The Kennebec, Sheepscot, and Damariscotta River Estuaries: SEASONAL OCEANOGRAPHIC DATA

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INTRODUCTION

General

This report presents results of a University of Maine/University of New Hampshire Sea Grant-sponsored research project that involved survey cruises in three estuaries of the midcoast Maine region: the Damariscotta, Sheepscot and Kennebec River estuaries. The purpose of the study was to assess the role of varying river water discharge among the three systems on the hydrography, nutrient regimes, planktonic populations, and suspended particulates. The three estuaries provided a natural "experiment" because river input to each varies while most other variables (e.g., climate morphometry, tidal feed water) do not.

The study comprised eight survey cruises over a 1.5 year period. Different types of cruises were conducted. One series combined general hydrographic, biological, chemical, and particulate measurements, and were conducted in September 1993 and February, May, June, July, and August 1994. These cruises occupied each estuary for one day, and all three estuaries were sampled over three consecutive days. Physical data on detailed hydrography and acoustic Doppler current meter measurements were made simultaneously from a second small boat on two of these sample periods: May and September 1994. Additional current meter measurements were made using short-term (ca. 24 hrs) mooring deployments of an Inter Ocean S4 current meter. In September 1995, we performed a more complete survey of the Kennebec estuary over a two day period, where the above operations were performed from the same boat. In addition to the estuary survey cruises, we sampled water from the shores of the three estuaries during the winter-spring period in 1994 in order to document the onset of the spring phytoplankton bloom. Additional shoreside water samples were collected from the Kennebec from March to July 1994, for nutrient analyses only.

This report includes summaries of the data collected on all cruises, as well as a brief overview of the significance of the results. More in-depth interpretations of different aspects of the data can be found in three M.S. theses recently completed (Laursen, 1995; Wong, 1996; Schoudel, 1996); further publications with interpretative analysis of the data are in preparation and will be available from study participants in the future. The data presented here can be obtained in electronic form from the authors for a nominal charge to cover expenses.

Background on the Three Estuarine Systems

The Damariscotta estuary is a drowned river valley typical of the central Maine coast (Fig. 1). It is narrow and relatively deep, with depressions greater than 30m in its upper reaches, and it extends approximately 30 km from its mouth to the source of fresh water (Damariscotta Lake). The freshwater discharge is very low, and varies between about 1 and 3 $m^3 s^{-1}$ (McAlice, 1977). Prior to this report, information on the hydrography of the Damariscotta was limited to the survey work by McAlice (1977; 1979). McAlice (1977) reported that the estuary thermally stratifies seasonally at the upper reaches while tidal mixing maintains a well-mixed condition toward the seaward end. The mean tidal range is about 3m. McAlice's (1977) current meter measurements demonstrated that the Damariscotta exhibits a classical two-layered estuarine circulation, with fresher water flowing seaward at the surface, and a compensatory upstream flow of higher salinity water beneath. Except during the spring freshet, temperature exerts more control over vertical water column stability during the warmer months than does salinity.

McAlice (1979) presented a long-term record of nutrient data for the Damariscotta collected at a station half way up the estuary. He reported nitrate values that fluctuated from undetectable levels to an average of 6-9 μM NO_3-N. Interestingly, his long-term record, from 1970 to 1977, is suggestive of a gradual increasing trend in wintertime nitrate concentrations after 1974.

Several investigators have studied the plankton of the Damariscotta estuary as part of their graduate thesis research at the University of Maine (Lee, 1975; Cura, 1981; Townsend, 1981; and Sanders, 1987). Cura (1981) and Townsend (1981; 1983) reported on seasonal patterns of phytoplankton and zooplankton in the Damariscotta estuary as related to physical structure. They showed that late-winter phytoplankton blooms began in late February and early March during their surveys, which they suggested were triggered when the average *in situ* light intensity exceeded ca. 40 Ly d^{-1}, and that vertical water column stratification was unimportant at that time of year. Phytoplankton chlorophyll concentrations in the Damariscotta reach about 10 μg L^{-1} during the spring diatom bloom (Cura, 1981; Townsend, 1984), in agreement with the nitrate available, but chlorophyll concentrations from dinoflagellate blooms in summer may exceed 50 μg L^{-1} (Incze and Yentsch, 1981). No data other than secchi disk depths were available for light attenuation prior to our surveys.

The Sheepscot estuary is also a drowned river valley and is adjacent to the Damariscotta (Fig. 1). It extends approximately 35 km from the seaward end to a dam at its head. The source of freshwater is the Sheepscot River, which has a freshwater discharge that averages about 15 m^3 s^{-1} during the spring runoff period, to about 5 m^3 s^{-1} in late summer - this is about one order of magnitude greater than the Damariscotta. Data on the hydrography of the Sheepscot estuary have been reported by Stickney (1959), Garside *et al.* (1978) and McAlice (1977). Garside *et al.* (1978) reported that the two-layered estuarine circulation in the Sheepscot was primarily responsible for bringing inorganic nutrients from the Gulf of Maine into the mouth of the estuary; this nitrogen source satisfied the requirements for their estimates of phytoplankton production in the system. They concluded that the level of nutrients entering from fresh water were insignificant. They also reported summertime phytoplankton chlorophyll concentrations exceeding 4 μg L^{-1}, and that the 1% surface PAR (photosynthetically active radiation) ranged from 5-15m, indicating relatively high light transparency in relation to other estuaries.

Additional historical information on the nutrient regime in the Sheepscot estuary can be found in McAlice *et al.* (1978) for surface and bottom waters at two stations: one near Wiscasset, for which nutrient levels are reported for the period 1969 to 1977; the other station was approximately 10 miles north of the mouth of Sheepscot Bay, where nutrients were measured from 1974 to 1977 (see Fig. 1). The concentrations of nitrate plus nitrite showed a rough seasonal cycle of low values in summer (0-4 μM-N) to highest values in winter (8-12 μM-N), but that these began to increase after 1974, with winter values exceeding 12 μM. This increase, as McAlice *et al.* (1978) point out, was remarkably similar to the increase in the Damariscotta estuary over the same period (McAlice, 1979), though no explanation was offered.

In comparison to the Damariscotta and Sheepscot, almost no data existed for the Kennebec estuary prior to 1993. Like the Damariscotta and Sheepscot estuaries, the Kennebec is also a drowned river valley that extends approximately 35 km from the mouth to Merrymeeting

Bay, where the Androscoggin and Kennebec Rivers converge. The estuary thus receives fresh water from both the Androscoggin and Kennebec Rivers; their combined discharges range from a low of about 150 $m^3 s^{-1}$ in late summer to >600 $m^3 s^{-1}$ during the period of peak spring runoff - this is an order of magnitude greater than the Sheepscot, and two orders of magnitude greater than the Damariscotta. The only historical literature we are aware of that includes data on the hydrography of the Kennebec estuary is a technical report by Francis *et al.* (1953). They present the results of turbulence measurements in the Kennebec, and give some data on density differences in the upper 12-13m (they report a density difference of 2 sigma-t units between 10 and 40 feet depth). There have been no studies of the plankton, nutrients or light field in the Kennebec prior to the work we report here.

METHODOLOGY AND ORGANIZATION OF THE REPORT

As outlined briefly in the introduction, our field measurements in each of the three estuaries, the Kennebec, Sheepscot and Damariscotta, included different types of surveys. One concentrated on detailed, cross-channel hydrographic and velocity surveys using a CTD and an acoustic Doppler current profiler. These surveys were performed on a small boat at several sections repeatedly over one complete semi-diurnal tidal cycle. Data are included here for the May and September 1994 surveys. We also conducted longitudinal surveys at 7-10 stations in each estuary, from the mouth to the head, in order to describe the basic hydrography, biology and chemistry using the University of New Hampshire's coastal research vessel, the R/V *Gulf Challenger*. A total of six of these surveys were conducted: 26 Sept. 1993, 9 Feb. 1994, 5 May 1994, 9 June 1994, 5 July 1994, and 1 Sept. 1994. An additional survey was made of the Kennebec estuary only on 16-17 Sept. 1995; this survey included both sets of measurements discussed above. Finally, data were obtained from water samples collected from shore during the winter-spring period of 1994 in order to document the development of the spring phytoplankton bloom, and from March to July in the Kennebec only, to follow nutrient concentrations.

Details of the methods used in each of the surveys and particulars of each of the analyses are given in the body of the report as sections preceeding each set of data. The organization of the report in as follows:

Table Group A	Biogeochemical and phytoplankton data from survey cruises;
Table Group B	Suspended particulate matter size composition;
Table Group C	Shoreside sample data (chlorophyll and nutrients), February to April 1994;
Table Group D	Kennebec shoreside nutrient samples, March to July 1994;
Figure Group A	Vertical section contour plots;
Figure Group B	Cross-channel temperature, salinity and density profiles, May and September 1994, and September 1995;
Figure Group C	Acoustic Doppler current profiles, May and September 1994, and September 1995;
Figure Group D	S4 current meter data.

PRELIMINARY FINDINGS AND THEIR IMPLICATIONS

As predicted, the three estuarine systems show varying influences from the rivers of differing size flowing into them. The Kennebec is a partially mixed estuary with a large prism of fresh water toward its head. The high river input coupled with high tidal flushing leads to relatively short water residence times of a few days. The Sheepscot and Damariscotta show signs of acting more like large tidal coves, with longer residence times due to lack of flushing by large volumes of river water. Stratification in these systems varies considerably over the course of the year, and it appears to be strongly influenced by local estuarine morphology as well as simple water budget terms.

Nutrient profiles in these estuaries show strong evidence for the importance of an oceanic source. Removal from the water column of these oceanic nutrients within the estuaries is evident in proceeding from the mouth to the upstream head of these systems, especially in the Sheepscot and Damariscotta. he estuaries are therefore acting as powerful reaction zones for Gulf of Maine water, providing conditions by which the Gulf-derived nutrient load is effectively converted to living biomass.

The river waters themselves act as nutrient sources only in places and times of high river flow, meaning the Kennebec during most of the year, and the Sheepscot occasionally (river flow in the Damariscotta is lowest among the three systems, and its freshwater nutrient loads are of minor importance). The river waters seem to be particularly important as sources of silicate, as compared with nitrogen or phosphorus, implying that river flow may be especially significant for phytoplankton speciation (e.g., diatoms vs. dinoflagellates) in these systems. The Kennebec exhibits a surprisingly strong "internal" nitrogenous nutrient source which appears to be derived from nitrification of organic material delivered to the estuary from up river. This excess nitrogen elevates the dissolved inorganic nitrogen "DIN" to phosphate ratios, up to 25-35 near Bath. However, coastal ocean water has DIN/P ratios of 5-10 for most of the year, so that this system may be shifted from nitrogen-limitation at the coastal end, to phosphorus-limitation toward the head.

The absorption of light (PAR) with depth in the water column by the dissolved organic matter showed the expected inverse correlation with salinity, demonstrating the importance of riverine input to this form of light attenuation. Thus we see that light attenuation coefficients are greatest in the Kennebec and least in the Damariscotta.

The conversion of plant nutrients into phytoplankton biomass, and thence into organic matter of use to animal filter feeders, generally mirrors the disappearance of nutrients. The landward ends of the Sheepscot and Damariscotta estuaries are, in some seasons (May, June September), regions of relatively high standing stocks of plankton compared with the seaward ends, and this pattern corresponds to the siting of the most productive aquaculture lease sites in the Damariscotta. At other times (February, July, August), when freshwater discharge is least, we find that standing stocks are greatest at the seaward ends of the estuaries.

The greatest standing stock of phytoplankton is in the Damariscotta, followed by the Kennebec and Sheepscot which are similar to one another with respect to cell densities, though there are clearly seasonal differences in the magnitudes of these patterns. Part of the differences in cell densities among the three estuaries may be related to the flushing of phytoplankton populations from the systems; this is especially evident in the Kennebec (which has the greatest freshwater runoff), where the greatest cell densities are at the seaward end, with very low densities upstream. We have found that diatoms are the dominant forms of phytoplankton in all three estuaries, and that densities of dinoflagellates are on the order of 10% those of diatoms. Detailed examinations of the plant pigments by high performance liquid chromatography (HPLC) corroborate the cell count data: we found very little peridinin, the pigment commonly used as a marker for dinoflagellates.

The Sheepscot estuary appears unusually incapable of converting its considerable stock of imported nutrients (from the Gulf of Maine) into phytoplankton standing stock. We observed this pattern not only from our survey cruise results, but also from the timing of the spring bloom, which was retarded in the Sheepscot relative to the Damariscotta. The Damariscotta estuary generally has much greater algal standing stocks than the Sheepscot, in spite of similar levels of plant nutrients. We note that this pattern is consistent with the lack of successful bivalve aquaculture sites in the Sheepscot.

The distribution of protein in the suspended particulates, which acts as a marker for digestible food available for filter-feeding bivalves, closely follows the phytoplankton populations. This correspondence indicates that phytoplankton production is primarily responsible for food available to shellfish aquaculture. Nevertheless, the ratios of protein to algal matter are high enough to imply that live phytoplankton are not the sole food type, but rather that detritus likely deriving from the phytoplankton are also of importance. Our use of a new method of assessing the quality of the protein, based on the kinetics of its degradation, shows that most of this protein material is available to bivalves.

Suspended particulate distributions generally have maxima at the landward ends of the three systems. In each case this particulate material appears to originate from within the estuary, probably by resuspension in the Sheepscot and Damariscotta but perhaps from human sources in the Kennebec.

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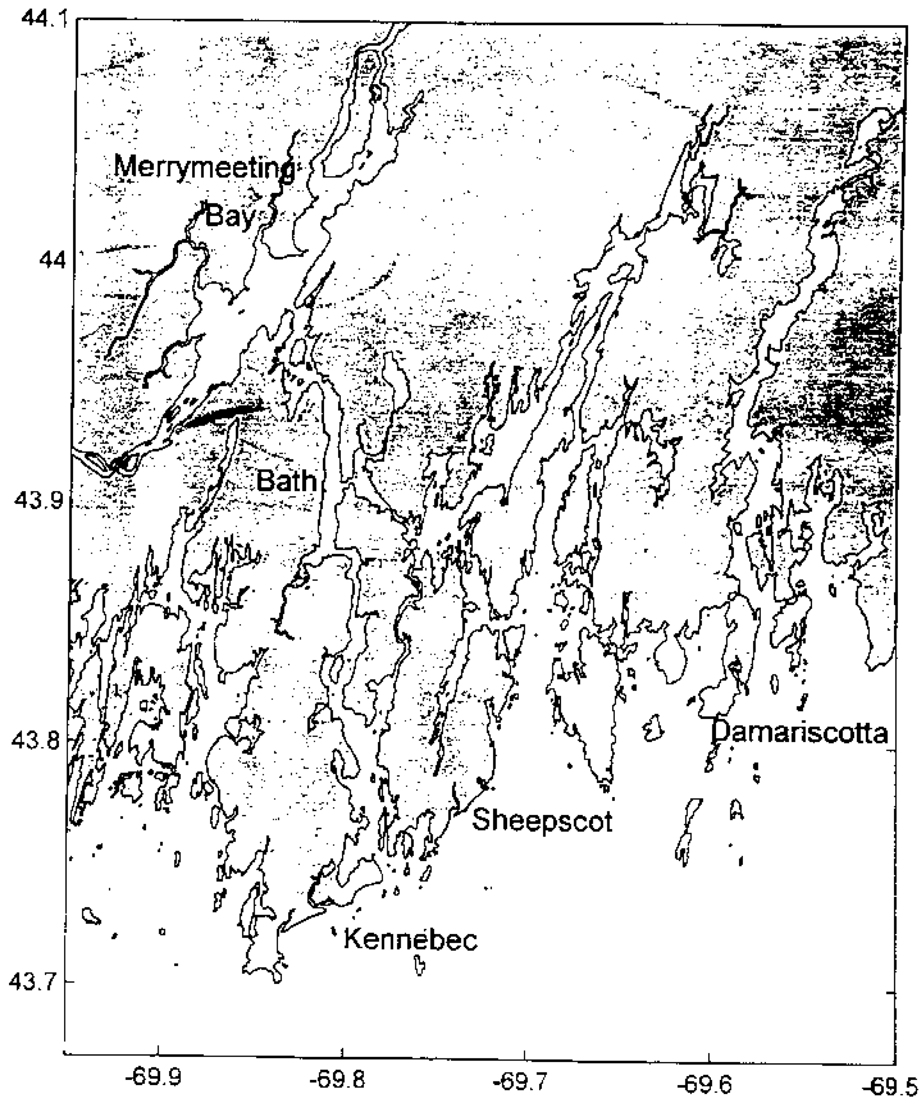

Figure 1: Location of the three estuaries and features mentioned in the text.

TABLE A **Biogeochemical Data**

Table A.1	(D) September 24, 1993, Damariscotta Estuary	
	(S) September 25, 1993, Sheepscot Estuary	
	(K) September 26, 1993, Kennebec Estuary	
Table A.2	(D) February 8, 1994, Damariscotta Estuary	
	(S) February 8, 1994, Sheepscot Estuary	
	(K) February 9, 1994, Kennebec Estuary	
Table A.3	(D) May 3, 1994, Damariscotta Estuary	
	(S) May 4, 1994, Sheepscot Estuary	
	(K) May 5, 1994, Kennebec Estuary	
Table A.4	(D) June 7, 1994, Damariscotta Estuary	
	(S) June 8, 1994, Sheepscot Estuary	
	(K) June 9, 1994, Kennebec Estuary	
Table A.5	(D) July 7, 1994, Damariscotta Estuary	
	(S) July 6, 1994, Sheepscot Estuary	
	(K) July 5, 1994, Kennebec Estuary	
Table A.6	(D) August 30, 1994, Damariscotta Estuary	
	(S) August 31, 1994, Sheepscot Estuary	
	(K) September 1, 1994, Kennebec Estuary	
Table A.7	(K-A) September 16-17, 1995, Kennebec Estuary, high tide	
	(K-B) September 16-17, 1995, Kennebec Estuary, ebbing	
	(K-C) September 16-17, 1995, Kennebec Estuary, low tide	
	(K-D) September 16-17, 1995, Kennebec Estuary, flooding	

TABLE A LEGEND

SPM	total suspended particulate matter
chl a	chlorophyll *a*
pheo	pheopigments (total)
POC	particulate organic carbon
PON	particulate organic nitrogen
PP	particulate phosphate
EHAA	enzymatically hydrolyzed amino acids (similar to protein)
NO3	nitrate (NO_3^-)
NO2	nitrite (NO_2^-)
NH4	ammonium (NH_4^+)
PO4	phosphate (PO_4^{-3})
SiO2	silicate
OD	optical density
PAR	photosynthetically active radiation (k= extinction coefficient)

Station locations are given by the distance from the mouth of estuary. With the exception of the September 1995 survey, sampling on each survey started from the mouth of the estuary at high tide. As sampling proceeded towards the head of the estuary with the water ebbing from the riverine end, a compressed picture of the estuary was measured.

Hydrographic data, for all surveys except June 1994 and the Kennebec September 1995 survey, were made by profiling temperature and conductivity from the surface to within 3m of the bottom using a Neil Brown CTD system. Salinity and density were computed based on the 1978 Practical Salinity Scale (UNESCO, 1981), using the software provided by General Oceanics/Neil Brown. The CTD data on the other two cruises were obtained with a Sea-Bird CTD, and salinity and density were calculated using Seasoft version 3.3H software. A Sea Tech *in situ* fluorometer and 25-cm path length transmissometer was also attached to the profiling package. The fluorometer used in September 1995 was a WetLabs instrument.

Water samples were collected with Niskin bottles at various depths at every station immediately following the CTD cast for the first six cruises; water was collected in September 1995 using a SeaBird carousel (rosette) with Niskin bottles. On all cruises, subsamples were taken from the Niskin bottles for various analyses following prescreening through 200 μm Nytex mesh.

In the September 1995 survey of the Kennebec, stations were sampled four times during a single tidal cycle: at high tide, ebbing tide, low tide and flooding tide. Transects were made from the station at Merrymeeting to Green Point (the upper estuary and freshwater zone) on the first day and from Fish Plant to Dix Island (the middle and lower estuary) on the second day. Temperature, salinity, and density for this survey were acquired using a SeaBird SBE 25-03 SeaLogger CTD and SeaSoft version 4.213 software. Niskin bottle water samples were taken from various depths in the center of the channel and from the top 1m on each side of the channel as close to shore as the vessel could reach. Each transect was finished within 90 minutes.

Salinity samples were collected directly from Niskin bottles and analyzed using a Guildline AutoSal 8400 calibrated with Sargasso Seawater (36.5 psu).

POC, PON, and SPM (Particulate organic carbon (POC), particulate organic nitrogen (PON), and suspended particulate matter (SPM)) were analyzed. POC and PON samples were collected by filtering 500 mls seawater from each sample depth onto a precombusted pre-ashed GF/F filter, the samples frozen and later analyzed with a Perkin Elmer 2400 Series II CHNO/S Elemental (Parsons *et al.*, 1984). (Filters were not vapor-acidified to remove inorganic carbon. Thus the concentrations may not accurately represent POC, although contamination by inorganic carbon is expected to be small in the estuaries. C/N ratios did not indicate significant quantities of $CaCO_3$.) Total suspended particulate material (SPM) measurements were made according to the methods in Strickland and Parsons (1972).

Chlorophyll *a* and phaeopigments were determined on all water samples by filtering 100 ml through a 25-mm GF/F filter onboard and extracting the pigments for at least 24 hr. in 90 % acetone in the dark at -18°C (Parsons *et al.*, 1984a). They were analyzed according to the standard fluorometric technique with acidification step of Parsons *et al.* (1984) on a Turner Designs fluorometer calibrated against pure chlorophyll *a* (Sigma Chemical Co.). Concentrations of selected samples were confirmed by HPLC following the procedure of Van Heukelem et al. (1992).

Fucoxanthin- Fucoxanthin (2L, 47mm GFC) was extracted in 100% acetone according to the procedure of Bidigare (1991) and separated using high performance liquid chromatography (HPLC) following the method of Van Heukelem et al. (1992). Fucoxanthin was identified and quantified based on comparisons with a standard.

EHAA- Enzymatically hydrolyzed amino acids (2L, 47mm GFC) were measured according to the procedure of Mayer *et al.* (in press) which involves a six hour long enzyme-mediated hydrolysis, a trichloroacetic acid precipitation step, and fluorometric detection of the *ortho*phthaldialdehyde derivative.

NO_3^-, NO_2^-, NH_4^+, PO_4^{-3}, SiO_2^- - All dissolved inorganic nutrients were prefiltered (30 ml through a 25mm 0.45 μm Millipore filter) and analyzed using a Technicon AutoAnalyzer. Methods for using the AutoAnalyzer for seawater nutrient chemistry are described by Technicon and modified by Glibert and Loder (1977). Samples were measured against working standards which were prepared by diluting stock standards into low nutrient Sargasso Seawater (36.5 psu) adjusted to within 2 psu of the samples. Corrections were made for the refractive index according to Loder and Glibert (1977).

PP- Particulate phosphate (1L, 47mm GFC) filters were treated following the procedure of Zimmerman (1993, pers. comm.) which involves muffling the filters at 520° C, soaking in 1N HCl, and a final soak and centrifugation in deionized water. The extract was analyzed following the method for ortho-phosphate measurment described by Glibert and Loder (1977).

OD- Optical density was measured by prefiltering the sample (50ml through a 25mm 0.45μm Millipore filter) and scanning the absorbance in a 10 cm (25 ml) cell from 180-650nm on a Hewlett Packard 8452 Spectrophotometer (PDA). Peak absorbance, which occurred at 282-286 nm, is included in Table A. Additional wavelength absorbancies are also available. Optical density of filtered samples at 284 nm representing the peak of absorption were reported to indicate the relative amount of dissolved organic matter (DOM) in the water.

PAR- Vertical profiles of photosynthetically active radiation (PAR) in the water column were measured on all cruises using a 4π, spherical LiCor underwater quantum sensor (LI-193SA). Subsurface irradiance intensity was measured simultaneously against the incident solar radiation with a matched quantum sensor (LI-190SA) mounted on the deck of the ship, since the incident light intensity can vary greatly especially with clouds temporarily obscuring the sun. The PAR measured at various depths in the water column (usually at 1 m or 2 m intervals) were expressed in percentages of the total PAR measured on deck. The diffuse attenuation, or extinction coefficient (k) was calculated from,

$$I_Z = I_o e^{-k\,Z} \qquad (1)$$

where I_Z and I_o are percentages of light received at two consecutive depths and Z is the change in depth in meters. On the September 1995 Kennebec cruise, subsurface PAR was also measured by the LiCor underwater radiation sensor. However, simultaneous on-deck radiation data were not retrieved after the cruise and thus extinction coefficients were calculated by the difference of radiation between two depths measured without considering any changes of incident radiation (change of cloud cover) during the cast.

Diatoms, Dinoflagellates- Phytoplankton cell counts were made on Lugol's (acidified)-preserved (Parson *et al.*, 1984) whole water samples as follows: Water samples were taken from the surface and subsurface water at each station. A 100-ml subsample was allowed to settle in a graduated cylinder for 48-72 hr. It was then concentrated by drawing off from the top a volume of from 50 to 90 ml (this gave a concentration factor of 2 to 10 for the remaining sample). The settling process employed in the concentration method allowed only larger species of phytoplankton (microplankton, 20-200 μm) to be retained for identification. A 1 ml subsample was then injected into a Sedgwick-Rafter counting cell and enumerated under 100 - 200X with a Nikon compound microscope. The entire counting cell was enumerated resulting in 500 to 3000 cells identified to species (when possible) for each sample. Confirmations of certain species were made by mounting samples on microscope slides and observing under 400X or 1000X with oil. For the purposes of this report, only major taxonomic catagories are given.

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Table A.1(D)
Damariscotta Data Summary - 24 Sept '93

station-bottle	Longitude deg-min W	Latitude (deg-min N	dept (M)	Salinity (PSU)	SPM (mg L^{-1})	chl a (µg L^{-1})	pheo (µg L^{-1})	fucoxanthin (µg L^{-1})	POC (mg L^{-1})	PON (mg L^{-1})	PP (µM)	EHAA (mg L^{-1})	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SIO2 (µM)	OD AU @254 nm	PAR k(m^{-1})	diatoms (cells mL^{-1})	dinoflag. (cells mL^{-1})
1-1	69°34.20	43°50.91	25	31.89	3.4	1.76			0.246	0.026		0.117	3.69	0.35	2.63	1.05	8.32	0.133			
1-2			15	31.82	1.0	2.05			0.188	0.025	0.28	0.190	2.35	0.25	1.43	0.91	6.26	0.112	0.28		
1-3			10	31.79	1.4	1.76			0.174	0.016	0.20	0.123	2.97	0.26	1.64	1.21	6.68	0.100	0.51		
1-4			5	31.81	0.2	1.92		0.392	0.229	0.027	0.91	0.161	2.41	0.25	1.69	0.89	6.51	0.093	0.32	238.0	1.5
1-5			1	31.78	1.0	1.56			0.643	0.059	0.09	0.191	2.36	0.25	1.70	0.90	6.43	0.124	0.12	259.0	2.8
2-1	34.94	52.53	12	31.77	1.6	1.61			0.194	0.025	0.32	0.195	2.22	0.23	1.50	0.98	6.81	0.118			
2-2			8	31.76	1.8	1.55			0.210	0.026		0.155	2.37	0.23	1.54	1.00	7.00	0.106	0.32		
2-3			4	31.76	1.4	1.56		0.364	0.660	0.027	0.16	0.171	2.41	0.23	1.68	0.97	7.06	0.127	0.31	214.2	1.0
2-4			1	31.76	1.0	1.39			0.242	0.030	0.26	0.155	2.27	0.24	1.56	0.99	10.44	0.078	0.13	216.4	2.0
3-1	34.65	54.07	20	31.71	1.4	1.40			0.285	0.034	0.09	0.161	2.43	0.26	2.11	1.02	8.61	0.121			
3-2			15	31.71	1.6	1.39			0.273	0.037	0.22	0.207	2.45	0.26	1.95	1.07	8.47	0.103			
3-3			10	31.71	1.4	1.18			0.174	0.023	0.40	0.173	2.37	0.26	1.77	1.06	8.20	0.101	0.32		
3-4			5	31.71	1.0	1.26		0.178	0.223	0.027	0.15	0.183	2.41	0.26	1.83	1.06	9.32	0.097	0.41	224.5	2.5
3-5			1	31.71	0.0	1.10		0.234	0.199	0.024	0.07	0.146	2.43	0.26	1.86	0.96	8.65	0.107	0.14	211.2	2.4
4-1	34.22	55.20	12	31.65	0.0	1.65			0.257	0.051	0.08	0.129	2.32	0.25	1.89	1.07	10.69	0.110			
4-2			8	31.64	1.8	1.73			0.307	0.031	0.19	0.131	2.33	0.25	1.80	1.01	10.13	0.139	0.41		
4-3			4	31.63	1.8	1.77		0.304	0.141	0.020	0.19	0.149	2.18	0.25	1.71	1.05	9.67	0.118	0.30	350.2	4.0
4-4			1	31.62	2.2	1.92			0.550	0.041	0.20	0.140	2.19	0.25	1.96	1.12	9.66	0.122	0.64	425.8	3.0
5-1	35.02	56.21	12	31.57	1.2	2.28			0.285	0.035	0.23	0.140	2.15	0.26	1.98	0.99	17.69	0.131			
5-2			8	31.56	2.4	2.49			0.260	0.035	0.22	0.121	2.17	0.24	2.03	1.11	12.44	0.154	0.47		
5-3			4	31.55	2.2	2.27		0.354	0.227	0.041	0.19	0.114	2.05	0.24	1.88	1.11	11.29	0.125	0.31	276.8	0.6
5-4			1	31.55	1.2	2.03			0.240	0.035		0.129	2.11	0.25	2.10	1.00	10.56	0.135	0.50	505.8	3.4
6-1	34.41	57.63	12	31.51	5.6	2.87			0.254	0.035	0.17	0.143	3.00	0.25	2.71	1.18	11.08	0.074			
6-2			8	31.50	3.2	2.81			0.263	0.033	0.24	0.150	2.36	0.27	2.37	1.21	10.55	0.058	0.60		
6-3			4	31.50	2.2	2.72		0.460	0.224	0.030	0.23	0.190	1.89	0.23	1.83	1.10	10.80	0.072	0.61	270.2	0.8
6-4			1	31.50	1.8	2.59			0.219	0.031	0.23	0.148	1.95	0.24	1.97	1.11	11.23	0.075	0.24	449.6	1.8
7-1	33.05	59.35	12	31.38	6.0	5.86			0.393	0.060	0.40	0.219	1.41	0.22	1.10	1.03	10.08	0.066			
7-2			8	31.38	4.2	6.12			0.414	0.059	0.21	0.131	1.16	0.23	1.14	0.91	10.32	0.042			
7-3			4	31.39	4.4	5.83		1.155	0.370	0.058	0.39	0.256	0.72	0.25	0.67	0.55	12.85	0.086	0.57		
7-4			1	31.39	4.6	6.15			0.368	0.053		0.208	1.22	0.25	1.40	0.87	11.96	0.088	0.60	586.0	3.6
8-1	32.55	44°00.30	4	31.21	4.0	5.13		0.759	0.404	0.055	0.36	0.201	1.43	0.22	2.33	1.16	12.62	0.091	0.66	115.5	0.5
8-2			1	31.21	4.4	4.87			0.371	0.050	0.36	0.220	0.72	0.24	0.82	0.99	15.69	0.125	0.61	138.0	0.0
9-1	32.60	01.13	1	31.22	3.6	1.62		0.179	0.229	0.031	0.23	0.118	1.18	0.26	3.07	1.16	14.39	0.135	0.51	19.5	0.5
10-1	32.16	01.90	1	30.79	2.0	1.19		0.102	0.110	0.014	0.16	0.098	1.14	0.22	2.31	1.61	8.66	0.007	1.38		
11-1		zodiac	0.5	30.72	0.0						0.13	0.112	0.97	0.13		1.04	8.61	0.249	1.38		

Table A.2(D)
Damariscotta Data Summary - 8 Feb '94

station-bottle	Longitude (deg-min W)	Latitude (deg-min N)	Depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
1-1	69°33.37	43°58.73	8	29.53	1.4	1.86	0.51		0.342	0.033	0.20	0.18	8.79	0.14	0.51	0.74	14.04	0.23	0.24		
1-2			4.5	29.38	1.4	2.88	0.37		0.413	0.043	0.21	0.25	8.32	0.14	0.60	0.79	14.16	0.17	0.38	104.5	0.0
1-3			1	29.27	1.6	1.86	0.51		0.467	0.046	0.23	0.17	8.28	0.14	0.51	0.74	14.40	0.21	0.38	104.6	0.1
2-1	34.97	56.12	13	31.29	1.2	1.68	0.55		0.234	0.025	0.15	0.13	10.34	0.15	0.30	0.91	13.06	0.14	0.30		
2-2			7	30.91	1.0	2.28	0.35		0.285	0.027	0.16	0.14	9.93	0.15	0.42	0.82	13.27	0.12	0.22	82.8	0.0
2-3			1	30.51	1.6	2.28	0.46		0.537	0.044	0.19	0.18	9.45	0.16	0.54	0.85	13.47	0.12	0.26	67.6	0.0
3-1	34.54	54.29	25	31.68	0.8	1.42	0.33		0.216	0.020	0.14	0.12	11.03	0.17	0.74	0.97	12.77	0.12			
3-2			15	31.71	1.4	0.64	0.13		0.175	0.017	0.12	0.13	11.06	0.16	0.53	0.92	12.69	0.12	0.27	63.3	0.1
3-3			1	31.76	0.8	1.47	0.24	0.074	0.274	0.017	0.13	0.11	11.08	0.16	0.51	0.92	12.64	0.15	0.33	42.6	0.0
4-1	34.29	50.09	28	32.64	1.0	0.64	0.13	0.000	0.118	0.015	0.08	0.13	12.96	0.15	0.37	0.98	12.00	0.11			
4-2			13	32.35	1.2	0.95	0.13		0.220	0.016	0.09	0.11	12.42	0.16	0.48	1.03	12.12	0.13	0.13	37.1	0.9
4-3			1	32.26	0.6	1.02	0.10	0.093	0.216	0.019	0.11	0.11	12.07	0.15	0.37	0.99	12.24	0.12	0.22	32.6	0.0

Table A.4(D)
Damariscotta Data Summary - 7 June '94

station-bottle	Longitude (deg-min W)	Latitude (deg-min N)	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag (cells mL⁻¹)
1-1	69°34.21	43°50.86	21	31.60	1.8	2.71	0.64	0.719	0.339	0.032	0.17	0.10	3.83	0.16	2.38	0.62	5.17	0.124			
1-2			16	31.32	2.0	2.49	0.40		0.235	0.032		0.07	2.59	0.17	1.54	0.51	4.51	0.120	0.23		
1-3			11	31.13	1.0	1.92	0.70		0.229	0.035	0.17	0.08	2.24	0.12	1.45	0.45	4.21	0.111	0.23		
1-4			7	30.89	1.2	2.49	0.40	0.380	0.312	0.045		0.11	1.38	0.08	2.04	0.35	3.56	0.192	0.22		
1-5			2	30.83	1.6	1.62	0.53	0.184	0.333	0.042	0.19	0.19	1.82	0.14	1.16	0.45	6.71	0.154	0.39	131.8	8.2
2-1	34.88	52.59	22	31.01	1.8	1.86	0.69		0.192	0.026		0.09	2.46	0.11	1.15	0.42	3.83	0.164			
2-2			16	30.91	1.8	2.84	0.47		0.370	0.054	0.23	0.14	1.60	0.10	0.82	0.38	4.89	0.174	0.24		
2-3			10	30.87	4.7	2.92	0.28		0.421	0.056	0.27	0.13	1.63	0.12	0.96	0.40	4.99	0.172	0.16		
2-4			5	30.76	1.4	2.49	0.40	0.310	0.276	0.049		0.10	2.06	0.15	1.04	0.44	5.22	0.219	0.24	131.8	6.2
2-5			1	30.70	2.0	1.56	0.52		0.282	0.041	0.15	0.08	1.69	0.12	1.04	0.43	5.35	0.176	0.35	78.0	2.5
3-1	34.50	54.24	23	30.66	2.0	1.73	0.56		0.432	0.038	0.15	0.06	2.06	0.12	1.18	0.50	5.45	0.200			
3-2			17	30.63	2.6	1.85	0.58		0.258	0.042		0.09	1.94	0.11	1.10	0.50	5.23				
3-3			11	30.53	3.2	2.18	0.54		0.206	0.034	0.17	0.09	1.80	0.12	0.99	0.46	5.46	0.174	0.27		
3-4			5	30.46	2.8	2.29	0.57	0.223	0.511	0.051	0.20	0.11	1.76	0.12	0.85	0.44	5.63	0.155	0.36	89.6	2.0
3-5			1	30.39	3.0	1.47	0.29		0.216	0.028	0.14	0.05	2.12	0.12	0.94	0.37	5.72	0.177	0.15	61.0	0.5
4-1	34.21	55.26	12	30.51	2.4	1.90	0.59		0.241	0.033	0.16	0.14	0.94	0.18	0.94	0.46	5.89	0.024	0.26		
4-2			8	30.40	2.8	3.62	0.53		0.430	0.061	0.22	0.12	0.71	0.13	0.71	0.48	5.88	0.155	0.29		
4-3			4	30.22	2.8	3.57	0.09	0.262	0.513	0.056	0.22	0.12	0.51	0.10	0.51	0.45	5.84	0.190	0.41	110.2	4.4
4-4			1	30.03	2.8	1.95	0.50		0.430	0.042	0.17	0.08	0.40	0.10	0.38	0.40	5.93	0.200	0.35	133.0	1.0
5-1	35.03	56.35	15	30.36	4.6	1.56	0.52		0.329	0.038	0.18	0.05	1.88	0.12	1.09	0.45	5.46	0.006			
5-2			10	30.18	3.2	2.08	0.63	0.398	0.313	0.043		0.17	1.90	0.12	1.15	0.45	5.38	0.193	0.38		
5-3			5	29.98	4.2	3.87	0.68	0.430	0.392	0.059	0.28	0.30	1.34	0.10	0.50	0.41	5.54	0.184	0.39	188.4	2.4
5-4			1	29.81	2.2	4.50	0.39		0.459	0.065	0.30	0.19	1.10	0.10	0.25	0.38	5.54	0.157	0.44	164.0	1.5
6-1	34.40	57.96	10	29.33	3.4	3.74	0.55		0.420	0.058		0.12	0.84	0.09	0.52	0.33	4.51	0.261			
6-2			5	29.30	4.2	4.07	0.51	0.926	0.537	0.069	0.31	0.20	0.68	0.09	0.36	0.31	4.15	0.245	0.46	748.2	4.6
6-3			1	29.28	4.4	4.31	0.67		0.475	0.072		0.21	0.93	0.09	0.62	0.31	3.85	0.244	0.43	625.0	9.0
7-1	33.12	59.39	8	29.12	153.3	10.94	9.26	4.221	4.062	0.563	1.53	0.87	1.28	0.30	0.55	0.30	4.48	0.235	0.49		
7-2			4	28.65	6.4	5.96	1.33	1.145	0.982	0.119	0.64	0.42	0.52	0.07	0.37	0.21	4.87	0.243	0.59	1,918.0	24.5
7-3			1	28.07	6.0	5.45	0.80	0.954	0.898	0.117		0.43	0.17	0.02	0.14	0.18	5.69	0.275	0.58	2,380.0	12.0
8-1	32.50	44°00.13	3.5	29.80	7.4	6.62	1.26	1.189	0.926	0.111	1.15	0.37	0.21	0.13	0.38	0.16	8.52	0.229	0.54	1,919.5	88.0
8-2			1	27.35	3.6	7.41	1.32	0.903	1.151	0.147		0.50	0.22	0.05	0.36	0.17	4.50	0.294	0.78	2,663.0	151.0
9-1	32.58	01.12	3	26.54	4.0	8.34	1.62		0.913	0.134	0.57	0.29	0.18	0.03	0.26	0.13	6.88	0.308	0.84	2,957.5	26.5
9-2			1	26.06	2.8	8.67	1.58	1.823	0.933	0.130		0.31	0.27	0.01	0.19	0.13	3.97	0.311	0.87	2,028.0	18.0
10-1	32.11	01.92	4	25.28	8.80	8.01	1.65	2.108	1.004	0.141		0.45	0.23	0.05	0.84	0.22	3.79	0.375	1.27	1,752.5	23.5
10-2			1	25.12	8.00	7.45	1.64	1.679	1.159	0.152	0.77	0.41	0.71	0.05	0.52	0.22	4.71	0.381	0.97	1,508.0	32.0
lake			0.50										0.14	0.03	0.27	0.05	4.97	1.228		284.0	2.5

Table A.3(D)
Damariscotta Data Summary -3 May '94

station-bottle	Longitude (deg-min W	Latitude (deg-min N	depth (M)	Salinity (PSU)	SPM (mg L^{-1})	chl a (µg L^{-1})	pheo (µg L^{-1})	fucoxanthin (µg L^{-1})	POC (mg L^{-1})	PON (mg L^{-1})	PP (µM)	EHAA (mg L^{-1})	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m^{-1})	diatoms (cells mL^{-1})	dinoflag. (cells mL^{-1})
1-1	69°34.22	43°51.06	16	30.59	0.2	0.82	0.37		0.229	0.033	0.15	0.11	0.79	0.07	1.18	0.33	4.18	0.140	0.11		
1-2			8	30.44	1.0	1.21	0.40		0.205	0.033	0.16	0.10	0.84	0.08	1.18	0.33	4.41	0.131	0.00		
1-3			4	30.38	1.2	1.78	0.46	0.195	0.257	0.042	0.19	0.11	1.06	0.08	1.36	0.32	4.63	0.115	0.27	45.4	1.8
1-4			1	30.32	1.0	2.04	0.33		0.288	0.040	0.17	0.20	0.81	0.09	1.17	0.32	4.74	0.145	0.19	29.2	3.1
2-1	34.88	52.46	20	30.33	1.2	1.27	0.41		0.229	0.033		0.10	0.87	0.07	1.29	0.32	4.30	0.135			
2-2			15	30.28	2.0	1.54	0.36		0.199	0.030	0.17	0.09	0.94	0.08	1.45	0.34	4.45	0.135			
2-3			10	30.23	2.0	1.26	0.35		0.246	0.029	0.17	0.09	1.17	0.06	1.90	0.34	4.53	0.208	0.31		
2-4			5	30.21	2.2	1.27	0.46	0.145	0.265	0.034	0.23	0.09	1.25	0.08	1.69	0.33	4.81	0.135	0.37	39.7	1.6
2-5			1	30.23	1.6	1.15	0.36		0.207	0.028	0.15	0.14	0.98	0.10	1.76	0.32	4.69	0.166	0.34	41.3	1.5
3-1	34.55	54.17	25	30.06	2.0	1.49	0.40		0.215	0.035	0.18	0.13	0.92	0.10	1.31	0.32	4.52	0.172			
3-2			15	30.01	1.4	2.18	0.54		0.226	0.033	0.16	0.09	0.92	0.08	1.29	0.30	4.62	0.186			
3-3			10	29.98	1.0	1.73	0.56		0.242	0.035	0.19	0.10	0.84	0.08	1.18	0.32	4.57	0.193	0.34		
3-4			5	29.66	1.8	2.18	0.54	0.291	0.264	0.037	0.20	0.11	0.71	0.09	1.07	0.28	4.94	0.261	0.41	54.5	0.8
3-5			1	29.60	1.8	1.68	0.55		0.230	0.033	0.17	0.15	1.06	0.07	1.60	0.28	4.82	0.151	0.37	60.7	1.0
4-1	34.17	55.18	13	29.79	2.6	2.00	0.51		0.231	0.037	0.22	0.16	0.69	0.09	1.04	0.28	4.68	0.165			
4-2			8	29.68	4.2	2.06	0.52		0.224	0.039	0.19	0.11	0.68	0.06	1.01	0.28	4.65	0.162	0.35		
4-3			4	29.36	3.1	2.62	0.53	0.376	0.271	0.041	0.23	0.13	0.56	0.06	0.81	0.26	4.76	0.105	0.39	77.1	1.7
4-4			1	29.25	3.2	2.10	0.42		0.292	0.041	0.21	0.18	0.50	0.07	0.69	0.24	4.68	0.363	0.33	76.5	0.8
5-1	35.07	56.23	13	29.09	2.2	2.94	0.38		0.268	0.045	0.25	0.17	0.51	0.06	0.75	0.27	4.76	0.184			
5-2			7	28.73	1.8	3.39	0.48	0.657	0.305	0.054	0.26	0.16	0.41	0.08	0.59	0.25	4.76	0.200	0.44	98.8	1.7
5-3			1	28.54	2.8	3.02	0.19		0.286	0.047	0.27	0.20	0.36	0.06	0.51	0.23	4.82	0.183	0.37	122.0	1.7
6-1	34.41	57.76	11	28.11	1.6	3.38	0.37		0.294	0.045	0.27	0.20	0.22	0.04	0.35	0.22	4.94	0.255			
6-2			6	27.90	1.6	3.72	0.44	0.506	0.334	0.054	0.28	0.18	0.21	0.03	0.53	0.23	5.14	0.156	0.44	150.3	0.7
6-3			1	27.65	1.4	3.27	0.35		0.306	0.049	0.27	0.23	0.13	0.05	0.23	0.20	5.23	0.201	0.41	128.6	1.8
7-1	33.15	59.29	8	28.05	3.2	5.27	0.34		0.371	0.061	0.37	0.32	0.35	0.05	0.48	0.20	4.78	0.207			
7-2			4	27.40	2.6	5.87	0.68	0.574	0.603	0.100	0.87	0.51	0.15	0.01	0.58	0.18	5.33	0.182	0.51	147.7	2.8
7-3			1	26.19	2.4	3.61	0.42		0.577	0.091	0.35	0.40	0.00	0.01	0.20	0.16	6.39	0.211	0.39	85.3	1.9
8-1	32.46	44°00.08	3.5	26.15	3.7	5.65	0.63		0.731	0.112	0.72	0.60	0.36	0.01	0.33	0.15	8.35	0.238	0.63	107.9	8.3
8-2			1	26.07	3.3	5.86	0.57		0.825	0.132	0.71	0.58	0.06	0.03	0.19	0.15	6.49	0.228	0.52	120.6	8.7
9-1	32.70	01.08	4	25.53	3.6	4.74	0.55		0.574	0.083	0.55	0.31	0.34	0.02	0.37	0.14	7.21	0.278	0.59	121.9	6.4
9-2			1	23.89	4.0	6.82	1.09		0.819	0.119	0.45	0.42	0.41	0.02	0.45	0.12	8.61	0.300	0.62	80.8	12.3
10-1	32.22	01.86	3	23.80	2.0	2.74	1.40		0.472	0.062	0.48	0.19	0.20	0.03	0.47	0.15	8.66	0.204	0.59	92.3	1.4
10-2			1	21.07	2.4	2.77	0.77		0.388	0.058	0.35	0.23	0.12	0.05	0.54	0.16	10.99	0.356	0.62	61.7	5.7

Table A.5(D)
Damariscotta Data Summary - 7 July '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (μg L⁻¹)	pheo (μg L⁻¹)	fucoxanthin (μg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (μM)	EHAA (mg L⁻¹)	NO3 (μM)	NO2 (μM)	NH4 (μM)	PO4 (μM)	SiO2 (μM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°34.36	43°49.28	20	31.76	0.4	4.28	0.68		0.587	0.079	0.38	0.26	1.16	0.09	0.25	0.39	0.91	0.107			
0-2			15	31.68	0.4	4.28	0.68		0.747	0.084	0.47	0.35	0.11	0.03	0.05	0.23	0.21	0.127			
0-3			10	31.62	0.2	3.11	0.92		0.750	0.076	0.47	0.29	0.22	0.07	0.25	0.23	0.75	0.118	0.26		
0-4			5	31.39	0.2	2.17	0.59	0.495	0.545	0.059	0.31	0.21	0.22	0.05	0.12	0.20	0.75	0.110	0.38	2,063.0	17.0
0-5			1	31.32	0.4	1.31	0.47		0.519	0.045	0.26	0.19	0.14	0.05	0.30	0.16	0.18	0.139	0.37	1,254.4	13.2
1-1	34.20	51.16	20	31.82	0.2	1.62	0.95	0.797	0.315	0.030	0.21	0.15	3.31	0.15	1.49	0.69	4.99	0.104			
1-2			12	31.64	2.4	2.44	0.88		0.574	0.070	0.31	0.21	1.30	0.12	0.73	0.47	2.33	0.137	0.29		
1-3			7	31.51	0.8	2.21	0.83	0.934	0.501	0.058	0.30	0.25	0.85	0.08	0.24	0.38	1.82	0.129	0.33	1,210.0	13.0
1-4			1	31.35	1.2	1.43	0.54		0.584	0.053	0.37	0.21	0.04	0.03	0.17	0.12	0.17	0.135	0.22	1,662.0	11.0
2-1	34.81	52.47	20	31.64	1.0	1.94	0.87		0.497	0.050	0.25	0.18	1.85	0.11	0.77	0.53	3.05	0.104			
2-2			10	31.48	1.4	2.09	0.86		0.506	0.059	0.34	0.20	1.04	0.09	0.39	0.43	2.26	0.143	0.33		
2-3			6	31.30	1.0	2.09	0.76	0.550	0.615	0.060	0.40	0.22	0.52	0.07	0.20	0.38	1.59	0.152	0.36	1,065.0	6.5
2-4			1	31.20	3.6	1.94	0.59		0.495	0.056	0.23	0.17	0.36	0.08	0.31	0.40	1.51	0.148	0.28	947.0	2.0
3-1	34.56	54.15	30	31.31	4.0	1.70	0.78		0.326	0.044	0.28	0.15	0.44	0.09	0.52	0.44	2.04	0.117			
3-2			15	31.21	4.2	2.05	0.90		0.518	0.083	0.38	0.18	0.45	0.15	0.55	0.45	1.71	0.163			
3-3			6	31.17	4.8	2.05	0.80	0.920	0.651	0.065	0.31	0.20	0.43	0.07	0.41	0.43	4.16	0.142	0.41	833.0	6.5
3-4			1	31.12	4.8	1.94	0.68		0.491	0.056	0.27	0.20	0.39	0.07	0.31	0.39	1.47	0.124	0.34	834.5	0.5
4-1	34.19	55.13	14	31.21	4.0	1.74	0.83		0.464	0.054	0.36	0.13	0.75	0.12	0.72	0.46	1.97	0.166			
4-2			6	31.12	4.6	2.21	0.93	0.680	0.656	0.071	0.39	0.20	0.34	0.08	0.22	0.41	1.50	0.117	0.46	1,063.5	6.0
4-3			1	30.91	5.2	2.25	0.79		0.678	0.079	0.40	0.24	0.06	0.08	0.13	0.35	8.34	0.170	0.22	789.5	4.0
x1-1	35.60	55.14	1	30.71	5.0	2.05	0.85		0.876	0.097	0.49	0.30	0.07	0.02	0.33	0.37	1.48	0.193			
x2-1	35.37	55.32	1	30.69	4.6	1.74	0.69		0.666	0.070	0.37	0.20	0.11	0.06	0.58	0.38	1.32	0.167			
x3-1	35.16	55.48	1	30.66	3.8	1.90	0.68		0.645	0.070	0.41	0.21	0.04	0.05	1.06	0.41	1.33	0.197			
x4-1	34.98	55.66	1	30.65	3.8	1.70	0.68		0.576	0.069	0.40	0.23	0.08	0.03	0.11	0.38	1.13	0.145			
x5-1	34.80	55.79	1	30.75	3.4	2.29	0.85		0.544	0.070	0.39	0.23	0.70	0.05	0.57	0.40	1.20	0.158			
5-1	34.94	56.19	12	31.07	2.3	1.90	0.91	0.940	0.517	0.058	0.36	0.24	0.45	0.07	0.79	0.45	1.99	0.158			
5-2			8	30.98	2.9	2.05	0.99		0.666	0.073	0.37	0.18	0.23	0.15	0.84	0.46	1.71	0.146	0.45		
5-3			4	30.85	0.3	2.09	0.95	0.795	0.595	0.070	0.37	0.26	0.18	0.13	0.23	0.42	1.46	0.158	0.47	575.0	3.0
5-4			1	30.80	1.1	2.01	0.84		0.493	0.065	0.36	0.19	0.33	0.13	0.31	0.41	1.49	0.158	0.40	588.5	1.5
6-1	34.38	57.84	10	30.50	2.3	1.66	1.01		0.539	0.062	0.38	0.14	0.33	0.07	0.81	0.50	1.71	0.174			
6-2			5	30.45	1.1	1.70	0.92	0.767	0.650	0.059	0.41	0.17	0.33	0.07	0.63	0.51	1.71	0.170	0.53	387.2	6.0
6-3			1	30.42	0.3	1.66	0.96		0.519	0.065	0.38	0.15	0.33	0.10	0.72	0.51	1.74	0.181	0.52	315.2	0.8
7-1	33.20	59.27	9	30.40	29.6	2.56	3.91	1.522	3.226	0.398	0.50	0.32	0.13	0.10	0.96	0.57	1.80	0.173			
7-2			5	30.32	0.6	1.97	1.07	0.700	0.616	0.080	0.37	0.32	0.02	0.05	0.28	0.49	1.77	0.156	0.72	556.8	2.0
7-3			1	29.87	1.1	1.90	0.72		0.799	0.085	0.46	0.22	0.14	0.03	0.08	0.48	2.37	0.195	0.56	387.4	1.4
xa-1	32.70	44°00.09	1	29.91	2.8	1.90	0.82		0.434	0.046	1.64	0.24	0.07	0.07	0.12	0.50	2.56	0.180			
xa-2	32.66	00.07	1	29.87	2.6	1.97	0.83		0.951	0.106	1.26	0.31	0.04	0.05	0.17	0.49	2.37	0.161			
xa-3	32.41	00.08	1	29.83	2.0	1.82	0.76		0.698	0.099	1.00	0.25	0.17	0.03	0.04	0.48	2.50	0.236			
xa-4	32.25	00.09	1		3.0	1.74	0.74		0.839	0.095	1.16	0.25	0.06	0.05	0.13	0.50	2.62	0.203			
8-1	32.39	00.06	4	30.09	1.2	2.25	1.22		0.910	0.092	1.64	0.25	0.02	0.03	0.13	0.49	2.27	0.282	0.83	659.2	0.4
8-2			1	29.87	2.8	1.70	0.73	0.421	0.653	0.088	1.16	0.28	0.09	0.05	0.10	0.49	2.81	0.284	0.57	472.4	1.6
9-1	32.68	01.13	3	28.57		2.13	0.96		0.793	0.102	1.56	0.30	0.14	0.05	0.25	0.77	7.03	0.320	0.79	151.8	1.8
9-2			1	28.25		2.21	0.93	0.742	0.907	0.116	1.68	0.31	0.49	0.06	0.95	0.85	7.81	0.357	0.95	75.4	2.4
10-1	32.10	01.94	1	28.55	0.4	1.58	1.18	0.662	0.762	0.075	0.92	0.17	0.00	0.10	1.02	0.96	7.85	0.272	0.32		

