# Nutrients in Somes Sound and the Associated Watershed, Mount Desert Island, Maine

Peter H. Doering
Charles T. Roman

Technical Report NPS/NAROSS/NRTR-94/22

May 1994

Department of the Interior
National Park Service
North Atlantic Region

# *Nutrients in Somes Sound and the Associated Watershed, Mount Desert Island, Maine*

*Peter H. Doering*
*Graduate School of Oceanography*
*University of Rhode Island*
*Narragansett, RI 02882*

*Charles T. Roman*[1]
*National Park Service*
*Cooperative Park Studies Unit*
*University of Rhode Island*
*Narragansett, RI 02882*

[1]*Present Affiliation:*
*National Biological Survey*

*May, 1994*

*National Park Service*
*North Atlantic Region*
*Office of Scientific Studies*
*15 State Street*
*Boston, Massachusetts 02109-3572*

# EXECUTIVE SUMMARY

Somes Sound, located on Mount Desert Island (Maine, USA), is classified as a fjord-type estuary because of it's long (8km) and narrow (1km) configuration, deep basins throughout the estuary (40-50m deep), and a relatively shallow sill at the mouth (10-12m). The purpose of this study was to collect baseline water quality information on the Sound and the freshwater brooks flowing into the Sound. A depauperate water quality data base and concern over the potential for increased residential development throughout the Somes Sound watershed were incentives for initiating this study.

Seven surveys, encompassing Spring, Summer and Fall, were conducted between 1991 and 1992. Each survey included sampling of surface water brooks (totalling 16) entering the Sound and 10-12 stations throughout the Sound. For brooks and the Somesville Pollution Control Facility, volume discharge, dissolved inorganic nutrient concentrations (ammonia, nitrate + nitrite, phosphate, silicate) and pH were determined. Within the Sound, vertical surface to bottom profiles of temperature, salinity and dissolved oxygen were obtained. Water samples for dissolved inorganic nutrients (as for freshwater) were collected at 3-4 depths throughout the water column profile, with chlorophyll *a* obtained from the surface.

Six brooks accounted for 86% of the freshwater discharge to Somes Sound (Somes Pond drainage, Kitteredge Brook, Denning Brook, Richardson Brook, Hadlock Brook, Man-of-War Brook). The Somesville Pollution Control Facility contributed less than 0.1% of the freshwater input. With regard to nutrient loading to the Sound (discharge multiplied by nutrient concentration), the Somesville Facility dominated the inputs contributing about 37% of the dissolved inorganic nitrogen and 51% of the phosphate. Despite the siting of a wastewater treatment facility within the Sound, it is noted that the concentration of nutrients entering the Sound is very low when compared to other estuaries throughout the world, and moreover, the annual input of dissolved inorganic nitrogen and phosphorus is nearly two orders of magnitude below that of other systems (e.g., Delaware Bay, Narragansett Bay, and others).

Similarly, when compared to other systems low concentrations of nutrients were also noted in the Sound waters. Some expected seasonal fluctuations were observed, with nitrate + nitrite dominating the dissolved inorganic nitrogen pool in the early spring and

fall and ammonia dominating in summer. The source of ammonia was most likely in situ remineralization of organic matter that resulted in elevated levels in bottom waters.

Somes Sound was well-oxygenated during all seasons with concentrations never falling below 6 mg/l. Hypoxic or anoxic conditions, a characteristic of some fjords, were never encountered. Chlorophyll *a* concentrations averaged less than 0.79 µg/l indicating that Somes Sound has a low accumulation of phytoplankton biomass relative to other estuaries.

A simple steady state box model was developed to evaluate flushing characteristics of the Sound. The median residence time of water in the Sound was calculated at 7.2 days (range 0.9 days to 50 days) suggesting a well-flushed estuary. The model was also used to predict the concentration of nutrients in the Sound if nutrient inputs from either the freshwater sources or the ocean were increased (i.e., simulating increased development within the watershed or coastal zone). Increasing freshwater nutrient input by 20% would have little effect on Sound water quality; however, increasing the oceanic input by 20% would result in a nearly 20% increase in nutrient concentration in the Sound.

Somes Sound is a relatively pristine estuary -- nutrient inputs are low, sound nutrient and chlorophyll *a* levels are low, and the water column is always well-saturated with oxygen. To insure that water quality in Somes Sound is maintained and so threats to the Sound can be detected early, a long-term water quality monitoring program is recommended. In addition, it is suggested that some living resource inventories be initiated. Somes Sound is one of the region's most outstanding coastal features, yet a comprehensive natural resource data base if lacking.

# TABLE OF CONTENTS

# LIST OF FIGURES



# LIST OF TABLES

# ACKNOWLEDGMENTS

We extend sincere thanks to our many colleagues who assisted with the sample cruises, sample processing, and data analysis;  Lynn Beatty, Karen Anderson, Charles Farris, Charles LaBash, Eric Klos, Candace Oviatt, Tara Schraga, Melissa Swanson, and Brendhan Zubricki.  Special thanks go to the "Miss Anne" Captain's, Don Beal and Tim Higgins.  Their expert skills and good humor were much appreciated.

Superintendent Robert Reynolds, Deputy Superintendent Len Bobinchock and Resource Management Specialists' Bob Breen and Judy Hazen Connery all provided much needed logistical support and coordination during our many trips to Acadia National Park.

We are indebted to Tom Bouchard and Del Chipman of the Mt. Desert Pollution Control Facility for providing flow data and water samples from the Somesville facility.

Funding for this study was provided by the National Park Service, Water Resources Division, Fort Collins.  This project was administered through the National Park Service Cooperative Park Studies Unit at the University of Rhode Island.

# INTRODUCTION

Somes Sound (Mount Desert Island, Maine) is the only true fjord-type estuary on the eastern seaboard (Fig. 1). Only 21% of Somes Sound's 34 km (21 miles) of shoreline and 44% of the total Somes Sound watershed (total = 78.8 $km^2$ or 19,482 acres) lie within the protective boundaries of Acadia National Park. Despite the physiographic uniqueness of the Somes Sound fjord and the potential for non-point nutrient inputs from future residential and recreational development, very little research or monitoring has been conducted in the Sound. It is interesting to note that between 1988 and 2010 the northeast coastal population is estimated to increase by 10% -- in Hancock County the increase is estimated from 15-24% making Hancock one of the fastest growing coastal areas of Maine (Culliton et al. 1990). It is becoming increasingly evident that degradation of coastal water quality is a result of development patterns (Ryther and Dunstan 1971, Nixon et al. 1986, Valiela et al. 1990).

The purpose of this study was to collect baseline water quality and hydrographic data (circulation and flushing characteristics) on Somes Sound and the freshwater streams discharging into the Sound. These baseline data will build upon the limited water quality nutrient database from previous studies (Ketchum and Cass 1986, Ketchum 1986). Continued baseline monitoring is essential so that ecosystem degradation can be anticipated and effective management actions implemented.

## The Study Site

Somes Sound is approximately 8 km long and only 1 km at its widest point. This narrow glacially-carved estuary is immediately flanked by steep-sided Norumbega Mountain (259 m) to the east and Acadia, St. Sauveur and Flying Mountains (up to 200 m) to the west. Several basins from 40-50 m deep occupy the western portion of the Sound while the eastern side slopes more gradually (Fig. 2). The depth of the sill is only 10-12 m. The bottom sediments of the Sound are characterized by sand and gravel near the mouth and by clay and silt with a progression northward toward the head of the Sound (Folger et al. 1972).

These characteristics define Somes Sound as a fjord -- long and narrow configuration, steep rising shoreline, deep waters throughout with a shallow sill at the mouth.

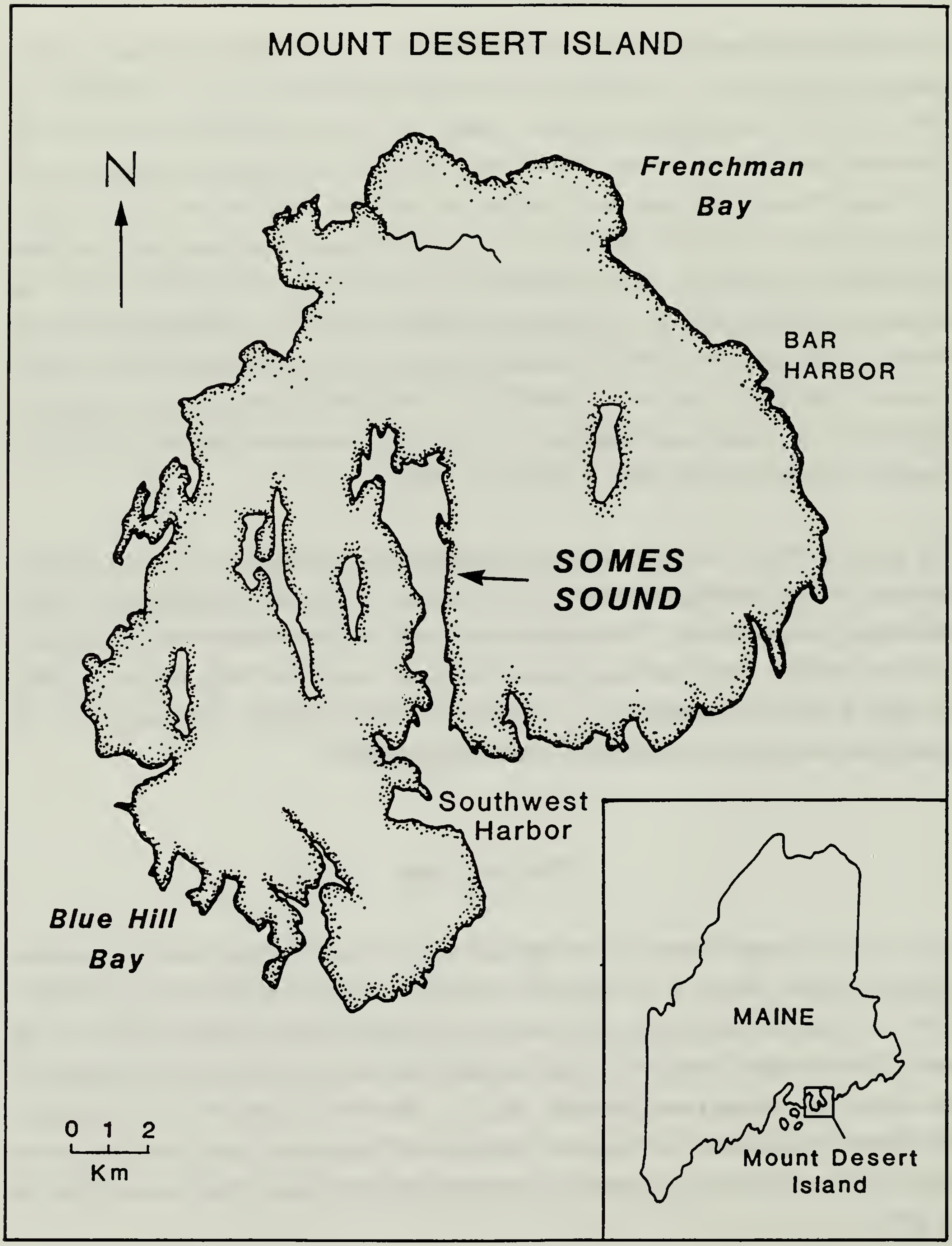



Fig. 1. Regional location of Somes Sound.

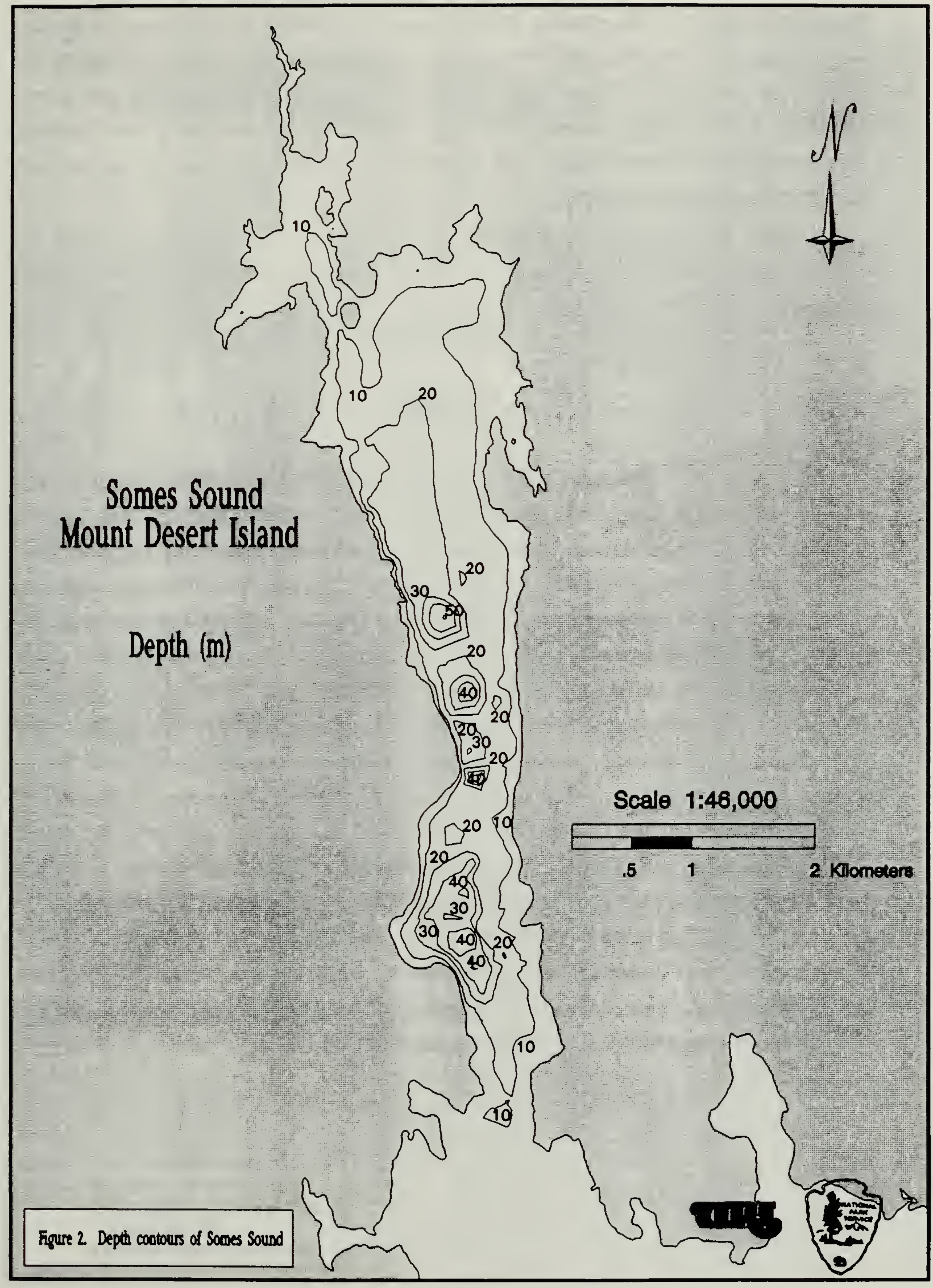



Figure 2. Depth contours of Somes Sound

Conceptually, circulation can be restricted to surface layers of the fjord. Freshwater flows seaward within the estuarine surface layer, while inflow of ocean water is limited by the depth of the shallow sill (Rattray 1967). Thus, renewal of deep water behind the sill is only occasional. If deep water renewal is infrequent then hypoxia or anoxia can develop. One objective of this study was to describe the circulation and flushing characteristics of Somes Sound and to predict the potential threat of low oxygen concentrations in deeper waters.

# METHODS

## Sampling

Seven cruises were conducted over a period of two years aboard the National Park Service vessel, Miss Anne (1991: June 20, Sept 12, Oct. 24; 1992: April 23, May 14, July 22, Aug. 18). Twelve stations were occupied on each cruise, excepting June 20, 1991 when 10 stations were visited (Fig. 3; see Appendix 1 for station coordinates). At each station vertical profiles of temperature (°C), salinity (ppt) and dissolved oxygen (mg $0_2L^{-1}$) were obtained electronically with a Hydrolab Surveyor 2. Data were collected every meter over a 5 meter surface layer and every 3-5 meters at depth. Prior to each cruise the instrument was calibrated according to manufacturers instructions. In addition, the salinity probe was periodically checked against a seawater standard maintained in our laboratory and temperature probe against an ASTM certified thermometer. Because of battery problems on the October 1991 cruise both the salinity and oxygen sensors malfunctioned, and thus, a limited data set was obtained. Water samples were taken back to the laboratory and analyzed for salinity on an Autosal Model 8400A Salinometer.

Water samples were collected with a Kemmerer Water Bottle at the surface (~ 1.0m) for dissolved inorganic nutrients and chlorophyll *a*. Dissolved inorganic nutrient samples were obtained at an additional 2-4 depths spanning the remainder of the water column.

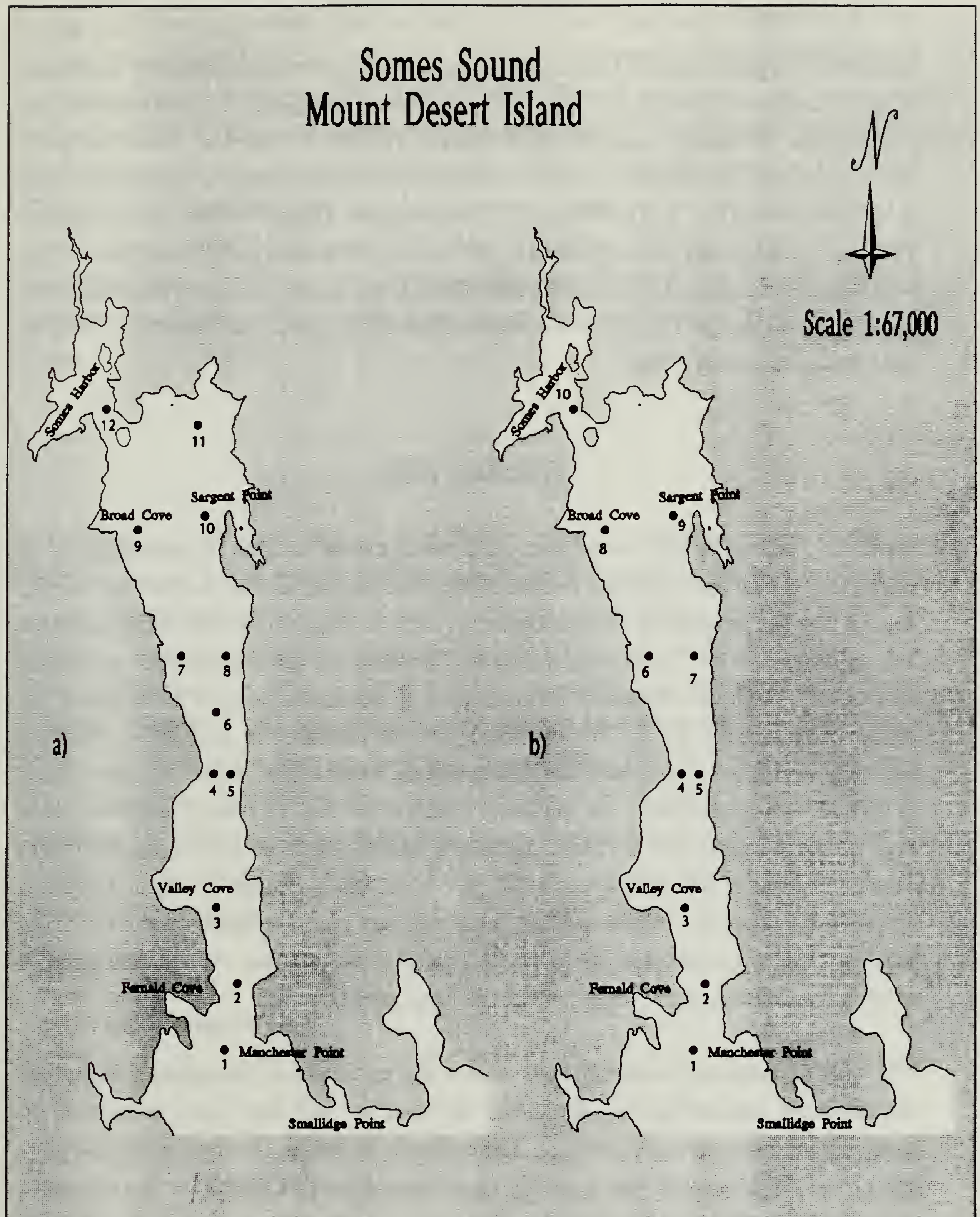



Figure 3. Somes Sound water sampling stations
a) twelve stations occupied on all cruises, except 20 June 1991
b) ten stations occupied on 20 June 1991

## Laboratory Analysis

Dissolved inorganic nutrient samples were filtered through 0.45 µm pore size membrane filters (Nuclepore, Poretics) into 100 ml plastic bottles and preserved with two drops of chloroform following Lambert and Oviatt (1986). Samples were analyzed colorimetrically for ammonia, nitrate and nitrite, soluble reactive phosphorus and dissolved silicon on a Technician II Autoanalyzer (Lambert and Oviatt 1986). Chlorophyll *a* samples were filtered (10 ml) through Whatman GF/F glass fiber filters. $MgCO_3$ was added as a preservative and filters were stored frozen, in darkness, over desiccant until analysis by the fluorometric method of Yentsch and Menzel (1962) as modified by Lorenzen (1966).

## Freshwater Inputs

On the day preceding each cruise freshwater streams were sampled for discharge ($m^3$ of water/sec), dissolved inorganic nutrient concentrations (ammonia, nitrate and nitrite, soluble reactive phosphorus, dissolved silicon) and pH. Nutrient samples were processed and analyzed as above. pH was measured with a Nestor pH pen, calibrated at the start of each cruise. Freshwater discharge was estimated by measuring cross sectional area of the stream and current velocity. Cross sectional area was measured by establishing transects perpendicular to the stream bank and measuring the width of the stream and water depth at several ( ~10) points along the transect. Current velocity was measured at mid-depth at each of these points with a Marsh McBirney Model 201D Electromagnetic Current Meter. Discharge was computed as the product of cross- sectional area and average cross-stream velocity. When feasible, area and flow measurements were taken from existing culverts to minimize variability in cross-sectional profiles. In addition, samples of the Somesville Sewage Treatment Plant effluent were obtained.

The input of nutrients from freshwater sources was calculated by multiplying freshwater discharge by concentrations. Estimates of input on each date were calculated by summing the input from all sources. Somes Sound Pollution Control Facility samples from June 1991 were lost during analysis and inputs from this source for this date were estimated from average concentrations.

Sources were ranked according to their contribution to the total freshwater nutrient input using the following scheme which accounts for the fact that some freshwater sources exhibited seasonal intermittent discharge. The mean discharge of water or nutrients was calculated for each source. For sources which flowed continually this mean was multiplied by 7, the total number of sampling dates. For sources that flowed intermittently the mean was multiplied by the number of times the source was sampled. This calculated total was used to rank the sources in order of importance. Estimates of the annualized nutrient input were obtained by arranging input data by month of year and integrating under the curve. The integrated total was divided by the 7 month period of observation to yield a daily average which in turn was multiplied by 365 to give annual input.

## Hydrodynamics

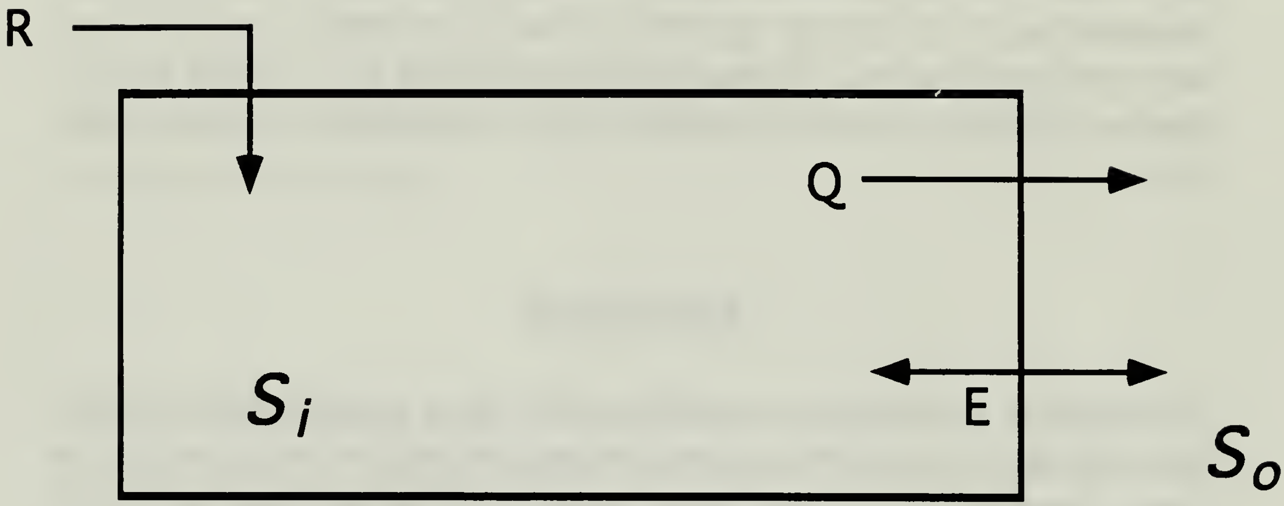
The purpose of the hydrodynamic modelling effort was to estimate rate of exchanges between Somes Sound and the adjacent ocean and the residence times of water in the Sound. Residence time provides a relative estimate of the flushing characteristics of the estuary. This was accomplished by means of the simple box model depicted in Fig. 4. This model treats the entire Sound as one box, in steady state and with instantaneous mixing. It assumes that both water volume and salt are conserved. The definition of terms and solutions for them are given by Officer (1980). Briefly, R is freshwater input, Q is the advective transport of water from the estuary to the ocean, E is the non-advective exchange, $S_i$ is the volume weighted salinity of the estuary, and $S_o$ is the salinity of the oceanic source water. We measure R, $S_i$, and $S_o$ and must calculate Q and E. By conservation of volume,

$$Q = R$$

and by conservation of salt:

$$E = Q\left(\frac{S_i}{S_o - S_i}\right)$$

Exchange of water between the estuary and ocean may be viewed as having two components: one related to advective gravitational circulation processes, represented by Q, and the other related to non-advective, diffusive, tidal processes (Officer and Kester 1991), represented by E. While Q moves water from the estuary to the ocean and thus




R = freshwater input
Q = advective transport
E = non-advective exchange
$S_o$ = salinity of the oceanic water
$S_i$ = volume weighted salinty of Sound

Fig. 4. Components of the Somes Sound hydrodynamic box model.

conserves the volume of the estuary in the face of freshwater input, E exchanges equal volumes of ocean and estuarine water across the boundary. Because these waters are of different salinities, the net result of non-advective exchange processes is exchange of salt. In understanding the behavior of materials in estuaries it is important to know whether exchanges are driven by non-advective tidal forces or by gravitational circulation which is a function of freshwater input. The relationship between the two is quantified by the estuarine parameter $\upsilon$ (Hansen and Rattray 1965; 1966). The estuarine parameter, $\upsilon$, is defined as the ratio of the longitudinal diffusive or non-advective tidal exchange flux to the total longitudinal flux of an index quantity, usually taken as salt. Officer and Kester (1991) present a method for estimating $\upsilon$ by regressing the total longitudinal flux (F) upon freshwater input (R). In terms of our model F = Q+ E. The intercept ($F_{int}$) of the regression of F on R represents the exchange occurring when R=O and there is no freshwater input and hence no gravitational circulation. All exchange with the adjoining ocean is non-advective and tidally driven. For any given freshwater input then

$$\upsilon = \frac{F_{int}}{F}$$

A value near 1.0 implies that most exchange is tidally driven while a value near zero indicates that most of the exchange is driven by freshwater input and the resultant gravitational circulation.

Regardless of the kind of exchange that dominates it is also important to know how long material is likely to reside in the estuary. This retention time will determine the susceptibility of materials to alteration within the estuary (Officer 1980). The residence time of freshwater in the system, defined as the time it would take the freshwater input to accumulate a volume of water equivalent to the volume of freshwater in the estuary, is given by

$$R_{FW} = \frac{V\,[\,1 - S_i/S_o]}{R}$$

where V = volume of estuary, $[1 - (S_i/S_o)]$ = the freshwater fraction and $R_{FW}$ the residence time of freshwater. Other terms are as previously defined. The residence time of salt in the system is given by the mass of salt divided by its rate of influx or efflux.

$$R_S = \frac{(VS_1)}{(QS_1 + ES_1)}$$

Where $R_S$ is the residence time of salt in the system, V is volume and other terms are defined as before. For this model $R_S$ and $R_{FW}$ are equivalent.

These calculations all require the volume weighted salinity. In order to calculate the volume weighted average of salinity or any other constituent, the system was divided into 5 segments shown in Fig. 5. A depth weighted average salinity was calculated for each vertical profile to produce an average salinity at each station. Average salinities from stations within a segment were in turn averaged to produce segmental salinities. These segmental averages were then weighted by the volume of each segment to derive a volume weighted average for the entire Sound.

## RESULTS AND DISCUSSION

### Freshwater Input

Fig. 6 shows the locations of the 16 brooks and one sewage treatment plant which were sampled during the study. Freshwater streams fell into two categories: those flowing continuously and those exhibiting seasonal intermittent discharge. Intermittent sources included three brooks at the head of the Sound in Somesville and several sources along Sargent Drive (Snowmelt 1 and 2, Confluence). The remaining sources had measurable flow on all sampling occasions. Appendix 2 presents freshwater discharge for each input source for each sample date.

The 16 brooks sampled encompass the entire 78.8 $km^2$ watershed of the Sound. Considering that the brooks were sampled near their discharge to the Sound, it is assumed that a significant portion of the non-point source nutrient inputs (e.g., stormwater, septic systems, lawn applications, etc.) to Somes Sound were accounted for. However, it is noted that input of nutrients by groundwater was not estimated and the magnitude of this pathway is unknown. Three overboard discharge pipes within the Sound (from Manchester Point, northward), as identified by the Maine Division of Marine Resources (personal communication, 1994), were not sampled.

