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NEAR-SURFACE BIO-OCEANOGRAPHIC PHENOMENA IN THE QUODDY REGION, BAY OF FUNDY

by

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The Quoddy region is an ecologically unique area noted for its complex oceanographic and biological events. The interaction of large amplitude, semi-diurnal tides and the complex physiography of the region causes anomalies in the tidal current regime that affect local concentration and distribution of zooplankton. These local concentrations are important feeding sites for fish, seabirds and marine mammals. This report provides summaries of data concerning currents, water temperatures, zooplankton and schooling pelagic fish with a finer spatio-temporal resolution than any previous records for the Quoddy region. The data were collected during an extended study of upper trophic level species that are present in large numbers during the summer months, in an effort to understand the feeding and distributional ecology of such species.

RÉSUMÉ

Smith, G. J. D., C. L. Jovellanos, and D. E. Gaskin. 1984. Near-surface bio-oceanographic phenomena in the Quoddy region, Bay of Fundy. Can. Tech. Rep. Fish. Aquat. Sci. 1280: iv + 124 p.

Ecologiquement, la région de Quoddy est unique et est renommée pour les phénomènes océanographiques et biologiques complexes qui s'y produisent. L'interaction entre les marées semi-diurnes de forte amplitude et la physiographie compliquée de la région cause des anomalies dans le régime des courants de marée qui, à leur tour, influent sur les concentrations locales et la distribution du zooplancton. Ces concentrations locales sont d'importantes aires d'alimentation pour les poissons, les oiseaux de mer et les mammifères marins. Le présent rapport contient un résumé des données sur les courants, les températures de l'eau, le zooplancton et les poissons pélagiques formant des bancs avec une résolution spatio-temporelle plus fine que tout ce qui avait été fait à ce jour dans la région de Quoddy. Les données ont été recueillies au cours d'une étude intensive des espèces de niveau trophique supérieur présentes en grand nombre durant les mois d'été. Le but de l'étude était de mieux comprendre l'écologie de l'alimentation et de la distribution de ces espèces.

INTRODUCTION

Considerable attention has been focused in recent years on the interrelationships of physical and biological factors in marine ecosystems. The importance of large upwellings with their associated biological activity in the open ocean is now widely appreciated (Laevastu and Hela 1970; Boje and Tomczak 1978). At the local level (over distances of tens of meters to a few kilometers), much emphasis has been focused on the phenomenon of patchiness of plankton and its effects on production cycles (see Fasham (1978) for a review of hypotheses and a detailed survey of earlier studies).

The Quoddy region off the southwestern coast of New Brunswick provides a suitable environment for studies of localized bio-oceanographical events. The dominant feature is the large semi-diurnal tides (range: 5.6-8.3 m; Forgeron 1959) that generate strong currents (1.5-2.5 m/sec; Forrester 1959). Topographic resistance to these tidal flows results in small-scale local upwellings, vigorous vertical mixing, and horizontal convergences (Gaskin and Smith 1979) which serve as loci for intense biological activity. Hamner and Hauri (1977) demonstrated how simple techniques employed intensively in a small area can reveal surface and subsurface structure in local water masses which otherwise might be assumed to be well-mixed and relatively homogeneous. During an extended study of seabirds and marine mammals in the Bay of Fundy, we have used analogous techniques in an effort to understand the frequent occurrence of sharply delineated, mobile and transitory feeding aggregations in the approaches to Passamaquoddy Bay.

The study area, demarcated by latitudes 44°54'45"-45°04'25"N and longitudes 66°50'40"-60°00'20"W, encompasses the West Isles district of southwestern New Brunswick (Fig. 1). Deer Island, and more than 40 smaller islands and numerous ledges, straddle the mouth of Passamaquoddy Bay, funnelling the tidally driven waters through two main passages, Letite Passage and Western Passage. Campobello Island acts as a barrier to the outflow from Western Passage, deflecting tidal waters around both its extremities through Head Harbour Passage to the northwest and Lubec Narrows to the west.

This region has been studied for nearly 86 years, since Moore (1898) first published his report on the herring fishery of the region. Some of the most intensive work was undertaken in 1957-58 to investigate the impact of a proposed tidal hydroelectric power development on the Quoddy region. These studies resulted in reports on temperature and salinity (Forgeron 1959) and currents (Chevrier 1959; Forrester 1959). More recent work focused on the impact of a proposed oil refinery at Eastport, Maine (Environment Canada 1974; Scarratt 1979). None of these investigations, however, has provided oceanographical and biological data on a spatio-temporal scale (Haury et al. 1978) fine enough to be useful in interpreting feeding activity by upper trophic level species which is intensive and patchy (Gaskin et al. 1979; Braune and Gaskin (1982).

In this report we provide summaries of data concerning currents, temperatures, zooplankton, and schooling pelagic fish. In all cases, the records were collected in both time and space on a much finer scale than previously attempted in the Quoddy region. Sample sites were often less than 1 km apart and were visited several times per month. The data are restricted, however, to the 6-mo period, June to November, with the most intensive sampling done during July, August, and September. This sampling period corresponds to the time of peak abundance of porpoises, whales, and seabirds in the area. Data collection was also restricted to the upper portion of the water column, since we were interested in the feeding ecology of these upper trophic level species. We present the data here because they have a high spatio-temporal resolution and they provide a much needed baseline for further studies in a coastal region of great oceanographic complexity and biological diversity.

MATERIALS AND METHODS

TEMPERATURE PROFILES

1977-1979

Temperatures were monitored at 65 stations in the Quoddy region from June to October 1977 (Fig. 2). The stations were distributed as evenly as possible throughout the area at intervals of about 0.8 km. Each station was monitored from one to six times per month on both the flood and ebb phases of the tide. A total of 911 profiles were obtained in 1977. Temperatures were measured at 0, 1.5, 3.0, 6.0, 9.0, and 12.0 m, using the thermistor circuitry of a Beckman RS-5 salinometer that had been calibrated with a high precision mercury thermometer. In 1978, the number of stations was increased to 79 (Fig. 3); the stations were monitored from June to September and in November. A total of 1289 profiles were obtained. In 1979, the same 79 stations were maintained but were visited on a more restricted basis from July to September to yield 324 profiles.

By month, the mean temperature for each depth at each station was calculated for both flood and ebb. Mean surface temperatures were plotted on maps of the area and isotherms drawn for three major temperature intervals. In addition, the readings from all depths were averaged to yield a mean value which we considered representative of the upper 12 m of the water column. The means were then clustered, using the Clustan 1C package (Wishart 1975). Hierarchic, optimization, and density techniques were used, and only clusters detected by at least two of the three methods were accepted (Everitt 1974; Wishart 1975).

One Tidal Cycle

Thirteen stations were selected within the central part of the study area from the 79 stations monitored in 1979 (Fig. 32). Each of these stations was visited consecutively on 16 August 1979 from 0727-2008 h in order to monitor water temperatures throughout one complete tidal cycle. Each station was visited at approximately 90-min intervals and the temperature read at 0, 1.5, 3.0, 6.0, 9.0, and 12.0 m, using the thermistor circuitry of a Beckman RS-5 salinometer.

CURRENT VELOCITIES

Current Meter

Current speeds and directions were obtained for each of the eight stations shown in Fig. 46. An Ekman current meter (Kahlsico Corp, Ca.) was repeatedly lowered from an anchored vessel to an average depth of 10 m (relative to the surface) and individual readings recorded at approximately 15-min intervals. Each station was monitored for one full tidal cycle (flood plus ebb) and complete time series profiles were obtained except at stations CJ1 and CJ2. At station CJ1, the lack of slack high water readings was filled by assuming that velocities were equivalent to those at slack low. At station CJ2, the lack of data for the late flood was compensated for by assuming that both speed and direction values during the peak of the flood tide graded linearly into the slack high water values.

The current speed and direction readings reflect only average tidal conditions. Time and manpower constraints precluded the recording of separate velocity profiles for the spring and neap tides.

Current meters utilizing recording propellers often measure velocity components not associated with current flows *per se*. The divergence between actual and recorded values is a function of propeller design, the angle of attack of the propeller (as a result of instrument and wire drag) and the extent of mooring motion (Weller and Davis 1980). To determine the extent of this non-cosinusoidal behavior, the Ekman current meter was subjected, in a swim mill (Flyght Corp., Sweden), to the current speeds (0-150 cm/s), angle of attack (10°), and rhythmical vertical motion (0.5 m/ 10 s) observed in the field. Figure 47, showing the actual speeds generated by the swim mill versus the values recorded by the current meter, indicates divergence only at speeds in excess of 110 cm/s (2.2 knots). Since speeds within the sites monitored did not exceed this value (except at station CJ3), the data obtained for stations CJ1 to CJ8, using the Ekman current meter, were considered reasonably accurate.

For each of the time series profiles, current speed and direction readings were recorded relative to a standardized 12.50 h tidal cycle. Velocities corresponding to the reported times of slack low and slack high water (Fisheries and Oceans Canada 1980) were respectively assigned to 0.0 h and 6.25 h of the standardized tide cycle.

Surface Drogues

The speed and direction of surface currents were obtained by using methods derived from Hamner and Hauri (1977). Drogues were released in sets of 5-10 in selected areas and their positions monitored from small boats, using hand-held compasses to triangulate from visible landmarks. The drogues consisted of two paper plates glued together (concave faces inward), painted fluorescent orange, and numbered accordingly. Drogues were never released when wind speeds exceeded 9 km/h. Hamner and Hauri (1977) reported that this type of drogue tracked water movements accurately (checked against dye dispersal) when the wind speed was <11 km/h.

ECHO SOUNDINGS

From June to September 1980, surveys for pelagic fish schools were conducted with a 200 kHz SiTex HE-32 sounder (SiTex Corp., Fla.) equipped with a dry paper stylus recorder. Soundings were conducted along three tracks, each consisting of a fixed number of straight-line transects of known compass bearing (Fig. 64). Maximum deviation from the expected transect path, as a result of lateral drift and navigational error, was visually estimated to be about 150 m. Letite Passage proper was not surveyed since previous scans had shown that the intense upwellings produce spurious traces which confounded analysis of the paper record.

Echo surveys were performed at sunrise, mid-day, and sunset. At an average boat speed of 100 cm/s (2 knots), completion time per track was approximately 1 h. Since only a maximum of two tracks could be scanned within any one of the three sampling periods, the specific tracks to be surveyed in a given session were selected at random. Soundings were not conducted if sea-state was rated above Beaufort 3 (winds greater than 10 knots or 500 cm/s) since surface turbulence would generate false traces.

For each transect, the paper record was scanned for pelagic traces. The modal depth, maximum length, and maximum height of each distinct trace were measured and a qualitative density ranking (1 = low, 2 = high) assigned to the trace. A relative abundance index for each transect was then calculated as the product of trace length, trace width, and trace density summed over all the pelagic traces recorded in that transect. Because qualitative observations during the 1980 field season indicated that the total summer pelagic biomass was divided equally between herring and immature pollock, the statistical probability that any given trace represents herring is assumed to be 0.5 (Jovellanos 1981).

An analysis of variance was performed using the Statistical Analysis System (S.A.S.) Anova program (Barr et al. 1979) on the log-transformed[3] relative abundance values, blocked by month, to test for differences between transects within a track and between transects irrespective of track. The relative abundance values were also inspected for differences with respect to sampling period. In addition, the standardized[4] log-transformed means of the relative abundance values per transect (irrespective of track) were clustered to detect spatial patterns in the pelagic targets. Hierarchic, optimization, and density techniques were implemented, using the Clustan 1C programs (Wishart 1975) and only clusters detected by at least two of the three methods were accepted (Everitt 1974; Wishart 1975).

PLANKTON SAMPLING

Vertical Hauls

Vertical hauls were conducted systematically through a 14 station grid (Fig. 68) with sampling periods assigned at random. Samples were collected with a 0.5-m (mouth diameter) 400-μ mesh net hauled upwards at 75 cm/s. Net design was similar to the ICES-SCOR WP-2 net (Anon. 1968).

With the exception of stations 2, 7, and 8, two depth strata were sampled per station: (i) 20 m to 0 m, and (ii) bottom to 0 m. Due to the shallow depths at stations 2, 7, and 8, only the 20-m to 0-m hauls were conducted at these sites. From 16 August 1980 to 7 September 1980, five replicates were obtained for each station and depth combination. All samples were preserved in 4% formaldehyde (Steedman 1976).

Subsamples for identification and counting were withdrawn with a large bore (5 mm) pipette after bubbling air through the sample to insure uniform distribution of the organisms (McCallum 1979). The subsamples were classified at most to genus, using the taxonomic keys of Gosner (1971), Murphy and Cohen (1979) and Roff (1978). The individuals in each taxon were then sorted, with the aid of an eyepiece micrometer, into four size octaves: 0.5-0.9 mm; 1.0-1.9 mm; 2.0-3.9 mm; and 4.0 mm and over. Metasomal lengths were measured for copepods and total length for all other organisms. Preservation of crustacean zooplankton in 4% formaldehyde results only in minimal shrinkage (Steedman 1976).

The number of individuals in each size class was expressed per cubic meter. If less than 100 of the most abundant copepod genus were counted in a given subsample, an additional subsample was taken to stabilize the coefficient of variation (Winsor and Walford 1936; Winsor and Clarke 1940). All subsampling was performed with replacement. For larger organisms (such as chaetognaths and euphausiids), all the individuals in a sample were counted.

An analysis of variance using the S.A.S. Anova program (Barr et al. 1979) was performed over the log-transformed counts of each size class. The Anova was based on a split-plot design (main plot: station, subplot: depth) and significant differences in the counts per size class, between stations and depths, were tested.

To detect spatial patterns in zooplankton densities, the standardized log-transformed mean counts per size class by station and depth were clustered, using hierarchic, optimization, and density techniques available through the Clustan 1C package (Wishart 1975). Only clusters detected by at least two of the three methods were accepted (Everitt 1974; Wishart 1975).

Horizontal Tows

Horizontal subsurface tows were conducted on both the flood and ebb along transects of known bearing (Fig. 69-70). The net was hauled at a depth of approximately 1 m. Net design and sample preservation procedures were identical to those used in the vertical hauls. The taxa however were not classified into size groups.

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[3] We performed log transformation on these and other data in this report to satisfy the assumptions for an analysis of variance.

[4] Data were standardized so that observations on each variable had zero mean and unit standard deviation.

EUPHAUSIID POPULATION SURVEYS

The spatial and temporal occurrences (by month, time of day, and tide phase) of euphausiid surface swarms were recorded in the course of odontocete and avian surveys conducted in 1973 and 1976-78. Euphausiid samples from surface plankton tows taken in 1977 and 1978 (using a 0.5-m diameter, 646-μ mesh net) were analyzed to determine the length frequency of the euphausiid populations in the study area. Measurements were taken with an eyepiece micrometer (precision ±0.05 mm) mounted on a Wild M4A stereomicroscope. Carapace length was measured from the posterior edge of the midlateral side to the base of the eye notch in the carapace. True carapace length is not affected by preservation in formalin (Steedman 1976). In samples containing more than 250 individuals, only a subsample, consisting of approximately 5% of the total number of individuals, was analyzed.

RESULTS

TEMPERATURE PROFILES

1977-1979

The mean temperature for each depth and station by tide phase and month is shown in Tables 1-3. Mean surface temperatures, grouped into equal intervals, are plotted in Fig. 4-29.

The upper 12 m of the study area were generally well-mixed. Temperatures were at a minimum for the months examined in June, reached a maximum in late August and early September, and by November returned to the June values. The mean, maximum, minimum, and range by year, month, and tidephase for the surface temperatures are given in Table 4. Surface temperatures in 1978 were between 0.01 and 0.67°C colder than in 1977. Temperatures in 1979 were warmer than in the previous two years although in July and September this observation may have been biased by the limited number of stations monitored. There were also some minor fluctuations in mean surface temperature between flood and ebb tides. The differences ranged from 0.01 to 0.51°C ($\bar{x}$=0.21°C), and the ebb values were usually lower than the flood (except in August). The results of the cluster analysis are shown in Fig. 30-31 and the descriptive statistics for each cluster are contained in Tables 5-6.

One Tidal Cycle

Eight temperature profiles were obtained at each station and are presented in Fig. 33-45. The temperatures varied from 9.8-11.4°C. At most stations, the range was less than 1.0°C but, at station 68, the range was 1.5°C. Stations in high velocity areas (42, 43, 44, 45, 54) showed the greatest range of temperatures with cold water being brought to the surface on the ebb, and warm (>11°C) water flowing inshore at the surface on the flood tide.

CURRENT VELOCITIES

Current Meter

The time series records of current speed and direction for each of the 8 stations are shown in Fig. 48-55 . The curves were obtained through linear interpolation of the data points, using the AFGEN function of the C.S.M.P. package (Anon. 1972).

Surface Drogues

The data for 28 sets of drogue releases (totaling 233 drogues) are presented in Fig. 56-63. The speed of movement of the drogues, calculated from straight-line distances between successive fixes, is given in Table 15. In most cases, the direction of movement corresponded to that expected for a given tidal phase. However, runs 8, 9, 16, 21, and 24 displayed interesting features.

Run 8: Drogues 1-7 were deflected in a clockwise direction as the tidal stream encountered the shallow ledges SE of Bean Is. and St. Helena Is. (Fig. 57).

Run 9: Many of the drogues started moving north but then swung around 180° and began to head south (Fig. 58). This suggests that the ebb tide begins to run in Simpson's Passage before the predicted time (see also run 24).

Run 16: Drogues 3-10 moved straight inshore rather than SW (Fig. 60) as might have been assumed from run 15 (Fig. 59). However, the drogues in run 15 were released later in the flood and on a tide that was 1.7 m greater in amplitude. Both these factors caused the tidal stream to be deflected to the SW away from Deer Is.

Run 21: Although these drogues were released 3 h and 49 min after the predicted time of high water, the drogues closer to Deer Is. (6-10) initially moved SW, i.e. as with the flood tide, before swinging counterclockwise (Fig. 61). Conceivably, a gyre is created in this area by tidal streams to the NE and SW which flow in opposing directions (e.g. runs 22, 27; Fig. 61, 63) before moving offshore through the island channels.

Run 24: Although drogue 5 moved SW, drogues 1-4 circled clockwise before heading NE (Fig. 62). This is opposite to run 9 (Fig. 58) which was done at the end of the flood. Tidal streams in Simpson's Passage apparently undergo several reversals in direction near high water.

ECHO SOUNDINGS

The analysis of variance of the log-transformed values of relative abundance of fish traces per transect within a track showed no significant differences (Tables 21-23). However, when the transect data were tested irrespective of track (Table 24), significant differences existed. Furthermore, relative abundances at each transect were always significantly different between months whether the transect data were analyzed with or without reference to track. Inspection of the mean monthly log-transformed relative abundances per transect (Tables 16-19) clearly showed maximum values in August, with September values greater than the June or July values. Mean relative abundances per transect, irrespective of month, are summarized in Table 20.

Relative abundance values, totaled over all transects, irrespective of track, were examined in relation to sampling period. Total relative abundance values were lowest during sunrise, peaked at noon, and decreased slightly during sunset (Fig. 65). However, no significant differences (at $p < 0.05$) between the relative abundance values during each sampling period were found.

The average depth of echo targets recorded in all transects (irrespective of track) was 30 m (SD $\pm$ 14 m, n = 134). Separate analysis of Track 3 which lies over deeper water showed an average target depth of 41 m (SD $\pm$ 23, n = 26). For tracks 1 and 2 situated in shallower waters, average target depth was 27 m (SD $\pm$ 15 m, n = 108).

The average dimensions of pelagic schools recorded were 102 $\pm$ 124 m (length: $\bar{x}$ and SD) and 15 $\pm$ 8 m (height: $\bar{x}$ and SD). The smallest school encountered was 9 m in length and 3 m in height while the largest was 1215 m long and 61 m high. Examples of large and small schools are shown in Fig. 66.

The cluster map of mean relative abundance values per transect (Fig. 67) revealed two particular areas of high density: the channel bordered by Barnes Island, Simpson Island and Bean Island, and the mouth of Head Harbour Passage.

PLANKTON SAMPLING

Vertical Hauls

The mean counts per size group, averaged over all stations and depths (Table 26), show approximately equal numbers of individuals in the 1.0-1.9 mm and 2.0-3.9 mm length classes. Those taxa contributing to the smallest size class (0.5-0.9 mm) seem to be poorly represented due to consistent undersampling by the 400-μ mesh net and were thus omitted from further analysis. Of the three length groups considered to be adequately sampled, organisms belonging to the largest size class are the least numerous.

Analysis of variance of the mean counts per size class by station and depth (Table 25) shows that significant differences between stations exist only for the 1.0-1.9 mm length class (Table 27) while differences between depths are significant for both the 1.0-1.9 mm and 2.0-3.9 mm size groups (Table 28). For the 4.0 mm and over length class, no significant differences between stations or depths were detected (Table 29).