Table A.6(D)
Damariscotta Data Summary - 30 Aug '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°34.37	43°49.25	22	32.24	0.4	0.53	0.66		0.181	0.019	0.06	0.05	7.80	0.71	1.22	1.06	15.37	0.146			
0-2			15	32.20	2.0	0.72	0.86		0.198	0.025	0.10	0.06	8.26	0.61	1.63	1.04	13.58	0.150			
0-3			10	32.03	1.6	1.90	0.86		0.303	0.046	0.22	0.16	2.90	0.45	1.79	0.79	8.03	0.205			
0-4			5	32.00	2.0	2.17	0.92	1.147	0.295	0.053	0.26	0.18	2.35	0.34	1.21	0.85	6.37	0.185	0.41	2080.0	1.0
0-5			1	31.95	2.0	2.29	1.06		0.431	0.071	0.24	0.29	0.39	0.14	1.21	0.74	3.55	0.306	0.23	3136.0	2.0
1-1	34.24	50.8	15	32.12	1.6	1.02	0.83	0.373	0.745	0.030	0.14	0.12	5.27	0.56	1.60	1.00	13.51	0.118			
1-2			10	32.01	1.6	1.90	0.77		0.769	0.055	0.25	0.17	2.85	0.38	1.09	0.80	7.86	0.216			
1-3			5	31.96	2.0	2.25	1.03	0.609	0.420	0.063	0.30	0.31	1.32	0.27	0.87	0.75	5.05	0.228	0.42	2174.0	3.0
1-4			1	31.95	2.8	2.25	1.03		0.962	0.080	0.31	0.27	1.45	0.25	0.84	0.69	4.38	0.279	0.50	2343.0	2.0
2-1	34.83	52.39	15	32.06	1.2	1.39	0.72		0.430	0.044	0.19	0.11	4.52	0.49	1.41	0.94	10.48	0.145			
2-2			8	31.95	2.0	2.29	0.94		0.329	0.059	0.31	0.22	1.64	0.27	0.78	0.73	5.04	0.167	0.36		
2-3			4	31.92	2.4	2.33	1.00	0.657	0.476	0.065	0.32	0.26	1.13	0.24	0.73	0.71	4.14	0.177	0.46	2357.0	6.0
2-4			1	31.91	2.0	2.21	0.93		0.425	0.057	0.31	0.21	1.48	0.26	1.43	0.84	4.11	0.204	0.36	1718.0	4.5
3-1	34.62	53.67	20	31.90	2.4	1.90	0.91		0.326	0.046	0.23	0.16	1.63	0.25	1.41	0.84	4.27	0.151			
3-2			15	31.87	3.6	2.25	1.17		0.451	0.060	0.31	0.20	1.22	0.20	1.13	0.76	3.42	0.166			
3-3			10	31.86	2.0	2.40	1.06		0.459	0.080	0.29	0.26	0.97	0.18	0.96	0.79	2.99	0.147	0.26		
3-4			5	31.83	1.6	2.72	1.31	0.523	0.457	0.073	0.31	0.32	0.20	0.10	0.45	0.72	2.24	0.171	0.46	2872.0	3.0
3-5			1	31.82	2.0	2.17	1.53		0.627	0.074	0.26	0.30	0.22	0.13	0.69	0.73	2.18	0.172	0.42	2765.0	2.0
4-1	34.31	55.31	11	31.79	1.2	3.15	1.21		0.523	0.074	0.32	0.29	0.50	0.11	0.71	0.77	2.29	0.196			
4-2			7	31.77	2.0	2.72	1.22		0.458	0.070	0.31	0.28	0.33	0.10	0.68	0.77	2.20	0.165	0.65		
4-3			4	31.77	1.2	2.72	1.22	0.520	0.494	0.074	0.34	0.20	0.31	0.12	0.80	0.79	2.24	0.170	0.46	2128.0	5.0
4-4			1	31.75	1.2	2.37	1.10		0.511	0.064	0.31	0.23	0.28	0.11	0.85	0.80	2.25	0.176	0.50	2078.0	2.0
5-1	35.02	56.34	12	31.76	2.0	2.40	1.11	0.848	0.478	0.060	0.33	0.28	0.80	0.13	1.75	0.86	2.48	0.202			
5-2			8	31.69	3.6	2.05	1.18		0.378	0.057	0.28	0.21	0.35	0.10	1.11	0.68	2.30	0.245	0.39		
5-3			4	31.67	3.4	1.82	0.90	0.309	0.383	0.048	0.26	0.26	0.54	0.09	1.32	0.88	2.33	0.184	0.55	1259.0	0.0
5-4			1	31.66	2.8	2.01	0.93		0.352	0.051	0.27	0.20	0.28	0.10	0.85	0.84	2.34	0.204	0.52	1286.0	1.0
6-1	34.47	57.87	11	31.58	2.4	1.86	0.78		0.370	0.041	0.26	0.18	0.16	0.07	0.74	0.89	2.14	0.201			
6-2			8	31.58	2.8	1.74	0.83		0.354	0.043	0.26	0.18	0.47	0.08	1.12	0.90	2.28	0.164	0.43		
6-3			4	31.58	2.8	1.88	0.78	0.521	0.447	0.047	0.29	0.18	0.75	0.06	1.17	0.86	2.18	0.564	0.46	1296.5	1.0
6-4			1	31.58	3.6	1.70	0.63		0.403	0.047	0.28	0.17	0.55	0.08	0.90	0.65	2.20	0.249	0.46	1119.0	1.0
7-1	33.09	59.29	11	31.49	4.6	2.01	0.98	0.475	0.515	0.061	0.38	0.26	0.12	0.05	0.66	0.87	2.10	0.286			
7-2			8	31.49	4.0	1.90	0.86		0.458	0.063	0.39	0.23	0.08	0.05	0.53	0.89	2.03	0.245	0.61		
7-3			4	31.43	4.6	1.70	0.73	0.357	0.251	0.034	0.40	0.28	0.07	0.06	0.50	0.89	2.40	0.244	0.36	1818.0	1.0
7-4			1	31.42	5.0	1.74	0.89		0.543	0.059	0.39	0.20	0.12	0.05	0.54	0.91	2.58	0.248	0.69	1584.0	2.0
8-1	32.53	44°00.12	4	31.33	5.8	2.05	0.80		0.530	0.076	0.52	0.22	0.06	0.13	1.03	0.93	2.90	0.220	0.65	1721.0	4.0
8-2			1	31.26	6.3	2.05	0.66	0.400	0.502	0.065	0.45	0.25	0.10	0.11	0.84	0.98	3.18	0.291	0.65	1666.0	1.0
9-1	32.54	01.14	4	30.87	7.5	1.39	0.72		0.394	0.057	0.36	0.15	0.56	0.25	2.68	1.41	6.46	0.322	0.77	625.5	0.0
9-2			1	30.87	5.7	1.39	0.72	0.193	0.385	0.055	0.33	0.16	0.65	0.27	3.00	1.42	6.50	0.292	0.74	573.0	1.0
10-1	32.15	01.86	4	30.50	6.0	0.74	0.82		0.310	0.037	0.25	0.09	0.81	0.31	3.95	1.58	6.39	0.362	0.60	349.0	1.0
10-2			1	30.51	7.2	0.94	0.81	0.152	0.333	0.044	0.30	0.11	0.84	0.31	3.91	1.57	6.39	0.315	0.60	222.0	0.0

Table A.1(8)
Sheepscot Data Summary - 25 Sept '93

station-bottl	Longitude (deg-min W)	Latitude (deg-min N)	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @264 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag (cells mL⁻¹)
1-1	69°41.71	43°51.88	32	32.02	1.4	0.51			0.230	0.015	0.1	0.084	5.15	0.51	1.96	0.98	13.40	0.021			
1-2			20	31.88	1.4	0.55			0.177	0.021	0.13	0.066	4.70	0.52	1.98	0.93	13.66	0.004			
1-3			16	31.77	1.6	0.54			0.265	0.023	0.15	0.076	4.53	0.49	2.07	0.93	14.20	0.048			
1-4			11	31.58	1.2	0.60			0.492	0.028	0.14	0.071	4.32	0.50	2.03	0.93	12.65	0.103			
1-5			5	30.71	1.6	0.70		0.184	0.302	0.029	0.15	0.086	5.94	0.54	2.68	1.35	13.80	0.077	0.49	63.4	0.2
1-6			1	30.19	2.4	0.65			0.284	0.020		0.087	4.56	0.47	2.47	0.95	13.07	0.049	0.28	43.0	0.0
2-1	41.49	53.38	22	31.84	2.8	0.52			0.186	0.022	0.13	0.070	5.43	0.43	2.13	1.21	13.23	0.039			
2-2			15	31.54	3.4	0.60			0.342	0.027	0.12	0.069	5.14	0.43	2.41	1.10	11.81	0.075			
2-3			10	31.15	2.2	0.74			0.350	0.057	0.13	0.061	4.97	0.44	1.98	1.08	12.12	0.062	0.39		
2-4			5	30.61	3.4	1.11		0.216	0.339	0.047	0.13	0.069	4.25	0.53	2.32	1.30	15.39	0.074	0.41	68.4	1.0
2-5			1	30.33	1.0	1.02			0.286	0.028	0.04	0.050	4.62	0.49	1.81	1.09	19.37	0.029	0.36	72.5	1.0
3-1	41.10	54.67	16	31.70	2.4	0.57			0.273	0.041	0.13	0.062	4.85	0.41	5.26	1.09	13.48	0.031			
3-2			12	31.29	1.6	0.64			0.215	0.029	0.1	0.079	4.68	0.38	5.06	1.09	13.43	0.064			
3-3			8	30.82	2.0	0.71			0.489	0.038	0.11	0.125	4.05	0.35	4.40	1.04	15.84	0.068	0.43		
3-4			4	30.56	2.2	0.78		0.157	0.292	0.028	0.09	0.057	4.34	0.36	4.70	1.09	14.22	0.073	0.38	47.3	0.2
3-5			1	30.47	2.0	0.62			0.341	0.027		0.116	4.54	0.36	4.90	1.09	15.80	0.026	0.35	50.5	0.5
4-1	40.57	55.40	22	31.62	3.2	0.69			0.258	0.030	0.11	0.061	3.06	0.36	3.42	1.04	14.64	0.106			
4-2			18	31.30	3.4	0.00			0.351	0.036	0.09	0.087	4.88	0.57	5.45	1.10	15.74	0.070			
4-3			14	31.20	5.8	0.72			0.289	0.033	0.17	0.119	4.77	0.48	5.25	1.10	15.54	0.059			
4-4			10	31.01	5.8	0.83			0.318	0.036	0.16	0.122	4.69	0.42	5.31	1.26	11.48	0.351			
4-5			5	30.89	3.8	0.88		0.148	0.252	0.026	0.12	0.116	4.86	0.44	5.30	1.13	13.52	0.124	0.67		
4-6			1	30.86	3.8	0.86			0.195	0.023	0.13	0.080	4.45	0.38	4.83	1.12	12.27	0.225	0.31	40.0	0.5
5-1	40.47	55.89	17	30.65	3.2	0.94			0.351	0.031	0.15	0.074	4.65	0.35	5.00	1.04	14.29	0.131			
5-2			12	30.62	0.8	0.95			0.568	0.035	0.12	0.086	5.00	0.37	5.37	1.09	11.49	0.133			
5-3			8	30.64	2.4	0.97			0.267	0.035	0.1	0.076	4.56	0.37	4.93	1.04	10.66	0.101	0.38		
5-4			4	30.83	2.0	1.01		0.167	0.383	0.029	0.13	0.128	4.73	0.35	5.08	1.05	12.16	0.123	0.86	57.0	1.5
5-5			1	30.83	3.0	1.04			0.230	0.019		0.103	5.00	0.37	5.37	1.09	11.63	0.594	0.30	58.2	0.2
6-1	40.31	56.77	18	30.55	2.2	0.58			0.289	0.030	0.2	0.085	7.40	0.43	2.46	1.63	10.33	0.158			
6-2			12	30.46	2.4	1.26			0.318	0.026	0.21	0.091	4.63	0.44	2.40	1.04	11.68	0.108			
6-3			8	30.45	3.2	1.22			0.308	0.026	0.1	0.083	4.90	0.38	1.82	1.11	12.01	0.120			
6-4			4	30.41	3.8	1.26		0.235	0.317	0.033	0.12	0.065	4.86	0.37	1.99	1.11	11.80	0.088	0.57	71.5	0.0
6-5			1	30.31	2.6	2.03			0.270	0.028	0.12	0.102	4.61	0.39	2.21	1.07	11.18	0.171	0.66	67.0	0.0
7-1	40.03	57.57	18	30.24	2.4	1.24			0.244	0.028	0.21	0.115	3.66	0.37	1.83	1.11	11.88	0.091			
7-2			12	30.01	3.4	1.37			0.205	0.028		0.089	2.23	0.36	1.91	1.14	12.60	0.117			
7-3			8	29.97	4.0	1.39			0.292	0.030	0.15	0.101	4.82	0.37	2.02	1.14	13.81	0.106			
7-4			4	29.88	3.2	1.49		0.212	0.611	0.039	0.17	0.080	4.75	0.37	1.96	1.13	12.35	0.134	0.45	62.0	0.0
7-5			1	29.87	2.0	1.43			0.405	0.034	0.15	0.167	4.54	0.47	2.19	1.11	11.79	0.105	0.56	78.5	0.5
8-1	39.59	58.60	15	29.72	2.8	1.42			0.222	0.024	0.2	0.095	3.55	0.34	1.75	1.09	11.63	0.118			
8-2			10	29.62	3.0	1.58			0.399	0.030	0.18	0.098	4.39	0.41	3.97	1.14	11.94	0.182			
8-3			4	29.60	2.6	1.48		0.186	0.289	0.028	0.18	0.134	4.37	0.45	2.41	1.14	11.37	0.110	0.73	69.6	0.4
8-4			1	29.56	2.8	1.37			0.273	0.025		0.133	3.81	0.41	1.73	1.09	14.61	0.132	0.50	90.5	0.0
9-1	39.21	59.34	21	29.44	5.2	2.01			0.234	0.025	0.14	0.110	3.67	0.45	3.25	1.06	11.58	0.130			
9-2			15	29.17	2.6	1.72			0.290	0.028	0.22	0.087	3.82	0.35	1.78	1.13	12.14	0.144			
9-3			10	29.16	1.0	1.68			0.402	0.031	0.19	0.130	3.72	0.33	1.78	1.10	11.78	0.140			
9-4			4	28.96	2.0	1.68		0.225	0.311	0.030	0.2	0.106	3.98	0.37	2.31	1.14	12.70	0.145	0.56	111.0	0.5
9-5			1	28.87	1.0	1.64			0.236	0.028		0.184	3.77	0.39	2.70	1.14	14.21	0.188	0.60	95.0	1.0
10-1	38.53	44°00.65	1	28.42	2.8	2.79		0.218	0.256	0.032		0.121	3.67	0.34	1.52	1.09	11.19	0.191	0.66		
11-1		zodiac	0.5	27.79	2.0	2.03		0.072	0.197	0.022	0.14	0.100	0.65	0.11	1.04	0.65	11.47	0.407			
12-1		zodiac	0.5	25.18	3.7	2.17			0.175	0.021	0.14		1.00	0.13	0.89	0.78	12.68	0.364			
13-1		zodiac	0.5	22.90	0.6	1.67			0.229	0.024	0.13	0.102	1.35	0.16	0.93	0.91	17.87	0.312			
14-1		zodiac	0.5	19.68	3.9	1.38			0.271	0.027	0.21		1.92	0.20	1.06	0.92	8.38	0.243			
river																		0.926			

Table A.2(S)
Sheepscot Data Summary - 8 Feb '94

station-bottle	Longitude (deg-min W)	Latitude (deg-min N)	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
1-1	69°41.62	43°51.97	40	32.75	1.8	0.58	0.34		0.210	0.020	0.19	0.07	13.33	0.16	0.28	1.01	11.91	0.118			
1-2			25	32.67	2.0	0.56	0.23		0.212	0.019	0.14	0.10	13.16	0.16	0.29	0.98	12.58	0.119			
1-3			12	32.24	0.5	0.61	0.26		0.235	0.028	0.13	0.08	13.15	0.16	0.35	0.97	13.25	0.156	0.36	16.8	0.1
1-4			1	30.72	4.1	0.42	0.24	0.020	0.475	0.028	0.17	0.08	13.49	0.15	0.49	1.00	17.47	0.223	0.33	14.0	0.2
2-1	41.37	53.77	19	32.45	2.4	0.64	0.33		0.240	0.019	0.17	0.08	13.16	0.16	0.54	0.95	12.81	0.223			
2-2			6	31.04	2.6	0.64	0.26		0.217	0.023	0.16	0.11	12.89	0.16	0.90	1.04	16.90	0.175	0.41	14.9	0.0
2-3			1	30.87	2.8	0.57	0.21	0.028	0.196	0.019	0.17	0.13	13.21	0.16	0.81	1.01	17.34	0.301	0.36	18.2	0.4
3-1	40.73	55.21	21	31.39	4.2	0.78	0.52		0.308	0.031	0.26	0.06	12.66	0.16	0.56	1.01	15.80	0.206			
3-2			12	30.66	6.4	0.73	0.49		0.415	0.036	0.26	0.09	12.42	0.16	1.11	0.98	17.18	0.177	0.26	4.9	0.0
3-3			1	30.81	4.8	0.75	0.45	0.046	0.361	0.036		0.07	12.43	0.15	0.41	1.00	17.50	0.194	0.21@3m	16.0	0.0
4-1	40.36	58.71	18	29.55	5.6	0.59	0.45		0.296	0.023	0.26	0.06	12.32	0.13	0.60	0.94	20.56	0.262	0.19		
4-2			8	29.24	4.2	0.60	0.43		0.360	0.028	0.26	0.09	12.19	0.15	0.65	0.93	21.46	0.254	0.21@9m	4.3	0.1
4-3			1	29.05	4.6	0.62	0.32	0.035	0.337	0.038		0.12	12.60	0.14	0.87	0.88	22.05	0.257	0.15@3m	23.5	0.0
5-1	39.78	58.73	15	27.95	3.2	0.63	0.65		0.286	0.026	0.26	0.04	12.61	0.15	1.63	0.91	24.68	0.318	0.21		
5-2			7	27.52	4.0	0.55	0.32		0.197	0.018	0.24	0.07	12.35	0.15	1.47	0.91	25.96	0.317	0.19@6m	9.0	0.0
5-3			1	27.46	4.2	0.58	0.32	0.034	0.249	0.027	0.21	0.08	12.71	0.14	1.87	0.90	26.23	0.339	0.28@3m	12.3	0.3
6-1	39.88	59.72	13	26.99	4.4	0.58	0.34		0.439	0.026	0.24	0.09	12.27	0.13	1.16	0.86	27.82	0.350	0.13		
6-2			5	25.85	4.6	0.58	0.34		0.272	0.025	0.22	0.09	11.32	0.13	1.26	0.76	30.49	0.412	0.3@6m	10.1	0.0
6-3			1	23.73	3.6	0.52	0.33	0.024	0.335	0.027	0.24	0.05	10.97	0.14	1.56	0.69	37.31	0.622	0.33@3m	12.1	0.2
7-1	38.44	44°00.47	6	23.62	3.2	0.55	0.40		0.447	0.034	0.26	0.05	10.71	0.13	1.44	0.72	37.62	0.573	0.31	12.4	0.2
7-2			1	20.68	3.8	0.49	0.39	0.029	0.399	0.039	0.26	0.06	10.48	0.15	1.49	0.62	45.74	0.607	0.46@3m	8.7	0.2

Table A.3(S)
Sheepscot Data Summary - 4 May '94

station-bottle	Longitude (deg-min W	Latitude (deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
1-1	69°41.64	43°51.9	40	31.83	0.4	0.74	0.39		0.108	0.021	0.12	0.049	2.10	0.08	2.18	0.54	4.68	0.164			
1-2			20	31.37	0.6	0.38	0.28		0.101	0.017	0.11	0.059	1.59	0.08	1.92	0.48	4.65	0.141			
1-3			8	30.46	0.6	0.68	0.18		0.136	0.025	0.13	0.056	1.54	0.07	1.64	0.43	7.07	0.156	0.29		
1-4			4	28.04	1.0	0.25	0.18		0.145	0.022	0.20	0.090	2.33	0.10	1.99	0.47	13.40	0.267	0.50	9.1	2.7
1-5			1	25.28	0.8	0.16	0.16	0.032	0.145	0.019	0.13	0.063	3.00	0.10	2.17	0.42	18.78	0.357	0.60	5.7	0.5
2-1	41.41	53.65	22	31.58	1.4	0.37	0.35		0.116	0.019	0.12	0.083	1.92	0.09	2.22	0.50	4.92	0.124			
2-2			15	31.44	1.4	0.36	0.33		0.112	0.023	0.11	0.064	1.62	0.08	1.97	0.50	5.08	0.229			
2-3			8	29.20	2.8	0.37	0.24		0.152	0.019	0.13	0.122	2.13	0.09	2.10	0.51	9.86	0.150	0.41		
2-4			4	27.40	3.4	0.33	0.18		0.143	0.023	0.16	0.078	2.43	0.09	1.97	0.49	14.36	0.265	0.47	6.0	1.6
2-5			1	26.60	3.4	0.25	0.16	0.054	0.135	0.021	0.13	0.098	2.46	0.09	1.94	0.47	14.93	0.238	0.62	12.8	2.4
3-1	40.65	55.30	22	31.34	3.8	0.33	0.45		0.177	0.023	0.17	0.114	1.84	0.07	1.90	0.50	5.15	0.113			
3-2			15	30.90	4.0	0.37	0.37		0.152	0.023	0.15	0.085	1.92	0.08	2.12	0.50	6.29	0.078			
3-3			8	29.69	2.6	0.43	0.28		0.152	0.028	0.15	0.089	2.12	0.08	2.15	0.50	9.25	0.130	0.37		
3-4			4	28.47	1.6	0.41	0.23		0.152	0.023	0.14	0.126	2.32	0.09	2.02	0.51	11.62	0.178	0.44	13.8	1.0
3-5			1	27.32	1.4	0.26	0.17	0.046	0.161	0.023	0.14	0.064	2.47	0.10	2.10	0.51	13.80	0.177	0.47	11.7	1.2
4-1	40.46	56.25	22	30.36	3.4	0.37	0.48		0.203	0.026	0.22	0.074	2.08	0.08	2.15	0.51	7.64	0.150			
4-2			13	28.21	3.4	0.49	0.28		0.194	0.026	0.15	0.068	2.39	0.09	2.35	0.52	12.15	0.250			
4-3			9	27.02	2.6	0.45	0.22		0.165	0.025	0.17	0.074	2.53	0.10	2.15	0.51	14.53	0.256	0.34		
4-4			5	26.43	2.2	0.42	0.23		0.159	0.023	0.17	0.065	2.67	0.10	2.31	0.52	15.93	0.194	0.55	10.2	2.0
4-5			1	25.74	2.2	0.29	0.15	0.050	0.132	0.019	0.15	0.084	2.80	0.10	2.84	0.50	17.45	0.213	0.59	10.5	0.7
5-1	40.06	58.00	16	28.02	3.6	0.57	0.43		0.236	0.030	0.23	0.076	2.45	0.10	2.29	0.53	12.34	0.275			
5-2			12	27.05	2.1	0.42	0.33		0.200	0.027	0.21	0.055	2.60	0.10	2.37	0.55	14.46	0.275			
5-3			8	25.87	1.6	0.37	0.30		0.208	0.028	0.16	0.057	2.73	0.09	2.12	0.50	17.03	0.266	0.57		
5-4			4	24.66	1.6	0.47	0.28		0.243	0.030	0.15	0.082	2.92	0.10	2.34	0.51	19.59	0.291	0.54	10.7	1.2
5-5			1	23.66	1.6	0.39	0.22	0.034	0.176	0.023	0.18	0.056	3.06	0.12	2.25	0.48	22.40	0.344	0.59	11.6	1.9
6-1	39.29	59.32	22	25.47	2.6	0.61	0.34		0.219	0.026	0.24	0.077	2.82	0.10	2.17	0.50	18.03	0.226			
6-2			15	23.33	2.0	0.64	0.26		0.209	0.029	0.22	0.092	3.03	0.10	2.26	0.49	22.34	0.420			
6-3			8	22.77	2.2	0.66	0.23		0.211	0.030	0.22	0.054	3.16	0.11	2.26	0.46	23.47	0.317			
6-4			4	22.05	3.6	0.66	0.25		0.225	0.031	0.23	0.061	3.36	0.13	2.38	0.52	27.65	0.393	0.63	12.3	0.9
6-5			1	21.99		0.62	0.27	0.070	0.281	0.030	0.23	0.062	3.38	0.13	2.21	0.52	25.86	0.275	0.66	20.6	1.1
7-1	39.86	59.81	8	23.11	1.6	0.45	0.23		0.188	0.021	0.18	0.049	3.08	0.11	2.21	0.47	22.86	0.332			
7-2			4	21.02	1.7	0.69	0.21		0.201	0.029	0.22	0.060	3.10	0.11	2.38	0.51	29.76	0.403	0.66	14.9	1.0
7-3			1	20.12	3.3	0.69	0.21	0.072	0.216	0.029	0.22	0.074	3.06	0.11	2.31	0.49	28.62	0.205	0.76	12.3	1.2
8-1	38.48	44°00.74	8	19.62	3.1	0.99	0.33		0.312	0.037	0.28	0.064	3.02	0.16	2.30	0.44	30.82	0.575			
8-2			4.5	17.77	3.0	0.95	0.33		0.294	0.039	0.20	0.068	2.99	0.13	2.51	0.45	33.48	0.530	0.74	16.6	1.5
8-3			2	17.64	2.7	0.92	0.34	0.086	0.281	0.033	0.24	0.070	3.24	0.12	2.50	0.48	34.28	0.341	0.72	12.8	1.8

Table A.4(S)
Sheepscot Data Summary - 8 June '94

station-bottle	Longitude deg-min W	Latitude (deg-min N	depth (M)	Salinity (PSU)	SPM (mg L^{-1})	chl a (µg L^{-1})	pheo (µg L^{-1})	fucoxanthin (µg L^{-1})	POC (mg L^{-1})	PON (mg L^{-1})	PP (µM)	EHAA (mg L^{-1})	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m^{-1})	diatoms (cells mL^{-1})	dinoflag. (cells mL^{-1})
1-1	69°41.55	43°52.09	29	31.74	2.4	1.58	0.63	0.347	0.394	0.031		0.08	4.73	0.18	2.62	0.78	7.33	0.188			
1-2			22	31.70	2.6	1.50	0.51		0.473	0.037	0.19	0.09	4.76	0.23	2.78	0.77	7.36	0.236			
1-3			10	30.97	2.0	1.79	0.57	0.303	0.217	0.031		0.13	4.32	0.17	2.67	0.72	11.57	0.035	0.51		
1-4			4	29.21	2.2	2.09	0.59		0.345	0.051		0.14	4.04	0.20	2.02	0.62	12.72	0.319	0.36	213.8	1.6
1-5			1	28.34	2.0	1.65	0.75		0.412	0.052	0.28	0.14	4.00	0.20	2.02	0.59	8.20	0.384	0.55	284.0	2.5
2-1	41.39	53.87	22	31.81	1.6	2.42	0.70		0.194	0.027		0.08	4.72	0.25	2.55	0.77	7.53	0.161			
2-2			15	31.72	1.4	1.68	0.55		0.280	0.031	0.18	0.11	4.62	0.24	2.78	0.77	8.74	0.264			
2-3			7.5	30.58	1.8	2.12	0.53		0.385	0.048	0.25	0.14	4.30	0.17	2.23	0.71	11.36	0.235	0.37		
2-4			4	29.24	1.8	2.23	0.56	0.292	0.406	0.054		0.10	4.13	0.18	2.13	0.67	11.74	0.335	0.44	190.6	0.8
2-5			1	29.00	1.0	2.12	0.53		0.315	0.041		0.12	4.11	0.21	1.95	0.67	7.15	0.333	0.53	276.5	1.0
3-1	40.61	55.34	23	31.60	2.4	1.72	0.73		0.279	0.029	0.21	0.07	4.60	0.17	2.72	0.78	7.56	0.222			
3-2			18	31.34	1.6	2.06	0.52		0.280	0.036	0.22	0.10	4.46	0.17	2.58	0.79	8.53	0.352			
3-3			13	30.91	2.0	1.90	0.59		0.312	0.037		0.10	4.18	0.18	2.86	0.88	10.32	0.213			
3-4			7	29.91	2.0	1.90	0.59	0.319	0.364	0.044	0.28	0.10	4.27	0.17	2.17	0.72	11.50	0.302	0.49	201.2	0.8
3-5			1	29.18	1.6	1.90	0.59		0.399	0.045		0.08	4.33	0.17	2.03	0.67	7.63	0.015	0.53	239.0	4.5
4-1	40.47	56.22	21	31.42	4.2	1.48	0.77	0.278	0.336	0.035		0.12	4.60	0.19	2.69	0.79	8.67	0.240			
4-2			13	30.84	2.6	1.40	0.60		0.310	0.036	0.26	0.09	4.44	0.18	2.55	0.76	9.82	0.304			
4-3			8	30.32	2.2	1.66	0.44		0.285	0.035		0.12	4.33	0.18	2.33	0.73	11.15	0.285	0.46		
4-4			4	29.21	1.8	2.08	0.63	0.256	0.420	0.048		0.19	4.20	0.17	1.87	0.68	11.52	0.319	0.47	226.8	1.4
4-5			1	29.18	1.8	2.06	0.52		0.348	0.042	0.25	0.07	4.27	0.20	2.07	0.67	9.87	0.294	0.45	275.0	2.0
5-1	40.08	57.81	20	30.28	4.6	1.52	0.62		0.350	0.039		0.09	4.48	0.17	2.42	0.73	11.14	0.242			
5-2			15	30.15	6.4	1.45	0.50		0.402	0.040	0.28	0.10	4.43	0.18	2.56	0.79	12.11	0.237			
5-3			6	29.36	2.0	1.58	0.63		0.467	0.042		0.11	4.26	0.18	2.09	0.70	9.46	0.320	0.41		
5-4			4	28.73	2.4	2.25	0.67	0.277	0.361	0.048	0.28	0.13	4.27	0.21	1.98	0.78	12.76	0.325	0.53	219.4	0.6
5-5			1	28.48	2.0	2.88	0.54		0.447	0.053		0.12	4.29	0.19	2.19	0.71	13.26	0.338	0.58	402.0	2.0
6-1	39.21	59.35	20	28.18	3.6	1.93	0.81		0.355	0.046	0.38	0.13	4.41	0.20	2.13	0.68	13.57	0.034			
6-2			15	28.21	3.4	1.95	0.92		0.388	0.049	0.35	0.13	4.33	0.23	2.05	0.71	16.14	0.324			
6-3			9	28.03	4.2	1.99	0.82		0.348	0.044	0.25	0.11	4.34	0.19	2.18	0.68	13.22	0.370			
6-4			4	26.34	3.4	3.52	0.61	0.464	0.509	0.068	0.36	0.16	4.20	0.22	1.71	0.62	16.25	0.394	0.46	675.0	0.5
6-5			1	26.33	2.4	3.21	0.76		0.429	0.051	0.32	0.14	4.14	0.21	1.44	0.62	13.63		0.61	645.5	2.0
7-1	39.84	59.87	9	27.96	3.6	1.99	0.82	0.368	0.359	0.040		0.14	4.45	0.20	2.05	0.66	16.74	0.315			
7-2			4	26.04	3.4	2.75	0.86	0.442	0.362	0.046	0.29	0.12	4.29	0.23	1.73	0.65	17.88	0.435	0.42	638.0	1.5
7-3			1	25.24	3.2	3.31	0.67		0.450	0.053		0.14	4.25	0.23	1.84	0.59	19.43	0.368	0.40	759.0	0.0
8-1	38.47	44°00.71	6	24.16	5.6	3.29	0.56		0.472	0.059		0.17	4.11	0.22	1.54	0.55	21.19	0.507	0.77	777.5	0.5
8-2			1	22.59	4.0	3.98	0.71	0.568	0.480	0.062	0.39	0.17	3.67	0.21	1.28	0.51	21.98	0.624	0.62	661.0	2.0
9-1		zodiac	0.5	19.00	3.8	2.97	0.60	0.473	0.496	0.052	0.28	0.17	3.44	0.22	1.71	0.45	23.35	0.646		466.0	1.0
10-1		zodiac	0.5	18.00	3.6	2.51	0.51	0.312	0.408	0.044	0.34	0.17	3.18	0.22	1.62	0.42	7.12	0.655		351.0	0.0

Table A.6(S)
Sheepscot Data Summary - 6 July '94

station-bottle	Longitude deg-min W	Latitude (deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SIO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°41.69	43°49.96	52	31.91	7.4	0.80	0.72		0.200	0.018	0.14	0.04	5.75	0.25	2.97	0.99	10.11	0.135			
0-2			30	31.82	7.0	0.82	0.79		0.197	0.026	0.14	0.07	5.06	0.22	2.83	0.94	8.88	0.095			
0-3			15	31.49	8.2	1.78	0.70		0.317	0.045	0.27	0.16	3.08	0.17	1.61	0.68	5.00	0.125			
0-4			6	30.36	9.0	3.62	0.97	0.211	1.198	0.132	0.52	0.42	0.18	0.05	0.31	0.27	0.19	0.200	0.53	4,636.0	13.0
0-5			1	30.38	8.8	2.44	1.44		1.130	0.095	0.00	0.27	0.21	0.08	1.00	0.26	0.11	0.162	0.29	5,608.0	6.0
1-1	41.64	52.00	40	31.88	8.6	0.78	0.78	0.242	0.213	0.020	0.15	0.08	5.65	0.28	3.81	1.03	9.92	0.092			
1-2			15	31.37	7.8	1.31	0.65		0.450	0.045	0.22	0.10	2.72	0.23	0.65	0.58	6.43	0.206			
1-3			8	30.04	8.6	2.25	0.79		0.495	0.062	0.30	0.16	3.75	0.23	0.91	0.69	7.33	0.187	0.33		
1-4			5	29.58	8.0	2.44	0.97	0.531	0.518	0.073	0.37	0.31	4.41	0.21	2.37	0.83	8.05	0.121	0.44	2,393.0	0.0
1-5			1	29.21	8.4	2.25	1.08		0.729	0.090	0.37	0.28	3.01	0.21	0.54	0.63	6.81	0.215	0.42	1,725.0	3.0
2-1	41.27	54.04	20	31.63	9.2	0.98	0.77		0.257	0.025	0.22	0.15	5.02	0.25	2.80	0.92	9.22	0.151			
2-2			10	30.37	8.8	1.58	0.66		0.307	0.040	0.27	0.14	3.82	0.24	1.52	0.82	7.89	0.174	0.32		
2-3			5	29.43	9.0	1.94	0.64	0.483	0.479	0.057	0.34	0.20	3.88	0.25	0.95	0.74	8.41	0.020	0.46	895.5	0.5
2-4			1	28.84	9.2	2.09	0.67		0.693	0.076	0.35	0.20	3.80	0.25	0.67	0.68	8.27	0.232	0.54	869.5	0.5
3-1	40.57	55.38	20	31.34	12.0	0.64	0.93		0.381	0.038	0.30	0.06	4.84	0.22	2.81	0.89	9.11	0.122			
3-2			10	30.17	12.3	1.19	0.77		0.350	0.042	0.30	0.12	4.44	0.26	1.72	0.82	9.37	0.184			
3-3			5	29.56	6.8	1.70	0.83	0.547	0.430	0.060	0.34	0.19	3.68	0.23	1.15	0.76	7.89	0.247	0.49	762.2	0.6
3-4			1	29.23	7.1	1.66	0.68		0.456	0.060	0.31	0.19	3.89	0.24	0.89	0.73	8.67	0.225	0.47	670.4	0.8
4-1	40.43	56.30	18	30.50	7.8	1.00	0.73	0.446	0.264	0.052	0.27	0.11	4.56	0.24	2.27	0.89	9.31	0.160			
4-2			9	29.60	7.6	1.74	0.74		0.580	0.110	0.35	0.21	4.26	0.25	1.43	0.81	9.30	0.205	0.44		
4-3			5	29.52	7.4	1.66	0.72	0.581	0.626	0.114	0.31	0.26	4.25	0.24	1.15	0.74	9.15	0.201	0.46	726.6	0.4
4-4			1	29.12	7.3	1.66	0.68		0.482	0.000	0.27	0.18	4.25	0.26	1.43	0.79	10.15	0.255	0.32	375.6	0.8
5-1	40.01	58.10	16	29.94	3.1	1.08	0.70		0.349	0.000	0.27	0.09						0.201			
5-2			10	29.55	2.0	1.31	0.70		0.380	0.000	0.32	0.14	4.21	0.28	1.41	0.77	9.77	0.218			
5-3			5	29.19	1.1	1.43	0.82	0.379	0.457	0.000	0.30	0.16	4.38	0.32	1.33	0.80	10.26	0.216	0.44	391.8	0.4
5-4			1	28.45	0.9	1.51	0.89		0.466	0.055	0.29	0.15	4.34	0.32	2.01	0.93	14.35	0.246	0.28	190.0	0.4
6-1	39.26	59.36	19	28.64	2.3	1.11	0.80		0.447	0.050	0.35	0.11	4.07	0.27	1.73	0.82	10.98	0.243			
6-2			10	28.76	1.4	1.43	0.82		0.537	0.064	0.35	0.16	4.35	0.29	1.67	0.81	11.62	0.297			
6-3			5	27.79	1.4	1.04	0.74	0.232	0.386	0.047	0.32	0.11	3.65	0.27	1.79	0.83	10.69	0.260	0.51	247.0	0.0
6-4			1	26.65	0.6	1.66	0.81		0.629	0.079	0.29	0.23	4.65	0.29	1.52	0.77	12.06	0.369	0.47	103.4	0.2
M-1	40.19	58.77	1	26.64	0.9	1.43	0.86		0.577	0.062	0.35	0.15	3.80	0.26	2.05	0.81	11.81	0.416			
7-1	39.73	59.83	4	26.65	1.1	1.43	0.72	0.440	0.463	0.052	0.29	0.17	3.55	0.32	1.28	0.76	12.17	0.296		133.8	0.2
7-2			1	26.02	0.6	1.74	0.74	0.323	0.423	0.061	0.33	0.23	3.27	0.30	1.88	0.75	12.85	0.363	0.52	76.0	0.0
8-1	38.47	44°00.68	6	25.71	3.7	1.54	0.84		0.593	0.075	0.53	0.16	2.90	0.29	1.13	0.71	13.28	0.389		90.0	0.5
8-2			1	25.65	2.3	2.05	0.94	0.486	0.755	0.092	0.58	0.21	1.75	0.30	0.96	0.67	13.45	0.417	0.58	56.0	0.6
9-1		zodiac	0.5	22.11	3.2	1.74	0.69	0.538	0.584	0.072	0.42	0.17	1.64	0.23	0.62	0.56	14.78	0.673		39.8	0.2
10-1		zodiac	0.5	22.45	1.2	1.97	0.88	0.532	0.493	0.066	0.36	0.17	1.20	0.21	1.51	0.52	14.74	0.697		42.4	0.0
11-1		zodiac	0.5	17.47	0.8	1.43	0.72	0.332	0.396	0.053	0.33	0.14	1.51	0.05	0.88	0.43	15.05	0.803		28.6	0.0
12-1		zodiac	0.5	24.74	1.2	1.54	0.56	0.069	1.021	0.128	0.83	0.29	1.51	0.14	0.96	3.23	11.26	0.546		42.8	0.0

Table A.6(S)
Sheepscot Data Summary - 31 August '94

station-bottle	Longitude (deg-min W)	Latitude (deg-min N)	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°41.80	43°49.85	50	32.55	2.6	0.51	0.54		0.179	0.022	0.16	0.07	8.61	0.30	0.56	1.03	14.72	0.139			
0-2			35	32.48	2.8	0.50	0.54		0.218	0.027	0.13	0.05	9.77	0.27	0.56	1.14	16.27	0.180			
0-3			18	32.21	1.8	0.65	0.59		0.291	0.027	0.14	0.08	9.38		0.56	1.13		0.191			
0-4			8	30.54	3.0	0.90	0.67		0.207	0.027	0.17	0.09	7.71		0.85	1.08		0.203	0.24	185.5	0.0
0-5			1	30.09	2.2	1.33	0.66	0.504	0.253	0.035	0.20	0.14	5.58	0.64	0.40	1.00	13.94	0.272	0.47	479.0	0.0
1-1	41.49	51.92	30	32.44	3.8	0.57	0.54	0.071	0.258	0.023	0.17	0.07	9.77	0.40	0.45	1.16	17.22	0.177			
1-2			20	32.27	1.8	0.65	0.59		0.254	0.024	0.16	0.08	9.15	0.58	0.43	1.15	16.14	0.148			
1-3			12	31.96	1.6	0.78	0.57		0.348	0.032	0.15	0.11	8.28	0.69	0.64	1.13	15.45	0.177			
1-4			6	31.13	2.0	0.94	0.63	0.262	0.281	0.031	0.20	0.15	7.07	0.73	0.54	1.13	15.44	0.214	0.33	199.0	0.0
1-5			1	29.51	0.8	1.47	0.54		0.468	0.048	0.21	0.15	5.33	0.81	0.52	0.99	13.81	0.249	0.48	272.5	0.0
2-1	41.29	53.91	19	32.27	1.4	0.64	0.54		0.252	0.022	0.19	0.06	9.14	0.57	0.79	1.14	16.17	0.129			
2-2			12	31.90	1.4	0.78	0.59		0.294	0.027	0.20	0.09	8.06	0.65	0.69	1.11	14.97	0.166			
2-3			8	31.06	1.4	0.92	0.62		0.385	0.033	0.19	0.10	7.19	0.75	0.68	1.14	15.43	0.203	0.33		
2-4			5	30.68	0.8	1.00	0.59		0.320	0.033	0.17	0.10	6.51	0.72	0.40	1.08	14.96	0.241	0.37	60.8	0.0
2-5			1	30.33	1.0	1.35	0.57	0.232	0.293	0.035	0.15	0.12	6.41	0.72	0.50	1.01	14.58	0.219	0.45	157.5	0.5
3-1	40.58	55.39	20	32.16	4.0	0.88	0.43		0.350	0.028	0.24	0.06	9.20	0.64	0.68	1.17	16.63	0.166			
3-2			10	31.69	2.2	0.78	0.57		0.442	0.030	0.19	0.07	7.89	0.71	0.49	1.13	15.59	0.184	0.37		
3-3			5	31.07	2.4	0.94	0.63	0.306	0.257	0.028	0.20	0.10	7.31	0.74	0.62	1.02	15.15	0.215	0.37	181.0	1.0
3-4			1	30.81	1.2	1.39	0.53		0.410	0.044	0.22	0.12	6.57	0.73	0.51	1.03	15.06	0.241	0.49	188.0	0.0
4-1	40.46	56.24	16	31.34	2.0	0.76	0.64	0.323	0.390	0.034	0.19	0.10	7.89	0.75	0.73	1.15	15.84	0.170			
4-2			10	30.86	1.6	1.08	0.65		0.318	0.030	0.21	0.09	5.29	0.58	0.55	0.90	11.77	0.213	0.34		
4-3			5	30.68	1.4	1.23	0.59	0.558	0.371	0.038	0.20	0.15	6.62	0.71	0.72	1.15	15.15	0.214	0.48	202.0	2.5
4-4			1	30.51	1.0	1.54	0.56		0.441	0.049	0.29	0.19	6.03	0.66	0.58	1.09	14.12	0.224	0.45	172.0	0.0
5-1	40.02	58.05	16	30.84	2.0	0.98	0.68		0.297	0.028	0.22	0.08	7.01	0.72	0.51	1.11	15.45	0.216			
5-2			6	30.15	2.2	1.31	0.61		0.395	0.037	0.24	0.11	6.08	0.68	0.66	1.10	14.74	0.268	0.40	193.5	0.0
5-3			1	29.55	2.8	1.90	0.58	0.682	0.319	0.047	0.25	0.15	4.87	0.58	0.43	1.02	12.98	0.264	0.50	303.5	3.5
6-1	39.28	59.36	18	29.71	2.4	1.54	0.61		0.344	0.041	0.25	0.11	5.32	0.62	0.85	1.11	13.79	0.254			
6-2			5	29.60	3.8	1.58	0.68		0.267	0.038	0.26	0.12	5.34	0.62	0.67	0.90	13.88	0.248	0.42	272.0	0.0
6-3			1	29.03	2.0	2.21	0.79	1.252	0.357	0.054	0.29	0.17	4.29	0.58	0.55	1.08	13.13	0.319	0.61	348.0	3.0
7-1	39.81	59.82	6	29.19	1.8	2.05	0.85	1.070	0.355	0.044	0.28	0.24	4.59	0.57	0.71	1.09	13.58	0.295	0.41	399.5	1.5
7-2			1	28.39	1.8	2.25	0.93	1.108	0.414	0.068	0.34	0.22	3.06	0.48	0.69	1.05	12.58	0.225	0.69	422.0	4.5
8-1	38.39	44°00.82	8	27.82	2.0	2.17	0.78		0.358	0.058	0.33	0.16	1.91	0.33	0.66	0.99	12.37	0.387		401.0	5.0
8-2			1	26.78	3.0	3.23	0.66	0.948	0.585	0.089	0.43	0.27	0.82	0.22	0.52	0.96	12.24	0.410	15.00	250.5	39.0
9-1		zodiac	0.5		1.8	1.23	0.54		0.270	0.037	0.19	0.11	0.50	0.14	0.86	0.93	12.02	0.443		180.0	7.0
10-1		zodiac	0.5		1.8	1.94	0.73		0.314	0.049	0.26	0.17	0.38	0.11	0.94	0.93	12.73	0.564		80.5	47.0
11-1		zodiac	0.5		3.0	1.97	0.69	0.345	0.361	0.058	0.31	0.15	0.19	0.10	0.90	0.86	13.60	0.418		90.0	61.5

Table A.6(K)
Kennebec Data Summary - 1 Sept '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag (cells mL⁻¹)
0-1	69°46.16	43°44.81	16	32.12	0.8	1.23	0.87		0.159	0.021	0.12	0.08	5.21		0.89	0.83		0.252			
0-2			10	31.67	1.4	2.17	0.83		0.321	0.050	0.19	0.14	0.00					0.248	0.29		
0-3			5	30.95	0.8	2.60	0.63		0.427	0.061	0.23	0.22	2.01	0.26	0.96	0.71	6.31	0.321	0.24	4322.0	12.0
0-4			1	29.99	1.6	2.76	0.52	1.136	0.462	0.068	0.28	0.22	1.51	0.24	0.77	0.59	5.42	0.351	0.65	4150.0	15.0
1-1	47.17	46.28	15	31.52	1.0	2.05	0.90	1.165	0.368	0.047	0.20	0.21	3.70		1.45	0.68		0.263			
1-2			10	31.27	0.6	2.13	0.82		0.387	0.050	0.23	0.14	3.43		0.92	0.72		0.249	0.27		
1-3			5	30.24	0.3	2.01	0.75	0.757	0.371	0.047	0.22	0.20	2.80	0.35	1.48	0.72	7.51	0.330	0.26	2158.0	4.0
1-4			1	25.84	1.1	1.31	0.75		0.291	0.038	0.18	0.10	2.82	0.32	2.78	0.75	7.68	0.497	0.46	1104.0	8.0
2-1	47.22	47.24	11	30.62	1.1	2.64	0.87		0.438	0.062	0.22	0.21	2.30	0.29	0.85	0.60	6.48	0.308	0.19		
2-2			5	29.85	1.7	2.44	0.79	1.059	0.574	0.068	0.26	0.19	2.26	0.28	1.21	0.66	6.66	0.418	0.27	2327.0	3.0
2-3			1	25.85	1.7	1.62	0.76		0.478	0.055	0.27	0.18	2.87	0.32	2.42	0.75	7.33	0.520	0.69	1124.0	0.0
3-1	47.46	48.42	8	29.22	2.0	2.09	0.86		0.315	0.043	0.24	0.16	2.87	0.35	1.44	0.70	7.52	0.252	0.09		
3-2			4	25.65	2.0	1.47	0.78	0.731	0.391	0.045	0.21	0.13	2.96	0.34	2.73	0.80	7.86	0.359	0.45	907.0	3.5
3-3			1	22.93	1.4	1.11	0.85		0.392	0.045	0.18	0.12	2.92	0.32	3.52	0.85	7.96	0.568	0.50	226.0	2.0
4-1	47.72	51.28	12	22.75	2.9	1.27	1.21	0.438	0.353	0.038	0.24	0.11	2.96	0.31	3.30	0.82	7.60	0.584			
4-2			5	20.90	2.0	1.04	1.02	0.355	0.405	0.039	0.25	0.11	2.78	0.33	4.26	0.81	7.39	0.589	0.52	390.0	0.0
4-3			1	19.41	2.3	1.08	1.12		0.367	0.041	0.25	0.10	2.69	0.31	4.15	0.82	7.27	0.773	0.59	306.0	0.0
5-1	47.79	52.62	15	19.38	3.7	1.04	1.49		0.490	0.050	0.32	0.10	2.59	0.29	3.86	0.79	6.59	0.592			
5-2			8	18.50	3.1	0.92	1.47	0.246	0.425	0.045	0.28	0.10	2.44	0.29	4.11	0.78	6.64	0.620		240.0	0.5
5-3			1	16.38	3.1	1.08	1.26		0.432	0.055	0.27	0.09	2.49	0.29	4.16	0.80	6.97	0.807	0.98	219.0	0.0
6-1	48.62	54.28	10	12.70	4.8	0.96	1.85		0.478	0.051	0.33	0.10	2.50	0.24	4.42	0.82	6.87	0.943			
6-2			5	10.85	5.2	1.19	1.90	0.347	0.491	0.052	0.39	0.13	1.89	0.18	3.48	0.81	5.01	0.802		140.5	0.0
6-3			1	9.52	3.6	1.74	2.05		0.523	0.062	0.43	0.15	2.03	0.19	4.01	0.89	6.08	0.890	1.16	220.0	0.0
7-1	48.49	55.46	10	10.55	5.6	1.31	2.25		0.626	0.073	0.58	0.13	2.15	0.20	4.51	0.90	6.30	0.876			
7-2			5	8.00	8.0	1.43	2.74	0.666	0.697	0.078	0.61	0.16	2.05	0.20	4.46	0.84	6.13	0.978		563.5	0.0
7-3			1	7.09	6.4	1.82	2.44		0.629	0.081	0.56	0.19	1.71	0.17	3.80	0.76	5.47	1.086	1.23	337.5	1.0
8-1	48.83	56.99	24	6.09	14.4	2.37	3.16	1.229	1.088	0.122	1.00	0.26	1.33	0.15	3.48	0.68	4.76	0.999			
8-2			15	5.55	14.0	2.68	2.90		1.040	0.121	1.02	0.23	1.49	0.17	3.76	0.72	5.40	0.877		517.0	0.0
8-3			1	4.70	7.2	3.11	2.98	1.276	1.089	0.129	0.94	0.29	1.27	0.15	3.30	0.66	4.78	1.023	2.13	225.0	0.0
9-1	49.24	44°00.13	1	0.70	11.2	4.95	4.38	3.520	1.478	0.190	1.42	0.37	0.00					1.180	1.62	2235.5	1.0