The total freshwater input from all point sources (brooks and Treatment Facility) ranged from 0.145 $m^3s^{-1}$ to 2.604 $m^3s^{-1}$ with a mean of 1.190 $m^3s^{-1}$ (Fig. 7). On average six

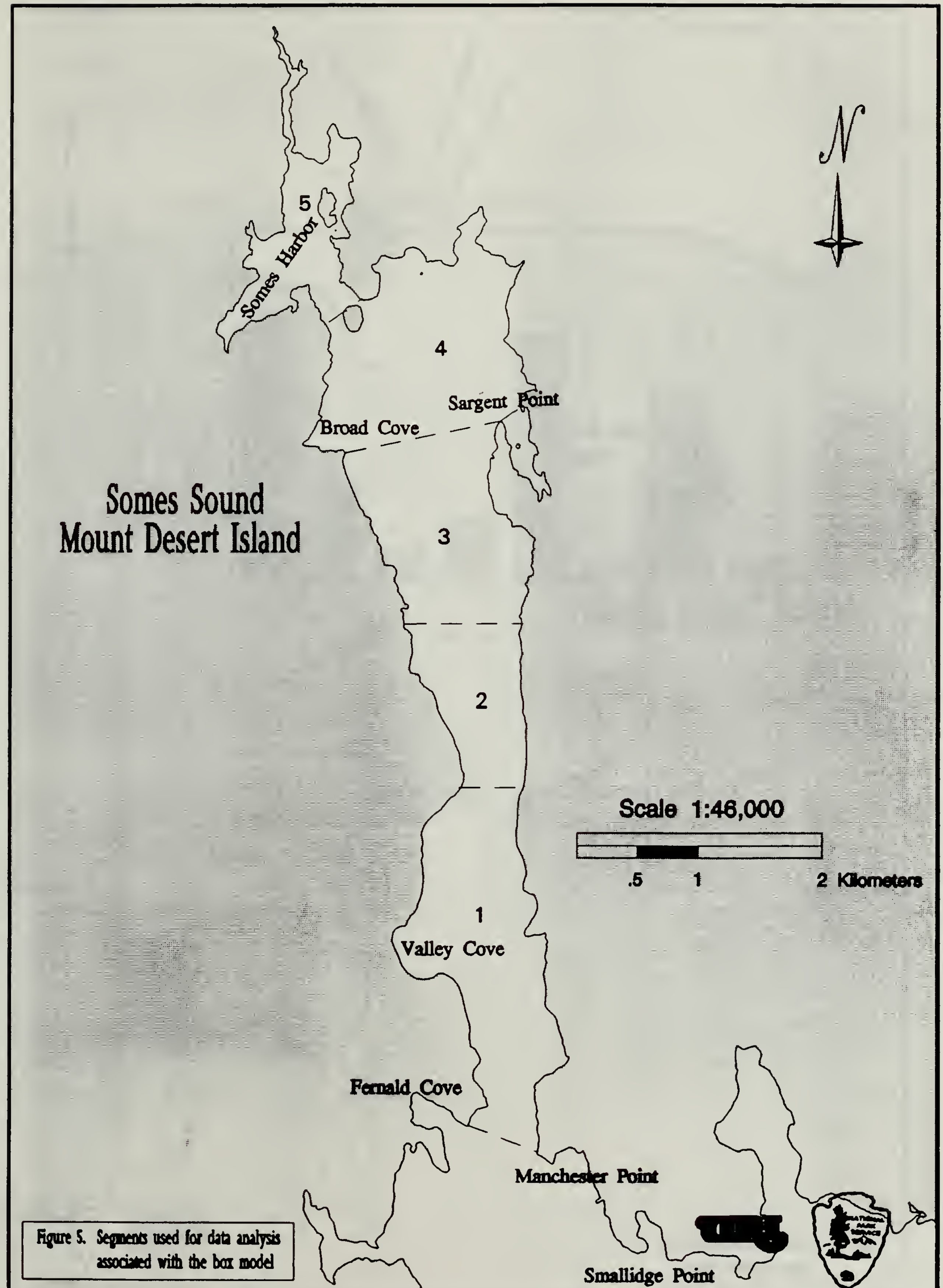



Figure 5. Segments used for data analysis associated with the box model

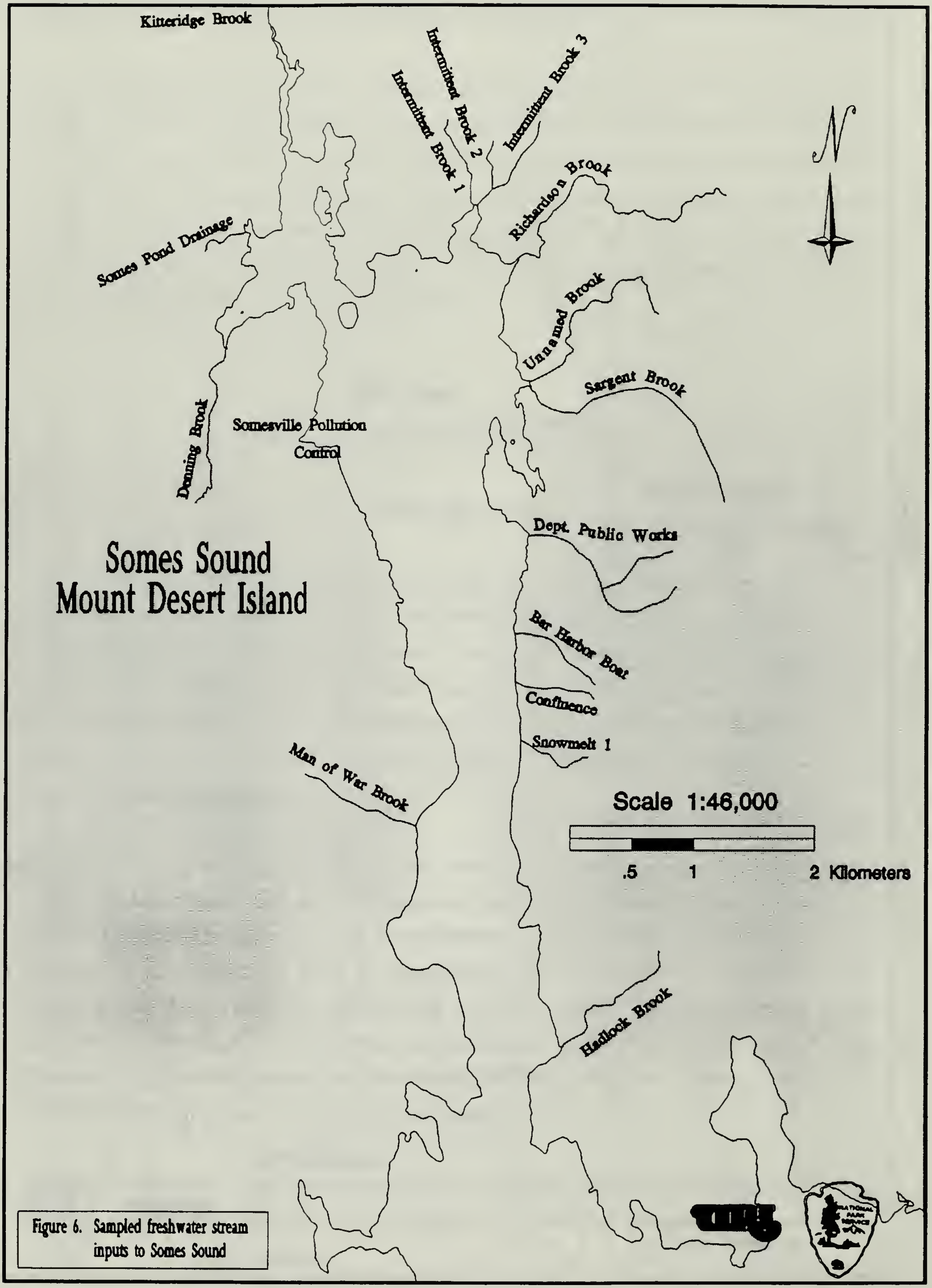



Figure 6. Sampled freshwater stream inputs to Somes Sound

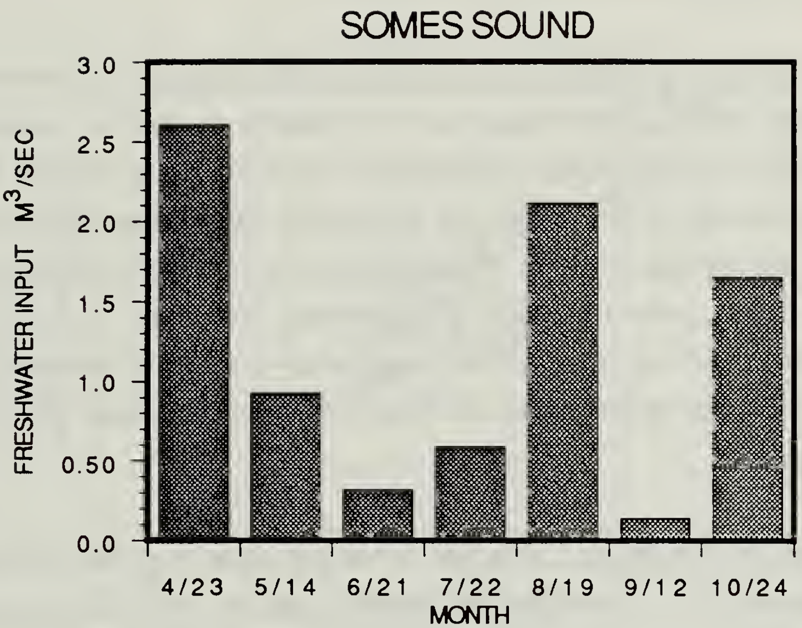



Fig. 7. Total freshwater input to Somes Sound for each sample date.

sources accounted for 86% of the inflow (Somes Pond Drainage 38%, Kitteredge Brook 15%, Denning Brook 11%, Richardson Brook 9%, Hadlock Brook 7%, and Man O War Brook 6%). The Somesville Pollution Control Facility contributed only a small fraction (0.07%) of the freshwater input. Although freshwater input was highest in spring (April) and tended to be low during the summer, there were too few measurements to unequivocally define a pattern of seasonal input (Fig. 7).

The amount of freshwater entering an estuary is an important characteristic. By supplying nutrients, freshwater discharge can affect primary production, especially in the spring (Nixon 1981). The magnitude of freshwater input mostly determines the salinity of an estuary and salinity in turn affects the number and kinds of species present in the system (Remane and Schlieper 1971). The average daily freshwater input to an estuary appears, at least in part, to be a function of the drainage area (Fig. 8). When compared with other systems on the east coast, Somes Sound receives a small freshwater input. Yet given the small size of its drainage area (78.8 $km^2$), Ketchum and Cass 1986), this small input is not unexpected.

The mean nutrient concentrations observed in stream water over the study appear in Table 1 (and Appendix 2). Compared to typical values for river water entering other estuaries in Maine and elsewhere worldwide, Somes Sound brooks generally have extremely low or comparable concentrations of dissolved inorganic nutrients (Table 2). By contrast the effluent from the Somesville Pollution Control Facility has high concentrations of dissolved inorganic nutrients which is typical of such facilities (Tables 3 and 4).

Nitrate + nitrite dominates the total freshwater input of dissolved inorganic nitrogen (DIN; Fig. 9). Variability in freshwater discharge explains about 67% of the variation in the input of DIN (linear regression $n = 7$, $r = 0.818$), suggesting that changes in loading arise primarily from fluctuations in water discharge rather than changes in nutrient concentration of freshwater. The six most important freshwater sources of DIN (Table 5) account for 89% of the input. Despite being an insignificant source of freshwater, the Somesville Pollution Control Facility accounts for 37% of the total freshwater input of nitrogen.

The correlation between phosphate loading and freshwater discharge is low ($r = 0.176$) and not statistically significant. This is undoubtedly because the major freshwater source

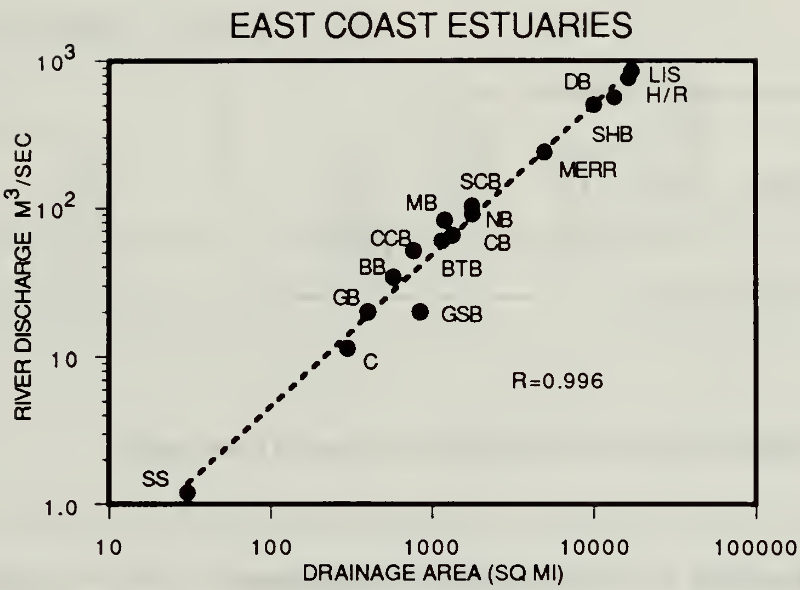



Fig. 8 Freshwater inflow as a function of drainage area for a number of east coast estuaries.

Key:

LIS= Long Island Sound
DB = Delaware Bay
NB = Narragansett Bay
BTB = Barnegat Bay
BB = Buzzards Bay
GSB = Great South Bay
SS = Somes Sound
SCB = Saco Bay

H/R = Hudson/Raritan
MERR = Merrimack
MB = Massachusetts Bay
CCB = Cape Cod Bay
GB = Gardiner's Bay
C = Chincoteague Bay
SHB = Sheepscot Bay
CB = Casco Bay

(All data from NOAA (1989), except Somes Sound)

Table 1. Average characteristics of freshwater brooks entering Somes Sound.

| Parameter | N | Mean | Minimum | Maximum |
|---|---|---|---|---|
| Flow ($m^3 s^{-1}$) | 84 | 0.099 | 0.00 | 0.905 |
| pH | 66 | 4.28 | 2.0 | 7.10 |
| Nutrient Concentrations ( µmoles/l ) | | | | |
| Ammonia | 85 | 0.47 | 0.0 | 6.80 |
| Nitrate & Nitrite | 85 | 1.21 | 0.0 | 7.91 |
| Phosphate | 85 | 0.03 | 0.0 | 0.06 |
| Silicate | 85 | 75.64 | 6.19 | 192.62 |

Table 2. Range of typical nutrient concentrations in river water.

| Nutrient and Location | Concentration (µmoles/l) | Source |
|---|---|---|
| <u>Ammonia</u> | | |
| Narragansett Bay rivers | 3-158 | Doering et al. 1990 |
| Penobscot River | 1.6 - 5.3 | Bartlett et al. 1993 |
| Kennebec River | 1.6 - 2.6 | Bartlett et al. 1993 |
| Somes Sound rivers | 0 - 6.8 | This Study |
| <u>Nitrate</u> | | |
| US rivers | 14.3 - 63.6 | Smith et al. 1987 |
| Penobscot River | 3.6 - 9.3 | Bartlett et al. 1993 |
| Kennebec River | 5.7 - 12.9 | Bartlett et al. 1993 |
| Somes Sound rivers | 0 - 7.0 | This Study |
| <u>Phosphate</u> | | |
| US rivers | 1.9 - 9.1 | Smith et al. 1987 |
| Penobscot River | <0.3 - 0.3 | Bartlett et al. 1993 |
| Kennebec River | 0.3 - 0.97 | Bartlett et al. 1993 |
| Somes Sound rivers | 0 - 0.06 | This Study |
| <u>Silicate</u> | | |
| Global rivers | 49 - 649 | Burton and Liss 1976 |
| Somes Sound rivers | 6 - 192 | This Study |

Table 3. Average characteristics of effluent from the Somesville Pollution Control Facility.

| Parameter | N | Mean | Minimum | Maximum |
|---|---|---|---|---|
| Flow ($m^3\ s^{-1}$) | 7 | 0.00091 | 0.0007 | 0.0012 |
| Nutrient Concentrations ( µmoles/l ) | | | | |
| Ammonia | 6 | 110.08 | 0.30 | 348.00 |
| Nitrate + Nitrite | 6 | 644.18 | 1.94 | 1262.40 |
| Phosphate | 6 | 62.94 | 13.12 | 80.54 |
| Silicate | 3 | 197.42 | 179.40 | 219.58 |

Table 4. Typical nutrient concentrations for sewage treatment plants in metropolitan Providence, RI.

| Concentration | Facility | | |
|---|---|---|---|
| ( µmoles/l* ) | Fields Point | Blackstone Valley | E. Providence |
| Ammonia | 1150-1202 | 540-955 | 886-998 |
| Nitrate + Nitrite | 10-19 | 64-98 | 57-66 |
| Phosphate | 33-41 | 65-145 | 84-120 |
| Silicate | 137-151 | 148-170 | 165-176 |

* data from Aug, 1987

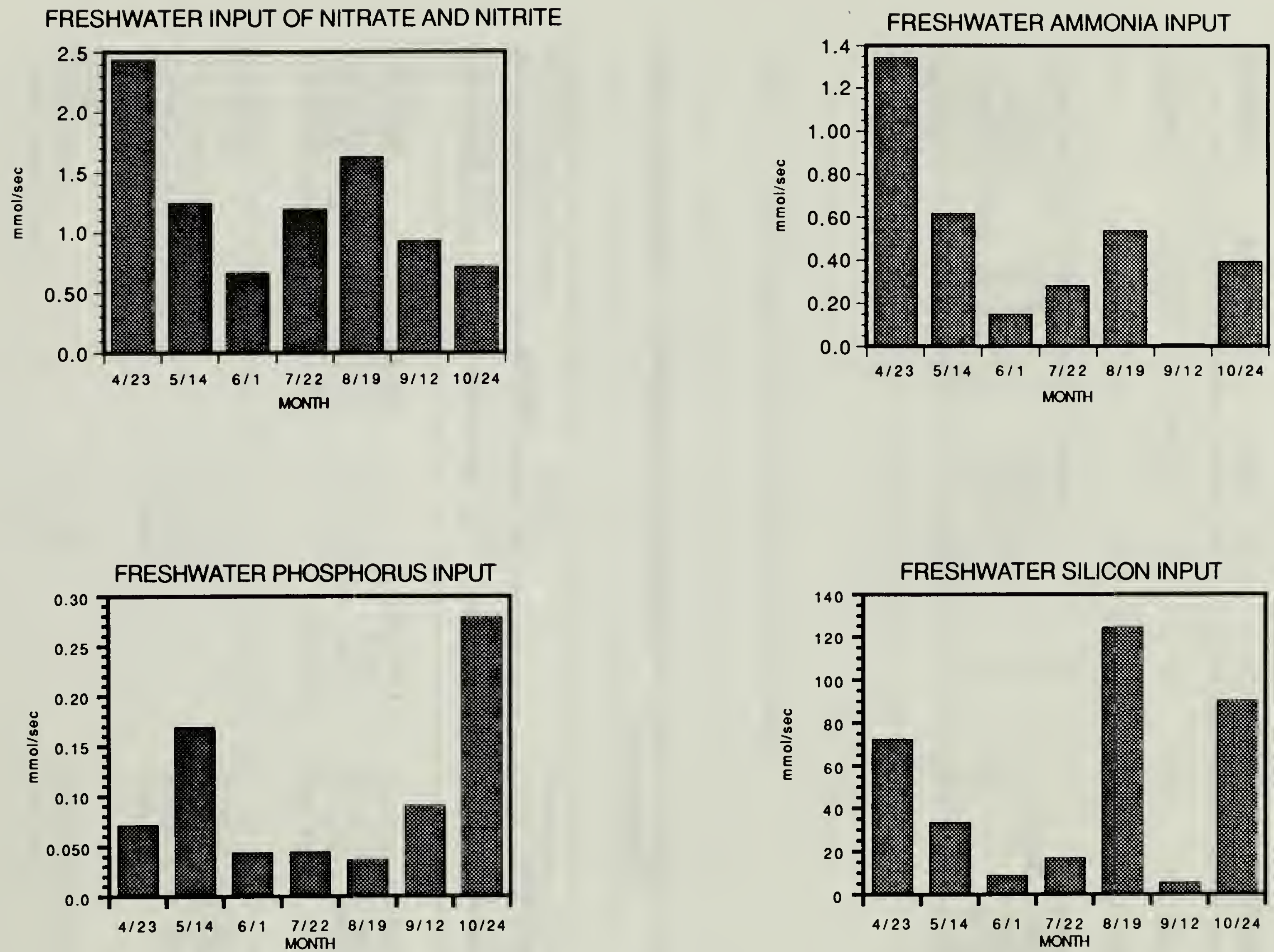



Fig. 9. Input of nutrients to Somes Sound from freshwater sources for each sample date.

Table 5. Ranking of freshwater inputs as a function of their contribution to the total input of nutrients from all freshwater sources.

| | DIN (89%) | | Phosphate (97%) | |
|---|---|---|---|---|
| 1. | Somesville Pollution Control | (37%) | Somesville Pollution Control | (51%) |
| 2. | Kitteredge Brook | (17%) | Somes Pond Drainage | (32%) |
| 3 | Denning Brook | (17% | Denning Brook | (10%) |
| 4. | Man O War Brook | (9.5%) | Man O War Brook | (1.8%) |
| 5. | Richardson Brook | (8.5%) | Kitteredge Brook | (1.5%) |
| 6. | Somes Pond Drainage | (6%) | Hadlock Brook | (0.8%) |

| | Silicate (79.5%) | |
|---|---|---|
| 1. | Kitteredge Brook | (27%) |
| 2. | Somes Pond Drainage | (18%) |
| 3. | Richardson Brook | (12%) |
| 4. | Man O War Brook | (8.5% |
| 5. | Denning Brook | (7.5%) |
| 6. | Hadlock Brook | (6.4%) |
| | Somesville Pollution Control | (0.6%) |

of phosphate (51%) is the Somesville Pollution Control Facility (Table 5). The Somesville facility dominates both the freshwater input of DIN and phosphate, not because of a high discharge of freshwater but because nutrient concentrations of its effluent are often several orders of magnitude higher than stream water.

By contrast, the pollution control facility contributes little to the total freshwater input of silicate (Fig. 9, Table 5). The concentration of silicate in sewage effluent is comparable to that in stream water (Tables 1 and 3), probably because the silicate in sewage effluent is present in source water for the treatment facility. Because their discharge is so much higher, streams dominate the freshwater input of silicate.

The calculated annual input of dissolved inorganic nitrogen and phosphorus from freshwater sources was 0.083g N/m$^2$/year and 0.012g P/m$^2$/year. Although this may under estimate actual loading because of infrequent sampling, estimated terrigenous input is nearly two orders of magnitude below that of other estuaries (Fig. 10).

## Nutrient Distributions in the Sound

This section summarizes the temporal and spatial distribution of nutrients and other parameters measured in Somes Sound. Appendix 3 contains vertical profile data for temperature, salinity and dissolved oxygen for each cruise. Appendix 4 presents all nutrient and chlorophyll data.

### *Mean Concentrations*

On average (Table 6), Somes Sound had a high salinity which did not vary greatly (~8 ppt) over the course of the study. Dissolved oxygen values never fell below 6 mg/l or 75% of saturation. Hypoxic (< 3 mg $O_2$/l) or anoxic conditions were never encountered. Similarly, previous studies found a well-oxygenated water column (8.4 - 14.2 mg $O_2$/l in August 1986, Ketchum 1986; 6.7 - 9.6 mg $O_2$/l in August 1969, Folger et al. 1972)

Surface concentrations of chlorophyll *a* averaged < 0.79 ug/l and did not exceed 3.0 ug/l. Although higher values may have been missed owing to infrequent sampling the data indicate that Somes Sound has a low accumulation of phytoplankton biomass relative to other estuaries which can exceed 25 ug/l (Boynton et al. 1982).

NUTRIENT LOADING FOR VARIOUS ESTUARIES

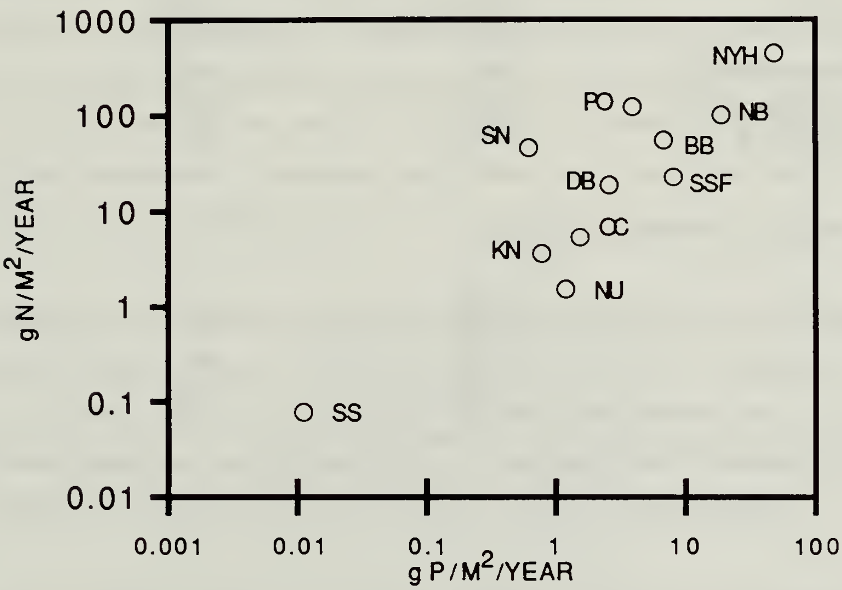



Fig. 10. Annual areal loading of dissolved inorganic nitrogen and phosphorus to various estuaries.

Key:

NYH = New York Harbor
NB = Narragansett Bay
SN = Sabrine-Neches
DB = Delaware Bay
KN = Kaneohe
PO = Pamlico Sound
BB = Bay of Brest
SSF = South San Francisco Bay
OC = Ochlockonee
NU = Nueces
SS = Somes Sound

(All data from Kelly and Levin (1986), except Somes Sound)

Table 6. Summary of values for parameters measured in Somes Sound during 1991 and 1992. Means are arithmetic means of all measurements.

| Parameter | Mean | Minimum | Maximum |
|---|---|---|---|
| Temperature (°C) | 10.20 | 2.68 | 18.00 |
| Salinity (ppt) | 31.83 | 27.60 | 35.70 |
| Dissolved Oxygen (mg/l) | 9.5 | 6.48 | 11.94 |
| Oxygen Saturation (%) | 98.33 | 75.57 | 117.92 |
| Chlorophyll *a* (µg/l) | 0.79 | 0.11 | 2.81 |
| Dissolved Inorganic Nutrients ( µmoles/l ) | | | |
| $NH_3$ | 0.65 | 0 | 6.62 |
| $NO_3 + NO_2$ | 0.44 | 0 | 3.88 |
| $PO_4$ | 0.45 | 0 | 2.39 |
| $SiO_4$ | 4.28 | 0.57 | 20.14 |

Concentrations of dissolved inorganic nutrients are also low. Boynton et al. (1982) summarized nutrient concentrations in a number of estuaries. Fig. 11 indicates that there are few systems with lower nutrient concentrations than Somes Sound.

*Seasonality*

The volume weighted mean salinity (Fig. 12) of Somes Sound varied only slightly < 2 ppt during the 7 month period of observation. Considering the low freshwater input, such small variability is not surprising. Temperature showed the expected seasonal trend being coldest in spring and warming until late summer. Oxygen concentrations decreased steadily from April through September. Although this pattern may be partially due to higher biological utilization at warmer temperatures it is also the result of decreasing solubility with increasing temperature.

Average phytoplankton biomass (Fig. 13) as measured by chlorophyll *a* at a depth of 1 meter remained below 1.0 ug/l for most of the study period. There was only slight evidence of a spring bloom that is typical of north temperate seas. However, the autumnal bloom which may occur was evident in September and October (Townsend and Cammen 1988; Evans and Parslow 1985; Cushing 1975; Sverdrup 1953).

The dissolved inorganic forms of nitrogen exhibited pronounced seasonal fluctuations (Fig. 14). The oxidized forms (nitrate + nitrite) decreased from April to June and began increasing until their concentration peaked in September. Ammonia began increasing in May, peaked in August and declined again in the fall. These seasonal patterns resulted in a change in composition of the total dissolved inorganic pool of nitrogen. Nitrate + nitrite dominated in the early spring and fall, whereas ammonia dominated in the summer. It is unlikely that this change in composition was precipitated by a changing freshwater input. The latter was always dominated by nitrate + nitrite. The source of ammonia is more likely the in situ remineralization of organic matter. Ketchum (1986) also reported elevated ammonia concentrations in Somes Sound bottom waters in August 1986. This seasonal fluctuation in composition of the DIN pool is typical of other estuaries (Pilson 1985).

Dissolved silicon (Fig. 14) varied irregularly from April through October with lowest concentrations observed in May and the highest in September and October. Dissolved phosphate (Fig. 14) increased from April to September and decreased in October.

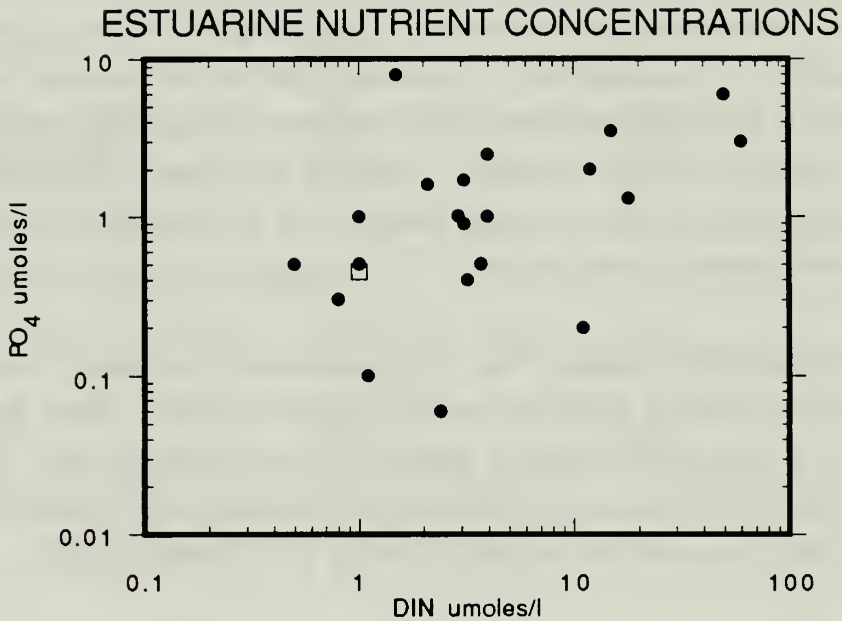



Fig. 11. Comparison of nutrient concentrations for several estuaries worldwide. Somes Sound is the open box. (All data from Boynton et al. (1982), except Somes Sound).

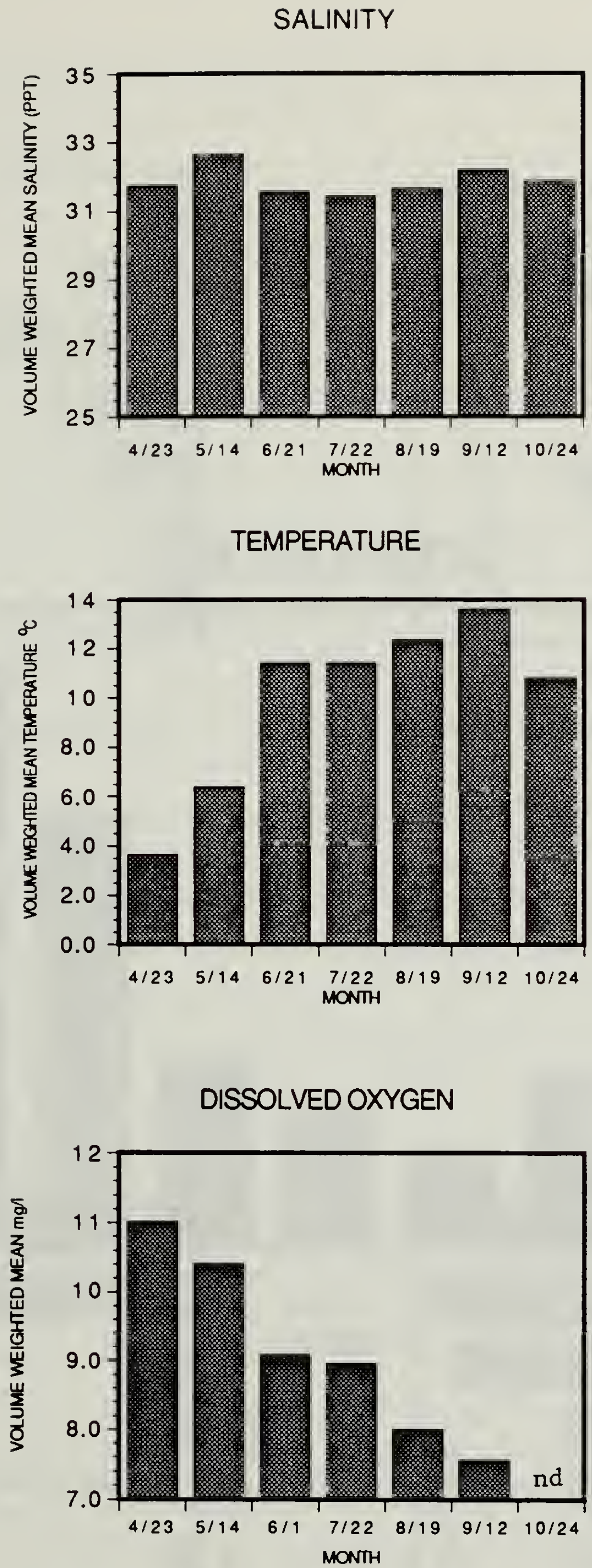



Fig. 12. Mean volume weighted salinity, temperature and dissolved oxygen from Somes Sound for each sample date.

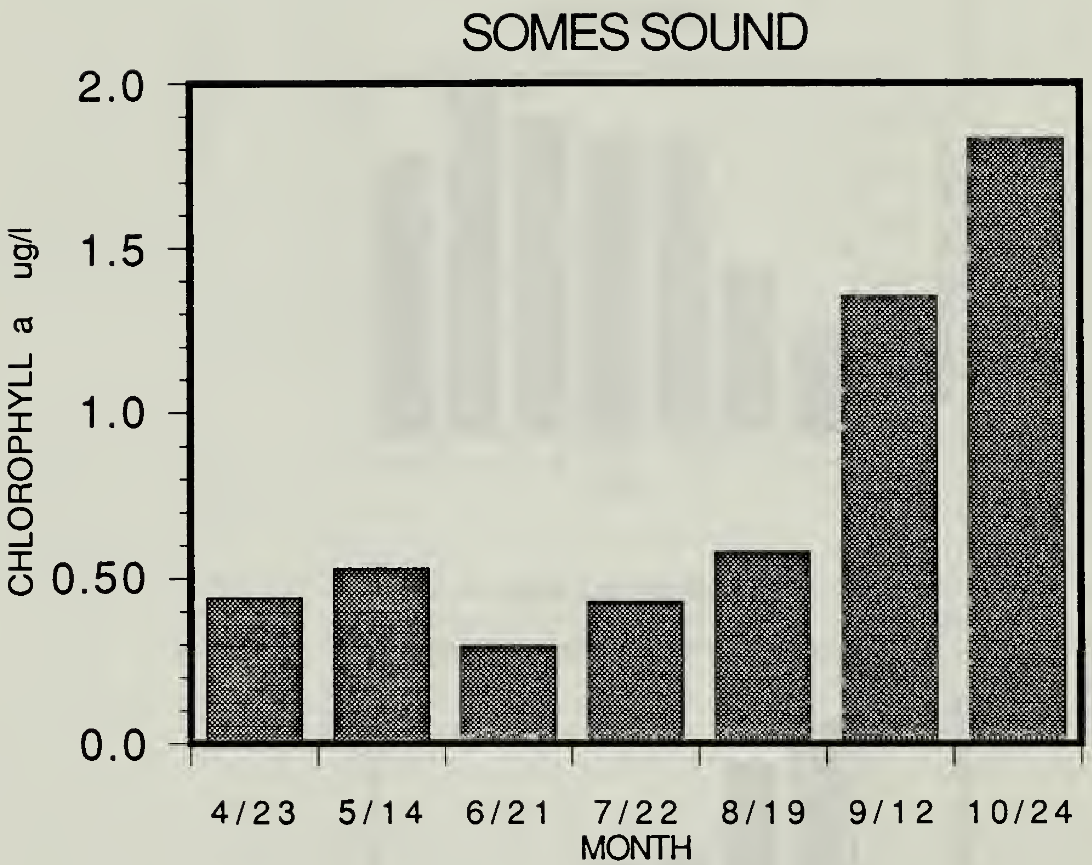



Fig. 13. Mean chlorophyll a concentration for each sample date.

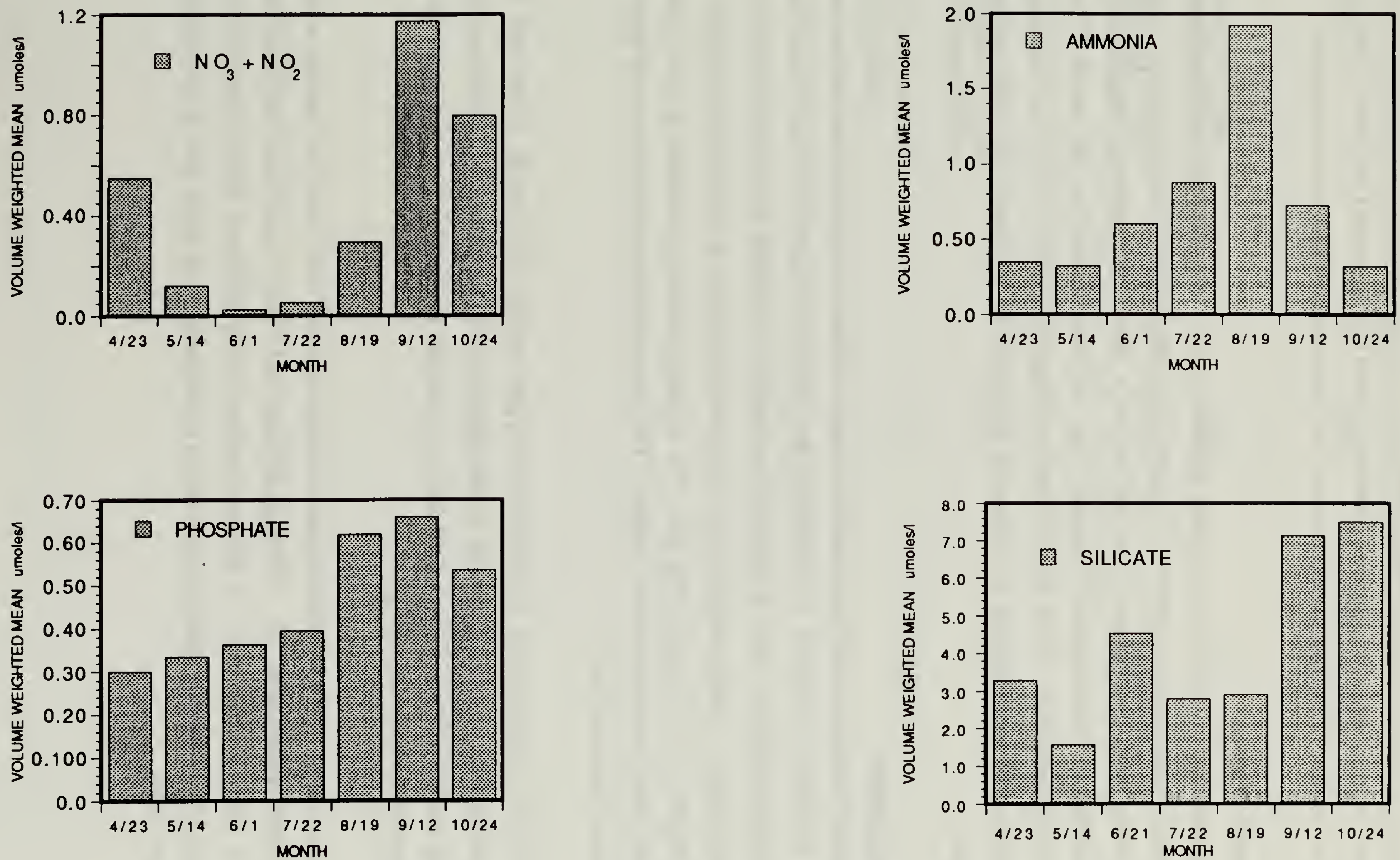



Fig. 14. Volume weighted nutrient concentrations in Somes Sound for each sample date.