In the 1.0-1.9 mm length class, the mean counts of *Centropages* sp. exceeded 100/m^3 at all stations and depths except for the deep hauls from stations 5, 11, and 12. *Acartia* sp. also recorded counts in excess of 100/m^3 at 8 of the sampling sites while *Eurytemora* sp., *Psuedocalanus* sp., *Temora* sp., and *Evadnae* sp. attained mean counts in excess of 100/m^3 but only at two sites at most. For the 2.0-3.9 mm length class, *Calanus* sp. consistently occurred in numbers greater than 100/m^{3}at all stations and depths. Of the taxa comprising the largest size group (4.0 mm and over), *Sagitta* sp. and *Thysanoessa* sp. were present at all stations and depths. In total, 25 taxa were identified and the mean number/m^3 at each station and depth is reported in Table 30.

The cluster map displaying the spatial patterns of high, medium, and low densities for the 1.0-1.9 mm length class (Fig. 71) reveals that at 12 of 14 stations the upper 20 m of the water column had the highest average plankton densities. In 'The River' area (see Fig. 1), high densities were also noted in the deeper strata sampled. The cluster map for the 2.0-3.9 mm size group (Fig. 72) revealed a more homogenous pattern with densities largely low to medium irrespective of station or depth, although densities are always relatively higher in the upper strata. For the largest length class, the corresponding cluster map (Fig. 73) indicates that densities tend to be higher in deeper offshore waters (stations 11, 12, and 13). Conversely, low to medium densities are associated largely with the shallower nearshore areas (stations 1, 2, 3, 4, 5, 6, 7, 9, and 10).

Horizontal Tows

Near-surface plankton densities (Table 31) were relatively lower than the densities recorded from the vertical hauls. However, the patterns of dominant taxa were similar. Calanus and Centropages also occurred in the highest numbers with Acartia, Evadnae and Psuedocalanus in slightly lower densities. There were no marked differences in the abundance of the dominant taxa on either the flood or ebb.

EUPHAUSIID POPULATION SURVEYS

The results of the euphausiid swarming surveys are shown in Fig. 74-75. The greatest number of swarms were sighted in July and August with the majority of these swarms occurring before 12 noon. The data show no clear evidence of swarms occurring predominantly either on the flood or ebb. The length frequency analysis of euphausiid samples (Table 32) indicated that M. norvegica year class 1 and T. inermis year class 0 were the dominant constituents of the euphausiid population.

DISCUSSION

The underlying factor that makes the Quoddy region ecologically unique is the large amplitude, semi-diurnal tides. The maximum tidal streams that we measured for example were 239 cm/sec (surface drogues) and 154 cm/sec (current meter), both within the range of 150-250 cm/sec measured by Forgeron (1959). When these strong tidal currents encounter topographic resistance inshore, plankton is forced to the surface and concentrated in localized patches through a variety of mechanisms.

Hamner and Hauri (1977) demonstrated that local concentration and distribution of zooplankton can be affected by shear zones, upwellings, convergences and divergences which in turn are generated by anomalies in the current regime. These local concentrations, when high enough, become preferential feeding sites for fish and seabirds. Such patches have been reported in the Bay of Fundy near Brier Island by Brown et al. (1979) and Brown (1980) who showed that cool subsurface water is forced to the surface along with associated copepods as the flood tide encounters a series of underwater ledges off Brier Island. Euphausiid shrimp also swarm at the surface in these areas. These zooplankters are concentrated in upwellings and convergence streaks and then preyed on by mackerel (Scomber scombrus), herring (Clupea harengus), squid (Illex sp.), herring gulls and great black-backed gulls (Larus argentus and L. marinus), greater and sooty shearwaters (Puffinus gravis and P. griseus), red phalaropes (Phalaropus fulicarius), and humpback and fin whales (Megaptera novae-angliae and Balaenoptera physalus). The birds and whales also feed on the fish and squid. A similar food chain exists in the present study area off Deer Island but the shearwaters are replaced by common and arctic terns (Sterna hirundo and S. paradisaea) and Bonaparte's gulls (L. philadelphia), and the red phalaropes by northern phalaropes (Lobipes lobatus).

Such feeding aggregations are highly visible and easy to monitor due to the presence of relatively large upper trophic level species. On the other hand, the associated oceanography and its influence on local food patches are more difficult to assess. Since these prey patches are the result of tidal action, they must be established in six hours or less, but then are often dispersed on the next half of the tidal cycle. They can also be highly mobile, moving within the range of the tidal excursion, and thus causing sequential predator displacement (Braune and Gaskin 1982). Further complexity is imposed by the spring-neap tidal cycle, when current velocities can double during spring tides. Even within one half of the tidal cycle current speeds can fluctuate widely, as at current meter station CJ3 (Fig. 50) where we measured two maxima during the flood tide.

Nearly all the data presented in this report (including cluster analyses of water temperatures, plankton and pelagic echo target densities, and current speeds measured by surface drogues and current meter) emphasize the spatio-temporal variability found within the Quoddy region. This variability is due mainly to the intense vertical mixing that takes place, using turbulent kinetic energy imparted by the tidal streams. Garrett et al. (1978) showed the entire Quoddy region, and indeed most of the Bay of Fundy, to be stratified in summer, but the mesh size of their grid (7.047 km) taken from the numerical model of Greenberg (1979) was not fine enough to resolve the area in question. The transition zone from stratified to well-mixed water masses is marked by small-scale frontal discontinuities that are biologically important. These have been quantified by Simpson and Hunter (1974), Simpson and Pingree (1978), and Pingree et al. (1978) on the European continental shelf, Garrett et al. (1978) in the Bay of Fundy, and Denman and Herman (1978) in the eastern Gulf of Maine.

A preliminary study by Smith et al. (1981) showed that such frontal discontinuities separating areas of stratified and well-mixed water can exist in the central part of the study area between Deer Island and the chain of smaller islands offshore; associated horizontal currents accumulate weak swimming planktonic organisms in local patches. The other major physical phenomenon that we believe to be biologically important in the Quoddy region (Jovellanos and Gaskin, unpubl.) is the 'island mass' effect first named by Doty and Oguri (1956). Asymmetric tidal streams around islands result in eddies, gyres, separation zones, divergences, and convergences that cause downstream depletion or enrichment of zooplankton and consequently their predators (Hamner and Hauri 1981).

In the summer months the Quoddy region supports several hundred harbour porpoises (Gaskin 1977), as many as 10 fin whales (and occasionally other cetaceans) (Gaskin and Smith 1979), approximately 17,000 terns, gulls, and other seabirds, and 400,000 phalaropes (Gaskin, Braune, and Mercier, unpubl.). Obviously substantial food resources are present in the water column. This in itself is not enough however. Foraging seabirds must depend extensively on prey concentrated close to the surface, both for accessibility and to reduce the energetic costs of foraging (Brown 1980). While surface accessibility is not as crucial to foraging cetaceans, prey concentration is important, especially in the case of the larger baleen whales. Brodie et al. (1978) provided calculations that showed fin whales require euphausiids to be in concentrations 175x the average (0.1 g/m^3) found in Nova Scotian waters for feeding to be economical. We were unable to calculate reliable euphausiid densities in the swarms near Deer Island (Fig. 75) due to undersampling as a result of net avoidance; however Brown et al. (1979) estimated euphausiid swarm densities to be 200 g/m^3 off Brier Island, N.S.

Since the data in this report were collected to serve as background to the kind of studies described above, it is difficult to extract specific cases of dynamic bio-oceanographic events without going into great detail. We can, however, provide a few examples to summarize environmental conditions and biomass distribution near Deer Island. Increased tidal streaming in the offshore island channels followed by reduced velocity inshore is demonstrated by many of the surface drogues. Similarly, the maximum speed measured at current meter station CJ3 in the channel between Adams and Barnes Islands was 154 cm/sec, in contrast to a maximum of 55 cm/sec measured inshore at CJ13. In addition, some drogues indicated the presence of various current anomalies, such as gyres and abrupt changes in direction (eg. runs 21 and 24, Fig. 61 and 62). Frictional resistance by the bottom to tidal streams and upwelling initiated by relief features, both resulting in intense vertical mixing (Fig. 31-43), are most pronounced in the vicinity of the high velocity channels. The results are manifested at the surface as regions of colder water, often with steep horizontal gradients (Tables 1-3). Such areas are especially noticeable in July and August in Letite Passage, in the lee of the offshore islands, and in Head Harbour Passage; in all three places the cold water is surrounded by water 0.5°C to 3.0°C warmer (Fig. 4-29).

The distributional relationship of zooplankton and pelagic fish is somewhat more ambiguous. For example, plankton in the size class 1.0-1.9 mm mainly *Centropages* sp.) was found in high concentrations at 12 of the 14 stations in the upper 20 m of the water column. Species in the 2.0-3.9 mm size class (mostly *Calanus* sp.) however were found in high concentration in the deeper strata offshore but in high concentration inshore near the surface only in the vicinity of Nubble, White, and Hospital Islands and also near Deer Island south of Bar Island. Distribution of the largest zooplankton (*Sagitta* sp. and *Thysanoessa* sp.) was similar except for increased density in the approaches to Head Harbour Passage. Interestingly, areas with the highest concentration of pelagic fish schools were also areas with relatively high plankton densities: in the vicinity of Barnes, Simpson, and Bean Islands, and the entrance to Head Harbour Passage (Jovellanos and Gaskin 1983). The turbulent water in the entrance to Head Harbour Passage is an important feeding area for both harbour porpoises and fin whales (Gaskin and Smith 1979), while Simpson's Passage has significant numbers of female porpoises with calves (Smith and Gaskin 1983). These few examples suggest a close relationship between tidal currents, topographical features, and the attendant biological regime of the Quoddy region.

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Table 1. Near-surface temperature profiles, 1977. See Fig. 2 for station locations.

		TEMPERATURE (°C) - 1977									
ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
1	0.0	8.8	7.6	9.2	9.3	11.5	11.6	11.9	0.0	11.4	10.2
1	1.5	8.2	7.5	9.2	9.2	11.1	11.4	11.8	0.0	11.1	10.2
1	3.0	7.9	7.1	8.8	8.7	11.0	11.0	11.7	0.0	10.8	10.2
1	6.0	7.5	6.9	8.5	8.6	10.9	10.8	11.5	0.0	10.8	10.3
1	9.0	7.2	6.7	8.3	8.4	10.7	10.7	11.7	0.0	10.9	10.4
1	12.0	7.1	6.8	8.2	8.4	10.8	0.0	11.6	0.0	0.0	0.0
2	0.0	8.5	7.4	8.7	9.3	11.4	11.7	11.4	0.0	11.2	10.4
2	1.5	8.1	7.2	8.7	9.2	10.8	11.8	11.4	0.0	10.9	10.2
2	3.0	7.8	7.1	8.7	8.9	10.7	11.3	11.4	0.0	10.7	10.2
2	6.0	7.6	6.8	8.5	8.9	10.5	11.1	11.2	0.0	10.8	10.2
2	9.0	7.4	6.7	8.1	8.7	10.5	11.0	11.4	0.0	10.7	10.2
2	12.0	7.5	6.7	8.1	8.4	10.5	10.8	11.3	0.0	10.7	10.4
3	0.0	8.4	7.0	9.1	9.1	11.2	11.0	11.1	12.2	11.3	10.2
3	1.5	8.3	6.9	8.9	8.9	10.9	11.5	11.1	12.2	10.9	10.3
3	3.0	8.2	6.8	8.6	8.7	10.8	11.2	11.0	12.2	10.9	10.2
3	6.0	7.6	6.6	8.6	8.5	10.6	10.7	11.0	11.8	10.9	10.2
3	9.0	7.6	6.6	8.6	8.3	10.8	0.0	0.0	11.7	0.0	10.2
3	12.0	7.6	6.6	8.2	7.9	10.9	0.0	0.0	11.5	0.0	0.0
4	0.0	8.1	6.7	9.8	8.7	10.6	11.1	11.3	11.5	10.9	0.0
4	1.5	7.8	6.7	9.6	8.4	10.7	11.1	11.1	11.4	10.7	0.0
4	3.0	7.7	6.6	9.3	8.6	10.6	11.1	11.1	11.4	10.7	0.0
4	6.0	7.6	6.4	9.2	8.4	10.5	11.1	11.1	11.3	10.6	0.0
4	9.0	7.5	6.3	9.1	8.4	10.6	11.0	11.0	11.5	10.5	0.0
4	12.0	7.4	6.2	9.1	8.3	10.6	11.0	10.9	11.5	10.5	0.0
5	0.0	7.9	7.0	9.4	9.0	10.6	11.1	10.9	11.6	10.6	0.0
5	1.5	7.8	6.9	9.3	8.7	10.5	11.1	11.0	11.4	10.6	0.0
5	3.0	7.8	6.7	9.4	8.8	10.6	10.8	10.8	11.6	10.5	0.0
5	6.0	7.6	6.7	9.3	8.8	10.5	10.9	10.8	11.4	10.5	0.0
5	9.0	7.6	6.7	9.3	8.7	10.5	10.8	10.8	11.3	10.5	0.0
5	12.0	7.6	6.7	9.1	8.4	10.4	10.8	10.8	11.2	10.5	0.0
6	0.0	8.6	7.2	9.6	9.2	10.9	11.2	11.0	11.6	10.8	10.2
6	1.5	7.8	7.0	9.1	9.2	10.5	11.2	11.0	11.6	10.9	10.2
6	3.0	7.5	6.9	8.6	9.1	10.2	11.2	11.1	11.5	10.9	10.4
6	6.0	7.6	6.8	8.6	9.0	10.2	11.4	11.1	11.4	10.8	10.2
6	9.0	7.5	6.8	8.4	9.0	10.2	11.0	11.0	11.4	10.8	10.2
6	12.0	7.5	6.7	8.3	8.9	10.1	11.1	11.0	11.5	10.8	10.3
7	0.0	8.2	7.0	10.7	9.0	10.3	0.0	11.1	11.7	10.9	10.5
7	1.5	8.2	7.0	10.3	8.9	10.3	0.0	11.2	11.7	10.9	10.5
7	3.0	7.9	7.0	10.0	9.0	10.4	0.0	11.0	11.6	10.9	10.5
7	6.0	7.6	6.8	9.7	8.9	10.4	0.0	11.3	11.6	10.8	10.5
7	9.0	7.5	6.7	9.5	8.9	10.3	0.0	11.0	11.6	10.8	10.4
7	12.0	7.5	6.8	9.5	8.8	10.3	0.0	10.9	11.6	10.9	10.5

		TEMPERATURE (°C) - 1977									
ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
8	0.0	7.7	6.7	9.4	8.6	11.8	10.9	11.2	11.0	10.8	10.6
8	1.5	7.6	7.1	9.0	8.6	10.7	10.9	11.0	11.0	10.8	10.5
8	3.0	7.4	6.7	8.8	8.6	10.2	10.8	11.0	11.0	10.8	10.5
8	6.0	7.1	6.7	8.5	8.7	10.0	10.8	10.9	11.0	10.8	10.6
8	9.0	6.8	6.7	8.4	8.7	10.0	10.9	10.5	11.0	10.8	10.4
8	12.0	6.8	6.6	8.3	8.7	9.9	10.8	10.7	10.9	10.8	10.6
9	0.0	7.6	6.8	9.0	9.6	10.1	11.0	11.1	11.3	10.8	10.7
9	1.5	7.5	6.9	8.9	9.2	10.0	11.0	10.9	11.3	10.9	10.7
9	3.0	7.4	6.9	8.8	9.0	10.1	11.0	11.1	11.4	10.9	10.7
9	6.0	7.4	7.0	8.8	8.7	10.1	11.0	10.8	11.4	10.7	10.5
9	9.0	7.3	6.9	8.8	9.0	10.0	11.0	11.0	11.5	10.8	10.6
9	12.0	7.4	6.8	8.8	9.0	10.0	11.0	11.1	11.4	10.8	10.5
10	0.0	7.6	8.4	9.0	11.3	10.3	12.0	11.0	11.8	10.9	10.7
10	1.5	7.6	7.9	9.0	10.6	10.2	12.1	11.1	11.6	10.8	10.6
10	3.0	7.5	7.4	8.7	10.2	10.2	11.4	11.1	11.5	10.8	10.7
10	6.0	7.5	7.3	8.5	9.6	10.5	11.2	11.1	11.5	10.9	10.6
10	9.0	7.5	7.0	8.8	9.5	10.6	11.1	11.1	11.5	10.9	10.7
10	12.0	7.5	6.9	9.0	9.0	10.6	11.0	11.1	11.5	10.8	10.6
11	0.0	7.2	7.2	8.5	10.4	10.6	11.2	11.0	12.0	10.8	10.7
11	1.5	7.1	7.2	8.5	10.3	10.6	11.1	10.9	12.1	10.7	10.7
11	3.0	7.2	7.1	8.4	10.2	10.6	10.9	10.8	12.1	10.6	10.7
11	6.0	7.1	7.0	8.4	10.2	10.5	10.8	11.8	11.8	10.8	10.5
11	9.0	7.1	6.9	8.5	9.8	10.5	10.7	10.8	11.9	10.7	10.4
11	12.0	7.1	6.9	8.4	9.5	10.5	10.6	10.8	11.8	10.8	10.7
12	0.0	7.8	7.3	9.5	8.3	10.3	11.2	10.9	11.2	11.0	10.7
12	1.5	7.6	6.9	9.1	8.0	10.2	11.2	11.2	11.2	11.0	10.7
12	3.0	7.6	6.9	8.9	8.0	10.1	11.0	11.2	11.1	10.8	10.7
12	6.0	7.4	6.9	8.8	8.5	9.9	10.7	10.9	11.0	10.8	10.6
12	9.0	7.5	6.9	8.6	8.0	9.9	10.6	11.1	11.1	10.7	10.5
12	12.0	7.3	6.8	8.7	8.0	9.8	10.6	11.0	10.9	10.8	10.5
13	0.0	8.0	7.0	9.7	8.6	10.4	11.3	11.9	10.9	10.7	0.0
13	1.5	8.0	6.7	9.6	8.4	10.4	10.9	11.9	10.8	10.7	0.0
13	3.0	7.9	6.7	9.4	8.3	10.4	10.6	11.6	10.8	10.7	0.0
13	6.0	7.8	6.6	9.2	8.4	10.2	10.4	11.6	10.9	10.6	0.0
13	9.0	7.7	6.6	9.1	8.4	10.2	10.3	11.5	10.8	10.6	0.0
13	12.0	7.5	6.6	9.0	8.4	10.2	10.3	11.5	10.9	10.6	0.0
14	0.0	8.1	7.7	9.7	9.5	11.7	11.4	11.4	11.1	10.7	0.0
14	1.5	7.9	7.3	9.3	9.2	11.6	11.3	11.4	10.9	10.7	0.0
14	3.0	7.8	7.8	9.1	8.9	11.7	11.2	11.1	10.9	10.7	0.0
14	6.0	7.8	7.7	9.1	8.6	11.2	10.8	11.1	11.0	10.7	0.0
14	9.0	7.6	7.1	9.0	8.4	11.0	10.8	11.0	11.0	10.6	0.0
14	12.0	7.6	6.9	8.9	8.3	10.8	10.6	11.1	10.9	10.5	0.0

Table 1 (continued).