Table A.2(K)
Kennebec Data Summary -9 Feb '94

station-bottle	Longitude (deg-min W	Latitude (deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
1-1	69°47.09	43°46.15	16	31.65	1.8	0.78	0.17		0.145	0.013	0.08	0.05	13.25	0.18	0.49	1.02	15.54	0.16	0.09@15m		
1-2			6	29.23	2.0	0.79	0.20		0.196	0.017	0.23	0.04	13.14	0.18	0.76	0.95	21.00	0.35	0.40		
1-3			1	25.10	0.5	0.78	0.30	0.063	0.219	0.019	0.18	0.08	12.56	0.10	1.32	0.88	31.70	0.43	0.29@3m	24.6	0.2
2-1	47.61	51.05	18	21.92	4.1	0.98	1.14		1.131	0.084	0.24	0.06	13.12	0.17	1.91	0.87	39.58	0.68			
2-2			8	19.52	2.4	0.90	1.02		1.310	0.106	0.25	0.07	13.59	0.17	2.24	0.81	45.06	0.62	0.42@9m	14.6	0.0
2-3			1	16.88	2.6	0.78	0.94	0.092	1.327	0.097	0.24	0.08	14.08	0.17	2.90	0.78	50.34	0.60	0.45@3m	13.4	0.0
3-1	48.61	54.23	8	5.99	2.8	1.11	2.13		1.327	0.095	0.26	0.09	15.97	0.19	5.03	0.70	77.79	1.12	1.02@6m	22.7	0.0
3-2			1	3.52	4.2	0.83	1.27	0.068	0.792	0.068	0.13	0.07	12.66	0.13	4.33	0.52	75.65	1.10	0.72@3m	26.2	0.0

Table A.3(K)
Kennebec Data Summary - 5 May '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°46.25	43°44.79	11	29.76	1.2	3.49	0.39		0.315	0.051	0.17	0.161	1.00	0.08	0.93	0.38	7.13	0.195			
0-2			6	29.37	1.0	3.25	0.24		0.453	0.061	0.13	0.104	0.99	0.07	0.97	0.35	8.14	0.180	0.35	15.4	0.2
0-3			1	29.28	1.6	3.05	0.41	0.300	0.180	0.023	0.21	0.139	1.02	0.08	0.88	0.32	8.63	0.227	0.47	63.2	0.3
1-1	47.09	46.30	13	29.41	1.4	2.71	0.34		0.401	0.053	0.35	0.129	1.53		0.90	0.33		0.366			
1-2			5	31.69	2.8	4.38	0.37		0.612	0.067	0.25	0.167	1.25	0.06	0.99	0.30	12.23	0.239	0.49		
1-3			2.5	23.87	1.5	3.51	0.50	0.229	0.556	0.058		0.174	2.10	0.06	1.09	0.29	18.71	0.470	0.47	95.4	0.2
1-4			1	19.41	4.0	2.18	0.54		0.384	0.047	0.22	0.140	3.46	0.07	0.96	0.28	30.10	0.393	1.01	121.2	1.8
2-1	47.41	46.68	11	29.32	2.3	2.84	0.47		0.420	0.047	0.28	0.110	0.90	0.06	0.77	0.30	7.28	0.485			
2-2			3	16.57	2.0	2.82	0.36		0.540	0.053	0.20	0.122	3.86	0.07	1.22	0.30	38.03	0.816			
2-3			2	13.02	0.6	1.43	0.39	0.196	0.591	0.051	0.27	0.085	4.62	0.07	1.17	0.26	39.77	1.318		97.4	1.0
2-4			1	13.01	2.0	1.66	0.44	0.188	0.475	0.044	0.23	0.090	4.63	0.08	1.23	0.27	40.75	0.506		42.8	0.0
3-1	47.43	48.56	7	27.50	4.5	2.87	0.69	0.560	0.461	0.053	0.28	0.133	1.65	0.07	1.01	0.31	10.69	0.293			
3-2			5	20.22	3.0	5.32	0.67		0.673	0.075	0.24	0.199	2.87	0.07	0.95	0.30	26.52	0.480			
3-3			3	12.56	3.2	1.82	0.64		0.559	0.054	0.28	0.110	4.88	0.06	1.44	0.27	39.54	0.509	0.89	71.5	1.3
3-4			1		4.4	1.26	0.35	0.100	0.377	0.043	0.22	0.125	5.45	0.11	1.47	0.26	44.77	0.945	1.24	74.0	1.0
4-1	47.53	50.99	15	14.26	15.6	2.31	0.68		0.782	0.083	0.55	0.156	4.48	0.08	1.43	0.32	37.73	0.750			
4-2			10	14.16	7.6	2.42	0.70		0.739	0.078	0.40	0.171	4.49	0.07	1.48	0.33	37.84	0.861			
4-3			5	9.01	8.0	1.36	0.69		0.608	0.062	0.39	0.109	5.81	0.08	1.47	0.30	46.34	0.932		66.5	1.7
4-4			1	7.74	6.4	1.22	0.51	0.150	0.424	0.046	0.30	0.128	6.23	0.08	1.36	0.28	47.64	1.062	12.00	84.4	1.4
5-1	47.79	52.42	17	7.10	8.4	1.45	0.92		0.829	0.088		0.127	6.21	0.08	1.42	0.30	48.71	0.959			
5-2			10	5.09	7.0	1.05	0.54		0.508	0.056		0.097	6.95	0.10	1.48	0.33	52.15	1.048			
5-3			5	3.84		0.88	0.50		0.517	0.054			7.05	0.09	1.35	0.29	54.29	1.059		48.1	2.4
5-4			1	3.29	6.5	0.78	0.39	0.179	0.429	0.049	0.60	0.095	7.18	0.09	1.28	0.27	54.02	0.748	1.39	48.9	1.9
6-1	48.61	54.08	12	2.83		1.08	0.54		0.649	0.071	0.54	0.098	7.46	0.09	1.25	0.28	54.03	1.103			
6-2			9		8.7	1.12	0.46		0.592	0.062	0.40	0.099	8.43	0.09	1.55	0.68	33.40	1.137			
6-3			6	0.20	5.3	1.10	0.43		0.599	0.066	0.48	0.100	8.51	0.08	1.03	0.47	34.87	1.154		33.0	1.9
6-4			1	0.00	3.3	1.15	0.38	0.180	0.481	0.053	0.44	0.128	8.61	0.08	0.76	0.37	19.60	1.161	1.47	36.2	2.3
7-1	48.53	55.19	13	0.00	4.7	1.44	0.49		0.640	0.065	0.49	0.106	8.47	0.08	0.68	0.34	20.16	1.181		41.6	1.5
7-2			1	0.00	3.3	1.36	0.44		0.636	0.065	0.50	0.110	8.56	0.09	0.63	0.32	15.43	1.141	1.41	54.5	2.0
8-1	48.8	56.98	19	0.00	7.3	1.41	0.47		0.635	0.070	0.52	0.117	8.31	0.08	0.59	0.33	13.10	1.152		46.6	1.3
8-2			1	0.00	5.3	1.35	0.45		0.542	0.077	0.49	0.101	8.25	0.08	0.63	0.30	27.54	1.164	1.45	35.5	1.3

Table A.4(K)
Kennebec Data Summary - 9 June '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°45.90	43°44.33	10	31.60	1.2	6.85	2.15		0.413	0.052	0.28	0.18	1.78	0.11	0.76	0.41	2.53	0.144			
0-2			6	30.40	1.8	8.40	1.20	0.835	0.591	0.090	0.31	0.25	0.63	0.07	0.17	0.20	1.39	0.186	0.36	1,171.0	11.0
0-3			1	27.85	2.0	4.07	0.51		0.404	0.064	0.28	0.19	1.52	0.11	0.94	0.36	1.49	0.343	0.52	709.5	2.5
1-1	47.05	46.06	15	29.70	3.2	6.11	2.42	1.159	0.678	0.077	0.40	0.27	0.81	0.13	0.42	0.32	3.67	0.201			
1-2			10	29.13	2.8	6.73	2.02		0.675	0.086	0.33	0.24	0.87	0.06	0.46	0.35	7.99	0.219	0.35		
1-3			6	28.10	4.0	5.30	1.11	1.009	0.579	0.075		0.25	0.99	0.17	0.89	0.32	8.12	0.255	0.46	866.0	8.0
1-4			1	30.11	2.6	5.52	1.35		0.582	0.067	0.34	0.32	1.24	0.11	1.11	0.32	4.54	0.288	0.43	731.5	8.5
2-1	47.23	47.14	11	29.52	1.6	10.16	1.04		0.595	0.071	0.36	0.37	0.91	0.08	0.53	0.39	5.50	0.241			
2-2			7	29.35	3.0	6.94	1.96	0.985	0.595	0.071	0.33	0.37	0.95	0.09	0.68	0.41	5.47	0.252	0.18	875.0	6.5
2-3			1	24.43	2.6	4.34	0.89		0.447	0.050		0.29	2.63	0.09	1.71	0.47	16.21	0.426	0.67	667.5	4.0
3-1	47.45	48.44	10	28.66	9.2	7.93	2.70		0.790	0.082	0.52	0.29	1.15	0.08	1.02	0.37	13.93	0.256			
3-2			5	25.80	3.8	4.79	1.72		0.621	0.067	0.44	0.28	1.81	0.11	1.57	0.37	31.43	0.403	0.66		
3-3			2.5	19.05	4.5	2.24	0.98	0.239	0.495	0.043	0.34	0.21	4.46	0.12	3.35	0.46	36.99	0.675	0.49	210.0	0.0
3-4			1	15.58	3.2	1.63	1.07		0.361	0.035	0.29	0.15	4.16	0.17	3.13	0.62	6.99	0.793	0.86	179.5	0.0
4-1	47.51	51.09	10	19.05	10.5	2.42	3.14	0.409	0.642	0.056		0.13	3.37	0.10	2.99	0.47	32.93	0.593			
4-2			5	16.64	6.3	1.68	1.82		0.589	0.056		0.19	4.01	0.14	3.50	0.56	39.55	0.700	0.90		
4-3			3	10.52	5.5	1.13	1.49	0.210	0.475	0.043	0.34	0.10	4.97	0.15	3.26	0.48	41.54	0.891	0.94	105.0	0.5
4-4			1	9.88	5.1	1.13	1.49		0.411	0.038	0.33	0.16	5.15	0.14	3.45	0.48	27.90	0.905	0.93	84.5	0.0
5-1	47.75	52.52	20	14.56	6.4	1.78	2.58		0.712	0.058	0.59	0.18	4.37	0.17	3.46	0.54	37.25	0.766			
5-2			15	14.06	2.4	1.41	2.29		0.625	0.052	0.48	0.19	4.40	0.13	3.51	0.52	38.26	0.805			
5-3			10	13.68	4.0	1.49	2.10		0.570	0.050	0.57	0.19	4.53	0.13	3.58	0.54	36.48	0.802			
5-4			5	13.28	3.6	1.35	1.86	0.221	0.643	0.053	0.45	0.17	4.55	0.13	3.56	0.51	38.73	0.856		254.0	0.0
5-5			1	12.77	2.3	1.21	1.62		0.545	0.045	0.37	0.16	4.64	0.16	3.46	0.50	37.53	0.830	1.09	98.0	0.0
6-1	48.57	54.22	10	8.75	1.6	1.62	2.23		0.772	0.063	0.58	0.18	5.41	0.17	3.26	0.48	43.83	0.677			
6-2			5	7.44	3.6	1.57	1.80	0.198	0.585	0.054	0.44	0.21	5.63	0.16	3.23	0.45	44.17	1.121		92.5	0.0
6-3			1	6.28	4.8	1.47	1.88		0.521	0.049		0.21	5.86	0.17	3.29	0.43	43.46	1.071	1.26	72.4	0.0
7-1	48.47	55.18	10	6.84	3.2	1.82	2.06	0.224	0.655	0.059	0.55	0.12	5.72	0.16	3.36	0.44	45.18	1.009			
7-2			5	5.87	4.0	1.67	1.71	0.263	0.576	0.054	0.44	0.12	5.87	0.17	3.27	0.43	44.29	1.029		83.5	0.0
7-3			1	5.58	3.2	1.55	1.69		0.494	0.048	0.39	0.19	5.87	0.16	3.13	0.40	43.47	1.048	1.99	63.4	0.0
8-1	48.73	56.94	10	2.72	8.0	3.20	3.20		0.772	0.074	0.69	0.26	6.07	0.15	2.35	0.28	51.52	0.902		126.0	0.0
8-2			1	1.70	8.4	4.39	2.91	0.619	0.758	0.082	0.71	0.25	6.14	0.18	2.29	0.30	41.73	1.152	2.75	115.0	0.2
9-1	49.61	58.7	15	0.21	13.20	8.63	4.54		1.469	0.162	1.84	0.34	6.15	0.13	0.80	0.22	47.75	1.128		385.0	0.0
9-2			1	0.18	7.50	9.71	2.64	1.343	0.671	0.076	0.83	0.26	5.03	0.18	0.98	0.21	54.29	1.170	1.89	198.0	0.0

Table A.5(K)
Kennebec Data Summary - 5 July '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°45.36	43°44.01	14	31.64	1.3	3.77	0.86		0.457	0.060	0.30	0.28	0.52	0.09	0.59	0.34	0.44	0.102	0.14		
0-2			6	31.26	2.7	1.06	0.60		0.467	0.046	0.22	0.16	0.09	0.04	1.25	0.05	0.01	0.127	0.20		
0-3			3	28.74	0.7	3.89	1.31	0.296	0.874	0.093	0.47	0.36	0.14	0.04	1.57	0.13	0.29	0.217	0.55	5,283.5	9.0
0-4			1	27.25	2.0	3.42	0.79		0.830	0.105	1.00	0.31	0.20	0.04	1.87	0.24	0.55	0.282	0.22	4,548.5	13.0
1-1	47.18	46.29	13	30.71	3.3	2.60	0.86	1.013	0.574	0.096	0.30	0.30	0.39	0.08	0.58	0.23	0.35	0.160			
1-2			9	29.92	0.7	2.72	1.08		0.818	0.097	0.36	0.29	0.22	0.06	0.52	0.23	0.29	0.174	0.23		
1-3			5	29.08	5.3	2.83	0.96	0.551	0.813	0.100	0.36	0.36	0.23	0.08	0.55	0.21	0.24	0.219	0.40	2,468.0	13.0
1-4			1	28.42	7.3	2.60	1.10		0.748	0.090	0.38	0.27	0.27	0.05	0.64	0.20	0.40	0.261	0.44	2,260.5	11.5
2-1	47.23	47.13	9	29.50	7.3	2.91	1.07		0.732	0.091		0.27	0.23	0.06	0.29	0.20	0.33	0.189	0.35		
2-2			4	28.05	6.7	2.64	0.87	0.610	0.816	0.090	0.35	0.27	0.43	0.06	0.77	0.20	0.91	0.274	0.61	2,076.0	17.0
2-3			1	19.24	6.0	1.70	0.87		0.588	0.071	0.33	0.18	1.47	0.13	1.79	0.37	2.34	0.651	0.40	962.5	1.5
3-1	47.52	48.51	9	29.21	8.0	2.56	1.14		0.566	0.081	0.45	0.22	0.39	0.05	0.63	0.24	0.32	0.209			
3-2			5	24.17	6.0	2.21	1.26	0.937	0.607	0.088	0.45	0.26	1.08	0.09	1.25	0.28	1.63	0.465	0.58	1,676.0	4.5
3-3			1	17.62	8.0	1.94	1.15		0.667	0.100	0.47	0.23	1.91	0.15	2.28	0.46	2.94	0.484	0.48	897.5	1.0
4-1	47.65	51.10	14	21.84	5.9	2.17	1.95	1.490	0.740	0.095	0.61	0.29	1.94	0.14	2.22	0.49	1.98	0.389			
4-2			7	18.47	8.7	1.78	1.64	0.881	0.887	0.079	0.48	0.16	2.16	0.19	2.78	0.49	2.76	0.417	0.79	852.8	3.0
4-3			1	11.62	9.4	1.43	1.47	0.563	0.637	0.069	0.43	0.17	3.00	0.21	3.61	0.38	4.19	0.597	0.47	294.6	1.4
5-1	47.74	52.10	15	15.74	10.2	1.97	1.30		0.600	0.077	0.54	0.14	2.74	0.22	3.43	0.46	3.34	0.458			
5-2			11	14.47	10.5	1.47	1.95		0.552	0.070	0.51	0.14	2.94	0.22	3.69	0.48	3.91	0.553			
5-3			6	12.59	10.8	1.43	1.90	0.802	0.504	0.066	0.45	0.13	3.09	0.26	3.99	0.43	4.02	0.887		316.4	0.6
5-4			1	12.07	10.4	1.39	1.89		0.538	0.071	0.46	0.13	3.20	0.21	3.86	0.41	4.12	0.751	0.77	347.6	1.4
6-1	46.61	54.29	11	10.53	9.3	1.27	2.85		0.562	0.072	0.61	0.14	3.16	0.19	3.26	0.31	5.80	0.966			
6-2			6	7.27	10.0	1.35	2.44	0.833	0.450	0.059	0.43	0.11	2.84	0.19	3.58	0.26	4.93	0.674		102.4	0.2
6-3			1	6.67	12.0	1.43	2.13		0.500	0.061	0.41	0.10	3.15	0.18	3.10	0.21	4.55	0.703	0.54	80.6	0.0
7-1	48.45	55.22	11	6.43	13.2	1.51	3.27		0.693	0.094	0.67	0.18	2.33	0.23	5.94	0.33	5.19	0.878			
7-2			5	3.68	12.4	3.23	2.77	1.841	0.787	0.098	0.69	0.16	2.21	0.21	2.43	0.25	4.92	1.19.		138.5	0.0
7-3			1	2.58	22.0	3.77	2.79		0.815	0.109	0.73	0.18	2.19	0.22	2.13	0.22	4.91	0.963	0.97	147.5	0.0
8-1	48.60	56.95	20	2.17	34.7	3.89	6.24		1.678	0.202	1.52	0.28	1.66	0.21	1.99	0.23	5.37	1.211		210.0	0.0
8-2			1	1.18	44.0	4.48	3.35	6.010	1.811	0.210	1.52	0.29	0.44	0.20	1.41	0.18	5.25	0.945	0.85	226.5	0.0
9-1	50.04	59.04	1	0.01	36.0	9.75	2.72	10.398	2.236	0.282	3.28	0.69	0.00	0.17	0.44	0.16	5.99	1.305	1.32	391.5	0.0

Table A.6(K)
Kennebec Data Summary - 1 Sept '94

station-bottle	Longitude deg-min W	Latitude deg-min N	depth (M)	Salinity (PSU)	SPM (mg L⁻¹)	chl a (µg L⁻¹)	pheo (µg L⁻¹)	fucoxanthin (µg L⁻¹)	POC (mg L⁻¹)	PON (mg L⁻¹)	PP (µM)	EHAA (mg L⁻¹)	NO3 (µM)	NO2 (µM)	NH4 (µM)	PO4 (µM)	SiO2 (µM)	OD AU @284 nm	PAR k(m⁻¹)	diatoms (cells mL⁻¹)	dinoflag. (cells mL⁻¹)
0-1	69°46.16	43°44.81	16	32.12	0.8	1.23	0.87		0.159	0.021	0.12	0.08	5.21		0.69	0.83		0.252			
0-2			10	31.67	1.4	2.17	0.83		0.321	0.050	0.19	0.14	0.00					0.248	0.29		
0-3			5	30.95	0.8	2.60	0.63		0.427	0.061	0.23	0.22	2.01	0.26	0.96	0.71	6.31	0.321	0.24	4322.0	12.0
0-4			1	29.99	1.6	2.76	0.52	1.136	0.462	0.068	0.28	0.22	1.51	0.24	0.77	0.59	5.42	0.351	0.65	4150.0	15.0
1-1	47.17	46.28	15	31.52	1.0	2.05	0.90	1.165	0.368	0.047	0.20	0.21	3.70		1.45	0.66		0.263			
1-2			10	31.27	0.6	2.13	0.62		0.387	0.050	0.23	0.14	3.43		0.92	0.72		0.249	0.27		
1-3			5	30.24	0.3	2.01	0.75	0.757	0.371	0.047	0.22	0.20	2.80	0.35	1.48	0.72	7.51	0.330	0.26	2158.0	4.0
1-4			1	25.84	1.1	1.31	0.75		0.291	0.038	0.18	0.10	2.82	0.32	2.78	0.75	7.68	0.497	0.46	1104.0	6.0
2-1	47.22	47.24	11	30.62	1.1	2.64	0.87		0.438	0.062	0.22	0.21	2.30	0.29	0.85	0.60	6.48	0.308	0.19		
2-2			5	29.85	1.7	2.44	0.79	1.059	0.574	0.068	0.26	0.19	2.28	0.28	1.21	0.66	6.66	0.418	0.27	2327.0	3.0
2-3			1	25.65	1.7	1.62	0.76		0.478	0.055	0.27	0.16	2.87	0.32	2.42	0.75	7.33	0.520	0.69	1124.0	0.0
3-1	47.46	48.42	8	29.22	2.0	2.09	0.66		0.315	0.043	0.24	0.16	2.87	0.35	1.44	0.70	7.52	0.252	0.09		
3-2			4	25.65	2.0	1.47	0.78	0.731	0.391	0.045	0.21	0.13	2.96	0.34	2.73	0.80	7.86	0.359	0.45	907.0	3.5
3-3			1	22.93	1.4	1.11	0.85		0.392	0.045	0.18	0.12	2.92	0.32	3.52	0.85	7.98	0.566	0.50	226.0	2.0
4-1	47.72	51.28	12	22.75	2.9	1.27	1.21	0.438	0.353	0.038	0.24	0.11	2.96	0.31	3.30	0.82	7.60	0.564			
4-2			5	20.90	2.0	1.04	1.02	0.355	0.405	0.039	0.25	0.11	2.78	0.33	4.26	0.81	7.39	0.589	0.52	390.0	0.0
4-3			1	18.41	2.3	1.08	1.12		0.367	0.041	0.25	0.10	2.69	0.31	4.15	0.82	7.27	0.773	0.59	306.0	0.0
5-1	47.79	52.62	15	18.38	3.7	1.04	1.49		0.490	0.050	0.32	0.10	2.59	0.29	3.86	0.79	6.59	0.592			
5-2			8	18.50	3.1	0.92	1.47	0.246	0.425	0.045	0.28	0.10	2.44	0.29	4.11	0.78	6.64	0.620		240.0	0.5
5-3			1	16.38	3.1	1.06	1.26		0.432	0.055	0.27	0.09	2.49	0.29	4.18	0.80	6.97	0.807	0.98	219.0	0.0
6-1	48.62	54.28	10	12.70	4.8	0.96	1.85		0.478	0.051	0.33	0.10	2.50	0.24	4.42	0.92	6.97	0.843			
6-2			5	10.65	5.2	1.19	1.90	0.347	0.491	0.052	0.39	0.13	1.69	0.18	3.48	0.81	5.01	0.802		140.5	0.0
6-3			1	9.52	3.6	1.74	2.05		0.523	0.062	0.43	0.15	2.03	0.19	4.01	0.89	6.08	0.890	1.16	220.0	0.0
7-1	48.49	55.46	10	10.55	5.6	1.31	2.25		0.626	0.073	0.58	0.13	2.15	0.20	4.51	0.90	6.30	0.876			
7-2			5	8.00	6.0	1.43	2.74	0.666	0.697	0.078	0.61	0.16	2.05	0.20	4.48	0.84	6.13	0.978		563.5	0.0
7-3			1	7.09	6.4	1.82	2.44		0.629	0.061	0.56	0.19	1.71	0.17	3.80	0.76	5.47	1.088	1.23	337.5	1.0
8-1	48.83	56.99	24	6.09	14.4	2.37	3.16	1.229	1.068	0.122	1.00	0.26	1.33	0.15	3.48	0.68	4.76	0.999			
8-2			15	5.55	14.0	2.68	2.90		1.040	0.121	1.02	0.23	1.49	0.17	3.76	0.72	5.40	0.877		517.0	0.0
8-3			1	4.70	7.2	3.11	2.98	1.276	1.089	0.129	0.94	0.29	1.27	0.15	3.30	0.66	4.76	1.023	2.13	225.0	0.0
9-1	49.24	44°00.13	1	0.70	11.2	4.95	4.38	3.520	1.478	0.190	1.42	0.37	0.00					1.180	1.62	2235.5	1.0

Table A.7(K-A) Kennebec Data Summary - 16-17 Sept '95 High Tide

Station	Long. (deg-min W)	Lat. (deg-min N)	Position in the channel	Depth (m)	Salinity (psu)	SPM (mgL^{-1})	Chl a (μgL^{-1})	Phaeo (μgL^{-1})	POC (mgL^{-1})	PON (mgL^{-1})	PP (μM)	NO_3 (μM)	NO_2 (μM)	NH_4 (μM)	PO_4 (μM)	SiO_2 (μM)	PAR k (m^{-1})	Sechi Depth (m	Diatoms (cells ml^{-1})	Dinoflag. (cells ml^{-1})
Phippsburg	69°48.26	43°49.2	Center	19	28.66	3.1	1.20	1.06	0.285	0.043	0.89	3.79	0.35	2.27	0.84	8.84		3.1		
			Center	14	28.89	1.8	1.20	0.79			0.83	3.78	0.37	2.42	0.87	8.71	0.319			
			Center	8	28.15	1.2	1.27	0.81			0.91	3.78	0.37	2.21	0.89	9.12	0.396			
			Center	1	26.63	1.2	1.13	0.77	0.248	0.033	1.01	3.81	0.35	3.86	0.92	10.20	0.577		63.2	0.0
Bluff Head	47.76	52.27	Center	25	21.33	2.4	0.71	1.56	0.357	0.034	1.07	3.80	0.30	4.31	1.00	13.19		2.1		
			Center	18	21.05	2.4	0.78	1.31			1.07	3.78	0.31	4.43	0.98	13.38				
			Center	10	20.38	3.5	0.71	1.38			1.21	3.87	0.32	2.28	0.82	13.92	0.516			
			Center	1	20.22	2.5	0.78	1.40	0.333	0.034	1.14	3.83	0.31	4.83	0.95	13.87	0.746		28.4	0.0
Fish Plant	48.5	55.6	Center	19	11.91	4.5	1.20	1.97	0.518	0.060	1.99	3.78	0.25	5.43	0.84	18.55				
			Center	13	11.91	4.5	1.13	2.31			1.93	3.71	0.25	4.76	0.82	18.28				
			Center	6	11.68	3.7	1.20	2.33			1.51	3.66	0.24	4.51	0.84	18.42	0.630			
			Center	1	11.53	3.1	1.06	2.02	0.483	0.058	1.56	3.76	0.24	4.63	0.92	18.26	0.947		16.6	0.0
Merrymeeting Bay	49.81	59.05	East side	8	4.89	4.5	2.90	2.90			2.59	2.77	0.16	4.58	0.52	20.34		1.5		
			East side	6	4.95		2.87	2.89			2.48	2.78	0.17	4.87	0.61	20.23				
			East side	4	4.61		2.83	3.06			2.33	2.79	0.19	7.24	0.51	20.64				
			East side	1	4.23	3.9	3.05	3.03	0.937	0.126	2.33	2.58	0.17	4.67	0.46	20.34			52.0	0.0
			Center	1	4.82		2.83	2.61			1.94	2.95	0.17	3.81	0.72	20.06			23.4	0.0
			West side	1	4.80		2.97	2.83			2.21	2.70	0.18	4.28	0.51	20.30			27.6	0.0
Twing Point	49.04	61.07	East side	1	2.43		5.31	4.66				2.14	0.14	1.76	0.38	21.46		1.1	81.6	0.0
			Center	7	2.72	5.9	4.96	3.65	0.973	0.138	3.00	2.03	0.16	2.53	0.35	20.68				
			Center	4	2.91	6.5	4.25	4.36			3.24	2.09	0.16	3.35	0.38	20.30				
			Center	1	2.64	4.3	5.31	3.75	1.108	0.172	3.23	2.08	0.16	5.98	0.39	20.66			45.6	0.0
			West side	1	2.17		5.45	4.34				2.02	0.17	2.45	0.35	22.10			109.6	0.0
Green Point	47.36	63.29	Center	4.5	0.38	10.0	7.44	3.90	1.159	0.140	4.74	3.66	0.20	1.45	0.53	31.36		0.9		
			Center	3	0.44		7.79	5.81			4.73	3.52	0.17	1.30	0.51	30.12				
			Center	1	0.43	11.0	7.44	5.71	1.323	0.165	5.42	3.54	0.16	1.35	0.50	30.41			323.2	0.0
			East side	1	0.45		7.79	4.90				3.37	0.19	1.21	0.47	29.69			170.4	0.0

Table A.7(K-B) Kennebec Data Summary - 16-17 Sept '95 Ebbing Tide

Station	Long. (deg-min W)	Lat. (deg-min N)	Position in the channel	Depth (m)	Salinity (psu)	SPM (mgL^{-1})	Chl a (μgL^{-1})	Phaeo (μgL^{-1})	POC (mgL^{-1})	PON mgL^{-1})	PP (μM)	NO_3 (μM)	NO_2 (μM)	NH_4 (μM)	PO_4 (μM)	SiO_2 (μM)	PAR k (m^{-1})	Sechi Depth (m	Diatoms (cells ml^{-1})	Dinoflag. (cells ml^{-1})
Dix Island	69°47.25	43°46.48	Center	14.5	28.80	1.6	1.42	0.76	0.341	0.039	0.87	3.69	0.34	2.03	0.83	8.52		2.4		
			Center	9	28.25		1.35	0.92				3.71	0.35	1.84	0.86	8.89				
			Center	6	26.71		1.20	0.79				3.72	0.33	2.36	0.89	10.04	0.545			
			Center	1	24.88	1.2	1.20	0.70	0.294	0.034	0.87	3.76	0.33	3.32	0.89	11.20	0.551			
Phippsburg	48.22	49.13	Center	12	23.97	2.4	0.99	1.09	0.255	0.029	0.92	3.72	0.32	3.33	0.90	11.85		2.6		
			Center	8	24.13		0.92	1.35			1.08	3.72	0.32	3.48	0.91	11.68				
			Center	4	23.33		0.99	1.37			1.05	3.84	0.32	3.68	0.94	12.28	0.630			
			Center	1	22.48		0.92	0.98	0.297	0.041	0.97	3.88	0.31	3.66	0.97	12.85	0.691			
Bluff Head	47.76	52.17	Center	25	18.82	3.1	0.71	1.47	0.357	0.037	1.02	3.84	0.30	4.45	0.98	14.77		2.1		
			Center	16	18.30	2.9	0.92	1.80			0.97	3.83	0.29	4.65	0.95	15.14				
			Center	8.5	18.39		0.85	1.42			1.08	3.79	0.29	4.18	0.93	14.89	0.658			
			Center	x	17.23	1.8	0.85	1.42	0.389	0.048	1.00	3.81	0.29	4.47	0.92	15.56	0.792			
Fish Plant	48.42	55.55	Center	18	13.82	4.3	0.99	1.82	0.495	0.050	1.57	3.96	0.29	3.96	0.71	17.59		1.7		
			Center	12	13.83	2.9	1.06	1.66			1.26	3.81	0.25	4.99	0.88	17.64				
			Center	6	11.72	3.3	1.13	1.95			1.50	3.71	0.24	5.64	0.85	18.68	0.805			
			Center	1	9.70	3.5	1.91	2.17	0.476	0.056	1.53	3.56	0.23	4.81	0.78	19.04	0.843			
Merrymeeting Bay	50.11	59.07	East side	7.5	2.78	9.2	4.60	4.46				2.06	0.15	2.39	0.38	20.86		1.2		
			East side	2	2.78	9.4	4.96	4.56				2.04	0.14	2.15	0.35	20.72				
			Center	10.5	3.14	7.6	4.46	4.15	1.61	0.189	3.46	4.74	0.15	2.65	0.36	20.56				
			Center	4.5	3.12	7.3	4.39	3.77			3.46	2.15	0.14	2.35	0.37	20.67	1.273			
			Center	1	3.14	7.1	4.67	4.39	1.028	0.131	3.46	2.12	0.15	2.44	0.37	20.62	1.608		52.4	0.0
			West side	1	2.63		5.67	4.31				1.71	0.15	2.60	0.32	20.17			83.8	0.0
Twing Point	49.1	61.1	East side	1	0.67		7.08	4.70				2.88	0.19	0.38	0.34	27.34	2.084	1.0		
			Center	6.3	0.51	14.7	7.79	5.35	1.436	0.182	5.04	2.99	0.17	0.93	0.44	28.76				
			Center	3.5	0.50	15.7	7.79	5.81			5.04	2.98	0.16	0.86	0.45	29.20	2.301			
			Center	1	0.50	15.1	8.50	5.10	1.394	0.175	5.77	3.02	0.17	0.82	0.46	28.85	1.892		142.8	0.0
			West side	1	0.50		8.15	6.81				2.99	0.18	0.97	0.55	28.81			212.8	0.0
Green Point	47.36	63.29	Center	3	0.08	5.9	5.67	2.86	0.789	0.091	3.05	5.80	0.18	0.82	0.98	46.15		1.1		
			Center	1	0.08	7.5	5.95	2.75	0.777	0.094	3.33	5.79	0.21	1.37	0.90	46.20	1.441		223.6	2.4
			East side	1	0.07		5.10	2.52				5.96	0.18	1.22	1.01	49.17			220.0	2.0

Table A.7(K-C) Kennebec Data Summary - 16-17 Sept '95 Low Tide

Station	Long. (deg-min W)	Lat. (deg-min N)	Position in the channel	Depth (m)	Salinity (psu)	SPM (mgL^{-1})	Chl a (μgL^{-1})	Phaeo (μgL^{-1})	POC (mgL^{-1})	PON (mgL^{-1})	PP (μM)	NO_3 (μM)	NO_2 (μM)	NH_4 (μM)	PO_4 (μM)	SiO_2 (μM)	PAR k (m^{-1})	Sechi Depth (m	Diatoms (cells ml^{-1})	Dinoflag. (cells ml^{-1})
Dix Island	69°47.32	43°46.61	Center	12	26.41		1.20	0.88	0.299	0.035	0.92	3.77	0.34	2.84	0.88	10.28				
			Center	9	26.11		1.20	0.97				3.73	0.34	2.94	0.90	10.30				
			Center	3.5	23.94		1.13	0.95				3.74	0.32	3.95	0.90	11.80				
			Center	1	22.92		0.92	0.98	0.24	0.028	0.90	3.69	0.31	3.74	0.90	12.31	0.835			
Phippsburg	48.29	49.15	Center	15	19.10	3.1	0.85	1.51	0.362	0.045	1.00	3.90	0.29	4.51	0.96	14.49		1.9		
			Center	11.5	19.15		0.85	1.33			0.98	3.86	0.29	4.37	0.94	14.48				
			Center	9	19.06	2.9	0.85	1.33			0.97	3.89	0.30	4.61	0.96	14.69	0.657			
			Center	1	17.57	2.9	0.85	1.42	0.334	0.038	1.14	3.93	0.29	4.53	0.95	15.58	0.770			
Bluff Head	47.68	52.15	Center	23	13.46	5.1	1.13	1.95	0.513	0.056	1.58	3.85	0.26	5.06	0.87	17.82		1.2		
			Center	11	13.31		1.13	1.95			1.55	3.82	0.25	4.59	0.88	17.94				
			Center	1	12.55	3.9	1.20	1.97	0.487	0.054	1.55	3.73	0.24	4.48	0.85	17.96	0.937			
Fish Plant	48.5	55.52	Center	16.5	7.00	9.8	2.48	5.23	1.039	0.116	2.94	3.16	0.19	4.41	0.64	20.55		1.2		
			Center	11	6.92	8.8	2.48	5.23			3.14	3.16	0.19	4.48	0.69	20.71				
			Center	6	6.77		2.62	4.45			3.08	3.17	0.17	3.97	0.61	19.98	0.996			
			Center	1	6.71	7.5	2.12	3.77			2.79	3.17	0.17	4.19	0.60	20.27	1.450			
Merrymeeting Bay	49.86	59.09	East side	7	1.09	12.4	7.65	5.22				2.29	0.15	0.94	0.36	24.34		1.0		
			East side	1	1.00	9.4	8.15	5.00				2.31	0.16	1.81	0.36	24.61	1.657		144.8	0.0
			Center	9	1.92	11.4	8.15	5.91	1.423	0.189	5.02	1.36	0.14	1.36	0.25	20.20				
			Center	6	1.84	12.2	8.15	5.91			5.10	1.24	0.13	0.87	0.24	20.28				
			Center	1	1.72	11.5	8.50	6.01	1.517	0.201	5.37	1.71	0.15	1.98	0.30	21.93	2.088			
			West side	1	1.74		8.15	4.55				1.19	0.16	1.79	0.28	20.38			123.2	0.0
Twing Point	48.96	61.18	East side	1	0.36		8.50	6.01				3.16	0.32	0.11	0.35	31.53	1.874	0.9		
			Center	8	0.26	14.1	8.50	5.55	1.478	0.210	5.09	3.77	0.17	0.60	0.57	32.67				
			Center	5	0.26	14.3	8.50	5.10			5.72	3.82	0.15	0.37	0.56	32.86	1.183			
			Center	1	0.25	12.4	8.50	4.19	1.338	0.191	4.70	3.82	0.20	0.13	0.43	33.32	1.900		261.0	0.0
			West side	1	0.24		9.21	5.30				3.59	0.18	0.61	0.56	32.99			264.0	0.0
Green Point	47.36	63.29	Center	3	0.07	6.5	5.67	2.04	0.718	0.089	2.51	5.83	0.18	0.81	1.01	49.03		1.4		
			Center	1	0.07	6.3	6.73	0.07	0.706	0.081	2.76	5.84	0.19	1.12	1.08	48.48	1.456		208.8	0.0
			East side	1	0.07		5.67	2.04				5.86	0.21	0.08	0.90	48.71			190.0	0.0

Table A.7(K-D) Kennebec Data Summary - 16-17 Sept '95 Flooding Tide

Station	Long. (deg-min W)	Lat. (deg-min N)	Position in the channel	Depth (m)	Salinity (psu)	SPM (mgL^{-1})	Chl a (μgL^{-1})	Phaeo (μgL^{-1})	POC (mgL^{-1})	PON (mgL^{-1})	PP (μM)	NO_3 (μM)	NO_2 (μM)	NH_4 (μM)	PO_4 (μM)	SiO_2 (μM)	PAR k (m^{-1})	Sechi Depth (m	Diatoms (cells ml^{-1})	Dinoflag. (cells ml^{-1})
Dix Island	69°47.3	43°46.6	Center	15	29.95	1.4	2.69	0.84			0.90	3.11	0.32	1.35	0.81	7.30		2.6		
			Center	10	29.98		2.48	1.06									0.349			
			Center	5	29.79		2.83	1.16	0.272	0.037							0.380			
			Center	1	29.32	1.2	2.34	1.02	0.279	0.038	0.85	3.40	0.32	1.73	0.94	7.71	0.467		163.6	1.0
Phippsburg	48.28	49.11	Center	15	23.80	3.9	0.92	1.53			1.05	3.72	0.32	3.77	0.91	11.76		2.1		
			Center	10	23.96		1.06	1.39			1.09	3.73	0.32	3.69	0.87	11.78				
			Center	5	23.72	2.7	0.99	1.18	0.373	0.039	1.32	3.75	0.31	3.38	0.92	12.04	0.499			
			Center	1	22.03	2.4	0.92	1.07	0.368	0.041	1.00	3.86	0.33	4.29	0.94	12.96	0.634		38.2	0.0
Bluff Head	47.76	52.13	Center	27	16.04	4.3	1.06	1.48			1.34	3.84	0.26	4.98	0.91	16.33		1.8		
			Center	18	15.86	3.9	0.85	1.60			1.22	3.87	0.26	5.20	0.92	16.58				
			Center	9	15.32		0.92	1.53	0.432	0.053	1.35	3.84	0.25	4.76	0.93	16.89	0.658			
			Center	1	14.63	4.5	0.99	1.55	0.526	0.050	1.24	3.75	0.26	4.85	0.87	17.03	0.849		15.6	0.0
Fish Plant	48.5	55.52	Center	8.3	6.85	6.1	2.62	3.54	0.753	0.084	2.43	3.20	0.19	4.60	0.62	20.64		1.3		
			Center	5	5.72	5.3	2.62	4.18	0.708	0.087	2.59	3.47	0.17	3.71	0.61	20.66	1.055			
			Center	1	5.10	4.3	3.19	3.61	0.558	0.076	2.72	2.89	0.17	3.62	0.56	20.40	0.955		21.0	0.0
Merrymeeting	49.87	59.07	East side	7.7	3.06	7.3	4.96	4.56				2.07	0.15	2.03	0.37	20.64		1.0		
Bay			East side	1	2.87	6.5	5.31	4.21	1.225	0.158		2.10	0.15	2.13	0.60	20.38	1.767		94.6	0.0
	50.17	59.14	Center	9	3.80	6.3	3.54	4.16	0.929	0.123	2.80	2.37	0.18	3.22	0.45	20.73				
			Center	4.7	3.82	6.1	3.90	3.81	0.938	0.118	2.29	2.38	0.15	2.70	0.46	20.37	1.075			
			Center	1	3.82	6.3	4.25	3.18	0.55	0.051	2.83	2.32	0.16	2.57	0.44	20.46	1.593			
			West side	1	4.00		3.90	3.81				2.34	0.15	2.68	0.42	20.23			74.0	0.0
Twing Point	48.97	61.2	East side	1	1.51		8.36	7.24				1.81	0.15	1.23	0.37	22.11		1.0		
			Center	6	2.43	11.0	7.01	5.23	1.341	0.172	3.32	1.78	0.15	1.84	0.30	20.25				
			Center	4	2.41	10.4	7.08	5.61			3.56	1.72	0.15	1.42	0.31	20.71	1.436			
			Center	1	2.44	12.5	6.80	6.26	1.562	0.204	3.69	1.75	0.14	1.13	0.35	20.27	1.873		139.4	2.8
	49.06	61.26	West side	1	2.15		7.79	5.81				1.62	0.14	1.33	0.27	20.56			151.0	0.0
Green Point	47.36	63.36	Center	5	0.41	11.6	8.85	6.11	1.44	0.176	4.20	2.96	0.17	0.37	0.47	28.68		0.9		
			Center	1	0.53	11.6	9.77	5.82	1.584	0.191	4.78	3.02	0.16	0.59	0.47	29.27	2.103		300.2	0.2
			East side	1	0.53		9.07	5.62				3.29	0.18	0.64	0.53	30.48			331.8	1.6

Table B — Particle Analysis

Table B.1 (D) 24 September, 1993, Damariscotta Estuary
(S) 25 September, 1993, Sheepscot Estuary
(K) 26 September, 1993, Kennebec Estuary

Table B.2 8-9 February, 1994
Damariscotta, Sheepscot, and Kennebec Estuaries

Table B.3 (D) 5 May, 1994
Damariscotta Estuary

Table B.5 (D) 5 July, 1994
Damariscotta Estuary

Table B Methods

Water samples were subsampled from Niskin bottle grab samples in 0.75 l glass jars and 2% Lugol's fixative was added. Samples were run on a Coulter Multisizer for particle concentration, size distribution and volume. Duplicate samples were run for each station. Due to settling after Niskin grab samples prior to subsampling, samples taken on 9/93 had high variability among replicates. All samples were 1 m below the surface except where noted. Apertures used and volumes counted along with size limits, are given below. The final sample protocol for analysis was on 7/5/94 samples, where 36.8 ml were counted on the 280 micron aperture, 4.4 ml were counted on the 140 micron aperture, and the numbers of channels were 128 and 64, respectively (about 2 microns ESD per channel). This gave the greatest reproducibility among samples. Subsamples had to be taken immediately after sampling with the Niskin bottle to be representative of the grab sample.

Date	Aperture (μm)	Vol counted (ml)	Size range (μm)
9/93	280	18.4	5.6 - 112
	100	2.3	2.1 - 64
2/94	100	2.3	2.1 - 64
5/94	280	9.2	5.6 - 112
	140	2.2	2.8 - 64
7/94	280	36.8	15 - 50
	140	4.4	2.8 - 15

On 7/94 particle concentration above 50 μm was not studied as the concentration was less than 30 particles per channel. In order to obtain concentrations of particles above 50 μm, optical techniques are necessary. It is likely that most of the particle volume is in these larger size classes *in situ*. All samples were prefiltered with 243 μm zooplankton net, and there was no significant difference in concentrations of particles filtered vs. unfiltered.

Table B.1 (D)
Particle Analysis, Damariscotta 24 Sept '93

station-bottle	depth (m)	A particle vol (mm^3/ml)	B	A particle conc. (#/ml)	B
1-1	25	2.18	3.87	6360	6591
1-2	15	2.07	2.12	4270	5678
1-3	10	2.45	2.08	3258	5728
1-4	5	2.26	1.88	4444	6132
1-5	1	3.32	2.27	11559	5314
2-1	12	2.93	5.13	7550	6105
2-2	8	2.50	3.36	6923	9530
2-3	4	2.72	2.51	7096	4171
2-4	1	2.92	2.52	5730	8573
3-1	20	2.97	3.24	6029	8300
3-2	15	4.77	2.55	11053	11531
3-3	10	2.41	4.49	6698	10573
3-4	5	3.44	2.50	7890	5080
3-5	1	4.44	4.64	7899	9153
4-1	12	3.38	3.02	10662	8133
4-2	8	2.27	3.87	9525	7406
4-3	4	7.00	2.37	6164	8499
4-4	1	3.92	0.47	11876	4208
5-1	12	1.69	1.55	4488	6363
5-2	8	3.37	2.90	8262	2835
5-3	4	2.26	2.24	3006	2284
5-4	1	2.59	2.22	8583	8180
7-1	12	3.05	5.10	25985	49174
8-1	4	3.63	2.61	33971	58557
8-2	1	3.71	3.94	47059	45608
9-1	1		3.69		18613

Table B.1 (S)
Particle Analysis, Sheepscot 25 Sept '93

station-bottle	depth (m)	particle vol (mm^3/ml)	particle conc. (#/ml)
1-1	32	2.36	7692
1-2	20	1.44	10669
1-3	16	2.87	13683
1-4	11	3.74	10860
1-5	5	2.24	18584
1-6	1	1.28	14708
2-1	22	2.05	9137
2-2	15	3.47	15541
2-3	10	3.11	24588
2-5	1	1.54	26054
3-1	16	3.88	17573
3-2	12	2.30	15906
3-3	8	2.13	12991
3-5	1	1.90	16360
4-1	22	2.84	18430
4-2	14	1.88	14336
4-3	10	3.48	16364
4-4	5	4.19	18462
4-5	1	2.24	21095
5-1	17	2.39	16853
5-2	12	2.44	18333
5-3	8	3.32	20303
5-4	4	2.66	16358
5-5	1	2.98	19359
6-1	18	3.05	19400
6-2	12	2.21	9716
6-3	8	2.87	24202
6-4	4	4.40	22489
6-5	1	2.94	15054
7-1	18	2.39	21756
7-2	12	2.15	15963
7-3	8	2.66	19197
7-4	4	1.88	14153
7-5	1	3.67	20045
8-1	15	2.88	18033
8-2	10	2.85	18227
8-3	4	2.57	17750
8-4	1	2.95	17297
9-1	21	1.14	11933
9-2	15	2.00	14744
9-3	10	1.68	16713
9-5	1	3.41	17283
10-1	1	1.07	7097

Table B.1 (K)
Particle Analysis, Kennebec 27 Sept '93

station-bottle	depth (m)	particle vol (mm^3/ml)	particle conc. (#/ml)
1-1	15	1.48	5947
1-2	12	2.69	7140
1-3	8	1.26	8563
1-4	4	1.18	10339
1-5	1	2.08	16959
2-2	8	3.06	10997
2-3	4	2.05	15632
2-4	1	2.06	19445
3-1	8	3.53	24698
3-2	4	1.89	27393
3-3	1	3.77	28000
4-1	13	2.98	32042
4-2	9	2.85	36948
4-3	5	3.25	37808
4-4	1	3.75	44591
5-1	9	22.90	873388
5-2	5	3.34	57910
5-3	1	3.92	72956
6-1	12	49.54	1687376
6-2	6	7.86	84344
6-3	1	7.90	77365
7-1	17	9.09	103688
7-2	1	10.48	92097

Table B.2
Particle Analysis 8-9 Feb '94

Damariscotta

station	depth (m)	particle conc. (#/ml)
1-1	8	53726
1-2	4.5	26119
1-3	1	24547
2-1	13	19309
2-2	7	18805
2-3	1	32928
3-1	25	44163
3-2	15	49665
3-3	1	56578
4-1	28	21491
4-2	13	19121
4-3	1	14266

Kennebec

station	depth (m)	particle conc. (#/ml)
1-1	16	17859
1-2	6	11778
1-3	1	38710
2-1	18	34177
2-2	8	27047
2-3	1	29582
3-1	1	31407

Sheepscot

station	depth (m)	particle conc. (#/ml)
1-1	40	30600
1-2	25	38255
1-3	12	38504
1-4	1	22975
2-1	19	35648
2-2	6	19982
2-3	1	17067
3-1	21	69783
3-2	12	47462
3-3	1	42116
4-1	18	44479
4-2	8	49986
4-3	1	32847
5-1	18	23004
5-2	8	52545
5-3	1	35979
6-1	13	26492
6-2	5	22210
6-3	1	25281
7-1	6	33744
7-2	1	35268

Table B.3 (D)
Particle Analysis, Damariscotta 5 May '94
Depth of samples- 1m below surface

station	A particle vol (mm^3/ml)	B	A particle conc. (#/ml)	B
1-4	2.88	1.50	16461	16846
2-5	3.43	1.60	14609	15062
3-5	2.22	1.89	11013	12149
4-4	2.24	1.75	25429	19154
5-3	2.93	2.39	16626	21035
6-3	5.01	2.73	27214	21573
7-3	5.16	3.17	28960	33303
8-2	5.56	4.62	30334	29419
9-2	4.47	4.13	25941	27299

Table B.5 (D)
Particle Analysis, Damariscotta 5 July '94
Depth of samples- 1m below surface

station	A particle vol (mm^3/ml)	B	A particle conc. (#/ml)	B
1-4	3.03	3.25	11932	15459
2-4	2.69	2.92	9625	6204
3-4	3.54	3.39	11885	16144
4-3	3.39	3.62	12707	13045
5-4	3.82	3.69	17073	18767
6-3	3.88	3.66	14096	16009
7-3	5.17	4.81	12384	13027
8-2	6.09	5.51	31713	29766
9-2	5.53	5.48	59788	59224

Table C (D) February 14-April 5, 1994, Damariscotta Estuary Stations
D1- Rutherford Island, 43°51.4 N, 69° 33.8 W
D2- Darling Center Pier, 43°55.1 N, 69°34.8 W
D3- not accessible due to ice cover
D4- Newcastle Bridge, 44°02.0 N, 69°32.0 W

(S) February 14-April 5, 1994, Sheepscot Estuary Stations
S1- Hendricks Head, 43°49.4 N, 69°41.5 W
S2- Barter's Is., 43°53.6 N, 69°41.0 W
S3- Ft. Edgecomb, 43°59.5 N, 69°39.3 W
S4- Wiscasset Town Dock, 43°59.9 N, 69°39.9 W
(collected 2h later than S3)

(K) February 14-April 5, 1994, Kennebec Estuary Stations
K1- Bay Point, 43°45.3 N, 69°46.5 W
K2- Marrtown, 43°48.5 N, 69°47.0 W
K3- Bluff Head, 43°51.3 N, 69°47.5 W

TABLE C LEGEND AND METHODS

Abbreviations and analytical methods are identical to those used in Table A.

Samples were collected every 3-4 days from shore at the same time each day, regardless of tidal phase. Sampling was restricted to the top 1-1.5m of water using a specially rigged bottle which was thrown out from the shore (5-10m) on a lanyard.