As noted in Table 7 average nutrient concentrations in Somes Sound appear similar when compared over the six year period from 1986 to 1992. Because different laboratory methods were employed and different methods to calculate average concentrations were used, care must be taken in comparing these data sets (Ketchum and Cass 1986, Ketchum 1986, this study). Given these considerations no exceptional differences are apparent.

*Horizontal Variation*

The concentrations of dissolved inorganic nutrients in the surface (depth = 1.0m) showed no dramatic variation as a function of distance from the mouth of Somes Sound. These were, for the most part similar at all stations on a particular sampling date (Fig. 15). Accumulation of phytoplankton biomass (Fig. 16) was localized at the mouth of the Sound in April and May. In the fall, biomass was high everywhere in the Sound although the trend towards accumulation of biomass at the mouth of the Sound was again evident in October.

*Vertical Variation*

On average throughout the Sound surface waters tended to be slightly less saline and warmer than deep water (Fig. 17) indicating that the water column of Somes Sound was nearly always stratified. Thus, temperature and salinity controlled the density structure of the water column. When clearly defined both the thermocline and halocline occurred at depths less than 5 to 10 meters (Fig. 18). The strongest holocline occurred in April when freshwater input to the Sound was highest. The strongest thermoclines occurred during the summer (June and July).

Although the concentration of dissolved oxygen varied with depth, there was no consistent pattern (Fig. 17). Owing to the effects of temperature and salinity on the solubility and the effects of biological activity, changes in dissolved oxygen were most pronounced in surface water (Fig. 18).

The concentration of dissolved inorganic nitrogen tended to be lower in surface water than in deeper waters (Fig. 19). While phosphorus and silicon on occasion exhibited this pattern, it was not consistent. A previous nutrient study in Somes Sound conducted in August also found higher ammonia and nitrate concentrations at depth than at the surface (Ketchum 1986).

Table 7. Comparison of average Sound-wide nutrient concentration between 1986 and this study (1992).

| Study | $NH_4$ | $NO_3 + NO_2$ (µM/l) | $PO_4$ |
|---|---|---|---|
| April 19, 1986 (Ketchum and Cass 1986) | nd | nd | 0.95 |
| April 23, 1992 (This Study) | 0.35 | 0.55 | 0.30 |
| August 11, 1986 (Ketchum 1986) | 3.06 | 1.51 | 1.44 |
| August 19, 1992 (This Study) | 1.92 | 0.29 | 0.62 |

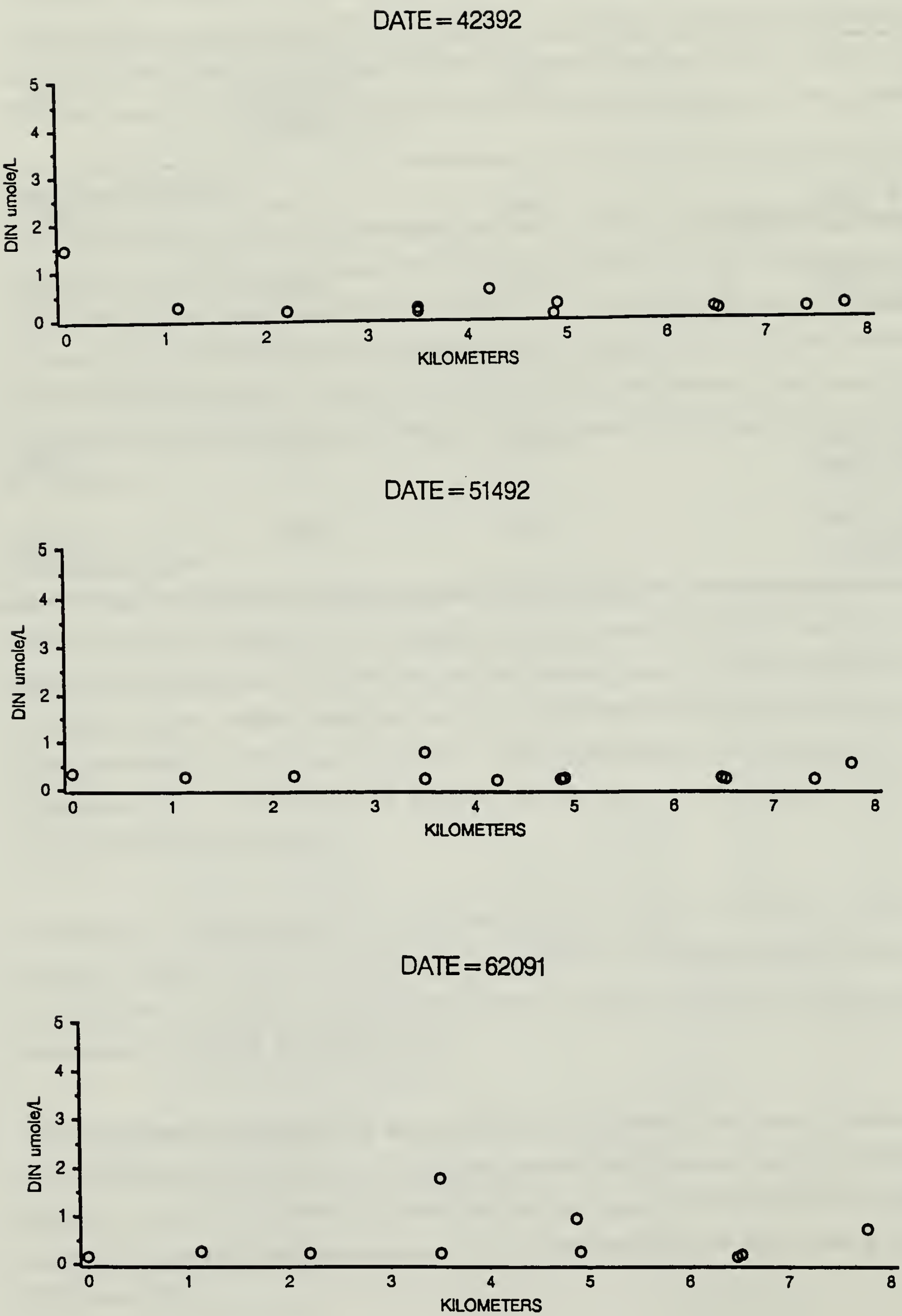



Fig. 15. Horizontal variation in nutrient concentration of surface waters from the mouth (0 km, station 1) to the head (8 km, station 12) of the estuary. Date legend includes month, date, year.

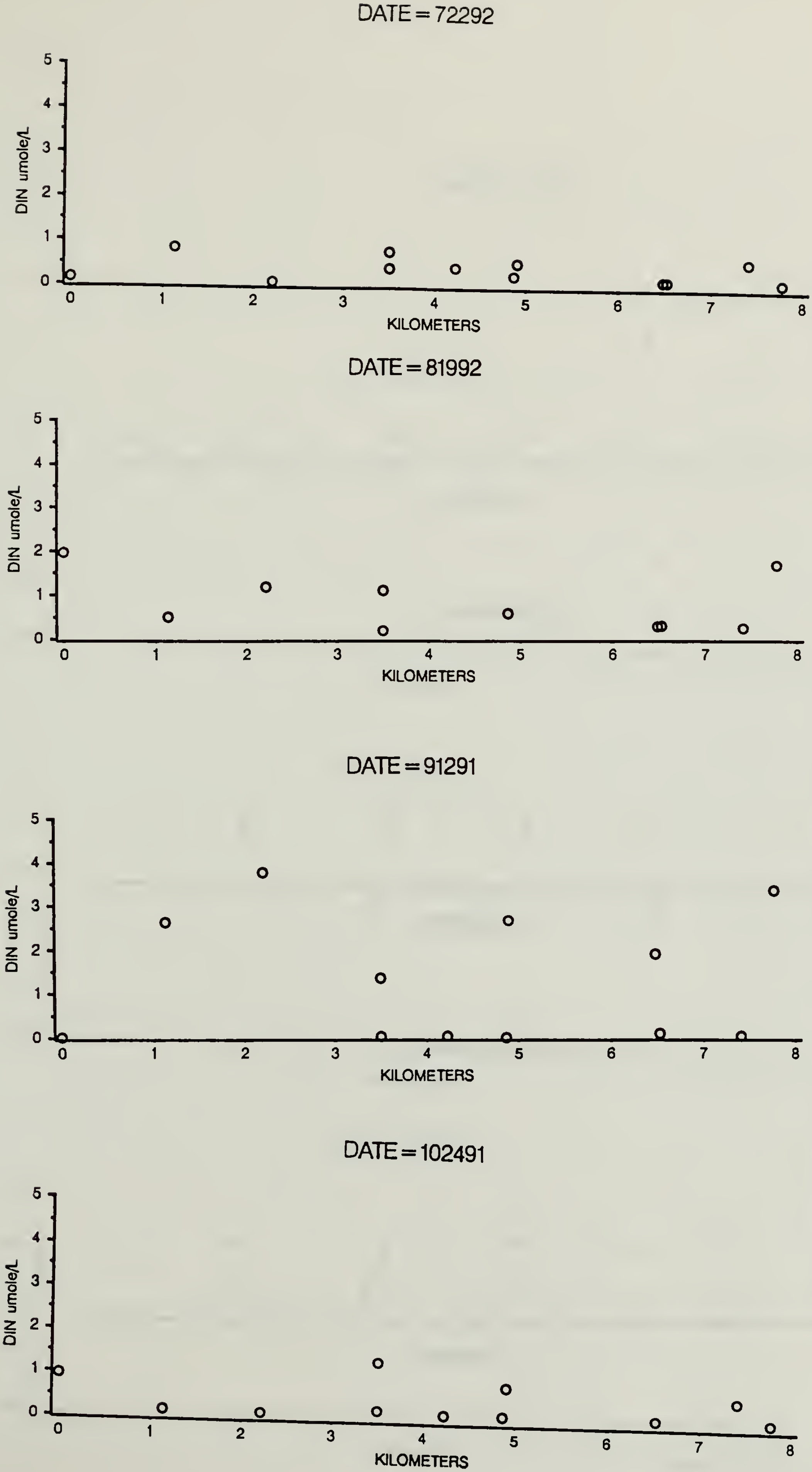
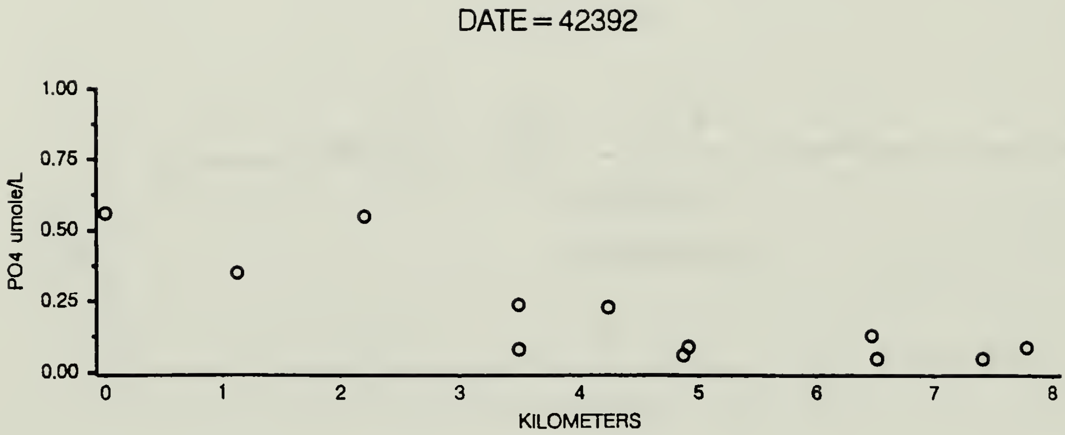
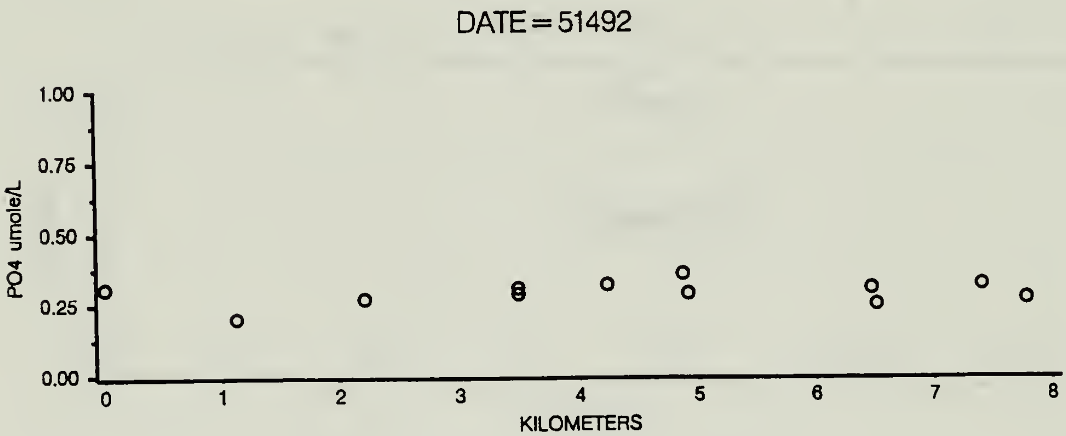



Fig. 15. (continued)



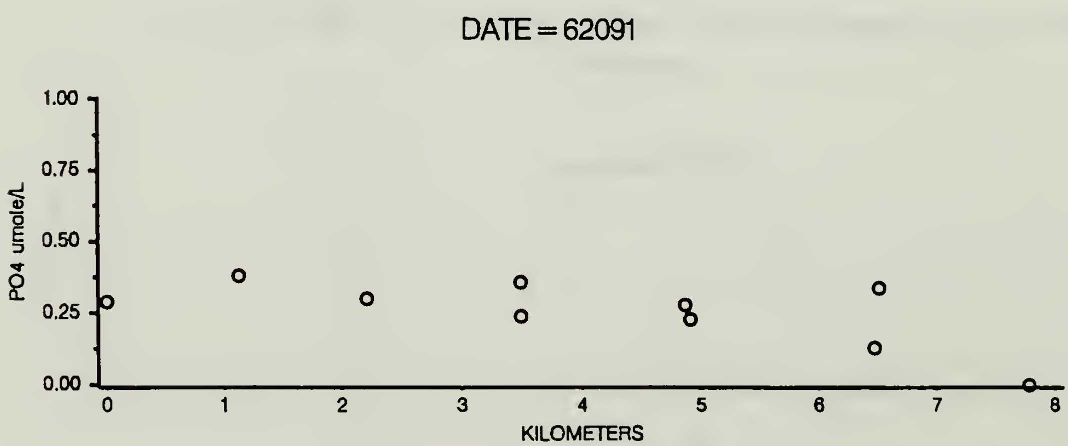




Fig. 15. (continued)

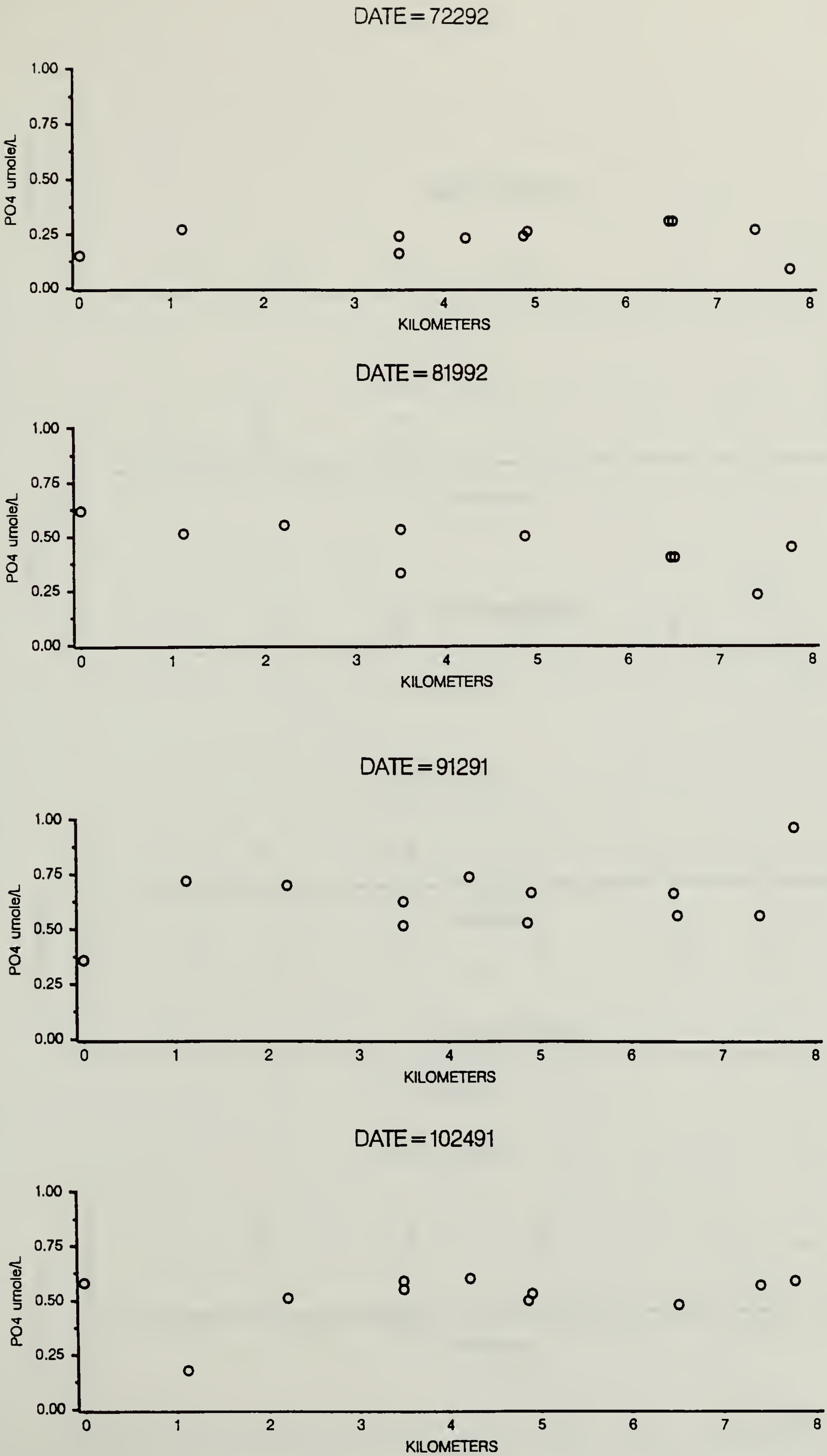



Fig. 15. (continued)

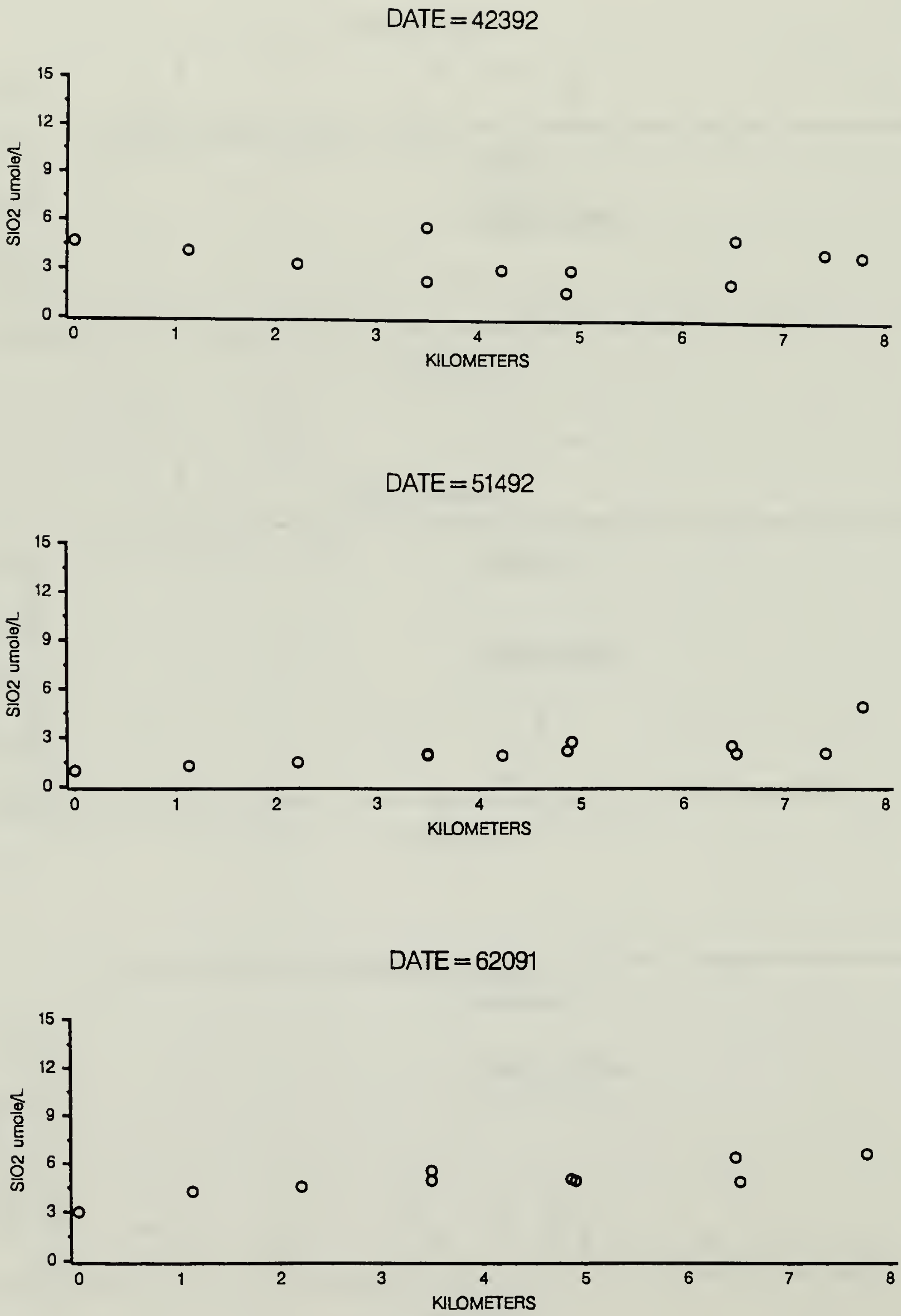



Fig. 15. (continued)

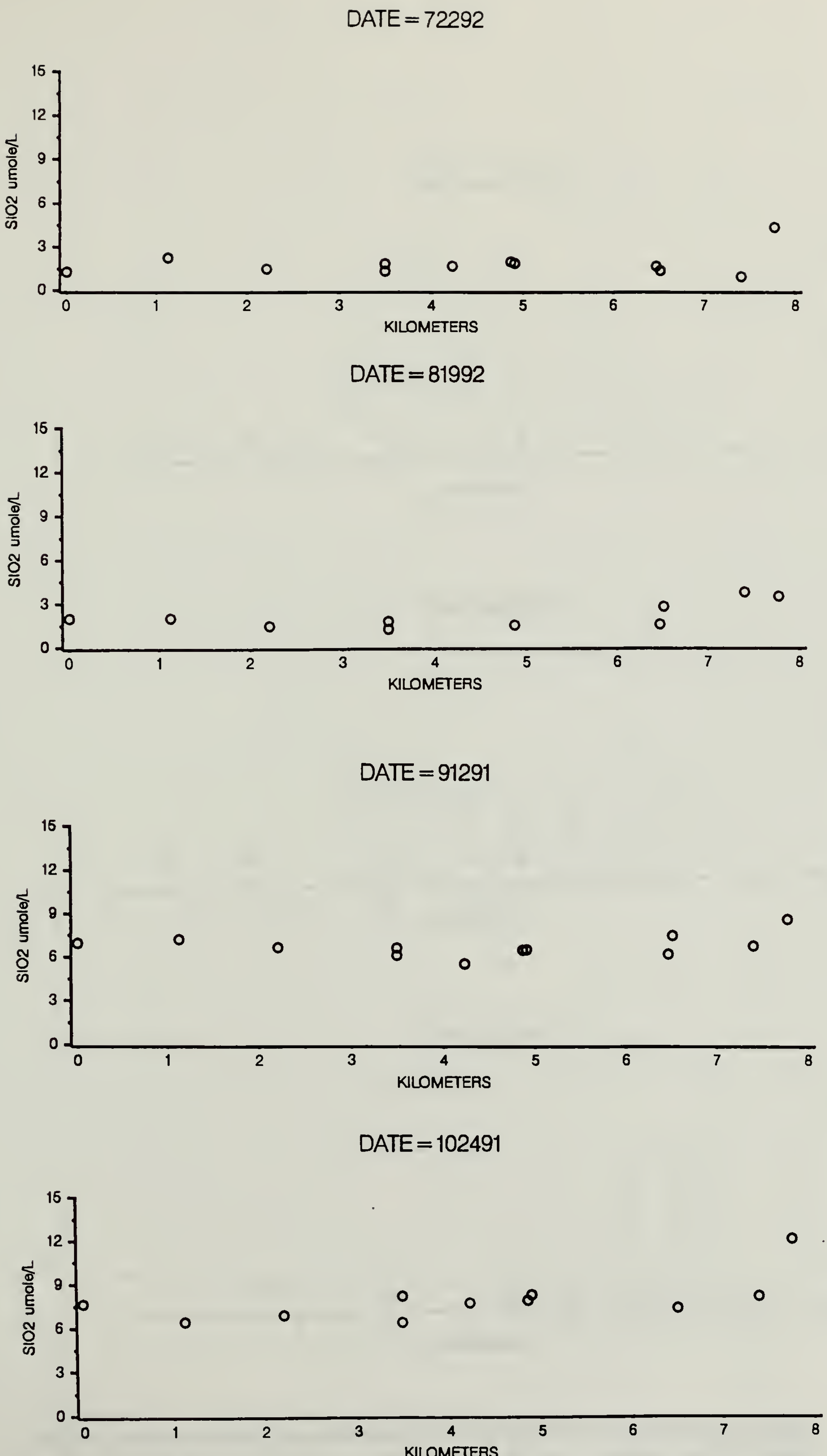



Fig. 15. (continued)

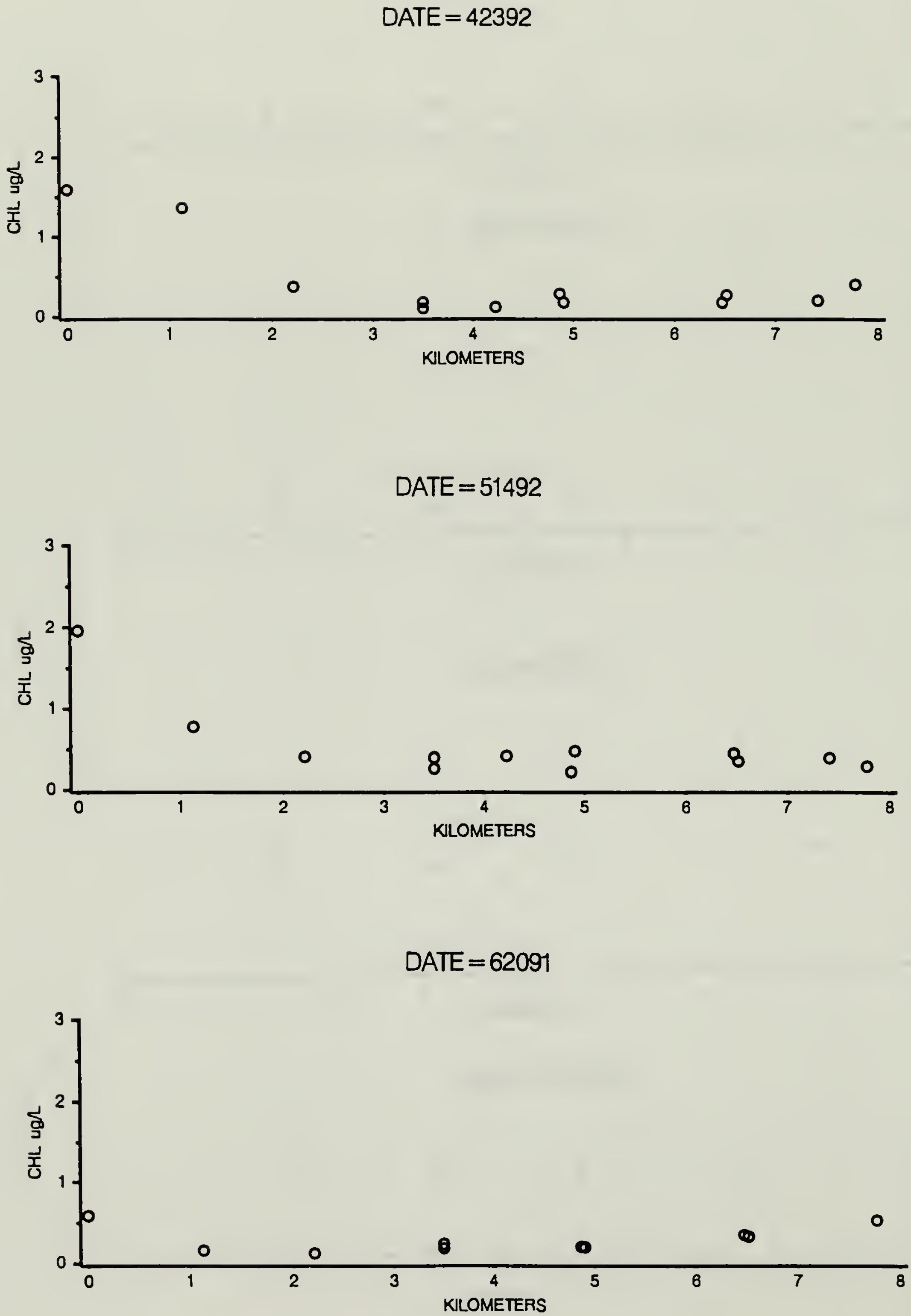



Fig. 16. Horizontal variation in chlorophyll *a* concentration of surface waters from the mouth (0 km, station 1) to the head (8 km, station 12) of the estuary. Date legend includes month, date, year.