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
15	0.0	7.3	6.2	10.4	8.7	0.0	11.0	12.1	10.9	0.0	10.6
15	1.5	7.1	6.0	10.2	8.5	0.0	10.8	12.1	11.0	0.0	10.5
15	3.0	7.1	5.9	9.7	8.5	0.0	10.7	12.0	10.9	0.0	10.6
15	6.0	7.1	5.9	8.8	8.3	0.0	10.5	11.5	10.8	0.0	10.4
15	9.0	7.0	5.9	8.7	8.3	0.0	10.3	11.5	10.9	0.0	10.4
15	12.0	6.8	5.9	8.6	8.2	0.0	10.2	11.4	10.8	0.0	10.4
16	0.0	7.8	6.0	0.0	8.6	11.1	10.9	11.2	11.4	10.4	10.7
16	1.5	7.6	6.0	0.0	8.6	10.7	10.9	11.0	11.2	10.3	10.6
16	3.0	7.4	5.9	0.0	8.4	10.7	10.8	11.1	11.2	10.3	10.6
16	6.0	7.4	5.9	0.0	8.3	10.3	10.8	10.9	11.2	10.3	10.6
16	9.0	7.2	5.9	0.0	8.2	10.1	10.7	10.8	11.1	10.3	10.6
16	12.0	7.1	5.9	0.0	8.0	10.1	10.6	10.7	11.1	10.2	10.6
17	0.0	6.8	0.0	9.5	8.9	10.8	10.8	11.3	11.7	10.5	10.9
17	1.5	6.7	0.0	9.4	8.6	10.7	10.8	11.1	11.6	10.4	10.7
17	3.0	6.7	0.0	9.3	8.5	10.6	10.7	10.9	11.4	10.5	10.7
17	6.0	6.6	0.0	9.3	8.4	10.5	10.6	10.7	11.3	10.3	10.6
17	9.0	6.5	0.0	9.1	8.3	10.1	10.5	10.6	11.4	10.2	10.7
17	12.0	6.5	0.0	9.0	8.2	10.0	10.4	10.6	11.2	10.3	10.8
18	0.0	8.3	7.0	9.3	8.5	10.3	10.4	10.9	10.8	0.0	10.1
18	1.5	7.9	6.9	9.3	8.5	10.2	10.3	10.8	10.8	0.0	10.4
18	3.0	7.7	6.8	9.0	8.5	10.2	10.4	10.8	10.8	0.0	10.1
18	6.0	7.6	6.7	9.0	7.6	10.2	10.4	10.9	10.8	0.0	10.2
18	9.0	7.5	6.8	8.9	8.4	10.2	10.2	10.8	10.8	0.0	10.2
18	12.0	7.6	6.6	8.9	8.4	10.0	10.2	10.9	10.7	0.0	10.3
19	0.0	7.0	6.7	0.0	8.2	11.3	11.0	11.2	12.0	10.2	0.0
19	1.5	7.0	6.7	0.0	8.2	10.6	10.7	11.4	11.5	10.2	0.0
19	3.0	6.8	6.6	0.0	8.2	10.6	10.6	11.1	11.3	10.1	0.0
19	6.0	7.8	6.7	0.0	8.2	10.6	10.2	11.1	11.2	10.2	0.0
19	9.0	6.7	6.6	0.0	8.1	10.6	10.1	10.8	11.3	10.2	0.0
19	12.0	6.6	6.6	0.0	8.0	10.3	10.0	10.7	11.1	10.1	0.0
20	0.0	7.3	6.7	0.0	8.4	11.0	10.8	0.0	10.8	10.2	0.0
20	1.5	7.3	6.6	0.0	8.4	10.6	10.7	0.0	10.9	10.2	0.0
20	3.0	7.1	6.6	0.0	8.3	10.6	10.7	0.0	10.8	10.2	0.0
20	6.0	7.2	6.5	0.0	8.1	10.6	10.5	0.0	10.8	10.4	0.0
20	9.0	7.0	6.5	0.0	8.0	10.6	10.5	0.0	10.7	10.2	0.0
20	12.0	6.9	6.4	0.0	8.0	10.7	10.5	0.0	10.7	10.1	0.0
21	0.0	7.2	6.7	8.4	8.3	10.8	10.3	0.0	10.6	10.2	0.0
21	1.5	7.1	6.5	8.4	8.2	10.8	10.3	0.0	10.7	10.2	0.0
21	3.0	7.0	6.6	8.1	8.1	10.8	10.3	0.0	10.7	10.1	0.0
21	6.0	7.1	6.5	8.2	8.1	11.0	10.2	0.0	10.5	10.2	0.0
21	9.0	6.9	6.5	8.1	8.1	10.9	10.2	0.0	10.6	10.2	0.0
21	12.0	6.9	6.4	8.0	8.1	10.9	10.2	0.0	10.5	10.2	0.0

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
22	0.0	6.9	6.9	9.3	8.2	10.6	10.7	0.0	10.8	10.2	0.0
22	1.5	6.6	6.9	9.1	8.2	10.4	10.7	0.0	10.8	10.2	0.0
22	3.0	6.6	6.9	9.1	8.1	10.4	10.6	0.0	10.8	10.3	0.0
22	6.0	6.5	7.0	9.0	8.0	10.4	10.7	0.0	10.9	10.3	0.0
22	9.0	6.5	6.9	9.0	8.0	10.4	10.6	0.0	10.8	10.2	0.0
22	12.0	6.5	6.9	9.0	7.9	10.4	10.5	0.0	10.8	10.1	0.0
23	0.0	6.6	6.8	10.1	8.2	11.3	10.3	0.0	10.8	0.0	10.5
23	1.5	6.6	6.7	9.6	8.1	11.2	10.2	0.0	10.8	0.0	10.5
23	3.0	6.7	6.7	9.2	8.1	11.1	10.5	0.0	10.7	0.0	10.5
23	6.0	6.5	6.6	9.2	8.0	11.0	10.2	0.0	10.7	0.0	10.5
23	9.0	6.5	6.5	9.3	8.0	10.7	10.2	0.0	10.7	0.0	10.4
23	12.0	6.5	6.5	9.2	8.0	10.5	10.1	0.0	10.7	0.0	10.5
24	0.0	7.7	6.6	9.8	8.1	11.3	10.1	0.0	11.0	0.0	10.6
24	1.5	7.5	6.6	9.7	8.1	11.1	10.1	0.0	10.9	0.0	10.4
24	3.0	7.8	6.4	9.7	8.0	11.1	10.0	0.0	11.0	0.0	10.5
24	6.0	7.5	6.4	9.6	8.0	10.9	10.0	0.0	10.8	0.0	10.6
24	9.0	7.4	6.3	9.2	8.0	10.9	10.0	0.0	10.8	0.0	10.5
24	12.0	7.4	6.3	9.1	8.1	10.8	10.0	0.0	10.8	0.0	10.6
25	0.0	7.7	6.5	0.0	8.3	11.4	10.6	0.0	10.8	0.0	10.5
25	1.5	7.5	6.5	0.0	8.3	10.5	10.4	0.0	10.8	0.0	10.6
25	3.0	7.4	6.4	0.0	8.2	10.5	10.3	0.0	10.7	0.0	10.4
25	6.0	7.3	6.4	0.0	8.1	10.4	10.1	0.0	10.7	0.0	10.5
25	9.0	7.3	6.4	0.0	8.2	10.4	10.1	0.0	10.6	0.0	10.4
25	12.0	7.2	6.4	0.0	8.1	10.3	10.0	0.0	10.7	0.0	10.4
26	0.0	8.3	6.4	0.0	8.2	10.8	10.6	0.0	10.9	10.6	10.6
26	1.5	8.2	6.7	0.0	8.3	10.5	10.5	0.0	11.0	10.4	10.4
26	3.0	7.7	6.7	0.0	8.3	10.4	10.5	0.0	10.9	10.1	10.2
26	6.0	7.6	6.7	0.0	8.2	10.3	10.5	0.0	10.8	10.5	10.3
26	9.0	7.5	6.6	0.0	8.2	10.1	10.4	0.0	10.8	10.5	10.2
26	12.0	7.5	6.6	0.0	8.2	10.2	10.4	0.0	10.8	10.6	10.3
27	0.0	8.0	7.2	0.0	8.6	10.5	10.4	11.2	10.9	10.4	10.3
27	1.5	7.7	7.1	0.0	8.5	10.3	10.2	11.1	10.8	10.7	10.3
27	3.0	7.6	6.7	0.0	8.5	10.2	10.1	11.1	10.8	10.6	10.3
27	6.0	7.4	6.7	0.0	8.5	10.1	10.1	11.0	10.8	10.6	10.4
27	9.0	7.2	6.6	0.0	8.5	10.1	10.0	10.9	10.7	10.4	10.2
27	12.0	7.2	6.7	0.0	8.4	10.1	10.0	10.8	10.6	10.6	10.3
28	0.0	6.5	6.6	8.2	8.1	10.6	9.5	11.1	10.8	10.5	10.2
28	1.5	6.5	6.6	8.2	8.1	10.6	9.6	10.9	10.8	10.7	10.2
28	3.0	6.5	6.5	8.3	8.1	10.5	9.6	11.0	10.8	10.5	10.2
28	6.0	6.5	6.6	8.0	8.1	10.5	9.6	11.0	10.8	10.5	10.1
28	9.0	6.4	6.6	7.9	8.0	10.4	9.5	11.0	10.7	10.6	10.2
28	12.0	6.4	6.5	7.9	8.0	10.4	9.5	10.8	10.7	10.6	10.2

Table 1 (continued).

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
29	0.0	6.5	7.2	8.5	8.6	10.2	11.3	11.1	10.6	10.5	10.3
29	1.5	6.4	7.2	8.3	8.5	10.1	10.7	11.1	10.5	10.5	10.2
29	3.0	6.3	7.2	8.4	8.4	10.0	10.7	11.1	10.5	10.6	10.1
29	6.0	6.2	7.2	8.2	8.5	9.9	10.6	11.1	10.5	10.6	10.2
29	9.0	6.3	7.2	8.2	8.4	9.9	10.5	11.0	10.5	10.7	10.2
29	12.0	6.2	7.2	8.2	8.3	9.9	10.5	11.1	10.5	10.7	10.2
30	0.0	6.8	7.2	8.7	8.7	10.4	0.0	11.9	11.0	0.0	10.3
30	1.5	6.8	7.0	8.6	8.6	10.4	0.0	11.8	11.0	0.0	10.1
30	3.0	6.7	7.0	8.4	8.4	10.4	0.0	11.4	11.5	0.0	10.2
30	6.0	6.5	6.9	8.3	8.3	10.4	0.0	11.5	10.8	0.0	10.3
30	9.0	6.5	6.7	8.3	8.2	10.4	0.0	11.4	10.9	0.0	10.2
30	12.0	6.6	6.7	8.4	8.2	10.4	0.0	11.2	10.7	0.0	10.1
31	0.0	7.1	7.4	8.8	9.4	11.2	10.8	11.6	11.1	0.0	10.3
31	1.5	7.0	7.1	8.6	9.1	11.0	11.0	11.6	10.9	0.0	10.3
31	3.0	7.0	7.1	8.1	8.9	10.7	10.7	11.6	10.9	0.0	10.2
31	6.0	6.8	6.9	8.0	8.9	10.6	10.8	11.4	11.0	0.0	10.2
31	9.0	6.7	6.8	7.9	8.8	10.5	10.7	11.4	10.9	0.0	10.2
31	12.0	6.7	6.7	7.9	8.7	10.5	10.7	11.4	10.8	0.0	10.0
32	0.0	8.0	6.6	0.0	8.1	10.8	11.0	10.7	11.0	10.1	10.7
32	1.5	7.9	6.6	0.0	8.0	10.4	10.5	10.5	11.1	10.2	10.8
32	3.0	7.8	6.5	0.0	8.0	10.3	10.3	10.5	10.8	10.2	10.6
32	6.0	7.6	6.5	0.0	8.0	10.2	10.2	10.4	10.8	10.1	10.7
32	9.0	7.4	6.4	0.0	8.0	9.9	10.2	10.4	10.8	10.2	10.8
32	12.0	7.1	6.5	0.0	7.9	9.9	10.1	10.6	10.7	10.2	10.5
33	0.0	8.1	6.7	9.8	8.3	11.6	10.5	0.0	11.0	10.3	10.7
33	1.5	7.5	6.6	9.1	8.3	11.1	10.5	0.0	10.9	10.2	10.7
33	3.0	7.8	6.5	8.9	8.3	11.1	10.4	0.0	11.0	10.2	10.8
33	6.0	7.6	6.4	8.8	8.2	11.0	10.3	0.0	10.9	10.1	10.7
33	9.0	7.3	6.4	8.7	8.2	11.0	10.3	0.0	10.9	10.2	10.6
33	12.0	7.3	6.3	8.6	8.1	10.6	10.1	0.0	10.9	10.3	10.6
34	0.0	7.7	6.2	0.0	8.9	10.7	11.1	0.0	10.9	10.2	0.0
34	1.5	7.6	6.1	0.0	8.8	10.4	11.0	0.0	10.7	10.3	0.0
34	3.0	7.7	6.1	0.0	8.6	10.3	10.9	0.0	11.0	10.1	0.0
34	6.0	7.4	6.1	0.0	8.6	10.2	10.9	0.0	10.9	10.2	0.0
34	9.0	7.3	6.0	0.0	8.5	10.2	10.9	0.0	10.9	10.2	0.0
34	12.0	7.3	5.9	0.0	8.5	10.0	10.8	0.0	11.0	10.0	0.0
35	0.0	7.7	7.4	9.0	8.5	10.4	10.7	10.9	11.5	0.0	10.2
35	1.5	7.8	7.2	8.9	8.5	10.3	10.7	10.8	11.4	0.0	10.2
35	3.0	7.7	7.1	8.0	8.5	10.2	10.7	10.8	11.3	0.0	10.2
35	6.0	7.8	7.0	9.0	8.5	10.3	10.7	10.7	11.2	0.0	10.3
35	9.0	7.8	7.0	9.0	8.5	10.3	10.6	10.7	11.3	0.0	10.2
35	12.0	7.7	6.9	8.8	8.4	10.3	10.7	10.8	11.3	0.0	10.3

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
36	0.0	7.4	7.4	9.3	8.5	11.6	0.0	0.0	12.1	0.0	10.7
36	1.5	7.4	7.3	9.8	8.5	11.1	0.0	0.0	12.2	0.0	10.8
36	3.0	7.3	7.1	9.5	8.5	10.7	0.0	0.0	12.0	0.0	10.7
36	6.0	7.3	7.0	9.1	8.5	10.4	0.0	0.0	12.1	0.0	10.5
36	9.0	7.3	6.9	9.0	8.5	10.3	0.0	0.0	11.9	0.0	10.6
36	12.0	7.2	6.9	8.6	8.5	10.3	0.0	0.0	11.8	0.0	10.4
37	0.0	7.2	7.0	8.3	9.4	10.2	10.9	0.0	10.8	10.8	10.5
37	1.5	7.2	7.0	8.2	9.3	10.1	10.9	0.0	10.8	10.7	10.5
37	3.0	7.3	7.0	8.3	9.2	10.2	10.8	0.0	10.8	10.7	10.5
37	6.0	7.2	7.0	8.2	9.2	10.3	10.8	0.0	10.8	10.7	10.5
37	9.0	7.2	7.0	8.2	9.1	10.0	10.7	0.0	10.7	10.8	10.6
37	12.0	7.2	7.0	8.3	9.1	9.9	10.7	0.0	10.8	10.8	10.5
38	0.0	0.0	7.4	9.0	11.3	10.7	12.7	0.0	0.0	0.0	0.0
38	1.5	0.0	6.8	8.3	11.2	10.6	12.4	0.0	0.0	0.0	0.0
38	3.0	0.0	6.6	8.4	11.2	10.6	12.4	0.0	0.0	0.0	0.0
38	6.0	0.0	6.4	8.3	10.6	10.7	11.3	0.0	0.0	0.0	0.0
38	9.0	0.0	6.5	8.3	9.7	10.7	11.3	0.0	0.0	0.0	0.0
38	12.0	0.0	6.5	8.1	9.3	10.6	11.3	0.0	0.0	0.0	0.0
39	0.0	0.0	8.2	9.8	11.4	11.2	12.3	0.0	12.0	11.0	11.0
39	1.5	0.0	7.7	8.6	11.1	11.2	11.6	0.0	12.0	10.8	10.9
39	3.0	0.0	7.5	8.6	10.9	11.2	11.0	0.0	11.8	10.8	10.7
39	6.0	0.0	7.3	8.4	10.0	11.0	11.0	0.0	11.7	10.8	10.6
39	9.0	0.0	7.3	8.5	9.6	10.9	10.7	0.0	11.6	10.7	10.5
39	12.0	0.0	7.2	8.5	9.6	10.8	10.5	0.0	11.6	10.8	10.7
40	0.0	8.4	7.5	9.5	9.2	11.2	11.2	0.0	11.5	11.0	10.6
40	1.5	8.1	7.3	9.2	9.1	10.9	11.0	0.0	11.5	11.0	10.5
40	3.0	7.9	7.2	9.0	8.7	10.8	11.0	0.0	11.5	10.9	10.5
40	6.0	7.4	6.9	8.8	8.3	10.6	10.9	0.0	11.3	10.8	10.4
40	9.0	7.3	7.0	8.8	8.3	10.6	10.7	0.0	11.2	10.9	10.3
40	12.0	7.3	6.9	8.8	8.2	10.7	10.6	0.0	11.7	11.0	10.5
41	0.0	7.6	7.5	9.6	9.3	11.2	11.7	0.0	0.0	0.0	10.6
41	1.5	7.4	7.5	9.4	9.1	10.9	11.4	0.0	0.0	0.0	10.5
41	3.0	7.2	7.5	9.1	8.7	10.8	10.8	0.0	0.0	0.0	10.5
41	6.0	7.2	7.5	8.5	8.4	10.5	10.6	0.0	0.0	0.0	10.5
41	9.0	7.0	7.4	8.5	8.4	10.3	10.4	0.0	0.0	0.0	10.5
41	12.0	7.0	7.4	8.4	8.4	10.2	10.3	0.0	0.0	0.0	10.5
42	0.0	7.8	6.6	8.8	9.4	0.0	11.1	11.7	11.2	10.6	0.0
42	1.5	7.8	6.3	8.9	9.3	0.0	11.0	11.5	11.2	10.7	0.0
42	3.0	7.8	5.8	8.8	9.1	0.0	10.9	11.5	11.1	10.6	0.0
42	6.0	7.6	5.6	8.7	8.9	0.0	10.9	11.5	11.0	10.6	0.0
42	9.0	7.2	5.8	8.7	8.8	0.0	10.8	11.2	11.0	10.7	0.0
42	12.0	7.1	5.6	8.8	8.8	0.0	10.6	11.2	11.0	10.6	0.0

Table 1 (continued).

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
43	0.0	9.5	6.4	10.0	9.1	11.0	0.0	12.1	0.0	10.7	0.0
43	1.5	8.7	6.2	9.3	9.9	10.8	0.0	12.0	0.0	10.7	0.0
43	3.0	8.4	6.2	9.2	8.7	10.7	0.0	11.5	0.0	10.8	0.0
43	6.0	8.2	6.1	9.0	8.6	10.7	0.0	11.6	0.0	10.6	0.0
43	9.0	7.6	6.1	8.9	8.4	10.4	0.0	11.2	0.0	10.5	0.0
43	12.0	7.6	6.0	8.6	8.5	10.3	0.0	11.4	0.0	10.6	0.0
44	0.0	7.3	7.5	8.6	8.7	10.9	10.6	0.0	11.5	10.5	0.0
44	1.5	7.1	7.4	8.7	8.3	10.7	10.5	0.0	11.5	10.5	0.0
44	3.0	6.9	7.4	8.6	8.2	10.7	10.5	0.0	11.5	10.3	0.0
44	6.0	6.8	7.3	8.5	8.0	10.6	10.5	0.0	11.4	10.3	0.0
44	9.0	6.8	7.2	8.6	8.1	10.5	10.5	0.0	11.5	10.3	0.0
44	12.0	6.8	7.2	8.6	7.9	10.6	10.4	0.0	11.4	10.4	0.0
45	0.0	8.0	6.3	0.0	8.1	10.7	11.1	0.0	11.2	10.5	0.0
45	1.5	7.5	6.2	0.0	8.0	10.4	11.1	0.0	11.1	10.3	0.0
45	3.0	7.4	6.1	0.0	7.9	10.3	11.1	0.0	11.0	10.3	0.0
45	6.0	7.3	6.1	0.0	7.9	10.0	10.7	0.0	10.8	10.2	0.0
45	9.0	7.2	5.9	0.0	7.9	10.0	10.6	0.0	10.8	10.4	0.0
45	12.0	7.1	5.9	0.0	7.7	9.8	10.4	0.0	10.6	10.3	0.0
46	0.0	9.5	7.1	0.0	8.5	0.0	10.2	0.0	0.0	10.5	10.5
46	1.5	7.8	7.0	0.0	8.4	0.0	10.1	0.0	0.0	10.5	10.6
46	3.0	7.8	6.7	0.0	8.3	0.0	10.4	0.0	0.0	10.7	10.4
46	6.0	7.7	6.5	0.0	8.1	0.0	10.3	0.0	0.0	10.7	10.3
46	9.0	7.6	6.4	0.0	8.0	0.0	10.4	0.0	0.0	10.5	10.3
46	12.0	7.6	6.3	0.0	8.0	0.0	10.0	0.0	0.0	10.6	10.2
47	0.0	7.9	6.6	0.0	8.5	10.9	9.8	11.3	10.7	0.0	10.5
47	1.5	7.4	6.5	0.0	8.4	10.9	9.8	11.2	10.7	0.0	10.3
47	3.0	7.4	6.5	0.0	8.3	10.9	9.8	11.0	10.6	0.0	10.3
47	6.0	7.3	6.5	0.0	8.3	10.6	9.7	10.9	10.7	0.0	10.2
47	9.0	7.2	6.5	0.0	8.2	10.6	9.7	10.8	10.6	0.0	10.2
47	12.0	7.2	6.3	0.0	8.2	10.5	9.7	11.0	10.6	0.0	10.2
48	0.0	7.9	6.8	0.0	8.5	10.3	10.2	10.2	10.6	10.6	10.2
48	1.5	7.8	6.8	0.0	8.4	10.2	10.2	10.6	10.6	10.6	10.2
48	3.0	7.6	6.6	0.0	8.4	10.2	10.1	10.3	10.5	10.6	10.2
48	6.0	7.5	6.6	0.0	8.4	10.1	9.8	10.3	10.5	10.7	10.2
48	9.0	7.3	6.6	0.0	8.3	10.1	9.7	10.4	10.5	10.7	10.2
48	12.0	7.3	6.5	0.0	8.5	10.1	9.7	10.3	10.4	10.6	10.2
49	0.0	0.0	6.8	8.7	9.1	10.3	10.5	10.8	10.7	10.7	10.2
49	1.5	0.0	6.8	8.7	8.9	10.4	10.4	10.8	10.8	10.8	10.2
49	3.0	0.0	6.8	8.8	9.0	10.4	10.4	10.6	10.7	10.8	10.1
49	6.0	0.0	6.8	8.7	9.0	10.4	10.2	10.6	10.7	10.9	10.2
49	9.0	0.0	6.8	8.7	9.0	10.4	10.1	10.6	10.7	10.6	10.2
49	12.0	0.0	6.9	8.6	9.0	10.4	10.1	10.6	10.7	10.6	10.2