Table C (D)
Damariscotta Spring Bloom Sampling 14 Feb-5 Apr '94

station	date	time (EST)	salinity (psu)	NH4 (µM)	NO3 (µM)	NO2 (µM)	PO4 (µM)	SiO2 (µM)	Chl a µg/L	OD (284 nm)
D1	14-Feb	1000	28.0	0.48	8.66	0.13	0.76	11.01	1.185	0.130
D1	18-Feb	0925	31.2	0.46	8.56	0.20	0.78	12.99	1.185	0.128
D1	22-Feb	0905	31.6	0.39	7.32	0.16	0.60	9.99	1.595	0.157
D1	25-Feb	0920	27.0	0.57	7.48	0.16	0.68	9.99	1.989	0.177
D1	28-Feb	0905	30.4	0.54	6.89	0.17	0.60	8.22	2.540	1.378
D1	4-Mar	0840	31.7	0.67	8.46	0.17	0.67	7.70	2.200	0.154
D1	8-Mar	0840	31.4	0.55	7.34	0.19	0.50	6.34	2.286	0.144
D1	11-Mar	0920	30.3	0.69	4.87	0.14	0.53	4.31	3.471	0.252
D1	14-Mar	0910	31.2	0.90	3.63	0.15	0.43	2.46	3.725	0.212
D1	18-Mar	0834	31.3	0.57	2.11	0.13	0.36	1.85	4.402	0.112
D1	22-Mar	0845							4.063	0.155
D1	26-Mar	0845							6.095	0.185
D1	31-Mar	0825							4.148	0.206
D1	5-Apr	0720							2.878	0.226
D2	14-Feb	0915	29.9	0.61	7.48	0.16	0.67	11.81	2.624	0.201
D2	18-Feb	0850	30.1	0.53	7.00	0.17	0.60	11.22	3.047	0.277
D2	22-Feb	0840	30.8	0.39	5.46	0.20	0.45	9.42	6.143	0.180
D2	25-Feb	0850	29.7	0.44	5.91	0.18	0.53	9.46	4.063	0.160
D2	28-Feb	0845	30.5	0.89	3.43	0.18	0.38	6.23	4.487	0.139
D2	4-Mar	0910	28.9	0.56	2.47	0.16	0.35	3.62	5.927	0.211
D2	8-Mar	0900	30.9	0.49	2.73	0.14	0.34	2.77	6.688	0.205
D2	11-Mar	0825	31.7	0.44	2.45	0.13	0.37	2.16	7.619	0.194
D2	14-Mar	0840	30.1	0.64	0.58	0.17	0.18	1.11	9.142	0.202
D2	18-Mar	0855	30.3	0.48	0.21	0.07	0.20	0.94	8.635	0.240
D2	22-Mar	0825							3.809	0.201
D2	26-Mar	0905							5.418	0.276
D2	31-Mar	0900							3.386	0.281
D2	5-Apr	0750							3.047	0.251
D4	14-Feb	1100	21.2	1.49	4.64	0.16	0.34	19.89	2.709	0.401
D4	18-Feb	1005	26.0	1.31	3.74	0.22	0.26	18.94	3.386	0.652
D4	22-Feb	0940	25.1	0.90	3.13	0.18	0.36	10.61	6.025	0.232
D4	25-Feb	0955	18.8	0.78	1.94	0.17	0.22	9.85	6.518	0.276
D4	28-Feb	0935	20.6	1.00	0.88	0.13	0.16	13.53	5.164	0.217
D4	4-Mar	0930	23.2	0.84	1.04	0.12	0.14	8.18	7.026	0.344
D4	8-Mar	0935	25.3	2.20	1.04	0.11	0.24	4.57	8.719	0.331
D4	11-Mar	0942	26.0	0.72	0.21	0.09	0.13	4.21	12.275	0.366
D4	14-Mar	0940	21.5	2.51	0.73	0.37	0.10	11.50	9.142	0.361
D4	18-Mar	0930	12.0	0.42	0.35	0.19	0.05	4.11	6.603	0.365
D4	22-Mar	0915							3.979	0.245
D4	26-Mar	0925							4.571	0.354
D4	31-Mar	0920							3.470	0.485
D4	5-Apr	0810							4.148	0.427

Table C (S)
Sheepscot Spring Bloom Sampling 14 Feb-5 Apr '94

station	date	time (EST)	salinity (psu)	NH4 (µM)	NO3 (µM)	NO2 (µM)	PO4 (µM)	SiO2 (µM)	Chl a µg/L	OD (284 nm)
S1	14-Feb	1210	30.7	0.47	9.30	0.14	0.81	13.34	0.525	0.183
S1	18-Feb	0900	31.4	0.55	12.52	0.18	0.90	15.99	0.804	0.182
S1	22-Feb	0835	31.0	0.39	10.45	0.16	0.80	15.23	0.732	0.182
S1	25-Feb	1045	31.7	0.60	12.11	0.16	0.89	14.44	0.804	0.324
S1	28-Feb	0800	31.0	0.81	11.74	0.20	0.87	14.91	1.354	0.395
S1	4-Mar	0840	32.0	0.58	13.67	0.16	0.88	13.56	0.847	0.198
S1	8-Mar	0900	31.7	1.23	14.23	0.16	0.95	12.86	0.652	0.200
S1	11-Mar	0830	31.7	0.44	12.25	0.15	0.84	13.52	0.677	0.254
S1	14-Mar	1020	29.3	0.87	11.86	0.15	0.82	13.46	0.652	0.219
S1	18-Mar	0900							1.524	0.187
S1	22-Mar	0855							2.286	0.276
S1	26-Mar	1145							3.979	0.251
S1	31-Mar	0810							7.020	0.280
S1	5-Apr	0745							3.047	0.339
S2	14-Feb	1300	30.8	0.26	12.09	0.18	0.86	18.13	0.593	0.233
S2	18-Feb	1000	31.2	0.40	11.84	0.15	0.92	16.62	0.889	0.204
S2	22-Feb	0905	29.8	0.60	11.39	0.16	0.82	17.22	0.449	0.188
S2	25-Feb	1115	30.5	0.60	10.64	0.17	0.86	18.17	0.643	0.294
S2	28-Feb	0830	30.9	0.86	12.20	0.17	0.86	16.91	0.931	0.203
S2	4-Mar	0910	32.0	0.62	11.79	0.15	0.85	14.28	0.804	
S2	8-Mar	0920	31.2	0.84	12.27	0.15	0.83	14.35	0.720	0.172
S2	11-Mar	0920	31.1	0.78	13.39	0.15	0.82	15.13	1.016	0.263
S2	14-Mar	0950	30.1	0.87	12.23	0.15	0.79	17.12	0.762	0.356
S2	18-Mar	0925							2.878	0.172
S2	22-Mar	0925							1.862	0.270
S2	26-Mar	1115							2.540	0.395
S2	31-Mar	0835							8.465	0.313
S2	5-Apr	0715							2.963	0.349
S3	14-Feb	1335	29.7	0.48	12.34	0.15	0.86	21.38	0.635	0.262
S3	18-Feb	1040	27.3	0.72	13.03	0.15	0.88	21.95	0.466	0.387
S3A	18-Feb	1350	29.2	1.41	9.86	0.24	0.82	29.98	0.508	
S3	22-Feb	0940	29.7	0.78	12.28	0.15	0.84	19.81	0.969	0.270
S3	25-Feb	1155	30.1	0.74	11.21	0.17	0.83	20.09	0.720	0.303
S3	28-Feb	0900	28.8	1.03	11.94	0.18	0.80	22.93	0.847	0.275
S3	4-Mar	1000	29.9	0.98	12.30	0.16	0.78	20.66	0.931	0.284
S3	8-Mar	1000	27.9	1.03	7.86	0.17	0.76	16.94	0.847	0.279
S3	11-Mar	0950	29.2	1.11	12.52	0.16	0.78	20.03	0.889	0.351
S3	14-Mar	0915	26.9	1.67	9.25	0.17	0.71	28.08	0.762	0.521
S3	18-Mar	1015							1.693	0.378
S3	22-Mar	1000							2.370	0.690
S3	26-Mar	0940							2.878	0.296
S3	31-Mar	0905							3.809	0.676
S3	5-Apr	0825							3.217	0.459
S4	22-Feb	1245	26.9	1.77	9.23	0.18	0.77	30.07	0.886	0.351
S4	25-Feb	1430	28.0	1.47	9.76	0.17	0.82	26.11	0.762	
S4	28-Feb	1220	29.2	0.99	11.82	0.16	0.81	20.66	0.677	0.245
S4	4-Mar	1310	29.5	1.09	13.68	0.16	0.79	20.97	0.677	0.278
S4	8-Mar	1210	28.2	1.64	12.06	0.16	0.74	23.63	0.804	0.331

Table C (S)
Sheepscot Spring Bloom Sampling 14 Feb-5 Apr '94

station	date	time (EST)	salinity (psu)	NH4 (µM)	NO3 (µM)	NO2 (µM)	PO4 (µM)	SiO2 (µM)	Chl a µg/L	OD (284 nm)
S4	11-Mar	1230	27.0	1.17	11.44	0.13	0.70	26.18	0.762	0.377
S4	14-Mar	1200	28.7	1.20	12.16	0.16	0.75	19.96	1.016	0.228
S4	18-Mar	1145							1.058	0.335
S4	22-Mar	1210							2.540	0.503
S4	26-Mar	1200							1.989	0.458
S4	31-Mar	1135							4.063	0.445
S4	5-Apr	1040							2.709	0.642

Table C (K)
Kennebec Spring Bloom Sampling 14 Feb-5 Apr '94

station	date	time (EST)	salinity (psu)	NH4 (µM)	NO3 (µM)	NO2 (µM)	PO4 (µM)	SiO2 (µM)	Chl a µg/L	OD (284 nm)
K1	14-Feb	1545	24.7	1.62	13.16	0.18	0.87	32.03	0.423	0.432
K1	18-Feb	1140	20.5	2.63	11.92	0.20	0.87	39.29	0.677	0.544
K1	22-Feb	1100	23.8	1.96	9.52	0.28	0.80	25.91	1.181	0.382
K1	25-Feb	1300	23.2	2.43	10.20	0.22	0.85	33.86	0.677	0.324
K1	28-Feb	1040	31.2	0.54	12.48	0.17	0.89	14.69	1.270	0.425
K1	4-Mar	1100	24.0	2.22	11.72	0.18	0.79	30.89	0.889	0.401
K1	8-Mar	1030	26.1	2.50	11.06	0.19	0.81	27.37	0.804	0.433
K1	11-Mar	1040	29.9	0.50	11.88	0.16	0.86	11.69	0.720	0.149
K1	14-Mar	1030	30.5	0.68	11.14	0.16	0.78	13.40	1.693	0.178
K1	18-Mar	1025	19.3	2.96	10.42	0.20	0.70	40.58	1.820	0.531
K1	22-Mar	1015							1.693	0.506
K1	26-Mar	1020							11.428	0.131
K1	31-Mar	1020							3.809	0.782
K1	5-Apr	0910							2.455	0.588
K2	14-Feb	1520	16.8	1.88	9.50	0.30	0.80	30.88	1.185	0.568
K2	18-Feb	1200	12.8	4.20	12.14	0.24	0.80	56.78	0.423	0.880
K2	22-Feb	1120	19.9	3.08	11.42	0.23	0.82	40.67	1.122	0.550
K2	25-Feb	1320	18.8	3.28	11.62	0.27	0.80	43.84	0.804	0.456
K2	28-Feb	1100	21.9	2.91	11.49	0.27	0.81	39.26	0.847	0.625
K2	4-Mar	1125	15.6	4.20	12.76	0.22	0.80	52.62	0.720	0.824
K2	8-Mar	1050	25.2	2.56	11.37	0.20	0.80	32.58	0.847	0.416
K2	11-Mar	1055	24.3	1.64	9.72	0.17	0.79	32.48	2.032	0.509
K2	14-Mar	1050	23.5	1.95	9.45	0.16	0.78	27.33	1.312	0.374
K2	18-Mar	1100	10.7	3.44	11.59	0.19	0.77	60.76	0.508	0.827
K2	22-Mar	1030							2.709	0.708
K2	26-Mar	1040							7.619	0.472
K2	31-Mar	1040							2.032	1.077
K2	5-Apr	0930							2.878	0.872
K3	14-Feb	1435	16.8	3.44	12.29	0.18	0.79	50.18	0.466	0.746
K3	18-Feb	1235	6.1	5.19	13.30	0.28	0.69	70.44	0.423	1.019
K3	22-Feb	1030	17.0	3.62	11.12	0.24	0.83	46.09	0.886	0.705
K3	25-Feb	1350	15.3	3.97	12.43	0.39	0.82	51.60	0.677	0.607
K3	28-Feb	1140	13.6	4.32	11.96	0.26	0.77	55.76	0.762	0.743
K3	4-Mar	1215	5.3	6.12	14.45	0.25	0.73	67.08	0.635	0.976
K3	8-Mar	1210	19.4	3.95	11.88	0.38	0.78	37.21	0.677	0.653
K3	11-Mar	1130	16.1	3.75	11.61	0.19	0.83	53.03	0.720	0.693
K3	14-Mar	1120	12.9	3.61	9.82	0.25	0.61	47.30	0.804	0.837
K3	18-Mar	1120	3.9	4.92	13.35	0.21	0.72	68.29	0.593	1.023
K3	22-Mar	1140							1.608	0.881
K3	26-Mar	1110							4.065	0.976
K3	31-Mar	1105							1.608	1.103
K3	5-Apr	1000							2.878	0.909

Table D **River Nutrient Sampling**

Table D (K) 10 March-7 July, 1994, Kennebec River Estuary

Table D Legend and Methods

Abbreviations and analytical methods are identical to those used in Table A.

Samples were collected as frequently as possible from Thorne Point (43°57 W, 69°39 N) on the Kennebec River Estuary. Outflow data was obtained from the U.S.G.S. Station gauging station at Auburn, Maine.

Table D (K)
Kennebec River Sampling 10 Mar-7 July '94

date	outflow cfps	NH4 µM	NO2 µM	NO3+NO2 µM	PO4 µM	SiO2 µM
10-Mar	14370					
11-Mar	14300					
12-Mar	13880					
13-Mar	12710					
14-Mar	15060	6.65		12.81	0.53	32.80
15-Mar	14960	5.33	0.183	14.46	0.81	48.60
16-Mar		8.49		13.67	0.79	61.00
17-Mar	14960	10.86		13.14	0.58	31.80
18-Mar	14280	6.96		12.76	0.56	74.30
19-Mar	13020	10.21		13.53	0.99	57.20
20-Mar	12990	10.07		13.86	0.70	65.10
21-Mar	13920	10.79		13.54	0.85	57.20
22-Mar	14160	17.64		11.24	0.90	27.80
23-Mar	15980	15.12		13.47	0.72	50.80
24-Mar	15280	7.59		13.40	0.66	51.20
25-Mar	18090	9.99		13.02	0.68	46.20
26-Mar	18860					
27-Mar	19780	10.12		12.72	0.82	51.10
27-Mar	19080	6.85		12.00	0.53	38.80
28-Mar	19340	8.28		12.60	0.53	41.60
29-Mar	18040	12.24		13.05	0.85	52.40
30-Mar	18430	10.27	0.133	14.88	1.20	42.90
31-Mar		33.37	0.342	15.79	1.74	23.60
1-Apr	19720	4.95	0.119	13.69	0.51	14.50
2-Apr	18970	6.51	0.112	13.21	1.03	19.80
3-Apr	19720	6.49	0.098	12.67	0.79	33.00
4-Apr	24960	7.79	0.084	13.38	1.06	28.50
5-Apr	29400	6.60	0.098	12.06	0.69	27.60
6-Apr	35300	25.23	0.164	12.87	0.91	41.70
7-Apr	41900	39.00	0.269	13.15	0.72	17.50
8-Apr	50400	76.59	0.883	14.96	0.69	57.40
9-Apr	45700	27.47	0.199	14.10	1.09	27.50
10-Apr	42400	64.48	0.408	13.42	3.20	12.20
11-Apr	42500	1.97	0.065	10.27	0.01	27.40
12-Apr	46600	41.21	0.000	8.62	1.17	41.40
13-Apr	49800	4.78	0.120	11.39	0.41	49.60
14-Apr	60400	21.41	0.270	12.16	1.15	17.50
15-Apr	73000	44.94	0.905	12.98	0.83	49.00
16-Apr	81700	6.21	0.182	10.57	0.81	8.57
17-Apr	95300	6.71	0.116	8.95	0.63	17.00
18-Apr	80400	30.26	0.317	11.26	1.18	6.54
19-Apr	66800	53.67	0.600	9.68	0.01	3.92
20-Apr	57800	5.57	0.112	8.37	0.83	5.62
21-Apr	48700	10.56	0.149	9.06	0.44	8.34
22-Apr	42200	6.94	0.110	9.76	0.57	8.28
23-Apr	34600	26.75	0.322	9.92	0.37	11.20

Table D (K)
Kennebec River Sampling 10 Mar-7 July '94

date	outflow cfps	NH4 μM	NO2 μM	NO3+NO2 μM	PO4 μM	SiO2 μM
24-Apr	29400	6.24	0.231	9.35	1.20	8.91
25-Apr	29700	23.53	0.262	9.25	0.36	11.20
26-Apr	31600	12.59	0.676	11.60	0.34	7.93
27-Apr	36800					
28-Apr	48100	11.17	0.116	9.64	0.64	9.14
29-Apr	53300	16.14	2.338	18.37	0.37	46.60
30-Apr	45100	9.43	0.546	12.67	0.64	41.10
1-May	39000	27.89	0.405	11.89	0.33	19.90
2-May	44800	24.39	2.904	16.43	0.69	20.20
3-May	41700	25.25	0.349	9.69	0.30	37.80
4-May	35900	26.21	0.394	12.05	0.84	19.40
5-May	32900	10.13	0.121	8.77	0.19	11.30
6-May	33300	29.70	0.332	11.88	0.28	43.20
7-May	32900	11.56	0.693	7.12	0.14	28.20
8-May	33000	16.08	3.987	10.08	0.19	2.63
9-May	46000	8.47	0.830	2.76	0.30	6.07
10-May	44500	6.39	0.194	10.69	0.40	18.50
11-May	38500					
12-May	35200	8.04	0.178	9.71	0.95	19.10
13-May	37400	12.07	0.225	12.28	1.04	32.00
14-May	35600	42.62	1.026	5.32	0.61	114.00
15-May	30990	41.84	0.439	10.05	0.44	80.40
16-May	29100	4.23	0.105	10.14	0.47	24.40
17-May	29400	3.00	0.100	8.28	0.34	37.60
18-May	34700	20.24	0.545	10.53	0.82	52.70
19-May	30600	5.13	0.120	8.70	0.53	32.50
20-May	27200	4.25	0.090	9.13	0.57	50.01
21-May	24300	2.10	0.152	8.48	0.25	18.60
22-May	22740	8.42	0.164	9.39	1.53	10.20
23-May	21410	3.29	0.171	8.23	0.33	16.80
24-May	19270	21.73	0.444	8.58	1.01	23.60
25-May	17570	38.29	0.517	9.54	0.65	32.20
26-May	16180					
27-May	18100					
28-May	21220					
29-May	19270					
30-May	17570					
31-May	16180					
1-Jun	17580					
2-Jun						
3-Jun	16640					
4-Jun	15630					
5-Jun	13760					
6-Jun	12240					
7-Jun	11320					
8-Jun	11440					

Table D (K)
Kennebec River Sampling 10 Mar-7 July '94

date	outflow cfps	NH4 µM	NO2 µM	NO3+NO2 µM	PO4 µM	SiO2 µM
9-Jun	14440					
10-Jun	13690					
11-Jun	13260					
12-Jun	11900					
13-Jun	11600					
14-Jun	13330					
15-Jun	14280					
16-Jun	11420					
17-Jun	11430					
18-Jun						
19-Jun	11550					
20-Jun	13940					
21-Jun						
22-Jun	9770					
23-Jun	9820					
24-Jun	10340					
25-Jun	10010					
26-Jun	9010					
27-Jun	9580					
28-Jun	9530					
29-Jun	12100					
30-Jun	11790		0.090	1.14		
1-Jul	11920	15.97	0.232	4.26	0.75	2.84
2-Jul	13290	12.05	0.289	5.61	1.17	5.31
3-Jul	12460	10.42	0.234	6.15	0.59	2.45
4-Jul	12170					
5-Jul	9720					
6-Jul	8650					
7-Jul	9000					

Figure A Longitudinal Hydrography Survey

Each figure shows the vertical section contour plots of the parameter in the Damariscotta, Sheepscot and Kennebec estuaries.

Figure A Methods of Longitudinal Hydrography Survey

Continuous vertical profiles of temperature, salinity, light transmission, and *in situ* chlorophyll fluorescence were measured at all stations using a Neil Brown CTD, a Sea Tech 25-cm path length transmissometer and *in situ* fluorometer. Computation of salinity and density were based on the 1978 Practical Salinity Scale (UNESCO, 1981), and were performed using the software provided by General Oceanics/Neil Brown. The CTD data of June cruise were obtained by a Sea-Bird CTD and salinity and density were calculated using Seasoft version 3.3H. In September 1995 cruise, CTD data were acquired by SEB 25-03 Sealogger CTD and Seasoft version 4.213. *In situ* chlorophyll fluorescence was measured by WETStar minature fluorometer. Vertical section contour plots of the parameters measured or calculated were made using Surfer for Windows software (Golden Software, Inc.). The CTD, light transmission and *in situ* fluorescence data are available on disk as ASCII files. Due to instrumental failure, light transmission data were not processed and presented. The station locations are the same as those for the biogeochemical data and are listed in Table A.

All stations except September 1995 were started at the mouth of the estuary at high tide, with sampling progressing up estuary against the ebbing tide. In September 1995 stations were repeated four times during a single tidal cycle.

References :

UNESCO. 1981. Background papers and supporting data on the practical salinity scale 1978. UNESCO Technical Papers in Marine Science, No. 37. 144p.

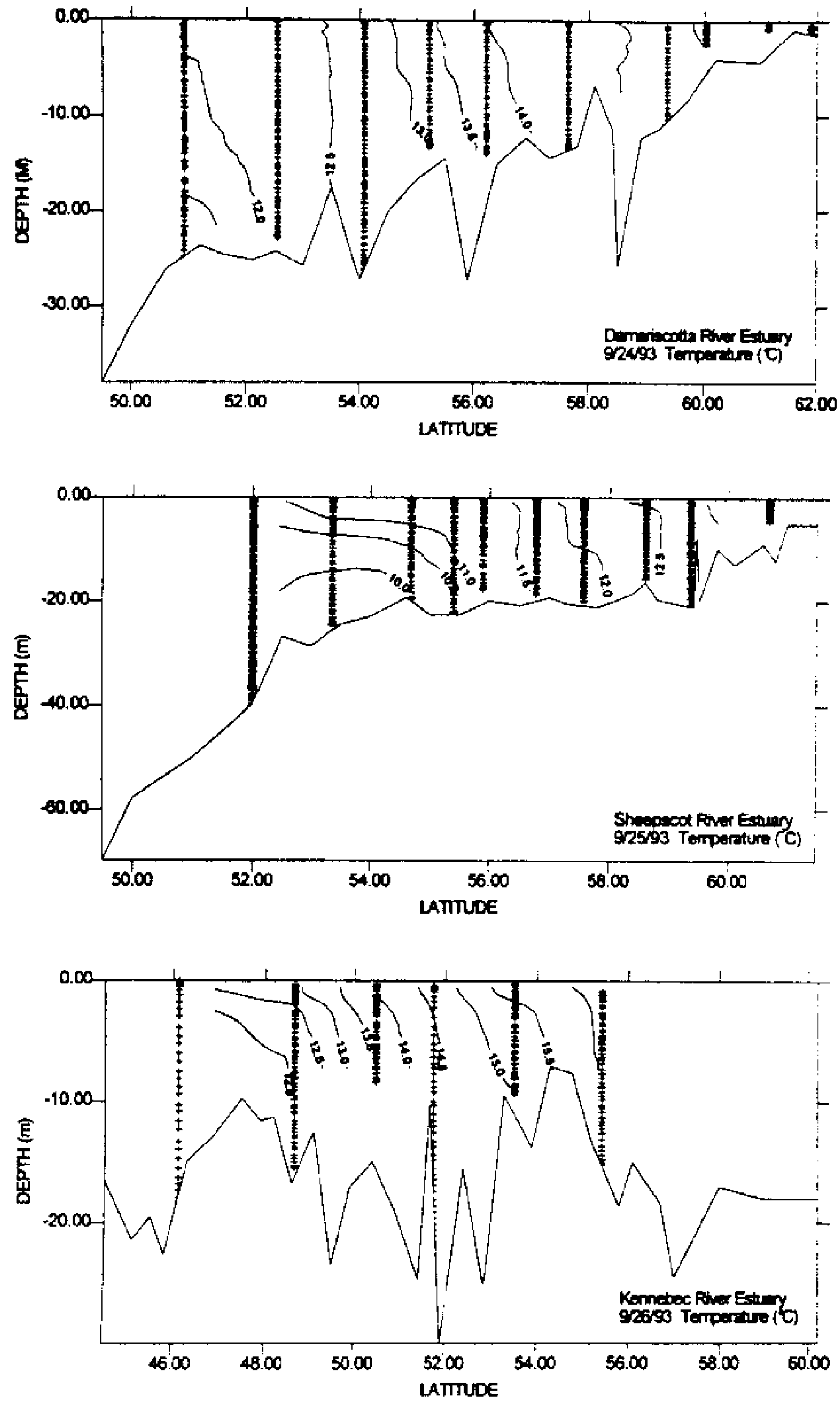

Figure A.1.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in September 1993. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

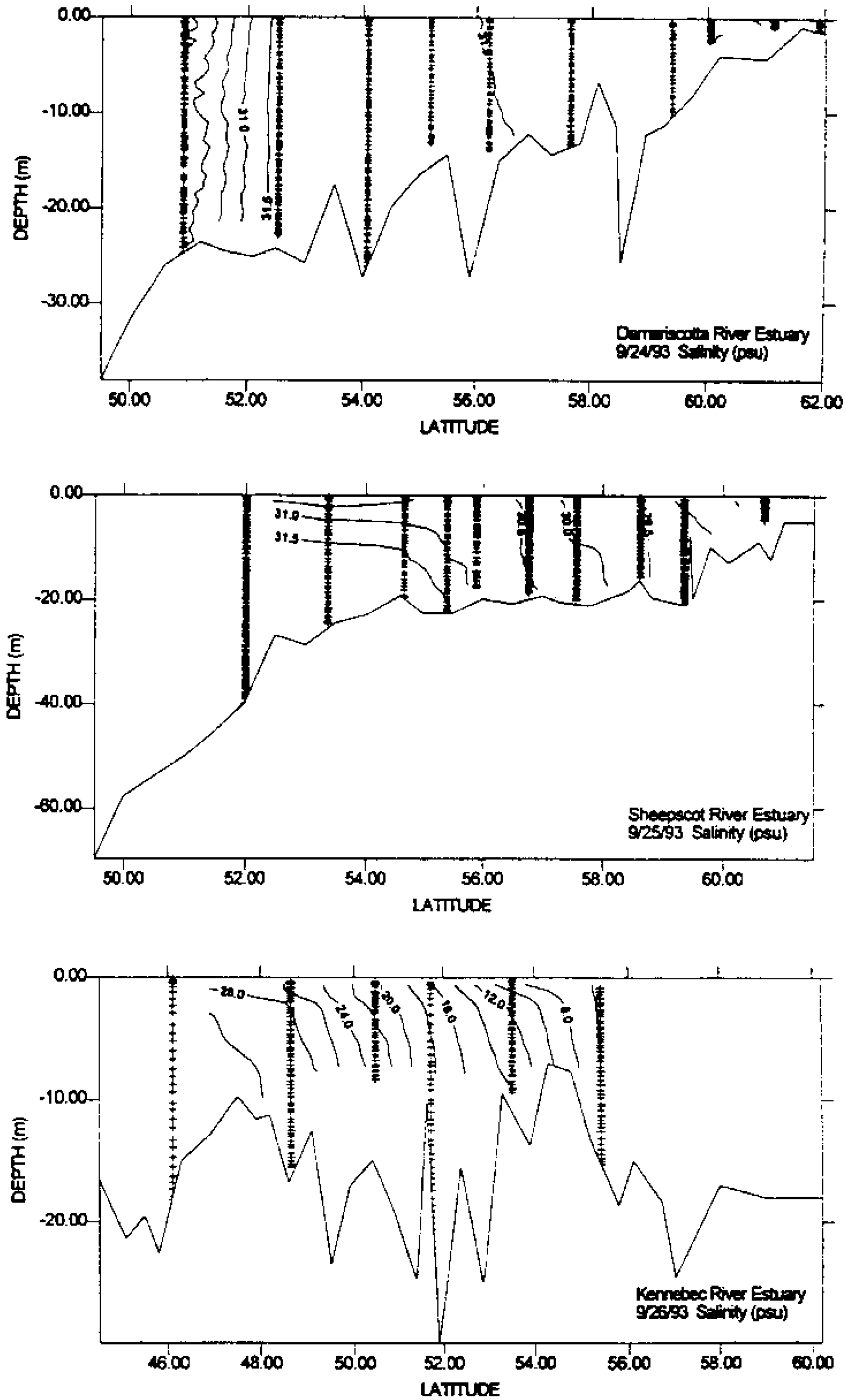

Figure A.1.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in September 1993. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

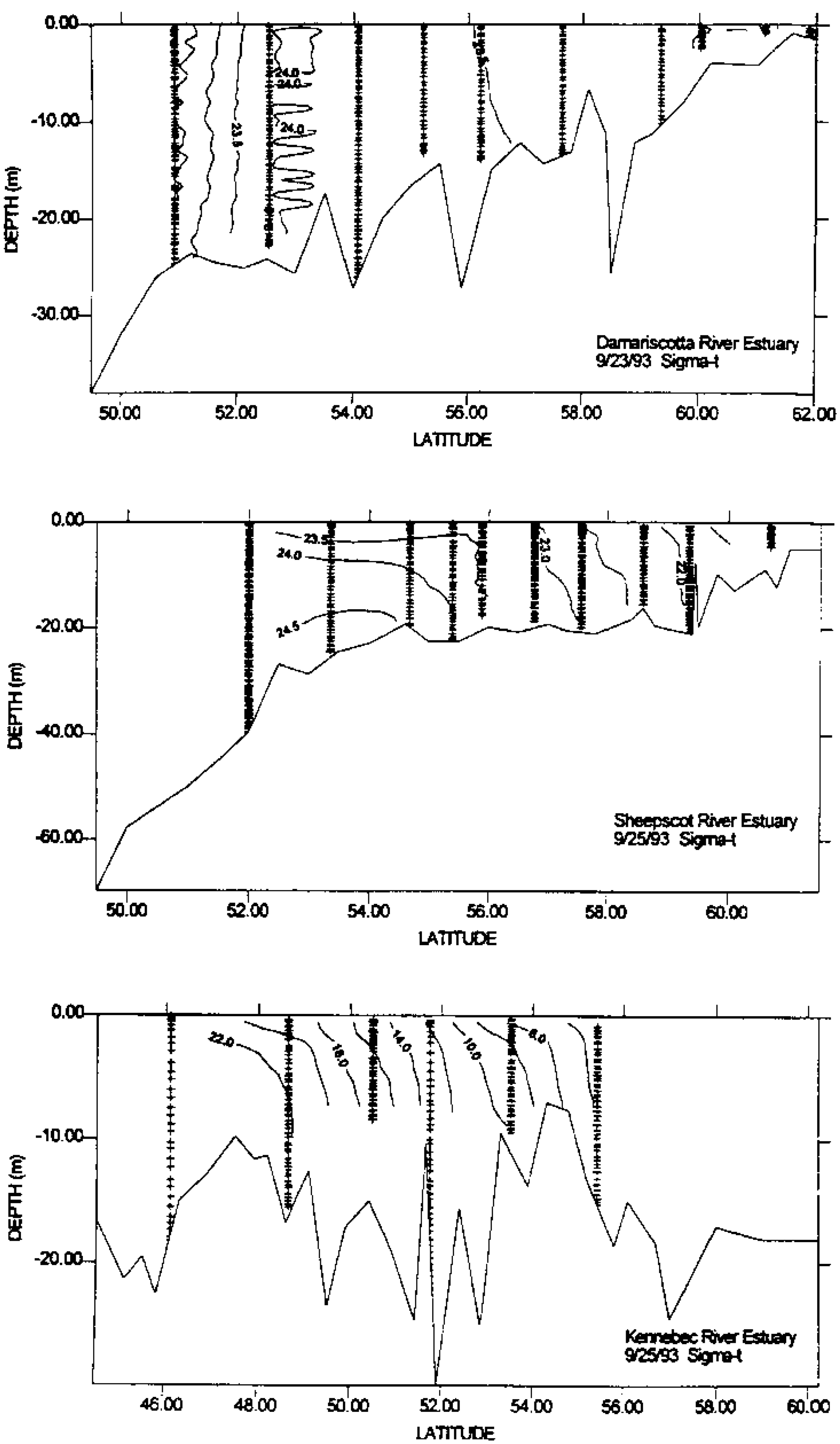

Figure A.1.3. Vertical section contour plots of Sigma-t, from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in September 1993. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

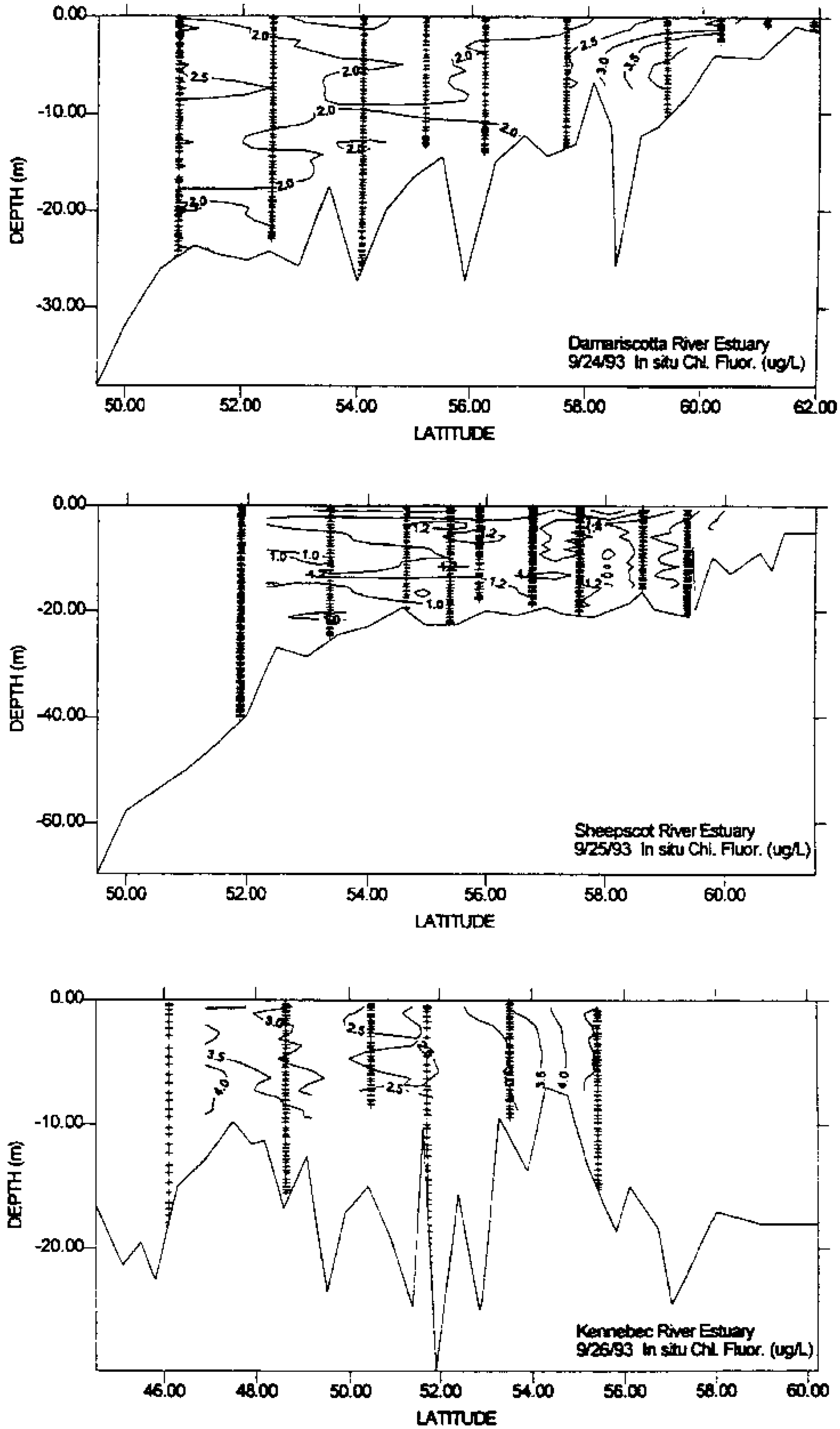

Figure A.1.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in September 1993. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

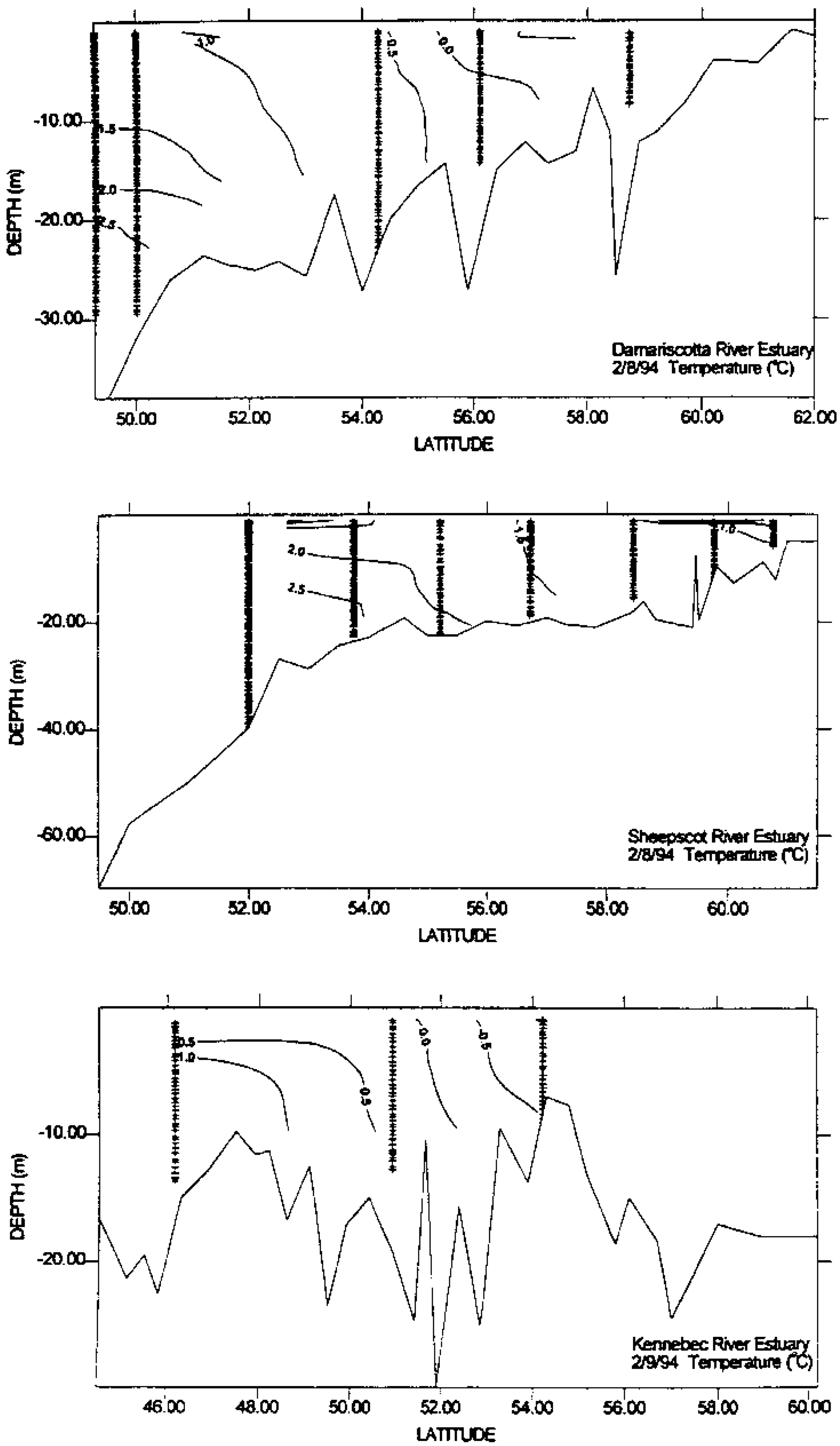

Figure A.2.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in February 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

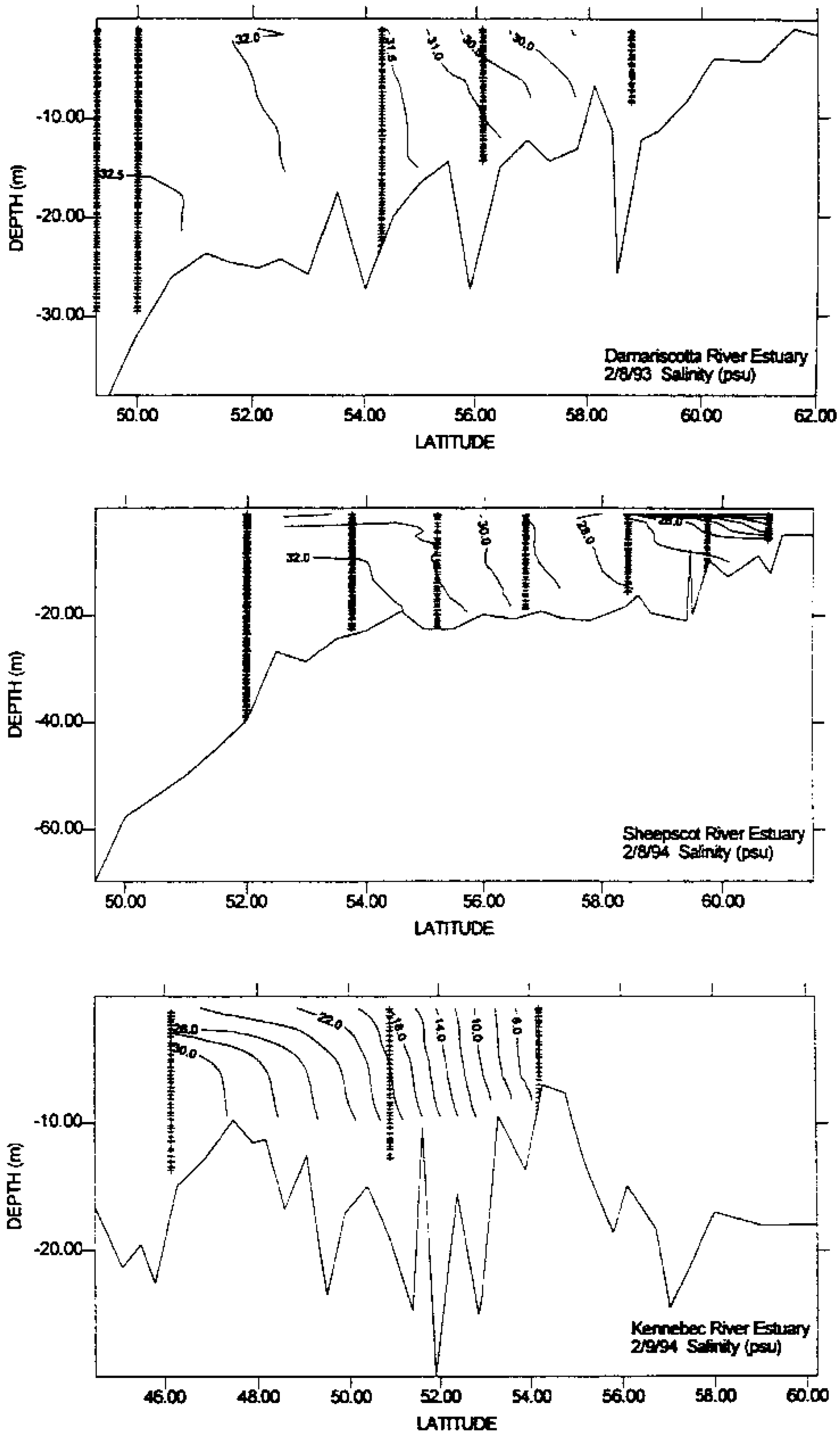

Figure A.2.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in February 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crossses at each station.

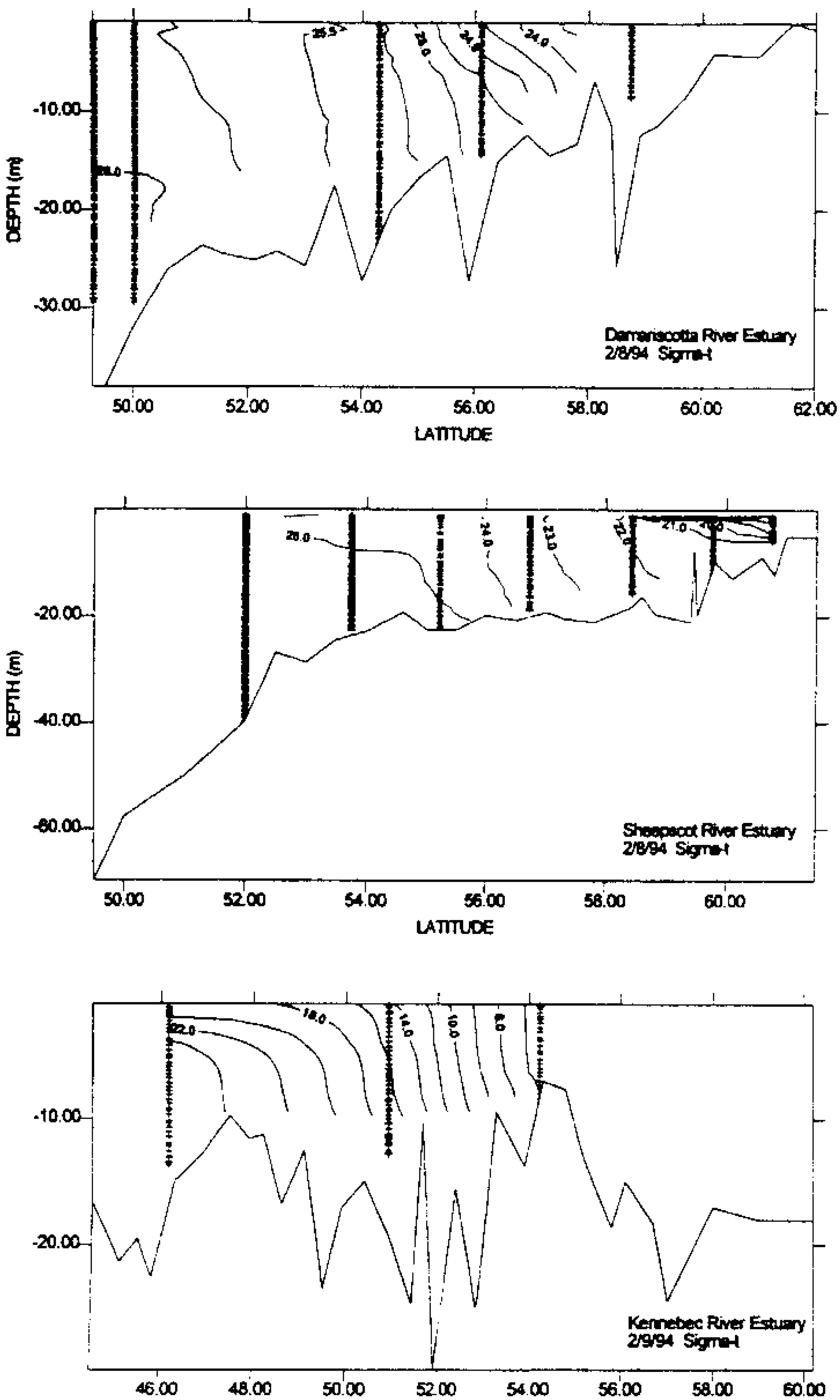

Figure A.2.3. Vertical section contour plots of Sigma-t, from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in February 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

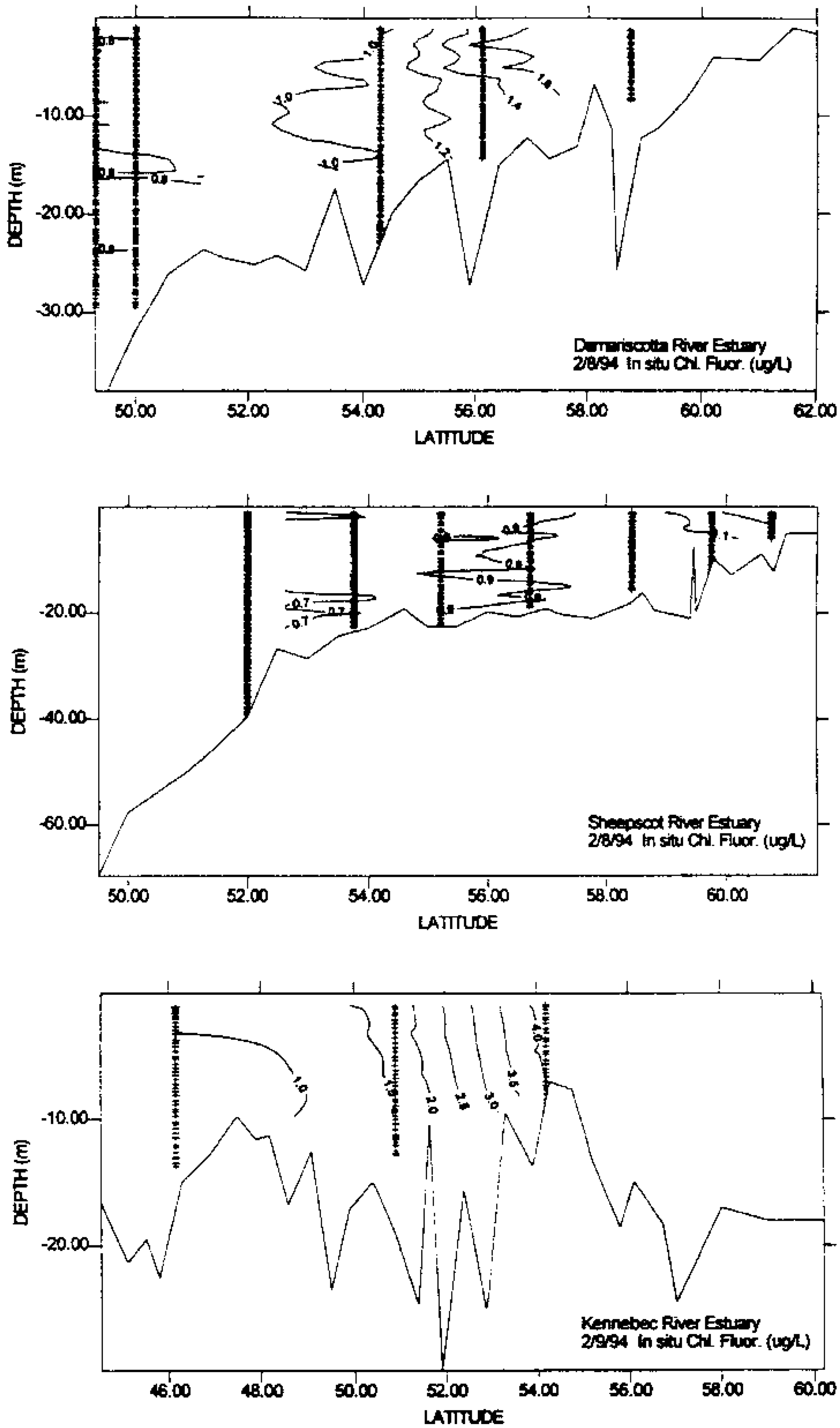

Figure A.2.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in February 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

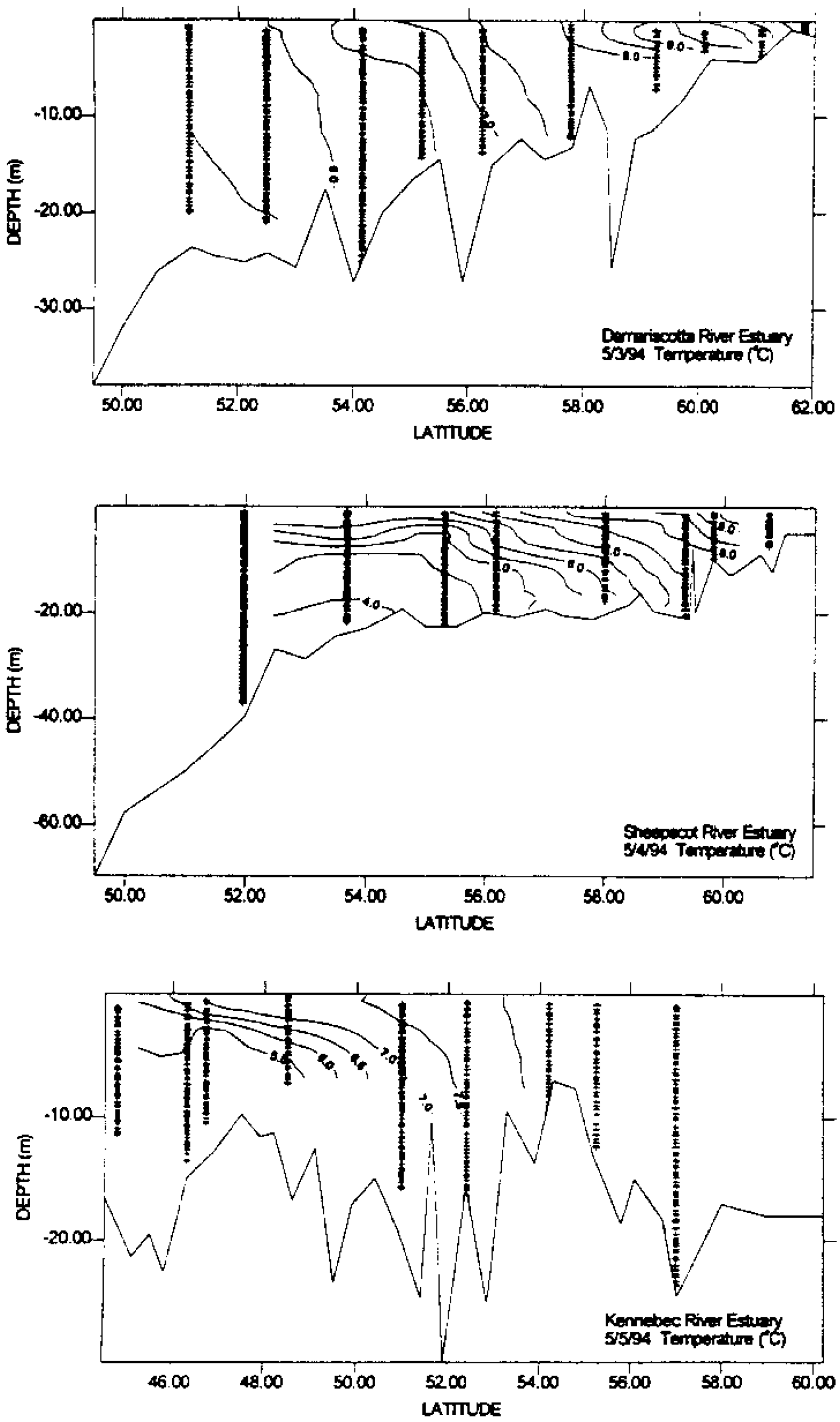

Figure A.3.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in May 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