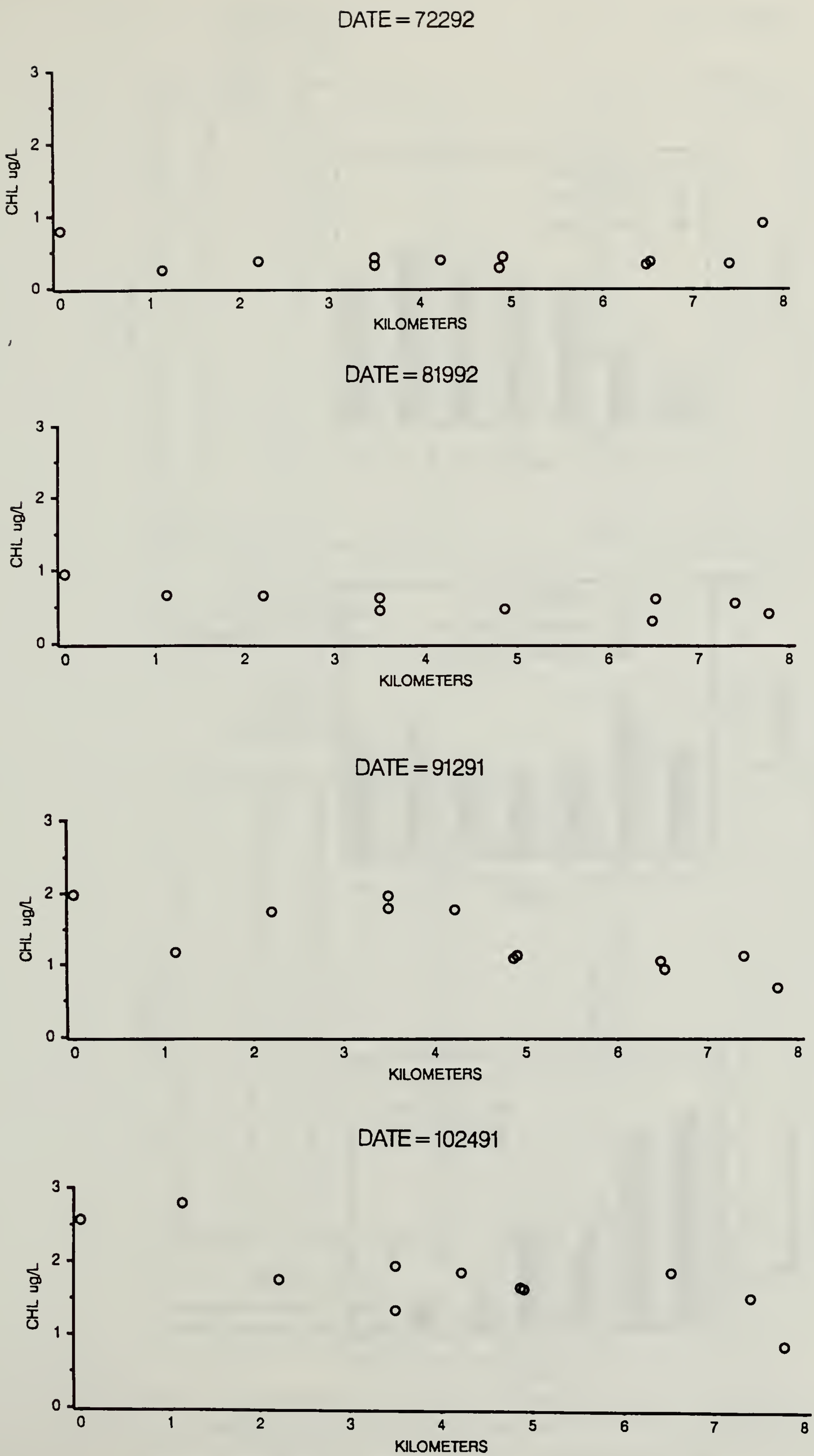



Fig. 16. (continued)

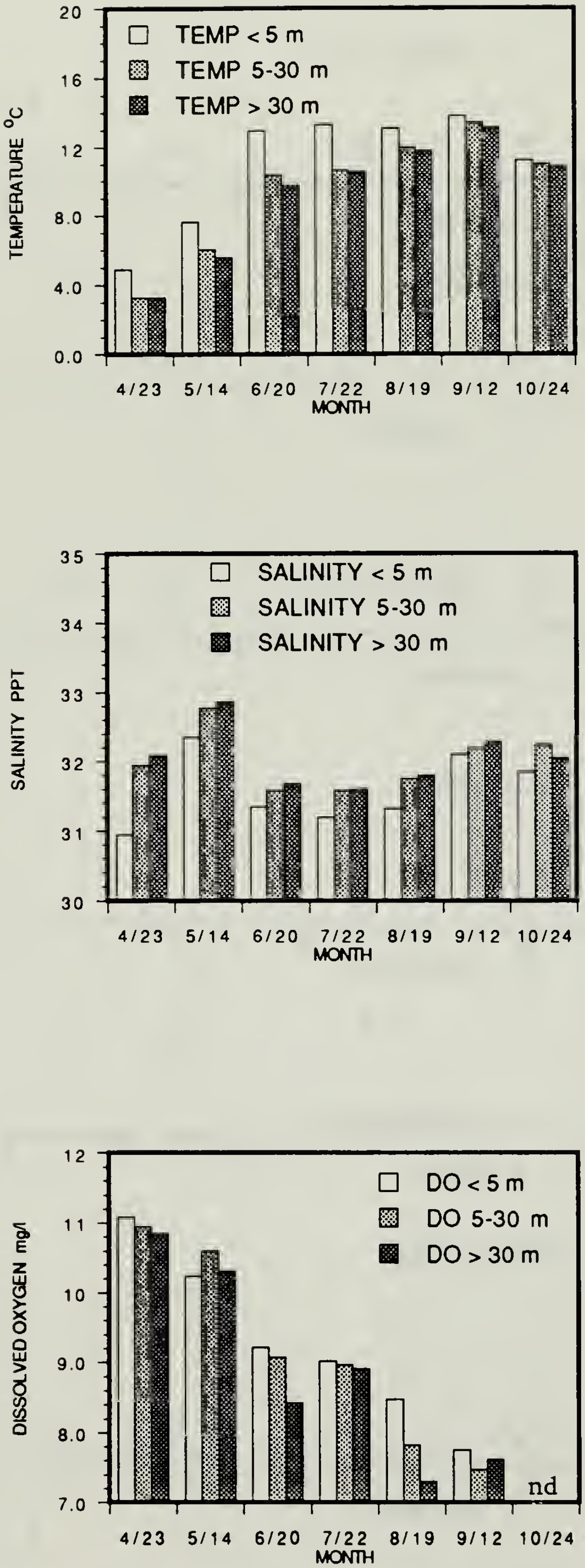



Fig. 17. Mean temperature, salinity and dissolved oxygen at three depth intervals for each sample date.

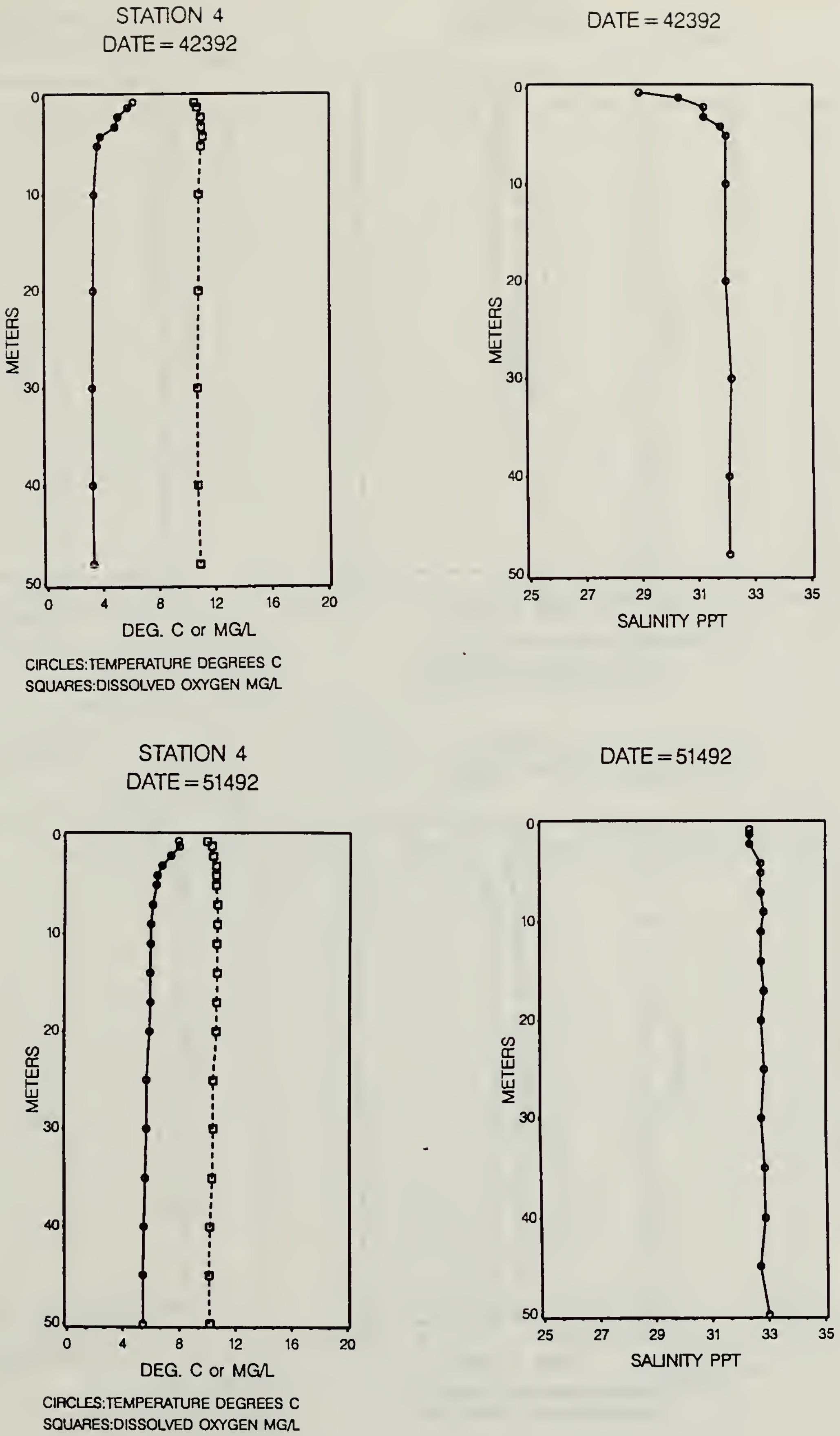



Fig. 18. Representative (station 4 only) depth profiles for temperature, salinity and dissolved oxygen for each sample date.

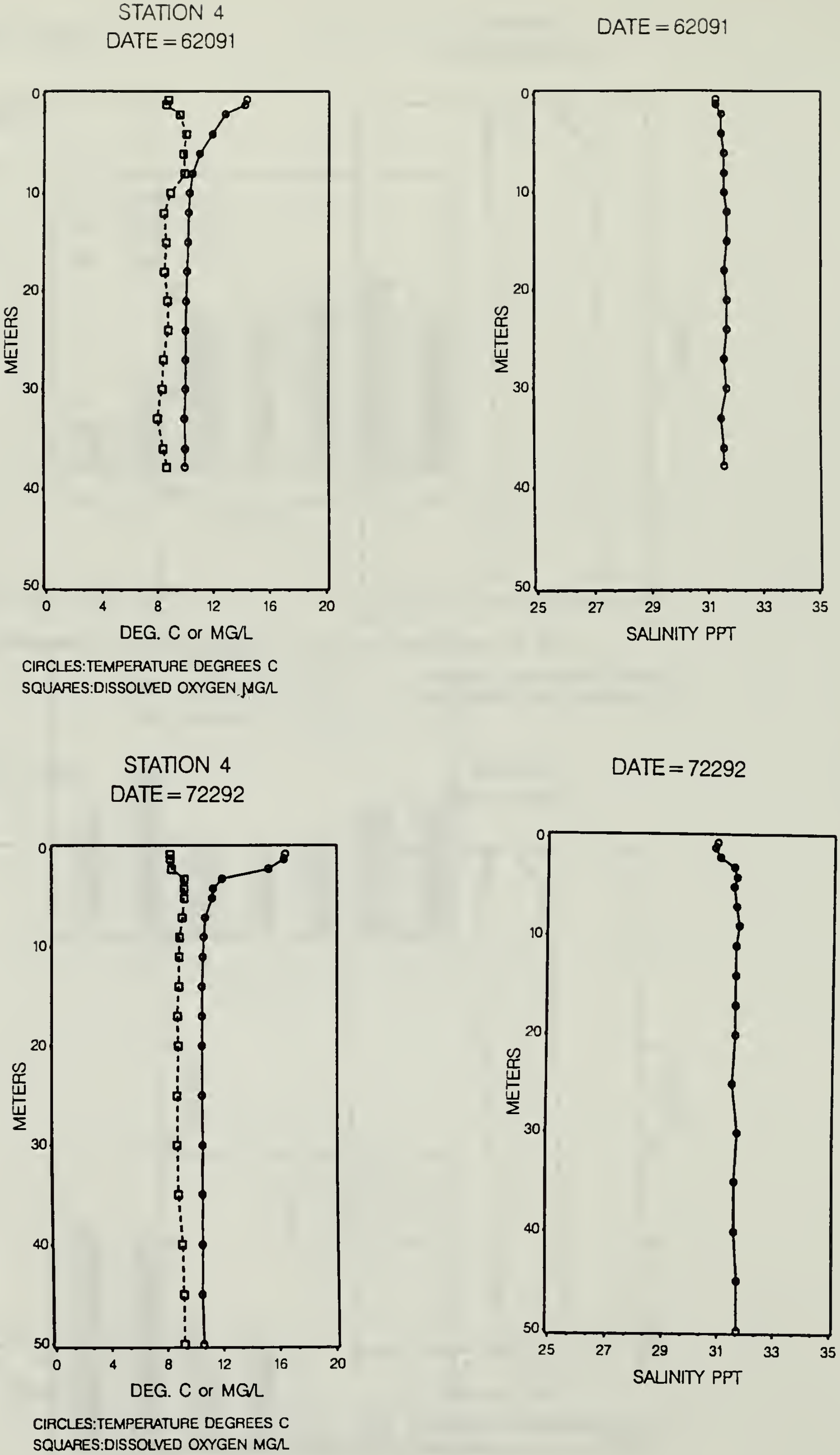



Fig. 18. (continued)

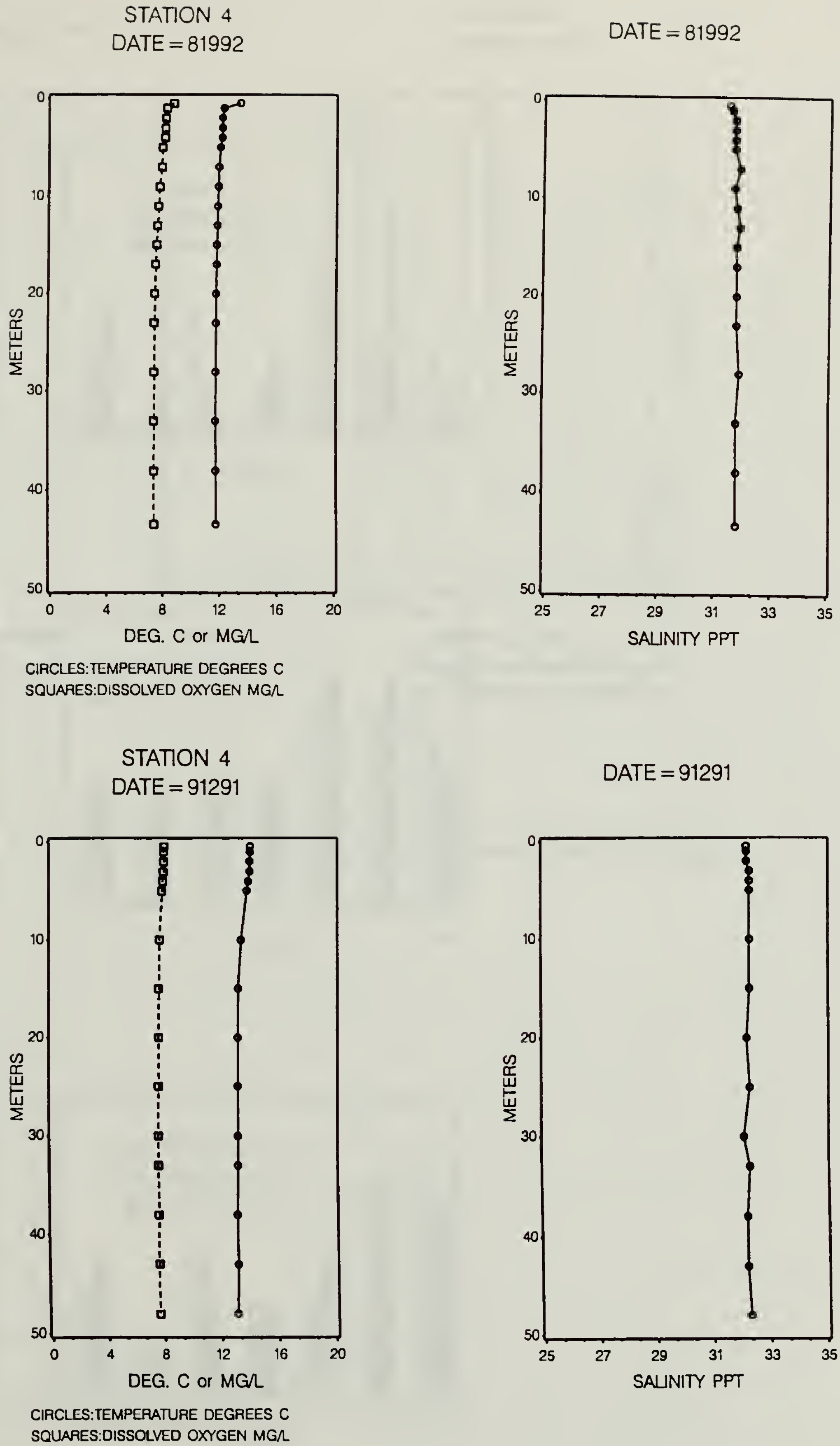



Fig. 18. (continued)

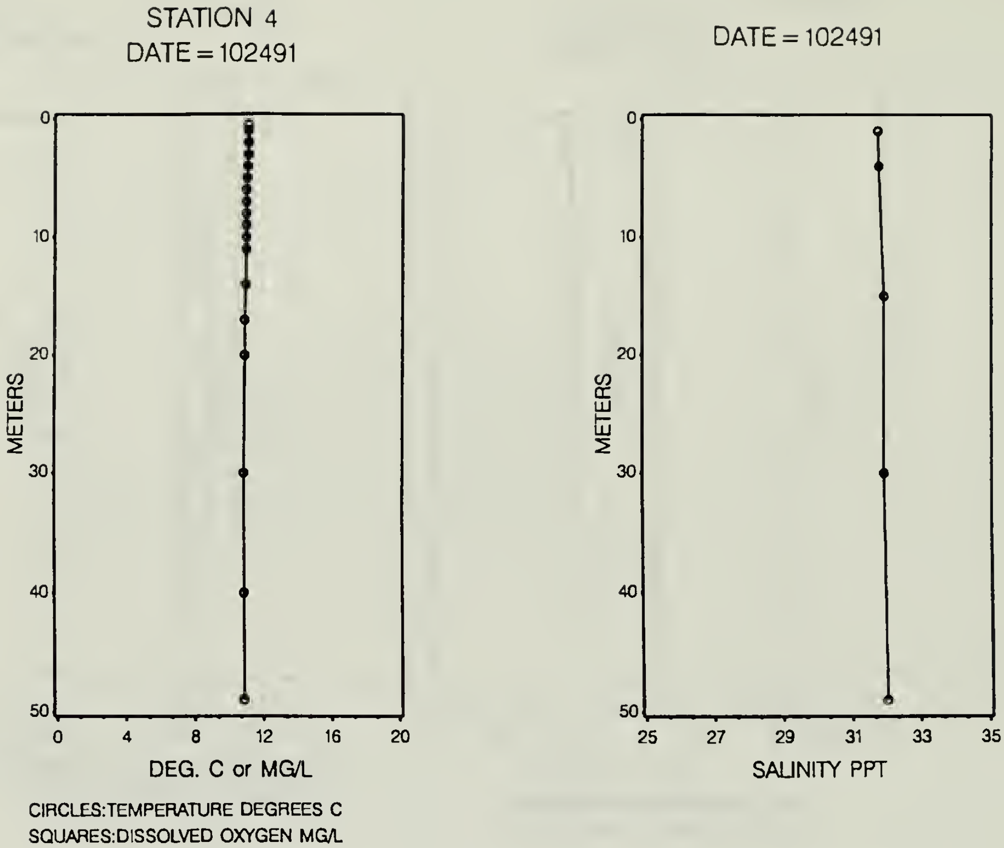



Fig. 18 (continued)

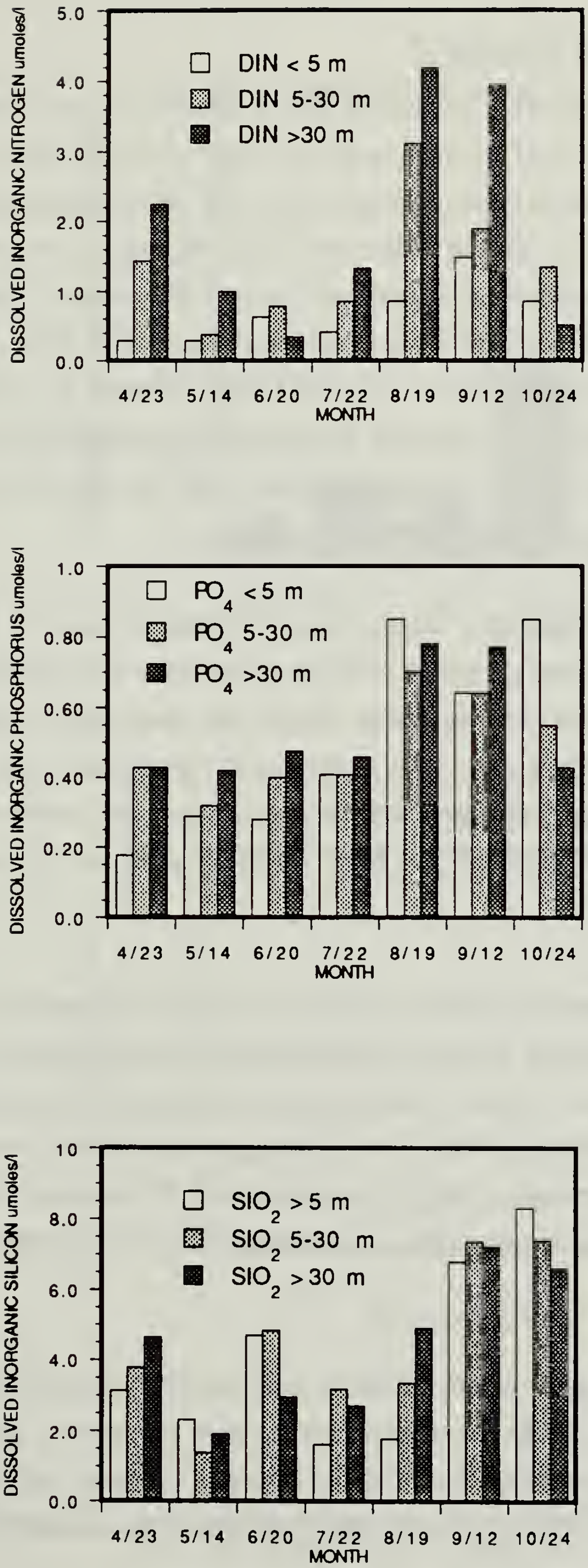



Fig. 19. Mean nutrient concentrations at three depth intervals for each sample date.

## Modelling

*Flushing Characteristics*

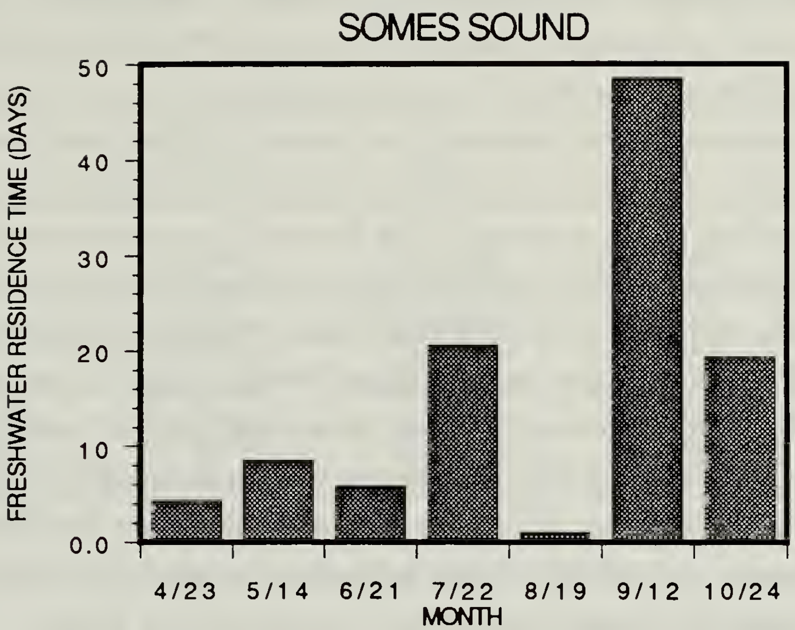
Residence times and flushing rates were calculated from a steady state box model which used salinity as a conservative tracer of fresh and salt water in the Sound. As shown earlier, the dynamic range of salinities encountered on any one sampling date were small. The differences between salinity inside the Sound and in the adjacent ocean were small. Using a depth weighted average salinity at the oceanic end member station often resulted in the Sound being more saline than the ocean and spurious results from the model. Therefore the maximum salinity observed at station 1 was assumed to represent the oceanic end member. This procedure resulted in more satisfying results from the model but these must be viewed with caution. Perhaps a station 1 end member located further from terrestrial influences would have been more appropriate.

The model assumes that the system is in steady state: freshwater input to the Sound, freshwater content of the Sound and exchange with the ocean have attained a balance or equilibrium. The August sampling event probably violates this assumption. Sampling of freshwater sources occurred during a rain event producing a high estimate for freshwater input. This high input coupled with the low freshwater content of the Sound at this time produced estimates of high flushing rates and short residence time which are probably spurious.

The residence time of freshwater in Somes Sound calculated from the model ranged between 0.9 days in August to nearly 50 days in September with an average of 15.4 days (Fig. 20). The median value was 7.2 days which agrees well with previous estimates for Somes Sound by Ketchum and Cass (1986). The flushing rate of Somes Sound did not vary as a function of freshwater input (Fig. 20) implying that the exchange of water is driven mainly by tides rather than thermohaline circulation (Officer and Kester 1991).

*Nutrient Inputs*

The transport terms from the model when combined with nutrient concentrations at the oceanic end member (Station 1) yield the steady state input of nutrients at the mouth of Somes Sound. This oceanic input dominated the total input (oceanic and freshwater) overwhelming the contribution of freshwater (Table 8) on all but one occasion (i.e., June 20, 1991)



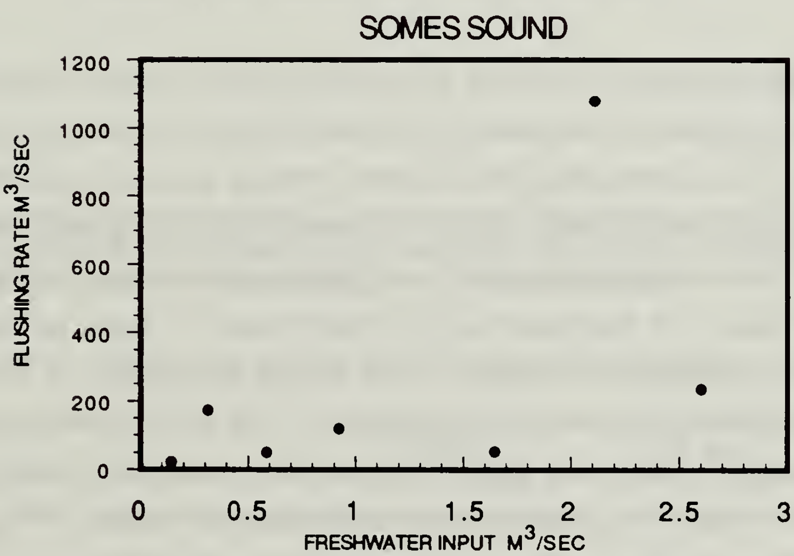




Fig. 20. Residence time for each sample date as calculated from the box model (above figure). Flushing rate of Somes Sound as a function of freshwater input to the Sound (below figure).

Since both the freshwater and oceanic input of nutrients are known, the steady state nutrient concentration can be predicted. This predicted concentration is conservative and does not account for biological processes which may affect nutrient concentration. It is useful however because the effect of increasing nutrient inputs can be illustrated. Table 9 shows that increasing the freshwater input of nutrients by 20% would have little effect on the concentration of nutrients in the Sound. By contrast, increasing the oceanic input at the mouth by 20% results in nearly a 20% increase in the concentration in the Sound. Such results are to be expected since oceanic inputs are so much larger than freshwater. It is noted that the outfall for the Northeast Harbor Pollution Control Facility is located just south of Manchester Point, near the mouth of Somes Sound (in the vicinity of station 1). Similarly, there are several overboard discharges south of Conner Point along the Southwest Harbor shoreline. Our investigation was not designed to evaluate the potential impact of increased nutrient discharges from these discharges on Somes Sound water quality. However, our station 1 sample did serve to collectively account for the nutrient inputs originating from outside the mouth (i.e., narrows) of the Sound.

## Productivity and Eutrophication Potential

In considering the potential effects of an increased nutrient load to Somes Sound which might attend increased development several factors must be taken into account. Chief among these is an understanding of the factors which at present control the annual cycle of productivity in Somes Sound. Since the Sound is deep, with steep shores, intertidal macrophyte production may not make a significant contribution to total productivity. However, resolution of this issue awaits further research. Based on measurements of phytoplankton biomass and nutrients made during this study, we can comment on productivity in the open waters of Somes Sound. Like most marine waters the nutrient which is most likely in shortest supply, and therefore, most likely limits productivity in Somes Sound is dissolved inorganic nitrogen (Ryther and Dunstan 1971). This fact can be deduced from the plot of the concentration of dissolved inorganic nirogen versus dissolved inorganic phosphorus (Fig. 21). This plot indicates that when nitrogen goes to zero there is still phosphorus remaining, implying that nitrogen will limit phytoplankton growth. Similarly, a plot of silicate versus DIN (Fig. 21) suggests that there is always some dissolved silicate present. Thus, it is unlikely that lack of silica excludes diatoms which also require this nutrient for growth.

Table 8. Oceanic input of dissolved inorganic nutrients calculated using transports from the box model and depth averaged nutrient concentrations from station 1. Units are mmol/sec. Values in parentheses are percentage of total input (Oceanic and Freshwater).

| Date | $NO_2 + NO_3$ | $NH_4$ | $PO_4$ | $SiO_2$ |
|---|---|---|---|---|
| April 23, 1992 | 665.4 (99) | 84.6 (98) | 188.8 (99) | 1283.3 (95) |
| May 14, 1992 | 17.3 (92) | 23.2 (97) | 29.5 (99) | 110.6 (77) |
| June 20, 1991 | 0.0 (0) | 240.8 (99) | 61.1 (99) | 529.3 (98) |
| July 22, 1992 | 3.7 (75) | 12.4 (98) | 11.4 (99) | 2019.7 (94) |
| August 19, 1992 | 574.6 (99) | 2400.5 (99) | 698.3 (99) | 2019.7 (94) |
| September 12, 1991 | 22.8 (96) | 8.4 (99) | 10.6 (99) | 144.5 (96) |
| October 24, 1991 | 91.5 (99) | 18.1 (98) | 28.6 (99) | 301.0 (77) |

Table 9. Observed volume weighted concentration of dissolved inorganic nitrogen and that predicted from present inputs and those predicted if either freshwater or oceanic inputs were increased by 20%. Units are µmol/l.

| Date | Observed | Predicted | | |
|---|---|---|---|---|
| | | Present Conditions | 20% Inc Freshwater | 20% Inc Oceanic |
| April 23, 1992 | 0.90 | 3.19 | 3.20 | 3.83 |
| May 14, 1992 | 0.44 | 0.36 | 0.36 | 0.43 |
| June 20, 1991 | 0.63 | 1.40 | 1.40 | 1.68 |
| July 22, 1992 | 0.93 | 0.35 | 0.36 | 0.42 |
| August 19, 1992 | 2.21 | 2.76 | 2.76 | 3.32 |
| September 12, 1991 | 1.89 | 1.55 | 1.55 | 1.85 |
| October 24, 1991 | 1.11 | 2.12 | 2.13 | 2.54 |

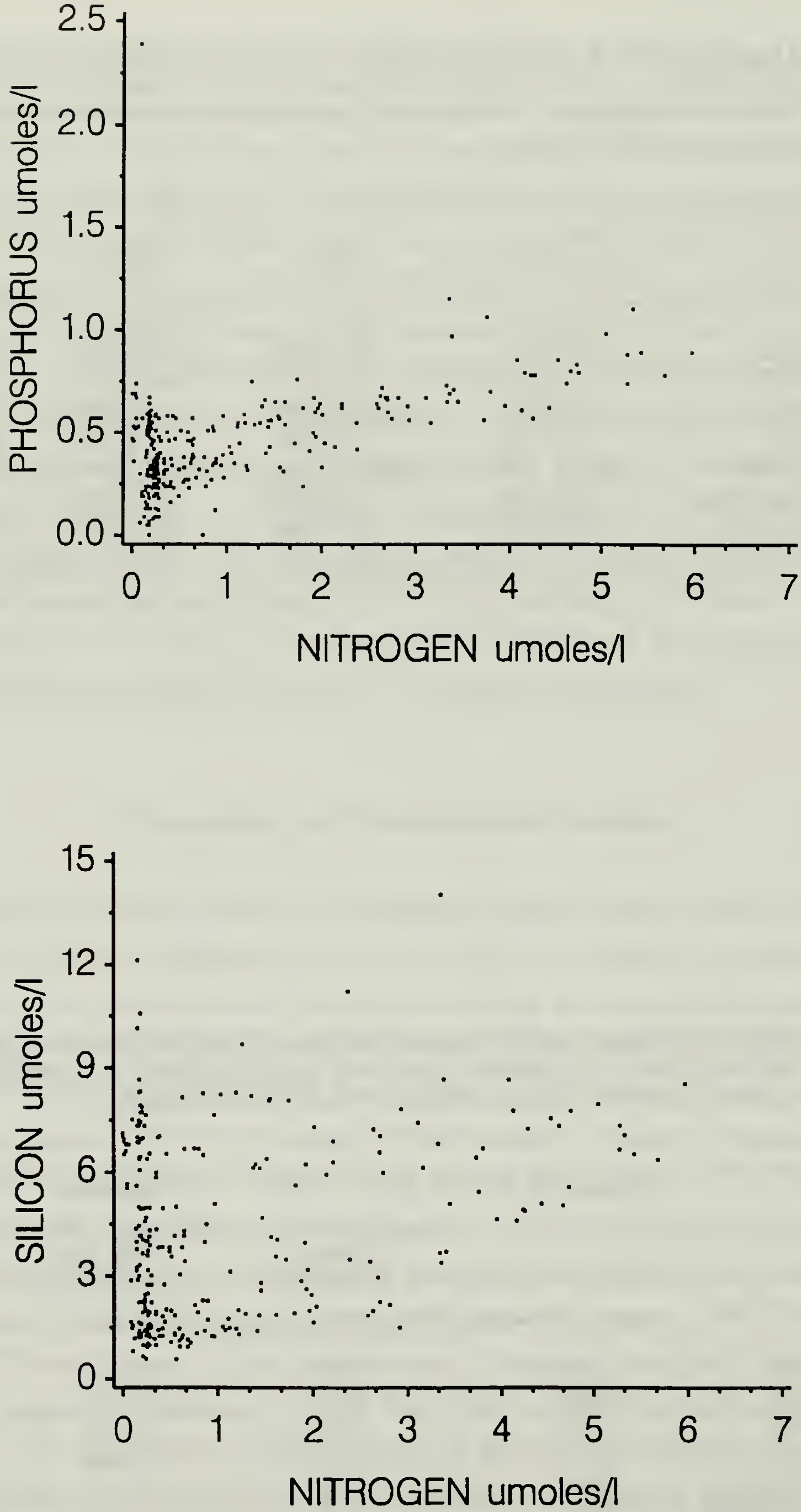



Fig. 21. Relationship between nitrogen and phosphorus and nitrogen and silicon concentration for all sample point locations throughout Somes Sound.

Because of a somewhat sparse sampling frequency, we may not have captured a complete picture of annual productivity. The spring bloom in shallow inshore areas of the Gulf of Maine can begin early in February, given sufficient light, and may continue into the early summer months in the deeper offshore waters of the central Gulf (Townsend and Cammen 1988). The small blooms observed at the mouth of the Sound evident in April and May probably represent the end of the spring bloom.

Once the water column becomes stratified in the spring and summer, nutrient concentrations and phytoplankton biomass remain low in the surface mixed layer. Nutrient concentrations increase throughout the summer, especially in deeper waters. The fall phytoplankton bloom is probably associated with a weakening of stratification and enhanced access to nutrients stored in bottom water. The dependence of phytoplankton biomass on the magnitude of stratification is shown in Fig. 22 which shows chlorophyll *a* as a function of the difference in temperature between surface and mid-depth waters.