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
50	0.0	5.8	7.3	8.5	8.6	0.0	10.6	11.1	11.1	0.0	10.3
50	1.5	5.9	7.2	8.4	8.7	0.0	10.4	11.2	11.0	0.0	10.2
50	3.0	5.9	7.2	8.3	8.7	0.0	10.2	11.2	11.0	0.0	10.1
50	6.0	5.9	7.3	8.2	8.7	0.0	10.2	11.2	10.9	0.0	10.2
50	9.0	5.8	7.3	8.1	8.7	0.0	10.2	11.0	11.1	0.0	10.2
50	12.0	5.7	7.1	8.2	8.5	0.0	10.2	11.2	11.0	0.0	10.2
51	0.0	7.0	7.3	8.5	9.0	10.3	10.5	11.4	11.0	0.0	10.3
51	1.5	6.7	7.2	8.4	8.9	10.3	10.3	11.2	11.0	0.0	10.2
51	3.0	6.7	7.1	8.3	8.9	10.3	10.3	11.2	11.0	0.0	10.2
51	6.0	6.5	7.1	8.1	8.7	10.2	10.2	11.3	11.1	0.0	10.3
51	9.0	6.5	7.1	8.1	8.7	10.3	10.2	11.2	10.9	0.0	10.2
51	12.0	6.5	7.1	8.1	8.5	10.2	10.2	11.1	11.0	0.0	10.2
52	0.0	7.3	6.8	10.2	9.4	10.7	0.0	0.0	0.0	0.0	0.0
52	1.5	7.3	6.7	9.2	9.3	10.5	0.0	0.0	0.0	0.0	0.0
52	3.0	7.0	6.7	9.1	9.2	10.4	0.0	0.0	0.0	0.0	0.0
52	6.0	6.9	6.6	8.8	8.8	10.4	0.0	0.0	0.0	0.0	0.0
52	9.0	6.7	6.7	8.8	8.7	10.4	0.0	0.0	0.0	0.0	0.0
52	12.0	6.5	6.6	8.7	8.7	10.4	0.0	0.0	0.0	0.0	0.0
53	0.0	8.0	7.5	8.9	10.8	10.5	10.9	0.0	12.8	0.0	0.0
53	1.5	7.8	7.3	9.0	11.0	10.5	11.0	0.0	12.8	0.0	0.0
53	3.0	7.7	7.3	8.8	10.6	10.4	11.0	0.0	12.8	0.0	0.0
53	6.0	7.7	7.3	8.8	10.5	10.5	11.0	0.0	12.6	0.0	0.0
53	9.0	7.7	7.1	8.9	9.8	10.5	10.9	0.0	12.5	0.0	0.0
53	12.0	7.6	6.9	8.8	9.2	10.5	10.9	0.0	12.6	0.0	0.0
54	0.0	0.0	7.8	11.4	0.0	12.8	0.0	0.0	11.3	0.0	0.0
54	1.5	0.0	7.4	9.7	0.0	12.7	0.0	0.0	11.3	0.0	0.0
54	3.0	0.0	6.6	9.3	0.0	12.6	0.0	0.0	11.3	0.0	0.0
54	6.0	0.0	6.6	8.9	0.0	11.9	0.0	0.0	11.2	0.0	0.0
54	9.0	0.0	6.5	8.6	0.0	11.5	0.0	0.0	11.3	0.0	0.0
54	12.0	0.0	6.5	8.5	0.0	11.2	0.0	0.0	11.3	0.0	0.0
55	0.0	7.5	0.0	10.2	8.8	0.0	11.2	0.0	12.1	0.0	0.0
55	1.5	7.3	0.0	10.0	8.7	0.0	11.3	0.0	11.8	0.0	0.0
55	3.0	7.3	0.0	9.8	8.5	0.0	11.3	0.0	11.8	0.0	0.0
55	6.0	7.0	0.0	9.2	7.9	0.0	10.8	0.0	11.6	0.0	0.0
55	9.0	6.8	0.0	9.0	7.9	0.0	10.7	0.0	11.4	0.0	0.0
55	12.0	6.7	0.0	8.8	0.0	0.0	10.6	0.0	11.4	0.0	0.0
56	0.0	8.3	0.0	9.8	9.2	11.2	11.4	12.1	0.0	0.0	0.0
56	1.5	8.0	0.0	9.8	9.2	11.0	11.3	12.2	0.0	0.0	0.0
56	3.0	7.8	0.0	9.5	8.9	10.8	11.2	12.0	0.0	0.0	0.0
56	6.0	7.8	0.0	9.3	8.4	10.7	11.3	12.0	0.0	0.0	0.0
56	9.0	7.3	0.0	9.0	8.3	10.5	11.0	11.6	0.0	0.0	0.0
56	12.0	7.2	0.0	8.5	8.3	10.4	10.9	11.5	0.0	0.0	0.0

Table 1 (continued).

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
57	0.0	7.2	7.3	0.0	8.1	10.7	10.8	0.0	0.0	10.2	0.0
57	1.5	7.1	7.0	0.0	8.2	10.8	10.8	0.0	0.0	10.3	0.0
57	3.0	7.1	7.0	0.0	8.1	10.8	10.8	0.0	0.0	10.3	0.0
57	6.0	7.0	7.0	0.0	8.1	10.6	10.7	0.0	0.0	10.3	0.0
57	9.0	6.9	6.9	0.0	8.1	10.6	10.6	0.0	0.0	10.3	0.0
57	12.0	6.6	6.9	0.0	8.0	10.7	10.6	0.0	0.0	10.1	0.0
58	0.0	6.8	0.0	9.7	8.1	10.8	10.6	0.0	0.0	0.0	0.0
58	1.5	6.7	0.0	9.6	7.9	10.8	10.5	0.0	0.0	0.0	0.0
58	3.0	6.5	0.0	9.3	7.9	10.8	10.5	0.0	0.0	0.0	0.0
58	6.0	6.5	0.0	9.2	7.9	10.6	10.5	0.0	0.0	0.0	0.0
58	9.0	6.5	0.0	9.0	7.9	10.7	10.5	0.0	0.0	0.0	0.0
58	12.0	6.4	0.0	9.1	8.0	10.6	10.5	0.0	0.0	0.0	0.0
59	0.0	0.0	7.1	0.0	8.9	11.9	10.3	0.0	0.0	0.0	0.0
59	1.5	0.0	7.1	0.0	8.4	10.2	10.3	0.0	0.0	0.0	0.0
59	3.0	0.0	6.8	0.0	7.9	10.1	10.2	0.0	0.0	0.0	0.0
59	6.0	0.0	6.5	0.0	7.8	10.0	10.3	0.0	0.0	0.0	0.0
59	9.0	0.0	6.4	0.0	7.7	9.9	10.3	0.0	0.0	0.0	0.0
59	12.0	0.0	6.3	0.0	7.8	9.9	10.3	0.0	0.0	0.0	0.0
60	0.0	5.6	7.6	0.0	8.0	10.3	0.0	0.0	0.0	0.0	0.0
60	1.5	5.6	7.4	0.0	8.1	10.3	0.0	0.0	0.0	0.0	0.0
60	3.0	5.6	7.3	0.0	8.1	10.2	0.0	0.0	0.0	0.0	0.0
60	6.0	5.6	7.4	0.0	8.0	10.2	0.0	0.0	0.0	0.0	0.0
60	9.0	5.6	7.3	0.0	8.1	10.1	0.0	0.0	0.0	0.0	0.0
60	12.0	5.6	7.4	0.0	8.1	10.0	0.0	0.0	0.0	0.0	0.0
61	0.0	5.8	7.6	8.4	0.0	10.6	10.8	0.0	0.0	0.0	0.0
61	1.5	5.7	7.8	8.3	0.0	10.5	10.5	0.0	0.0	0.0	0.0
61	3.0	5.7	7.6	8.2	0.0	10.4	10.6	0.0	0.0	0.0	0.0
61	6.0	5.8	7.5	8.3	0.0	10.3	10.5	0.0	0.0	0.0	0.0
61	9.0	5.8	7.2	8.1	0.0	10.2	10.5	0.0	0.0	0.0	0.0
61	12.0	5.7	7.2	8.1	0.0	10.2	10.5	0.0	0.0	0.0	0.0
62	0.0	0.0	7.1	8.9	0.0	10.6	10.5	10.8	10.7	10.9	10.4
62	1.5	0.0	7.0	8.8	0.0	10.6	10.3	10.7	10.7	10.8	10.4
62	3.0	0.0	7.1	8.8	0.0	10.5	10.2	10.8	10.6	11.0	10.4
62	6.0	0.0	7.2	8.8	0.0	10.5	10.2	10.6	10.7	10.7	10.3
62	9.0	0.0	7.2	8.9	0.0	10.6	10.1	10.6	10.7	10.7	10.3
62	12.0	0.0	7.2	8.8	0.0	10.5	10.0	10.4	10.6	10.7	10.3
63	0.0	0.0	7.4	8.8	0.0	10.7	10.3	10.6	0.0	0.0	0.0
63	1.5	0.0	7.2	8.9	0.0	10.7	10.3	10.7	0.0	0.0	0.0
63	3.0	0.0	7.4	8.9	0.0	10.7	10.2	10.7	0.0	0.0	0.0
63	6.0	0.0	7.4	8.9	0.0	10.7	10.2	11.0	0.0	0.0	0.0
63	9.0	0.0	7.3	8.8	0.0	10.6	10.2	11.0	0.0	0.0	0.0
63	12.0	0.0	7.3	8.8	0.0	10.6	10.2	11.1	0.0	0.0	0.0

TEMPERATURE (°C) - 1977

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	OCTOBER FLOOD	OCTOBER EBB
64	0.0	0.0	7.4	8.6	0.0	10.6	10.5	0.0	0.0	0.0	0.0
64	1.5	0.0	7.2	8.6	0.0	10.4	10.5	0.0	0.0	0.0	0.0
64	3.0	0.0	7.4	8.6	0.0	10.2	10.5	0.0	0.0	0.0	0.0
64	6.0	0.0	7.4	8.4	0.0	10.2	10.5	0.0	0.0	0.0	0.0
64	9.0	0.0	7.3	8.4	0.0	10.1	10.3	0.0	0.0	0.0	0.0
64	12.0	0.0	7.3	8.4	0.0	10.0	10.3	0.0	0.0	0.0	0.0
65	0.0	6.1	7.9	8.5	10.0	0.0	10.6	0.0	0.0	0.0	0.0
65	1.5	6.1	7.6	8.5	9.5	0.0	10.5	0.0	0.0	0.0	0.0
65	3.0	6.0	7.2	8.4	9.2	0.0	10.3	0.0	0.0	0.0	0.0
65	6.0	5.9	7.1	8.4	9.1	0.0	10.4	0.0	0.0	0.0	0.0
65	9.0	5.9	7.1	8.1	8.6	0.0	10.5	0.0	0.0	0.0	0.0
65	12.0	5.9	7.0	8.1	8.5	0.0	10.3	0.0	0.0	0.0	0.0

Table 2. Near-surface temperature profiles, 1978. See Fig. 3 for station locations.

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1978 JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
1	0.0	9.3	8.1	9.9	10.3	11.1	13.3	11.1	11.3	0.0	6.5
1	1.5	8.4	7.8	9.6	10.2	12.0	13.0	11.1	11.3	0.0	6.5
1	3.0	8.3	7.1	9.3	9.8	11.9	12.8	0.0	0.0	0.0	6.9
1	6.0	7.8	7.0	8.9	9.5	11.1	11.8	0.0	0.0	0.0	0.0
1	9.0	7.0	6.9	8.8	8.6	11.2	11.7	0.0	0.0	0.0	0.0
1	12.0	7.0	6.9	9.0	8.7	11.6	11.2	0.0	0.0	0.0	0.0
2	0.0	8.5	11.1	10.7	10.5	12.4	13.4	10.9	11.0	0.0	6.2
2	1.5	7.9	8.9	10.4	10.4	12.1	12.4	10.9	10.9	0.0	6.4
2	3.0	7.8	8.5	10.1	10.1	11.4	12.0	0.0	0.0	0.0	6.4
2	6.0	7.3	8.3	9.4	9.6	11.9	11.8	0.0	0.0	0.0	0.0
2	9.0	7.8	8.1	9.2	9.4	11.2	11.5	0.0	0.0	0.0	0.0
2	12.0	7.6	8.1	9.0	9.1	10.8	11.0	0.0	0.0	0.0	0.0
3	0.0	0.0	8.5	9.5	10.4	10.6	13.2	11.1	11.1	0.0	6.4
3	1.5	0.0	8.6	9.4	10.1	10.4	12.2	10.8	11.0	0.0	6.6
3	3.0	0.0	8.4	9.3	10.0	10.8	11.8	0.0	0.0	0.0	6.5
3	6.0	0.0	8.4	9.3	8.5	10.8	11.5	0.0	0.0	0.0	0.0
3	9.0	0.0	7.9	9.3	8.4	11.0	11.0	0.0	0.0	0.0	0.0
3	12.0	0.0	7.3	9.3	8.3	11.0	10.9	0.0	0.0	0.0	0.0
4	0.0	7.5	8.6	9.9	10.1	10.4	12.5	10.7	11.0	0.0	6.1
4	1.5	7.5	8.3	9.5	9.9	10.3	12.0	10.7	11.1	0.0	6.1
4	3.0	7.5	8.3	9.4	9.8	10.4	11.9	0.0	0.0	0.0	6.1
4	6.0	7.4	8.3	9.1	9.6	10.5	11.4	0.0	0.0	0.0	0.0
4	9.0	7.4	7.4	9.0	9.3	10.5	11.3	0.0	0.0	0.0	0.0
4	12.0	7.3	7.2	9.0	9.1	10.2	11.1	0.0	0.0	0.0	0.0
5	0.0	7.7	11.2	8.8	10.1	10.5	12.4	10.8	11.1	6.8	6.5
5	1.5	7.7	10.7	8.8	9.7	10.9	11.6	10.8	10.9	6.8	6.4
5	3.0	7.5	8.5	8.8	9.1	11.0	11.0	0.0	0.0	6.8	6.4
5	6.0	7.7	7.6	8.8	8.5	11.1	10.9	0.0	0.0	0.0	0.0
5	9.0	7.5	7.6	8.8	8.5	10.6	10.8	0.0	0.0	0.0	0.0
5	12.0	7.6	7.6	8.7	8.5	10.7	10.7	0.0	0.0	0.0	0.0
6	0.0	7.4	8.4	8.7	9.9	10.6	12.3	10.7	10.9	7.0	6.4
6	1.5	7.3	6.9	8.7	9.5	10.7	11.5	10.7	10.8	6.9	6.4
6	3.0	7.3	6.9	8.8	8.9	10.5	11.0	0.0	0.0	7.0	6.4
6	6.0	7.4	6.9	8.7	8.6	10.6	10.9	0.0	0.0	0.0	0.0
6	9.0	7.4	6.9	8.5	8.5	10.7	10.9	0.0	0.0	0.0	0.0
6	12.0	7.4	6.9	8.7	8.5	10.7	10.7	0.0	0.0	0.0	0.0
7	0.0	8.0	8.0	8.8	9.7	10.2	12.1	10.6	10.7	7.1	6.1
7	1.5	7.9	7.9	8.7	9.1	10.4	11.2	0.0	11.0	6.9	6.7
7	3.0	8.0	7.9	8.7	8.8	10.3	11.1	0.0	0.0	7.0	6.3
7	6.0	7.9	7.8	8.7	8.7	10.3	10.9	0.0	0.0	0.0	0.0
7	9.0	7.8	8.0	8.6	8.7	10.4	10.8	0.0	0.0	0.0	0.0
7	12.0	7.8	8.0	8.6	8.7	10.5	10.9	0.0	0.0	0.0	0.0

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1978 JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
8	0.0	7.5	7.1	8.4	9.5	10.3	11.0	10.7	10.9	7.3	6.7
8	1.5	7.5	7.2	8.4	9.4	10.2	10.9	10.7	10.8	7.1	6.7
8	3.0	7.4	7.2	8.3	8.9	10.5	10.9	0.0	0.0	7.0	6.6
8	6.0	7.5	7.1	8.3	8.6	10.5	10.8	0.0	0.0	0.0	0.0
8	9.0	7.4	7.1	8.3	8.6	10.5	10.8	0.0	0.0	0.0	0.0
8	12.0	7.4	7.1	8.3	8.5	10.4	10.7	0.0	0.0	0.0	0.0
9	0.0	7.0	6.9	8.9	9.0	10.6	11.1	0.0	10.9	7.1	0.0
9	1.5	7.0	6.9	8.9	8.9	10.3	10.9	0.0	10.8	7.2	0.0
9	3.0	7.0	6.9	8.8	8.8	10.5	10.9	0.0	0.0	7.1	0.0
9	6.0	7.0	6.9	8.6	8.7	10.6	10.9	0.0	0.0	0.0	0.0
9	9.0	7.0	6.8	8.6	8.6	10.5	10.9	0.0	0.0	0.0	0.0
9	12.0	7.0	6.8	8.6	8.7	10.5	11.1	0.0	0.0	0.0	0.0
10	0.0	7.8	8.3	8.8	8.7	10.0	10.9	0.0	10.7	6.9	6.5
10	1.5	8.0	8.3	8.7	8.7	10.2	11.0	0.0	10.7	7.0	6.4
10	3.0	7.7	8.2	8.7	8.7	10.3	10.9	0.0	0.0	7.2	6.5
10	6.0	7.6	0.0	8.6	8.7	10.3	11.0	0.0	0.0	0.0	0.0
10	9.0	7.6	0.0	8.6	8.6	10.3	10.9	0.0	0.0	0.0	0.0
10	12.0	7.5	0.0	8.7	8.4	10.4	11.0	0.0	0.0	0.0	0.0
11	0.0	7.4	6.9	8.6	8.6	10.0	10.9	10.7	10.7	7.0	6.7
11	1.5	7.3	6.9	8.6	8.6	10.1	10.9	10.6	10.8	7.0	6.6
11	3.0	7.3	6.9	8.6	8.6	10.1	10.9	0.0	0.0	7.2	6.5
11	6.0	7.2	6.9	8.5	8.6	10.4	10.9	0.0	0.0	0.0	0.0
11	9.0	7.3	6.9	8.5	8.6	10.2	10.9	0.0	0.0	0.0	0.0
11	12.0	7.3	6.9	8.6	8.6	10.3	10.8	0.0	0.0	0.0	0.0
12	0.0	7.5	7.8	8.2	8.6	10.6	10.9	10.6	10.6	6.9	6.6
12	1.5	7.4	7.9	8.2	8.5	10.6	10.6	10.7	10.6	7.0	6.6
12	3.0	7.3	7.8	8.2	8.5	10.5	10.6	0.0	0.0	6.9	6.6
12	6.0	7.4	7.8	8.2	8.5	10.6	10.6	0.0	0.0	0.0	0.0
12	9.0	7.4	7.7	8.2	8.5	10.3	10.7	0.0	0.0	0.0	0.0
12	12.0	7.4	7.7	8.2	8.5	10.5	10.7	0.0	0.0	0.0	0.0
13	0.0	7.5	7.8	8.4	8.6	10.5	11.0	10.5	10.8	6.9	6.3
13	1.5	7.5	7.7	8.3	8.6	10.4	11.0	10.5	10.8	6.7	6.9
13	3.0	7.4	7.8	8.3	8.6	10.5	11.0	0.0	0.0	6.9	6.6
13	6.0	7.4	7.8	8.3	8.5	10.4	11.0	0.0	0.0	0.0	0.0
13	9.0	7.4	7.8	8.2	8.5	10.4	11.0	0.0	0.0	0.0	0.0
13	12.0	7.4	7.9	8.2	8.5	10.2	11.0	0.0	0.0	0.0	0.0
14	0.0	7.6	8.4	9.6	9.4	10.5	10.9	0.0	10.8	7.6	6.7
14	1.5	7.6	8.0	9.5	9.2	10.4	10.9	0.0	10.7	7.7	6.3
14	3.0	7.5	8.0	9.4	9.3	10.3	10.9	0.0	0.0	7.6	6.5
14	6.0	0.0	8.0	9.2	9.3	10.3	10.8	0.0	0.0	0.0	0.0
14	9.0	0.0	8.0	9.2	9.3	10.5	10.8	0.0	0.0	0.0	0.0
14	12.0	0.0	8.0	9.2	9.4	10.4	11.0	0.0	0.0	0.0	0.0

Table 2 (continued).