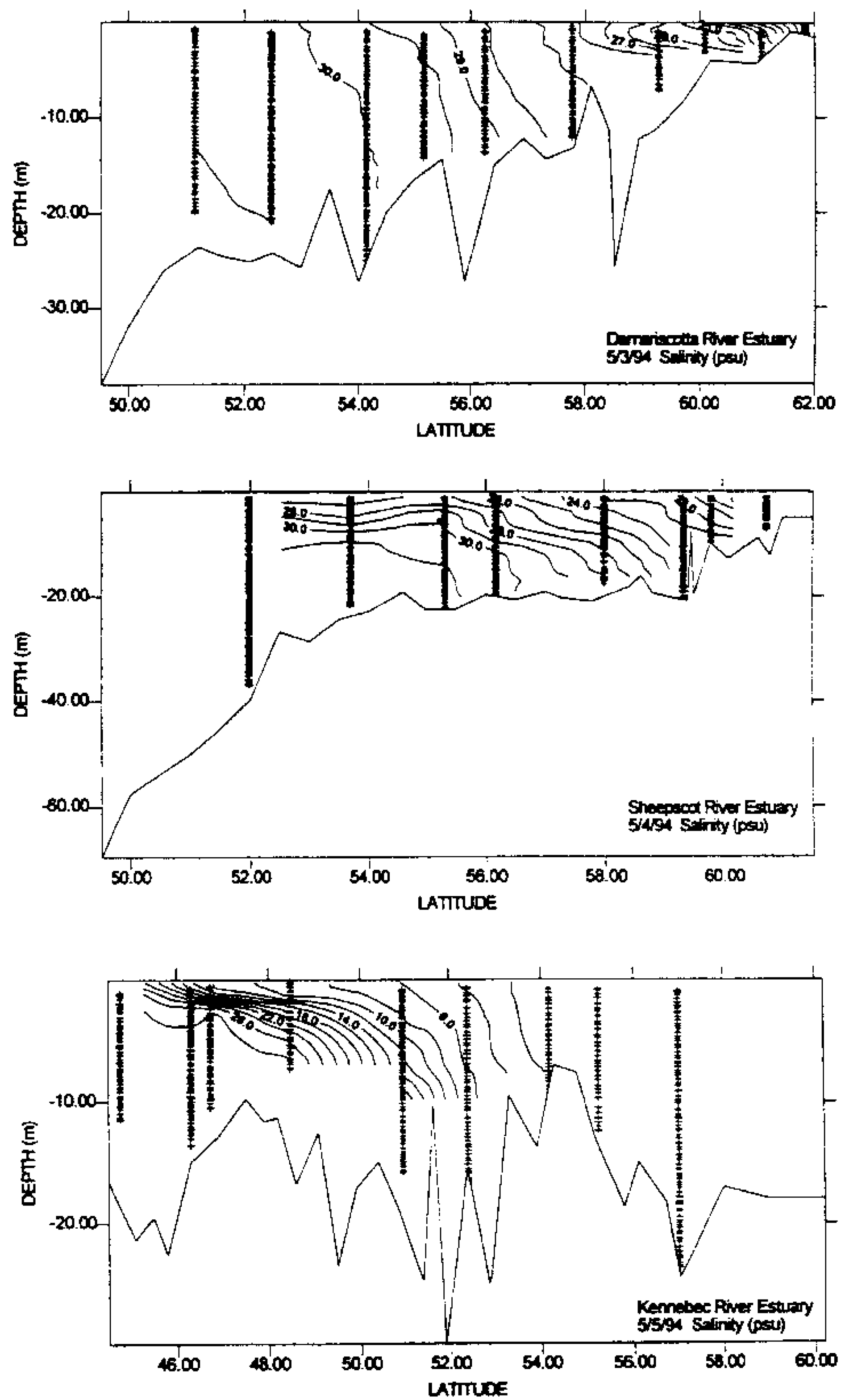

Figure A.3.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in Damariscotta, Sheepscot and Kennebec River estuaries in May 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

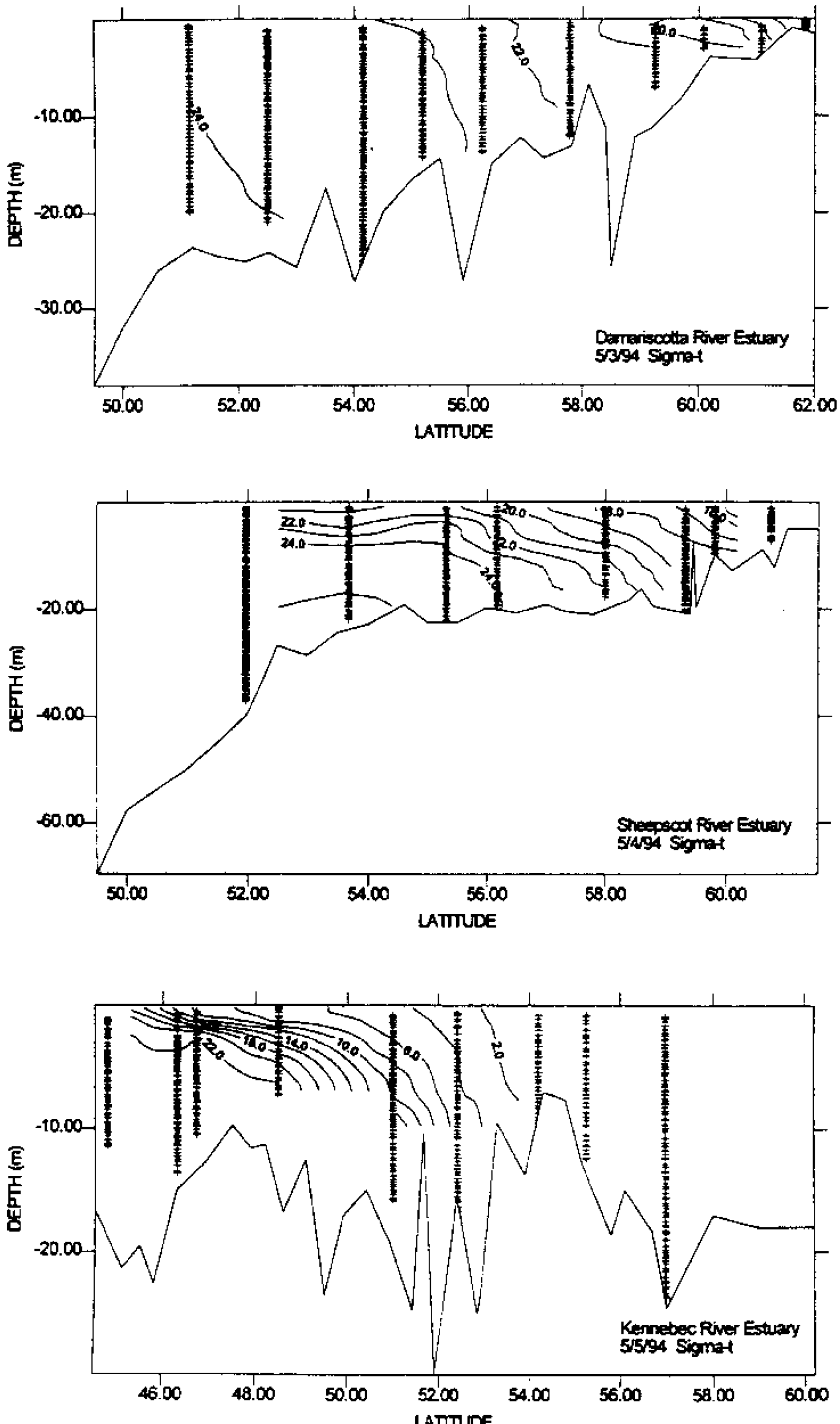

Figure A.3.3. Vertical section contour plots of Sigma-t, from the mouth to the head, in Damariscotta, Sheepscot and Kennebec River estuaries in May 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

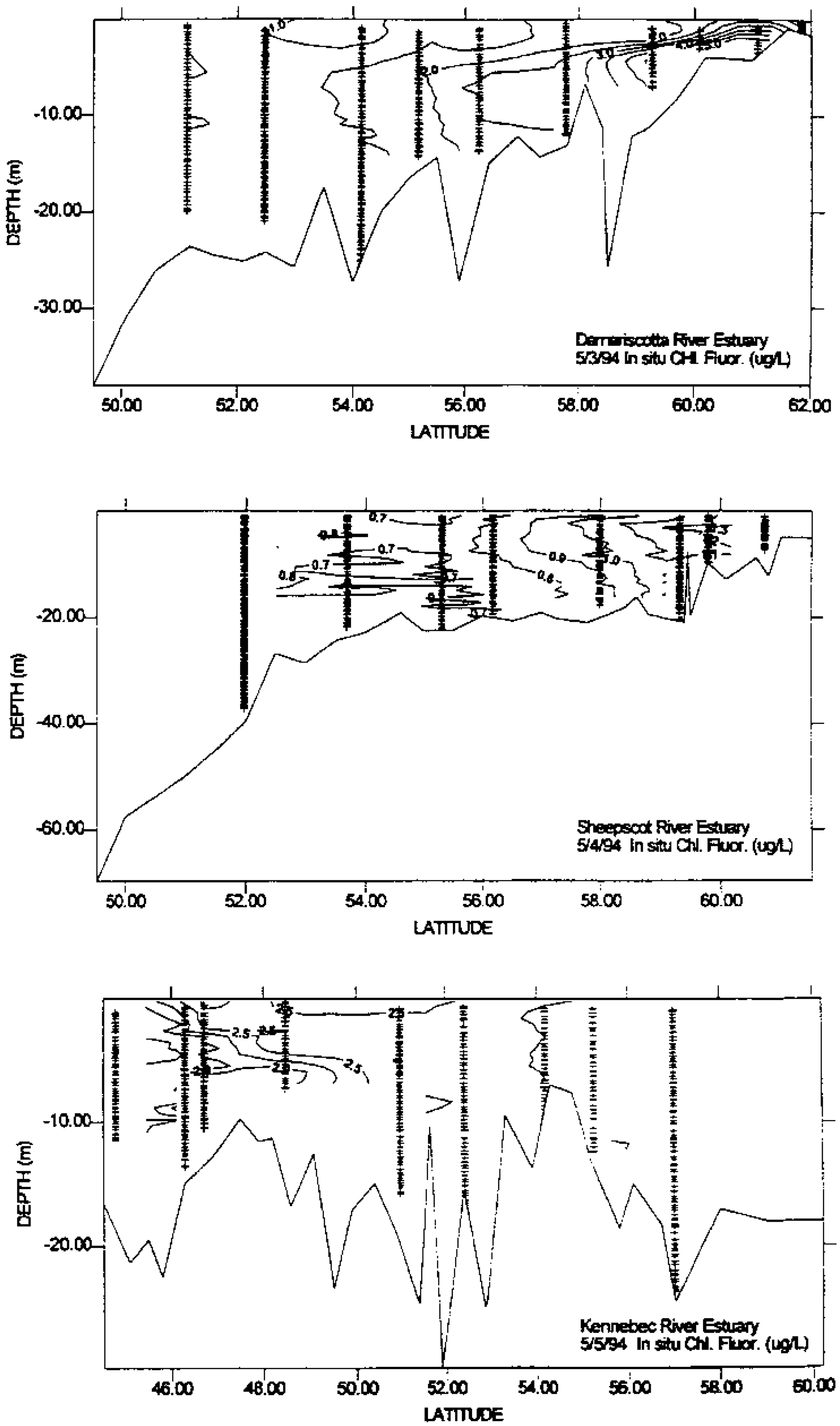

Figure A.3.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in Damariscotta, Sheepscot and Kennebec River estuaries in May 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

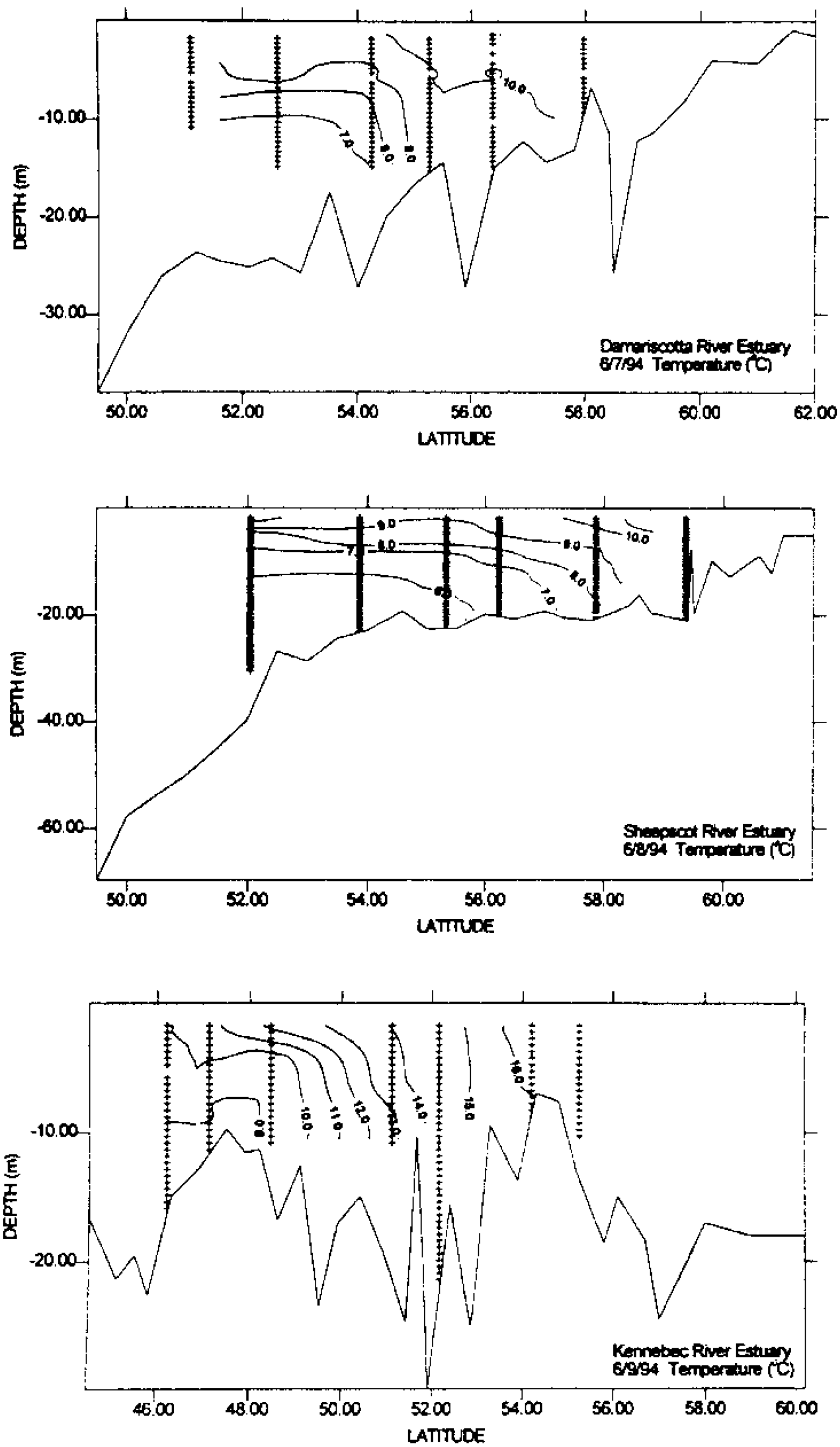

Figure A.4.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in June 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

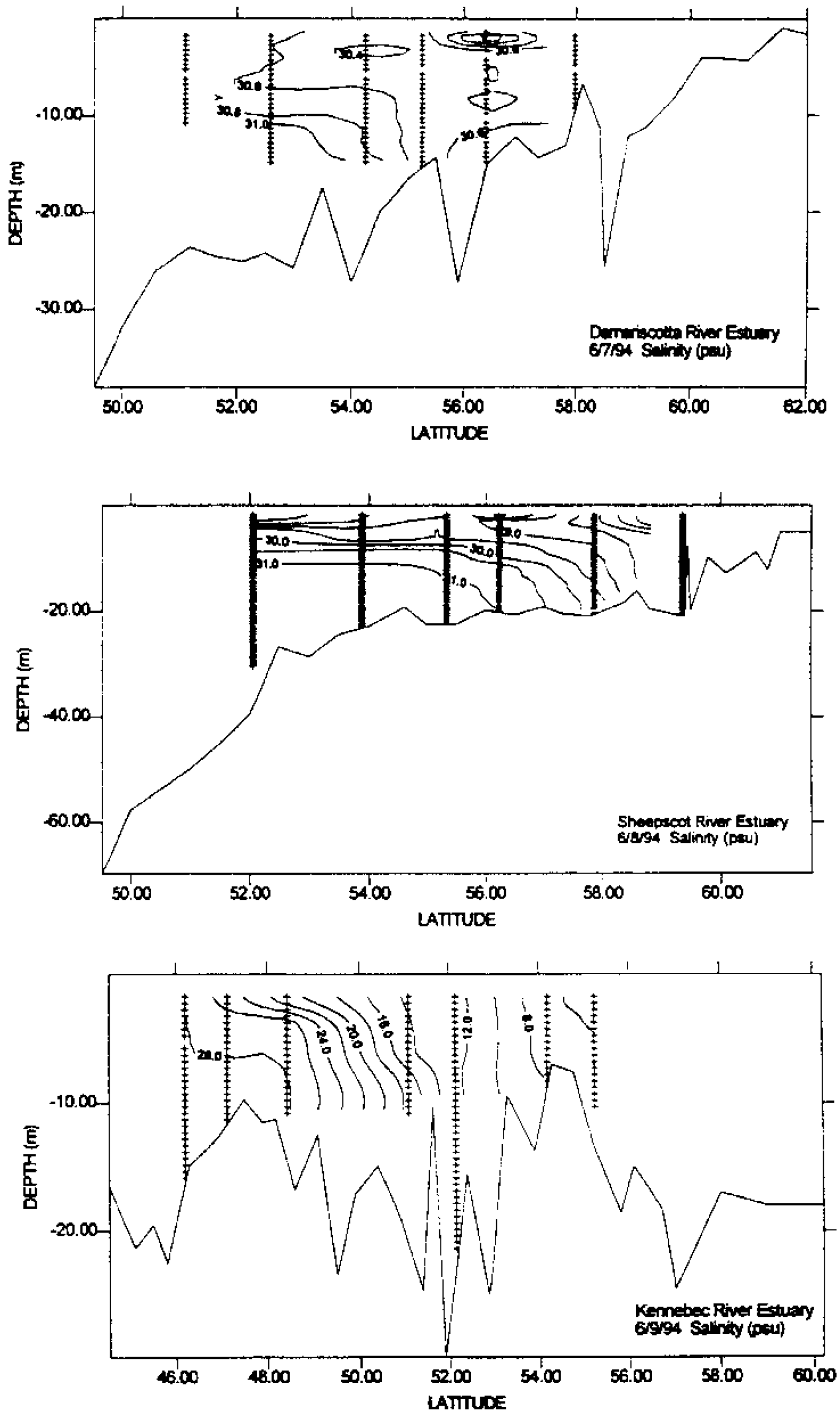

Figure A.4.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in June 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

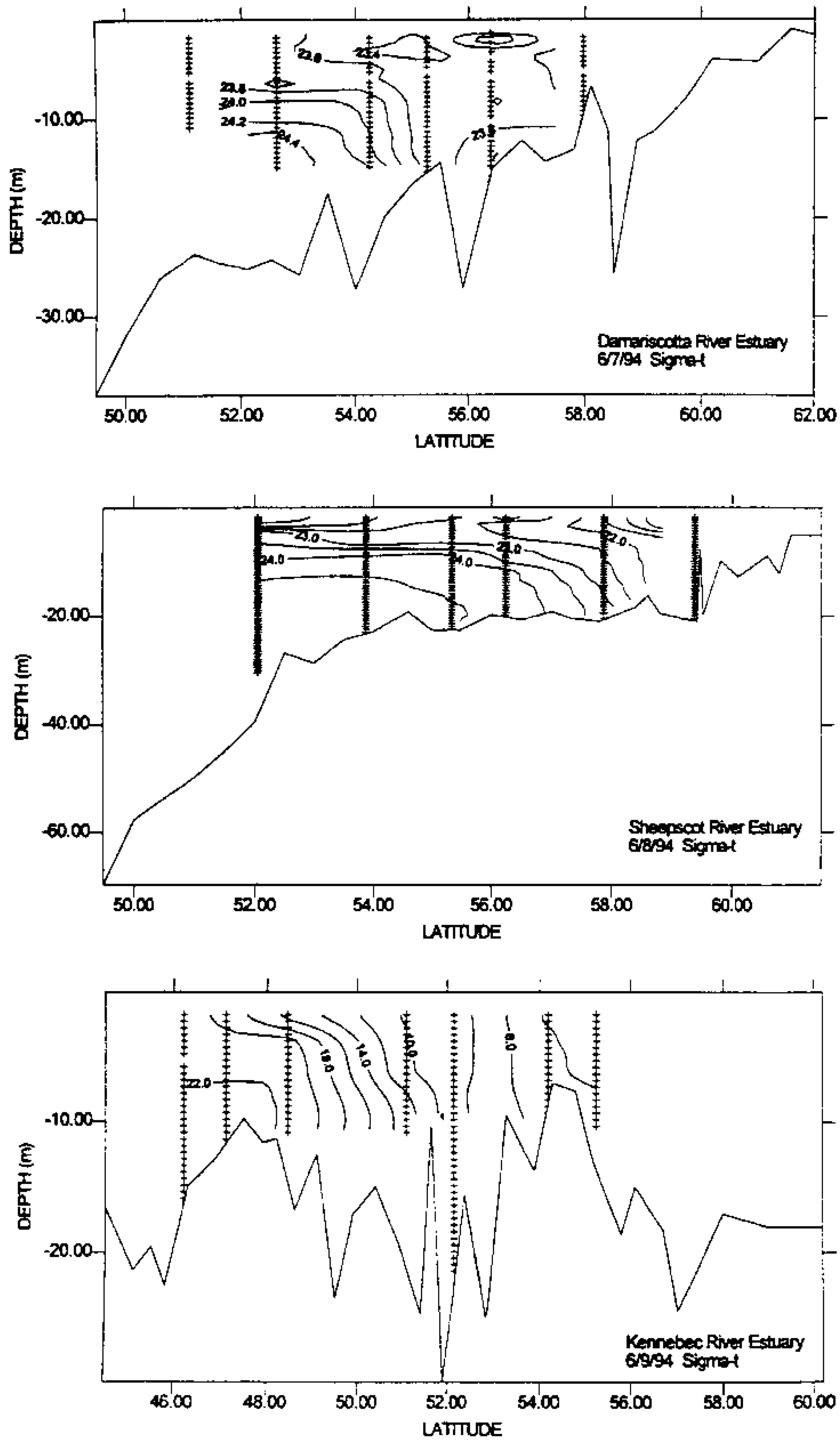

Figure A.4.3. Vertical section contour plots of Sigma-t, from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in June 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

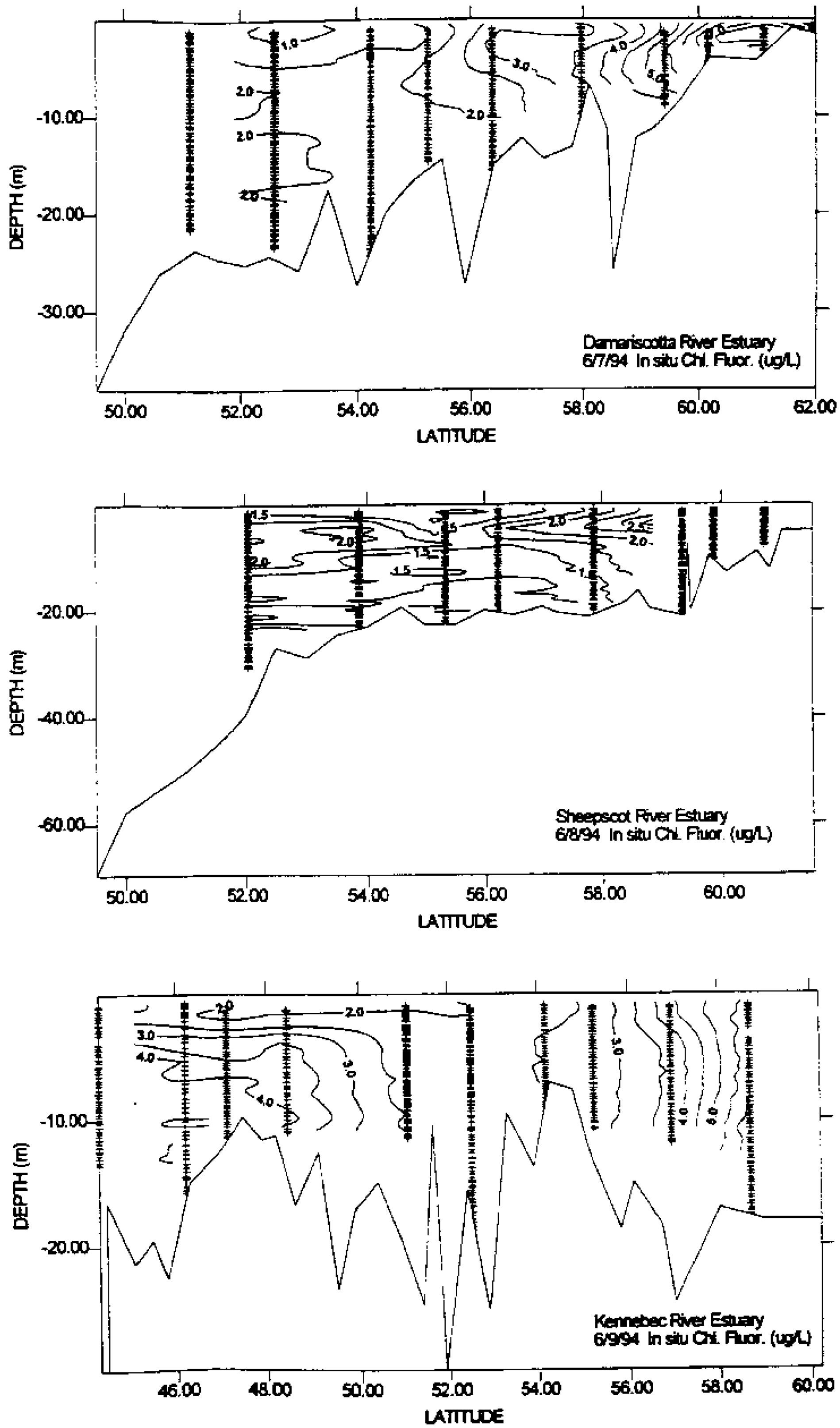

Figure A.4.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in June 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

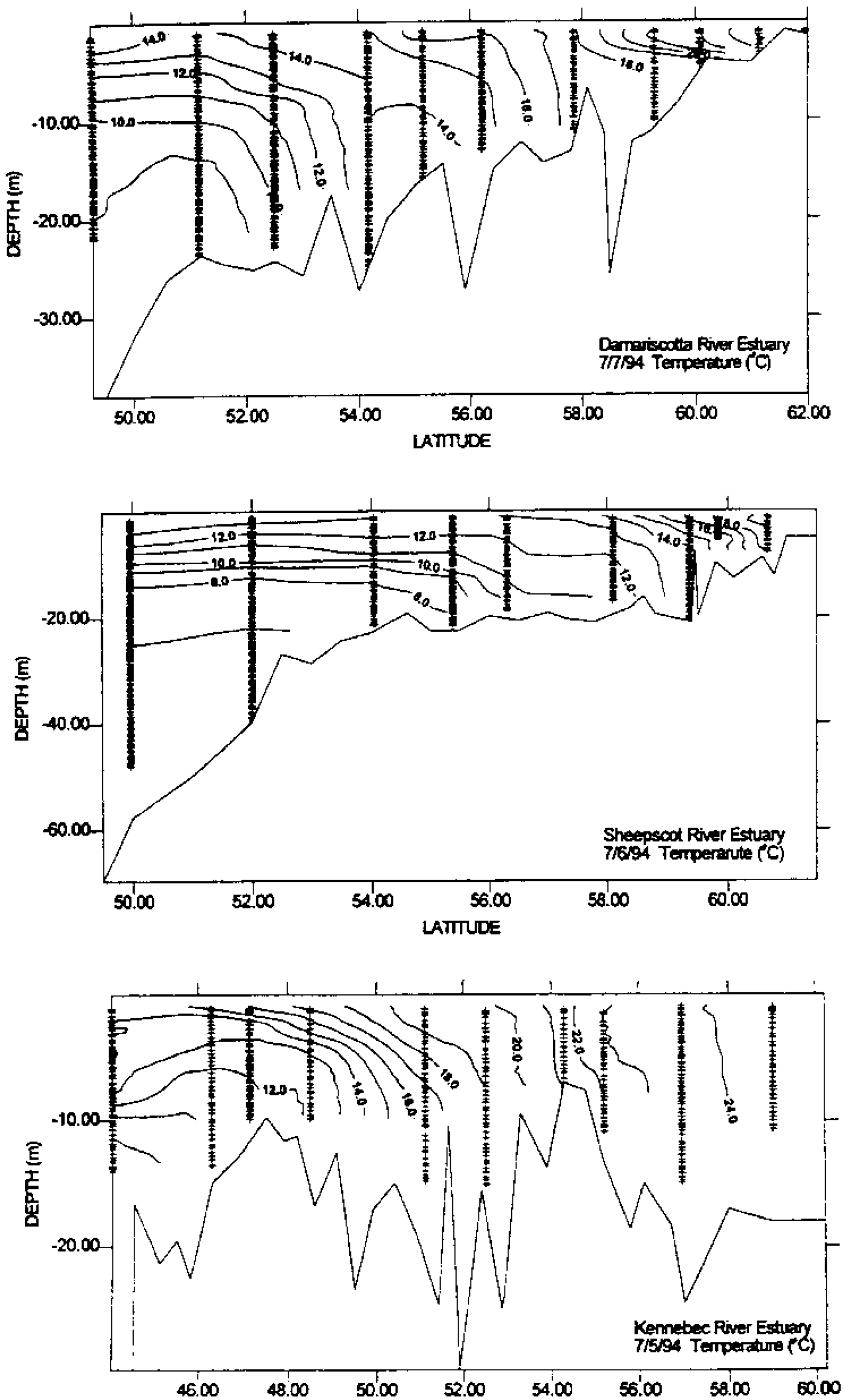

Figure A.5.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in July 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

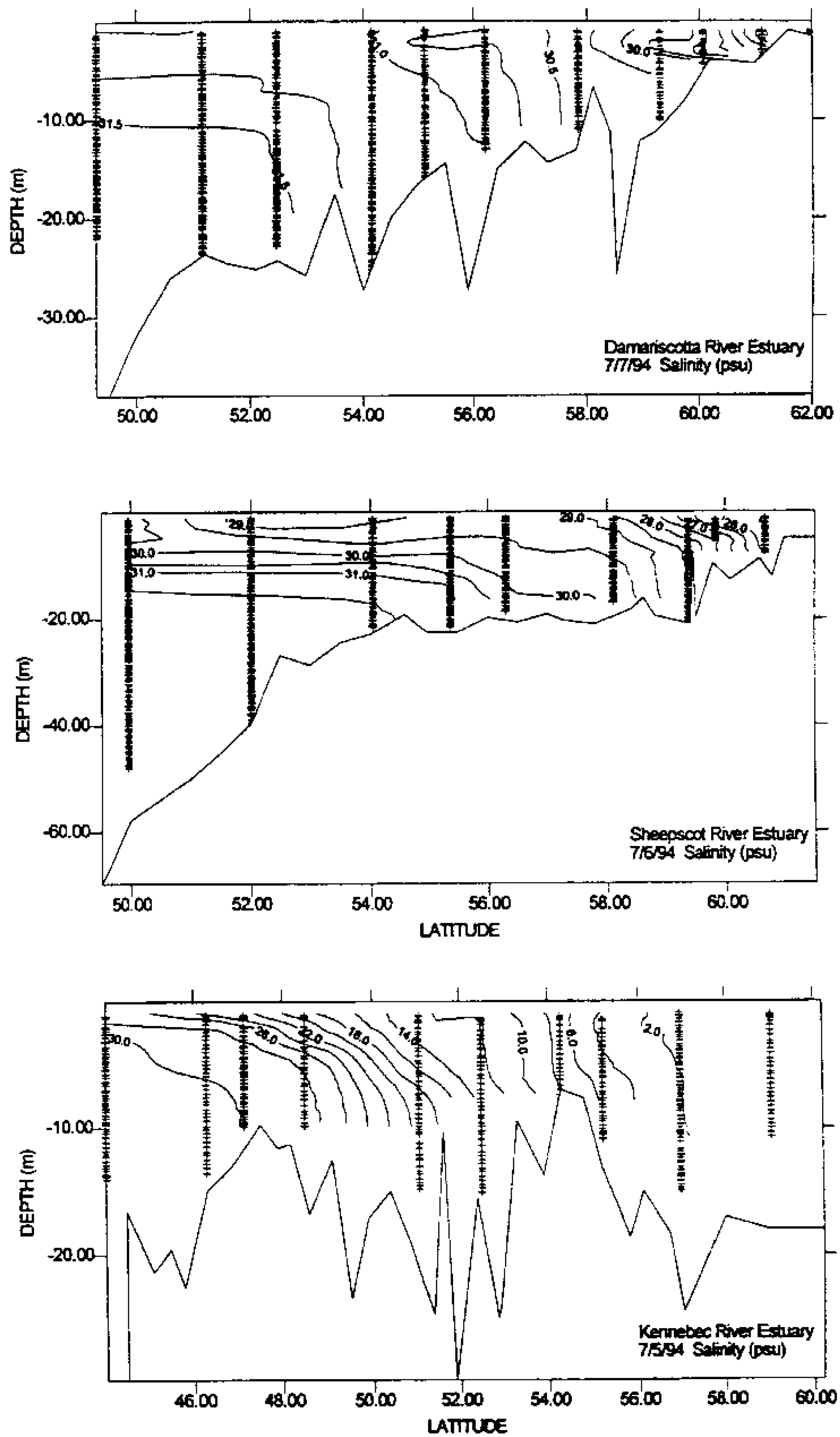

Figure A.5.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in July 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

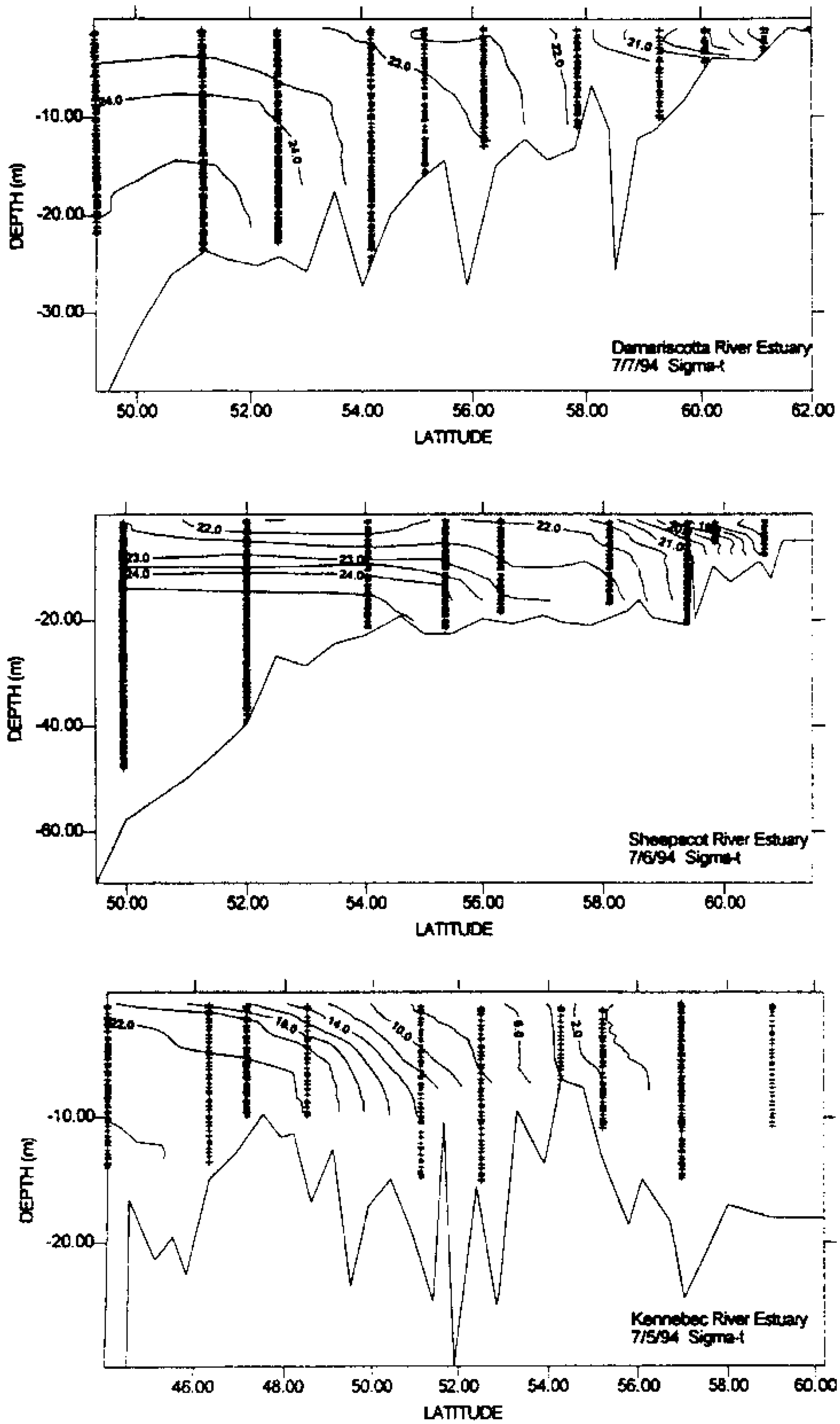

Figure A.5.3. Vertical section contour plots of sigma-t, from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in July 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

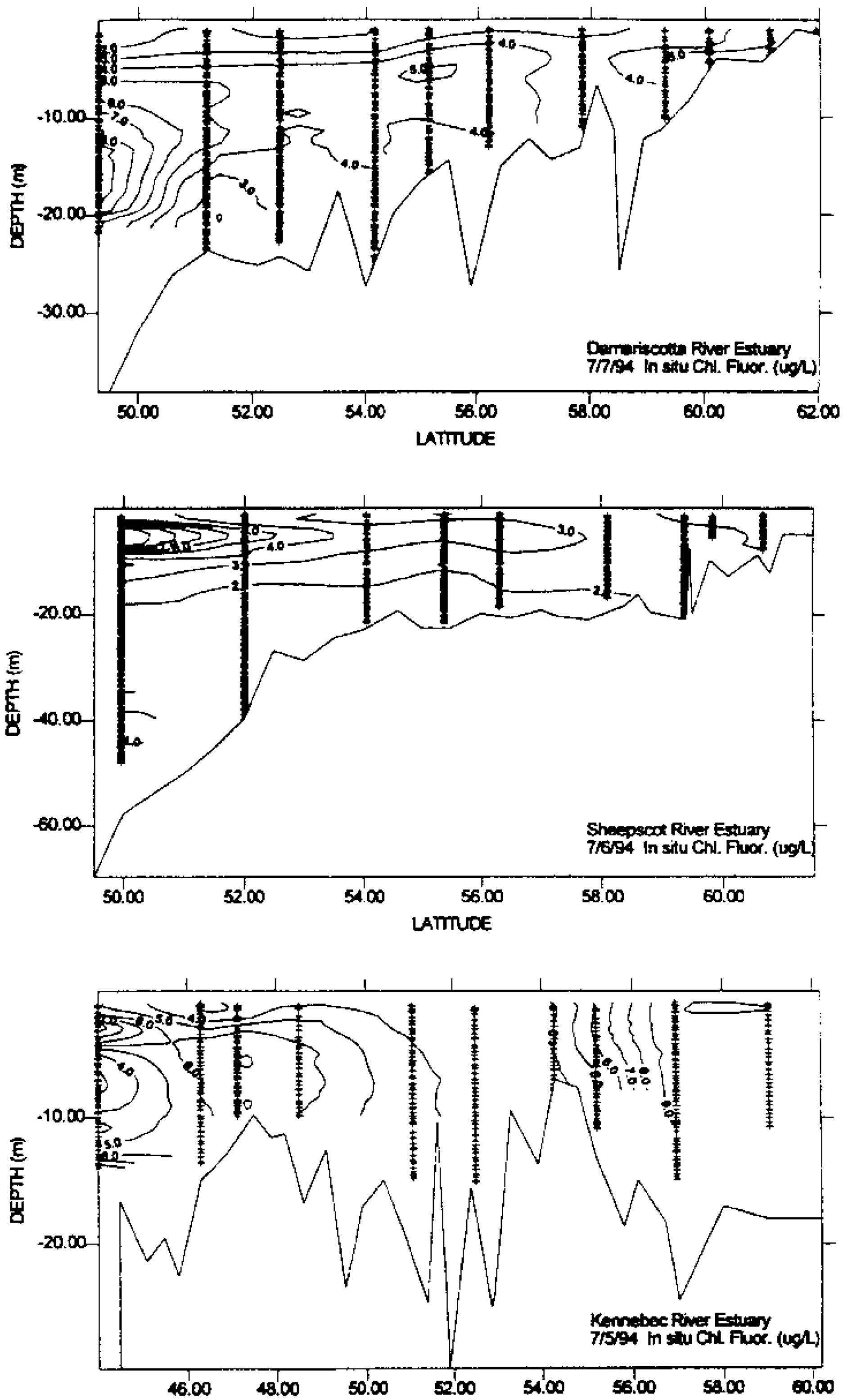

Figure A.5.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in July 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

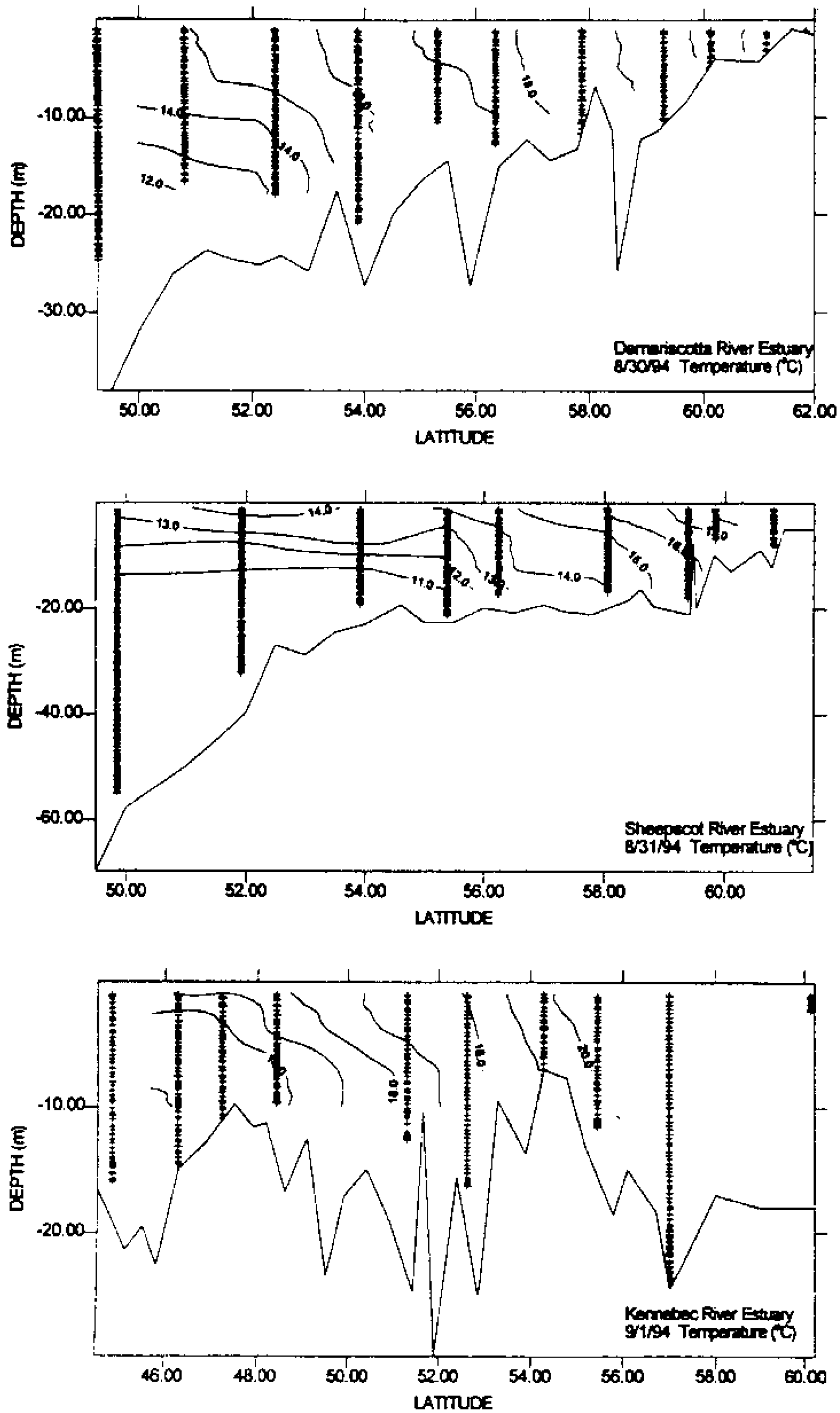

Figure A.6.1. Vertical section contour plots of temperature (°C), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in August 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

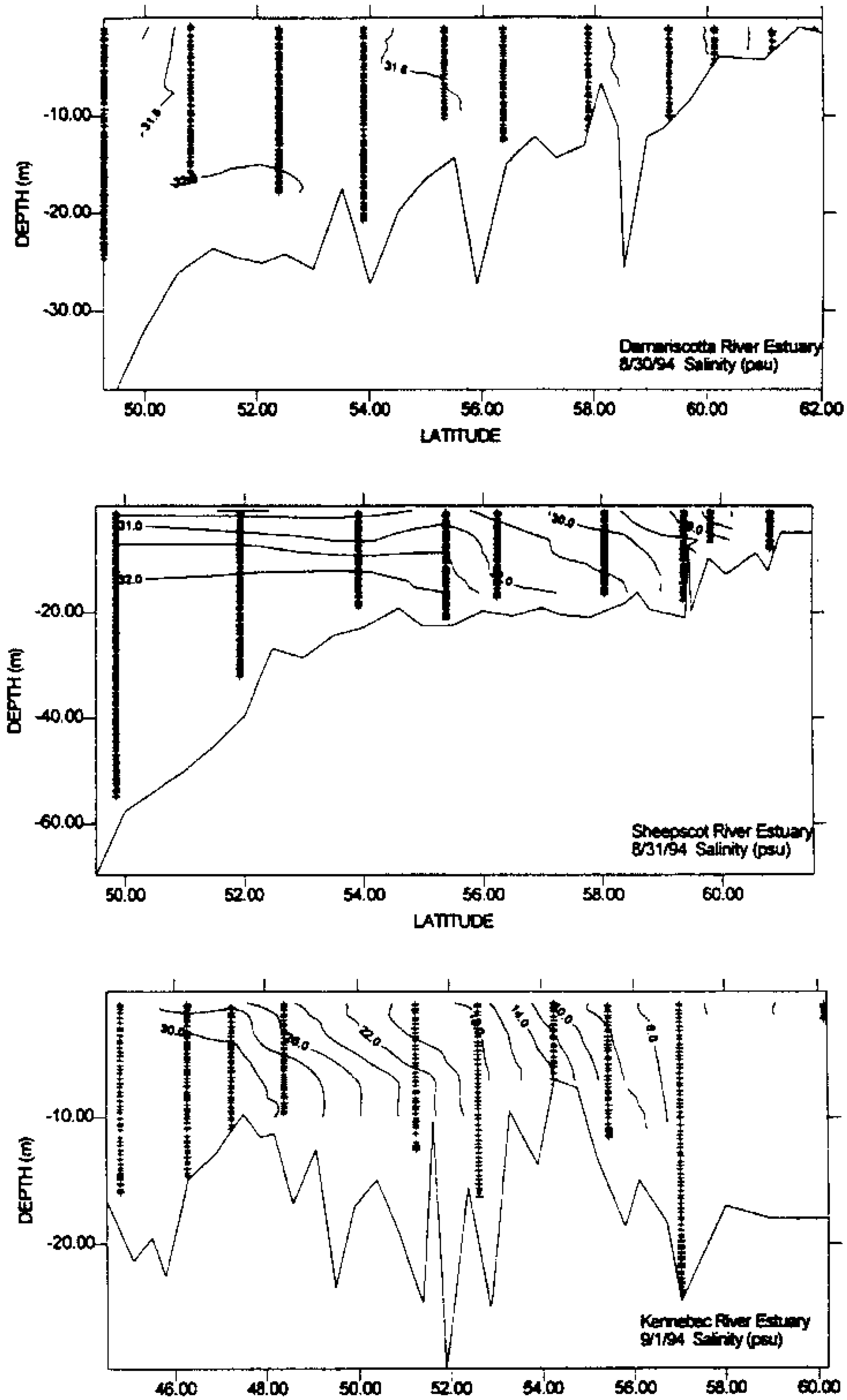

Figure A.6.2. Vertical section contour plots of salinity (psu), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in August 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

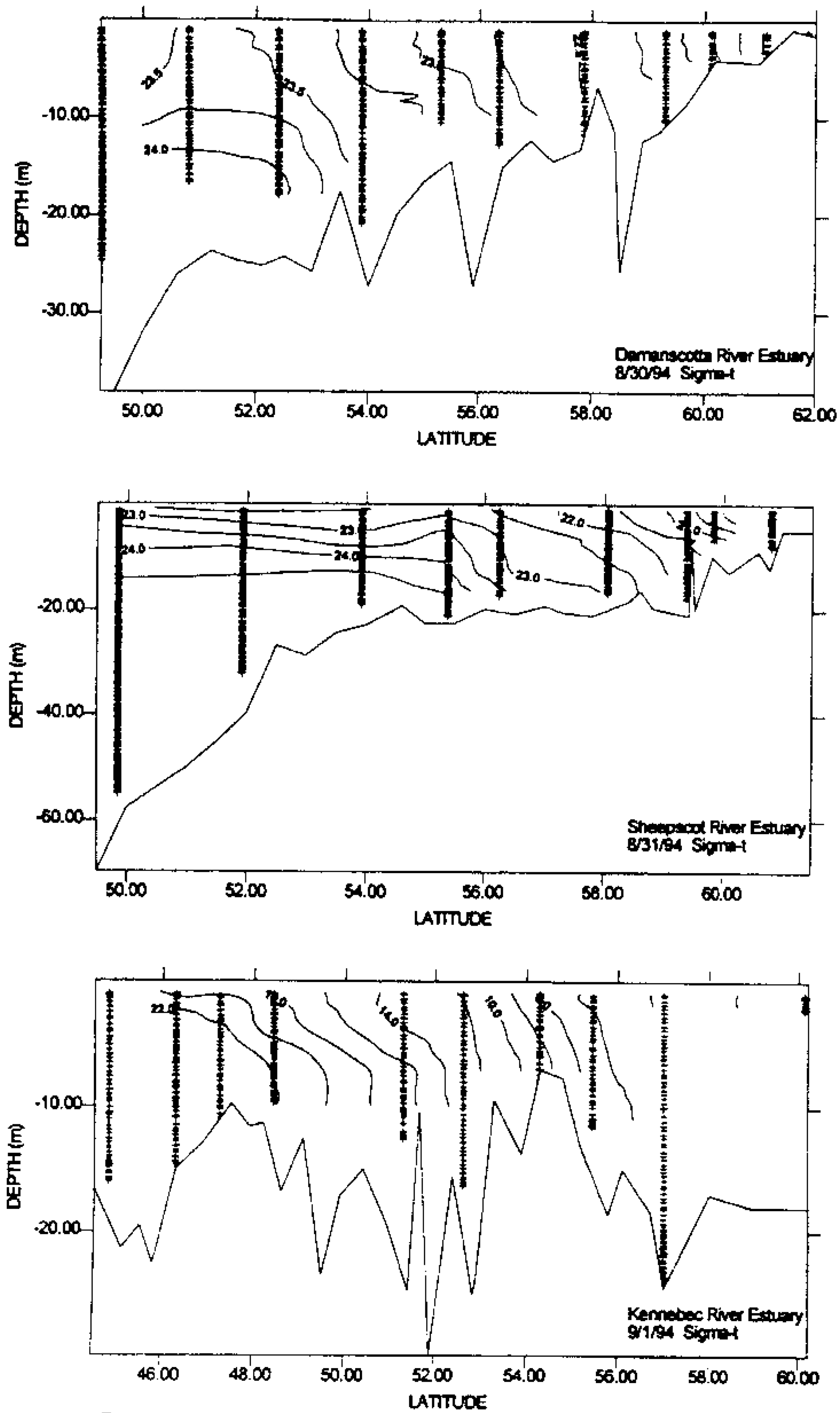

Figure A.6.3. Vertical section contour plots of sigma-t, from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in August 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