The nutrients which fuel the productivity in Somes Sound enter primarily through the mouth at the oceanic end of the system. The Sound receives so little freshwater input that a 20% increase in freshwater derived nutrients would be barely noticeable. By contrast a 20% increase in oceanic input would cause almost a 20% increase in concentration in the Sound. While increased development of the Somes Sound watershed will undoubtedly affect water quality, nutrient loading to ocean waters near its mouth will also have a significant impact.

## Future Monitoring and Inventory Needs

Somes Sound appears to be a relatively pristine estuary when compared to other estuarine ecosystems of the United States. Nutrient inputs are modest, nutrient and chlorophyll *a* concentrations in the Sound are relatively low, and the water column is always well-oxygenated, even within the deep basins of this fjord-type estuary. To insure that water quality characteristics are maintained, especially given the threats associated with potential increases in development throughout the Somes Sound watershed, it is important to initiate a periodic water quality monitoring program. In addition, other baseline inventories are required to assess and monitor the ecological status of the Sound.

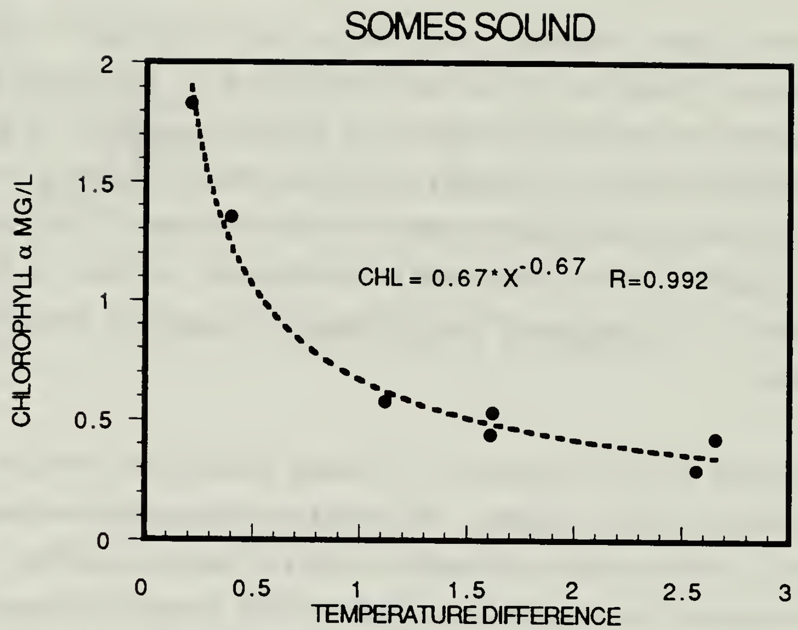



Fig. 22. Mean chlorophyll a concentration for each sample date as a function of temperature difference between surface and mid-depth waters. Stratified conditions occur with the greatest temperature difference.

To date, no comprehensive studies on the living resources of the Sound have been conducted.

*Water Quality Monitoring*

The following is recommended as a minimum long-term water quality monitoring program for Somes Sound.

1. Sound Baseline Survey -- An annual survey (Apr, June, Aug, Oct), as conducted in this study, should be completed at 5-7 yr intervals. If substantial increases in nutrient inputs are noted from the quarterly input monitoring then the survey should be more frequent. The survey should include freshwater input assessments, Sound circulation characteristics, and water quality as presented in this study.

2. Assessment of Development Patterns -- Over half (56%) of the Somes Sound watershed is outside the boundaries of Acadia National Park, and thus, there is a potential for increased growth and development within the watershed and associated increases in nutrient loading. It is recommended that careful and periodic monitoring of growth patterns be initiated. If significant development occurs or if discharge from the Somesville or Northeast Harbor Pollution Control Facilities increases it is suggested that a program of monitoring nutrient inputs be initiated. Such a program should include estimates of nutrient concentrations (nitrate + nitrite, ammonia, phosphate) and discharge from the brooks of the Somes Sound watershed (sampled in this study), as well as streams at the mouth of the Sound.

*Inventory Needs*

The Somes Sound natural resource data base is depauperate. The following inventories are recommended as a start to generating a comprehensive baseline database for one of Mount Desert Island's most outstanding coastal resources. These recommended activities are not all inclusive, but rather, suggest some initial inventory activities that should be considered.

1. Primary Productivity -- Primary production is an initial response variable to increased nutrient inputs. In a review of nutrient and primary productivity relationships, Nixon (1986) found that worldwide there are low production estuaries characterized by low nutrient inputs or by systems with a euphotic zone somewhat separated from nutrients that are recycled from the sediments (i.e., deep and/or

stratified estuaries). High production estuaries occur with large nutrient input and are often shallow systems where recycled nutrients are readily available to primary production. We suggest that Somes Sound, because of a slightly stratified water column and low nutrient inputs, is a low production system, yet the data are not available to support this.

Are low production systems more susceptible to eutrophication (i.e., increased primary productivity in response to increased nutrients)? Baseline information on primary production is necessary to begin to understand and monitor relationships between nutrient inputs and the most basic biological process in Somes Sound, primary productivity. Primary production and associated parameters (chlorophyll, light, and nutrients) will serve as excellent indicators of the long-term ecological status of the Somes Sound estuary. In Spring 1994 a 1-yr assessment of Somes Sound water column or phytoplankton-based primary production will begin with support from the National Park Service.

Macroalgae, dominating the rocky shoreline of Somes Sound also contributes to the estuary's primary productivity. Studies evaluating the species composition, biomass and productivity of the algae fringe are warranted. In fact, anecdotal reports by residents suggest that algae attached to mooring lines and fixed structures in the Sound has been increasing in abundance (Ketchum and Cass 1986). There are no quantitative data to support this.

2. Living Resources -- Seasonal inventories of fish, shellfish, benthos, and other components of the estuary are needed. It is recommended that these inventories include a comparative habitat approach with sampling sites selected outside the estuary, at the narrows (sill), within deep holes, along the moderate depth rocky cobble bottom, within the shoreline macroalge habitat, and at the shallow head of the estuary (e.g., fringing marshes, intertidal flats, Somes Harbor).

# REFERENCES CITED


Bartlett, W.P., J.P. Nielsen, W.B. Higgins, and R.G. Lippert, 1993. *Water Resources Data, Maine, Water Year 1992*. US Geological Survey Water-Data Report ME-92-1. Water Resources Division, USGS, Augusta, ME. 179p.

Boynton, W.R., W.M. Kemp, and C.W. Keefe. 1982. A comparative analysis of nutrients and other factors influencing estuarine phytoplankton production. Pages 69-90 *in* V.S. Kennedy, editor. Estuarine Comparisons. Academic Press, NY.

Burton, J.D., and P.S. Liss. 1976. *Estuarine Chemistry*. Academic Press, NY. 229 p.

Culliton, T.J., M.A. Warren, T.R. Goodspeed, D.G. Remer, C.M. Blackwell, and J.J. McDonough, III. 1990. *Population change along the Nation's coasts*. US Dept. of Commerce. National Oceanic and Atmospheric Administration, National Ocean Survey. Washington. 41 p.

Cushing, D.H. 1975. *Marine ecology and fisheries*. Cambridge Univ. Press, Cambridge. 278 p.

Doering, P.H., C.A. Oviatt, and M.E.Q. Pilson. 1990. Control of nutrient concentrations in the Seekonk-Providence River region of Narragansett Bay, Rhode Island. *Estuaries* 13: 418-430/

Evans, G.T., and J.S. Parslow. 1985. A model of annual plankton cycles. *Biol. Oceanogr.* 3: 327-347.

Folger, D.W., R.H. Meade, B.F. Jones, and R.L. Cory. 1972. Sediments and waters of Somes Sound, a fjordlike estuary in Maine. *Limnol. Oceanogr.* 17: 394-402.

Hansen, D.V., and M. Rattray. 1965. Gravitational circulation in straits and estuaries. *J. Mar. Res.* 23: 104-122.

Hansen, D.V., and M. Rattray. 1966. New dimensions in estuary classification. *Limnol. Oceanogr.* 11: 319-326.

Kelly, J.R., and S.A. Levin. 1986. Comparison of aquatic and terrestrial nutrient cycling and production processes in natural ecosystems, with reference to ecological concepts of relevance to waste disposal issues. *In* G. Kullenberg, editor. The role of oceans as a waste disposal option. NATO, ASI Series C, Volume 172. D.Reidel Publ. Co., Dordnecht.

Ketchum, C.B. 1986. Somes Sound August nutrient study -- 1986. Unpublished report prepared for The Somes Sound Association.

Ketchum, C.B., and D. Cass. 1986. Somes Sound Spring 1986 study, Parts 1 and 2. Unpublished report prepared for The Somes Sound Association and the Town of Mt. Desert.

Lambert, C.E., and C.A. Oviatt (eds.). 1986. *Manual of biological and geochemical techniques in coastal areas*. Graduate School of Oceanography, University of Rhode Island, Narragansett, RI. MERL Series Report No. 7 (2nd edition). 319 p.

Lorenzen, C.J. 1966. A method for continuous measurement of *in vivo* chlorophyll concentration. *Deep Sea Res.* 13: 223-227.

NOAA, National Oceanic and Atmospheric Administration. 1989. Susceptibility of East Coast estuaries to nutrient discharges: Passamaquoddy Bay to Chesapeake Bay. National Estuarine Inventory,, Strategic Assessment Branch. Rockville, MD. 37p.

Nixon, S.W. 1981. Freshwater inputs and estuarine productivity. Pages 31-57 *in* Proceedings of the National Symposium on Freshwater Inflow to Estuaries. US Dept. of Interior, Fish and Wildlife Service, Biological Services Program. FWS/OBS-81/04.

Nixon, S.W. 1986. Nutrient dynamics and the productivity of marine coastal waters. Pages 97-115 *in* R. Halwagy, D. Clayton and M. Benbehani, editors. Marine Environment and Pollution. Alden Press, Oxford.

Nixon, S.W., C.A. Oviatt, J. Frithsen, and B. Sullivan. 1986. Nutrients and the productivity of estuarine and coastal marine ecosystems. *J. Limnol. Soc. Sth. Afr.* 12: 43-71.

Officer, C.B. 1980. Box models revisited. Pages 65-114 *in* P. Hamilton and K.B. MacDonald, editors. Estuarine and Wetland Processes with Emphasis on Modeling. Plenum Press, NY.

Officer, C.B., and D. R. Kester. 1991. On estimating the non-advective tidal exchanges and advective gravitational circulation exchanges in an estuary. *Est. Coast. Shelf Sci.* 32: 99-103.

Pilson, M.E.Q. 1985. Annual cycles of nutrients and chlorophyll in Narragansett Bay, Rhode Island. *J. Mar. Res.* 43: 849-873.

Rattray, M. 1967. Some aspects of the dynamics of circulation in fjords. Pages 52-62 *in* G.H. Lauff, editor. Publ. No. 83. Am. Assoc. Adv. Sci. Washington, DC.

Remane, A., and C. Schlieper. 1971. *Biology of Brackish Water.* Wiley-Interscience, NY. 372p.

Ryther, J.H., and W.M. Dunstan. 1971. Nitrogen, phosphorus and eutrophication in the coastal marine environment. *Science* 171: 1008-1013.

Smith, R.A., R.B. Alexander, and M.G. Wolman. 1987. Water quality trends in the nation's rivers. *Science* 235: 1607-1615.

Sverdrup, H.U. 1953. On conditions for the vernal blooming of phytoplankton. *J. Cons. Int. Explor. Mer.* 18: 287-295.

Townsend, D.W., and L.M. Cammen. 1988. Potential importance of the timing of spring plankton blooms to benthic-pelagic coupling and recruitment of juvenile demersal fishes. *Biol. Oceanogr.* 5: 215-229.

Valiela, I., J. Costa, K. Forman, J.M. Teal, B. Howes, and D. Aubrey. 1990. Transport of groundwater-borne nutrients from watersheds and their effects on coastal waters. *Biogeochemistry* 10: 175-197.

Yentsch, C.S., and D.W. Menzel. 1962. A method for the determination of phytoplankton chlorophyll and phaeophytin by fluorescence. *Deep Sea Res.* 10: 221-231.

# APPENDICES

**APPENDIX 1--** Location of Somes Sound sampling stations. Latitude and longitude coordinates.

| Station Identification | | Location | |
|---|---|---|---|
| 6/20/91 | All other cruises | Latitude 44° | Longitude 68° |
| 1 | 1 | 17.51' | 18.14' |
| 2 | 2 | 18.00' | 18.20' |
| 3 | 3 | 18.62' | 18.40' |
| 4 | 4 | 19.27' | 18.35' |
| 5 | 5 | 19.33 | 18.30' |
| 6 | 7 | 20.01' | 18.45' |
| | 6 | 19.69' | 18.39' |
| 7 | 8 | 20.00' | 18.35' |
| 8 | 9 | 20.89' | 18.52' |
| 9 | 10 | 20.87 | 18.87' |
| | 11 | 21.41' | 18.56' |
| 10 | 12 | 21.57' | 19.33' |

**APPENDIX 2--** Freshwater input data for all sample dates including the following parameters; pH, volume discharge or flux ($m^3$/sec), dissolved inorganic nutrient concentrations (*u*M/l). Number, as indicated on the data spreadsheet, is a site identifier.

NOTE: The source named CORPORAL in this Appendix is identified as Unnamed Brook in Fig. 6 of this report.

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENT CONCENTRATIONS
FROM FRESHWATER SOURCES

------------------------------- DATE=42392 -------------------------------

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | 3.3 | 0.1291 | 7 | 0.07 | 0.01 | 22.83 | 1.51 | 0.01 |
| CONFLUEN | 2.2 | 0.0431 | 15 | 0.12 | 0.10 | 24.89 | 0.31 | 0.02 |
| CORPORAL | 3.4 | 0.1013 | 4 | 0.69 | 0.01 | 25.21 | 0.21 | 0.06 |
| DENNING | 3.3 | 0.2791 | 11 | 1.36 | 0.13 | 29.70 | 0.99 | 0.01 |
| DPW | 3.2 | 0.0019 | 6 | 4.16 | 0.01 | 45.28 | 6.80 | 0.03 |
| HADLOCK | 3.1 | 0.2009 | 8B | . | 0.00 | 24.81 | 0.09 | 0.00 |
| INTER_1 | 2.1 | 0.0066 | 1 | 0.00 | 0.00 | 32.21 | 0.22 | 0.00 |
| INTER_2 | 2.0 | 0.0103 | 2 | 0.00 | 0.00 | 24.57 | 0.97 | 0.00 |
| KITTERID | 3.1 | 0.4484 | 9 | 2.57 | 0.00 | 34.35 | 0.39 | 0.00 |
| MANOWAR | 3.1 | 0.3147 | 12 | 2.01 | 0.03 | 60.96 | 0.53 | 0.09 |
| RICHARDS | 3.5 | 0.1537 | 3 | 0.03 | 0.01 | 27.53 | 0.23 | 0.00 |
| SARGENT | 3.2 | 0.1676 | 5 | 0.86 | 0.01 | 20.10 | 0.07 | 0.01 |
| SEWAGE | . | 0.0012 | 0 | 2.66 | 13.12 | . | 282.50 | 2.44 |
| SOMESPON | 3.2 | 0.7387 | 10 | 0.04 | 0.00 | 12.60 | 0.09 | 0.01 |
| _1SNOWME | 2.1 | 0.0061 | 13 | 0.07 | 0.00 | 55.08 | 0.19 | 0.03 |
| _2SNOWME | . | 0.0019 | 14 | 0.07 | 0.00 | 55.08 | 0.19 | 0.03 |

------------------------------- DATE=51492 -------------------------------

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | 4.4 | 0.0081 | 7 | 1.50 | 0.03 | 94.80 | 0.17 | 0.02 |
| CONFLUEN | 3.4 | 0.0028 | 15 | 0.22 | 0.02 | 97.40 | 0.21 | 0.00 |
| CORPORAL | 4.6 | 0.0247 | 4 | 0.11 | 0.02 | 64.80 | 0.22 | 0.03 |
| DENNING | 4.5 | 0.1744 | 11 | 1.16 | 0.04 | 22.01 | 0.88 | 0.00 |
| DPW | 4.6 | 0.0002 | 6 | 7.22 | 0.03 | 109.76 | 2.97 | 0.06 |
| HADLOCK | 6.4 | 0.1046 | 8B | 3.15 | 0.03 | 56.40 | 0.30 | 0.03 |
| INTER_1 | 3.6 | 0.0016 | 1 | 1.02 | 0.00 | 100.84 | 0.24 | 0.00 |
| INTER_2 | 2.8 | 0.0013 | 2 | 0.00 | 0.00 | 87.84 | 0.62 | 0.00 |
| KITTERID | 4.4 | 0.1290 | 9 | 2.87 | 0.09 | 59.16 | 0.48 | 0.00 |
| MANOWAR | 4.3 | 0.0094 | 12 | 4.32 | 0.03 | 92.72 | 1.04 | 0.02 |
| RICHARDS | 4.4 | 0.1533 | 3 | 1.45 | 0.02 | 31.52 | 0.21 | 0.08 |
| SARGENT | 4.3 | 0.0217 | 5 | 1.75 | 0.02 | 92.60 | 0.26 | 0.01 |
| SEWAGE | . | 0.0009 | 0 | 1.94 | 155.50 | . | 348.00 | 0.59 |
| SOMESPON | 4.7 | 0.2906 | 10 | 0.08 | 0.01 | 19.17 | 0.01 | 0.00 |
| _1SNOWME | 3.3 | 0.0009 | 13 | 0.18 | 0.02 | 90.04 | 0.19 | 0.01 |
| _2SNOWME | . | . | 14 | . | . | . | . | . |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENT CONCENTRATIONS
FROM FRESHWATER SOURCES

DATE=61991

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | . | 0.0043 | 7 | 0.07 | 0.00 | 119.40 | 0.00 | 0.00 |
| CORPORAL | . | 0.0044 | 4 | 0.77 | 0.02 | 86.40 | 0.00 | 0.04 |
| DENNING | . | 0.0434 | 11 | 1.03 | 0.00 | 12.33 | 0.22 | 0.00 |
| DPW | . | 0.0002 | 6 | 5.75 | 0.01 | 164.56 | 2.14 | 0.02 |
| HADLOCK | . | 0.0032 | 8 | 5.09 | 0.00 | 95.00 | 0.07 | 0.00 |
| KITTERID | . | 0.0482 | 9 | 0.00 | 0.00 | 92.20 | 0.80 | 0.00 |
| RICHARDS | . | 0.0242 | 3 | 3.85 | 0.00 | 58.24 | 0.18 | 0.00 |
| SARGENT | . | 0.0029 | 5 | 0.04 | 0.00 | . | 0.05 | 0.00 |
| SEWAGE | 4.8 | 0.0007 | 0 | . | . | . | . | . |
| SOMESPON | . | 0.1842 | 10 | 0.33 | 0.00 | 6.19 | 0.11 | 0.00 |

DATE=72292

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | 5.4 | 0.0040 | 7 | 0.79 | 0.00 | 108.84 | 0.08 | 0.00 |
| CORPORAL | 6.0 | 0.0083 | 4 | 1.02 | 0.00 | 77.64 | 0.11 | 0.03 |
| DENNING | 5.4 | 0.0731 | 11 | 1.96 | 0.00 | 21.27 | 0.10 | 0.13 |
| DPW | 5.3 | 0.0013 | 6 | 5.03 | 0.02 | 146.00 | 2.06 | 0.01 |
| HADLOCK | 5.0 | 0.1417 | 8B | 0.07 | 0.00 | 28.94 | 0.07 | 0.00 |
| KITTERID | 5.1 | 0.0242 | 9 | 1.24 | 0.00 | 68.72 | 0.52 | 0.00 |
| MANOWAR | 5.4 | 0.0085 | 12 | 1.38 | 0.00 | 99.92 | 0.27 | 0.00 |
| RICHARDS | 5.4 | 0.0701 | 3 | 2.61 | 0.00 | 40.89 | 0.16 | 0.01 |
| SARGENT | 5.1 | 0.0091 | 5 | 0.05 | 0.00 | 101.92 | 0.09 | 0.00 |
| SEWAGE | . | 0.0008 | 0 | 968.00 | 55.60 | 179.40 | 18.68 | 0.39 |
| SOMESPON | 6.2 | 0.2457 | 10 | 0.10 | 0.00 | 14.55 | 0.90 | 0.00 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENT CONCENTRATIONS
FROM FRESHWATER SOURCES

DATE=81992

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | 4.7 | 0.03830 | 7 | 0.15 | 0.00 | 108.60 | 0.17 | 0.03 |
| CONFLUEN | 4.6 | 0.03420 | 15 | 0.06 | 0.00 | 135.68 | 0.16 | 0.05 |
| CORPORAL | 5.0 | 0.09900 | 4 | 0.00 | 0.00 | 92.72 | 0.16 | 0.00 |
| DENNING | 6.4 | 0.18410 | 11 | 0.76 | 0.00 | 19.99 | 0.13 | 0.02 |
| DPW | 7.1 | 0.00350 | 6 | 6.77 | 0.01 | 130.72 | 1.03 | 0.04 |
| HADLOCK | 4.9 | 0.03468 | 8B | 0.93 | 0.03 | 89.00 | 0.81 | 0.00 |
| INTER_1 | 4.0 | 0.00070 | 1 | 0.00 | 0.00 | 107.80 | 0.76 | 0.00 |
| INTER_2 | 3.7 | 0.02480 | 2 | 0.00 | 0.00 | 86.00 | 0.99 | 0.00 |
| INTER_3 | 3.8 | 0.02040 | 16 | 0.00 | 0.00 | 123.96 | 1.15 | 0.00 |
| KITTERID | 4.7 | 0.44280 | 9 | 0.00 | 0.00 | 102.40 | 0.74 | 0.00 |
| MANOWAR | 4.8 | . | 12 | 0.64 | 0.00 | 96.16 | 0.22 | 0.00 |
| RICHARDS | 5.0 | 0.21520 | 3 | 1.95 | 0.00 | 81.04 | 0.07 | 0.00 |
| SARGENT | 4.8 | 0.12560 | 5 | 0.02 | 0.00 | 96.60 | 0.04 | 0.00 |
| SEWAGE | . | 0.00090 | 0 | 1034.00 | 39.40 | 193.30 | 10.80 | 1.74 |
| SOMESPON | 4.9 | 0.85470 | 10 | 0.08 | 0.00 | 18.38 | 0.03 | 0.00 |
| _1SNOWME | 3.5 | 0.02620 | 13 | 0.13 | . | 118.72 | 0.97 | 0.06 |
| _2SNOWME | 3.9 | 0.00690 | 14 | 0.05 | 0.00 | 127.36 | 0.00 | 0.00 |

DATE=91291

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | . | 0.0106 | 7 | 0.09 | 0.04 | 134.18 | 0.00 | 0.01 |
| CORPORAL | . | 0.0006 | 4 | 0.88 | 0.01 | 79.82 | 0.07 | 0.12 |
| DENNING | . | 0.0331 | 11 | 0.03 | 0.60 | 22.93 | 0.07 | 0.00 |
| DPW | . | . | 6 | 4.50 | 0.00 | 192.62 | 1.74 | 0.09 |
| HADLOCK | . | 0.0069 | 8 | 0.04 | 0.30 | 51.90 | 0.06 | 0.00 |
| KITTERID | . | 0.0008 | 9 | 7.70 | 0.00 | 84.83 | 0.12 | 0.00 |
| MANOWAR | . | 0.0007 | 12 | 0.04 | 0.01 | 112.52 | 0.08 | 0.00 |
| RICHARDS | . | 0.0051 | 3 | 7.91 | 0.05 | 74.95 | 0.14 | 0.11 |
| SARGENT | . | 0.0013 | 5 | 0.04 | 0.02 | 129.61 | 0.03 | 0.00 |
| SEWAGE | . | 0.0007 | 0 | 1262.40 | 80.54 | 219.58 | 0.22 | 0.15 |
| SOMESPON | . | 0.0856 | 10 | 0.00 | 0.13 | 22.72 | 0.10 | 0.00 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENT CONCENTRATIONS
FROM FRESHWATER SOURCES

DATE=102391

| SOURCE | PH | FLUX | NUMBER | NO2_NO3 | PO4 | SIO2 | NH4 | NO2 |
|---|---|---|---|---|---|---|---|---|
| BARHARBO | 4.3 | 0.0040 | 7 | 0.00 | 0.28 | 113.19 | 0.06 | 0.03 |
| CORPORAL | 5.1 | 0.0460 | 4 | 0.00 | 0.00 | 105.55 | 0.13 | 0.00 |
| DENNING | 4.4 | 0.1940 | 11 | 0.01 | 0.06 | 49.83 | 0.20 | 0.09 |
| DPW | 4.2 | 0.0010 | 6 | 1.60 | 0.03 | 138.33 | 0.16 | 0.11 |
| HADLOCK | 4.4 | 0.1200 | 8 | 0.00 | 0.00 | 39.45 | 0.09 | 0.05 |
| INTER_1 | 3.5 | 0.0030 | 1 | 0.00 | 0.00 | 123.43 | 0.24 | 0.00 |
| INTER_2 | 3.2 | 0.0040 | 2 | 0.00 | 0.00 | 105.83 | 0.66 | 0.00 |
| KITTERID | 3.5 | 0.2020 | 9 | 0.00 | 0.00 | 114.49 | 0.30 | 0.00 |
| MANOWAR | 4.2 | 0.0150 | 12 | 0.00 | 0.00 | 113.09 | 0.14 | 0.05 |
| RICHARDS | 6.8 | 0.1390 | 3 | 0.00 | 0.00 | 89.53 | 0.19 | 0.00 |
| SARGENT | 4.2 | 0.0140 | 5 | 0.02 | 0.02 | 103.97 | 0.11 | 0.02 |
| SEWAGE | . | 0.0012 | 0 | 596.13 | 33.50 | . | 0.30 | 0.08 |
| SOMESPON | 4.5 | 0.9050 | 10 | 0.00 | 0.25 | 34.23 | 0.27 | 0.10 |

**APPENDIX 3 --** Vertical hydrographic profile data for each Somes Sound station for each sample date. Parameters and units are as follows; depth (m), temperature (°C), salinity (ppt), and dissolved oxygen (mg/l).

DATE=42392 STATION=1

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 3.78 | 31.7 | 11.28 |
| 1.0 | 3.61 | 31.8 | 11.07 |
| 2.0 | 3.46 | 31.9 | 11.06 |
| 3.0 | 3.43 | 31.9 | 11.02 |
| 4.0 | 3.43 | 31.9 | 11.03 |
| 5.0 | 3.40 | 32.0 | 10.97 |
| 6.0 | 3.40 | 32.0 | 10.97 |
| 7.0 | 3.40 | 32.0 | 10.97 |
| 8.0 | 3.36 | 32.0 | 10.92 |
| 10.0 | 3.13 | 32.1 | 10.80 |
| 12.0 | 3.10 | 32.1 | 10.70 |
| 14.0 | 3.07 | 32.0 | 10.72 |
| 16.0 | 3.07 | 32.1 | 10.70 |

DATE=42392 STATION=2

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 3.61 | 31.8 | 11.29 |
| 1.0 | 3.50 | 32.0 | 11.17 |
| 2.0 | 3.47 | 31.9 | 11.12 |
| 3.0 | 3.48 | 31.9 | 11.10 |
| 4.0 | 3.41 | 31.8 | 11.08 |
| 5.0 | 3.38 | 32.0 | 11.06 |
| 6.0 | 3.38 | 31.9 | 11.05 |
| 7.0 | 3.38 | 32.0 | 11.04 |
| 8.0 | 3.38 | 32.0 | 11.05 |
| 9.0 | 3.32 | 32.0 | 11.04 |
| 12.0 | 3.29 | 32.0 | 10.97 |
| 13.0 | 3.29 | 32.0 | 10.97 |

DATE=42392 STATION=3

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 5.43 | 30.3 | 10.68 |
| 1.0 | 5.41 | 30.4 | 10.72 |
| 2.0 | 4.82 | 31.1 | 10.92 |
| 3.0 | 4.65 | 31.2 | 11.03 |
| 4.0 | 4.48 | 31.5 | 11.10 |
| 5.0 | 4.36 | 31.6 | 11.12 |
| 10.0 | 3.60 | 32.1 | 11.02 |
| 20.0 | 3.40 | 32.1 | 10.81 |
| 30.0 | 3.35 | 32.0 | 10.80 |
| 40.0 | 3.33 | 32.1 | 10.79 |
| 48.0 | 3.29 | 32.1 | 10.76 |

DATE=42392 STATION=4

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.24 | 28.9 | 10.57 |
| 1.0 | 5.84 | 30.3 | 10.76 |
| 2.0 | 5.14 | 31.2 | 11.02 |
| 3.0 | 4.94 | 31.2 | 11.10 |
| 4.0 | 3.88 | 31.8 | 11.20 |
| 5.0 | 3.65 | 32.0 | 11.05 |
| 10.0 | 3.42 | 32.0 | 10.89 |
| 20.0 | 3.33 | 32.0 | 10.86 |
| 30.0 | 3.29 | 32.2 | 10.77 |
| 40.0 | 3.29 | 32.1 | 10.78 |
| 48.0 | 3.31 | 32.1 | 10.89 |

DATE=42392 STATION=5

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 5.94 | 30.1 | 10.89 |
| 1.0 | 5.82 | 30.3 | 10.75 |
| 2.0 | 5.70 | 30.6 | 10.80 |
| 3.0 | 5.40 | 31.0 | 11.05 |
| 4.0 | 5.30 | 31.0 | 11.00 |
| 5.0 | 3.48 | 31.6 | 11.01 |
| 6.0 | 3.50 | 32.0 | 11.01 |
| 10.0 | 3.42 | 32.0 | 10.83 |
| 15.0 | 3.44 | 32.1 | 11.07 |

DATE=42392 STATION=6

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.32 | 29.2 | 10.42 |
| 1.0 | 6.29 | 29.4 | 10.41 |
| 2.0 | 5.96 | 30.3 | 10.68 |
| 3.0 | 5.63 | 31.0 | 10.98 |
| 4.0 | 4.43 | 31.6 | 11.46 |
| 5.0 | 4.06 | 31.9 | 11.47 |
| 10.0 | 3.25 | 32.1 | 10.92 |
| 15.0 | 3.28 | 32.1 | 10.92 |
| 20.0 | 3.29 | 32.1 | 10.82 |
| 25.0 | 3.28 | 32.1 | 10.79 |
| 35.0 | 3.30 | 32.1 | 10.76 |
| 45.0 | 3.31 | 32.0 | 10.97 |

DATE=42392 STATION=7

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.69 | 27.6 | 10.29 |
| 1.0 | 6.10 | 30.3 | 10.66 |
| 2.0 | 5.71 | 30.9 | 10.91 |
| 3.0 | 5.22 | 31.3 | 11.36 |
| 4.0 | 5.04 | 31.5 | 11.42 |
| 6.0 | 4.09 | 31.7 | 11.68 |
| 8.0 | 3.31 | 31.8 | 11.51 |
| 10.0 | 3.23 | 32.0 | 11.54 |
| 10.0 | 3.21 | 32.0 | 11.04 |
| 15.0 | 3.19 | 31.9 | 10.85 |
| 20.0 | 3.20 | 32.1 | 10.83 |
| 30.0 | 3.19 | 32.0 | 10.77 |
| 38.5 | 3.25 | 32.1 | 10.79 |
| 47.0 | 3.29 | 32.1 | 11.00 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=42392 STATION=8 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 5.77 | 30.90 | 11.10 |
| 1.0 | 5.65 | 30.80 | 10.95 |
| 2.0 | 5.35 | 31.00 | 10.98 |
| 3.0 | 5.31 | 31.10 | 11.18 |
| 4.0 | 5.26 | 31.30 | 11.29 |
| 6.0 | 4.10 | 31.80 | 11.63 |
| 8.0 | 3.38 | 31.09 | 11.20 |
| 10.0 | 3.28 | 31.90 | 11.00 |
| 12.0 | 3.28 | 32.00 | 10.98 |
| 14.0 | 3.28 | 32.00 | 10.92 |
| 16.0 | 3.28 | 32.00 | 10.92 |
| 17.0 | 3.28 | 32.20 | 10.84 |

---------------------------- DATE=42392 STATION=9 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.57 | 28.9 | 10.71 |
| 1.0 | 6.54 | 28.9 | 10.53 |
| 1.5 | 5.80 | 29.5 | 10.83 |
| 2.0 | 5.17 | 31.4 | 11.32 |
| 3.0 | 4.58 | 31.5 | 11.68 |
| 4.0 | 3.79 | 31.5 | 11.78 |
| 5.0 | 3.55 | 31.7 | 11.94 |
| 6.0 | 3.31 | 31.7 | 11.87 |
| 8.0 | 3.20 | 31.8 | 11.18 |
| 10.0 | 3.19 | 32.0 | 11.04 |
| 12.0 | 3.12 | 32.0 | 10.79 |
| 14.0 | 3.10 | 32.0 | 10.77 |
| 16.0 | 3.07 | 32.0 | 10.72 |
| 18.0 | 3.04 | 32.0 | 10.75 |
| 20.0 | 3.01 | 32.1 | 10.70 |
| 22.0 | 3.01 | 32.0 | 10.64 |
| 23.0 | 3.01 | 32.0 | 10.56 |

DATE=42392 STATION=10

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.24 | 29.7 | 10.74 |
| 1.0 | 5.87 | 29.9 | 10.53 |
| 2.0 | 4.50 | 31.5 | 11.62 |
| 3.0 | 4.55 | 31.6 | 11.63 |
| 4.0 | 4.25 | 31.7 | 11.60 |
| 5.0 | 3.83 | 31.8 | 11.53 |
| 6.0 | 3.53 | 31.9 | 11.53 |
| 8.0 | 3.22 | 31.9 | 11.10 |
| 10.0 | 3.10 | 31.9 | 10.85 |
| 12.0 | 3.03 | 32.1 | 10.95 |
| 14.0 | 3.12 | 32.0 | 10.83 |
| 16.0 | 3.09 | 32.0 | 10.77 |
| 17.0 | 3.10 | 32.0 | 10.71 |

DATE=42392 STATION=11

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.22 | 29.5 | 10.65 |
| 1.0 | 6.35 | 29.8 | 10.59 |
| 2.0 | 4.92 | 31.6 | 11.50 |
| 3.0 | 4.59 | 31.6 | 11.59 |
| 4.0 | 3.86 | 31.8 | 11.58 |
| 5.0 | 3.47 | 31.7 | 11.93 |
| 6.0 | 3.30 | 31.8 | 11.34 |
| 7.0 | 3.20 | 32.0 | 10.98 |
| 8.0 | 2.95 | 32.0 | 10.68 |
| 10.0 | 2.91 | 31.7 | 10.49 |
| 12.0 | 2.73 | 31.8 | 10.22 |
| 13.0 | 2.68 | 32.0 | 10.24 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