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
15	0.0	8.1	8.4	9.3	9.9	10.6	11.1	0.0	10.9	7.6	7.3
15	1.5	8.0	8.3	9.3	9.9	10.6	11.1	0.0	10.9	7.5	7.3
15	3.0	8.0	8.3	9.3	9.8	10.7	11.1	0.0	0.0	7.5	7.4
15	6.0	7.9	8.4	9.3	9.8	10.7	11.0	0.0	0.0	0.0	0.0
15	9.0	7.9	8.2	9.2	9.8	10.7	11.0	0.0	0.0	0.0	0.0
15	12.0	0.0	8.1	9.3	9.7	10.7	11.2	0.0	0.0	0.0	0.0
16	0.0	8.0	8.2	9.2	9.8	11.8	11.2	10.9	10.8	7.5	7.4
16	1.5	7.6	8.3	9.1	9.7	10.6	11.3	10.8	10.9	7.4	7.5
16	3.0	7.6	8.2	9.0	9.7	10.6	11.3	0.0	0.0	7.6	7.3
16	6.0	7.5	8.1	8.9	9.6	10.5	11.3	0.0	0.0	0.0	0.0
16	9.0	0.0	8.0	9.0	9.5	10.6	10.9	0.0	0.0	0.0	0.0
16	12.0	0.0	8.2	9.0	9.3	10.5	0.0	0.0	0.0	0.0	0.0
17	0.0	7.4	7.9	9.4	8.8	10.4	11.1	10.8	10.9	7.6	7.4
17	1.5	7.5	7.9	8.9	8.6	10.3	11.0	10.8	11.0	7.5	7.4
17	3.0	7.5	7.9	8.9	8.6	10.4	10.9	0.0	0.0	7.6	7.4
17	6.0	7.4	7.9	8.8	8.6	10.4	11.1	0.0	0.0	0.0	0.0
17	9.0	7.4	7.9	8.5	8.6	10.4	11.1	0.0	0.0	0.0	0.0
17	12.0	7.3	7.8	8.5	9.5	10.3	11.0	0.0	0.0	0.0	0.0
18	0.0	8.0	8.0	8.1	8.5	10.4	10.9	10.8	0.0	6.5	7.2
18	1.5	7.8	7.8	8.1	8.4	10.4	10.8	10.7	0.0	6.6	6.6
18	3.0	7.6	7.8	8.1	8.4	10.6	10.8	0.0	0.0	6.8	6.9
18	6.0	7.6	7.7	8.1	8.4	10.5	10.6	0.0	0.0	0.0	0.0
18	9.0	7.6	7.7	8.1	8.4	10.5	10.7	0.0	0.0	0.0	0.0
18	12.0	7.8	7.7	8.2	8.3	10.5	10.5	0.0	0.0	0.0	0.0
19	0.0	7.2	6.9	9.1	9.6	11.0	10.9	10.6	11.0	6.9	6.6
19	1.5	7.1	6.9	8.9	8.6	11.0	10.7	10.6	11.0	6.8	6.6
19	3.0	7.2	6.9	8.8	8.6	10.7	10.9	0.0	0.0	6.7	6.5
19	6.0	7.2	6.9	8.5	8.6	10.5	10.8	0.0	0.0	0.0	0.0
19	9.0	6.9	6.9	8.4	8.8	10.3	10.8	0.0	0.0	0.0	0.0
19	12.0	6.6	6.9	8.4	8.6	10.4	10.7	0.0	0.0	0.0	0.0
20	0.0	7.8	7.8	9.0	9.1	11.1	11.0	10.4	11.2	6.8	7.1
20	1.5	7.4	7.5	8.9	8.7	11.1	10.9	10.5	11.3	6.8	6.8
20	3.0	7.4	7.3	8.9	8.7	11.1	10.8	0.0	0.0	6.9	6.8
20	6.0	7.3	7.0	8.8	8.6	10.9	10.6	0.0	0.0	0.0	0.0
20	9.0	7.3	6.5	8.8	8.5	10.9	10.6	0.0	0.0	0.0	0.0
20	12.0	7.5	6.3	8.8	8.5	10.9	10.4	0.0	0.0	0.0	0.0
21	0.0	7.1	0.0	9.5	8.9	11.0	10.6	10.8	11.0	0.0	7.5
21	1.5	7.1	0.0	9.1	8.9	11.0	10.8	10.6	11.1	0.0	7.6
21	3.0	7.0	0.0	9.0	8.9	10.9	10.7	0.0	0.0	0.0	7.6
21	6.0	6.6	7.3	8.7	8.9	10.9	10.8	0.0	0.0	0.0	0.0
21	9.0	6.9	0.0	8.6	8.9	10.8	10.6	0.0	0.0	0.0	0.0
21	12.0	6.9	0.0	8.6	8.9	10.7	10.8	0.0	0.0	0.0	0.0

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
22	0.0	7.6	7.0	9.2	9.6	11.0	11.1	11.0	11.2	7.5	7.5
22	1.5	7.6	7.0	9.1	9.5	11.0	11.1	10.9	11.2	7.5	7.3
22	3.0	7.6	7.0	9.0	9.5	10.9	11.2	0.0	0.0	7.5	7.5
22	6.0	7.5	7.0	9.0	9.4	10.7	11.1	0.0	0.0	0.0	0.0
22	9.0	7.4	7.0	8.9	9.4	10.8	11.0	0.0	0.0	0.0	0.0
22	12.0	7.3	7.0	8.8	9.4	10.7	11.1	0.0	0.0	0.0	0.0
23	0.0	0.0	7.0	8.5	9.0	10.9	10.6	10.4	11.0	7.6	6.6
23	1.5	0.0	6.8	8.4	8.9	10.9	10.7	10.5	10.9	7.7	6.7
23	3.0	0.0	6.6	8.4	8.7	10.8	10.7	0.0	0.0	7.7	6.7
23	6.0	6.8	6.1	8.4	8.7	10.7	10.8	0.0	0.0	0.0	0.0
23	9.0	0.0	6.1	8.4	8.7	10.7	10.5	0.0	0.0	0.0	0.0
23	12.0	0.0	6.1	8.3	8.6	10.6	10.6	0.0	0.0	0.0	0.0
24	0.0	0.0	7.5	8.8	9.1	11.2	10.7	10.5	11.0	7.3	7.4
24	1.5	0.0	7.4	8.8	9.1	10.9	10.7	10.5	11.0	7.4	7.5
24	3.0	0.0	7.4	8.8	9.2	10.7	10.6	0.0	0.0	7.3	7.5
24	6.0	0.0	7.3	8.6	9.1	10.8	10.6	0.0	0.0	0.0	0.0
24	9.0	0.0	6.9	8.4	9.2	10.7	10.7	0.0	0.0	0.0	0.0
24	12.0	0.0	6.9	8.4	9.2	10.5	10.6	0.0	0.0	0.0	0.0
25	0.0	8.0	8.0	9.5	8.7	11.6	10.8	11.1	10.7	0.0	7.6
25	1.5	8.0	7.4	9.1	8.7	11.0	10.5	10.8	10.7	0.0	7.5
25	3.0	7.6	6.9	9.0	8.7	10.8	10.3	0.0	0.0	0.0	7.5
25	6.0	7.4	6.4	8.8	8.6	10.6	10.5	0.0	0.0	0.0	0.0
25	9.0	7.3	6.4	8.8	8.4	10.5	10.3	0.0	0.0	0.0	0.0
25	12.0	7.3	6.2	8.8	8.5	10.5	10.2	0.0	0.0	0.0	0.0
26	0.0	8.4	8.3	10.5	8.9	11.3	10.8	10.7	10.8	7.0	6.8
26	1.5	8.1	7.3	9.9	8.7	11.0	10.8	10.6	10.6	6.9	6.8
26	3.0	7.7	7.3	9.5	8.7	10.9	10.6	0.0	0.0	6.6	6.8
26	6.0	7.7	6.6	9.2	8.5	10.7	10.3	0.0	0.0	0.0	0.0
26	9.0	7.7	6.6	9.0	8.5	10.7	10.5	0.0	0.0	0.0	0.0
26	12.0	7.5	6.6	8.9	8.4	10.6	10.6	0.0	0.0	0.0	0.0
27	0.0	0.0	7.3	9.2	8.9	11.1	10.6	10.6	10.9	0.0	7.1
27	1.5	0.0	7.1	9.2	8.8	11.0	10.5	10.7	10.9	0.0	6.7
27	3.0	0.0	7.1	9.1	8.8	10.8	10.5	0.0	0.0	0.0	6.7
27	6.0	0.0	7.1	9.0	8.6	10.8	10.6	0.0	0.0	0.0	0.0
27	9.0	0.0	7.1	8.9	8.6	10.6	10.4	0.0	0.0	0.0	0.0
27	12.0	0.0	6.7	8.8	8.5	10.7	10.5	0.0	0.0	0.0	0.0
28	0.0	0.0	7.7	9.8	9.8	11.5	11.6	10.7	11.3	0.0	6.6
28	1.5	0.0	7.3	9.5	9.5	11.0	11.1	10.7	11.1	0.0	6.6
28	3.0	0.0	7.1	9.4	9.2	10.9	11.0	0.0	0.0	0.0	6.6
28	6.0	0.0	6.9	9.3	9.1	10.9	10.7	0.0	0.0	0.0	0.0
28	9.0	0.0	6.9	9.0	8.9	10.8	10.6	0.0	0.0	0.0	0.0
28	12.0	0.0	6.7	8.9	8.8	10.6	10.3	0.0	0.0	0.0	0.0

Table 2 (continued).

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
29	0.0	0.0	7.0	9.8	9.8	11.3	11.2	10.6	11.0	0.0	6.9
29	1.5	0.0	6.8	9.4	9.5	11.1	11.1	10.6	11.0	0.0	6.9
29	3.0	0.0	6.7	9.5	9.4	10.9	10.9	0.0	0.0	0.0	6.9
29	6.0	0.0	6.7	9.3	9.1	10.7	10.8	0.0	0.0	0.0	0.0
29	9.0	0.0	6.6	9.2	8.9	10.7	10.6	0.0	0.0	0.0	0.0
29	12.0	0.0	6.5	8.9	8.8	10.7	10.5	0.0	0.0	0.0	0.0
30	0.0	0.0	7.1	9.0	9.8	11.1	11.1	10.7	11.3	0.0	6.9
30	1.5	0.0	6.9	9.0	9.5	10.8	10.6	10.6	11.1	0.0	6.9
30	3.0	0.0	6.8	8.9	9.0	10.7	10.6	0.0	0.0	0.0	6.9
30	6.0	0.0	6.7	8.8	8.8	10.7	10.5	0.0	0.0	0.0	0.0
30	9.0	0.0	6.8	8.6	8.6	10.7	10.6	0.0	0.0	0.0	0.0
30	12.0	0.0	6.6	8.7	8.4	10.9	10.3	0.0	0.0	0.0	0.0
31	0.0	0.0	7.2	9.6	9.4	10.7	10.8	10.9	10.9	0.0	7.2
31	1.5	0.0	7.2	9.6	9.3	10.9	10.5	10.7	10.7	0.0	6.7
31	3.0	0.0	7.0	9.4	9.3	10.6	10.4	0.0	0.0	0.0	6.8
31	6.0	0.0	6.6	9.2	9.1	10.6	10.3	0.0	0.0	0.0	0.0
31	9.0	0.0	6.6	9.1	8.9	10.4	10.4	0.0	0.0	0.0	0.0
31	12.0	0.0	6.6	8.8	8.7	10.4	10.2	0.0	0.0	0.0	0.0
32	0.0	7.8	6.8	9.7	9.2	10.6	11.1	10.6	10.9	0.0	7.6
32	1.5	7.6	6.8	9.3	9.0	10.0	10.7	10.6	10.8	0.0	7.5
32	3.0	7.6	6.7	9.2	9.0	10.2	10.8	0.0	0.0	0.0	7.5
32	6.0	7.5	6.7	9.0	8.5	10.3	10.8	0.0	0.0	0.0	0.0
32	9.0	7.5	6.7	8.8	8.5	9.9	10.7	0.0	0.0	0.0	0.0
32	12.0	7.5	6.7	8.8	8.5	10.1	10.6	0.0	0.0	0.0	0.0
33	0.0	7.1	7.3	8.4	8.4	11.0	10.6	10.7	10.8	7.6	7.1
33	1.5	7.1	6.8	8.4	8.4	11.0	10.5	10.4	10.8	7.7	7.0
33	3.0	7.0	6.8	8.4	8.3	10.9	10.5	0.0	0.0	7.6	7.0
33	6.0	6.9	6.8	8.3	8.3	10.8	10.4	0.0	0.0	0.0	0.0
33	9.0	6.7	6.8	8.3	8.4	10.8	10.4	0.0	0.0	0.0	0.0
33	12.0	6.5	6.8	8.3	8.3	10.7	10.5	0.0	0.0	0.0	0.0
34	0.0	7.3	6.9	8.7	8.7	10.9	10.5	10.4	10.9	7.6	7.3
34	1.5	7.2	6.9	8.6	8.5	10.8	10.4	10.4	10.8	7.5	7.2
34	3.0	7.2	6.9	8.6	8.4	10.8	10.5	0.0	0.0	7.6	7.2
34	6.0	7.1	6.9	8.6	8.4	10.7	10.5	0.0	0.0	0.0	0.0
34	9.0	7.1	6.9	8.5	8.5	10.7	10.5	0.0	0.0	0.0	0.0
34	12.0	7.1	6.9	8.4	8.5	10.7	10.4	0.0	0.0	0.0	0.0
35	0.0	0.0	6.7	8.8	8.3	10.7	10.4	10.4	10.6	7.6	6.9
35	1.5	0.0	6.7	8.8	8.3	10.6	10.2	10.5	10.7	7.6	6.9
35	3.0	0.0	6.7	8.7	8.3	10.6	10.4	0.0	0.0	7.5	7.0
35	6.0	0.0	6.7	8.6	8.3	10.5	10.3	0.0	0.0	0.0	0.0
35	9.0	0.0	6.8	8.5	8.2	10.5	10.3	0.0	0.0	0.0	0.0
35	12.0	0.0	6.7	8.6	8.1	10.5	10.3	0.0	0.0	0.0	0.0

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
36	0.0	0.0	6.9	9.4	8.5	10.9	10.5	10.9	10.9	7.8	7.2
36	1.5	0.0	6.7	9.3	8.5	10.9	10.5	10.6	10.9	8.0	7.3
36	3.0	0.0	6.6	9.1	8.5	10.6	10.5	0.0	0.0	0.0	7.2
36	6.0	0.0	6.6	9.0	8.4	10.8	10.5	0.0	0.0	0.0	0.0
36	9.0	0.0	6.5	9.0	8.4	10.7	10.4	0.0	0.0	0.0	0.0
36	12.0	0.0	6.4	0.0	8.4	10.5	10.4	0.0	0.0	0.0	0.0
37	0.0	7.6	7.0	9.5	8.5	11.4	11.2	10.9	11.1	7.5	6.9
37	1.5	7.4	7.0	9.3	8.6	11.4	11.0	10.7	11.1	7.5	6.9
37	3.0	6.9	7.0	9.2	8.5	11.2	10.9	0.0	0.0	0.0	6.8
37	6.0	6.4	6.7	9.2	8.5	11.1	10.8	0.0	0.0	0.0	0.0
37	9.0	6.4	6.7	9.0	8.6	11.1	10.9	0.0	0.0	0.0	0.0
37	12.0	6.4	6.6	9.3	8.5	10.9	10.8	0.0	0.0	0.0	0.0
38	0.0	7.5	7.1	10.3	8.9	11.2	11.2	10.9	10.9	7.6	6.6
38	1.5	7.5	7.0	9.6	8.8	11.4	11.2	10.6	11.0	7.5	6.5
38	3.0	7.5	7.0	9.3	8.8	11.4	11.2	0.0	0.0	0.0	6.4
38	6.0	6.6	6.8	9.2	9.0	11.0	11.2	0.0	0.0	0.0	0.0
38	9.0	6.5	6.6	9.0	8.7	11.1	10.9	0.0	0.0	0.0	0.0
38	12.0	6.4	6.6	0.0	0.0	10.8	10.9	0.0	0.0	0.0	0.0
39	0.0	7.2	8.0	10.4	9.6	11.6	11.4	10.9	11.4	7.2	7.2
39	1.5	7.1	7.6	9.6	9.6	11.5	11.3	10.7	11.3	7.1	7.3
39	3.0	6.9	7.3	9.5	9.3	11.5	11.2	0.0	0.0	0.0	7.3
39	6.0	6.8	7.2	9.5	9.1	11.3	10.9	0.0	0.0	0.0	0.0
39	9.0	6.3	7.1	9.2	9.0	11.3	10.8	0.0	0.0	0.0	0.0
39	12.0	6.2	6.5	9.6	9.0	11.2	10.8	0.0	0.0	0.0	0.0
40	0.0	6.6	6.9	9.3	8.5	10.9	10.2	10.6	10.6	7.5	7.2
40	1.5	6.6	6.9	8.9	8.4	10.6	10.1	10.6	10.5	7.7	7.2
40	3.0	6.6	6.8	8.8	8.3	10.6	10.3	0.0	0.0	7.6	7.3
40	6.0	6.6	6.7	8.8	8.3	10.5	10.1	0.0	0.0	0.0	0.0
40	9.0	6.4	6.4	8.7	8.3	10.3	10.0	0.0	0.0	0.0	0.0
40	12.0	6.3	6.3	8.7	8.2	10.3	10.3	0.0	0.0	0.0	0.0
41	0.0	5.9	7.0	8.4	8.4	10.1	10.1	10.2	10.4	7.4	7.6
41	1.5	5.9	7.0	8.4	8.3	10.2	10.0	10.2	10.5	7.8	7.6
41	3.0	5.8	6.7	8.4	8.4	10.2	10.1	0.0	0.0	7.7	7.7
41	6.0	5.8	6.7	8.2	8.3	10.1	10.1	0.0	0.0	0.0	0.0
41	9.0	5.8	6.7	8.1	8.3	10.1	10.0	0.0	0.0	0.0	0.0
41	12.0	5.8	6.6	8.1	8.1	10.0	10.0	0.0	0.0	0.0	0.0
42	0.0	5.8	6.3	8.1	8.8	10.2	10.1	10.2	10.3	7.7	7.6
42	1.5	5.8	6.3	8.1	8.6	10.2	10.1	10.3	10.4	7.8	7.7
42	3.0	5.6	6.3	8.1	8.6	10.0	10.0	0.0	0.0	7.9	7.4
42	6.0	5.6	6.3	8.1	8.6	9.8	9.8	0.0	0.0	0.0	0.0
42	9.0	5.6	6.3	8.1	8.6	9.7	9.6	0.0	0.0	0.0	0.0
42	12.0	5.6	6.3	8.1	8.4	9.8	9.6	0.0	0.0	0.0	0.0

Table 2 (continued).