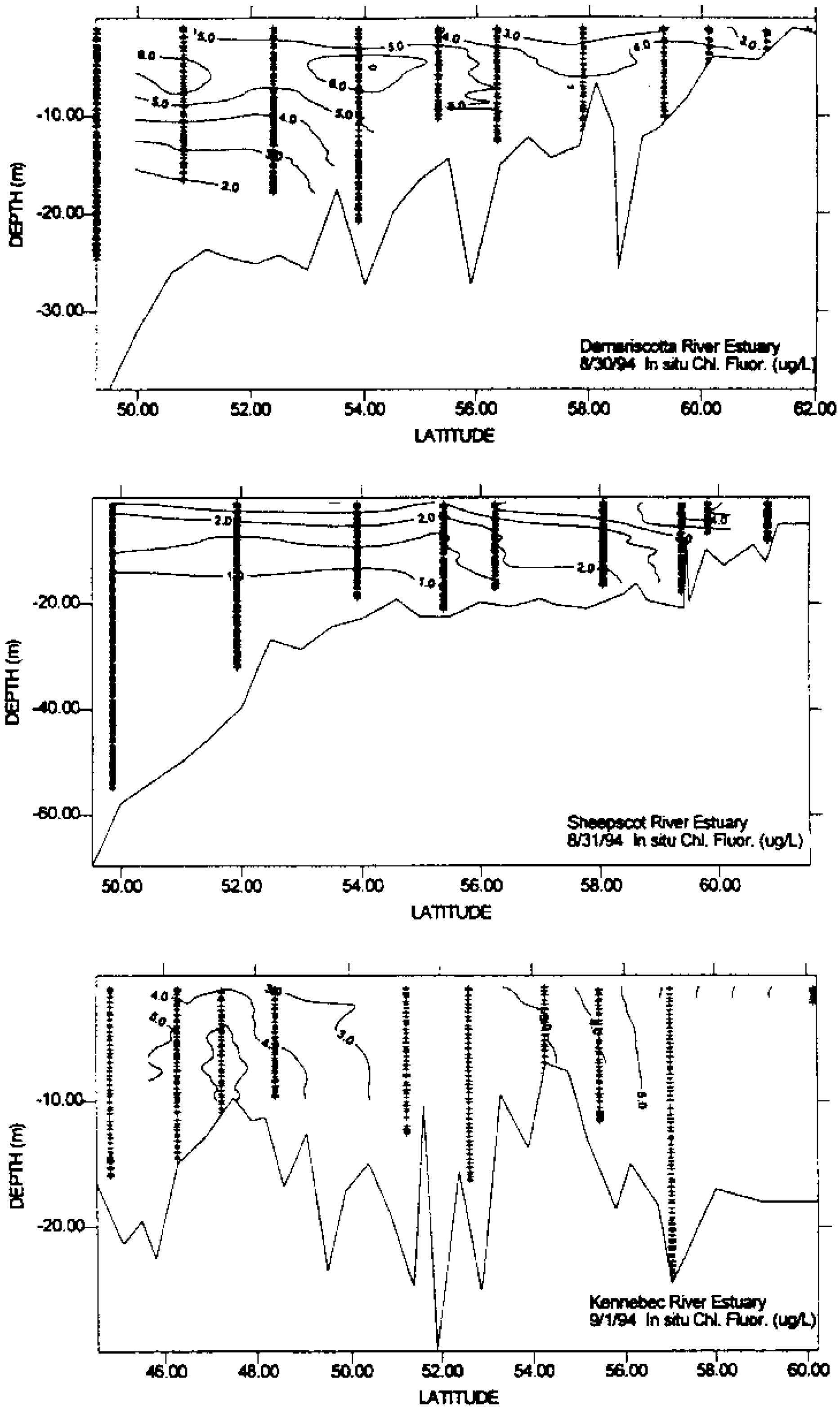

Figure A.6.4. Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Damariscotta, Sheepscot and Kennebec River estuaries in August 1994. Latitude is given as minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

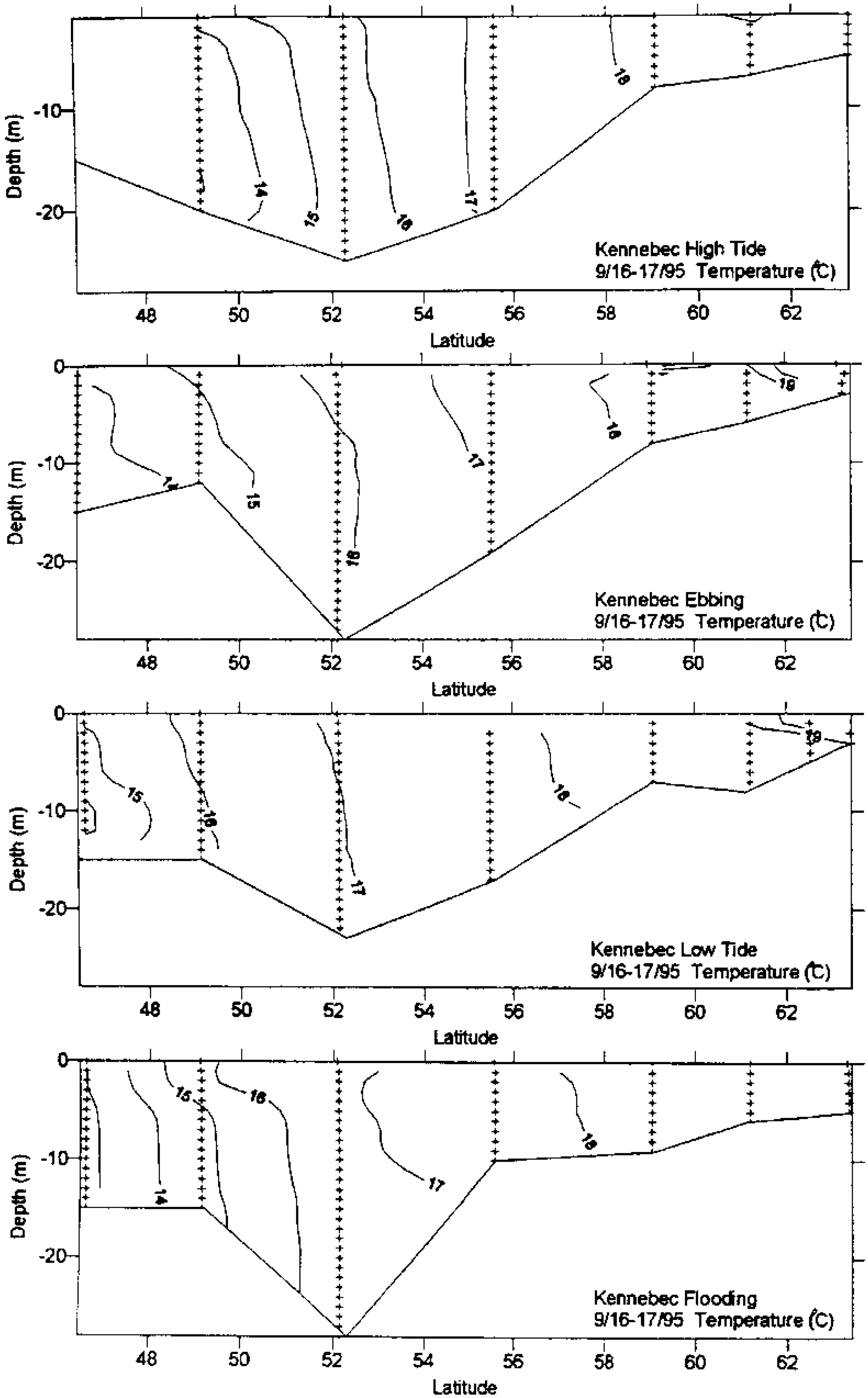

Figure A.7.1 Vertical section contour plots of Temperature (℃), from the mouth to the head, in the Kennebec River estuary at 3 hour intervals on September 16-17, 1995. Latitude is in minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

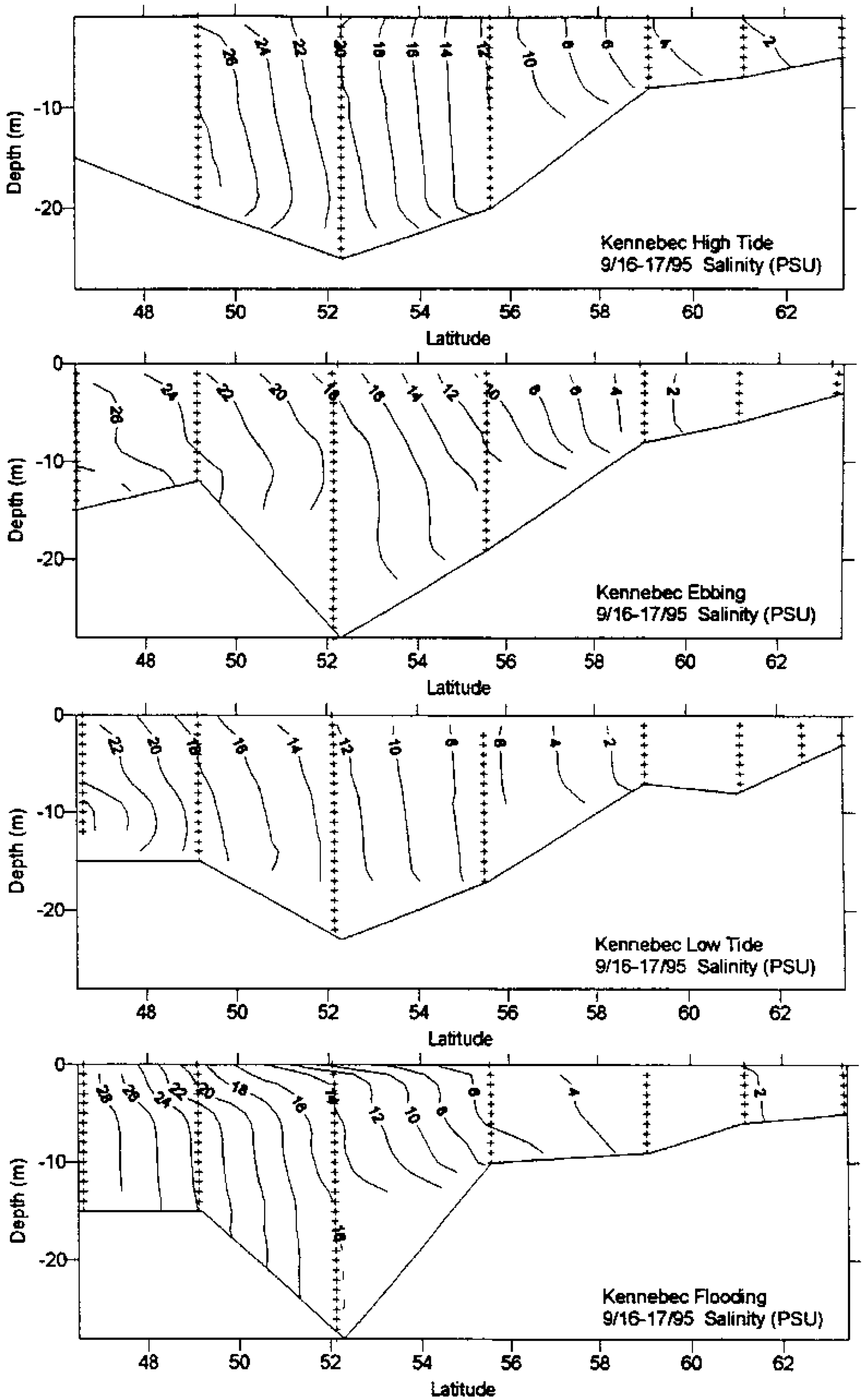

Figure A.7.2 Vertical section contour plots of Salintiy (PSU), from the mouth to the head, in the Kennebec River estuary at 3 hour intervals on September 16-17, 1995. Latitude is in minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

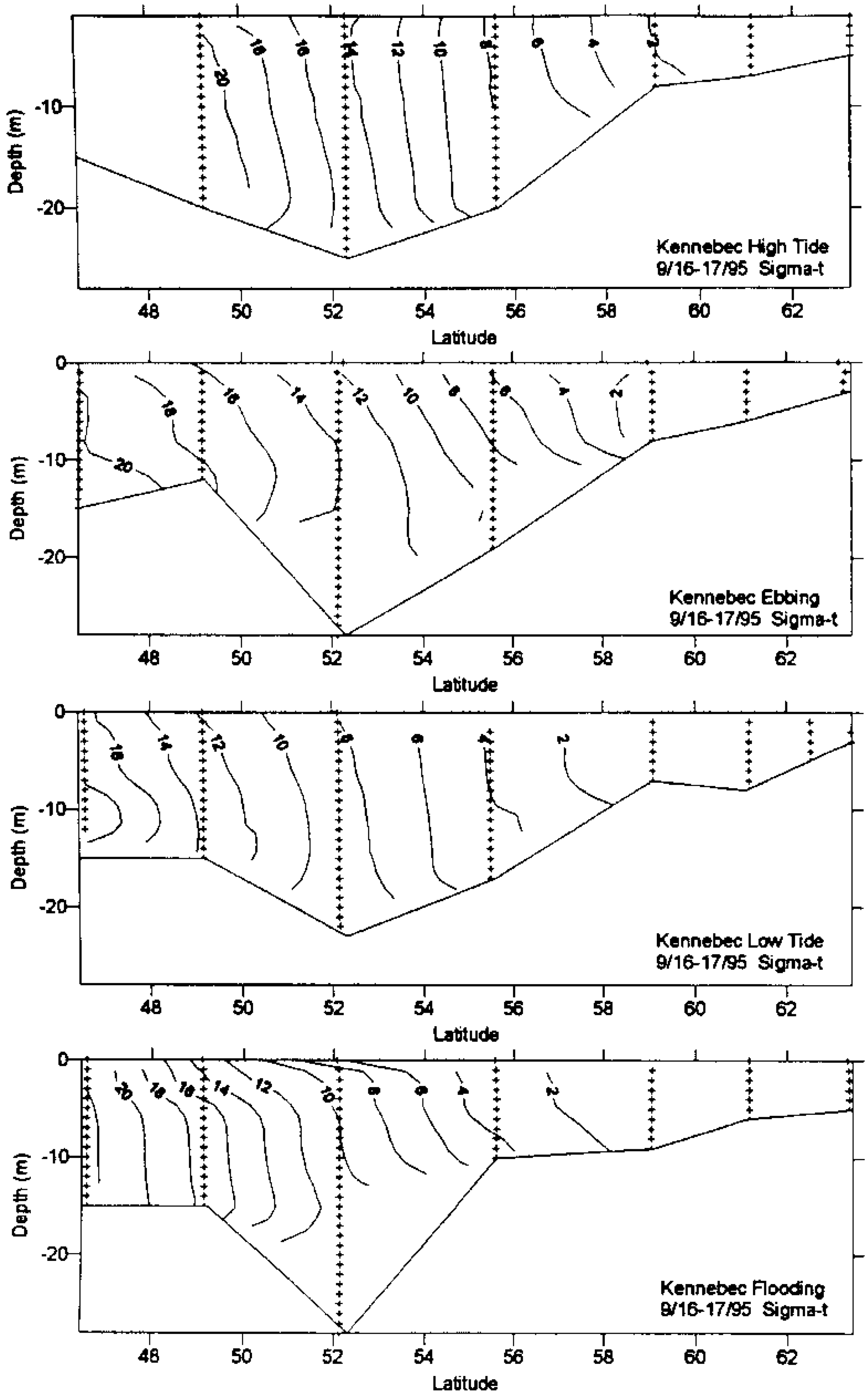

Figure A.7.3 Vertical section contour plots of Sigma-t, from the mouth to the head, in the Kennebec River estuary at 3 hour intervals on September 16-17, 1995. Latitude is in minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

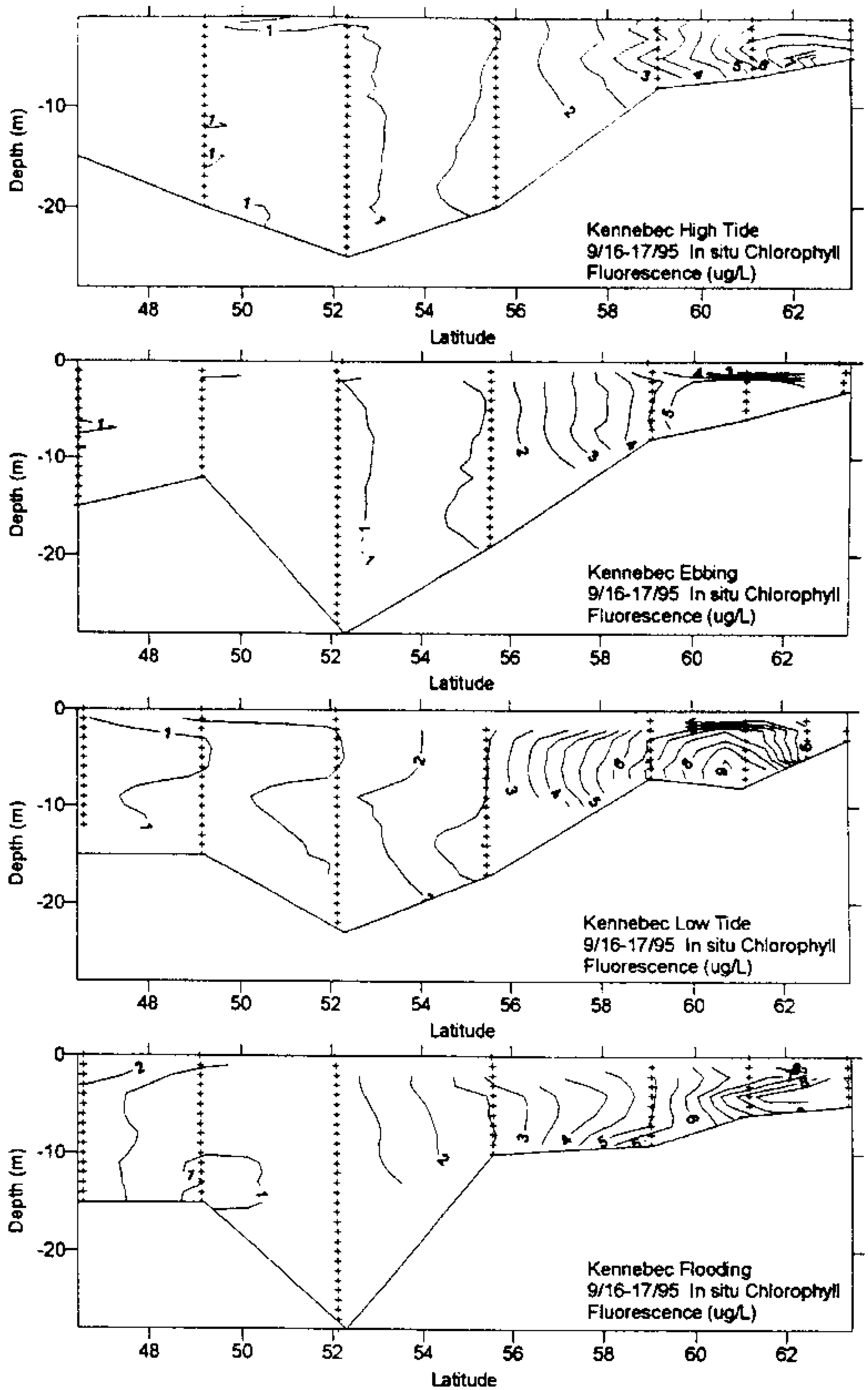

Figure A.7.4 Vertical section contour plots of in situ chlorophyll fluorescence (ug/L), from the mouth to the head, in the Kennebec River estuary at 3 hour intervals on September 16-17, 1995. Latitude is in minutes north of 43 degrees N. Sample depths are shown as crosses at each station.

Figure B **Hydrography**

Figure B.3 **May, 1994 Tidal Means**

Figure B.3.1	Cross Section Locations: May 4-6, September 26-30, 1994	
Figure B.3.2	(5/6/94) MK2 Bluff Head	43° 50.50' N
Figure B.3.3	(5/6/94) MK4 Fish Plant	43° 55.50' N
Figure B.3.4	(5/5/94) MS2 Quarry Point	43° 56.00' N
Figure B.3.5	(5/5/94) MS3 CloughPoint	43° 59.40' N
Figure B.3.6	(5/4/94) MD2 Wentworth Point	43° 56.25' N
Figure B.3.7	(5/4/94) MD3 Dodge Point	43° 59.25' N
Figure B.3.8	(5/4/94) MD4 Little Point	44° 01.10' N

Figure B.3 **Methods**

Temperature and salinity data were collected on the three estuaries during May 4-6, 1994, at each of the cross-sections shown in Figure B.3.1 prefixed with 'M'. A Sea-Bird SBE 25 CTD was used. At each cross-section, between one and four lateral stations were established based on the width of the channel at that point. These are represented by their relative east-west position in the channel. On the Damariscotta, each station was occupied 6 times, at 2 hour intervals, over a semidiurnal tidal cycle. On the Sheepscot and Kennebec, each station was occupied 8 times, at 1.5 hour intervals, over a semidiurnal tidal cycle.

Tidal means of temperature, salinity and density are presented in side by side panels for each cross-section. Different line types denote lateral stations. To account for changing water depths, the data were reinterpolated using sigma coordinates based on the mean depth at each station prior to averaging.

Figure B.6 **September, 1994 Tidal Means**

Figure B.6.1	(9/29/94) SK5 Sasanoa River	69° 48.00' W
Figure B.6.2	(9/30/94) SK1 Cox Head	43° 46.00' N
Figure B.6.3	(9/30/94) SK2 Phippsburg	43° 49.00' N
Figure B.6.4	(9/29/94) SK3 Hospital Point	43° 53.10' N
Figure B.6.5	(9/29/94) SK4 Fish Plant	43° 55.50' N
Figure B.6.6	(9/27/94) SS1 Barters Island	43° 54.50' N
Figure B.6.7	(9/27/94) SS3 Clough Point	43° 59.40' N
Figure B.6.8	(9/29/94) SD1 Rutherford Island	43° 50.75' N
Figure B.6.9	(9/29/94) SD2 Wentworth Point	43° 56.25' N

Figure B.6 **Methods**

Due to instrument failure, hydrography and current measurements for cruise 6 were made 4 weeks after the longitudinal surveys. Temperature and salinity data were collected on the three estuaries during September 26-30, 1994, at each of the cross-sections shown in Figure B.3.1 prefixed with 'S'. Collection methods were the same as for B.3 (May) with the following exception: all of the stations were occupied10 times, at 1.25 hour intervals, over a semidiurnal tidal cycle.

Figure B.7 **September, 1995**

Hydrography data for the Kennebec, 1995, cruise appears in Figure A.7.

Cross-Section Locations:
May 4-6, 1994 and September 26-29, 1994

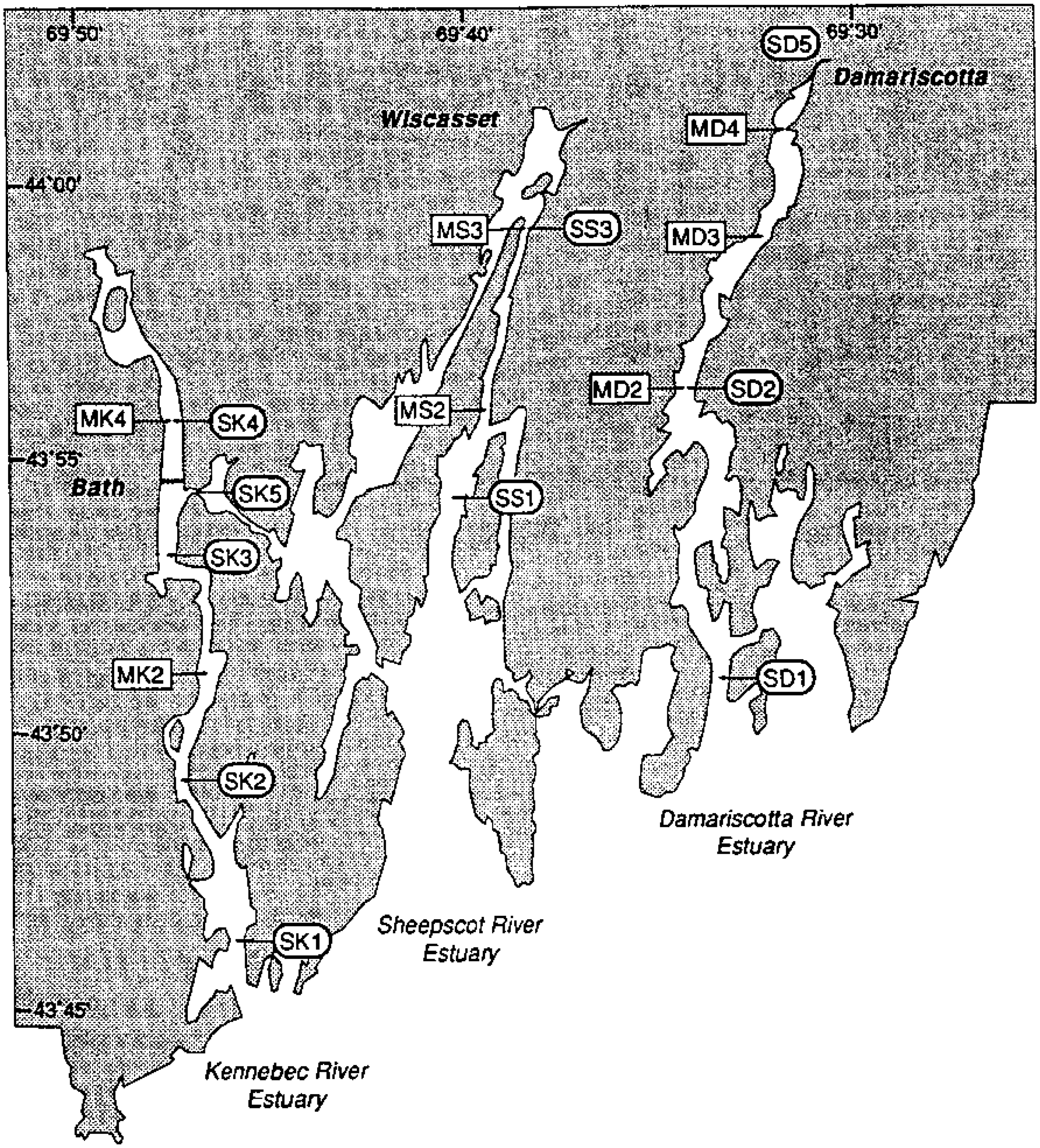

Figure B.3.1 Cross-section locations for May 4-6, 1994 (cruise #3), are prefixed with 'M'. Cross-section locations for September 26-29, 1994 (cruise #6) are prefixed with 'S'. Changes were made between cruises due to transport time, channel depth, and excessive currents for hand-lowering of the CTD. At each location, measurements were made at 1-4 lateral stations, depending on channel width, and are denoted in the data figures by their relative east-west position in the channel.