--------------------------- DATE=42392 STATION=12 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.56 | 29.0 | 10.59 |
| 1.0 | 6.17 | 29.4 | 10.70 |
| 2.0 | 5.59 | 30.6 | 11.07 |
| 3.0 | 4.76 | 31.4 | 11.39 |
| 4.0 | 4.21 | 31.4 | 11.34 |
| 5.0 | 3.95 | 31.7 | 11.25 |
| 6.0 | 3.80 | 31.6 | 11.18 |
| 7.0 | 3.69 | 31.7 | 11.15 |
| 8.0 | 3.57 | 31.7 | 11.11 |
| 9.0 | 3.48 | 31.8 | 11.08 |
| 10.0 | 3.29 | 31.7 | 10.91 |
| 11.0 | 3.25 | 31.8 | 10.89 |
| 12.0 | 3.13 | 31.8 | 10.76 |

--------------------------- DATE=51492 STATION=1 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.41 | 32.6 | 11.05 |
| 1.0 | 6.32 | 32.5 | 11.03 |
| 2.0 | 6.22 | 32.6 | 11.11 |
| 3.0 | 6.17 | 32.6 | 11.08 |
| 4.0 | 6.13 | 32.6 | 11.11 |
| 5.0 | 6.10 | 32.6 | 11.11 |
| 6.0 | 6.07 | 32.7 | 11.13 |
| 7.0 | 6.05 | 32.7 | 11.16 |
| 9.0 | 5.97 | 32.8 | 11.26 |
| 11.0 | 5.89 | 32.8 | 11.31 |
| 13.0 | 5.87 | 32.8 | 11.32 |
| 15.0 | 5.81 | 32.8 | 11.36 |
| 17.0 | 5.69 | 32.8 | 11.31 |
| 19.0 | 5.66 | 32.9 | 11.29 |
| 21.0 | 5.62 | 32.9 | 11.26 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

--------------------------- DATE=51492 STATION=2 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 6.40 | 32.5 | 10.82 |
| 1.0 | 6.34 | 32.6 | 10.72 |
| 2.0 | 6.42 | 32.6 | 10.73 |
| 3.0 | 6.43 | 32.5 | 10.78 |
| 4.0 | 6.12 | 32.6 | 10.93 |
| 5.0 | 6.14 | 32.6 | 10.90 |
| 6.0 | 6.13 | 32.7 | 10.94 |
| 6.0 | 6.13 | 32.7 | 11.00 |
| 7.0 | 6.11 | 32.8 | 10.90 |
| 8.0 | 6.09 | 32.8 | 10.90 |

--------------------------- DATE=51492 STATION=3 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 7.19 | 32.6 | 10.35 |
| 1.0 | 7.07 | 32.6 | 10.35 |
| 2.0 | 6.76 | 32.8 | 10.47 |
| 3.0 | 6.48 | 32.8 | 10.69 |
| 4.0 | 6.28 | 32.8 | 10.75 |
| 5.0 | 6.22 | 32.9 | 10.79 |
| 6.0 | 6.16 | 32.8 | 10.79 |
| 8.0 | 6.00 | 32.9 | 10.84 |
| 10.0 | 5.99 | 32.8 | 10.80 |
| 13.0 | 5.99 | 32.9 | 10.85 |
| 16.0 | 5.96 | 32.9 | 10.80 |
| 19.0 | 5.97 | 32.9 | 10.80 |
| 20.0 | 5.97 | 33.0 | 10.83 |
| 22.0 | 5.98 | 32.9 | 10.81 |
| 27.0 | 5.97 | 32.9 | 10.81 |
| 32.0 | 5.98 | 32.8 | 10.81 |
| 37.0 | 5.97 | 32.7 | 10.81 |
| 42.0 | 5.94 | 33.1 | 10.82 |
| 47.0 | 5.95 | 32.9 | 10.83 |

DATE=51492 STATION=4

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 7.91 | 32.4 | 9.97 |
| 1.0 | 7.99 | 32.4 | 10.31 |
| 2.0 | 7.39 | 32.4 | 10.37 |
| 3.0 | 6.77 | 35.7 | 10.60 |
| 4.0 | 6.44 | 32.8 | 10.62 |
| 5.0 | 6.35 | 32.8 | 10.61 |
| 7.0 | 6.13 | 32.8 | 10.71 |
| 9.0 | 6.00 | 32.9 | 10.73 |
| 11.0 | 5.99 | 32.8 | 10.68 |
| 14.0 | 5.95 | 32.8 | 10.71 |
| 17.0 | 5.97 | 32.9 | 10.67 |
| 20.0 | 5.91 | 32.8 | 10.65 |
| 25.0 | 5.70 | 32.9 | 10.43 |
| 30.0 | 5.73 | 32.8 | 10.43 |
| 35.0 | 5.61 | 32.9 | 10.35 |
| 40.0 | 5.52 | 32.9 | 10.19 |
| 45.0 | 5.45 | 32.7 | 10.13 |
| 50.0 | 5.43 | 33.0 | 10.17 |

DATE=51492 STATION=5

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 8.29 | 32.3 | 10.06 |
| 1.0 | 8.27 | 32.4 | 9.91 |
| 2.0 | 8.26 | 32.4 | 9.89 |
| 3.0 | 8.24 | 32.4 | 9.90 |
| 4.0 | 7.89 | 32.5 | 10.03 |
| 5.0 | 7.72 | 32.4 | 10.12 |
| 7.0 | 7.06 | 32.6 | 10.44 |
| 9.0 | 6.43 | 32.7 | 10.57 |
| 11.0 | 6.18 | 32.8 | 10.64 |
| 13.0 | 5.96 | 32.9 | 10.55 |
| 15.0 | 5.93 | 32.9 | 10.55 |
| 16.0 | 5.92 | 32.9 | 10.51 |

---------------------------- DATE=51492 STATION=6 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 8.42 | 32.4 | 9.86 |
| 1.0 | 8.36 | 32.4 | 9.89 |
| 2.0 | 8.23 | 32.3 | 9.97 |
| 3.0 | 7.91 | 32.5 | 10.08 |
| 4.0 | 7.99 | 32.5 | 10.12 |
| 5.0 | 7.69 | 32.4 | 10.18 |
| 6.0 | 6.80 | 32.6 | 10.50 |
| 7.0 | 6.19 | 32.8 | 10.61 |
| 9.0 | 6.18 | 32.8 | 10.61 |
| 11.0 | 5.92 | 32.9 | 10.63 |
| 14.0 | 5.85 | 32.9 | 10.56 |
| 17.0 | 5.81 | 32.9 | 10.52 |
| 20.0 | 5.68 | 32.9 | 10.43 |
| 20.0 | 5.50 | 32.9 | 10.18 |
| 23.0 | 5.49 | 32.8 | 10.19 |
| 28.0 | 5.44 | 33.0 | 10.10 |
| 33.0 | 5.42 | 32.8 | 10.11 |
| 38.0 | 5.43 | 32.8 | 10.06 |
| 43.0 | 5.45 | 32.9 | 10.10 |

---------------------------- DATE=51492 STATION=7 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 9.05 | 31.8 | 9.76 |
| 1.0 | 9.03 | 31.8 | 9.67 |
| 2.0 | 8.98 | 32.2 | 9.66 |
| 3.0 | 8.41 | 32.3 | 9.89 |
| 4.0 | 8.07 | 32.3 | 10.06 |
| 5.0 | 7.41 | 32.5 | 10.32 |
| 7.0 | 6.16 | 32.8 | 10.60 |
| 9.0 | 6.03 | 32.8 | 10.62 |
| 12.0 | 5.83 | 32.9 | 10.46 |
| 15.0 | 5.58 | 33.0 | 10.18 |
| 15.0 | 5.61 | 32.8 | 10.27 |
| 18.0 | 5.50 | 32.8 | 10.17 |
| 21.0 | 5.46 | 32.8 | 10.14 |
| 26.0 | 5.41 | 32.8 | 10.06 |
| 31.0 | 5.40 | 32.8 | 10.00 |
| 36.0 | 5.37 | 32.9 | 9.98 |
| 41.0 | 5.36 | 32.8 | 9.97 |

DATE=51492 STATION=8

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 8.96 | 32.1 | 9.91 |
| 1.0 | 8.79 | 32.0 | 9.78 |
| 2.0 | 8.83 | 32.1 | 9.71 |
| 3.0 | 8.85 | 32.0 | 9.76 |
| 4.0 | 8.00 | 32.2 | 10.25 |
| 5.0 | 7.85 | 32.2 | 10.15 |
| 7.0 | 6.96 | 32.5 | 10.47 |
| 9.0 | 6.34 | 32.7 | 10.54 |
| 11.0 | 6.12 | 32.8 | 10.49 |
| 13.0 | 6.08 | 32.7 | 10.42 |
| 15.0 | 5.56 | 32.7 | 10.03 |

DATE=51492 STATION=9

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 9.06 | 31.7 | 9.78 |
| 1.0 | 9.06 | 32.0 | 9.70 |
| 2.0 | 8.84 | 31.9 | 9.83 |
| 3.0 | 8.11 | 32.1 | 9.97 |
| 4.0 | 6.80 | 32.4 | 10.45 |
| 5.0 | 6.35 | 32.5 | 10.65 |
| 6.0 | 6.19 | 32.4 | 10.68 |
| 8.0 | 6.06 | 32.5 | 10.55 |
| 10.0 | 5.93 | 32.6 | 10.44 |
| 12.0 | 5.83 | 32.7 | 10.43 |
| 15.0 | 5.66 | 32.7 | 10.29 |
| 18.0 | 5.50 | 32.7 | 10.23 |
| 21.0 | 5.28 | 32.9 | 9.80 |

DATE=51492 STATION=10

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 8.86 | 32.0 | 9.76 |
| 1.0 | 8.76 | 32.1 | 9.80 |
| 2.0 | 7.41 | 32.6 | 10.43 |
| 3.0 | 7.04 | 32.6 | 10.53 |
| 4.0 | 6.53 | 32.6 | 10.61 |
| 5.0 | 6.48 | 32.7 | 10.64 |
| 7.0 | 6.16 | 32.8 | 10.59 |
| 9.0 | 6.09 | 32.7 | 10.58 |
| 11.0 | 6.05 | 32.8 | 10.54 |
| 12.0 | 5.96 | 32.8 | 10.55 |

DATE=51492 STATION=11

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 9.10 | 32.0 | 9.77 |
| 1.0 | 8.49 | 32.2 | 9.94 |
| 2.0 | 7.30 | 32.6 | 10.30 |
| 3.0 | 7.04 | 32.7 | 10.45 |
| 4.0 | 6.71 | 32.7 | 10.59 |
| 5.0 | 6.45 | 32.7 | 10.57 |
| 6.0 | 6.32 | 32.8 | 10.59 |
| 7.0 | 6.26 | 32.7 | 10.58 |
| 8.0 | 6.16 | 32.7 | 10.67 |
| 9.0 | 6.02 | 32.7 | 10.64 |
| 10.0 | 5.87 | 32.7 | 10.70 |

DATE=51492 STATION=12

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 10.09 | 30.0 | 9.29 |
| 1.0 | 10.00 | 30.0 | 9.24 |
| 1.5 | 9.60 | 31.3 | 9.50 |
| 2.0 | 8.78 | 31.5 | 9.62 |
| 3.0 | 8.44 | 31.8 | 9.69 |
| 4.0 | 8.03 | 32.0 | 9.89 |
| 5.0 | 7.69 | 32.2 | 9.94 |
| 6.0 | 7.63 | 32.1 | 9.97 |
| 7.0 | 7.52 | 32.3 | 10.01 |
| 8.0 | 7.36 | 32.3 | 10.08 |
| 9.0 | 6.81 | 32.4 | 10.15 |
| 9.5 | 6.58 | 32.6 | 10.25 |

DATE=62091 STATION=1

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.12 | 31.2 | 8.99 |
| 1.0 | 11.04 | 31.3 | 8.89 |
| 1.5 | 11.04 | 31.3 | 9.23 |
| 2.0 | 11.18 | 31.3 | 9.30 |
| 4.0 | 11.00 | 31.4 | 9.43 |
| 6.0 | 10.42 | 31.4 | 10.15 |
| 8.0 | 9.92 | 31.5 | 10.32 |
| 10.0 | 9.93 | 31.5 | 10.45 |
| 12.0 | 9.96 | 31.5 | 9.28 |
| 14.0 | 9.82 | 31.6 | 9.22 |
| 16.0 | 9.82 | 31.6 | 9.12 |
| 20.0 | 9.66 | 31.5 | 9.19 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=62091 STATION=2 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.05 | 31.3 | 9.00 |
| 2.0 | 12.30 | 31.4 | 9.90 |
| 3.0 | 11.15 | 31.6 | 9.28 |
| 4.0 | 11.27 | 31.5 | 9.70 |
| 6.0 | 10.74 | 31.5 | 9.70 |
| 8.0 | 10.47 | 31.5 | 9.70 |
| 10.0 | 10.00 | 31.6 | 9.66 |
| 12.0 | 9.92 | 31.6 | 9.58 |
| 13.3 | 9.92 | 31.6 | 9.37 |

---------------------------- DATE=62091 STATION=3 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.69 | 31.4 | 9.25 |
| 2.0 | 11.67 | 31.5 | 9.29 |
| 3.0 | 11.52 | 31.5 | 9.23 |
| 4.0 | 11.31 | 31.5 | 9.10 |
| 6.0 | 11.12 | 31.5 | 9.08 |
| 8.0 | 11.01 | 31.6 | 9.24 |
| 10.0 | 10.57 | 31.6 | 9.11 |
| 12.0 | 10.41 | 31.6 | 9.14 |
| 15.0 | 10.23 | 31.7 | 8.78 |
| 18.0 | 10.15 | 31.6 | 8.75 |
| 21.0 | 10.07 | 31.7 | 8.54 |
| 24.0 | 10.02 | 31.7 | 8.32 |
| 27.0 | 9.98 | 31.7 | 8.38 |
| 30.0 | 9.86 | 31.7 | 8.56 |
| 33.0 | 9.73 | 31.8 | 8.55 |
| 36.0 | 9.71 | 31.6 | 8.16 |
| 39.0 | 9.70 | 31.7 | 8.35 |
| 42.0 | 9.64 | 31.8 | 8.75 |
| 44.0 | 9.62 | 31.9 | 8.60 |

DATE=62091 STATION=4

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.36 | 31.3 | 8.74 |
| 1.0 | 14.22 | 31.3 | 8.58 |
| 2.0 | 12.83 | 31.5 | 9.55 |
| 4.0 | 11.93 | 31.5 | 10.03 |
| 6.0 | 11.01 | 31.6 | 9.85 |
| 8.0 | 10.49 | 31.6 | 9.94 |
| 10.0 | 10.31 | 31.6 | 8.91 |
| 12.0 | 10.22 | 31.7 | 8.45 |
| 15.0 | 10.18 | 31.7 | 8.61 |
| 18.0 | 10.12 | 31.6 | 8.48 |
| 21.0 | 10.06 | 31.7 | 8.72 |
| 24.0 | 10.03 | 31.7 | 8.77 |
| 27.0 | 10.03 | 31.6 | 8.44 |
| 30.0 | 10.01 | 31.7 | 8.33 |
| 33.0 | 9.97 | 31.5 | 8.00 |
| 36.0 | 9.98 | 31.6 | 8.40 |
| 37.8 | 9.95 | 31.6 | 8.65 |

DATE=62091 STATION=5

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.7 | 14.45 | 31.4 | 8.80 |
| 1.5 | 14.40 | 31.4 | 8.78 |
| 2.0 | 14.34 | 31.4 | 9.27 |
| 3.0 | 12.24 | 31.4 | 9.54 |
| 4.0 | 11.29 | 31.6 | 9.46 |
| 5.0 | 11.04 | 31.6 | 9.65 |
| 6.0 | 10.82 | 31.6 | 9.62 |
| 8.0 | 10.38 | 31.6 | 9.72 |
| 10.0 | 10.22 | 31.6 | 9.48 |
| 12.0 | 10.16 | 31.7 | 9.31 |
| 14.0 | 10.10 | 31.7 | 9.38 |
| 15.0 | 10.09 | 31.6 | 9.23 |

DATE=62091 STATION=6

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 1 | 14.21 | 31.3 | 9.16 |
| 2 | 14.20 | 31.3 | 9.05 |
| 3 | 13.75 | 31.4 | 9.18 |
| 4 | 12.07 | 31.4 | 9.56 |
| 6 | 11.25 | 31.5 | 10.62 |
| 8 | 10.68 | 31.6 | 9.99 |
| 10 | 10.44 | 31.6 | 9.16 |
| 12 | 10.26 | 31.6 | 8.82 |
| 15 | 10.19 | 31.6 | 8.65 |
| 18 | 10.17 | 31.5 | 8.38 |
| 21 | 10.13 | 31.7 | 8.07 |
| 24 | 10.10 | 31.7 | 7.95 |
| 25 | 10.09 | 31.5 | 7.84 |

DATE=62091 STATION=7

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 1 | 14.29 | 31.4 | 8.53 |
| 2 | 14.15 | 31.3 | 9.11 |
| 3 | 13.27 | 31.3 | 9.18 |
| 4 | 12.49 | 31.5 | 9.36 |
| 5 | 12.07 | 31.4 | 9.60 |
| 6 | 11.68 | 31.5 | 9.66 |
| 8 | 10.94 | 31.6 | 9.70 |
| 10 | 10.53 | 31.6 | 9.57 |
| 12 | 10.42 | 31.6 | 9.08 |
| 14 | 10.23 | 31.6 | 8.76 |
| 16 | 10.14 | 31.6 | 8.31 |

DATE=62091 STATION=8

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 1 | 14.41 | 31.3 | 9.15 |
| 2 | 13.68 | 31.3 | 9.16 |
| 3 | 12.97 | 31.4 | 9.21 |
| 4 | 12.31 | 31.5 | 9.50 |
| 5 | 11.70 | 31.4 | 10.00 |
| 6 | 11.35 | 31.5 | 10.19 |
| 8 | 10.48 | 31.5 | 9.28 |
| 10 | 10.31 | 31.5 | 8.83 |
| 12 | 10.25 | 31.5 | 8.58 |
| 14 | 10.22 | 31.6 | 8.40 |
| 16 | 10.17 | 31.6 | 8.22 |

DATE=62091 STATION=9

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 1 | 15.20 | 31.3 | 8.66 |
| 2 | 15.02 | 31.3 | 8.80 |
| 3 | 13.28 | 31.4 | 9.10 |
| 4 | 12.21 | 31.4 | 9.46 |
| 6 | 11.05 | 31.5 | 10.09 |
| 8 | 10.75 | 31.6 | 10.63 |
| 10 | 10.41 | 31.6 | 9.32 |
| 12 | 10.31 | 31.6 | 8.93 |
| 14 | 10.22 | 31.7 | 8.39 |
| 16 | 10.19 | 31.7 | 8.24 |
| 18 | 10.15 | 31.6 | 8.22 |
| 20 | 10.12 | 31.7 | 7.88 |

DATE=62091 STATION=10

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 1 | 17.75 | 30.0 | 8.34 |
| 2 | 14.70 | 30.8 | 9.17 |
| 3 | 14.24 | 31.8 | 9.26 |
| 4 | 12.89 | 31.1 | 9.80 |
| 5 | 12.65 | 31.5 | 9.13 |
| 6 | 12.21 | 31.4 | 9.39 |
| 8 | 11.40 | 31.3 | 8.89 |
| 10 | 11.03 | 31.5 | 8.75 |
| 11 | 11.00 | 31.4 | 8.65 |

DATE=72292 STATION=1

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 12.94 | 31.1 | 9.150 |
| 1.0 | 12.40 | 31.1 | 9.250 |
| 2.0 | 11.70 | 31.3 | 9.360 |
| 3.0 | 11.56 | 31.4 | 9.350 |
| 4.0 | 11.39 | 31.4 | 9.410 |
| 5.0 | 10.67 | 31.5 | 9.650 |
| 7.0 | 10.28 | 31.6 | 9.810 |
| 9.0 | 9.81 | 31.7 | 9.890 |
| 11.0 | 9.62 | 31.7 | 9.820 |
| 13.0 | 9.20 | 31.8 | 9.740 |
| 15.0 | 9.07 | 31.6 | 9.687 |
| 17.0 | 9.02 | 31.7 | 9.620 |
| 17.9 | 9.01 | 31.8 | 9.600 |

---------------------------- DATE=72292 STATION=2 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.65 | 30.5 | 8.91 |
| 1.0 | 14.66 | 30.5 | 8.78 |
| 2.0 | 12.74 | 31.2 | 9.17 |
| 3.0 | 12.24 | 31.3 | 9.20 |
| 4.0 | 11.54 | 31.5 | 9.38 |
| 5.0 | 11.45 | 31.5 | 9.42 |
| 7.0 | 11.29 | 31.6 | 9.41 |
| 9.0 | 10.78 | 31.5 | 9.51 |
| 11.0 | 10.30 | 31.7 | 9.55 |
| 13.5 | 9.85 | 31.7 | 9.64 |

---------------------------- DATE=72292 STATION=3 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.05 | 15.24 | 31.1 | 8.66 |
| 1.00 | 15.13 | 31.0 | 8.64 |
| 2.00 | 14.97 | 31.1 | 8.66 |
| 3.00 | 12.92 | 31.3 | 9.24 |
| 4.00 | 11.57 | 31.6 | 9.49 |
| 5.00 | 11.55 | 31.6 | 9.48 |
| 7.00 | 11.29 | 31.6 | 9.51 |
| 9.00 | 10.90 | 31.6 | 9.46 |
| 11.00 | 10.82 | 31.6 | 9.44 |
| 13.00 | 10.75 | 31.6 | 9.42 |
| 15.00 | 10.73 | 31.6 | 9.37 |
| 17.00 | 10.69 | 31.6 | 9.31 |
| 20.00 | 10.66 | 31.6 | 9.43 |
| 25.00 | 10.63 | 31.7 | 9.41 |
| 30.00 | 10.53 | 31.5 | 9.42 |
| 35.00 | 10.42 | 31.7 | 9.35 |
| 40.00 | 10.24 | 31.7 | 9.34 |
| 45.00 | 10.07 | 31.7 | 9.41 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

DATE=72292 STATION=4

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 16.53 | 30.9 | 8.33 |
| 1.0 | 16.44 | 30.8 | 8.35 |
| 2.0 | 15.34 | 31.0 | 8.46 |
| 3.0 | 12.05 | 31.5 | 9.35 |
| 4.0 | 11.42 | 31.6 | 9.36 |
| 5.0 | 11.34 | 31.5 | 9.35 |
| 7.0 | 10.85 | 31.6 | 9.20 |
| 9.0 | 10.72 | 31.7 | 9.02 |
| 11.0 | 10.65 | 31.6 | 8.98 |
| 14.0 | 10.61 | 31.6 | 8.94 |
| 17.0 | 10.60 | 31.6 | 8.84 |
| 20.0 | 10.61 | 31.6 | 8.92 |
| 25.0 | 10.61 | 31.5 | 8.83 |
| 30.0 | 10.62 | 31.7 | 8.82 |
| 35.0 | 10.61 | 31.6 | 8.87 |
| 40.0 | 10.58 | 31.6 | 9.14 |
| 45.0 | 10.51 | 31.7 | 9.18 |
| 50.0 | 10.55 | 31.7 | 9.20 |

DATE=72292 STATION=5

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 16.23 | 30.7 | 8.50 |
| 1.0 | 16.09 | 30.8 | 8.47 |
| 2.0 | 13.85 | 31.3 | 8.96 |
| 3.0 | 12.46 | 31.4 | 9.24 |
| 4.0 | 11.42 | 31.5 | 9.43 |
| 5.0 | 11.30 | 31.4 | 9.53 |
| 7.0 | 10.97 | 31.5 | 9.39 |
| 9.0 | 10.90 | 31.5 | 9.34 |
| 11.0 | 10.86 | 31.6 | 9.34 |
| 14.0 | 10.73 | 31.6 | 9.26 |
| 17.0 | 10.71 | 31.6 | 9.30 |
| 19.5 | 10.66 | 31.7 | 9.31 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=72292 STATION=6 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 16.52 | 30.9 | 8.36 |
| 1.0 | 16.44 | 30.8 | 8.39 |
| 2.0 | 15.38 | 30.9 | 8.62 |
| 3.0 | 11.39 | 31.6 | 9.33 |
| 4.0 | 11.33 | 31.6 | 9.28 |
| 5.0 | 11.05 | 31.6 | 9.21 |
| 6.0 | 10.87 | 31.7 | 9.14 |
| 8.0 | 10.79 | 31.6 | 9.09 |
| 10.0 | 10.65 | 31.6 | 8.72 |
| 13.0 | 10.66 | 31.6 | 8.56 |
| 16.0 | 10.65 | 31.5 | 8.48 |
| 19.0 | 10.67 | 31.6 | 8.55 |
| 20.0 | 10.64 | 31.6 | 8.78 |
| 24.0 | 10.67 | 31.6 | 8.83 |
| 29.0 | 10.68 | 31.7 | 8.96 |
| 34.0 | 10.67 | 31.6 | 8.81 |
| 39.0 | 10.70 | 31.3 | 8.86 |
| 44.0 | 10.72 | 31.6 | 8.94 |

---------------------------- DATE=72292 STATION=7 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 16.13 | 30.8 | 8.42 |
| 1.0 | 15.55 | 30.8 | 8.44 |
| 2.0 | 13.38 | 31.3 | 9.11 |
| 3.0 | 12.16 | 31.4 | 9.40 |
| 4.0 | 11.66 | 31.5 | 9.43 |
| 5.0 | 11.45 | 31.5 | 9.29 |
| 7.0 | 11.02 | 31.6 | 9.18 |
| 9.0 | 10.85 | 31.6 | 9.16 |
| 11.0 | 10.82 | 31.6 | 9.11 |
| 14.0 | 10.72 | 31.6 | 8.81 |
| 17.0 | 10.67 | 31.7 | 8.59 |
| 20.0 | 10.64 | 31.6 | 8.44 |
| 23.0 | 10.64 | 31.5 | 8.44 |
| 28.0 | 10.64 | 31.5 | 8.40 |
| 33.0 | 10.65 | 31.6 | 8.44 |
| 38.0 | 10.66 | 31.5 | 8.44 |
| 43.0 | 10.67 | 31.6 | 8.42 |
| 48.0 | 10.69 | 31.5 | 8.46 |

------------------------------ DATE=72292 STATION=8 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.80 | 30.9 | 8.44 |
| 1.0 | 15.76 | 30.8 | 8.41 |
| 2.0 | 12.26 | 31.5 | 9.25 |
| 3.0 | 12.03 | 31.4 | 9.27 |
| 4.0 | 12.04 | 31.4 | 9.29 |
| 5.0 | 11.84 | 31.4 | 9.28 |
| 7.0 | 11.41 | 31.5 | 9.31 |
| 9.0 | 11.13 | 31.5 | 9.32 |
| 11.0 | 10.95 | 31.5 | 9.16 |
| 13.0 | 10.79 | 31.6 | 8.90 |
| 15.0 | 10.76 | 31.5 | 8.81 |
| 17.0 | 10.72 | 31.6 | 8.77 |

------------------------------ DATE=72292 STATION=9 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.36 | 30.9 | 8.85 |
| 1.0 | 15.36 | 30.9 | 8.75 |
| 2.0 | 14.40 | 31.2 | 8.84 |
| 3.0 | 12.04 | 31.5 | 9.44 |
| 4.0 | 11.70 | 31.4 | 9.48 |
| 5.0 | 11.40 | 31.5 | 9.32 |
| 7.0 | 11.15 | 31.6 | 9.17 |
| 9.0 | 11.00 | 31.5 | 9.09 |
| 11.0 | 10.88 | 31.5 | 8.79 |
| 13.0 | 10.81 | 31.6 | 8.61 |
| 15.0 | 10.75 | 31.5 | 8.15 |
| 17.0 | 10.67 | 31.5 | 7.90 |
| 19.0 | 10.60 | 31.6 | 7.52 |
| 21.0 | 10.57 | 31.6 | 7.23 |
| 22.8 | 10.55 | 31.6 | 7.03 |

--------------------------- DATE=72292 STATION=10 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.88 | 31.1 | 8.71 |
| 1.0 | 15.29 | 31.1 | 8.80 |
| 2.0 | 13.88 | 31.2 | 9.12 |
| 3.0 | 12.55 | 31.5 | 9.32 |
| 4.0 | 11.45 | 31.5 | 9.31 |
| 5.0 | 11.29 | 31.3 | 9.24 |
| 7.0 | 11.13 | 31.5 | 9.18 |
| 9.0 | 10.98 | 31.5 | 8.95 |
| 11.0 | 10.88 | 31.5 | 8.70 |
| 13.0 | 10.89 | 31.5 | 8.49 |
| 15.0 | 10.78 | 31.5 | 8.30 |

--------------------------- DATE=72292 STATION=11 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.60 | 31.2 | 9.43 |
| 1.0 | 14.54 | 31.3 | 9.16 |
| 2.0 | 13.34 | 31.5 | 8.87 |
| 3.0 | 12.18 | 31.5 | 9.41 |
| 4.0 | 11.73 | 31.5 | 9.37 |
| 5.0 | 11.49 | 31.5 | 9.28 |
| 7.0 | 11.19 | 31.5 | 9.36 |
| 9.0 | 10.98 | 31.5 | 8.97 |
| 11.0 | 10.91 | 31.5 | 8.49 |
| 12.3 | 10.72 | 31.6 | 7.59 |

--------------------------- DATE=72292 STATION=12 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 17.92 | 29.6 | 8.57 |
| 1.0 | 18.00 | 29.8 | 8.13 |
| 2.0 | 12.48 | 31.3 | 8.76 |
| 3.0 | 12.46 | 31.3 | 8.72 |
| 4.0 | 12.32 | 31.3 | 8.72 |
| 5.0 | 12.11 | 31.4 | 8.71 |
| 6.0 | 11.78 | 31.4 | 8.70 |
| 7.0 | 11.58 | 31.4 | 8.72 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

------------------------------ DATE=81992 STATION=1 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 12.70 | 30.8 | 8.43 |
| 1.0 | 12.53 | 31.2 | 8.26 |
| 2.0 | 12.37 | 31.2 | 8.23 |
| 3.0 | 12.28 | 31.3 | 8.19 |
| 4.0 | 12.24 | 31.2 | 8.14 |
| 5.0 | 12.18 | 31.4 | 8.18 |
| 6.0 | 12.02 | 31.5 | 8.20 |
| 7.0 | 11.95 | 31.6 | 8.22 |
| 8.0 | 11.92 | 31.5 | 8.20 |
| 10.0 | 11.85 | 31.6 | 8.22 |
| 12.0 | 11.79 | 31.7 | 8.27 |
| 13.3 | 11.56 | 31.7 | 8.30 |

------------------------------ DATE=81992 STATION=2 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 12.38 | 31.4 | 8.47 |
| 1.0 | 12.20 | 31.4 | 8.27 |
| 2.0 | 12.17 | 31.5 | 8.19 |
| 3.0 | 12.07 | 31.7 | 8.12 |
| 4.0 | 11.97 | 31.6 | 8.06 |
| 5.0 | 11.92 | 31.7 | 8.00 |
| 6.0 | 11.90 | 31.7 | 8.00 |
| 7.0 | 11.89 | 31.7 | 7.89 |
| 8.0 | 11.87 | 31.7 | 7.89 |
| 8.2 | 11.87 | 31.8 | 7.86 |

---------------------------- DATE=81992 STATION=3 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.09 | 31.6 | 8.66 |
| 1.0 | 13.03 | 31.6 | 8.62 |
| 2.0 | 12.36 | 31.6 | 8.45 |
| 3.0 | 12.18 | 31.6 | 8.35 |
| 4.0 | 12.11 | 31.5 | 8.30 |
| 5.0 | 12.07 | 31.5 | 8.25 |
| 7.0 | 11.95 | 31.6 | 8.22 |
| 9.0 | 11.88 | 31.8 | 8.09 |
| 11.0 | 11.87 | 31.8 | 8.01 |
| 14.0 | 11.88 | 31.8 | 7.98 |
| 17.0 | 11.89 | 31.8 | 7.93 |
| 20.0 | 11.88 | 31.9 | 7.89 |
| 25.0 | 11.87 | 31.8 | 7.81 |
| 30.0 | 11.86 | 31.8 | 7.70 |
| 35.0 | 11.83 | 31.8 | 7.55 |
| 40.0 | 11.82 | 31.8 | 7.48 |
| 45.5 | 11.83 | 31.8 | 7.44 |

---------------------------- DATE=81992 STATION=4 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.40 | 31.5 | 8.73 |
| 1.0 | 12.25 | 31.6 | 8.23 |
| 2.0 | 12.15 | 31.7 | 8.16 |
| 3.0 | 12.17 | 31.7 | 8.15 |
| 4.0 | 12.12 | 31.7 | 8.11 |
| 5.0 | 12.01 | 31.7 | 7.95 |
| 7.0 | 11.92 | 31.9 | 7.90 |
| 9.0 | 11.88 | 31.7 | 7.73 |
| 11.0 | 11.85 | 31.8 | 7.67 |
| 13.0 | 11.82 | 31.9 | 7.60 |
| 15.0 | 11.80 | 31.8 | 7.56 |
| 17.0 | 11.78 | 31.8 | 7.47 |
| 20.0 | 11.76 | 31.8 | 7.44 |
| 23.0 | 11.75 | 31.8 | 7.40 |
| 28.0 | 11.76 | 31.9 | 7.40 |
| 33.0 | 11.76 | 31.8 | 7.40 |
| 38.0 | 11.76 | 31.8 | 7.39 |
| 43.4 | 11.76 | 31.8 | 7.39 |

------------------------------ DATE=81992 STATION=5 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 12.80 | 31.5 | 8.54 |
| 1.0 | 12.60 | 31.4 | 8.45 |
| 2.0 | 12.61 | 31.5 | 8.43 |
| 3.0 | 12.53 | 31.6 | 8.42 |
| 4.0 | 12.43 | 31.5 | 8.40 |
| 5.0 | 12.18 | 31.5 | 8.20 |
| 7.0 | 12.02 | 31.7 | 8.14 |
| 9.0 | 11.95 | 31.7 | 8.02 |
| 11.0 | 11.94 | 31.7 | 7.94 |
| 13.0 | 11.92 | 31.7 | 7.83 |
| 14.7 | 11.79 | 31.8 | 7.34 |