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
43	0.0	6.0	6.2	8.5	8.5	10.1	9.9	10.1	10.2	7.7	7.6
43	1.5	6.0	6.3	8.5	8.4	10.0	10.0	9.9	10.4	7.7	7.7
43	3.0	6.0	6.2	8.4	8.3	9.9	9.9	0.0	0.0	7.8	7.7
43	6.0	5.8	6.2	8.3	8.3	9.8	10.0	0.0	0.0	0.0	0.0
43	9.0	5.8	6.2	8.2	8.3	9.8	9.9	0.0	0.0	0.0	0.0
43	12.0	5.8	6.1	8.2	8.2	9.9	9.9	0.0	0.0	0.0	0.0
44	0.0	6.7	6.1	8.2	8.1	10.1	9.7	10.1	10.4	0.0	7.6
44	1.5	6.7	6.1	8.2	8.2	10.1	9.9	10.2	10.3	0.0	7.6
44	3.0	6.7	6.1	8.2	8.1	10.1	9.8	0.0	0.0	0.0	7.7
44	6.0	6.7	6.1	8.0	8.0	9.9	9.7	0.0	0.0	0.0	0.0
44	9.0	5.7	6.1	8.0	8.0	9.9	9.6	0.0	0.0	0.0	0.0
44	12.0	6.5	6.1	7.8	8.0	9.9	9.8	0.0	0.0	0.0	0.0
45	0.0	6.0	6.3	8.4	8.0	9.8	9.9	10.3	10.4	0.0	7.6
45	1.5	6.0	6.3	8.2	8.0	9.8	9.6	10.1	10.3	0.0	7.7
45	3.0	6.0	6.3	8.3	8.0	9.7	10.0	0.0	0.0	0.0	7.6
45	6.0	5.9	6.3	8.1	8.0	9.6	10.0	0.0	0.0	0.0	0.0
45	9.0	5.9	6.3	8.1	8.0	9.7	10.0	0.0	0.0	0.0	0.0
45	12.0	5.8	6.3	8.0	8.0	9.7	9.9	0.0	0.0	0.0	0.0
46	0.0	7.1	0.0	8.5	9.0	10.9	10.5	10.2	10.5	7.8	7.6
46	1.5	7.2	0.0	8.4	8.7	10.8	10.4	10.3	10.5	7.9	7.7
46	3.0	7.1	0.0	8.3	8.5	10.7	10.4	0.0	0.0	7.9	7.7
46	6.0	7.0	0.0	8.3	8.5	10.6	10.4	0.0	0.0	0.0	0.0
46	9.0	7.0	0.0	8.3	8.4	10.5	10.4	0.0	0.0	0.0	0.0
46	12.0	7.0	0.0	8.3	9.1	10.5	10.3	0.0	0.0	0.0	0.0
47	0.0	6.6	6.7	8.6	8.4	10.3	10.1	10.7	10.5	7.8	7.7
47	1.5	6.5	6.5	8.3	8.4	10.3	10.2	10.5	10.5	7.9	7.7
47	3.0	6.4	6.3	8.5	8.4	10.2	10.1	0.0	0.0	7.7	7.7
47	6.0	6.3	6.3	8.5	8.4	10.2	10.0	0.0	0.0	0.0	0.0
47	9.0	6.3	6.3	8.4	8.3	10.1	10.4	0.0	0.0	0.0	0.0
47	12.0	6.3	6.2	8.4	8.3	10.1	10.0	0.0	0.0	0.0	0.0
48	0.0	6.5	0.0	8.9	9.1	11.0	10.5	10.7	10.7	7.5	7.6
48	1.5	6.5	0.0	8.8	8.8	11.2	10.5	10.7	10.6	7.7	7.7
48	3.0	6.5	0.0	8.8	8.8	11.1	10.2	0.0	0.0	7.6	7.6
48	6.0	6.5	0.0	8.7	8.5	10.8	10.3	0.0	0.0	0.0	0.0
48	9.0	6.3	0.0	8.7	8.3	10.6	10.4	0.0	0.0	0.0	0.0
48	12.0	6.3	0.0	8.7	8.3	10.6	10.3	0.0	0.0	0.0	0.0
49	0.0	8.3	7.8	8.8	9.1	10.8	10.5	10.8	10.4	7.9	6.7
49	1.5	7.9	7.7	9.0	8.9	10.6	10.6	10.8	10.7	7.8	7.1
49	3.0	7.8	7.8	8.9	8.9	10.5	10.9	0.0	0.0	7.7	6.5
49	6.0	7.6	7.8	8.8	8.7	10.3	10.8	0.0	0.0	0.0	0.0
49	9.0	7.6	7.7	8.6	8.6	10.3	10.7	0.0	0.0	0.0	0.0
49	12.0	7.6	7.6	8.5	8.5	10.3	10.5	0.0	0.0	0.0	0.0

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
50	0.0	6.4	6.4	8.6	8.5	10.6	10.4	10.4	10.4	7.4	7.3
50	1.5	6.4	6.4	7.6	9.0	10.5	10.4	10.6	10.3	7.7	7.1
50	3.0	6.4	6.4	7.5	8.8	10.4	10.3	0.0	0.0	7.4	7.0
50	6.0	6.3	6.4	7.6	8.7	10.4	10.3	0.0	0.0	0.0	0.0
50	9.0	6.3	6.4	7.6	8.8	10.3	10.2	0.0	0.0	0.0	0.0
50	12.0	6.3	6.3	7.6	8.7	10.4	10.3	0.0	0.0	0.0	0.0
51	0.0	7.2	6.9	8.6	8.2	10.3	10.1	10.7	10.4	7.6	7.8
51	1.5	7.1	7.0	8.5	8.1	10.3	10.1	10.6	10.4	7.9	7.2
51	3.0	7.1	7.0	8.5	8.2	10.2	10.0	0.0	0.0	8.0	7.2
51	6.0	6.9	7.0	8.5	8.2	10.2	9.9	0.0	0.0	0.0	0.0
51	9.0	6.9	6.8	8.4	8.2	10.0	9.9	0.0	0.0	0.0	0.0
51	12.0	6.9	6.7	8.4	8.1	9.9	9.9	0.0	0.0	0.0	0.0
52	0.0	0.0	0.0	8.5	8.3	10.3	10.3	10.6	10.4	7.7	7.4
52	1.5	0.0	0.0	8.4	8.3	10.3	10.3	10.6	10.5	7.7	7.1
52	3.0	0.0	0.0	8.4	8.3	10.1	10.1	0.0	0.0	7.7	7.2
52	6.0	0.0	0.0	8.4	8.3	10.2	10.1	0.0	0.0	0.0	0.0
52	9.0	0.0	0.0	8.4	8.2	10.1	10.1	0.0	0.0	0.0	0.0
52	12.0	0.0	0.0	8.4	8.1	10.7	10.1	0.0	0.0	0.0	0.0
53	0.0	7.2	7.0	8.4	8.3	9.9	9.9	10.7	10.4	7.9	7.7
53	1.5	7.0	7.1	8.4	8.2	9.9	10.0	10.7	10.4	7.6	7.7
53	3.0	6.9	7.1	8.5	8.2	9.8	10.0	0.0	0.0	7.9	7.7
53	6.0	7.0	7.0	8.4	8.3	9.8	9.9	0.0	0.0	0.0	0.0
53	9.0	7.0	7.0	8.5	8.1	9.7	9.9	0.0	0.0	0.0	0.0
53	12.0	6.9	7.0	8.4	8.1	9.7	9.7	0.0	0.0	0.0	0.0
54	0.0	7.0	7.0	8.4	8.1	10.1	9.9	9.5	10.3	0.0	7.7
54	1.5	6.6	7.0	8.5	8.1	9.9	10.0	10.5	10.4	0.0	7.7
54	3.0	6.5	7.0	8.5	8.1	9.8	9.9	0.0	0.0	0.0	7.7
54	6.0	6.2	6.9	8.4	8.1	9.8	9.7	0.0	0.0	0.0	0.0
54	9.0	6.2	6.9	8.3	8.1	9.7	9.9	0.0	0.0	0.0	0.0
54	12.0	6.1	6.9	8.2	8.1	9.7	9.9	0.0	0.0	0.0	0.0
55	0.0	7.0	7.1	8.5	8.2	10.0	9.8	10.2	10.5	0.0	7.7
55	1.5	7.0	7.0	8.5	8.1	10.1	9.8	10.3	10.4	0.0	7.8
55	3.0	7.0	7.0	8.3	8.1	9.9	9.9	0.0	0.0	0.0	7.8
55	6.0	7.0	7.0	8.3	8.1	10.0	9.9	0.0	0.0	0.0	0.0
55	9.0	6.9	7.1	8.2	7.2	9.9	9.9	0.0	0.0	0.0	0.0
55	12.0	6.9	7.0	7.5	7.2	9.8	9.8	0.0	0.0	0.0	0.0
56	0.0	6.7	0.0	8.4	8.3	9.8	9.8	10.5	10.5	0.0	7.7
56	1.5	6.7	0.0	8.4	8.3	9.8	9.8	10.6	10.5	0.0	7.7
56	3.0	6.6	0.0	8.4	8.1	9.8	9.8	0.0	0.0	0.0	7.7
56	6.0	6.6	0.0	8.4	8.2	9.8	9.8	0.0	0.0	0.0	0.0
56	9.0	6.6	0.0	8.4	8.2	9.7	9.7	0.0	0.0	0.0	0.0
56	12.0	6.6	0.0	8.3	8.1	9.8	9.8	0.0	0.0	0.0	0.0

Table 2 (continued).

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1978 JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
57	0.0	7.4	7.2	8.8	8.5	10.6	10.1	10.6	10.5	0.0	7.7
57	1.5	7.4	7.2	8.6	8.5	10.5	10.1	10.6	10.5	0.0	7.7
57	3.0	7.4	7.1	8.7	8.4	10.5	10.1	0.0	0.0	0.0	7.7
57	6.0	7.5	7.1	8.6	8.3	10.4	10.1	0.0	0.0	0.0	0.0
57	9.0	7.5	7.1	8.6	8.3	10.4	10.1	0.0	0.0	0.0	0.0
57	12.0	7.4	7.1	8.4	8.2	10.5	10.2	0.0	0.0	0.0	0.0
58	0.0	7.0	0.0	9.1	8.5	10.7	10.4	10.7	10.5	0.0	7.0
58	1.5	6.9	0.0	9.0	8.5	10.6	10.3	10.7	10.5	0.0	6.9
58	3.0	6.9	0.0	8.9	8.4	10.5	10.3	0.0	0.0	0.0	6.9
58	6.0	6.8	0.0	8.9	8.3	10.5	10.2	0.0	0.0	0.0	0.0
58	9.0	6.8	0.0	9.1	8.4	10.4	10.2	0.0	0.0	0.0	0.0
58	12.0	6.7	0.0	8.9	8.3	10.3	10.2	0.0	0.0	0.0	0.0
59	0.0	7.6	7.3	8.7	8.6	10.7	10.1	10.8	10.5	0.0	6.8
59	1.5	7.5	7.1	8.7	8.5	10.5	10.0	10.6	10.4	0.0	7.0
59	3.0	7.4	7.1	8.7	8.5	10.5	10.1	0.0	0.0	0.0	6.5
59	6.0	7.4	7.3	8.7	8.5	10.4	10.2	0.0	0.0	0.0	0.0
59	9.0	7.4	7.2	8.7	8.5	10.3	10.2	0.0	0.0	0.0	0.0
59	12.0	7.5	7.2	8.6	8.5	10.3	10.1	0.0	0.0	0.0	0.0
60	0.0	7.4	6.6	8.9	8.5	10.1	9.8	10.8	10.5	0.0	7.1
60	1.5	7.4	6.6	8.9	8.6	10.1	9.8	10.5	10.4	0.0	7.0
60	3.0	7.4	6.6	8.8	8.5	10.1	9.9	0.0	0.0	0.0	7.0
60	6.0	7.4	6.6	8.8	8.4	10.1	9.7	0.0	0.0	0.0	0.0
60	9.0	7.4	6.6	8.8	8.4	9.9	9.8	0.0	0.0	0.0	0.0
60	12.0	7.4	6.4	8.7	8.3	9.9	9.8	0.0	0.0	0.0	0.0
61	0.0	7.3	7.1	8.7	8.7	10.5	10.2	10.0	10.8	0.0	7.3
61	1.5	7.3	7.1	8.7	8.5	10.4	10.0	10.2	10.6	0.0	7.4
61	3.0	7.3	7.0	8.6	8.5	10.4	10.1	0.0	0.0	0.0	7.2
61	6.0	7.2	7.0	8.6	8.5	10.4	10.0	0.0	0.0	0.0	0.0
61	9.0	7.2	7.0	8.6	8.4	10.3	10.0	0.0	0.0	0.0	0.0
61	12.0	7.2	0.0	8.6	8.4	10.3	10.1	0.0	0.0	0.0	0.0
62	0.0	7.3	7.2	9.0	8.7	9.9	10.3	10.3	10.4	0.0	7.0
62	1.5	7.3	7.2	9.0	8.8	10.0	9.9	10.4	10.4	0.0	6.9
62	3.0	7.3	7.2	8.9	8.6	9.9	10.3	0.0	0.0	0.0	7.0
62	6.0	7.3	7.2	8.9	8.6	9.8	10.3	0.0	0.0	0.0	0.0
62	9.0	7.1	7.2	8.9	8.6	10.0	10.2	0.0	0.0	0.0	0.0
62	12.0	7.0	7.1	8.7	8.5	9.8	10.3	0.0	0.0	0.0	0.0
63	0.0	6.9	7.0	9.1	8.8	10.1	10.4	10.2	10.7	0.0	7.0
63	1.5	6.9	6.9	9.1	8.5	10.1	9.9	10.2	10.5	0.0	7.0
63	3.0	6.8	6.9	9.0	8.5	9.8	10.0	0.0	0.0	0.0	7.1
63	6.0	6.8	6.8	9.0	8.5	10.0	10.0	0.0	0.0	0.0	0.0
63	9.0	6.9	6.7	8.9	8.4	10.0	9.9	0.0	0.0	0.0	0.0
63	12.0	7.1	6.7	8.9	8.4	10.0	9.9	0.0	0.0	0.0	0.0

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1978 JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
64	0.0	7.2	7.0	9.0	8.7	10.0	10.3	10.2	10.3	0.0	7.0
64	1.5	7.2	7.0	8.9	8.5	10.1	10.3	10.4	10.4	0.0	7.2
64	3.0	7.2	7.0	8.9	8.4	10.1	10.0	0.0	0.0	0.0	7.1
64	6.0	7.2	7.0	8.9	8.4	10.0	10.2	0.0	0.0	0.0	0.0
64	9.0	7.2	7.0	8.9	8.4	10.0	10.2	0.0	0.0	0.0	0.0
64	12.0	7.2	7.0	8.7	8.4	10.0	10.2	0.0	0.0	0.0	0.0
65	0.0	6.9	7.4	8.8	8.2	10.1	9.9	10.2	10.4	0.0	7.5
65	1.5	6.9	7.1	8.8	8.0	10.1	9.9	10.2	10.4	0.0	7.6
65	3.0	6.9	7.2	8.8	8.0	9.9	9.9	0.0	0.0	0.0	7.6
65	6.0	6.9	7.1	8.8	8.0	9.9	9.9	0.0	0.0	0.0	0.0
65	9.0	7.0	7.1	8.8	8.3	9.9	9.9	0.0	0.0	0.0	0.0
65	12.0	6.8	7.1	8.7	8.0	10.1	9.8	0.0	0.0	0.0	0.0
66	0.0	7.1	7.0	8.8	8.4	10.1	9.8	10.4	10.4	0.0	7.7
66	1.5	7.0	7.0	8.7	8.3	9.9	9.8	10.4	10.5	0.0	7.8
66	3.0	6.9	7.0	8.7	8.3	9.9	10.0	0.0	0.0	0.0	7.8
66	6.0	6.8	7.0	8.7	8.2	9.9	9.8	0.0	0.0	0.0	0.0
66	9.0	6.8	7.2	8.7	8.2	10.0	9.7	0.0	0.0	0.0	0.0
66	12.0	6.8	7.0	8.6	8.2	9.8	9.8	0.0	0.0	0.0	0.0
67	0.0	7.4	7.0	8.4	8.5	10.2	10.0	10.3	10.4	0.0	7.6
67	1.5	7.3	7.0	8.4	8.4	10.2	10.2	10.3	10.4	0.0	7.8
67	3.0	7.3	7.2	8.4	8.4	10.1	10.2	0.0	0.0	0.0	7.8
67	6.0	7.4	7.1	8.4	8.4	10.1	10.1	0.0	0.0	0.0	0.0
67	9.0	7.4	7.1	8.5	8.3	10.1	10.2	0.0	0.0	0.0	0.0
67	12.0	7.2	7.0	8.5	8.3	10.2	10.1	0.0	0.0	0.0	0.0
68	0.0	6.7	6.5	8.2	8.2	9.8	10.1	10.2	10.6	0.0	7.1
68	1.5	6.7	6.5	8.3	8.3	9.8	10.1	10.1	10.5	0.0	7.3
68	3.0	6.8	6.8	7.8	8.2	9.6	10.1	0.0	0.0	0.0	6.9
68	6.0	6.7	6.5	8.1	8.3	9.6	10.1	0.0	0.0	0.0	0.0
68	9.0	6.6	6.5	8.0	8.2	9.6	10.1	0.0	0.0	0.0	0.0
68	12.0	6.6	6.5	8.5	8.1	9.6	10.0	0.0	0.0	0.0	0.0
69	0.0	0.0	6.9	8.9	9.1	10.6	10.3	10.4	10.7	0.0	7.4
69	1.5	0.0	7.0	8.9	8.6	10.4	10.4	10.4	10.6	0.0	7.1
69	3.0	0.0	7.0	8.8	8.5	10.5	10.3	0.0	0.0	0.0	7.4
69	6.0	0.0	6.8	8.7	8.5	10.4	10.3	0.0	0.0	0.0	0.0
69	9.0	0.0	6.8	8.7	8.3	10.2	10.2	0.0	0.0	0.0	0.0
69	12.0	0.0	6.8	8.6	8.1	10.3	10.3	0.0	0.0	0.0	0.0
70	0.0	7.0	7.5	8.7	9.0	10.8	10.8	10.3	10.6	0.0	7.4
70	1.5	6.5	6.5	8.6	8.6	10.1	10.6	10.3	10.6	0.0	7.3
70	3.0	6.5	6.3	8.8	8.4	10.2	10.6	0.0	0.0	0.0	7.3
70	6.0	6.4	6.3	8.6	8.4	10.3	10.5	0.0	0.0	0.0	0.0
70	9.0	6.4	6.5	8.5	8.2	10.3	10.4	0.0	0.0	0.0	0.0
70	12.0	6.4	6.5	8.5	8.1	10.1	10.3	0.0	0.0	0.0	0.0

Table 2 (continued).