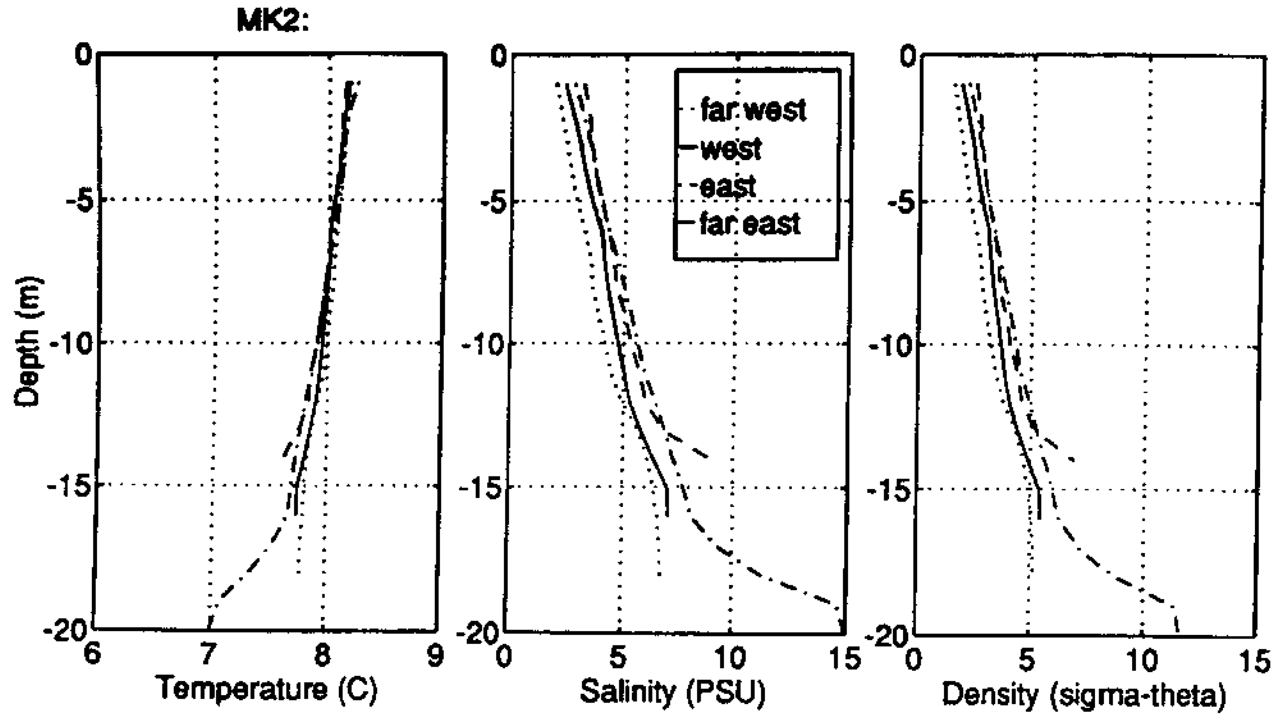

Figure B.3.2 (5/6/94) Tidal Mean Hydrography v. Depth at Bluff Head

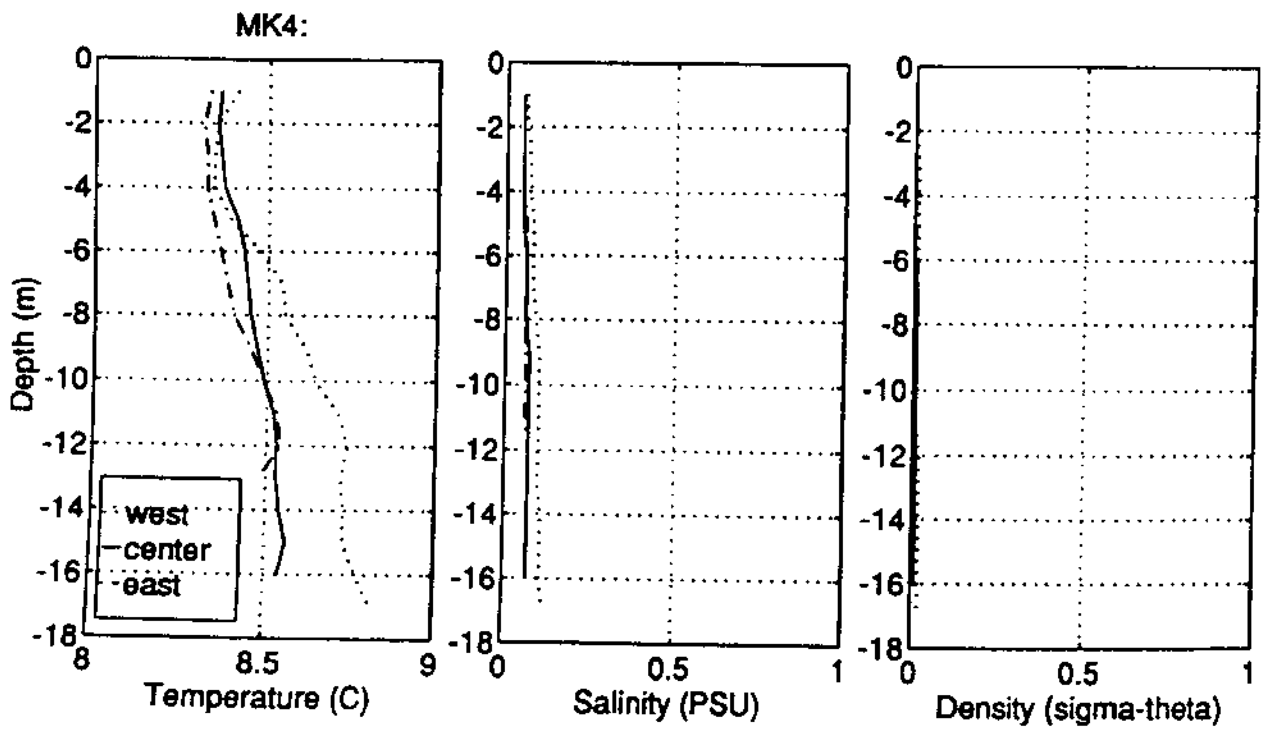

Figure B.3.3 (5/6/94) Tidal Mean Hydrography v. Depth at Fish Plant

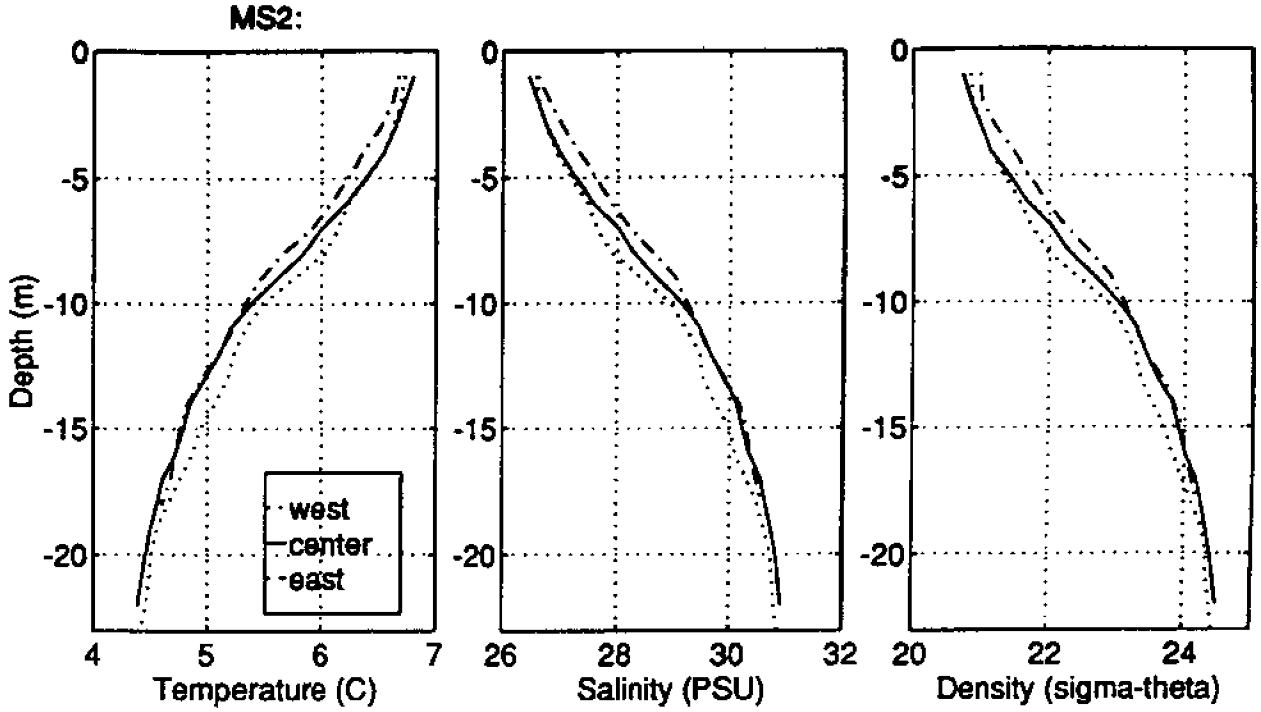

Figure B.3.4 (5/5/94) Tidal Mean Hydrography v. Depth at Quarry Point

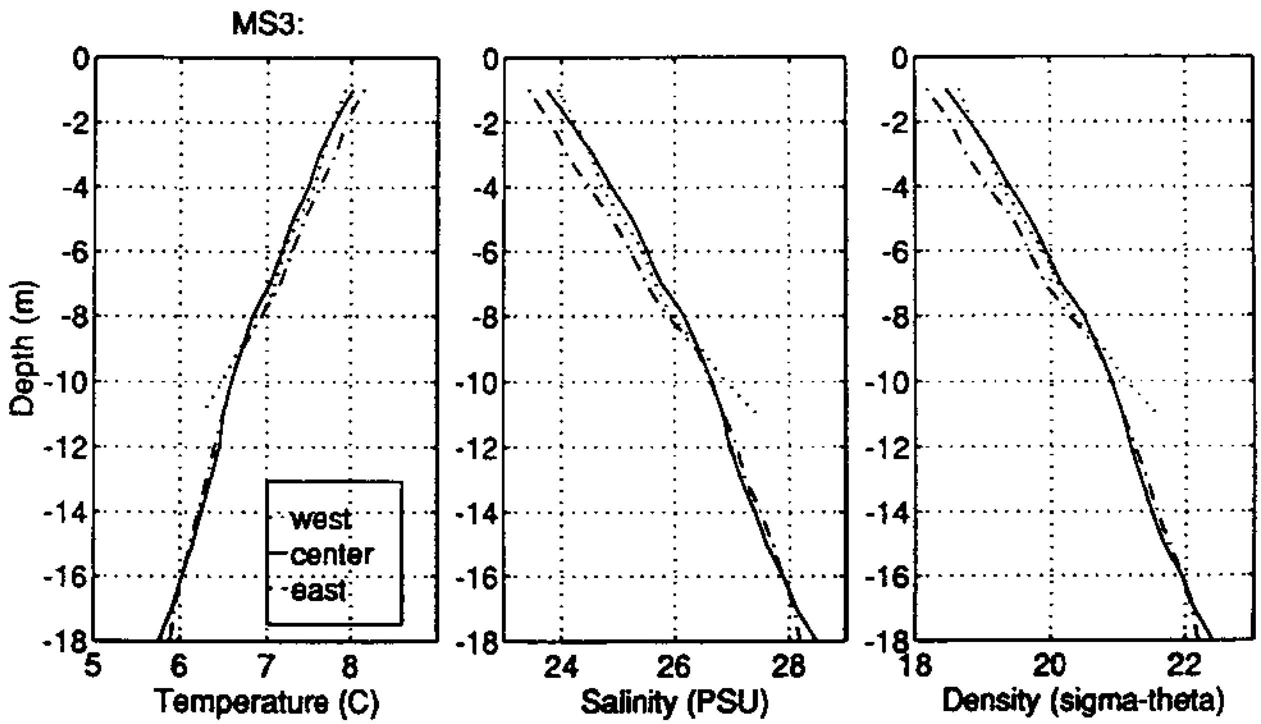

Figure B.3.5 (5/5/94) Tidal Mean Hydrography v. Depth at Clough Point

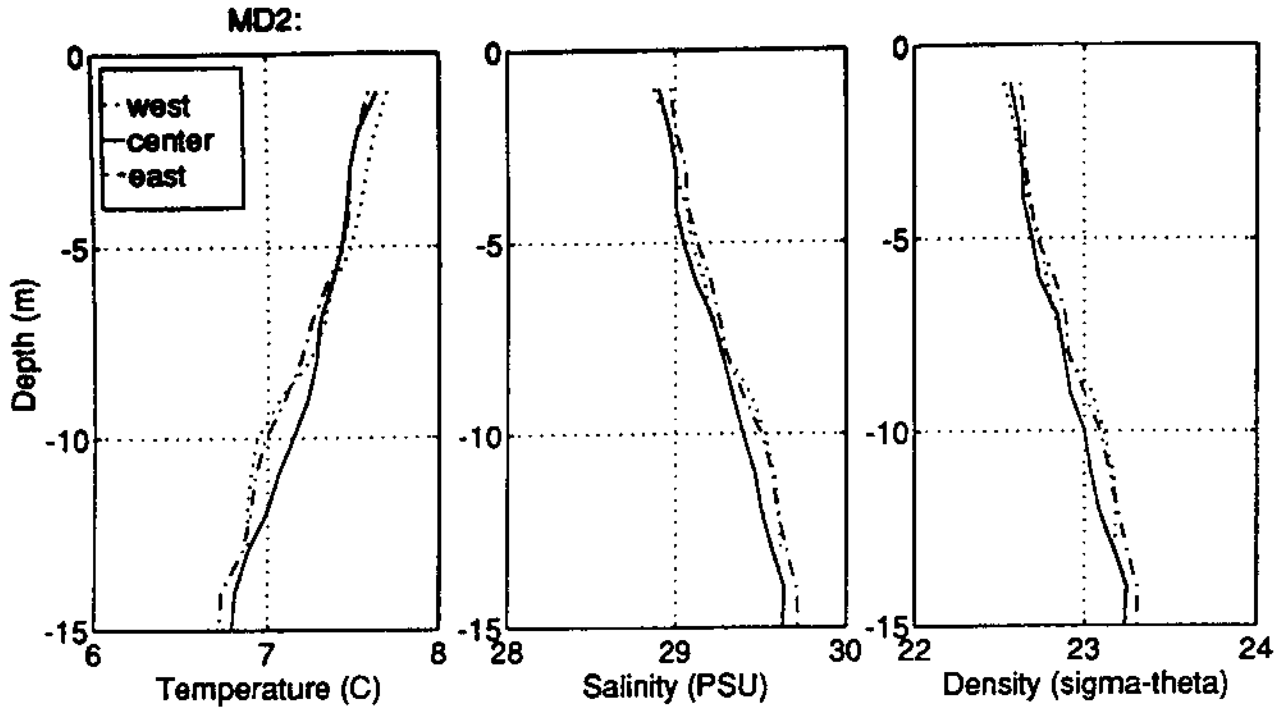

Figure B.3.6 (5/4/94) Tidal Mean Hydrography v. Depth at Wentworth Point

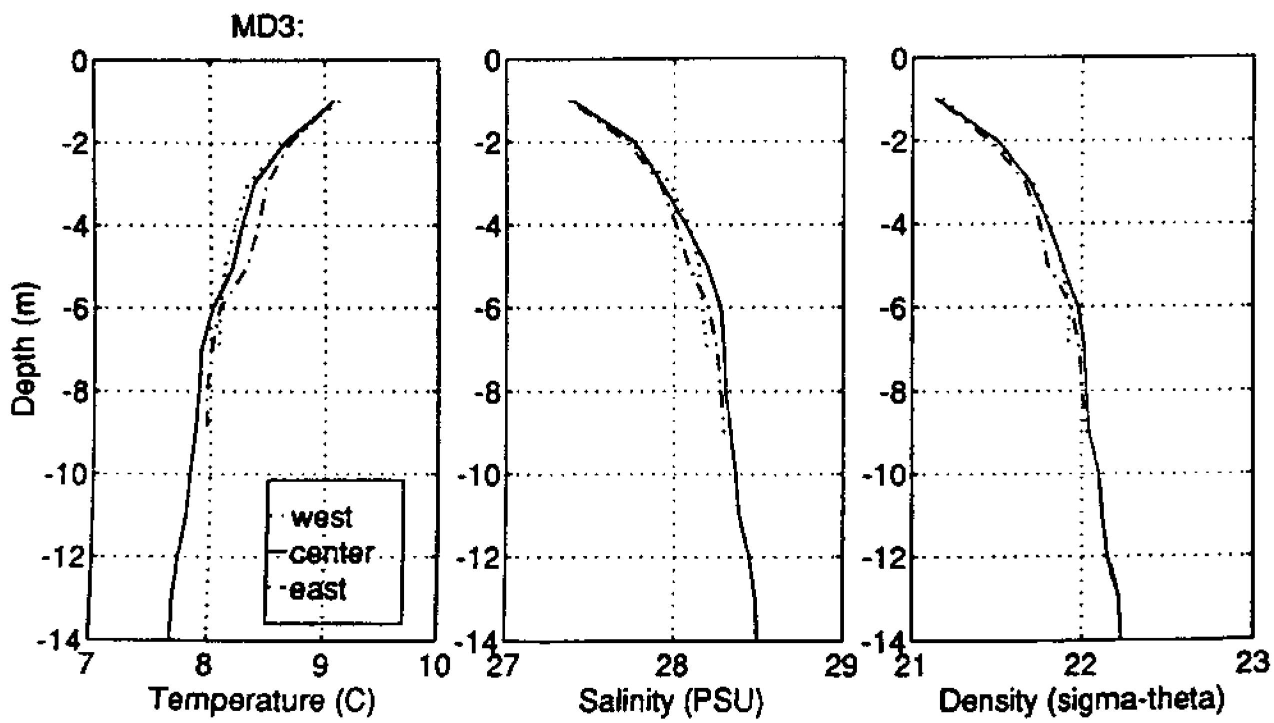

Figure B.3.7 (5/4/94) Tidal Mean Hydrography v. Depth at Dodge Point

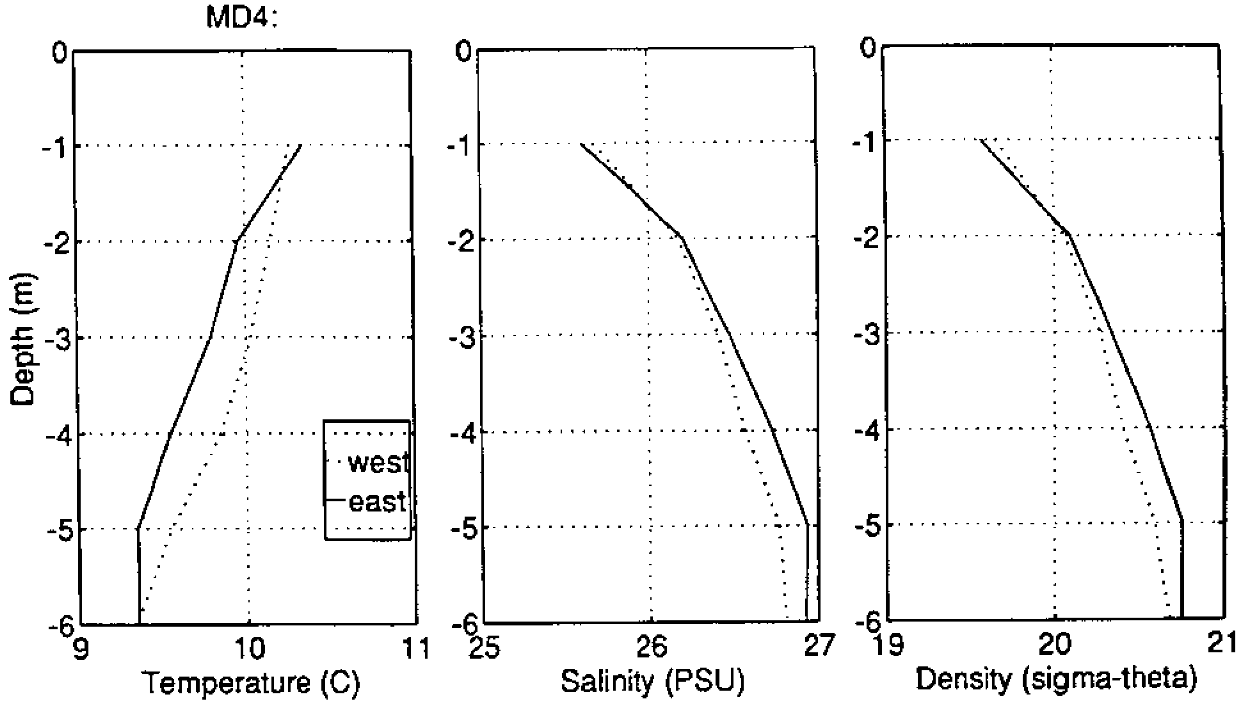

Figure B.3.8 (5/4/94) Tidal Mean Hydrography v. Depth at Little Point

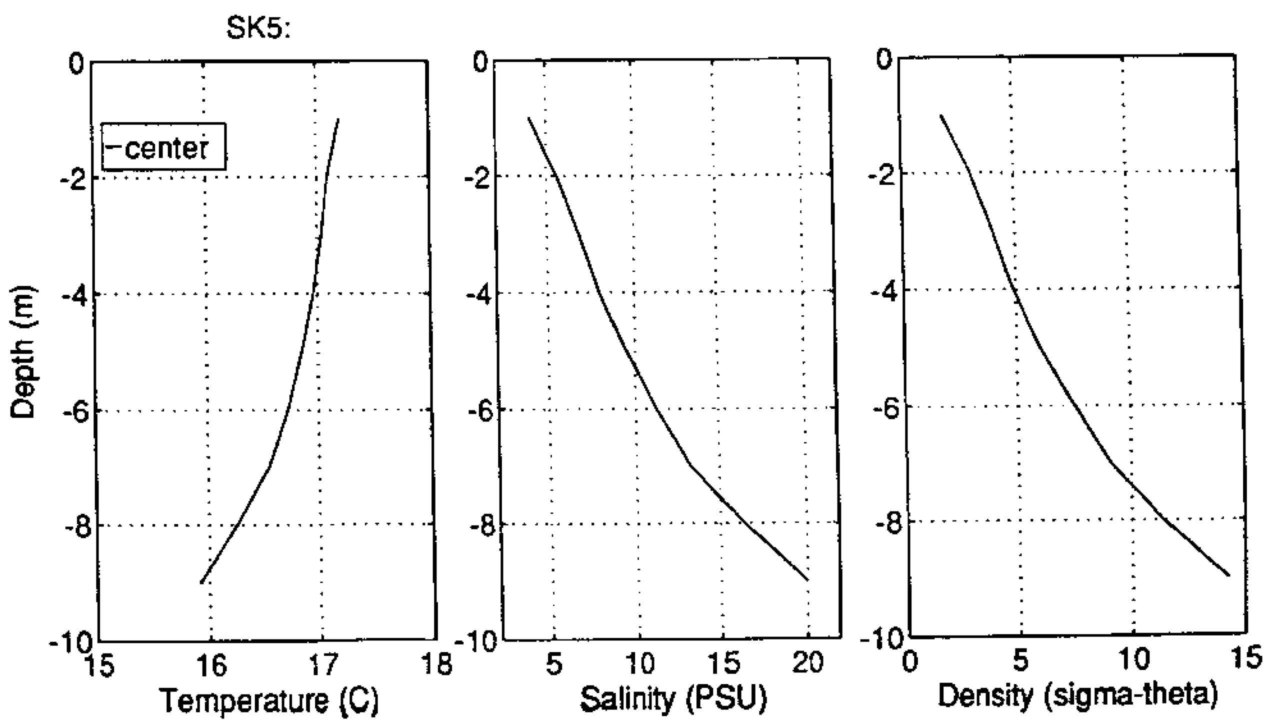

Figure B.6.1 (9/29/94) Tidal Mean Hydrography v. Depth at Sasanoa River

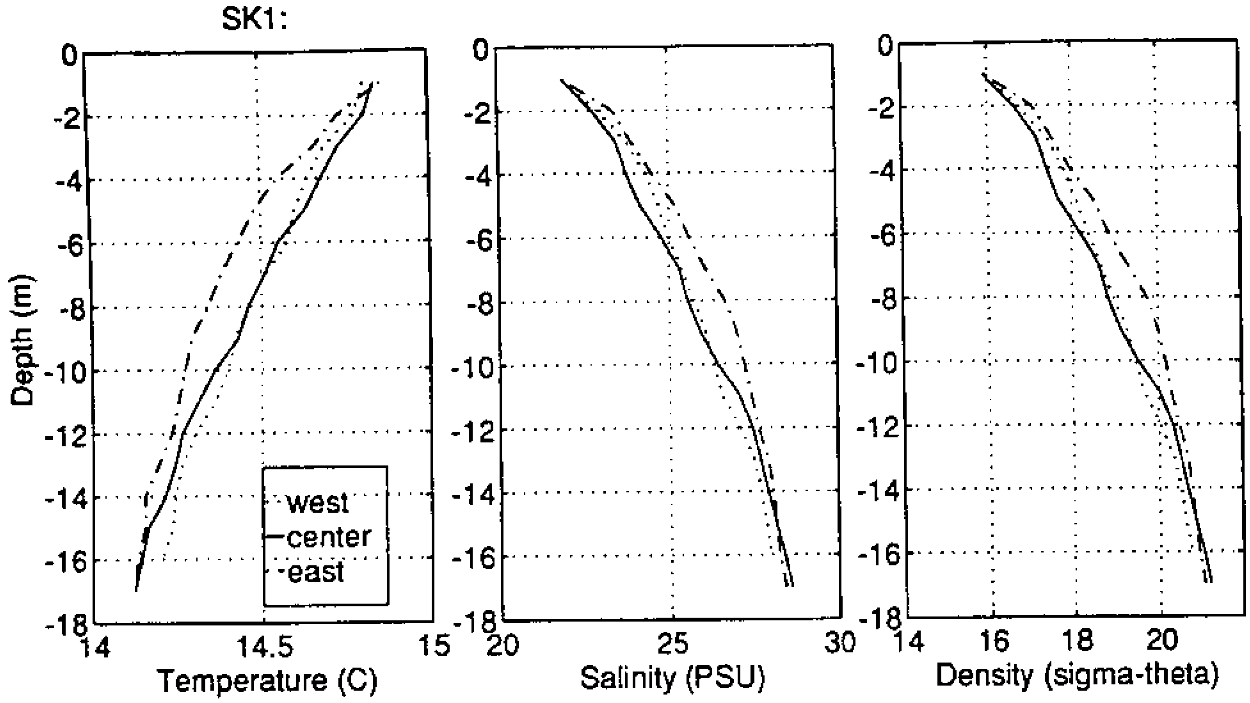

Figure B.6.2 (9/30/94) Tidal Mean Hydrography v. Depth at Cox Head

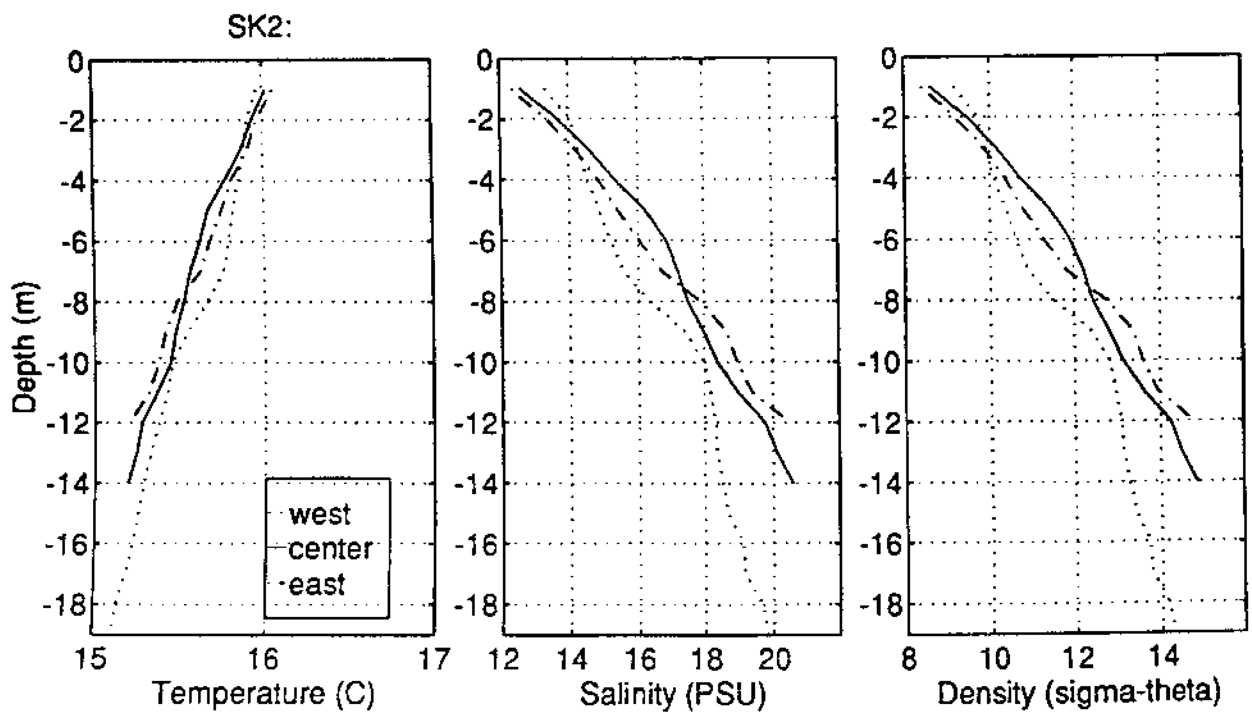

Figure B.6.3 (9/30/94) Tidal Mean Hydrography v. Depth at Phippsburg

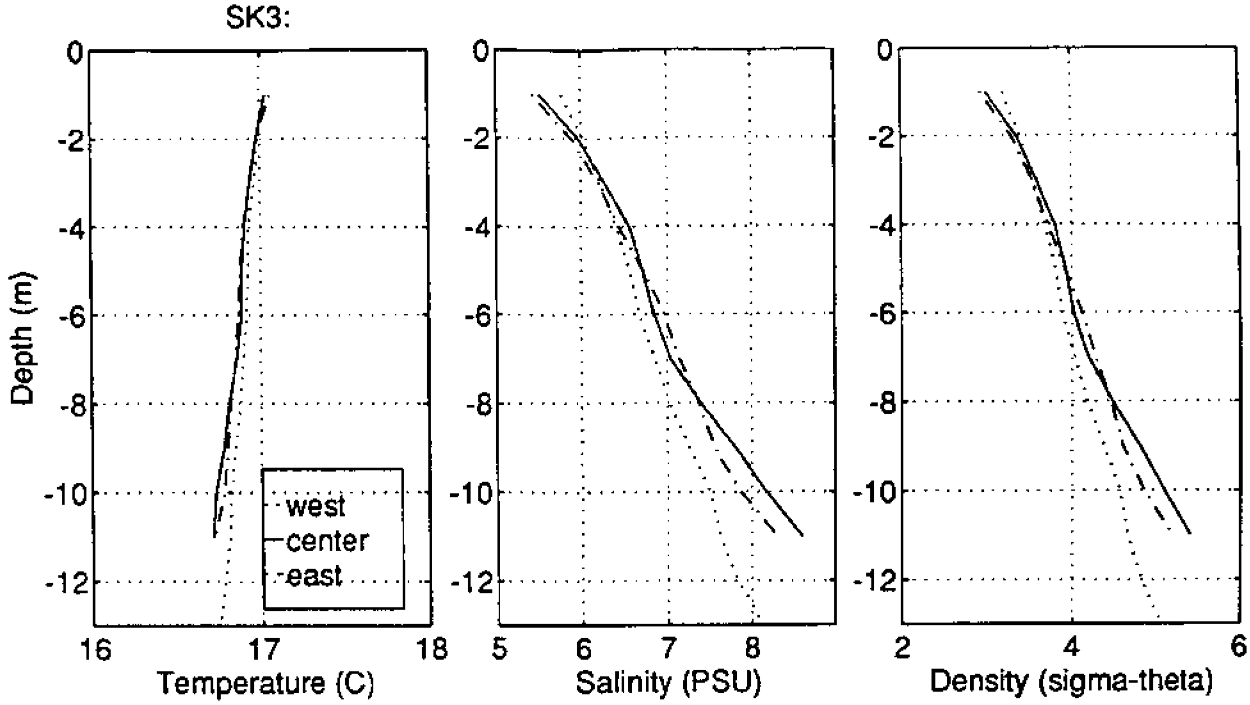

Figure B.6.4 (9/29/94) Tidal Mean Hydrography v. Depth at Hospital Point

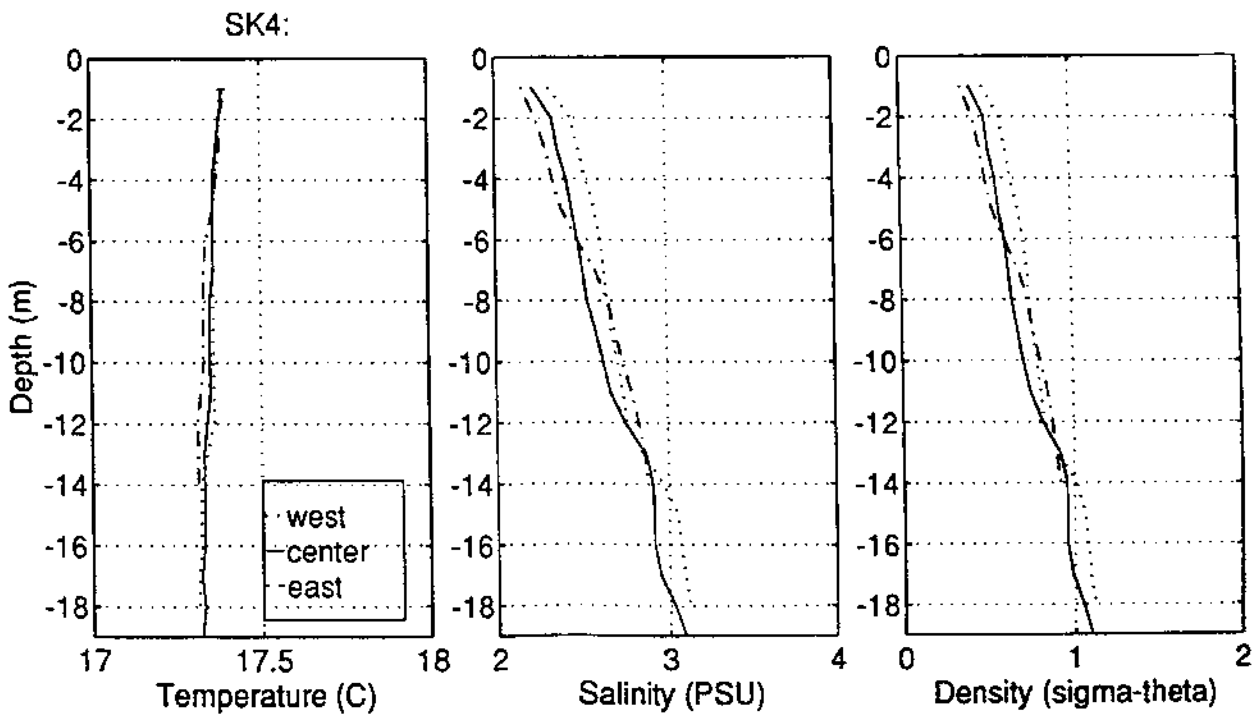

Figure B.6.5 (9/29/94) Tidal Mean Hydrography v. Depth at Fish Plant

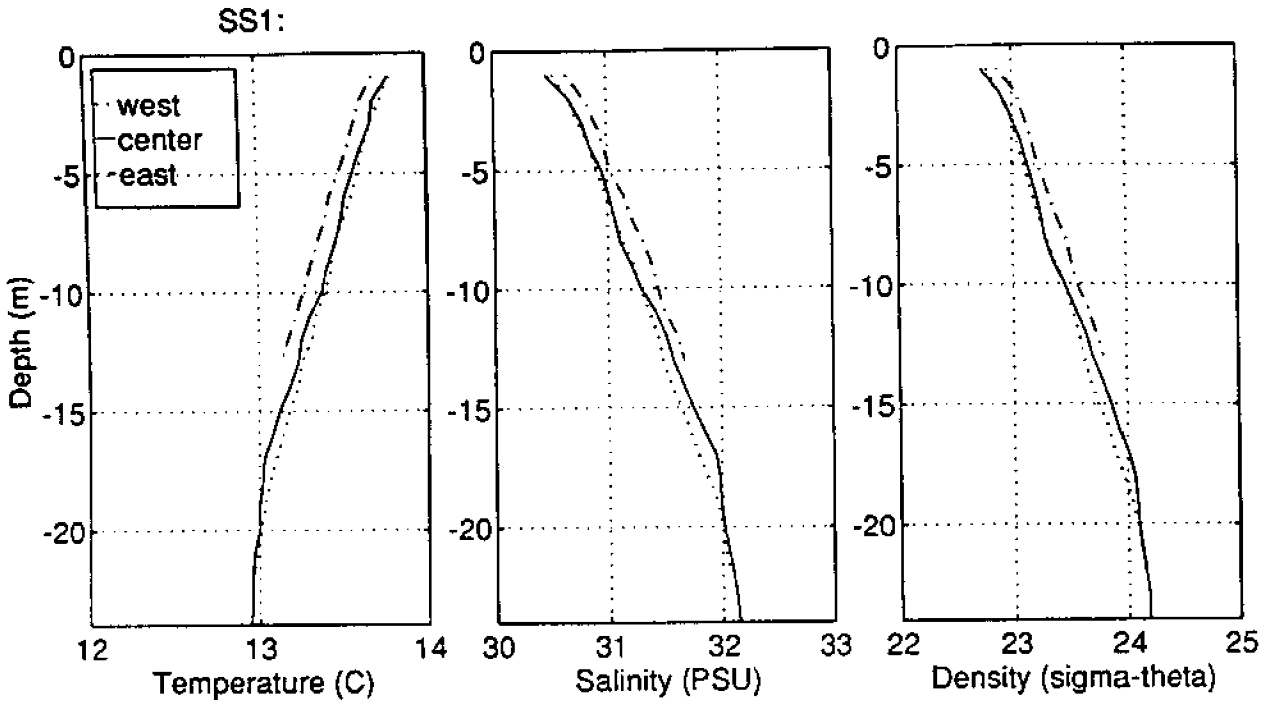

Figure B.6.6 (9/27/94) Tidal Mean Hydrography v. Depth at Barters Island

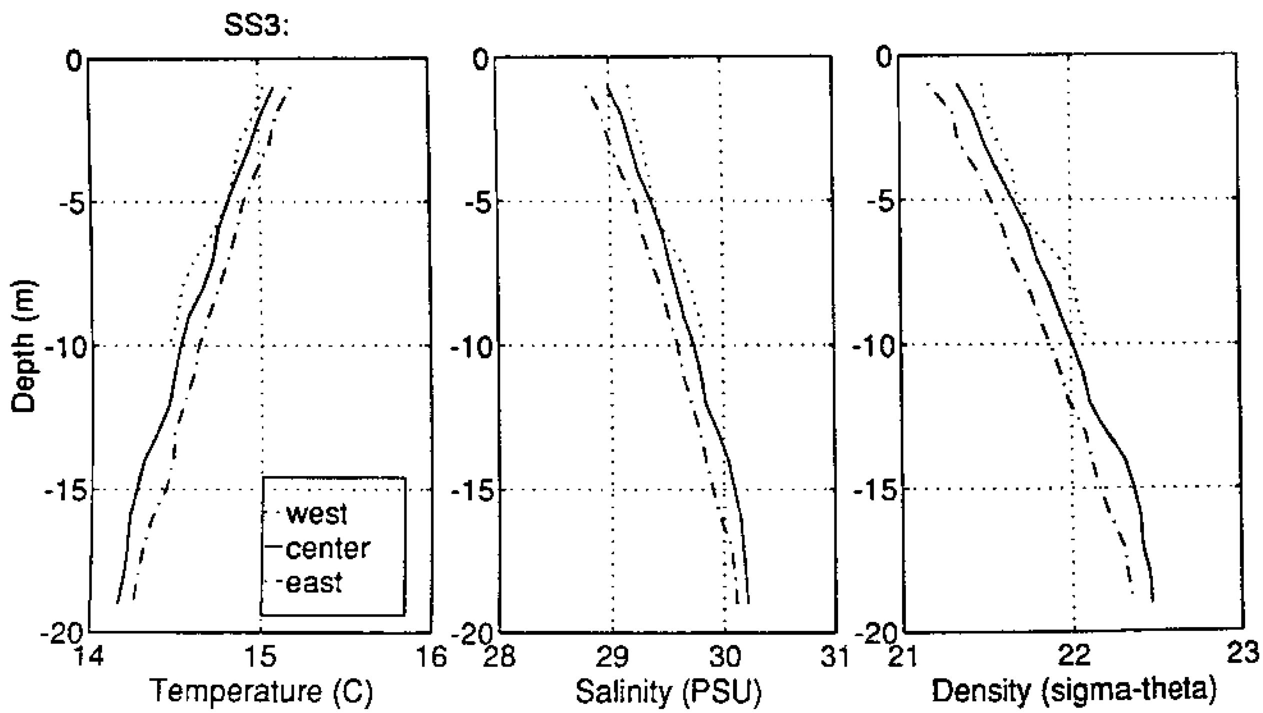

Figure B.6.7 (9/27/94) Tidal Mean Hydrography v. Depth at Clough Point

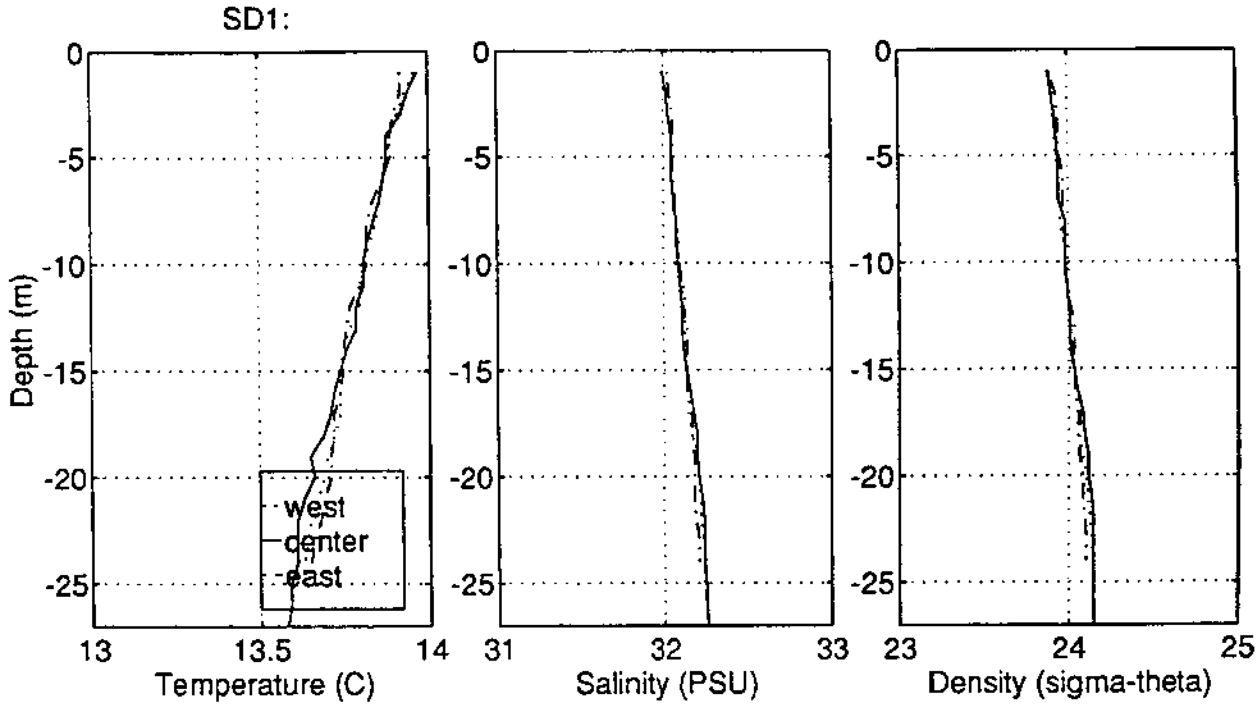

Figure B.6.8 (9/26/94) Tidal Mean Hydrography v. Depth at Rutherford Island

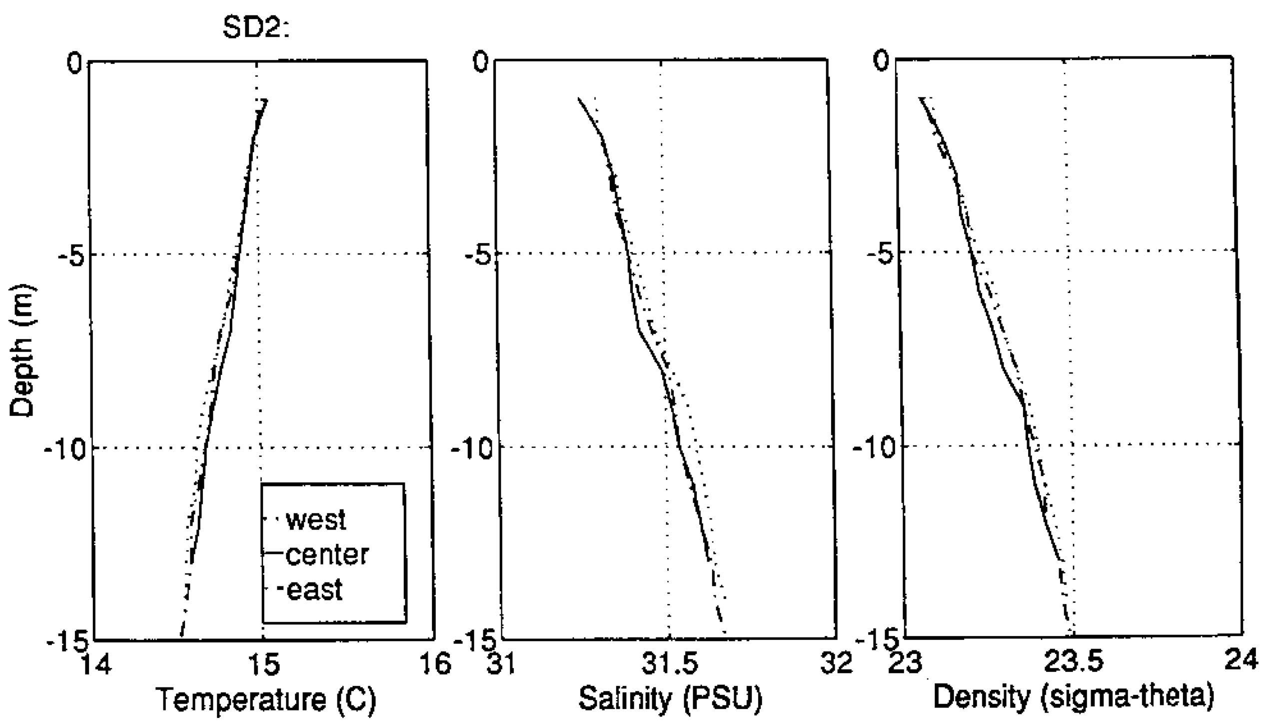

Figure B.6.9 (9/26/94) Tidal Mean Hydrography v. Depth at Wentworth Point

Figure C **Current Data**

Figure C.3 Methods

See Figure B.3 for explanation of stations and averaging. Data were collected with a RDI 1200 kHz Acoustic Doppler Current Profiler, and are presented in side by side panels for the lateral stations at each cross-section. Along channel and cross-channel components are denoted with different line types. Velocity components were rotated so that along channel corresponds to north-south flow following the approximate geographical orientation of these three estuaries.

Figure C.6 Methods

Stations are the same as Figure B.6. Methods are the same as Figure C.3 with one exception: along channel currents in the Sasanoa are represented by east-west flow, with westward currents flowing into the Kennebec.

Figure C.7 Methods

Stations are the same as those in Table A.7. Measurements were made with an RDI 300 kHz Broad Band Acoustic Doppler Current Profiler in the center of the channel. Each station was occupied 4 times, at 3 hour intervals, with the exception of Bluff Head and Twing Point which were occupied 8 times at approximately one hour, twenty-five minute intervals.

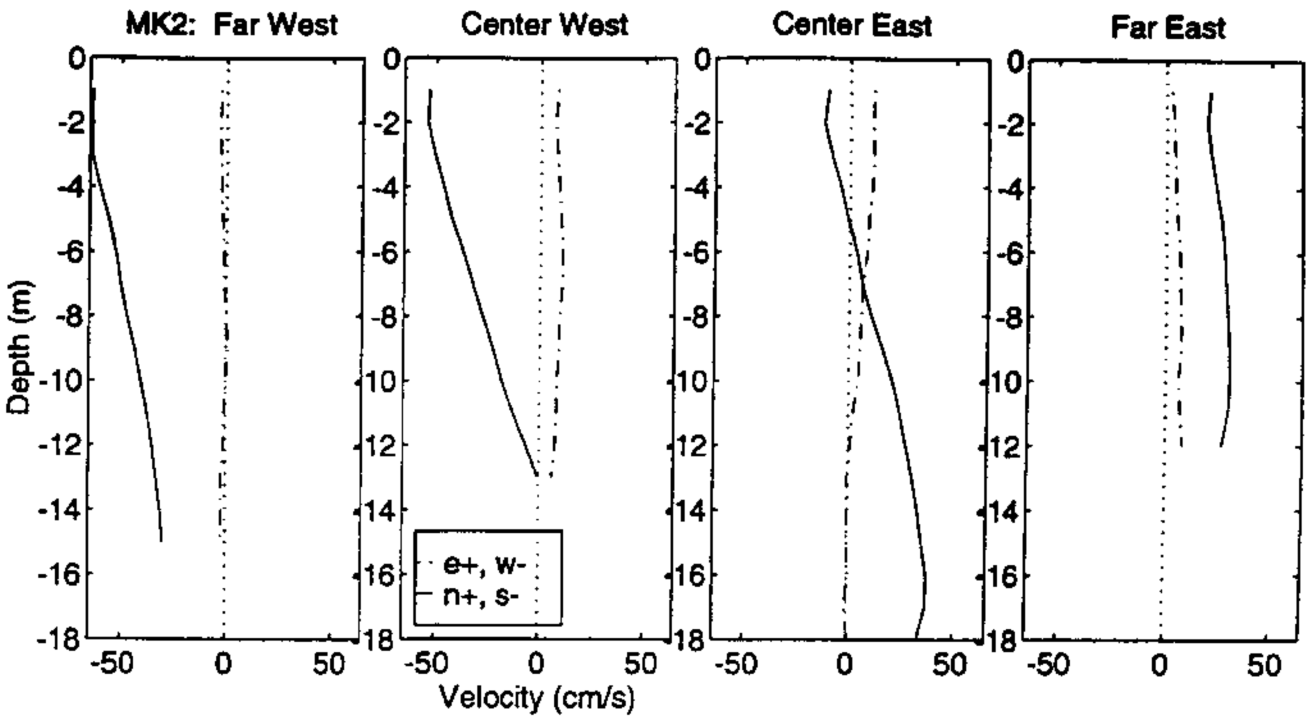

Figure C.3.1 (5/6/94) Tidal Mean Velocity v. Depth below Bluff Head

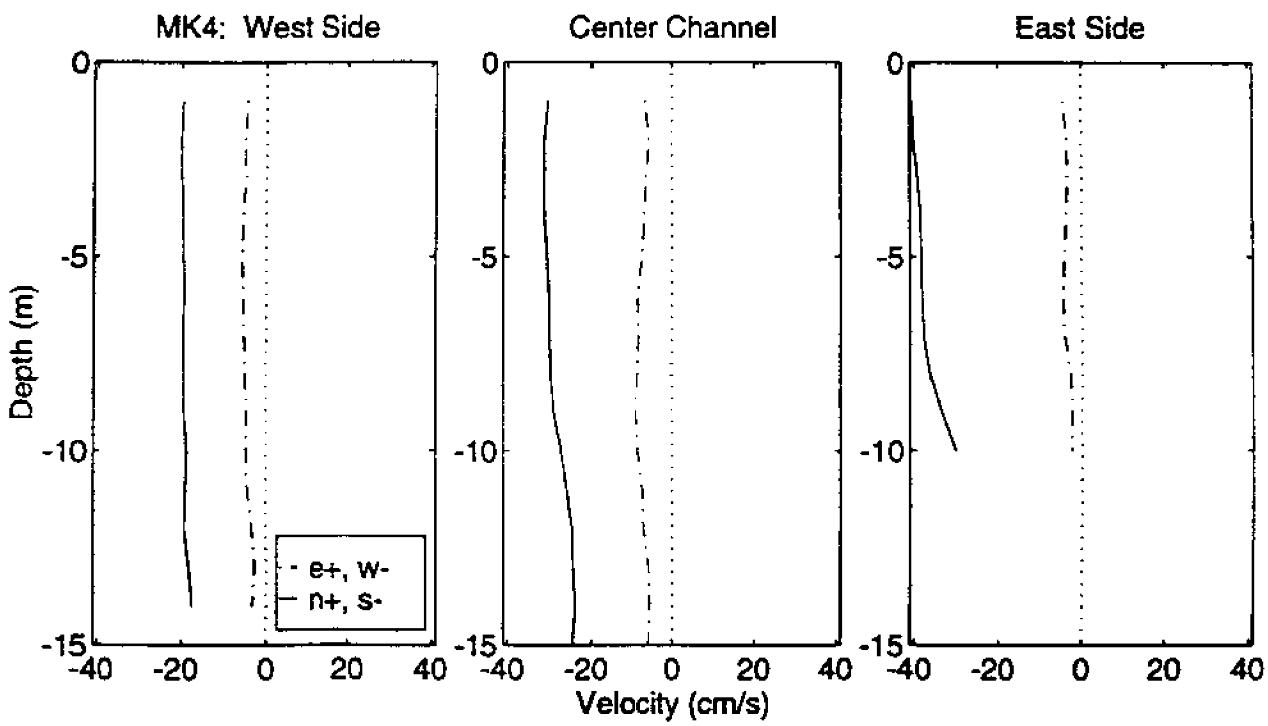

Figure C.3.2 (5/6/94) Tidal Mean Velocity v. Depth at Fish Plant

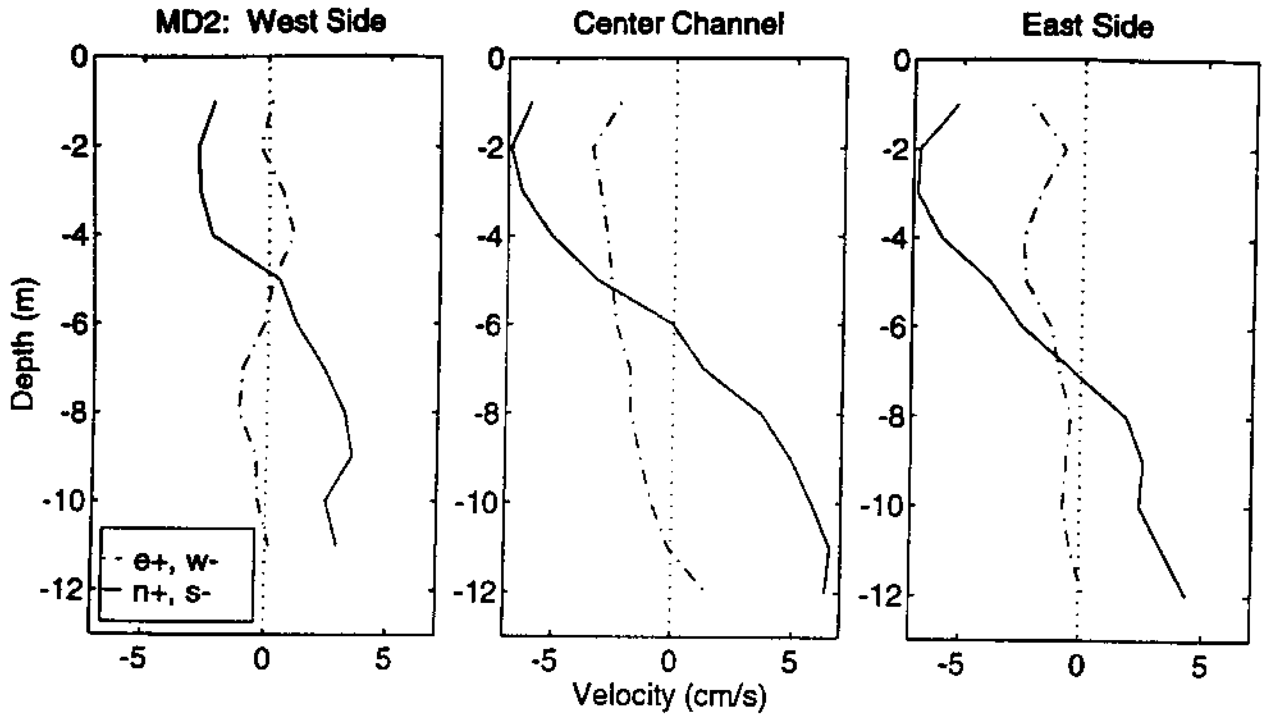

Figure C.3.3 (5/4/94) Tidal Mean Velocity v. Depth at Wentworth Point

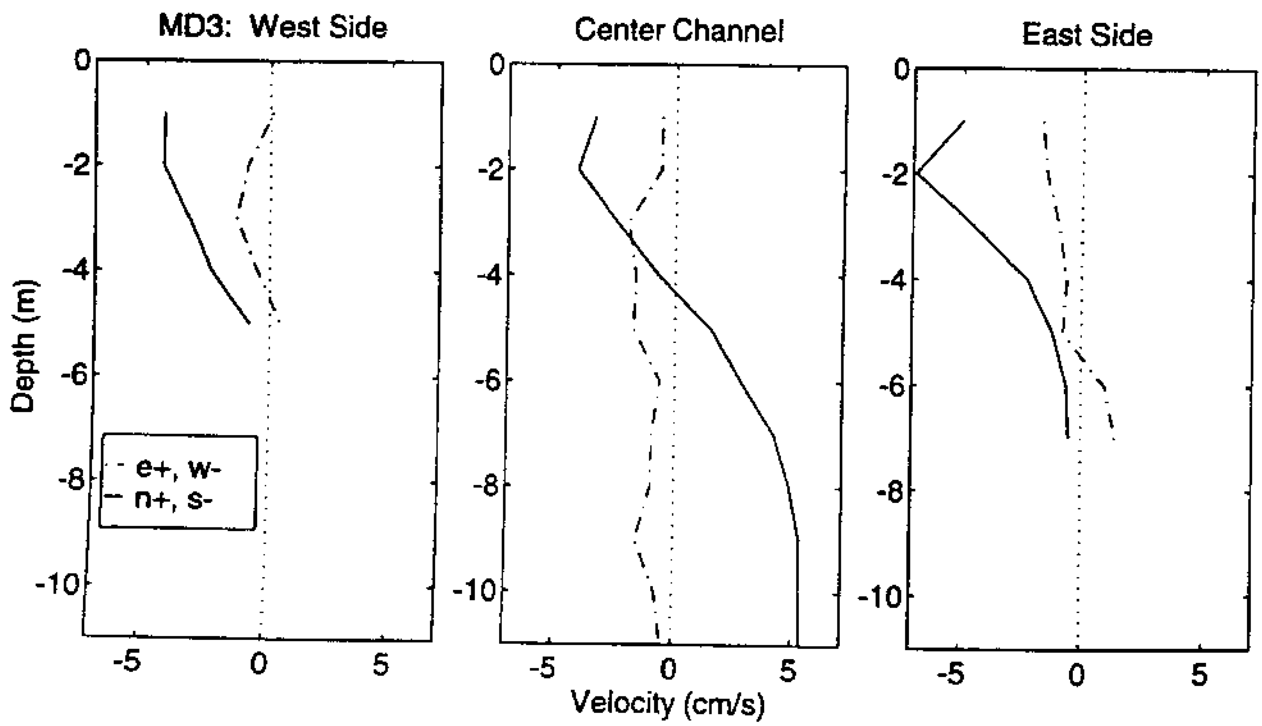

Figure C.3.4 (5/4/94) Tidal Mean Velocity v. Depth at Dodge Point

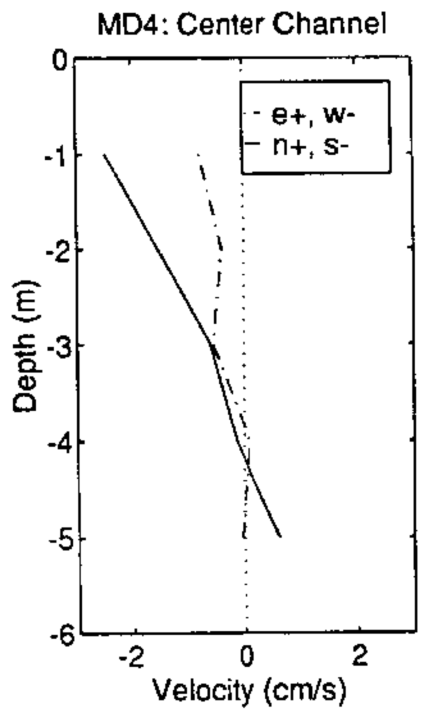

Figure C.3.5 (5/4/94) Tidal Mean Velocity v. Depth at Little Point

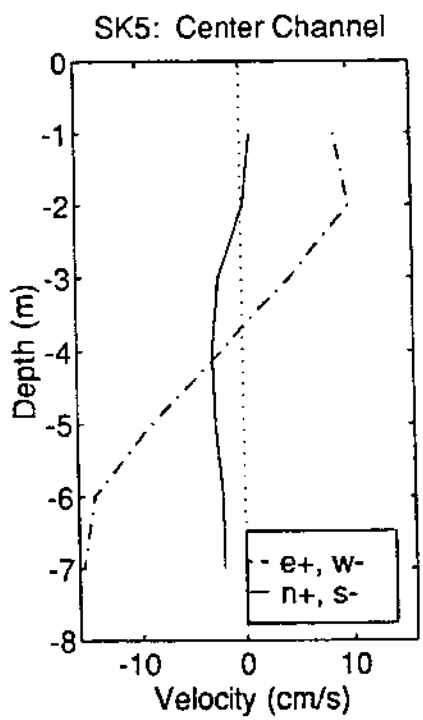

Figure C.6.1 (9/29/94) Tidal Mean Velocity v. Depth at Sasanoa R.