------------------------------ DATE=81992 STATION=6 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.48 | 31.6 | 8.61 |
| 1.0 | 13.25 | 31.7 | 8.56 |
| 2.0 | 12.56 | 31.7 | 8.42 |
| 3.0 | 12.48 | 31.7 | 8.37 |
| 4.0 | 12.20 | 31.8 | 8.17 |
| 5.0 | 12.17 | 31.8 | 8.13 |
| 7.0 | 12.02 | 31.8 | 8.02 |
| 9.0 | 11.99 | 31.8 | 7.92 |
| 11.0 | 11.86 | 31.8 | 7.62 |
| 13.0 | 11.83 | 31.8 | 7.55 |
| 15.0 | 11.83 | 31.8 | 7.52 |
| 17.0 | 11.80 | 31.9 | 7.49 |
| 19.0 | 11.82 | 31.7 | 7.46 |
| 24.0 | 11.78 | 31.8 | 7.39 |
| 29.0 | 11.78 | 31.9 | 7.34 |
| 34.0 | 11.76 | 31.8 | 7.23 |
| 39.0 | 11.76 | 31.7 | 7.23 |
| 44.0 | 11.78 | 31.8 | 7.24 |

DATE=81992 STATION=7

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.56 | 31.6 | 8.79 |
| 1.0 | 13.53 | 31.7 | 8.75 |
| 2.0 | 13.46 | 31.7 | 8.80 |
| 3.0 | 13.43 | 31.7 | 8.81 |
| 4.0 | 13.38 | 31.6 | 8.80 |
| 5.0 | 13.09 | 31.8 | 8.80 |
| 7.0 | 12.21 | 31.4 | 8.20 |
| 9.0 | 12.01 | 31.7 | 7.98 |
| 11.0 | 11.98 | 31.7 | 7.88 |
| 14.0 | 11.89 | 31.7 | 7.73 |
| 17.0 | 11.77 | 31.9 | 7.49 |
| 20.0 | 11.70 | 31.9 | 7.29 |
| 25.0 | 11.67 | 31.9 | 7.19 |
| 30.0 | 11.67 | 31.9 | 7.20 |
| 40.0 | 11.67 | 31.8 | 7.19 |
| 45.0 | 11.70 | 31.9 | 7.15 |
| 49.9 | 11.71 | 31.8 | 7.12 |

DATE=81992 STATION=8

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.76 | 31.2 | 8.69 |
| 1.0 | 13.51 | 31.2 | 8.70 |
| 2.0 | 13.38 | 31.3 | 8.78 |
| 3.0 | 12.86 | 31.4 | 8.70 |
| 4.0 | 12.60 | 31.5 | 8.74 |
| 5.0 | 12.55 | 31.5 | 8.52 |
| 7.0 | 12.34 | 31.8 | 8.29 |
| 9.0 | 12.21 | 31.8 | 8.10 |
| 11.0 | 12.21 | 31.8 | 8.04 |
| 13.0 | 12.12 | 31.8 | 7.90 |
| 15.0 | 11.98 | 31.8 | 7.53 |
| 17.1 | 11.84 | 31.8 | 7.29 |

----------------------------- DATE=81992 STATION=9 -----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.58 | 29.8 | 8.53 |
| 1.0 | 15.13 | 30.0 | 8.80 |
| 2.0 | 15.01 | 30.3 | 8.60 |
| 3.0 | 13.02 | 31.6 | 8.87 |
| 4.0 | 12.64 | 31.7 | 8.34 |
| 5.0 | 12.56 | 31.6 | 8.36 |
| 7.0 | 12.32 | 31.7 | 8.16 |
| 9.0 | 12.24 | 31.7 | 8.04 |
| 12.0 | 12.15 | 31.6 | 7.99 |
| 15.0 | 12.04 | 31.8 | 7.79 |
| 18.0 | 11.95 | 31.8 | 7.57 |
| 21.0 | 11.73 | 31.8 | 6.85 |

----------------------------- DATE=81992 STATION=10 -----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.66 | 31.1 | 8.90 |
| 1.0 | 14.66 | 31.1 | 8.81 |
| 2.0 | 14.43 | 31.2 | 8.82 |
| 3.0 | 14.17 | 31.3 | 8.83 |
| 4.0 | 12.56 | 31.7 | 8.52 |
| 5.0 | 12.52 | 31.7 | 8.48 |
| 7.0 | 12.37 | 31.9 | 8.29 |
| 9.0 | 12.30 | 31.8 | 8.20 |
| 11.0 | 12.24 | 31.6 | 8.11 |
| 13.0 | 12.18 | 31.8 | 7.87 |
| 14.2 | 12.06 | 31.8 | 7.56 |

----------------------------- DATE=81992 STATION=11 -----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.66 | 29.4 | 8.78 |
| 1.0 | 15.65 | 29.4 | 8.69 |
| 2.0 | 14.72 | 30.2 | 8.73 |
| 3.0 | 13.73 | 31.5 | 8.90 |
| 4.0 | 13.17 | 31.8 | 8.99 |
| 5.0 | 13.00 | 31.6 | 8.99 |
| 7.0 | 12.53 | 31.7 | 8.57 |
| 9.0 | 12.33 | 31.7 | 8.31 |
| 11.0 | 12.19 | 31.8 | 8.12 |
| 13.0 | 12.07 | 31.8 | 7.66 |

---------------------------- DATE=81992 STATION=12 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 15.49 | 30.0 | 8.49 |
| 1.0 | 15.52 | 30.0 | 8.35 |
| 2.0 | 13.57 | 31.2 | 8.32 |
| 3.0 | 13.23 | 31.4 | 8.26 |
| 4.0 | 12.95 | 31.4 | 8.10 |
| 5.0 | 12.88 | 31.5 | 8.15 |
| 7.0 | 12.69 | 31.7 | 8.07 |
| 9.0 | 12.45 | 31.7 | 8.01 |
| 10.0 | 12.42 | 31.7 | 8.00 |

---------------------------- DATE=91291 STATION=1 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.05 | 32.1 | 8.30 |
| 1.0 | 13.05 | 32.0 | 8.16 |
| 2.0 | 13.00 | 32.2 | 8.12 |
| 3.0 | 12.99 | 32.2 | 8.09 |
| 4.0 | 12.81 | 32.2 | 8.01 |
| 5.0 | 12.90 | 32.2 | 8.02 |
| 6.0 | 12.82 | 32.3 | 7.97 |
| 7.0 | 12.71 | 32.3 | 7.98 |
| 8.0 | 12.71 | 32.3 | 8.00 |
| 9.0 | 12.68 | 32.3 | 7.96 |
| 10.0 | 12.43 | 32.3 | 7.87 |
| 13.0 | 12.38 | 32.4 | 7.84 |
| 16.0 | 12.28 | 32.4 | 7.80 |
| 19.0 | 12.17 | 32.4 | 7.70 |
| 20.7 | 12.13 | 32.4 | 7.68 |

---------------------------- DATE=91291 STATION=2 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.53 | 31.8 | 8.19 |
| 1.0 | 13.38 | 32.0 | 8.09 |
| 2.0 | 13.19 | 32.2 | 8.00 |
| 3.0 | 13.19 | 32.3 | 7.99 |
| 4.0 | 13.12 | 32.3 | 7.99 |
| 5.0 | 13.06 | 32.3 | 7.98 |
| 6.6 | 13.05 | 32.3 | 7.95 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

DATE=91291 STATION=3

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.75 | 32.3 | 7.96 |
| 1.0 | 13.75 | 32.3 | 7.96 |
| 2.0 | 13.73 | 32.3 | 7.96 |
| 3.0 | 13.68 | 32.3 | 7.89 |
| 4.0 | 13.60 | 32.2 | 7.90 |
| 5.0 | 13.60 | 32.3 | 7.92 |
| 8.0 | 13.49 | 32.3 | 7.85 |
| 10.0 | 13.24 | 32.3 | 7.77 |
| 15.0 | 13.16 | 32.3 | 7.73 |
| 20.0 | 13.08 | 32.3 | 7.70 |
| 25.0 | 13.02 | 32.2 | 7.70 |
| 30.0 | 12.94 | 32.2 | 7.74 |
| 30.0 | 12.96 | 32.4 | 7.65 |
| 35.0 | 12.96 | 32.4 | 7.70 |
| 40.0 | 12.94 | 32.6 | 7.73 |
| 45.0 | 12.71 | 32.3 | 7.85 |
| 49.3 | 12.75 | 32.1 | 7.83 |

DATE=91291 STATION=4

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.09 | 32.2 | 8.07 |
| 1.0 | 14.08 | 32.2 | 8.03 |
| 2.0 | 14.05 | 32.2 | 8.04 |
| 3.0 | 14.07 | 32.3 | 8.01 |
| 4.0 | 13.94 | 32.3 | 7.97 |
| 5.0 | 13.84 | 32.3 | 7.91 |
| 10.0 | 13.45 | 32.3 | 7.73 |
| 15.0 | 13.25 | 32.3 | 7.67 |
| 20.0 | 13.20 | 32.2 | 7.66 |
| 25.0 | 13.21 | 32.3 | 7.64 |
| 30.0 | 13.21 | 32.1 | 7.63 |
| 33.0 | 13.21 | 32.3 | 7.62 |
| 38.0 | 13.15 | 32.2 | 7.64 |
| 43.0 | 13.16 | 32.2 | 7.63 |
| 48.0 | 13.12 | 32.3 | 7.65 |
| 53.4 | 13.12 | 32.3 | 7.71 |

---------------------------- DATE=91291 STATION=5 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.97 | 32.0 | 8.00 |
| 1.0 | 13.97 | 32.0 | 7.93 |
| 2.0 | 13.91 | 32.0 | 7.88 |
| 3.0 | 13.92 | 32.1 | 7.85 |
| 4.0 | 13.90 | 32.2 | 7.83 |
| 5.0 | 13.88 | 32.2 | 7.83 |
| 6.0 | 13.88 | 32.2 | 7.83 |
| 7.0 | 13.88 | 32.2 | 7.80 |
| 8.0 | 13.84 | 32.2 | 7.79 |
| 9.0 | 13.72 | 32.1 | 7.70 |
| 10.0 | 13.76 | 32.2 | 7.72 |
| 12.0 | 13.60 | 32.2 | 7.62 |
| 14.0 | 13.58 | 32.2 | 7.63 |
| 16.0 | 13.56 | 32.2 | 7.60 |
| 16.7 | 13.56 | 32.2 | 7.60 |

---------------------------- DATE=91291 STATION=6 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.23 | 32.2 | 7.93 |
| 1.0 | 14.24 | 32.2 | 7.94 |
| 2.0 | 14.15 | 32.2 | 7.91 |
| 3.0 | 14.09 | 32.2 | 7.91 |
| 4.0 | 14.06 | 32.2 | 7.92 |
| 5.0 | 14.00 | 32.2 | 7.88 |
| 10.0 | 13.66 | 32.2 | 7.71 |
| 15.0 | 13.50 | 32.2 | 7.67 |
| 20.0 | 13.34 | 32.2 | 7.62 |
| 25.0 | 13.34 | 32.2 | 7.66 |
| 29.0 | 13.31 | 32.3 | 7.53 |
| 30.0 | 13.35 | 32.3 | 7.73 |
| 32.0 | 13.22 | 32.3 | 7.56 |
| 35.0 | 13.19 | 32.3 | 7.55 |
| 38.0 | 13.23 | 32.2 | 7.53 |
| 42.0 | 13.23 | 32.4 | 7.58 |
| 46.2 | 13.24 | 32.1 | 7.61 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=91291 STATION=7 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.11 | 31.9 | 7.91 |
| 1.0 | 14.10 | 32.0 | 7.85 |
| 2.0 | 14.09 | 32.0 | 7.81 |
| 3.0 | 14.08 | 32.0 | 7.78 |
| 4.0 | 14.06 | 32.1 | 7.76 |
| 5.0 | 14.03 | 32.1 | 7.74 |
| 6.0 | 13.81 | 32.1 | 7.57 |
| 7.0 | 13.55 | 32.1 | 7.31 |
| 8.0 | 13.52 | 32.2 | 7.31 |
| 9.0 | 13.55 | 32.2 | 7.33 |
| 10.0 | 13.54 | 32.2 | 7.34 |
| 15.0 | 13.51 | 32.2 | 7.42 |
| 15.0 | 13.53 | 32.2 | 7.40 |
| 20.0 | 13.49 | 32.2 | 7.39 |
| 20.0 | 13.51 | 32.2 | 7.41 |
| 25.0 | 13.43 | 32.2 | 7.42 |
| 25.0 | 13.44 | 32.4 | 7.47 |
| 30.0 | 13.34 | 32.3 | 7.52 |
| 35.0 | 13.30 | 32.2 | 7.50 |
| 40.0 | 13.30 | 32.3 | 7.50 |
| 45.0 | 13.28 | 32.3 | 7.54 |
| 50.3 | 13.28 | 32.4 | 7.58 |

---------------------------- DATE=91291 STATION=8 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.06 | 32.1 | 7.87 |
| 1.0 | 14.04 | 32.0 | 7.80 |
| 2.0 | 14.02 | 32.1 | 7.77 |
| 3.0 | 14.02 | 32.2 | 7.78 |
| 4.0 | 13.98 | 32.2 | 7.71 |
| 5.0 | 13.90 | 32.2 | 7.66 |
| 6.0 | 13.82 | 32.2 | 7.53 |
| 7.0 | 13.76 | 32.2 | 7.45 |
| 8.0 | 13.74 | 32.2 | 7.39 |
| 9.0 | 13.71 | 32.1 | 7.41 |
| 10.0 | 13.65 | 32.2 | 7.40 |
| 13.0 | 13.49 | 32.2 | 7.43 |
| 16.0 | 13.39 | 32.2 | 7.46 |
| 16.7 | 13.40 | 32.2 | 7.43 |

---------------------------- DATE=91291 STATION=9 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 13.91 | 32.1 | 7.46 |
| 1.0 | 13.92 | 32.1 | 7.46 |
| 2.0 | 13.91 | 32.1 | 7.46 |
| 3.0 | 13.92 | 32.1 | 7.49 |
| 4.0 | 13.92 | 32.1 | 7.52 |
| 5.0 | 13.91 | 32.1 | 7.49 |
| 6.0 | 13.85 | 32.1 | 7.48 |
| 7.0 | 13.82 | 32.1 | 7.46 |
| 8.0 | 13.79 | 32.1 | 7.37 |
| 9.0 | 13.76 | 32.1 | 7.31 |
| 10.0 | 13.71 | 32.1 | 7.27 |
| 11.0 | 13.59 | 32.1 | 7.18 |
| 13.0 | 13.53 | 32.1 | 7.09 |
| 16.0 | 13.51 | 32.1 | 6.94 |
| 19.0 | 13.42 | 32.2 | 6.64 |
| 20.6 | 13.38 | 32.1 | 6.48 |

---------------------------- DATE=91291 STATION=10 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.06 | 31.9 | 7.83 |
| 1.0 | 14.05 | 32.1 | 7.67 |
| 1.0 | 14.06 | 32.1 | 7.73 |
| 2.0 | 14.03 | 32.1 | 7.74 |
| 3.0 | 14.02 | 32.1 | 7.73 |
| 4.0 | 13.97 | 32.1 | 7.66 |
| 5.0 | 13.96 | 32.1 | 7.63 |
| 6.0 | 13.95 | 32.1 | 7.61 |
| 7.0 | 13.94 | 32.1 | 7.61 |
| 8.0 | 13.94 | 32.2 | 7.58 |
| 9.0 | 13.88 | 32.1 | 7.44 |
| 10.0 | 13.75 | 32.1 | 7.19 |
| 11.0 | 13.74 | 32.1 | 7.19 |
| 12.0 | 13.71 | 32.1 | 7.15 |
| 13.0 | 13.62 | 32.2 | 7.11 |

---------------------------- DATE=91291 STATION=11 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.00 | 31.9 | 7.76 |
| 1.0 | 13.99 | 32.1 | 7.66 |
| 2.0 | 13.97 | 32.1 | 7.60 |
| 3.0 | 13.91 | 32.1 | 7.56 |
| 4.0 | 13.82 | 32.1 | 7.53 |
| 5.0 | 13.81 | 32.1 | 7.50 |
| 6.0 | 13.72 | 32.1 | 7.37 |
| 7.0 | 13.62 | 32.2 | 7.31 |
| 8.0 | 13.60 | 32.2 | 7.32 |
| 9.0 | 13.46 | 32.1 | 7.25 |
| 10.0 | 13.25 | 32.2 | 7.08 |

---------------------------- DATE=91291 STATION=12 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 14.12 | 31.6 | 7.13 |
| 1.0 | 14.13 | 31.6 | 6.99 |
| 2.0 | 14.10 | 31.8 | 6.97 |
| 3.0 | 14.00 | 32.0 | 6.90 |
| 4.0 | 13.95 | 31.8 | 6.92 |
| 5.0 | 13.92 | 32.0 | 6.93 |
| 6.0 | 13.92 | 32.0 | 6.93 |
| 7.0 | 13.88 | 32.0 | 6.92 |
| 8.0 | 13.81 | 32.0 | 6.77 |
| 8.5 | 13.79 | 32.1 | 6.74 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

------------------------------ DATE=102491 STATION=1 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 10.91 | 32.5 | 8.58 |
| 1.0 | 10.91 | 32.5 | 8.34 |
| 2.0 | 10.90 | 32.5 | 8.43 |
| 3.0 | 10.88 | 32.5 | 8.39 |
| 4.0 | 10.86 | 32.6 | 8.33 |
| 5.0 | 10.85 | 32.6 | 8.49 |
| 6.0 | 10.82 | 32.6 | 8.58 |
| 7.0 | 10.82 | 32.7 | 8.54 |
| 8.0 | 10.79 | 32.9 | 8.63 |
| 9.0 | 10.79 | 32.9 | 8.59 |
| 10.0 | 10.78 | 32.9 | 8.43 |
| 12.0 | 10.76 | 32.9 | 8.44 |
| 14.0 | 10.75 | 32.9 | 8.36 |
| 16.0 | 10.75 | 32.9 | 8.49 |
| 17.0 | 10.74 | 32.8 | 8.25 |

------------------------------ DATE=102491 STATION=2 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 10.82 | 32.7 | 8.66 |
| 1.0 | 10.82 | 32.6 | 8.63 |
| 2.0 | 10.81 | 32.7 | 8.59 |
| 3.0 | 10.80 | 32.7 | 8.60 |
| 4.0 | 10.81 | 32.7 | 8.63 |
| 5.0 | 10.80 | 32.7 | 8.63 |
| 6.0 | 10.79 | 32.6 | 8.64 |
| 7.0 | 10.78 | 32.6 | 8.63 |
| 8.0 | 10.78 | 32.7 | 8.63 |
| 9.0 | 10.78 | 32.6 | 8.62 |
| 10.0 | 10.78 | 32.6 | 8.60 |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=102491 STATION=3 --------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 10.85 | . | . |
| 1.0 | 10.80 | 31.942 | . |
| 2.0 | 10.81 | . | . |
| 3.0 | 10.79 | . | . |
| 4.0 | 10.79 | 32.058 | . |
| 5.0 | 10.79 | . | . |
| 6.0 | 10.79 | . | . |
| 7.0 | 10.89 | . | . |
| 8.0 | 10.79 | 32.045 | . |
| 9.0 | 10.79 | . | . |
| 10.0 | 10.79 | . | . |
| 15.0 | 10.78 | 32.107 | . |
| 25.0 | 10.78 | . | . |
| 30.0 | 10.78 | 32.068 | . |
| 35.0 | 10.79 | . | . |
| 39.0 | 10.79 | . | . |
| 40.0 | . | 32.068 | . |
| 42.0 | 10.78 | . | . |
| 45.0 | 10.81 | . | . |
| 50.0 | . | 32.100 | . |

---------------------------- DATE=102491 STATION=4 --------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.08 | . | . |
| 1.0 | 11.08 | 31.778 | . |
| 2.0 | 11.07 | . | . |
| 3.0 | 11.07 | . | . |
| 4.0 | 11.05 | 31.804 | . |
| 5.0 | 10.99 | . | . |
| 6.0 | 10.98 | . | . |
| 7.0 | 10.97 | . | . |
| 8.0 | 10.98 | . | . |
| 9.0 | 10.98 | . | . |
| 10.0 | 10.98 | . | . |
| 11.0 | 10.98 | . | . |
| 14.0 | 10.95 | . | . |
| 15.0 | . | 31.968 | . |
| 17.0 | 10.86 | . | . |
| 20.0 | 10.87 | . | . |
| 30.0 | 10.85 | 31.958 | . |
| 40.0 | 10.85 | . | . |
| 49.0 | 10.82 | 32.027 | . |

---------------------------- DATE=102491 STATION=5 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.09 | . | . |
| 1.0 | 11.05 | 31.810 | . |
| 2.0 | 11.02 | . | . |
| 3.0 | 11.02 | . | . |
| 4.0 | 11.00 | 31.912 | . |
| 5.0 | 10.98 | . | . |
| 6.0 | 10.93 | . | . |
| 7.0 | 10.92 | . | . |
| 8.0 | 10.92 | 31.945 | . |
| 9.0 | 10.90 | . | . |
| 10.0 | 10.90 | . | . |
| 13.0 | 10.89 | . | . |
| 16.0 | 10.88 | . | . |
| 17.5 | 10.86 | . | . |
| 18.0 | . | 31.969 | . |

---------------------------- DATE=102491 STATION=6 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.45 | . | . |
| 1.0 | 11.44 | 31.650 | . |
| 2.0 | 11.44 | . | . |
| 3.0 | 11.25 | . | . |
| 4.0 | 11.22 | 31.773 | . |
| 5.0 | 11.17 | . | . |
| 6.0 | 11.14 | . | . |
| 7.0 | 11.14 | . | . |
| 8.0 | 11.11 | 31.785 | . |
| 9.0 | 11.11 | . | . |
| 10.0 | 11.05 | . | . |
| 12.0 | 11.00 | . | . |
| 17.0 | 10.95 | . | . |
| 22.0 | 10.95 | . | . |
| 25.0 | . | 31.881 | . |
| 32.0 | 10.93 | . | . |
| 42.0 | 10.95 | . | . |
| 44.0 | . | 31.981 | . |

---------------------------- DATE=102491 STATION=7 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.41 | . | . |
| 1.0 | 11.43 | 31.567 | . |
| 2.0 | 11.39 | . | . |
| 3.0 | 11.35 | . | . |
| 4.0 | 11.29 | 31.682 | . |
| 5.0 | 11.21 | . | . |
| 6.0 | 11.13 | . | . |
| 7.0 | 11.13 | . | . |
| 8.0 | 11.11 | . | . |
| 9.0 | 11.11 | . | . |
| 10.0 | 11.13 | . | . |
| 11.0 | 11.16 | 31.878 | . |
| 14.0 | 11.04 | . | . |
| 17.0 | 11.00 | . | . |
| 20.0 | 10.97 | . | . |
| 25.0 | 10.97 | 31.946 | . |
| 30.0 | 10.97 | . | . |
| 40.0 | 10.95 | . | . |
| 49.0 | 10.95 | 31.951 | . |

---------------------------- DATE=102491 STATION=8 ------------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.51 | . | . |
| 1.0 | 11.48 | 31.598 | . |
| 2.0 | 11.48 | . | . |
| 3.0 | 11.45 | . | . |
| 4.0 | 11.41 | 31.628 | . |
| 5.0 | 11.27 | . | . |
| 6.0 | 11.25 | . | . |
| 7.0 | 11.19 | . | . |
| 8.0 | 11.19 | 31.790 | . |
| 9.0 | 11.16 | . | . |
| 10.0 | 11.10 | . | . |
| 13.0 | 10.97 | . | . |
| 16.0 | 10.97 | . | . |
| 18.0 | 10.94 | 31.948 | . |

SOMES SOUND, ACADIA NATIONAL PARK
VERTICAL HYDROGRAPHIC PROFILES

---------------------------- DATE=102491 STATION=9 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.57 | . | . |
| 1.0 | 11.55 | 31.501 | . |
| 2.0 | 11.46 | . | . |
| 3.0 | 11.45 | . | . |
| 4.0 | 11.43 | 30.502 | . |
| 5.0 | 11.38 | . | . |
| 6.0 | 11.22 | . | . |
| 7.0 | 11.16 | . | . |
| 8.0 | 11.15 | 31.672 | . |
| 9.0 | 11.14 | . | . |
| 10.0 | 11.14 | . | . |
| 13.0 | 11.22 | . | . |
| 16.0 | 11.18 | . | . |
| 18.0 | . | 31.927 | . |
| 19.0 | 11.12 | . | . |
| 22.0 | 11.05 | . | . |

---------------------------- DATE=102491 STATION=10 ----------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.53 | . | . |
| 1.0 | 11.51 | 31.446 | . |
| 2.0 | 11.49 | . | . |
| 3.0 | 11.48 | . | . |
| 4.0 | 11.41 | 31.425 | . |
| 5.0 | 11.37 | . | . |
| 6.0 | 11.32 | . | . |
| 7.0 | 11.29 | . | . |
| 8.0 | 11.26 | 31.584 | . |
| 9.0 | 11.16 | . | . |
| 10.0 | 11.27 | 31.860 | . |
| 13.0 | 11.10 | . | . |
| 16.0 | 11.07 | . | . |
| 17.5 | 11.05 | . | . |
| 18.0 | . | 31.928 | . |

--------------------------- DATE=102491 STATION=11 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.45 | . | . |
| 1.0 | 11.46 | 31.124 | . |
| 2.0 | 11.44 | . | . |
| 3.0 | 11.42 | . | . |
| 4.0 | 11.38 | . | . |
| 5.0 | 11.11 | 31.363 | . |
| 6.0 | 11.11 | . | . |
| 7.0 | 11.22 | . | . |
| 8.0 | 11.26 | . | . |
| 9.0 | 11.27 | . | . |
| 10.0 | 11.25 | . | . |
| 11.0 | 11.25 | . | . |
| 12.0 | 11.29 | 31.859 | . |

--------------------------- DATE=102491 STATION=12 ---------------------------

| DEPTH | TEMP | SAL | DO |
|---|---|---|---|
| 0.5 | 11.86 | . | . |
| 1.0 | 11.86 | 29.592 | . |
| 2.0 | 11.80 | . | . |
| 3.0 | 11.61 | 30.561 | . |
| 4.0 | 11.42 | . | . |
| 5.0 | 11.38 | 31.330 | . |
| 6.0 | 11.23 | . | . |
| 7.0 | 11.22 | . | . |
| 8.0 | 11.23 | . | . |
| 9.0 | 11.23 | . | . |
| 10.0 | 11.23 | . | . |
| 11.0 | . | 31.511 | . |

**APPENDIX 4 --** Disolved inorganic nutrients and chlorophyll for each Somes Sound station for each sample date. Parameters and units are as follows; depth (m), nutrient concentrations (*u*M/l), chlorophyll and phaeophytin (mg/l), temperature (°C), salinity (ppt), and dissolved oxygen (mg/l).

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=42392 STATION=1

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.43 | 0.56 | 4.67 | 1.04 | 0.04 | 1.59 | 0.94 | 3.61 | 31.8 | 11.07 |
| 8 | 3.60 | 1.06 | 5.42 | 0.16 | 0.12 | . | . | 3.36 | 32.0 | 10.92 |
| 16 | 3.58 | 0.56 | 6.40 | 0.15 | 0.04 | . | . | 3.07 | 32.1 | 10.70 |

DATE=42392 STATION=2

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.04 | 0.35 | 4.14 | 0.23 | 0.03 | 1.36 | 0.85 | 3.50 | 32.0 | 11.17 |
| 6 | 0.04 | 0.30 | 4.45 | 0.12 | 0.02 | . | . | 3.38 | 31.9 | 11.05 |
| 12 | 3.14 | 0.57 | 4.87 | 1.11 | 0.14 | . | . | 3.29 | 32.0 | 10.97 |

DATE=42392 STATION=3

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.55 | 3.31 | 0.14 | 0.03 | 0.38 | 0.55 | 5.41 | 30.4 | 10.72 |
| 10 | 1.76 | 0.62 | 3.41 | 0.84 | 0.10 | . | . | 3.60 | 32.1 | 11.02 |
| 20 | 0.05 | 0.32 | 4.16 | 0.12 | 0.02 | . | . | 3.40 | 32.1 | 10.81 |
| 47 | 3.34 | 0.62 | 5.07 | 1.09 | 0.14 | . | . | 3.29 | 32.1 | 10.76 |

DATE=42392 STATION=4

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.07 | 0.24 | 5.61 | 0.07 | 0.03 | 0.11 | 0.41 | 5.84 | 30.3 | 10.76 |
| 10 | 0.06 | 0.13 | 3.98 | 0.08 | 0.02 | . | . | 3.42 | 32.0 | 10.89 |
| 20 | 0.09 | 0.12 | 4.48 | 0.79 | 0.02 | . | . | 3.33 | 32.0 | 10.86 |
| 47 | 2.72 | 0.63 | 4.63 | 1.23 | 0.13 | . | . | 3.31 | 32.1 | 10.89 |

DATE=42392 STATION=5

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.08 | 2.30 | 0.14 | 0.03 | 0.18 | 0.51 | 5.82 | 30.3 | 10.75 |
| 5 | 0.06 | 0.16 | 3.15 | 0.08 | 0.01 | . | . | 3.48 | 31.6 | 11.01 |
| 16 | 0.10 | 0.38 | 4.16 | 0.44 | 0.03 | . | . | 3.44 | 32.1 | 11.07 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

---------------------------- DATE=42392 STATION=6 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.28 | 0.23 | 3.03 | 0.32 | 0.04 | 0.12 | 0.46 | 6.29 | 29.4 | 10.41 |
| 20 | 0.10 | 0.32 | 3.71 | 0.39 | 0.04 | . | . | 3.29 | 32.1 | 10.82 |
| 44 | 0.11 | 0.24 | 4.57 | 0.12 | 0.03 | . | . | 3.31 | 32.0 | 10.97 |

---------------------------- DATE=42392 STATION=7 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.5 | 0.07 | 0.00 | 7.45 | 0.11 | 0.04 | . | . | 6.69 | 27.6 | 10.29 |
| 1.0 | 0.15 | 0.09 | 3.00 | 0.14 | 0.03 | 0.18 | 0.46 | 6.10 | 30.3 | 10.66 |
| 20.0 | 2.07 | 0.65 | 3.65 | 1.27 | 0.13 | . | . | 3.20 | 32.1 | 10.83 |
| 53.0 | 0.08 | 0.24 | 4.35 | 0.27 | 0.03 | . | . | 3.29 | 32.1 | 11.00 |

---------------------------- DATE=42392 STATION=8 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.06 | 1.65 | 0.08 | 0.01 | 0.29 | 0.58 | 5.65 | 30.80 | 10.95 |
| 8 | 0.05 | 0.19 | 2.24 | 0.18 | 0.02 | . | . | 3.38 | 31.09 | 11.20 |
| 17 | 0.17 | 0.50 | 3.81 | 0.20 | 0.03 | . | . | 3.28 | 32.20 | 10.84 |

---------------------------- DATE=42392 STATION=9 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.06 | 0.05 | 4.98 | 0.1 | 0.02 | 0.28 | 0.55 | 6.54 | 28.9 | 10.53 |
| 2 | 0.08 | 0.07 | 1.61 | 0.1 | 0.01 | . | . | 5.17 | 31.4 | 11.32 |
| 23 | 0.10 | 0.29 | 4.05 | 0.1 | 0.01 | . | . | 3.01 | 32.0 | 10.56 |

---------------------------- DATE=42392 STATION=10 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.13 | 2.24 | 0.10 | 0.01 | 0.18 | 0.48 | 5.87 | 29.9 | 10.53 |
| 5 | 0.14 | 0.18 | 0.99 | 0.14 | 0.03 | . | . | 3.83 | 31.8 | 11.53 |
| 17 | 1.37 | 0.54 | 4.04 | 0.25 | 0.13 | . | . | 3.10 | 32.0 | 10.71 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=42392 STATION=11

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.05 | 4.17 | 0.10 | 0.02 | 0.21 | 0.55 | 6.35 | 29.8 | 10.59 |
| 5 | 0.10 | 0.23 | 0.65 | 0.11 | 0.00 | . | . | 3.47 | 31.7 | 11.93 |
| 13 | 1.31 | 0.48 | 3.17 | 0.63 | 0.03 | . | . | 2.68 | 32.0 | 10.24 |

DATE=42392 STATION=12

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.10 | 0.09 | 4.01 | 0.15 | 0.02 | 0.41 | 0.69 | 6.17 | 29.4 | 10.70 |
| 2 | 0.12 | 0.12 | 1.94 | 0.16 | 0.01 | . | . | 5.59 | 30.6 | 11.07 |
| 4 | 0.08 | 0.13 | 0.93 | 0.17 | 0.04 | . | . | 4.21 | 31.4 | 11.34 |
| 8 | 0.28 | 0.32 | 1.05 | 0.43 | 0.08 | . | . | 3.57 | 31.7 | 11.11 |
| 11 | 0.39 | 0.39 | 1.22 | 0.57 | 0.08 | . | . | 3.25 | 31.8 | 10.89 |

DATE=51492 STATION=1

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.18 | 0.31 | 0.99 | 0.16 | 0.05 | 1.96 | 1.15 | 6.32 | 32.5 | 11.03 |
| 15 | 0.10 | 0.20 | 0.91 | 0.15 | 0.03 | . | . | 5.81 | 32.8 | 11.36 |
| 21 | 0.24 | 0.28 | 0.93 | 0.44 | 0.07 | . | . | 5.62 | 32.9 | 11.26 |

DATE=51492 STATION=2

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.11 | 0.20 | 1.27 | 0.16 | 0.02 | 0.78 | 0.97 | 6.34 | 32.6 | 10.72 |
| 6 | 0.11 | 0.26 | 1.20 | 0.17 | 0.03 | . | . | 6.13 | 32.7 | 10.94 |
| 6 | 0.11 | 0.26 | 1.20 | 0.17 | 0.03 | . | . | 6.13 | 32.7 | 11.00 |
| 9 | 0.22 | 0.24 | 1.24 | 0.16 | 0.06 | . | . | 6.09 | 32.8 | 10.90 |

DATE=51492 STATION=3

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.12 | 0.27 | 1.49 | 0.17 | 0.03 | 0.41 | 0.65 | 7.07 | 32.6 | 10.35 |
| 20 | 0.13 | 0.25 | 1.15 | 0.20 | 0.03 | . | . | 5.97 | 33.0 | 10.83 |
| 47 | 0.26 | 0.32 | 1.29 | 0.96 | 0.05 | . | . | 5.95 | 32.9 | 10.83 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

----------------------------- DATE=51492 STATION=4 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.19 | 0.31 | 1.93 | 0.60 | 0.05 | 0.4 | 0.54 | 7.99 | 32.4 | 10.31 |
| 20 | 0.21 | 0.35 | 1.40 | 0.65 | 0.06 | . | . | 5.91 | 32.8 | 10.65 |
| 25 | 0.09 | 0.31 | 1.58 | 0.18 | 0.07 | . | . | 5.70 | 32.9 | 10.43 |
| 49 | 0.34 | 0.45 | 2.10 | 1.69 | 0.10 | . | . | 5.43 | 33.0 | 10.17 |