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
71	0.0	7.9	6.5	8.8	8.7	10.9	10.3	10.6	10.4	0.0	7.5
71	1.5	7.0	6.5	8.8	8.4	10.6	10.4	10.5	10.6	0.0	7.3
71	3.0	7.2	6.5	8.8	8.3	10.7	10.3	0.0	0.0	0.0	7.3
71	6.0	6.7	6.4	8.8	8.3	10.3	10.1	0.0	0.0	0.0	0.0
71	9.0	6.6	6.4	8.7	8.3	10.4	10.2	0.0	0.0	0.0	0.0
71	12.0	6.6	6.4	8.8	8.2	10.3	10.2	0.0	0.0	0.0	0.0
72	0.0	7.4	6.7	8.9	8.7	10.5	10.3	10.5	10.5	0.0	7.1
72	1.5	6.8	6.5	8.8	8.5	10.3	10.3	10.4	10.4	0.0	7.3
72	3.0	6.8	6.5	8.8	8.6	10.4	10.2	0.0	0.0	0.0	7.3
72	6.0	6.7	6.5	8.7	8.4	10.3	9.9	0.0	0.0	0.0	0.0
72	9.0	6.6	6.3	8.6	8.4	10.3	10.0	0.0	0.0	0.0	0.0
72	12.0	6.6	6.3	8.7	8.5	10.2	10.0	0.0	0.0	0.0	0.0
73	0.0	6.8	6.9	9.0	8.4	10.5	10.3	10.5	10.4	0.0	7.3
73	1.5	6.7	6.9	8.7	8.5	10.3	10.3	10.5	10.5	0.0	7.3
73	3.0	6.7	6.7	8.8	8.4	10.4	10.3	0.0	0.0	0.0	7.3
73	6.0	6.7	6.7	8.8	8.4	9.9	10.2	0.0	0.0	0.0	0.0
73	9.0	6.5	6.7	8.7	8.3	10.4	10.2	0.0	0.0	0.0	0.0
73	12.0	6.6	6.7	8.7	8.2	10.1	10.1	0.0	0.0	0.0	0.0
74	0.0	8.1	6.4	9.5	8.9	10.4	10.5	11.0	10.9	0.0	7.1
74	1.5	7.9	6.4	9.1	8.8	10.3	10.4	10.4	10.4	0.0	7.2
74	3.0	7.7	6.4	9.1	8.7	10.2	10.2	0.0	0.0	0.0	7.2
74	6.0	7.1	6.4	8.7	8.6	10.2	10.0	0.0	0.0	0.0	0.0
74	9.0	7.0	6.4	8.9	8.5	10.1	9.8	0.0	0.0	0.0	0.0
74	12.0	6.8	6.4	8.9	8.5	10.1	9.9	0.0	0.0	0.0	0.0
75	0.0	6.1	6.2	8.9	9.4	10.8	10.7	10.5	10.6	0.0	0.0
75	1.5	6.1	6.2	8.9	9.1	10.7	10.5	10.5	10.6	0.0	0.0
75	3.0	5.9	6.2	8.9	9.0	10.5	10.4	0.0	0.0	0.0	0.0
75	6.0	5.8	6.2	8.8	8.9	10.4	10.3	0.0	0.0	0.0	0.0
75	9.0	5.8	6.2	8.6	8.7	10.3	10.0	0.0	0.0	0.0	0.0
75	12.0	5.8	6.0	8.4	8.6	10.2	10.0	0.0	0.0	0.0	0.0
76	0.0	7.1	6.7	9.0	9.0	10.7	11.5	10.4	10.7	0.0	7.6
76	1.5	7.1	6.7	8.8	9.0	10.5	10.6	10.6	10.7	0.0	7.5
76	3.0	7.1	6.5	8.3	8.8	10.5	10.4	0.0	0.0	0.0	7.5
76	6.0	7.0	6.5	8.2	8.5	10.3	10.3	0.0	0.0	0.0	0.0
76	9.0	7.0	6.3	8.2	8.5	10.3	10.2	0.0	0.0	0.0	0.0
76	12.0	7.0	6.3	8.1	8.5	10.2	10.1	0.0	0.0	0.0	0.0
77	0.0	7.3	6.9	9.0	8.7	10.6	10.9	10.6	10.8	0.0	7.5
77	1.5	7.1	6.9	8.7	8.7	10.4	10.4	10.3	10.7	0.0	7.5
77	3.0	7.2	6.8	8.6	8.7	10.4	10.4	0.0	0.0	0.0	7.4
77	6.0	7.1	6.7	8.5	8.6	10.2	10.4	0.0	0.0	0.0	0.0
77	9.0	6.5	6.5	8.4	8.6	9.9	10.2	0.0	0.0	0.0	0.0
77	12.0	7.0	6.8	8.3	8.5	10.0	10.2	0.0	0.0	0.0	0.0

TEMPERATURE (°C) - 1978

ST. NO.	DEPTH (M)	JUNE FLOOD	JUNE EBB	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB	NOVEMBER FLOOD	NOVEMBER EBB
78	0.0	8.0	0.0	8.9	8.9	10.7	10.9	10.7	10.8	0.0	7.0
78	1.5	7.7	0.0	8.5	8.8	10.6	10.7	10.7	10.6	0.0	7.4
78	3.0	7.5	0.0	8.5	8.7	10.5	10.4	0.0	0.0	0.0	7.1
78	6.0	7.4	0.0	8.4	8.6	10.1	10.3	0.0	0.0	0.0	0.0
78	9.0	7.2	0.0	8.4	8.5	10.2	10.2	0.0	0.0	0.0	0.0
78	12.0	7.2	0.0	8.3	8.5	10.2	10.2	0.0	0.0	0.0	0.0
79	0.0	7.4	7.7	9.2	9.7	10.2	10.8	10.5	10.8	0.0	7.2
79	1.5	7.4	7.3	9.0	9.3	10.3	10.7	10.4	10.6	0.0	7.6
79	3.0	7.4	6.9	9.0	9.2	10.2	10.6	0.0	0.0	0.0	7.5
79	6.0	7.4	6.9	8.8	9.0	10.2	10.5	0.0	0.0	0.0	0.0
79	9.0	7.3	6.9	8.8	8.9	10.1	10.4	0.0	0.0	0.0	0.0
79	12.0	7.4	6.8	8.7	8.8	10.1	10.4	0.0	0.0	0.0	0.0

Table 3. Near-surface temperature profiles, 1979. See Fig. 3 for station locations.

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1979 JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
1	0.0	11.0	0.0	0.0	0.0	0.0	0.0
1	1.5	10.5	0.0	0.0	0.0	0.0	0.0
1	3.0	10.3	0.0	0.0	0.0	0.0	0.0
1	6.0	10.3	0.0	0.0	0.0	0.0	0.0
1	9.0	10.2	0.0	0.0	0.0	0.0	0.0
1	12.0	10.2	0.0	0.0	0.0	0.0	0.0
2	0.0	11.1	0.0	0.0	0.0	12.0	0.0
2	1.5	10.8	0.0	0.0	0.0	11.9	0.0
2	3.0	10.7	0.0	0.0	0.0	12.1	0.0
2	6.0	10.5	0.0	0.0	0.0	12.0	0.0
2	9.0	10.4	0.0	0.0	0.0	12.1	0.0
2	12.0	10.4	0.0	0.0	0.0	12.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	1.5	0.0	0.0	0.0	0.0	0.0	0.0
3	3.0	0.0	0.0	0.0	0.0	0.0	0.0
3	6.0	0.0	0.0	0.0	0.0	0.0	0.0
3	9.0	0.0	0.0	0.0	0.0	0.0	0.0
3	12.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	11.0	0.0	0.0	0.0	0.0	0.0
4	1.5	10.8	0.0	0.0	0.0	0.0	0.0
4	3.0	10.9	0.0	0.0	0.0	0.0	0.0
4	6.0	10.9	0.0	0.0	0.0	0.0	0.0
4	9.0	10.3	0.0	0.0	0.0	0.0	0.0
4	12.0	10.3	0.0	0.0	0.0	0.0	0.0
5	0.0	10.4	0.0	0.0	0.0	0.0	0.0
5	1.5	10.4	0.0	0.0	0.0	0.0	0.0
5	3.0	10.3	0.0	0.0	0.0	0.0	0.0
5	6.0	10.3	0.0	0.0	0.0	0.0	0.0
5	9.0	10.3	0.0	0.0	0.0	0.0	0.0
5	12.0	10.3	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	11.5	0.0
6	1.5	0.0	0.0	0.0	0.0	11.6	0.0
6	3.0	0.0	0.0	0.0	0.0	11.3	0.0
6	6.0	0.0	0.0	0.0	0.0	11.5	0.0
6	9.0	0.0	0.0	0.0	0.0	11.4	0.0
6	12.0	0.0	0.0	0.0	0.0	11.4	0.0
7	0.0	10.2	0.0	0.0	0.0	11.5	0.0
7	1.5	10.2	0.0	0.0	0.0	11.5	0.0
7	3.0	10.1	0.0	0.0	0.0	11.5	0.0
7	6.0	10.1	0.0	0.0	0.0	11.4	0.0
7	9.0	10.2	0.0	0.0	0.0	11.4	0.0
7	12.0	10.2	0.0	0.0	0.0	11.4	0.0

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1979 JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
8	0.0	0.0	0.0	0.0	0.0	11.3	0.0
8	1.5	0.0	0.0	0.0	0.0	11.4	0.0
8	3.0	0.0	0.0	0.0	0.0	11.3	0.0
8	6.0	0.0	0.0	0.0	0.0	11.6	0.0
8	9.0	0.0	0.0	0.0	0.0	11.3	0.0
8	12.0	0.0	0.0	0.0	0.0	11.4	0.0
9	0.0	0.0	0.0	0.0	0.0	11.6	0.0
9	1.5	0.0	0.0	0.0	0.0	11.5	0.0
9	3.0	0.0	0.0	0.0	0.0	11.4	0.0
9	6.0	0.0	0.0	0.0	0.0	11.4	0.0
9	9.0	0.0	0.0	0.0	0.0	11.4	0.0
9	12.0	0.0	0.0	0.0	0.0	11.5	0.0
10	0.0	10.6	0.0	0.0	0.0	0.0	0.0
10	1.5	10.7	0.0	0.0	0.0	0.0	0.0
10	3.0	10.7	0.0	0.0	0.0	0.0	0.0
10	6.0	10.6	0.0	0.0	0.0	0.0	0.0
10	9.0	10.4	0.0	0.0	0.0	0.0	0.0
10	12.0	10.4	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	1.5	0.0	0.0	0.0	0.0	0.0	0.0
11	3.0	0.0	0.0	0.0	0.0	0.0	0.0
11	6.0	0.0	0.0	0.0	0.0	0.0	0.0
11	9.0	0.0	0.0	0.0	0.0	0.0	0.0
11	12.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	1.5	0.0	0.0	0.0	0.0	0.0	0.0
12	3.0	0.0	0.0	0.0	0.0	0.0	0.0
12	6.0	0.0	0.0	0.0	0.0	0.0	0.0
12	9.0	0.0	0.0	0.0	0.0	0.0	0.0
12	12.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	11.3	0.0
13	1.5	0.0	0.0	0.0	0.0	11.3	0.0
13	3.0	0.0	0.0	0.0	0.0	11.3	0.0
13	6.0	0.0	0.0	0.0	0.0	11.5	0.0
13	9.0	0.0	0.0	0.0	0.0	11.5	0.0
13	12.0	0.0	0.0	0.0	0.0	11.3	0.0
14	0.0	0.0	10.5	0.0	0.0	0.0	0.0
14	1.5	0.0	10.5	0.0	0.0	0.0	0.0
14	3.0	0.0	10.4	0.0	0.0	0.0	0.0
14	6.0	0.0	10.4	0.0	0.0	0.0	0.0
14	9.0	0.0	10.4	0.0	0.0	0.0	0.0
14	12.0	0.0	10.4	0.0	0.0	0.0	0.0

ST. NO.	DEPTH (M)	TEMPERATURE (°C) - 1979 JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
15	0.0	0.0	10.5	0.0	11.5	0.0	0.0
15	1.5	0.0	10.5	0.0	11.5	0.0	0.0
15	3.0	0.0	10.5	0.0	11.5	0.0	0.0
15	6.0	0.0	10.5	0.0	11.6	0.0	0.0
15	9.0	0.0	10.6	0.0	11.6	0.0	0.0
15	12.0	0.0	10.5	0.0	11.7	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	1.5	0.0	0.0	0.0	0.0	0.0	0.0
16	3.0	0.0	0.0	0.0	0.0	0.0	0.0
16	6.0	0.0	0.0	0.0	0.0	0.0	0.0
16	9.0	0.0	0.0	0.0	0.0	0.0	0.0
16	12.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	10.4	0.0	11.3	0.0	0.0
17	1.5	0.0	10.4	0.0	11.3	0.0	0.0
17	3.0	0.0	10.4	0.0	11.4	0.0	0.0
17	6.0	0.0	10.4	0.0	11.3	0.0	0.0
17	9.0	0.0	10.5	0.0	11.3	0.0	0.0
17	12.0	0.0	10.4	0.0	11.3	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	1.5	0.0	0.0	0.0	0.0	0.0	0.0
18	3.0	0.0	0.0	0.0	0.0	0.0	0.0
18	6.0	0.0	0.0	0.0	0.0	0.0	0.0
18	9.0	0.0	0.0	0.0	0.0	0.0	0.0
18	12.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	11.3	0.0	0.0
19	1.5	0.0	0.0	0.0	11.5	0.0	0.0
19	3.0	0.0	0.0	0.0	11.5	0.0	0.0
19	6.0	0.0	0.0	0.0	11.5	0.0	0.0
19	9.0	0.0	0.0	0.0	11.5	0.0	0.0
19	12.0	0.0	0.0	0.0	11.4	0.0	0.0
20	0.0	0.0	0.0	11.1	11.4	0.0	0.0
20	1.5	0.0	0.0	11.1	11.2	0.0	0.0
20	3.0	0.0	0.0	11.0	11.3	0.0	0.0
20	6.0	0.0	0.0	11.1	11.0	0.0	0.0
20	9.0	0.0	0.0	11.1	11.0	0.0	0.0
20	12.0	0.0	0.0	11.1	11.0	0.0	0.0
21	0.0	0.0	10.5	12.1	11.2	11.7	12.3
21	1.5	0.0	10.5	11.3	11.2	11.7	12.1
21	3.0	0.0	10.3	11.2	11.2	11.7	12.1
21	6.0	0.0	10.3	11.0	11.3	11.6	12.0
21	9.0	0.0	10.4	10.9	11.3	11.6	12.1
21	12.0	0.0	10.4	10.9	11.2	11.7	12.1

Table 3 (continued).

TEMPERATURE (°C) - 1979

ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
22	0.0	0.0	10.6	11.1	0.0	11.4	12.3
22	1.5	0.0	10.7	11.2	0.0	11.4	12.3
22	3.0	0.0	10.6	11.1	0.0	11.4	12.2
22	6.0	0.0	10.5	11.1	0.0	11.3	12.2
22	9.0	0.0	10.5	11.0	0.0	11.2	12.1
22	12.0	0.0	10.7	11.0	0.0	11.2	12.0
23	0.0	0.0	10.6	11.1	0.0	0.0	12.3
23	1.5	0.0	10.7	10.8	0.0	0.0	12.3
23	3.0	0.0	10.6	10.8	0.0	0.0	12.4
23	6.0	0.0	10.5	10.8	0.0	0.0	12.2
23	9.0	0.0	10.5	10.8	0.0	0.0	12.3
23	12.0	0.0	10.3	10.6	0.0	0.0	12.3
24	0.0	0.0	10.3	11.0	11.2	0.0	0.0
24	1.5	0.0	10.3	11.0	11.2	0.0	0.0
24	3.0	0.0	10.5	11.0	11.2	0.0	0.0
24	6.0	0.0	10.5	10.9	11.1	0.0	0.0
24	9.0	0.0	10.3	11.0	11.1	0.0	0.0
24	12.0	0.0	10.3	10.9	11.1	0.0	0.0
25	0.0	0.0	0.0	11.4	11.2	0.0	12.0
25	1.5	0.0	0.0	11.2	11.1	0.0	11.8
25	3.0	0.0	0.0	11.3	11.2	0.0	11.9
25	6.0	0.0	0.0	11.2	10.9	0.0	11.9
25	9.0	0.0	0.0	11.1	10.9	0.0	11.8
25	12.0	0.0	0.0	11.2	10.8	0.0	11.7
26	0.0	0.0	0.0	11.6	11.8	0.0	0.0
26	1.5	0.0	0.0	11.1	11.1	0.0	0.0
26	3.0	0.0	0.0	11.0	11.0	0.0	0.0
26	6.0	0.0	0.0	11.0	11.1	0.0	0.0
26	9.0	0.0	0.0	11.1	10.8	0.0	0.0
26	12.0	0.0	0.0	11.1	10.8	0.0	0.0
27	0.0	0.0	10.8	11.2	11.4	0.0	0.0
27	1.5	0.0	10.5	11.1	11.2	0.0	0.0
27	3.0	0.0	10.5	11.1	11.1	0.0	0.0
27	6.0	0.0	10.4	11.1	11.1	0.0	0.0
27	9.0	0.0	10.5	11.2	11.1	0.0	0.0
27	12.0	0.0	10.1	11.1	11.0	0.0	0.0
28	0.0	0.0	0.0	0.0	11.5	0.0	0.0
28	1.5	0.0	0.0	0.0	11.4	0.0	0.0
28	3.0	0.0	0.0	0.0	11.3	0.0	0.0
28	6.0	0.0	0.0	0.0	11.2	0.0	0.0
28	9.0	0.0	0.0	0.0	11.0	0.0	0.0
28	12.0	0.0	0.0	0.0	10.9	0.0	0.0

TEMPERATURE (°C) - 1979

ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
29	0.0	0.0	0.0	11.1	11.3	0.0	0.0
29	1.5	0.0	0.0	11.2	11.4	0.0	0.0
29	3.0	0.0	0.0	11.1	11.2	0.0	0.0
29	6.0	0.0	0.0	11.1	11.0	0.0	0.0
29	9.0	0.0	0.0	11.1	11.0	0.0	0.0
29	12.0	0.0	0.0	11.1	10.9	0.0	0.0
30	0.0	0.0	0.0	11.3	11.3	0.0	0.0
30	1.5	0.0	0.0	11.1	11.1	0.0	0.0
30	3.0	0.0	0.0	11.0	11.1	0.0	0.0
30	6.0	0.0	0.0	11.1	11.0	0.0	0.0
30	9.0	0.0	0.0	11.0	10.9	0.0	0.0
30	12.0	0.0	0.0	10.9	10.9	0.0	0.0
31	0.0	0.0	0.0	11.9	10.9	0.0	0.0
31	1.5	0.0	0.0	11.6	11.0	0.0	0.0
31	3.0	0.0	0.0	11.5	11.0	0.0	0.0
31	6.0	0.0	0.0	11.5	10.8	0.0	0.0
31	9.0	0.0	0.0	11.4	10.9	0.0	0.0
31	12.0	0.0	0.0	11.2	10.7	0.0	0.0
32	0.0	0.0	0.0	11.4	11.2	0.0	12.4
32	1.5	0.0	0.0	11.3	11.1	0.0	12.2
32	3.0	0.0	0.0	11.1	11.1	0.0	12.1
32	6.0	0.0	0.0	11.1	11.1	0.0	12.0
32	9.0	0.0	0.0	11.1	11.0	0.0	12.0
32	12.0	0.0	0.0	11.0	11.0	0.0	12.0
33	0.0	0.0	10.5	10.7	10.8	0.0	0.0
33	1.5	0.0	10.3	10.8	11.0	0.0	0.0
33	3.0	0.0	10.3	10.6	10.8	0.0	0.0
33	6.0	0.0	10.3	10.8	10.9	0.0	0.0
33	9.0	0.0	10.2	10.6	10.8	0.0	0.0
33	12.0	0.0	10.2	10.7	10.9	0.0	0.0
34	0.0	0.0	10.5	10.9	11.3	11.3	12.1
34	1.5	0.0	10.2	10.8	11.3	11.4	12.2
34	3.0	0.0	10.3	10.7	11.2	11.4	12.1
34	6.0	0.0	10.2	10.8	11.2	11.4	12.2
34	9.0	0.0	10.3	10.7	11.3	11.3	12.1
34	12.0	0.0	10.1	10.7	11.3	11.4	12.2
35	0.0	0.0	10.3	11.0	11.4	0.0	0.0
35	1.5	0.0	10.3	10.8	11.3	0.0	0.0
35	3.0	0.0	10.4	11.0	11.2	0.0	0.0
35	6.0	0.0	10.1	10.9	11.0	0.0	0.0
35	9.0	0.0	10.2	10.8	10.8	0.0	0.0
35	12.0	0.0	10.2	10.8	10.8	0.0	0.0

TEMPERATURE (°C) - 1979

ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
36	0.0	0.0	11.4	10.8	12.0	11.6	12.3
35	1.5	0.0	10.9	10.9	11.9	11.6	12.4
36	3.0	0.0	10.8	10.9	11.8	11.6	12.0
36	6.0	0.0	10.6	11.0	11.6	11.5	12.2
36	9.0	0.0	10.4	10.9	11.5	11.5	12.0
36	12.0	0.0	10.4	10.8	11.5	11.5	12.2
37	0.0	0.0	11.0	12.4	12.2	0.0	0.0
37	1.5	0.0	11.0	12.3	11.8	0.0	0.0
37	3.0	0.0	10.6	12.1	11.9	0.0	0.0
37	6.0	0.0	10.4	11.4	11.7	0.0	0.0
37	9.0	0.0	10.3	11.2	11.4	0.0	0.0
37	12.0	0.0	10.3	11.0	11.3	0.0	0.0
38	0.0	0.0	11.1	11.6	13.0	11.6	12.4
38	1.5	0.0	10.9	11.4	12.8	11.6	12.6
38	3.0	0.0	10.7	11.5	12.5	11.6	12.3
38	6.0	0.0	0.0	11.4	12.0	11.5	12.4
38	9.0	0.0	0.0	11.0	11.8	11.5	12.2
38	12.0	0.0	0.0	11.1	0.0	11.6	12.5
39	0.0	0.0	0.0	12.8	12.5	0.0	12.6
39	1.5	0.0	0.0	11.5	12.3	0.0	12.6
39	3.0	0.0	0.0	11.8	12.2	0.0	12.5
39	6.0	0.0	0.0	11.2	11.5	0.0	12.5
39	9.0	0.0	0.0	11.1	0.0	0.0	12.4
39	12.0	0.0	0.0	10.9	0.0	0.0	11.9
40	0.0	0.0	10.5	10.9	11.3	0.0	12.2
40	1.5	0.0	10.6	11.0	11.2	0.0	12.1
40	3.0	0.0	10.7	11.0	10.9	0.0	12.1
40	6.0	0.0	10.4	10.8	10.9	0.0	12.1
40	9.0	0.0	10.3	10.8	10.7	0.0	12.1
40	12.0	0.0	10.2	10.9	10.6	0.0	11.9
41	0.0	0.0	10.2	11.0	11.0	11.2	11.8
41	1.5	0.0	10.1	11.0	10.8	11.2	11.8
41	3.0	0.0	10.1	10.9	10.7	11.2	11.8
41	6.0	0.0	10.0	10.8	10.8	11.1	11.8
41	9.0	0.0	10.0	10.8	10.7	11.1	11.7
41	12.0	0.0	9.9	10.8	10.7	11.2	11.5
42	0.0	0.0	10.8	11.0	10.8	11.2	11.6
42	1.5	0.0	10.7	10.8	10.7	11.2	11.5
42	3.0	0.0	10.1	10.9	10.7	11.2	11.5
42	6.0	0.0	10.2	10.8	10.7	11.2	11.5
42	9.0	0.0	10.2	10.8	10.7	11.0	11.5
42	12.0	0.0	10.0	10.7	10.8	11.1	11.5

Table 3 (continued).

