6.3
			1	3	2.10	-1.4
			2	1	1.55	4.1
			2	2	1.28	-1.0
			2	3	3.14	6.7
HYD	1	Low	1	1	3.40	35.1
			1	2	4.10	35.8
			1	3	4.43	29.7
			2	1	3.76	26.6
			2	2	5.24	39.7
			2	3	7.22	34.7
	3	High	1	1	8.38	44.0
			1	2	6.69	32.8
			1	3	8.94	16.2
			2	1	13.95	60.7
			2	2	11.88	32.7
			2	3	9.17	16.5

Table E-15.--Glutamate uptake (bacterial activity) and thymidine incorporation (bacterial growth rate) at vegetated (MIXED, HYD) and unvegetated (NV) sites, November 4, 1987.
[Glutamate uptake in percent per hour, Thymidine incorporation in picomoles per liter per hour; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Replicate	Glutamate uptake	Thymidine incorporation
MIXED	1	High	1	1	3.30	22.2
			1	2	6.65	42.9
			1	3	2.88	23.6
			2	1	1.61	12.8
			2	2	1.86	7.8
			2	3	1.74	10.3
	3	Low	1	1	2.74	-6.3
			1	2	11.33	25.8
			1	3	4.85	10.2
			2	1	6.48	35.6
			2	2	7.06	25.4
			2	3	6.84	23.4
NV	1	High	1	1	7.05	39.1
			1	2	4.03	18.4
			1	3	5.54	28.8
			2	1	4.81	29.2
			2	2	3.36	21.8
			2	3	4.81	23.5
	3	Low	1	1	12.00	20.4
			1	2	2.88	11.1
			1	3	4.02	9.1
			2	1	3.52	18.0
			2	2	1.31	9.9
			2	3	2.50	12.3
HYD	1	High	1	1	2.31	18.4
			1	2	1.18	1.8
			1	3	1.10	3.9
			2	1	3.93	12.4
			2	2	2.05	31.9
			2	3	3.25	5.7
	3	Low	1	1	2.58	8.0
			1	2	3.36	12.1
			1	3	5.05	19.0
			2	1	6.96	26.9
			2	2	6.81	36.2
			2	3	4.66	19.0

Table E-16.--List of all zooplankton samples collected at vegetated (H-PY, M-MH, MIXED, HYD) and unvegetated (EC, MH/GF, NV) sites in 1987. [Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon, Tide: Mid=midway between high and low tide]

Date	Site	Time	Tide	Number of samples collected
June 10	H-PY	4	Mid	2
	EC	4	Mid	2
	M-MH	4	Mid	2
	MH/GF	4	Mid	2
June 17	H-PY	1	Low	2
		3	High	2
	EC	1	Low	2
		3	High	2
	M-MH	1	Low	2
		3	High	2
	MH/GF	1	Low	2
		3	High	2
August 20	MIXED	1	High	2
		3	Low	2
	NV	1	High	2
		3	Low	2
	HYD	1	High	2
		3	Low	2
August 31	MIXED	1	Low	2
		3	High	2
	NV	1	Low	2
		3	High	2
	HYD	1	Low	2
		3	High	2
October 29	MIXED	1	Low	2
		3	High	2
	NV	1	Low	2
		3	High	2
	HYD	1	Low	2
		3	High	2
November 4	MIXED	1	High	2
		3	Low	2
	NV	1	High	2
		3	Low	2
	HYD	1	High	2
		3	Low	2

Table E-17.--Zooplankton communities at vegetated (MIXED, HYD) and unvegetated (NV) sites, August 20, 1987.
[all densities are in number of animals per liter; Time: 1=dawn, 2=midmorning, 3=noon, 4=midafternoon]

Site	Time	Tide	Subsite	Cladocera	Copepoda	Rotifera	Total
MIXED	1	High	1	135	185	401	935
			2	101	205	496	1023
	3	Low	1	130	216	383	946
			2	96	132	339	602
NV	1	High	1	55	45	206	318
			2	48	57	241	349
	3	Low	1	7	66	65	143
			2	16	97	139	252
HYD	1	High	1	48	241	244	651
			2	26	92	69	215
	3	Low	1	95	217	221	628
			2	313	323	272	1292

Table E-18.--List of all vegetation-associated macroinvertebrate samples collected at vegetated (H-PY, M-MH, MIXED, HYD) and unvegetated (EC, MH/GF, NV) sites in 1987.

Date	Site	Time	Number of samples collected
June 17	H-PY	Day	1
	EC	Day	1
	M-MH	Day	2
	MH/GF	Day	0
June 29	H-PY	Day	2
	EC	Day	2
	M-MH	Day	2
	MH/GF	Day	2
September 9	MIXED	Day	4
	HYD	Day	4
October 9	MIXED	Night	5
October 15	NV	Night	5
	HYD	Night	5
November 9	MIXED	Day	5
	NV	Day	5
	HYD	Day	5

Table E-19.--Vegetation-associated macroinvertebrate communities at vegetated (HYD) site, September 9, 1987.
[all units are number of animals per square meter]

Taxon	HYD 2	HYD 5	MIXED 1	MIXED 5
Turbellaria (flatworms)	0	1	0	3
Oligochaeta (aquatic earthworms)	0	54	34	162
Hirudinea (leeches)	10	15	5	15
Isopods (aquatic sow bugs)	0	0	0	3
Amphipoda (scuds)	16	15	19	69
Hydracarina (water mites)	26	17	5	24
Ephemeroptera (mayflies)	47	115	11	21
Odonata (dragonflies)	103	182	92	192
Tricoptera (caddisflies)	15	14	33	90
Hemiptera (true bugs)	0	1	0	0
Diptera larvae (true flies)	29	84	97	231
Diptera pupa (true flies)	0	1	0	0
Diptera adults (true flies)	1	3	0	0
Ancylidae (limpets)	1	29	0	6
Unknown pupae	2	3	0	0
Unknown	0	9	0	0