----------------------------- DATE=51492 STATION=5 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.06 | 0.29 | 1.98 | 0.18 | 0.03 | 0.26 | 0.46 | 8.27 | 32.4 | 9.91 |
| 7 | 0.17 | 0.35 | 1.41 | 0.91 | 0.07 | . | . | 7.06 | 32.6 | 10.44 |
| 16 | 0.21 | 0.40 | 1.52 | 0.84 | 0.08 | . | . | 5.92 | 32.9 | 10.51 |

----------------------------- DATE=51492 STATION=6 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.32 | 1.94 | 0.15 | 0.03 | 0.42 | 0.54 | 8.36 | 32.4 | 9.89 |
| 6 | 0.06 | 0.33 | 1.44 | 0.17 | 0.03 | . | . | 6.80 | 32.6 | 10.50 |
| 20 | 0.08 | 0.34 | 1.56 | 0.18 | 0.02 | . | . | 5.68 | 32.9 | 10.43 |
| 20 | 0.08 | 0.34 | 1.56 | 0.18 | 0.02 | . | . | 5.50 | 32.9 | 10.18 |
| 43 | 0.26 | 0.47 | 2.02 | 0.19 | 0.23 | . | . | 5.45 | 32.9 | 10.10 |

----------------------------- DATE=51492 STATION=7 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.29 | 2.74 | 0.16 | 0.03 | 0.48 | 0.58 | 9.03 | 31.8 | 9.67 |
| 9 | 0.07 | 0.29 | 1.31 | 0.12 | 0.02 | . | . | 6.03 | 32.8 | 10.62 |
| 15 | 0.06 | 0.34 | 1.59 | 0.13 | 0.02 | . | . | 5.58 | 33.0 | 10.18 |
| 15 | 0.06 | 0.34 | 1.59 | 0.13 | 0.02 | . | . | 5.61 | 32.8 | 10.27 |
| 45 | 0.15 | 0.46 | 2.23 | 0.15 | 0.09 | . | . | 5.39 | 33.0 | 9.98 |

----------------------------- DATE=51492 STATION=8 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.36 | 2.21 | 0.14 | 0.03 | 0.22 | 0.6 | 8.79 | 32.0 | 9.78 |
| 4 | 0.08 | 0.31 | 1.85 | 0.18 | 0.03 | . | . | 8.00 | 32.2 | 10.25 |
| 16 | 0.07 | 0.42 | 2.32 | 0.16 | 0.02 | . | . | 5.56 | 32.7 | 10.03 |

DATE=51492 STATION=9

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.25 | 2.02 | 0.14 | 0.03 | 0.36 | 0.59 | 9.06 | 32.0 | 9.70 |
| 4 | 0.08 | 0.29 | 1.26 | 0.16 | 0.02 | . | . | 6.80 | 32.4 | 10.45 |
| 21 | 0.08 | 0.48 | 1.56 | 0.20 | 0.02 | . | . | 5.28 | 32.9 | 9.80 |

DATE=51492 STATION=10

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.10 | 0.31 | 2.49 | 0.16 | 0.04 | 0.45 | 0.57 | 8.76 | 32.1 | 9.80 |
| 2 | 0.15 | 0.32 | 1.42 | 0.22 | 0.06 | . | . | 7.41 | 32.6 | 10.43 |
| 12 | 0.08 | 0.32 | 1.29 | 0.19 | 0.03 | . | . | 5.96 | 32.8 | 10.55 |

DATE=51492 STATION=11

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.32 | 2.08 | 0.18 | 0.02 | 0.4 | 0.61 | 8.49 | 32.2 | 9.94 |
| 2 | 0.06 | 0.28 | 1.39 | 0.16 | 0.03 | . | . | 7.30 | 32.6 | 10.30 |
| 10 | 0.06 | 0.39 | 1.04 | 0.20 | 0.02 | . | . | 5.87 | 32.7 | 10.70 |

DATE=51492 STATION=12

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.5 | 0.05 | 0.27 | 4.99 | 0.51 | 0.04 | 0.3 | 0.62 | 10.09 | 30.0 | 9.29 |
| 1.0 | 0.04 | 0.24 | 4.93 | 0.14 | 0.02 | . | . | 10.00 | 30.0 | 9.24 |
| 1.5 | 0.07 | 0.28 | 4.69 | 0.17 | 0.04 | . | . | 9.60 | 31.3 | 9.50 |
| 4.0 | 0.07 | 0.31 | 2.45 | 0.16 | 0.02 | . | . | 8.03 | 32.0 | 9.89 |
| 10.0 | 0.08 | 0.32 | 1.46 | 0.17 | 0.02 | . | . | 6.58 | 32.6 | 10.25 |

DATE=62091 STATION=1

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.29 | 3.00 | 0.16 | 0 | 0.59 | 1.04 | 11.04 | 31.3 | 8.89 |
| 8 | 0 | 0.41 | 2.85 | 1.87 | 0 | . | . | 9.92 | 31.5 | 10.32 |
| 16 | 0 | 0.31 | 3.56 | 1.60 | 0 | . | . | 9.82 | 31.6 | 9.12 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=62091 STATION=2

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.38 | 4.31 | 0.28 | 0.00 | 0.16 | 0.42 | 13.05 | 31.3 | 9.00 |
| 4 | 0.00 | 0.42 | 3.47 | 2.38 | 0.00 | . | . | 11.27 | 31.5 | 9.70 |
| 13 | 0.25 | 0.51 | 3.55 | 0.26 | 0.03 | . | . | 9.92 | 31.6 | 9.37 |

DATE=62091 STATION=3

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.30 | 4.57 | 0.23 | 0 | 0.13 | 0.42 | 13.69 | 31.4 | 9.25 |
| 10 | 0 | 0.47 | 3.42 | 0.65 | 0 | . | . | 10.57 | 31.6 | 9.11 |
| 41 | 0 | 0.58 | 2.75 | 0.43 | 0 | . | . | 9.64 | 31.8 | 8.75 |

DATE=62091 STATION=4

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.24 | 5.60 | 1.81 | 0 | 0.24 | 0.44 | 14.22 | 31.3 | 8.58 |
| 4 | 0 | 0.39 | 4.15 | 0.64 | 0 | . | . | 11.93 | 31.5 | 10.03 |
| 31 | 0 | 0.37 | 3.18 | 0.26 | 0 | . | . | 10.01 | 31.7 | 8.33 |

DATE=62091 STATION=5

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.36 | 4.97 | 0.24 | 0 | 0.19 | 0.43 | 14.45 | 31.4 | 8.80 |
| 3 | 0 | 0.30 | 3.88 | 0.28 | 0 | . | . | 12.24 | 31.4 | 9.54 |
| 15 | 0 | 0.37 | 3.59 | 0.25 | 0 | . | . | 10.09 | 31.6 | 9.23 |

DATE=62091 STATION=6

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.23 | 4.97 | 0.28 | 0 | 0.2 | 0.38 | 14.21 | 31.3 | 9.16 |
| 6 | 0 | 0.25 | 4.00 | 0.24 | 0 | . | . | 11.25 | 31.5 | 10.62 |
| 28 | 0 | 0.59 | 8.28 | 1.19 | 0 | . | . | 10.09 | 31.5 | 7.84 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=62091 STATION=7

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.28 | 5.07 | 0.97 | 0 | 0.21 | 0.42 | 14.29 | 31.4 | 8.53 |
| 8 | 0 | 0.37 | 3.83 | 0.41 | 0 | . | . | 10.94 | 31.6 | 9.70 |
| 15 | 0 | 0.44 | 4.30 | 0.64 | 0 | . | . | 10.14 | 31.6 | 8.31 |

DATE=62091 STATION=8

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.34 | 4.95 | 0.21 | 0.00 | 0.34 | 0.47 | 14.41 | 31.3 | 9.15 |
| 14 | 0.07 | 0.33 | 4.12 | 1.49 | 0.03 | . | . | 10.22 | 31.6 | 8.40 |
| 16 | 0.07 | 0.43 | 8.23 | 0.96 | 0.05 | . | . | 10.17 | 31.6 | 8.22 |

DATE=62091 STATION=9

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.13 | 6.43 | 0.12 | 0.02 | 0.36 | 0.44 | 15.20 | 31.3 | 8.66 |
| 4 | 0.04 | 0.19 | 3.82 | 0.45 | 0.02 | . | . | 12.21 | 31.4 | 9.46 |
| 20 | 0.09 | 0.46 | 7.33 | 0.14 | 0.04 | . | . | 10.12 | 31.7 | 7.88 |

DATE=62091 STATION=10

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.06 | 0.00 | 6.68 | 0.69 | 0.03 | 0.54 | 0.53 | 17.75 | 30.0 | 8.34 |
| 8 | 0.07 | 0.34 | 4.95 | 0.35 | 0.03 | . | . | 11.40 | 31.3 | 8.89 |
| 11 | 0.08 | 0.32 | 5.98 | 0.27 | 0.03 | . | . | 11.00 | 31.4 | 8.65 |

DATE=72292 STATION=1

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.15 | 1.27 | 0.11 | 0.01 | 0.8 | 0.75 | 12.40 | 31.1 | 9.25 |
| 9 | 0.03 | 0.21 | 0.81 | 0.07 | 0.00 | . | . | 9.81 | 31.7 | 9.89 |
| 19 | 0.18 | 0.35 | 1.71 | 0.71 | 0.03 | . | . | 9.01 | 31.8 | 9.60 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

---------------------------- DATE=72292 STATION=2 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.07 | 0.27 | 2.28 | 0.77 | 0.02 | 0.25 | 0.73 | 14.66 | 30.5 | 8.78 |
| 2 | 0.00 | 0.24 | 1.40 | 0.17 | 0.01 | . | . | 12.74 | 31.2 | 9.17 |
| 10 | 0.14 | 0.37 | 1.26 | 0.49 | 0.03 | . | . | 10.30 | 31.7 | 9.55 |

---------------------------- DATE=72292 STATION=3 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 2.39 | 1.49 | 0.09 | 0.01 | 0.37 | 0.48 | 15.13 | 31.0 | 8.64 |
| 3 | 0.02 | 0.32 | 1.07 | 0.48 | 0.03 | . | . | 12.92 | 31.3 | 9.24 |
| 20 | 0.10 | 0.34 | 1.25 | 0.84 | 0.03 | . | . | 10.66 | 31.6 | 9.43 |
| 47 | 0.15 | 0.34 | 2.00 | 1.06 | 0.04 | . | . | 10.07 | 31.7 | 9.41 |

---------------------------- DATE=72292 STATION=4 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.24 | 1.33 | 0.75 | 0.02 | 0.42 | 0.5 | 16.44 | 30.8 | 8.35 |
| 3 | 0.03 | 0.28 | 1.14 | 0.65 | 0.02 | . | . | 12.05 | 31.5 | 9.35 |
| 5 | 0.03 | 0.33 | 1.27 | 0.52 | 0.02 | . | . | 11.34 | 31.5 | 9.35 |
| 20 | 0.11 | 0.43 | 2.57 | 1.34 | 0.03 | . | . | 10.61 | 31.6 | 8.92 |
| 52 | 0.08 | 0.38 | 2.14 | 0.68 | 0.02 | . | . | 10.55 | 31.7 | 9.20 |

---------------------------- DATE=72292 STATION=5 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.16 | 1.81 | 0.41 | 0.00 | 0.31 | 0.46 | 16.09 | 30.8 | 8.47 |
| 5 | 0.00 | 0.19 | 1.56 | 0.10 | 0.00 | . | . | 11.30 | 31.4 | 9.53 |
| 17 | 0.07 | 0.37 | 2.26 | 0.82 | 0.02 | . | . | 10.71 | 31.6 | 9.30 |

---------------------------- DATE=72292 STATION=6 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.02 | 0.23 | 1.65 | 0.42 | 0.02 | 0.38 | 0.49 | 16.44 | 30.8 | 8.39 |
| 3 | 0.00 | 0.26 | 1.24 | 0.41 | 0.01 | . | . | 11.39 | 31.6 | 9.33 |
| 16 | 0.00 | 0.30 | 2.86 | 0.08 | 0.02 | . | . | 10.65 | 31.5 | 8.48 |
| 20 | 0.08 | 0.45 | 3.13 | 1.05 | 0.04 | . | . | 10.64 | 31.6 | 8.78 |
| 46 | 0.10 | 0.43 | 2.80 | 1.35 | 0.04 | . | . | 10.72 | 31.6 | 8.94 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=72292 STATION=7

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.02 | 0.26 | 1.85 | 0.52 | 0.02 | 0.42 | 0.5 | 15.55 | 30.8 | 8.44 |
| 2 | 0.02 | 0.24 | 1.46 | 0.39 | 0.03 | . | . | 13.38 | 31.3 | 9.11 |
| 4 | 0.00 | 0.19 | 1.17 | 0.12 | 0.01 | . | . | 11.66 | 31.5 | 9.43 |
| 5 | 0.00 | 0.38 | 1.33 | 0.54 | 0.01 | . | . | 11.45 | 31.5 | 9.29 |
| 20 | 0.00 | 0.35 | 3.82 | 0.62 | 0.00 | . | . | 10.64 | 31.6 | 8.44 |
| 52 | 0.13 | 0.50 | 3.95 | 1.78 | 0.04 | . | . | 10.69 | 31.5 | 8.46 |

DATE=72292 STATION=8

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.24 | 1.97 | 0.23 | 0.02 | 0.27 | 0.54 | 15.76 | 30.8 | 8.41 |
| 2 | 0.02 | 0.26 | 1.57 | 0.26 | 0.01 | . | . | 12.26 | 31.5 | 9.25 |
| 9 | 0.03 | 0.40 | 1.40 | 1.38 | 0.01 | . | . | 11.13 | 31.5 | 9.32 |
| 17 | 0.00 | 0.29 | 2.89 | 0.15 | 0.01 | . | . | 10.72 | 31.6 | 8.77 |

DATE=72292 STATION=9

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.31 | 1.35 | 0.16 | 0.02 | 0.36 | 0.46 | 15.36 | 30.9 | 8.75 |
| 4 | 0.00 | 0.33 | 1.64 | 2.00 | 0.02 | . | . | 11.70 | 31.4 | 9.48 |
| 24 | 0.24 | 1.15 | 14.02 | 3.12 | 0.09 | . | . | 10.55 | 31.6 | 7.03 |

DATE=72292 STATION=10

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.31 | 1.64 | 0.13 | 0.01 | 0.32 | 0.47 | 15.29 | 31.1 | 8.80 |
| 4 | 0.04 | 0.32 | 1.20 | 0.13 | 0.02 | . | . | 11.45 | 31.5 | 9.31 |
| 15 | 0.04 | 0.51 | 3.97 | 0.82 | 0.04 | . | . | 10.78 | 31.5 | 8.30 |

DATE=72292 STATION=11

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.27 | 0.95 | 0.57 | 0.02 | 0.33 | 0.45 | 14.54 | 31.3 | 9.16 |
| 4 | 0.00 | 0.27 | 0.57 | 0.56 | 0.01 | . | . | 11.73 | 31.5 | 9.37 |
| 13 | 0.00 | 0.38 | 3.77 | 0.14 | 0.02 | . | . | 10.72 | 31.6 | 7.59 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=72292 STATION=12

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.09 | 4.37 | 0.13 | 0.02 | 0.9 | 1.99 | 18.00 | 29.8 | 8.13 |
| 2 | 0.00 | 0.22 | 3.25 | 0.14 | 0.01 | . | . | 12.48 | 31.3 | 8.76 |
| 4 | 0.01 | 0.37 | 1.95 | 0.33 | 0.04 | . | . | 12.32 | 31.3 | 8.72 |
| 8 | 0.02 | 0.32 | 2.22 | 0.14 | 0.01 | . | . | 11.58 | 31.4 | 8.72 |

DATE=81992 STATION=1

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.43 | 0.62 | 1.98 | 1.53 | 0.07 | 0.95 | 0.94 | 12.53 | 31.2 | 8.26 |
| 4 | 0.47 | 0.67 | 2.15 | 2.34 | 0.07 | . | . | 12.24 | 31.2 | 8.14 |
| 16 | 0.64 | 0.63 | 1.51 | 2.27 | 0.07 | . | . | 11.56 | 31.7 | 8.30 |

DATE=81992 STATION=2

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.51 | 1.98 | 0.46 | 0.03 | 0.66 | 1.22 | 12.20 | 31.4 | 8.27 |
| 4 | 0.25 | 0.30 | 1.88 | 0.09 | 0.02 | . | . | 11.97 | 31.6 | 8.06 |
| 9 | 0.57 | 0.67 | 2.95 | 2.11 | 0.10 | . | . | 11.85 | 31.6 | 8.22 |

DATE=81992 STATION=3

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.30 | 0.55 | 1.46 | 0.89 | 0.04 | 0.66 | 0.8 | 13.03 | 31.6 | 8.62 |
| 7 | 0.44 | 0.64 | 1.84 | 2.14 | 0.07 | . | . | 11.95 | 31.6 | 8.22 |
| 30 | 0.47 | 0.71 | 3.70 | 2.94 | 0.09 | . | . | 11.86 | 31.8 | 7.70 |
| 47 | 0.52 | 0.80 | 5.02 | 4.14 | 0.10 | . | . | 11.83 | 31.8 | 7.44 |

DATE=81992 STATION=4

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.33 | 1.23 | 0.10 | 0.04 | 0.46 | 0.67 | 12.25 | 31.6 | 8.23 |
| 7 | 0.44 | 0.69 | 3.39 | 2.92 | 0.08 | . | . | 11.92 | 31.9 | 7.90 |
| 17 | 0.46 | 0.79 | 4.59 | 3.70 | 0.10 | . | . | 11.78 | 31.8 | 7.47 |
| 45 | 0.48 | 0.83 | 5.56 | 4.25 | 0.10 | . | . | 11.76 | 31.8 | 7.39 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

------------------------------ DATE=81992 STATION=5 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.26 | 0.53 | 1.74 | 0.85 | 0.05 | 0.63 | 0.76 | 12.60 | 31.4 | 8.45 |
| 7 | 0.44 | 0.68 | 1.98 | 2.19 | 0.08 | . | . | 12.02 | 31.7 | 8.14 |
| 10 | 0.47 | 0.78 | 4.90 | 3.76 | 0.10 | . | . | 11.94 | 31.7 | 7.94 |

------------------------------ DATE=81992 STATION=6 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.24 | 0.54 | 1.90 | 1.05 | 0.05 | . | . | 13.25 | 31.7 | 8.56 |
| 9 | 0.40 | 0.66 | 2.25 | 2.30 | 0.07 | . | . | 11.99 | 31.8 | 7.92 |
| 46 | 0.48 | 0.89 | 6.50 | 4.95 | 0.10 | . | . | 11.78 | 31.8 | 7.24 |

------------------------------ DATE=81992 STATION=7 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.46 | 1.18 | 0.53 | 0.04 | . | . | 13.53 | 31.7 | 8.75 |
| 5 | 0.10 | 0.46 | 1.11 | 0.49 | 0.04 | . | . | 13.09 | 31.8 | 8.80 |
| 14 | 0.07 | 0.44 | 3.66 | 0.13 | 0.04 | . | . | 11.89 | 31.7 | 7.73 |
| 52 | 0.29 | 0.60 | 2.61 | 1.64 | 0.06 | . | . | 11.71 | 31.8 | 7.12 |

------------------------------ DATE=81992 STATION=8 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.12 | 0.50 | 1.47 | 0.47 | 0.05 | 0.48 | 0.69 | 13.51 | 31.2 | 8.70 |
| 5 | 0.25 | 0.55 | 1.48 | 0.87 | 0.07 | . | . | 12.55 | 31.5 | 8.52 |
| 18 | 0.54 | 0.88 | 6.64 | 4.74 | 0.11 | . | . | 11.84 | 31.8 | 7.29 |

------------------------------ DATE=81992 STATION=9 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.40 | 2.74 | 0.17 | 0.06 | 0.62 | 0.77 | 15.13 | 30.0 | 8.80 |
| 4 | 0.10 | 0.51 | 1.38 | 0.15 | 0.05 | . | . | 12.64 | 31.7 | 8.34 |
| 24 | 0.40 | 1.08 | 6.83 | 6.62 | 0.13 | . | . | 11.73 | 31.8 | 6.85 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

---------------------------- DATE=81992 STATION=10 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.40 | 1.53 | 0.21 | 0.04 | 0.32 | 0.61 | 14.66 | 31.1 | 8.81 |
| 4 | 0.07 | 0.45 | 0.98 | 0.14 | 0.03 | . | . | 12.56 | 31.7 | 8.52 |
| 16 | 0.35 | 0.64 | 2.45 | 1.63 | 0.09 | . | . | 12.06 | 31.8 | 7.56 |

---------------------------- DATE=81992 STATION=11 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.23 | 3.72 | 0.13 | 0.03 | 0.57 | 0.8 | 15.65 | 29.4 | 8.69 |
| 5 | 0.09 | 0.37 | 0.59 | 0.15 | 0.04 | . | . | 13.00 | 31.6 | 8.99 |
| 14 | 0.22 | 0.65 | 1.87 | 1.39 | 0.07 | . | . | 12.07 | 31.8 | 7.66 |

---------------------------- DATE=81992 STATION=12 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.16 | 0.45 | 3.46 | 1.55 | 0.06 | 0.42 | 0.76 | 15.52 | 30.0 | 8.35 |
| 4 | 0.21 | 0.53 | 1.85 | 1.22 | 0.06 | . | . | 12.95 | 31.4 | 8.10 |
| 12 | 0.23 | 0.62 | 1.92 | 1.57 | 0.08 | . | . | 12.42 | 31.7 | 8.00 |

---------------------------- DATE=91291 STATION=1 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.36 | 6.96 | 0.01 | 0.00 | 1.98 | 1.09 | 13.05 | 32.0 | 8.16 |
| 10 | 0.00 | 0.46 | 6.88 | 0.01 | 0.00 | . | . | 12.43 | 32.3 | 7.87 |
| 22 | 3.88 | 0.74 | 7.33 | 1.40 | 0.25 | . | . | 12.13 | 32.4 | 7.68 |

---------------------------- DATE=91291 STATION=2 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.51 | 0.72 | 7.22 | 0.13 | 0.24 | 1.18 | 1.07 | 13.38 | 32.0 | 8.09 |
| 3 | 0.35 | 0.46 | 7.03 | 0.04 | 0.19 | . | . | 13.19 | 32.3 | 7.99 |
| 8 | 0.00 | 0.47 | 7.12 | 0.00 | 0.00 | . | . | 13.05 | 32.3 | 7.95 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

----------------------------- DATE=91291 STATION=3 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.96 | 0.70 | 6.66 | 1.84 | 0.19 | 1.75 | 1.34 | 13.75 | 32.3 | 7.96 |
| 8 | 2.25 | 0.73 | 6.81 | 1.08 | 0.21 | . | . | 13.49 | 32.3 | 7.85 |
| 20 | 1.50 | 0.57 | 8.10 | 0.05 | 0.02 | . | . | 13.08 | 32.3 | 7.70 |
| 49 | 3.22 | 1.10 | 7.06 | 2.12 | 0.23 | . | . | 12.75 | 32.1 | 7.83 |

----------------------------- DATE=91291 STATION=4 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.81 | 0.63 | 6.13 | 0.56 | 0 | 1.97 | 1.36 | 14.08 | 32.2 | 8.03 |
| 10 | 0.78 | 0.51 | 6.65 | 0.02 | 0 | . | . | 13.45 | 32.3 | 7.73 |
| 54 | 2.43 | 0.60 | 7.03 | 0.28 | 0 | . | . | 13.12 | 32.3 | 7.71 |

----------------------------- DATE=91291 STATION=5 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.52 | 6.61 | 0.03 | 0 | 1.8 | 1.32 | 13.97 | 32.0 | 7.93 |
| 8 | 0 | 0.69 | 7.04 | 0.00 | 0 | . | . | 13.84 | 32.2 | 7.79 |
| 16 | 0 | 0.69 | 6.80 | 0.03 | 0 | . | . | 13.56 | 32.2 | 7.60 |

----------------------------- DATE=91291 STATION=6 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.74 | 5.54 | 0.04 | 0.00 | 1.78 | 1.31 | 14.24 | 32.2 | 7.94 |
| 10 | 0.00 | 0.67 | 5.66 | 0.04 | 0.00 | . | . | 13.66 | 32.2 | 7.71 |
| 45 | 2.52 | 0.67 | 7.41 | 0.59 | 0.22 | . | . | 13.24 | 32.1 | 7.61 |

----------------------------- DATE=91291 STATION=7 -----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.43 | 0.67 | 6.55 | 1.27 | 0.18 | 1.14 | 1.22 | 14.10 | 32.0 | 7.85 |
| 6 | 0.56 | 0.38 | 6.65 | 0.09 | 0.10 | . | . | 13.81 | 32.1 | 7.57 |
| 8 | 1.88 | 0.78 | 7.22 | 2.40 | 0.21 | . | . | 13.52 | 32.2 | 7.31 |
| 48 | 2.35 | 0.74 | 7.32 | 2.27 | 0.23 | . | . | 13.28 | 32.4 | 7.58 |

DATE=91291 STATION=8

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.53 | 6.52 | 0.01 | 0.00 | 1.1 | 1.16 | 14.04 | 32.0 | 7.80 |
| 5 | 1.44 | 0.65 | 6.38 | 0.07 | 0.18 | . | . | 13.90 | 32.2 | 7.66 |
| 17 | 2.24 | 0.79 | 7.75 | 2.51 | 0.22 | . | . | 13.40 | 32.2 | 7.43 |

DATE=91291 STATION=9

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.05 | 0.57 | 7.52 | 0.05 | 0.08 | 0.95 | 1.27 | 13.92 | 32.1 | 7.46 |
| 11 | 1.87 | 0.85 | 7.54 | 2.66 | 0.21 | . | . | 13.59 | 32.1 | 7.18 |
| 21 | 0.43 | 0.75 | 9.69 | 0.83 | 0.22 | . | . | 13.38 | 32.1 | 6.48 |

DATE=91291 STATION=10

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.48 | 0.67 | 6.22 | 0.44 | 0.19 | 1.06 | 1.32 | 14.05 | 32.1 | 7.67 |
| 1 | 1.48 | 0.67 | 6.22 | 0.44 | 0.19 | 1.06 | 1.32 | 14.06 | 32.1 | 7.73 |
| 3 | 1.33 | 0.66 | 6.23 | 0.07 | 0.21 | . | . | 14.02 | 32.1 | 7.73 |
| 13 | 1.54 | 0.58 | 8.06 | 0.00 | 0.23 | . | . | 13.62 | 32.2 | 7.11 |

DATE=91291 STATION=11

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.57 | 6.82 | 0.04 | 0 | 1.14 | 1.27 | 13.99 | 32.1 | 7.66 |
| 5 | 0.26 | 0.57 | 6.52 | 0.20 | 0 | . | . | 13.81 | 32.1 | 7.50 |
| 10 | 0.00 | 0.53 | 6.80 | 0.06 | 0 | . | . | 13.25 | 32.2 | 7.08 |

DATE=91291 STATION=12

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.30 | 0.97 | 8.66 | 2.09 | 0.17 | 0.69 | 1.49 | 14.13 | 31.6 | 6.99 |
| 4 | 1.43 | 0.98 | 7.93 | 3.62 | 0.18 | . | . | 13.95 | 31.8 | 6.92 |
| 9 | 1.78 | 0.85 | 8.64 | 2.30 | 0.30 | . | . | 13.79 | 32.1 | 6.74 |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

---------------------------- DATE=102491 STATION=1 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.48 | 0.58 | 7.64 | 0.48 | 0.00 | 2.57 | 1.5 | 10.91 | 32.5 | 8.34 |
| 4 | 0.22 | 0.58 | 7.00 | 0.15 | 0.26 | . | . | 10.86 | 32.6 | 8.33 |
| 8 | 2.86 | 0.65 | 5.07 | 0.59 | 0.27 | . | . | 10.79 | 32.9 | 8.63 |
| 17 | 1.99 | 0.43 | 5.91 | 0.15 | 0.28 | . | . | 10.74 | 32.8 | 8.25 |

---------------------------- DATE=102491 STATION=2 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.18 | 6.45 | 0.18 | 0.00 | 2.81 | 1.56 | 10.82 | 32.6 | 8.63 |
| 3 | 2.57 | 0.57 | 5.97 | 0.17 | 0.13 | . | . | 10.80 | 32.7 | 8.60 |
| 9 | 0.19 | 0.35 | 5.84 | 0.15 | 0.20 | . | . | 10.78 | 32.6 | 8.62 |

---------------------------- DATE=102491 STATION=3 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.51 | 6.87 | 0.15 | 0.00 | 1.77 | 1.49 | 10.80 | 31.942 | . |
| 4 | 0.00 | 0.20 | 6.06 | 0.17 | 0.00 | . | . | 10.79 | 32.058 | . |
| 8 | 0.00 | 0.41 | 7.01 | 0.15 | 0.00 | . | . | 10.79 | 32.045 | . |
| 15 | 2 99 | 0.55 | 6.13 | 0.17 | 0.35 | . | . | 10.78 | 32.107 | . |
| 30 | 2.06 | 0.64 | 6.28 | 0.15 | 0.46 | . | . | 10.78 | 32.068 | . |
| 50 | 1.29 | 0.56 | 6.11 | 0.15 | 0.56 | . | . | . | 32.100 | . |

---------------------------- DATE=102491 STATION=4 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.22 | 0.55 | 8.19 | 0.13 | 0.37 | 1.37 | 1.53 | 11.08 | 31.778 | . |
| 4 | 0.00 | 0.40 | 7.35 | 0.15 | 0.00 | . | . | 11.05 | 31.804 | . |
| 8 | 1.06 | 0.76 | 8.05 | 0.68 | 0.70 | . | . | 10.98 | . | . |
| 15 | 0.00 | 0.53 | 6.84 | 0.16 | 0.00 | . | . | . | 31.968 | . |
| 49 | 0.00 | 0.49 | 7.33 | 0.15 | 0.00 | . | . | 10.82 | 32.027 | . |

---------------------------- DATE=102491 STATION=5 ----------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.59 | 6.39 | 0.16 | 0.16 | 1.98 | 1.53 | 11.05 | 31.810 | . |
| 4 | 2.65 | 0.61 | 7.74 | 1.48 | 0.34 | . | . | 11.00 | 31.912 | . |
| 8 | 2.74 | 0.56 | 7.80 | 0.19 | 0.35 | . | . | 10.92 | 31.945 | . |
| 18 | 2.93 | 0.78 | 6.35 | 2.75 | 0.36 | . | . | . | 31.969 | . |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

DATE=102491 STATION=6

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.60 | 7.71 | 0.18 | 0.00 | 1.89 | 1.61 | 11.44 | 31.650 | . |
| 4 | 0.00 | 0.57 | 20.14 | 0.18 | 0.00 | . | . | 11.22 | 31.773 | . |
| 8 | 0.00 | 0.55 | 6.98 | 0.21 | 0.00 | . | . | 11.11 | 31.785 | . |
| 25 | 0.67 | 0.34 | 6.48 | 0.18 | 0.32 | . | . | . | 31.881 | . |
| 44 | 0.00 | 0.57 | 6.54 | 0.28 | 0.00 | . | . | . | 31.981 | . |

DATE=102491 STATION=7

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.65 | 0.53 | 8.26 | 0.20 | 0.02 | 1.67 | 1.52 | 11.43 | 31.567 | . |
| 4 | 0.00 | 0.47 | 7.86 | 0.20 | 0.00 | . | . | 11.29 | 31.682 | . |
| 11 | 0.00 | 0.54 | 7.45 | 0.19 | 0.00 | . | . | 11.16 | 31.878 | . |
| 25 | 0.00 | 0.58 | 6.95 | 0.19 | 0.00 | . | . | 10.97 | 31.946 | . |
| 49 | 0.00 | 0.13 | 6.39 | 0.17 | 0.00 | . | . | 10.95 | 31.951 | . |

DATE=102491 STATION=8

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.50 | 7.91 | 0.18 | 0.00 | 1.69 | 1.5 | 11.48 | 31.598 | . |
| 8 | 1.83 | 0.59 | 7.29 | 0.18 | 0.19 | . | . | 11.19 | 31.790 | . |
| 18 | 2.02 | 0.62 | 6.88 | 0.19 | 0.20 | . | . | 10.94 | 31.948 | . |

DATE=102491 STATION=9

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.48 | 7.35 | 0.17 | 0 | 1.92 | 1.54 | 11.55 | 31.501 | . |
| 4 | 0 | 0.58 | 7.46 | 0.19 | 0 | . | . | 11.43 | 30.502 | . |
| 8 | 0 | 0.32 | 7.48 | 0.16 | 0 | . | . | 11.15 | 31.672 | . |
| 22 | 0 | 0.52 | 7.72 | 0.20 | 0 | . | . | 11.05 | 31.927 | . |

DATE=102491 STATION=10

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 0.00 | 0.58 | 7.65 | 0.24 | 0.00 | . | . | 11.41 | 31.425 | . |
| 8 | 0.00 | 0.64 | 8.30 | 0.17 | 0.00 | . | . | 11.26 | 31.584 | . |
| 10 | 0.01 | 0.67 | 10.58 | 0.17 | 0.12 | . | . | 11.27 | 31.860 | . |
| 18 | 0.00 | 0.64 | 8.31 | 0.18 | 0.00 | . | . | . | 31.928 | . |

SOMES SOUND, ACADIA NATIONAL PARK
DISSOLVED INORGANIC NUTRIENTS AND CHLOROPHYLL

------------------------------ DATE=102491 STATION=11 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.37 | 0.57 | 8.15 | 0.26 | 0.07 | 1.57 | 1.36 | 11.46 | 31.124 | . |
| 5 | 0.00 | 0.61 | 7.86 | 0.20 | 0.00 | . | . | 11.11 | 31.363 | . |
| 12 | 2.23 | 0.55 | 11.22 | 0.14 | 0.55 | . | . | 11.29 | 31.859 | . |

------------------------------ DATE=102491 STATION=12 ------------------------------

| DEPTH | NO3_NO2 | PO4 | SIO2 | NH3 | NO2 | CHLA | PHAEO | TEMP | SAL | DO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.59 | 12.13 | 0.15 | 0.00 | 0.9 | 1.19 | 11.86 | 29.592 | . |
| 3 | 0.00 | 0.59 | 10.14 | 0.15 | 0.00 | . | . | 11.61 | 30.561 | . |
| 5 | 2.91 | 0.89 | 8.52 | 3.06 | 0.48 | . | . | 11.38 | 31.330 | . |
| 11 | 0.00 | 0.52 | 8.66 | 0.17 | 0.00 | . | . | . | 31.511 | . |

*As the nations's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility of the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.*

*NPS D-122*