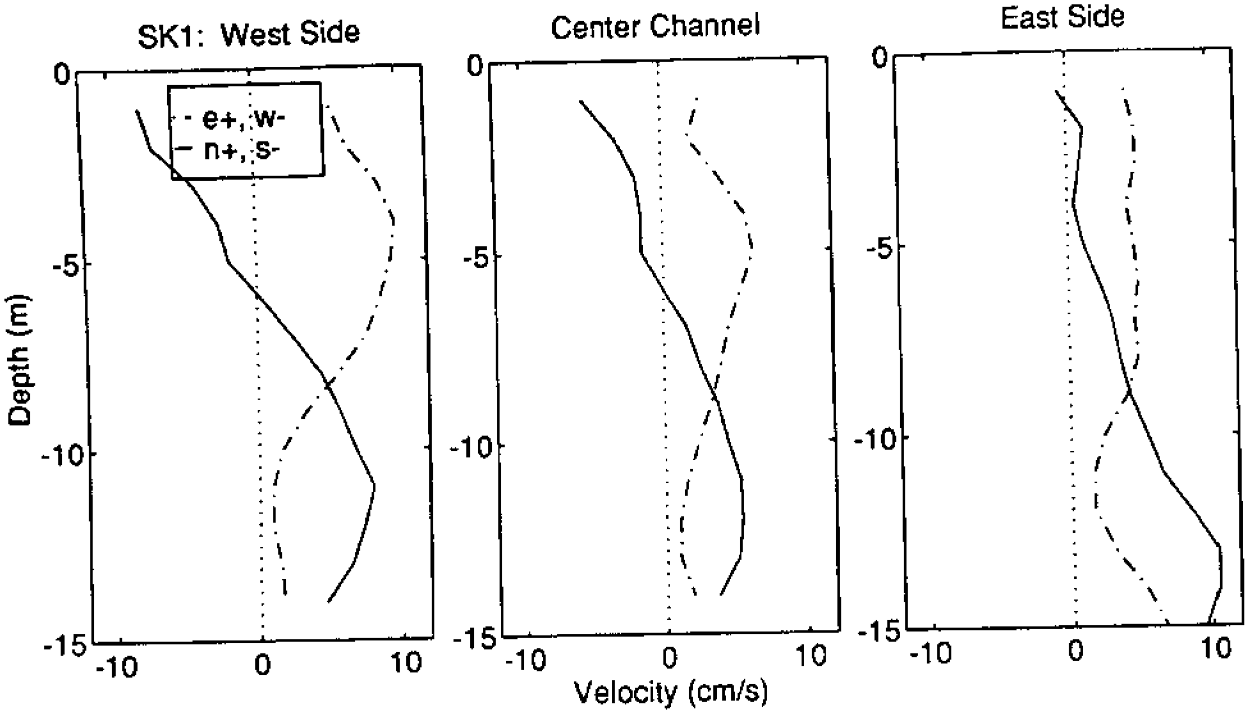

Figure C.6.2 (9/30/94) Tidal Mean Velocity v. Depth at Cox Head

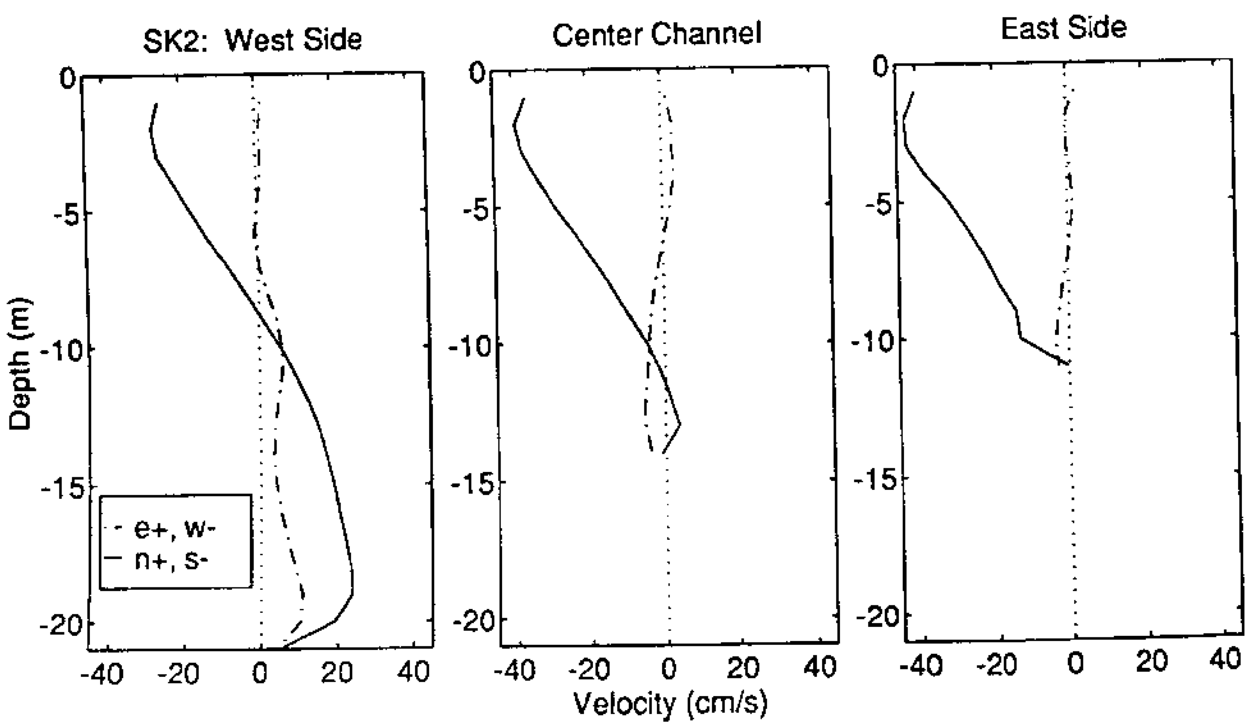

Figure C.6.3 (9/30/94) Tidal Mean Velocity v. Depth at Phippsburg

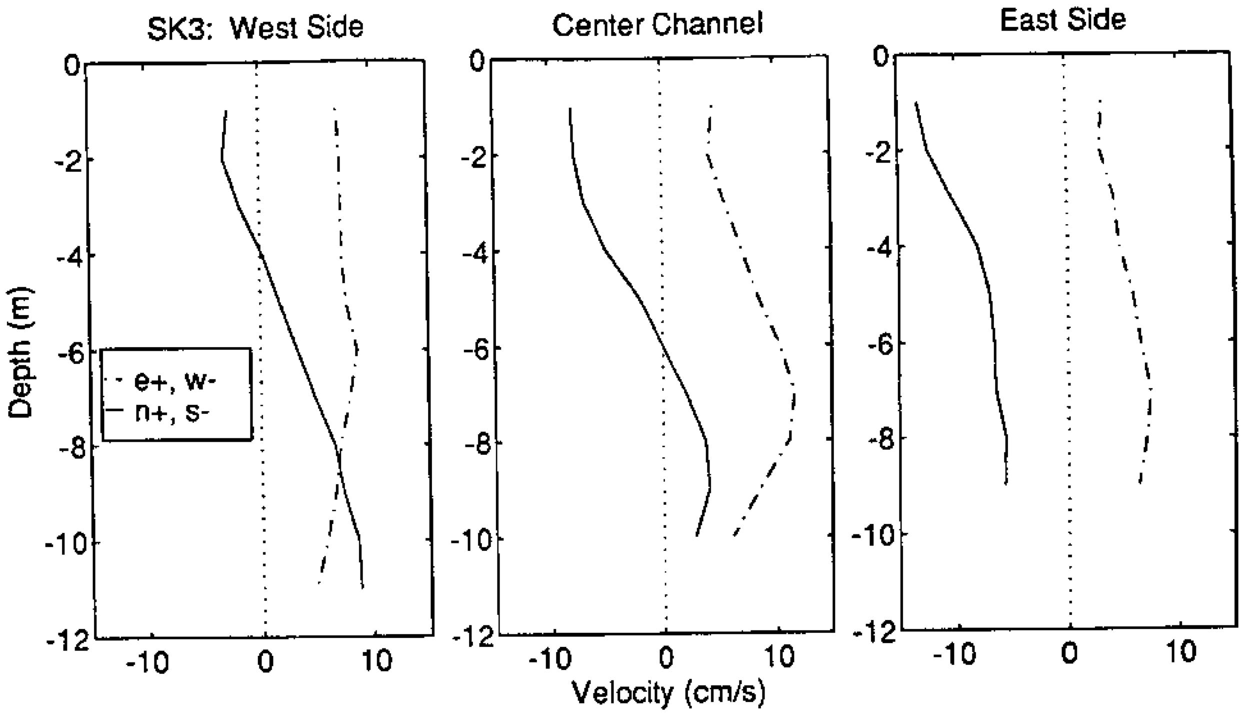

Figure C.6.4 (9/29/94) Tidal Mean Velocity v. Depth at Hospital Point

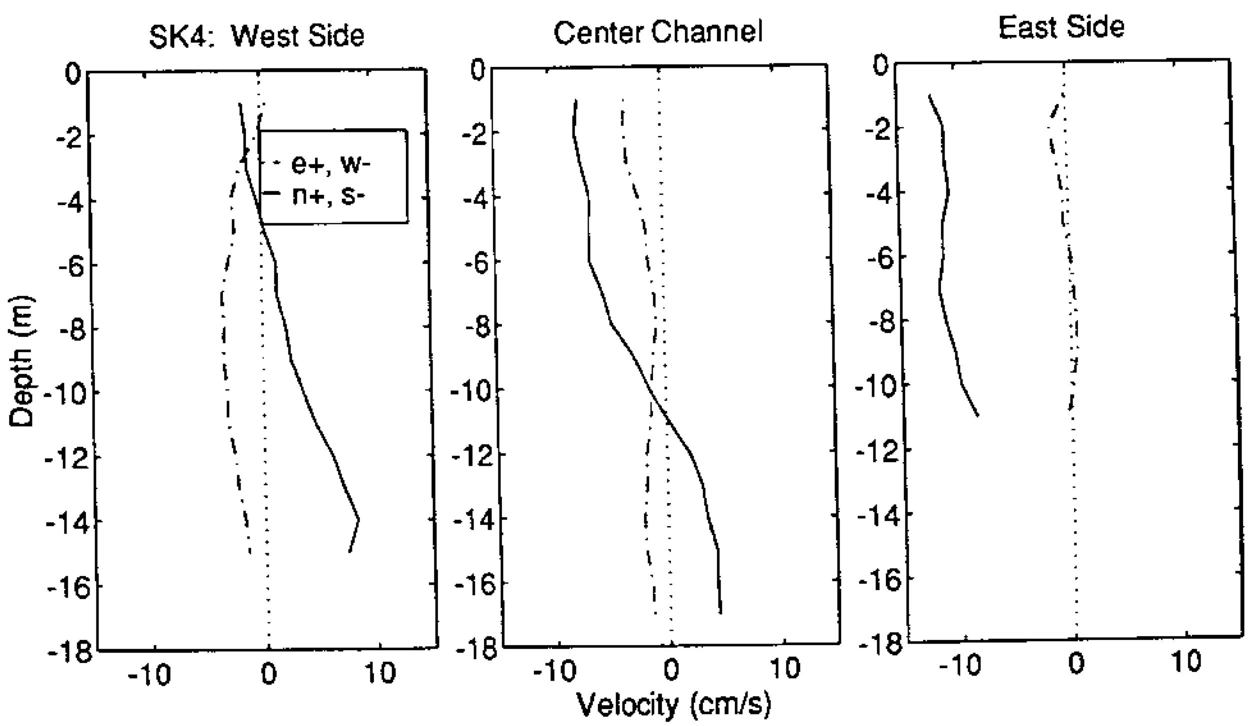

Figure C.6.5 (9/29/94) Tidal Mean Velocity v. Depth at Fish Plant

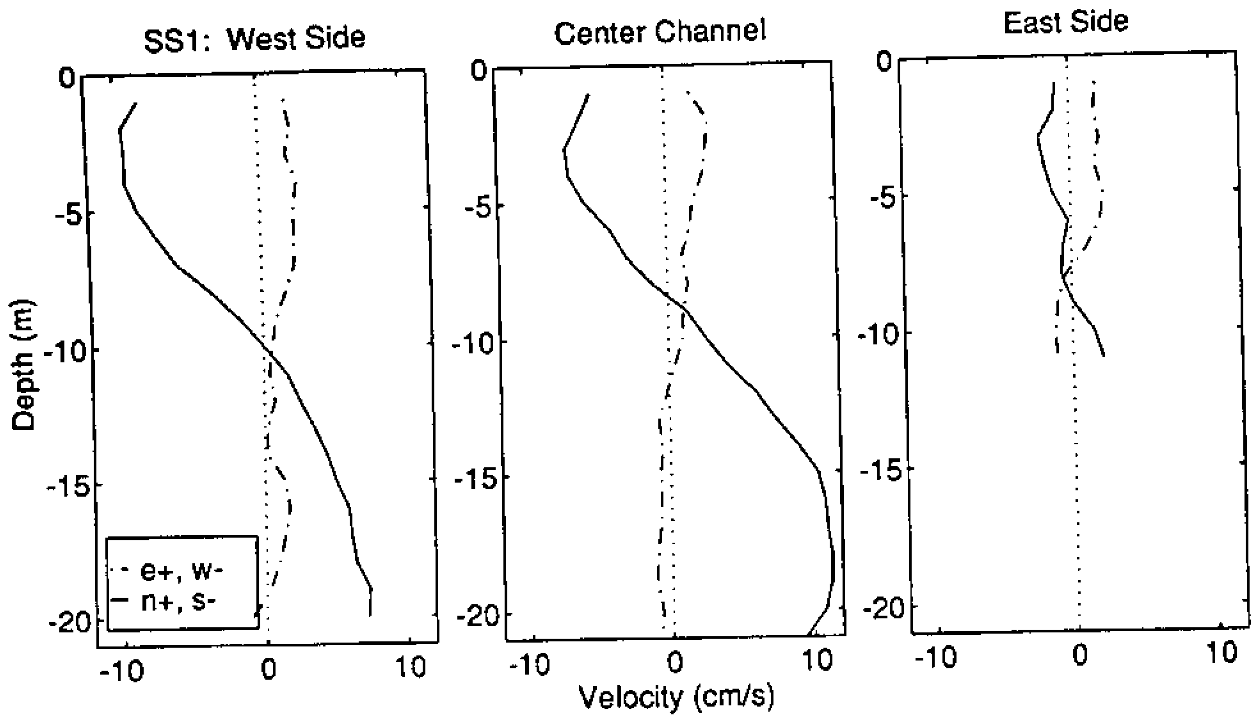

Figure C.6.6 (9/27/94) Tidal Mean Velocity v. Depth at Barters Island

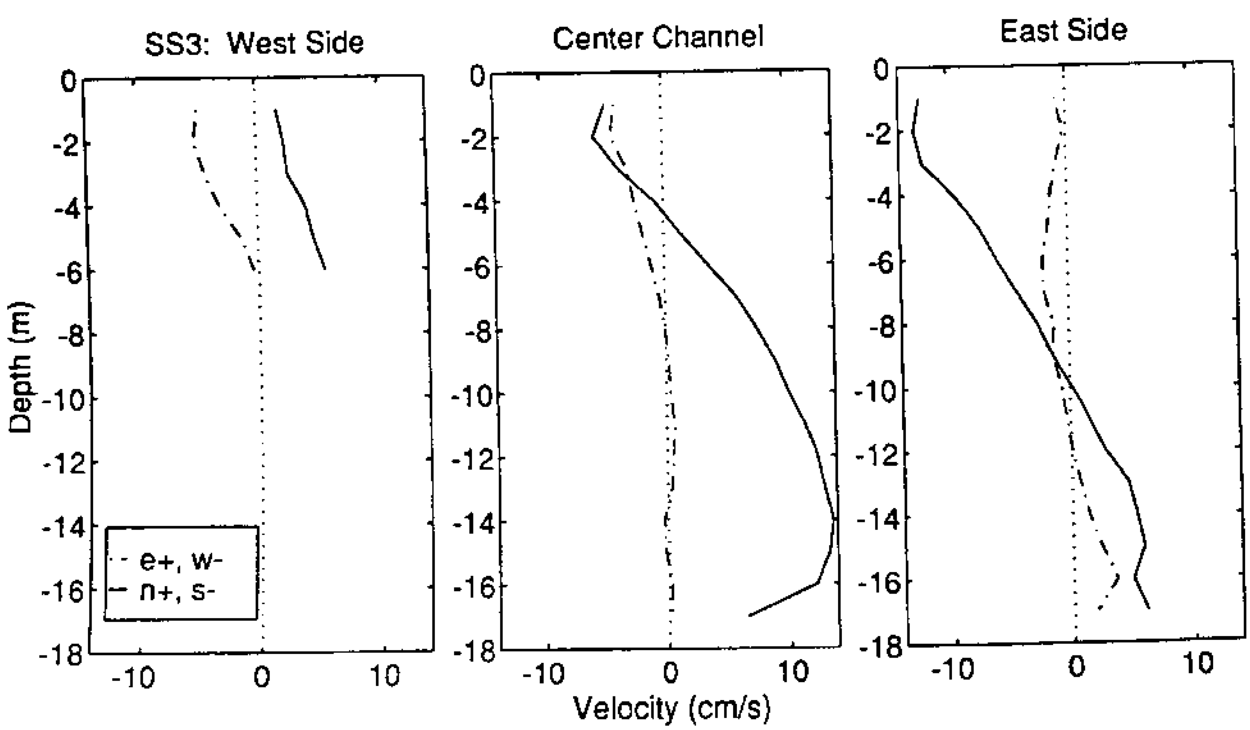

Figure C.6.7 (9/27/94) Tidal Mean Velocity v. Depth at Clough Point

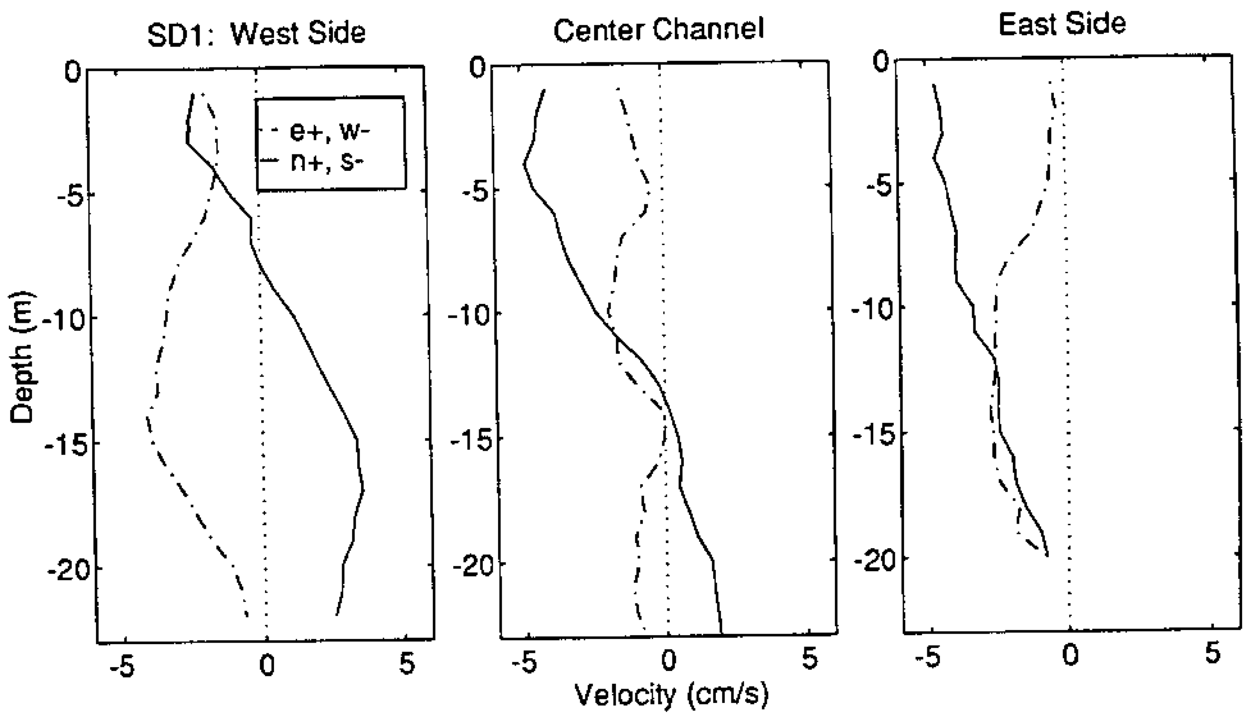

Figure C.6.8 (9/26/94) Tidal Mean Velocity v. Depth at Rutherford Island

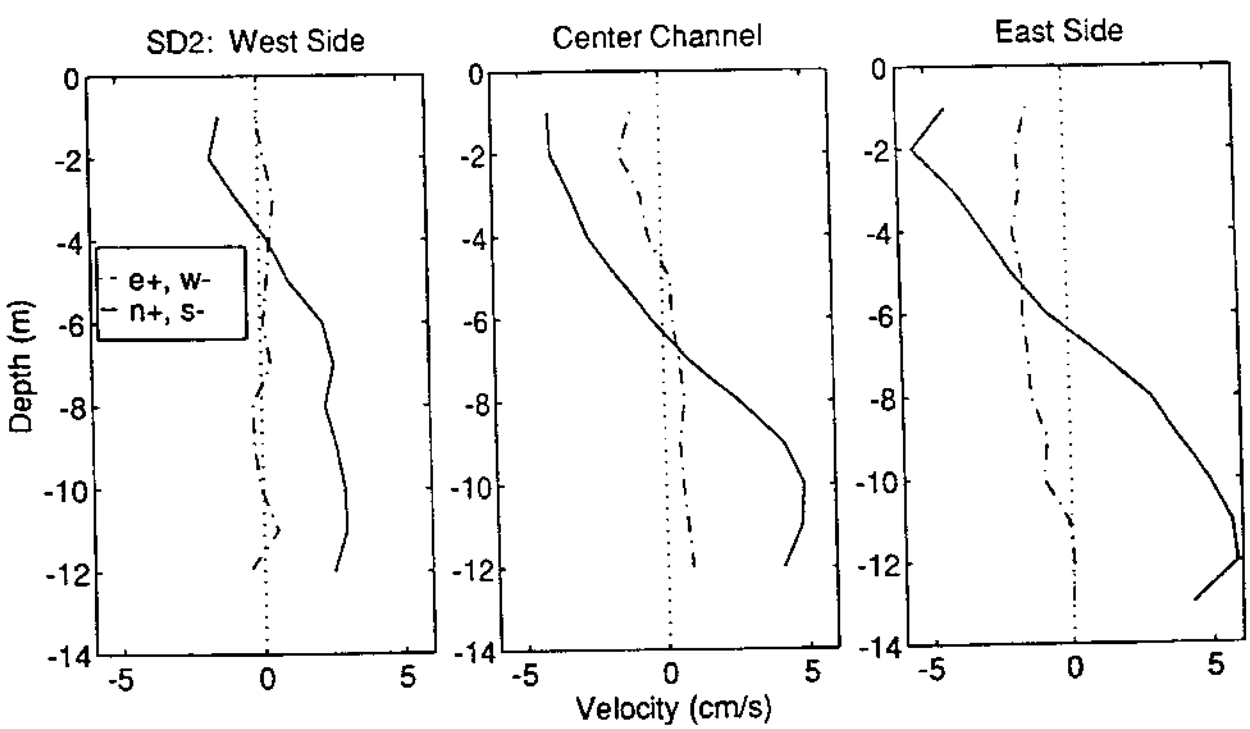

Figure C.6.9 (9/26/94) Tidal Mean Velocity v. Depth at Wentworth Point

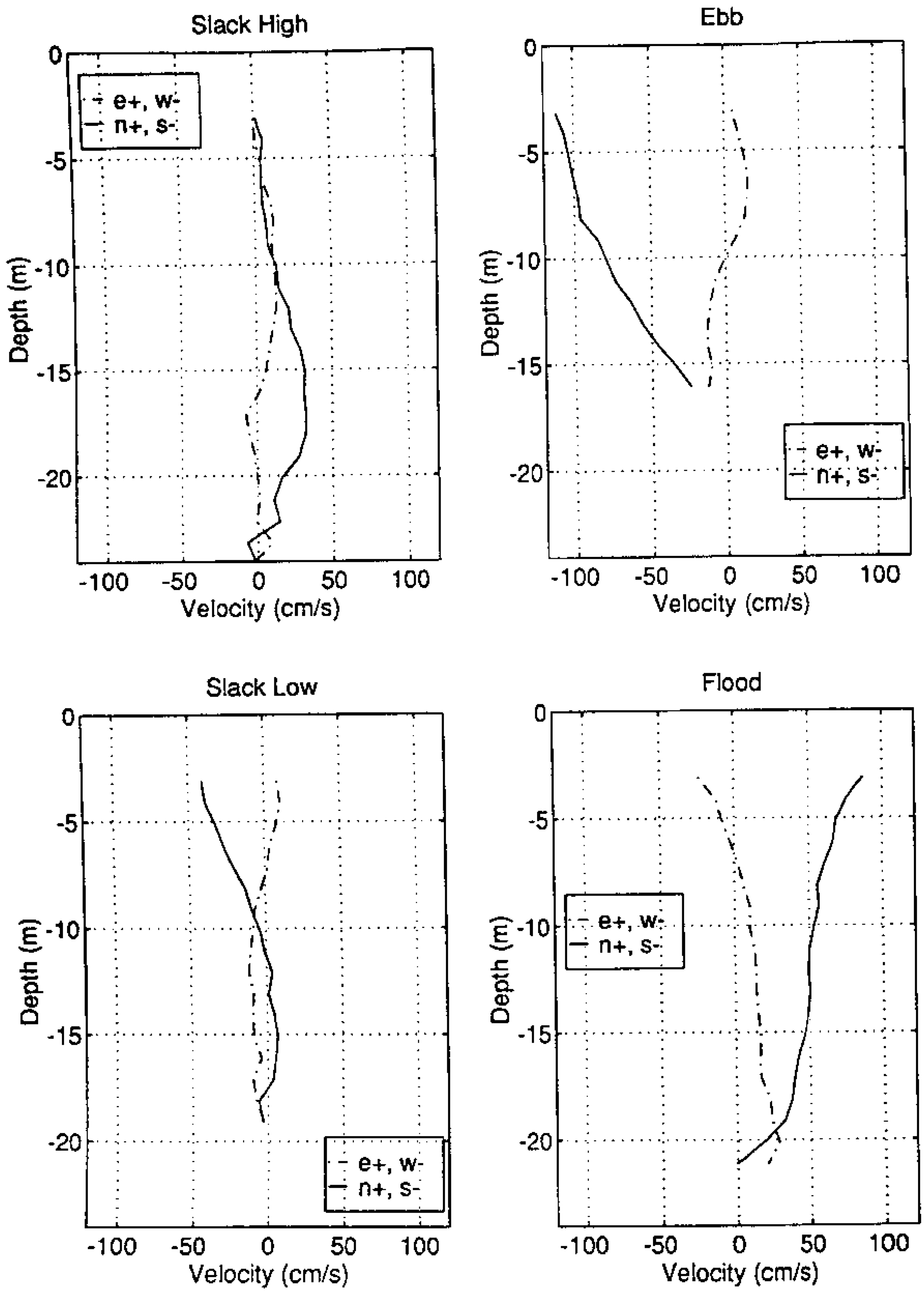

Figure C.7.1 (9/17/95) Velocity vs. Depth at Phippsburg

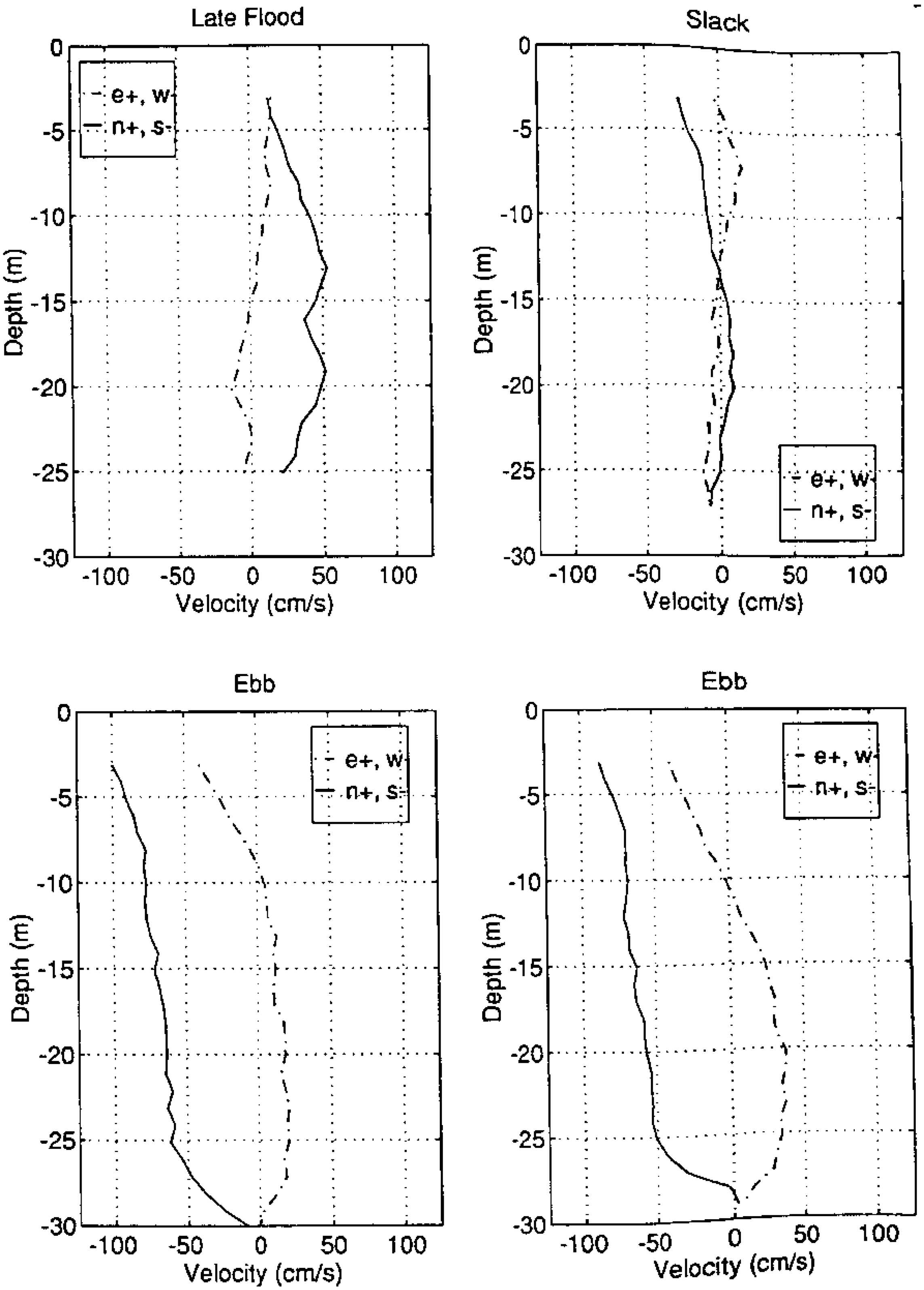

Figure C.7.2a (9/17/95) Velocity vs. Depth above Bluff Head

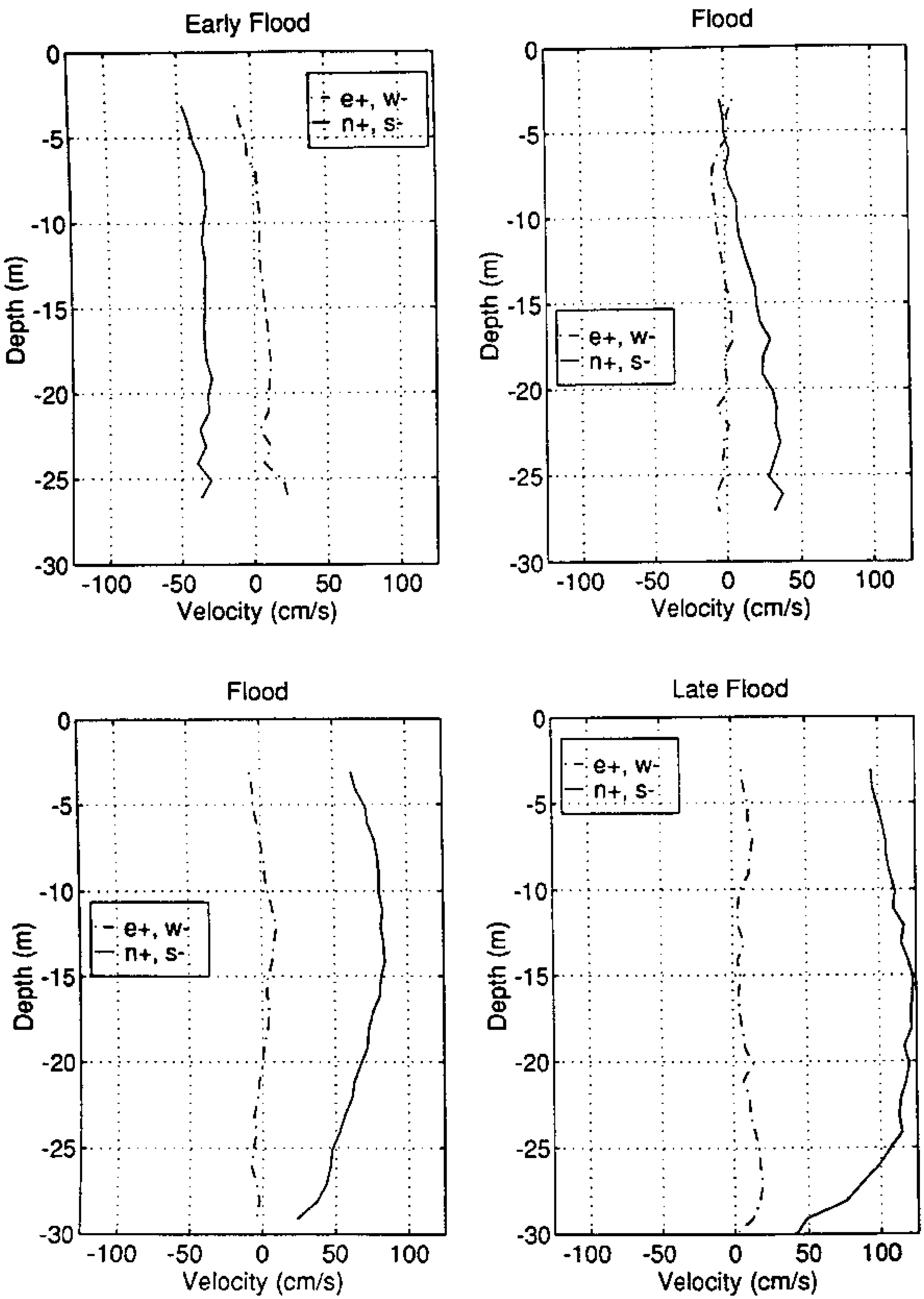

Figure C.7.2b (9/17/95) Velocity vs. Depth above Bluff Head

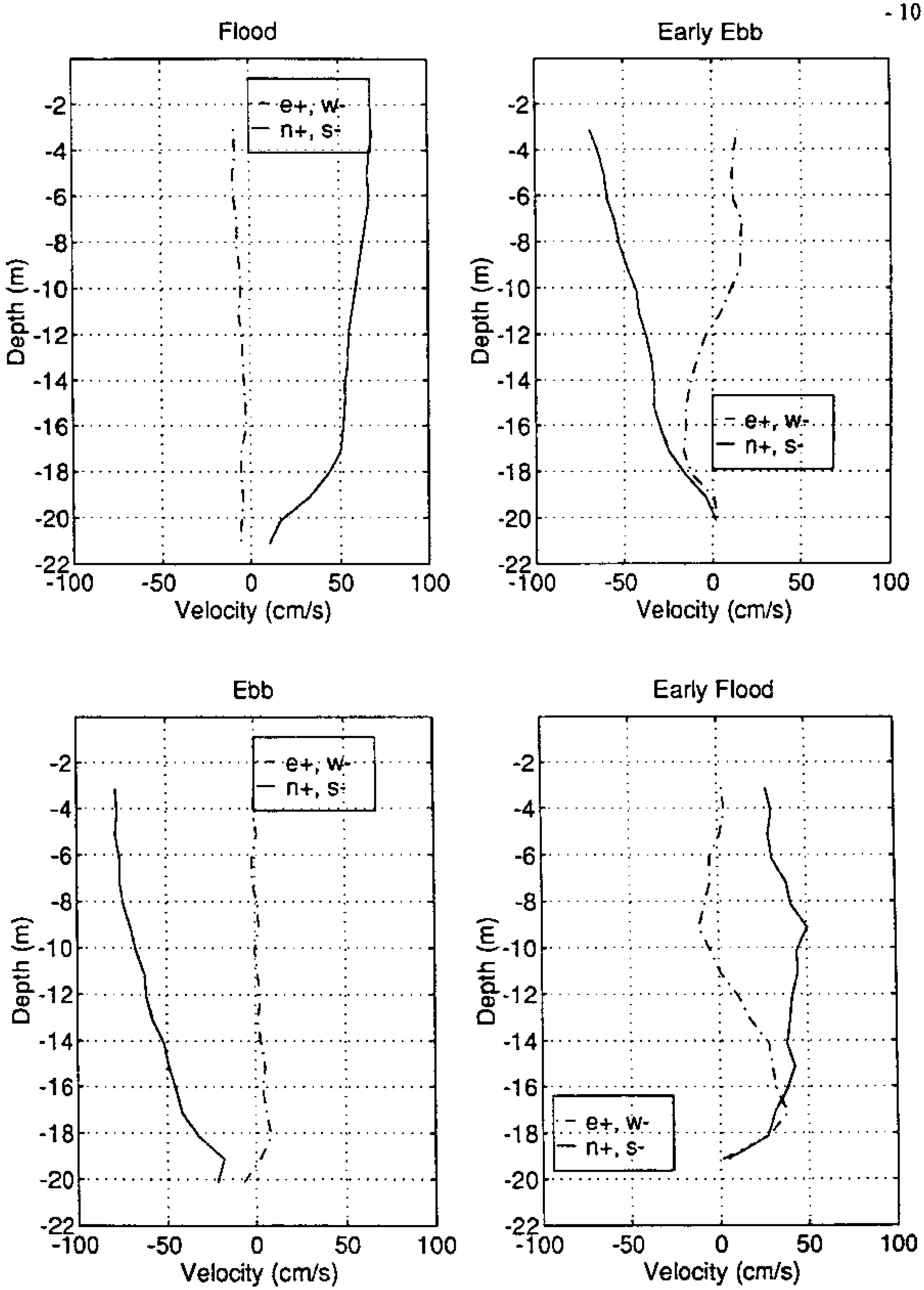

Figure C.7.3 (9/17/95) Velocity vs. Depth at Fish Plant

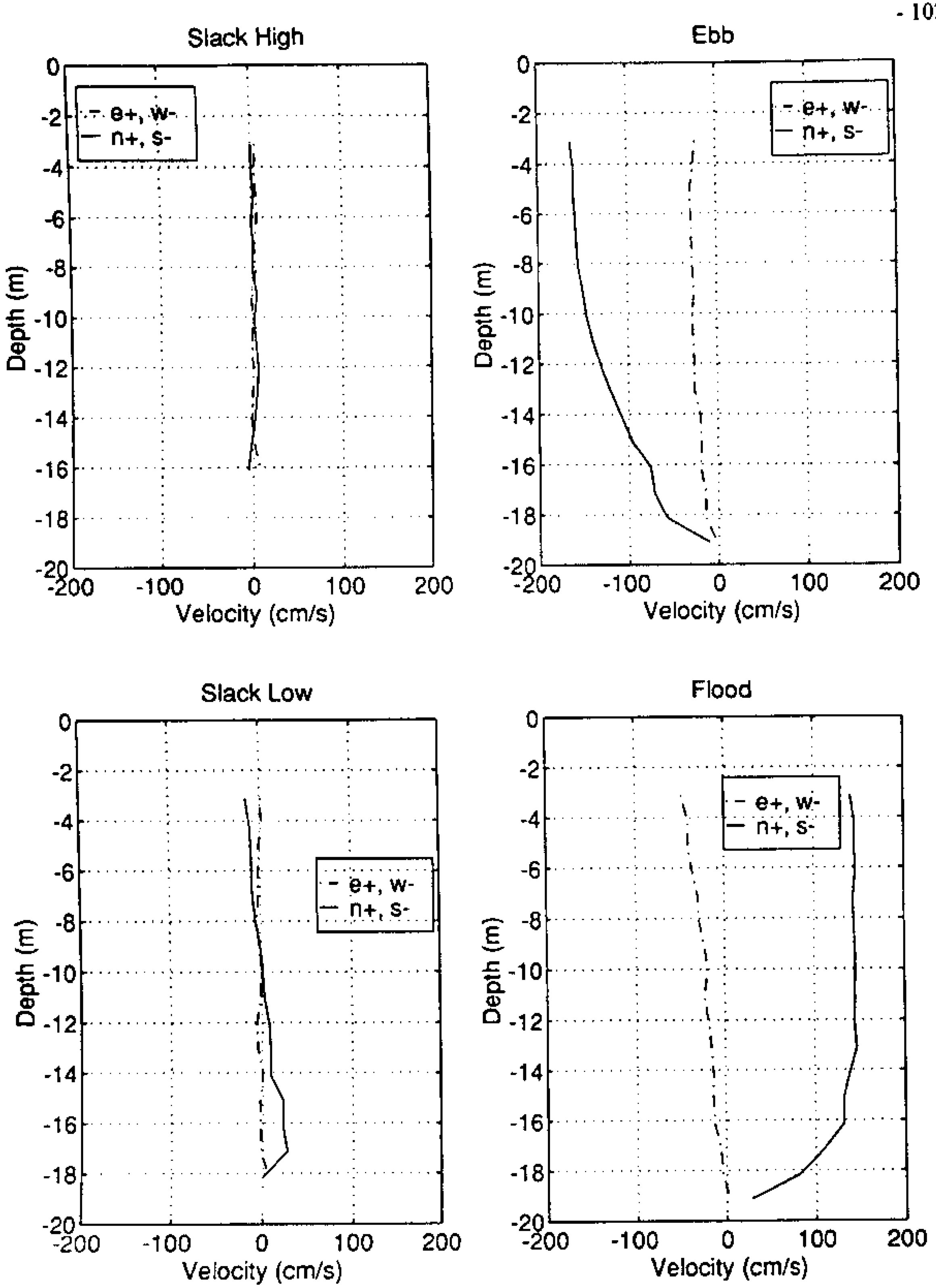

Figure C.7.4 (9/16/95) Velocity vs. Depth at Chops Point

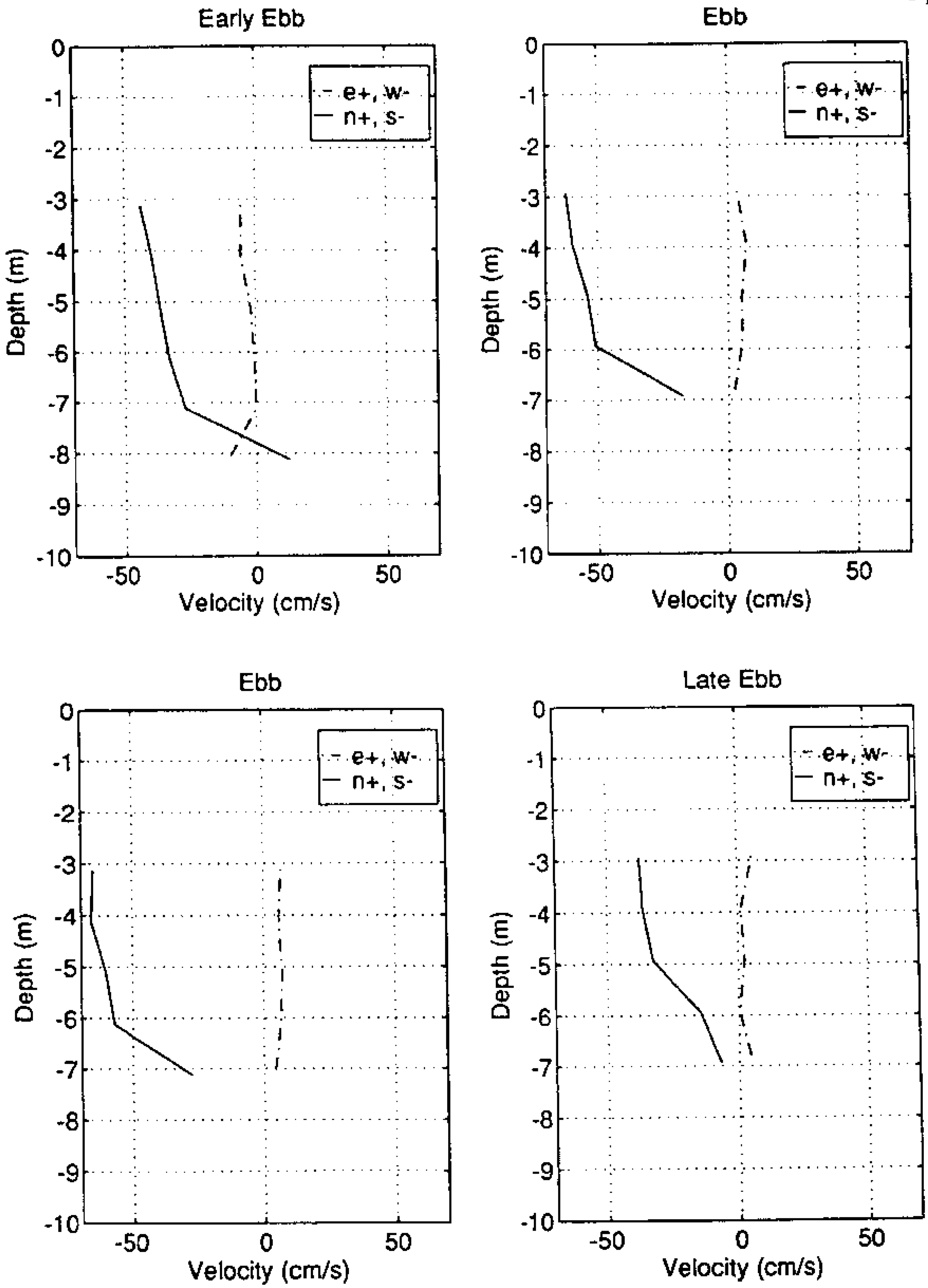

Figure C.7.5a (9/16/95) Velocity vs. Depth at Twing Point

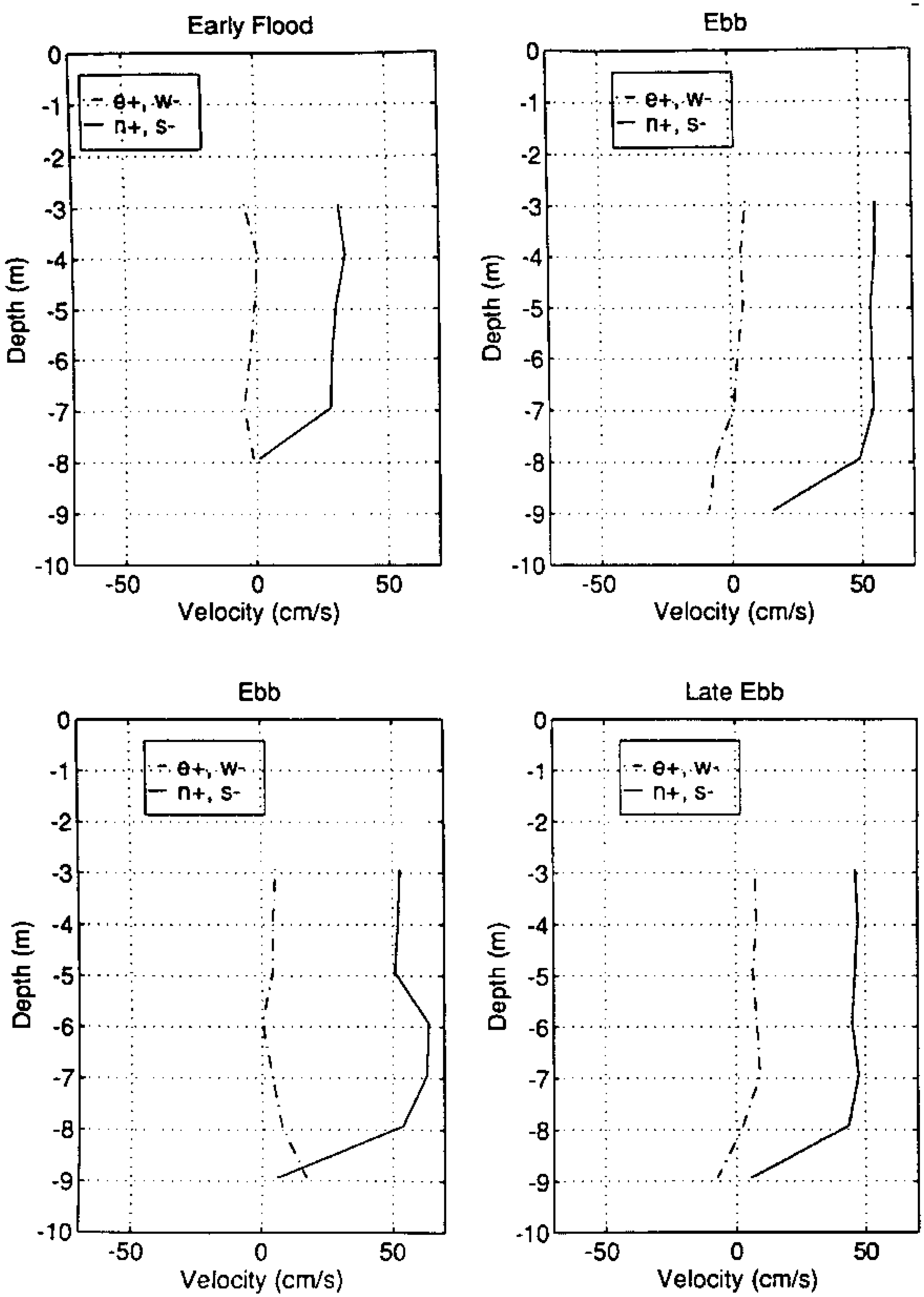

Figure C.7.5b (9/16/95) Velocity vs. Depth at Twing Point

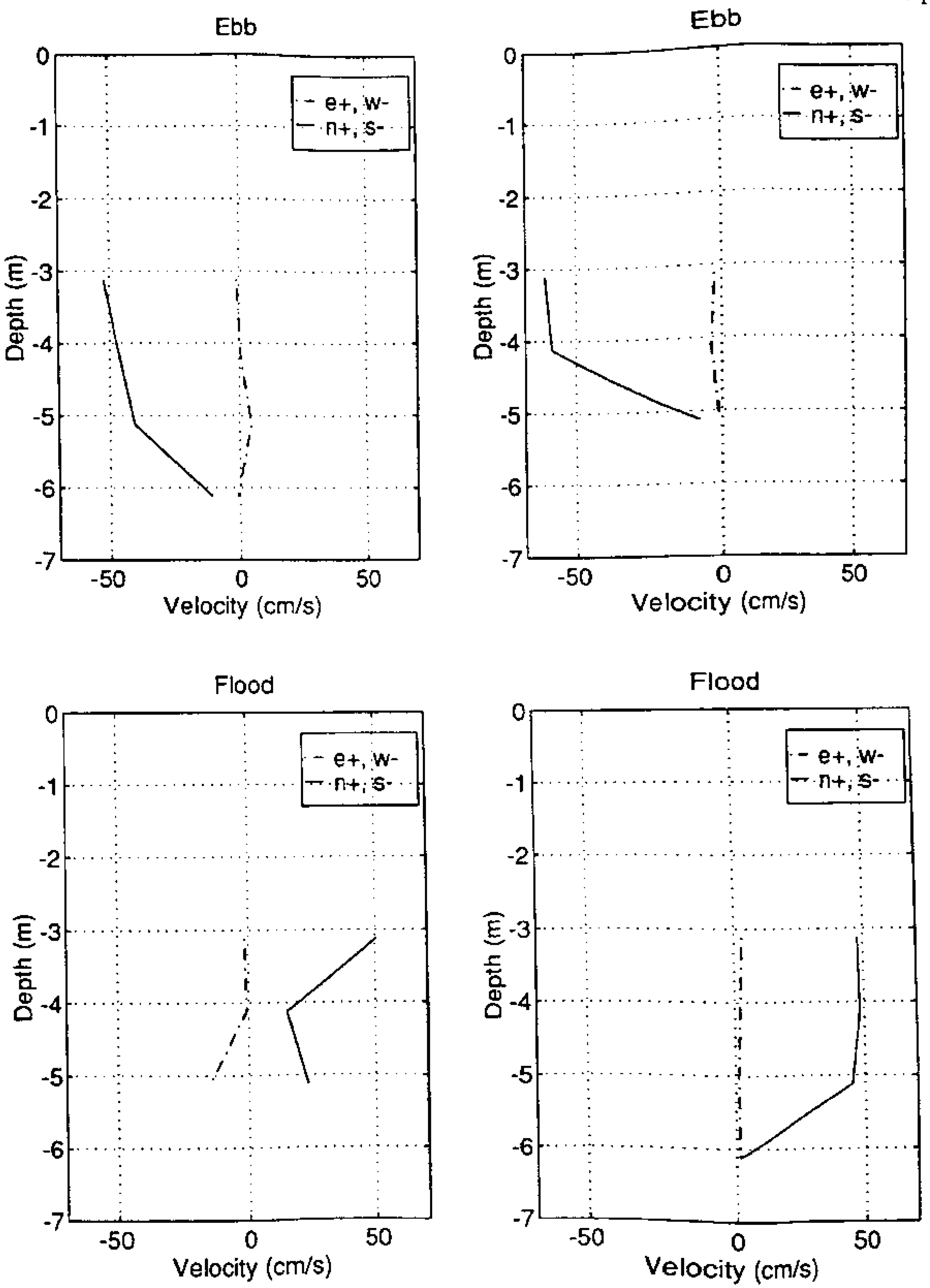

Figure C.7.6 (9/16/95) Velocity vs. Depth at Green Point

<u>Figure D</u> <u>S4 Data</u>

Figure D.3.1	(5/2-4/94) Wentworth Point	69° 35.01' W 43° 56.21' N
Figure D.6.1	(9/1-2/94) near Phippsburg	69° 46.16' W 43° 44.81' N
Figure D.6.2	(8/31-9/1/94) Barters Island	69° 41.27 W 43° 54.36' N
Figure D.6.3	(8/29-30/) Wentworth Point	69° 35.01' W 43° 56.21' N

<u>Figure D</u> <u>Methods</u>

An Inner Ocean S4 Current Meter was anchored approximately 5 meters off the bottom, using 3 cinder blocks for anchor, 3 10" glass floats and a tag line tied to a lobster buoy. Measurements were taken for 1 minute out of every five, and recorded as 30 second averages. Current velocity, direction, temperature, salinity, sensor depth and sensor tilt are presented for each deployment.

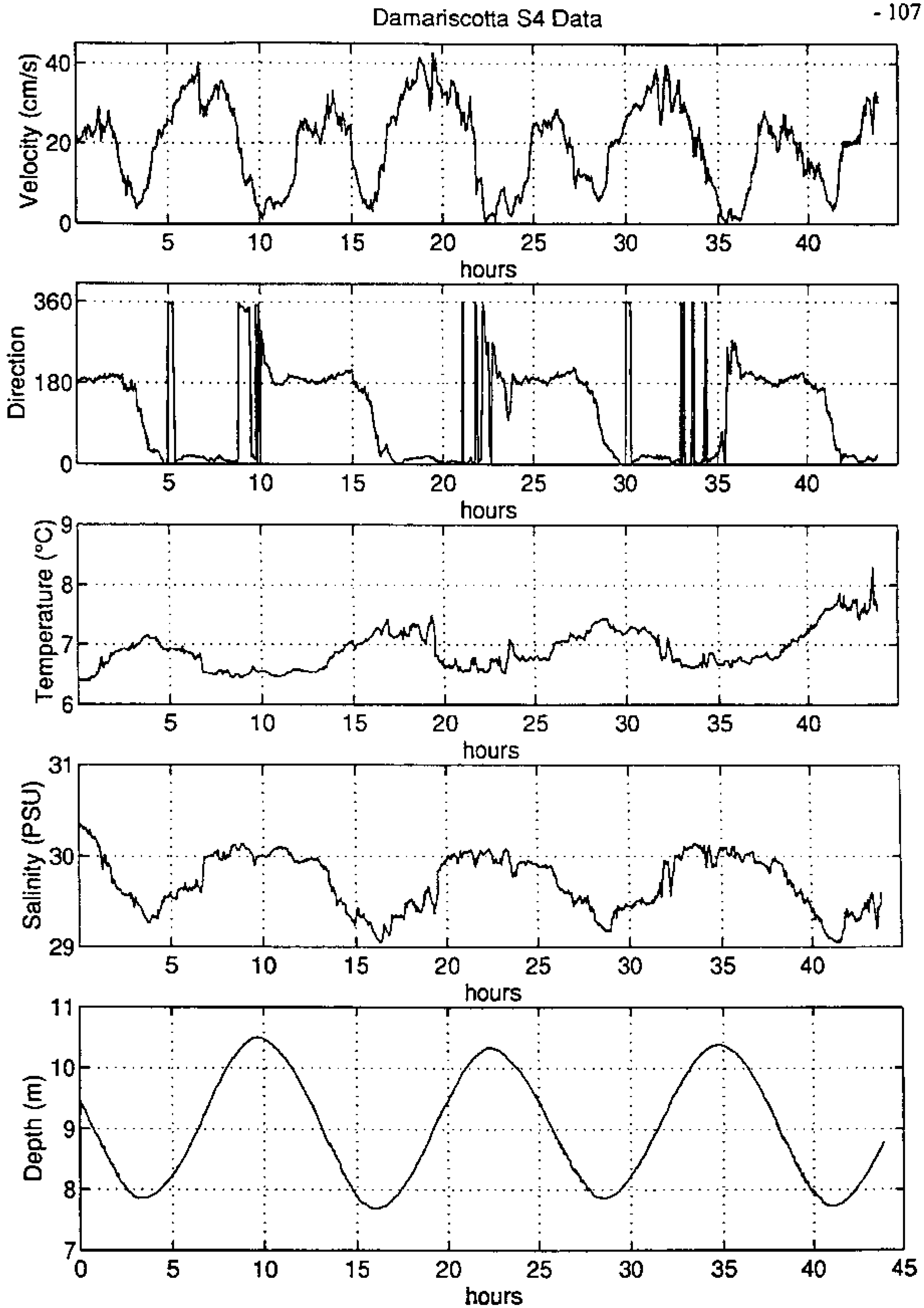

Figure D.3.1 Data from S4 moored 5m off the bottom at Wentworth Point, beginning 20:23, 5/2/94, ending 16:33, 5/4/94.

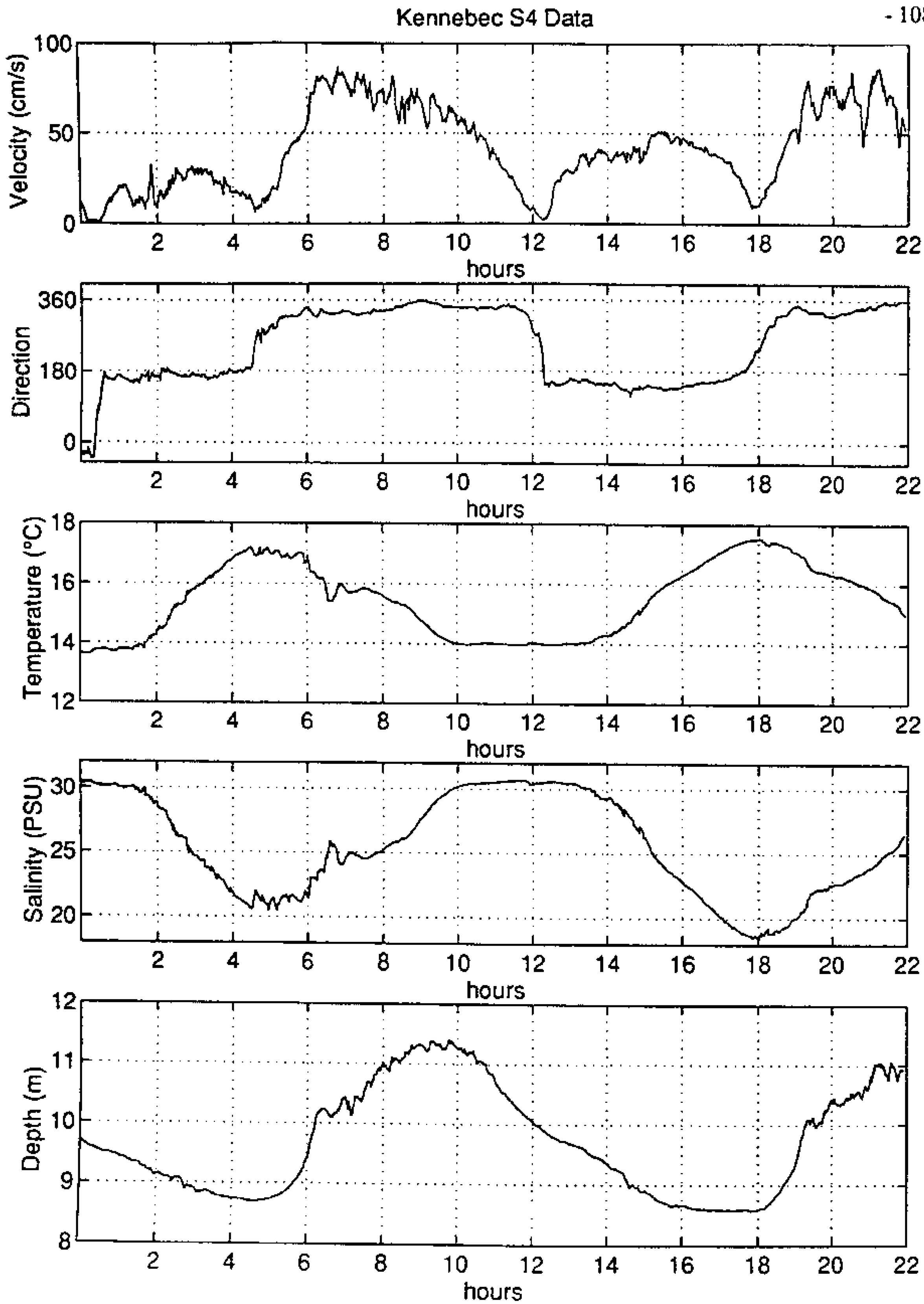

Figure D.6.1 Data from S4 moored 5m off bottom at Phippsburg, beginning 10:35, 9/1/94, ending 8:30, 9/2/94.

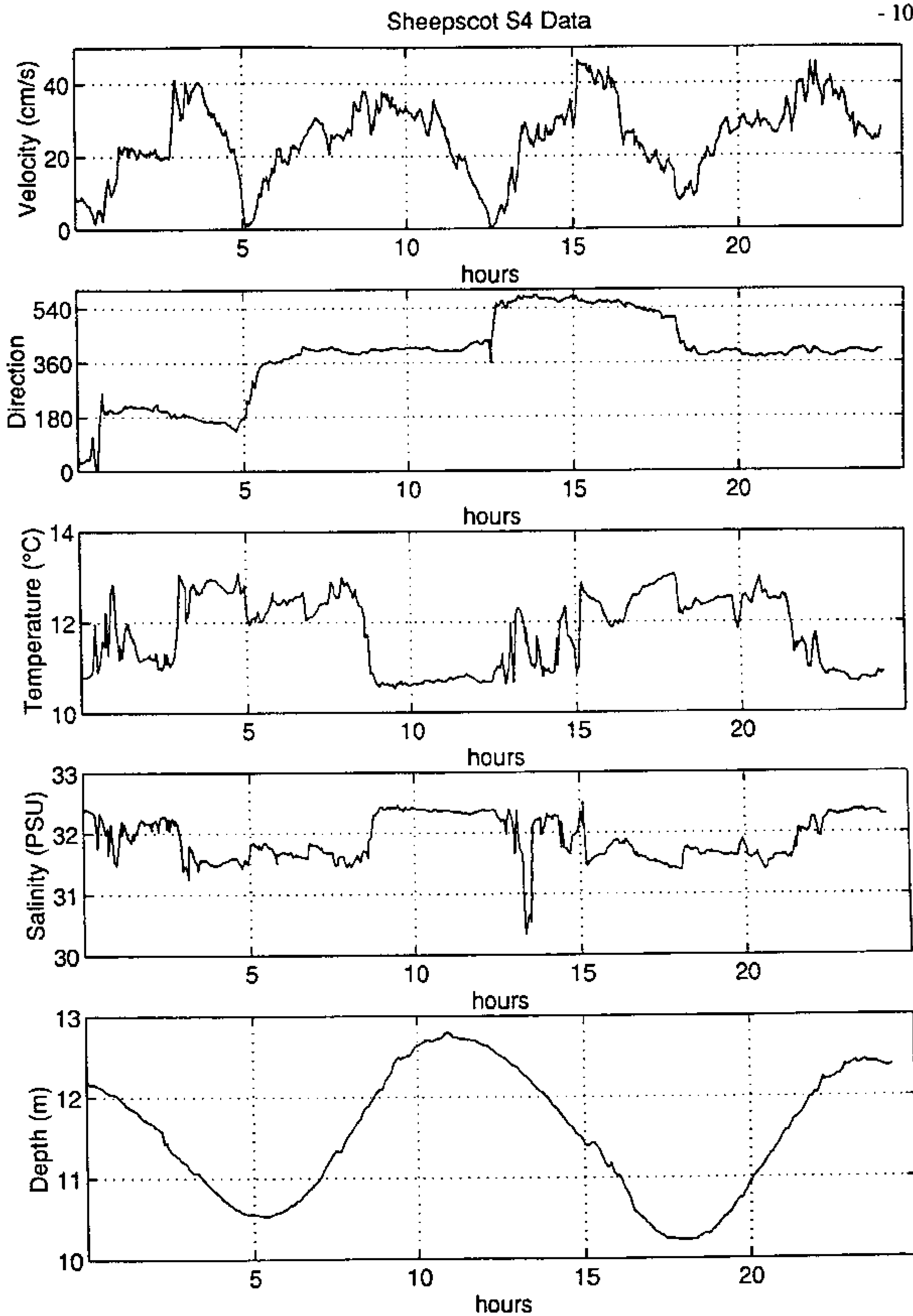

Figure D.6.2 Data from S4 moored 5m off the bottom off Barters Island, beginning 7:55, 8/31/94, ending 8:15, 9/1/94.

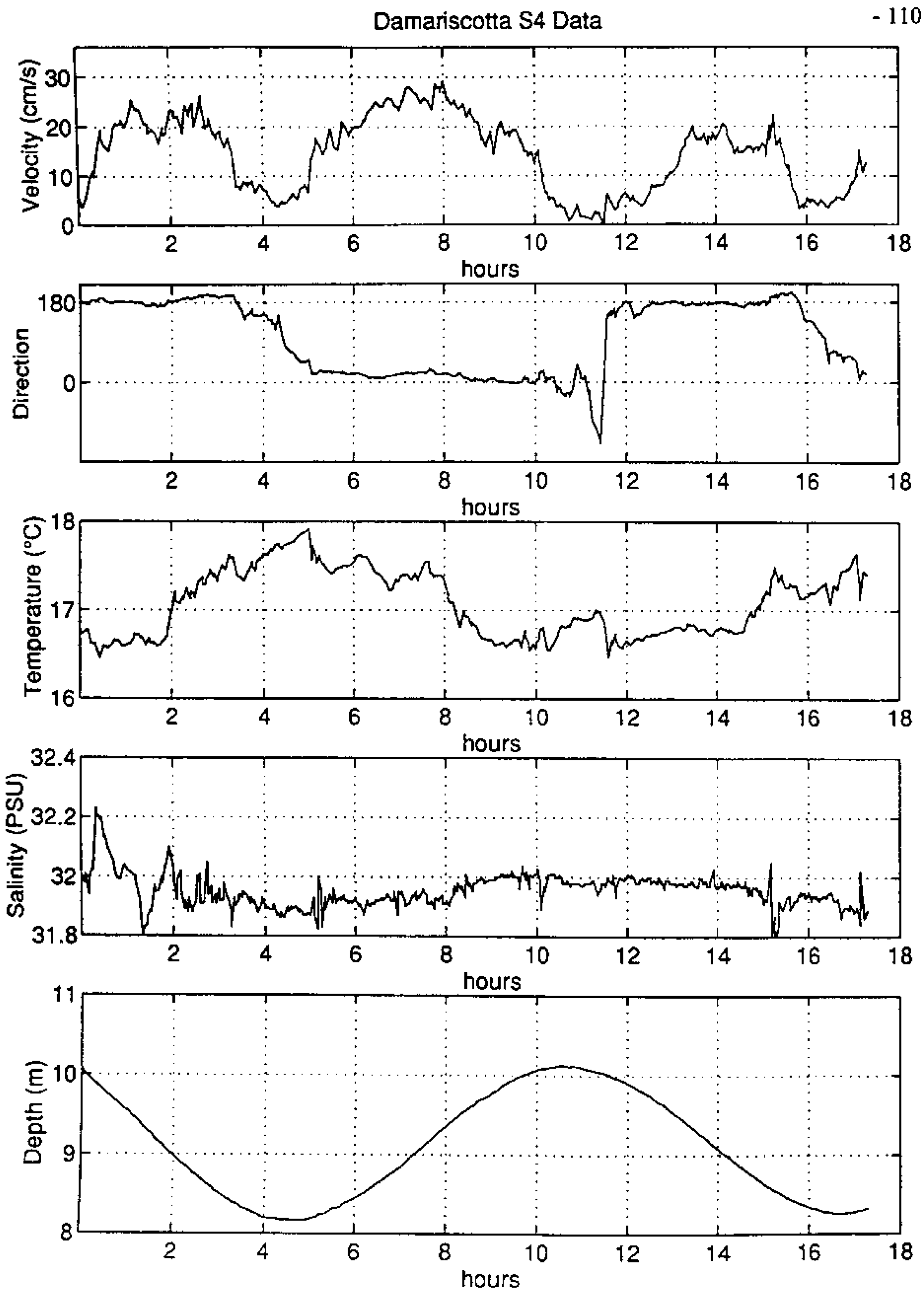

Figure D.6.3 Data from S4 moored 5m off the bottom at Wentworth Point, beginning 19:30, 8/29/94, ending 12:45, 8/30/94.