Table E-20.--Ichthyoplankton at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 10, 1987.
[Ather = Atherinidae, Clup = Clupeidae, Centr = Centrarchidae, Cyprin = Cyprinidae, Unid = unidentified; all densities are number of animals per 10 cubic meters]

Site	Time	Tide	Subsite	Ather	Clup	Centr	Cypr	Unid
H-PY	4	Mid	1	0.49	0.41	0.57	0	0
EC	4	Mid	1	0	2.41	0	0	0
M-MH	4	Mid	1	0.33	0.17	0	0	0
			2	0	1.96	0	0	0
MH/GF	4	Mid	1	0.16	2.97	0	0	0
			2	1.19	2.54	0	0	0.08

Table E-21.--Ichthyoplankton at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 17, 1987.
[Ather = Atherinidae, Clup = Clupeidae, Centr = Centrarchidae, Cyprin = Cyprinidae, Unid = unidentified; all densities are number of animals per 10 cubic meters]

Site	Time	Tide	Subsite	Ather	Clup	Centr	Cypr	Unid
H-PY	2	Mid	1	15.01	0	0	0	0.30
			2	13.68	0.14	0	0.14	0
EC	2	Mid	1	4.68	3.59	0.44	0	0
			2	10.70	3.98	0.42	0.10	0
M-MH	2	Mid	1	1.52	2.23	0.10	0	0
			2	4.97	0.53	0.11	0.21	0
MH/GF	2	Mid	1	0	2.90	0	0	0.05
			2	0.06	5.54	0	0	0

Table E-22.--Fish collected by trawling at vegetated (H-PY, M-MH) and unvegetated (EC, MH/GF) sites, June 19, 1987.
[all units are number of fish per 3-minute trawl; Trawl designated H-PY/EC overlapped both sites]

Species	Site		
	H-PY/EC	M-MH	MH/GF
Ictalurus nebulosus (Brown bullhead)	1	0	0
Lepomis gibbosus (Pumpkinseed)	5	2	0
Lepomis macrochirus (Bluegill)	1	0	0
Morone americana (White perch)	13	22	14
Notropis hudsonius (Spottail shiner)	0	2	1

Table E-23.--Fish collected by pop netting at vegetated (MIXED, HYD) and unvegetated (NV) sites, October 9, 1987.
[all units are numbers of fish per pop net]

Species	Site			
	MIXED	NV		HYD
	1	1	2	1
Carassius auratus (Goldfish)	0	0	0	2
Etheostoma olmsteadi (Tessellated darter)	1	0	0	3
Fundulus diaphanus (Banded killifish)	1	0	0	14
Lepomis gibbosus (Pumpkinseed)	0	0	0	74
Lepomis macrochirus (Bluegill)	5	0	0	120
Menidia beryllina (inland silverside)	16	0	0	0
Notropis hudsonius (Spottail shiner)	1	0	0	0

Table E-24.--Fish collected in macroinvertebrate bag sampler at vegetated (MIXED, HYD) and unvegetated (NV) sites in 1987.
[all units are numbers of fish per bag sampler, each site has five samples (1-5); MIXED samples were collected on October 6, HYD were collected on October; MIXED samples were collected on November 19, HYD were collected on November 9]

Species	MIXED					HYD				
	1	2	3	4	5	1	2	3	4	5
September 10										
Anguilla rostrata (American eel)	1	0	0	0		0	0	0	0	
Fundulus diaphanus (Banded killifish)	4	0	1	4		0	2	0	14	
Lepomis gibbosus (Pumpkinseed)	1	0	0	8		0	0	0	0	
Lepomis macrochirus (Bluegill)	12	7	0	49		0	25	0	7	
October										
Etheostoma olmsteadi (Tessellated darter)	0	0	0	0	0	1	0	0	0	0
Fundulus diaphanus (Banded killifish)	0	0	0	0	2	3	0	1	1	2
Lepomis gibbosus (Pumpkinseed)	0	0	0	0	0	20	0	0	4	0
Lepomis macrochirus (Bluegill)	0	0	0	0	0	0	0	17	0	0
Morone americana (white perch)	0	6	0	0	0	0	0	0	0	2
November										
Anguilla rostrata (American eel)	1	0	0	0	0	0	0	0	0	0
Fundulus diaphanus (Banded killifish)	0	0	0	0	0	1	0	0	2	0
Ictalurus nebulosus (Brown bullhead)	0	0	0	0	1	0	0	0	0	0

Table E-24.--Fish collected in macroinvertebrate bag sampler at vegetated (MIXED, HYD) and unvegetated (NV) sites in 1987, continued
[all units are numbers of fish per bag sampler, each site has five samples (1-5); MIXED samples were collected on October 6, HYD were collected on October; MIXED samples were collected on November 19, HYD were collected on November 9]

Species	MIXED					HYD				
	1	2	3	4	5	1	2	3	4	5
Lepomis gibbosus (Pumpkinseed)	0	0	0	0	0	1	0	0	0	0
Lepomis macrochirus (Bluegill)	0	0	0	0	0	4	5	0	2	5

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