		TEMPERATURE (°C) - 1979					
ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
43	0.0	0.0	10.3	10.9	10.7	0.0	11.6
43	1.5	0.0	10.1	10.8	10.7	0.0	11.6
43	3.0	0.0	10.2	10.8	10.7	0.0	11.5
43	6.0	0.0	10.0	10.7	10.7	0.0	11.5
43	9.0	0.0	10.0	10.7	10.6	0.0	11.5
43	12.0	0.0	9.9	10.7	10.6	0.0	11.4
44	0.0	11.7	9.8	11.0	10.6	11.3	11.6
44	1.5	11.4	9.6	10.9	10.6	11.2	11.6
44	3.0	11.2	9.6	10.9	10.7	11.0	11.6
44	6.0	11.3	9.5	10.9	10.6	11.2	11.5
44	9.0	10.9	9.5	10.9	10.5	11.2	11.4
44	12.0	11.0	9.5	10.8	10.6	10.9	11.5
45	0.0	10.1	0.0	10.8	10.7	11.4	11.6
45	1.5	10.0	0.0	10.7	10.7	11.4	11.6
45	3.0	10.0	0.0	10.7	10.6	11.3	11.5
45	6.0	9.9	0.0	10.7	10.6	11.3	11.4
45	9.0	10.0	0.0	10.6	10.6	11.3	11.4
45	12.0	10.0	0.0	10.5	10.6	11.4	11.3
46	0.0	10.8	10.9	10.8	11.0	0.0	0.0
46	1.5	0.0	10.2	10.8	11.0	0.0	0.0
46	3.0	0.0	10.1	10.8	11.0	0.0	0.0
46	6.0	0.0	10.1	10.8	11.0	0.0	0.0
46	9.0	0.0	9.9	10.7	10.9	0.0	0.0
46	12.0	0.0	9.7	10.7	11.0	0.0	0.0
47	0.0	12.0	11.1	11.1	10.9	11.4	11.7
47	1.5	0.0	10.6	10.9	10.8	11.5	11.7
47	3.0	0.0	10.5	11.0	10.8	11.4	11.9
47	6.0	0.0	10.5	10.8	10.7	11.3	11.7
47	9.0	0.0	10.5	10.8	10.8	11.3	11.5
47	12.0	0.0	10.3	10.7	10.7	11.3	11.7
48	0.0	0.0	11.1	11.1	12.2	0.0	12.4
48	1.5	0.0	10.6	11.0	12.0	0.0	12.3
48	3.0	0.0	10.5	10.9	11.9	0.0	12.4
48	6.0	0.0	10.4	10.8	11.7	0.0	12.3
48	9.0	0.0	10.3	10.7	11.5	0.0	12.0
48	12.0	0.0	10.3	10.7	11.2	0.0	11.7
49	0.0	0.0	10.6	0.0	11.3	11.6	12.2
49	1.5	0.0	10.6	11.1	11.2	0.0	12.2
49	3.0	0.0	10.6	11.0	11.1	0.0	12.1
49	6.0	0.0	10.5	10.8	11.1	0.0	12.1
49	9.0	0.0	10.4	10.8	10.9	0.0	11.9
49	12.0	0.0	10.4	10.8	11.0	0.0	0.0

		TEMPERATURE (°C) - 1979					
ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
50	0.0	0.0	10.3	11.0	10.7	0.0	0.0
50	1.5	0.0	10.2	10.9	10.6	0.0	0.0
50	3.0	0.0	10.1	10.8	10.8	0.0	0.0
50	6.0	0.0	10.0	10.7	10.7	0.0	0.0
50	9.0	0.0	10.0	10.8	0.0	0.0	0.0
50	12.0	0.0	10.0	10.8	0.0	0.0	0.0
51	0.0	0.0	10.2	11.0	11.0	0.0	11.7
51	1.5	0.0	10.3	10.9	10.9	0.0	11.7
51	3.0	0.0	10.3	10.9	10.9	0.0	11.6
51	6.0	0.0	10.2	10.8	10.8	0.0	11.6
51	9.0	0.0	10.2	10.8	10.8	0.0	11.5
51	12.0	0.0	10.2	10.8	10.7	0.0	11.6
52	0.0	10.8	10.4	0.0	10.7	0.0	0.0
52	1.5	0.0	10.2	0.0	10.7	0.0	0.0
52	3.0	0.0	10.2	0.0	10.6	0.0	0.0
52	6.0	0.0	10.2	0.0	10.6	0.0	0.0
52	9.0	0.0	9.9	0.0	10.6	0.0	0.0
52	12.0	0.0	9.9	0.0	10.6	0.0	0.0
53	0.0	0.0	9.8	10.6	10.8	0.0	11.7
53	1.5	0.0	9.8	10.6	10.9	0.0	11.7
53	3.0	0.0	9.7	10.6	10.9	0.0	11.6
53	6.0	0.0	9.6	10.6	10.8	0.0	11.5
53	9.0	0.0	9.5	10.6	10.8	0.0	11.6
53	12.0	0.0	9.4	10.6	10.7	0.0	11.5
54	0.0	11.0	10.2	11.1	10.7	11.5	11.5
54	1.5	10.7	10.1	10.8	10.8	11.5	11.5
54	3.0	10.8	10.1	10.7	10.7	11.4	11.4
54	6.0	10.2	10.1	10.7	10.6	11.4	11.4
54	9.0	10.3	10.2	10.6	10.7	11.4	11.4
54	12.0	10.2	10.2	10.6	10.7	11.4	11.5
55	0.0	10.8	10.0	10.6	11.0	0.0	0.0
55	1.5	10.7	9.8	10.6	11.0	0.0	0.0
55	3.0	10.6	9.8	10.4	10.9	0.0	0.0
55	6.0	10.6	9.8	10.5	11.0	0.0	0.0
55	9.0	10.5	9.8	10.5	11.0	0.0	0.0
55	12.0	10.5	0.0	0.0	0.0	0.0	0.0
56	0.0	0.0	9.7	10.6	10.6	0.0	0.0
56	1.5	0.0	9.7	10.5	10.7	0.0	0.0
56	3.0	0.0	9.7	10.5	10.7	0.0	0.0
56	6.0	0.0	9.6	10.5	10.7	0.0	0.0
56	9.0	0.0	9.6	10.4	10.6	0.0	0.0
56	12.0	0.0	9.6	10.3	10.6	0.0	0.0

		TEMPERATURE (°C) - 1979					
ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
57	0.0	0.0	9.6	10.6	10.6	0.0	0.0
57	1.5	0.0	9.7	10.5	10.6	0.0	0.0
57	3.0	0.0	9.6	10.6	10.6	0.0	0.0
57	6.0	0.0	9.6	10.4	10.6	0.0	0.0
57	9.0	0.0	9.7	10.5	10.6	0.0	0.0
57	12.0	0.0	9.7	10.5	10.6	0.0	0.0
58	0.0	0.0	0.0	11.1	10.9	0.0	0.0
58	1.5	0.0	0.0	11.0	10.8	0.0	0.0
58	3.0	0.0	0.0	10.9	10.8	0.0	0.0
58	6.0	0.0	0.0	10.8	10.8	0.0	0.0
58	9.0	0.0	0.0	10.8	10.8	0.0	0.0
58	12.0	0.0	0.0	10.7	10.8	0.0	0.0
59	0.0	0.0	9.9	11.0	10.9	0.0	0.0
59	1.5	0.0	9.9	11.1	10.9	0.0	0.0
59	3.0	0.0	9.8	10.8	10.9	0.0	0.0
59	6.0	0.0	9.8	10.8	10.8	0.0	0.0
59	9.0	0.0	9.8	10.7	10.7	0.0	0.0
59	12.0	0.0	9.8	10.7	10.8	0.0	0.0
60	0.0	10.7	0.0	11.0	10.8	0.0	11.6
60	1.5	10.7	0.0	10.9	10.6	0.0	11.6
60	3.0	10.6	0.0	10.8	10.7	0.0	11.6
60	6.0	10.6	0.0	10.9	10.6	0.0	11.6
60	9.0	10.8	0.0	10.9	10.6	0.0	11.5
60	12.0	10.7	0.0	10.8	10.6	0.0	11.5
61	0.0	0.0	0.0	11.0	10.8	0.0	0.0
61	1.5	0.0	0.0	10.8	10.8	0.0	0.0
61	3.0	0.0	0.0	10.9	10.7	0.0	0.0
61	6.0	0.0	0.0	10.9	10.8	0.0	0.0
61	9.0	0.0	0.0	10.9	10.6	0.0	0.0
61	12.0	0.0	0.0	10.9	10.8	0.0	0.0
62	0.0	0.0	0.0	11.2	11.1	0.0	0.0
62	1.5	0.0	0.0	11.2	10.9	0.0	0.0
62	3.0	0.0	0.0	11.0	10.9	0.0	0.0
62	6.0	0.0	0.0	11.0	11.0	0.0	0.0
62	9.0	0.0	0.0	10.9	10.9	0.0	0.0
62	12.0	0.0	0.0	10.8	10.9	0.0	0.0
63	0.0	0.0	0.0	11.6	10.8	0.0	0.0
63	1.5	0.0	0.0	11.2	10.7	0.0	0.0
63	3.0	0.0	0.0	11.1	10.8	0.0	0.0
63	6.0	0.0	0.0	11.0	10.8	0.0	0.0
63	9.0	0.0	0.0	11.0	10.8	0.0	0.0
63	12.0	0.0	0.0	10.9	10.8	0.0	0.0

Table 3 (continued).

TEMPERATURE (°C) - 1979

ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
64	0.0	0.0	0.0	10.8	10.8	0.0	0.0
64	1.5	0.0	0.0	11.0	10.9	0.0	0.0
64	3.0	0.0	0.0	10.9	10.7	0.0	0.0
64	6.0	0.0	0.0	10.9	10.7	0.0	0.0
64	9.0	0.0	0.0	10.9	10.7	0.0	0.0
64	12.0	0.0	0.0	10.9	10.6	0.0	0.0
65	0.0	10.8	9.6	10.6	10.6	0.0	0.0
65	1.5	0.0	9.6	10.6	10.6	0.0	0.0
65	3.0	0.0	9.5	10.7	10.5	0.0	0.0
65	6.0	0.0	9.5	10.6	10.5	0.0	0.0
65	9.0	0.0	9.5	10.6	10.5	0.0	0.0
65	12.0	0.0	9.5	10.7	10.5	0.0	0.0
66	0.0	10.8	9.6	10.9	10.6	0.0	11.7
66	1.5	0.0	9.6	10.9	10.7	0.0	11.7
66	3.0	0.0	9.5	10.9	10.7	0.0	11.7
66	6.0	0.0	9.5	10.8	10.6	0.0	11.6
66	9.0	0.0	9.5	10.6	10.7	0.0	11.6
66	12.0	0.0	9.5	10.6	10.6	0.0	11.7
67	0.0	0.0	9.8	10.9	11.0	0.0	0.0
67	1.5	0.0	10.0	10.8	11.0	0.0	0.0
67	3.0	0.0	10.0	10.8	11.0	0.0	0.0
67	6.0	0.0	9.9	10.8	10.9	0.0	0.0
67	9.0	0.0	9.9	10.8	11.0	0.0	0.0
67	12.0	0.0	9.9	10.7	11.0	0.0	0.0
68	0.0	10.7	0.0	10.8	10.8	10.8	11.6
68	1.5	10.7	0.0	10.6	10.7	10.8	11.5
68	3.0	10.6	0.0	10.6	10.7	10.8	11.5
68	6.0	10.4	0.0	10.6	10.6	10.9	11.5
68	9.0	10.1	0.0	10.6	10.7	10.8	11.4
68	12.0	10.1	0.0	10.5	10.6	10.9	11.4
69	0.0	0.0	0.0	10.5	10.7	0.0	0.0
69	1.5	0.0	0.0	10.5	10.7	0.0	0.0
69	3.0	0.0	0.0	10.5	10.7	0.0	0.0
69	6.0	0.0	0.0	10.5	10.6	0.0	0.0
69	9.0	0.0	0.0	10.5	10.6	0.0	0.0
69	12.0	0.0	0.0	10.5	10.7	0.0	0.0
70	0.0	0.0	0.0	11.2	10.7	0.0	0.0
70	1.5	0.0	0.0	10.5	10.7	0.0	0.0
70	3.0	0.0	0.0	10.3	10.7	0.0	0.0
70	6.0	0.0	0.0	10.3	10.7	0.0	0.0
70	9.0	0.0	0.0	10.2	10.6	0.0	0.0
70	12.0	0.0	0.0	10.1	10.6	0.0	0.0

TEMPERATURE (°C) - 1979

ST. NO.	DEPTH (M)	JULY FLOOD	JULY EBB	AUGUST FLOOD	AUGUST EBB	SEPTEMBER FLOOD	SEPTEMBER EBB
71	0.0	0.0	9.7	11.2	10.6	0.0	0.0
71	1.5	0.0	9.7	11.1	10.6	0.0	0.0
71	3.0	0.0	9.7	10.9	10.6	0.0	0.0
71	6.0	0.0	9.6	10.6	10.5	0.0	0.0
71	9.0	0.0	9.6	10.6	10.6	0.0	0.0
71	12.0	0.0	9.5	10.4	10.5	0.0	0.0
72	0.0	0.0	9.8	11.0	10.8	0.0	0.0
72	1.5	0.0	9.6	11.0	10.7	0.0	0.0
72	3.0	0.0	9.6	10.8	10.7	0.0	0.0
72	6.0	0.0	9.5	10.8	10.8	0.0	0.0
72	9.0	0.0	9.6	10.7	10.7	0.0	0.0
72	12.0	0.0	9.6	10.5	10.8	0.0	0.0
73	0.0	0.0	10.0	11.0	10.7	0.0	11.4
73	1.5	0.0	9.9	11.0	10.6	0.0	11.3
73	3.0	0.0	9.7	10.9	10.6	0.0	11.2
73	6.0	0.0	9.7	10.9	10.6	0.0	11.3
73	9.0	0.0	9.7	10.9	10.6	0.0	11.3
73	12.0	0.0	9.6	10.8	10.6	0.0	11.3
74	0.0	0.0	10.4	10.9	12.0	0.0	0.0
74	1.5	0.0	10.0	10.8	11.7	0.0	0.0
74	3.0	0.0	9.7	10.5	11.2	0.0	0.0
74	6.0	0.0	9.7	10.3	11.2	0.0	0.0
74	9.0	0.0	9.6	10.2	11.2	0.0	0.0
74	12.0	0.0	9.6	10.1	11.2	0.0	0.0
75	0.0	0.0	0.0	0.0	11.6	0.0	0.0
75	1.5	0.0	0.0	0.0	11.4	0.0	0.0
75	3.0	0.0	0.0	0.0	11.3	0.0	0.0
75	6.0	0.0	0.0	0.0	11.1	0.0	0.0
75	9.0	0.0	0.0	0.0	11.1	0.0	0.0
75	12.0	0.0	0.0	0.0	11.0	0.0	0.0
76	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76	1.5	0.0	0.0	0.0	0.0	0.0	0.0
76	3.0	0.0	0.0	0.0	0.0	0.0	0.0
76	6.0	0.0	0.0	0.0	0.0	0.0	0.0
76	9.0	0.0	0.0	0.0	0.0	0.0	0.0
76	12.0	0.0	0.0	0.0	0.0	0.0	0.0
77	0.0	0.0	0.0	11.1	11.2	0.0	0.0
77	1.5	0.0	0.0	11.0	11.1	0.0	0.0
77	3.0	0.0	0.0	11.1	11.1	0.0	0.0
77	6.0	0.0	0.0	10.9	11.1	0.0	0.0
77	9.0	0.0	0.0	11.0	11.0	0.0	0.0
77	12.0	0.0	0.0	10.9	10.9	0.0	0.0

Table 4. Descriptive statistics for surface temperatures blocked by year, month, and tide phase.

June 77 flood:	max - 9.5	June 77 ebb:	max - 8.4
	min - 5.6		min - 6.0
	range - 3.9		range - 2.4
	$\bar{x}$,SD - 7.57 $\pm$ 0.80		$\bar{x}$,SD - 7.07 $\pm$ 0.48
	n - 57		n - 61
July 77 flood:	max - 11.4	July 77 ebb:	max - 11.4
	min - 8.2		min - 8.0
	range - 3.2		range - 3.4
	$\bar{x}$,SD - 9.26 $\pm$ 0.68		$\bar{x}$, sd - 8.93 $\pm$ 0.79
	n - 50		n - 60
Aug 77 flood:	max - 12.8	Aug 77 ebb:	max - 12.7
	min - 10.1		min - 9.5
	range - 2.7		range - 3.2
	$\bar{x}$,SD - 10.86 $\pm$ 0.51		$\bar{x}$,SD - 10.88 $\pm$ 0.56
	n - 59		n - 58
Sept 77 flood:	max - 12.1	Sept 77 ebb:	max - 12.8
	min - 10.2		min - 10.6
	range - 1.9		range - 2.2
	$\bar{x}$,SD - 11.24 $\pm$ 0.44		$\bar{x}$,SD - 11.23 $\pm$ 0.50
	n - 36		n - 49
Oct 77 flood:	max - 11.4	Oct 77 ebb:	max - 11.0
	min - 10.1		min - 10.1
	range - 1.3		range - 0.9
	$\bar{x}$,SD - 10.64 $\pm$ 0.32		$\bar{x}$,SD - 10.48 $\pm$ 0.22
	n - 39		n - 38
June 78 flood:	max - 9.3	June 78 ebb:	max - 11.2
	min - 5.8		min - 6.1
	range - 3.5		range - 5.1
	$\bar{x}$,SD - 7.30 $\pm$ 0.64		$\bar{x}$,SD - 7.34 $\pm$ 0.89
	n - 67		n - 72

Table 4 (continued).

July 78 flood:	max - 10.7 min - 8.1 range - 2.6 $\bar{x}$,SD - 8.98 ± 0.56 n - 79	July 78 ebb:	max - 10.5 min - 8.0 range - 2.5 $\bar{x}$,SD - 8.92 ± 0.59 n - 79
Aug 78 flood:	max - 12.4 min - 9.8 range - 2.6 $\bar{x}$,SD - 10.62 ± 0.50 n - 79	Aug 78 ebb:	max - 13.4 min - 9.7 range - 3.7 $\bar{x}$,SD - 10.75 ± 0.78 n - 79
Sept 78 flood:	max - 11.1 min - 9.5 range - 1.6 $\bar{x}$,SD - 10.57 ± 0.29 n - 75	Sept 78 ebb:	max - 11.4 min - 10.2 range - 1.2 $\bar{x}$,SD - 10.72 ± 0.28 n - 78
Nov 78 flood:	max - 7.9 min - 6.5 range - 1.4 $\bar{x}$,SD - 7.38 ± 0.35 n - 39	Nov 78 ebb:	max - 7.8 min - 6.1 range - 1.7 $\bar{x}$,SD - 7.14 ± 0.44 n - 77
July 79 flood:	max - 12.0 min - 10.1 range - 1.9 $\bar{x}$,SD - 10.85 ± 0.45 n - 17	July 79 ebb:	max - 11.4 min - 9.6 range - 1.8 $\bar{x}$,SD - 10.34 ± 0.47 n - 39
Aug 79 flood:	max - 12.8 min - 10.5 range - 2.3 $\bar{x}$,SD - 11.10 ± 0.42 n - 55	Aug 79 ebb:	max - 13.0 min - 10.6 range - 2.4 $\bar{x}$,SD - 11.13 ± 0.50 n - 60
Sept 79 flood:	max - 12.0 min - 10.8 range - 1.2 $\bar{x}$,SD - 11.43 ± 0.24 n - 19	Sept 79 ebb:	max - 12.6 min - 11.4 range - 1.2 $\bar{x}$,SD - 11.94 ± 0.36 n - 25

Table 5. Descriptive statistics for temperature stations clustered relative to ebb tide readings.

Cluster	$\bar{x}$	SD	Min	Max
1	10.49	1.20	8.1	13.3
2	11.04	1.23	8.7	13.4
3	10.24	0.99	8.4	12.0
4	10.21	1.09	7.2	12.3
5	10.01	0.99	8.0	13.2

Table 6. Descriptive statistics for temperature stations clustered relative to flood tide readings.

Cluster	$\bar{x}$	SD	Min	Max
1	9.42	1.60	5.6	12.1
2	9.42	1.37	6.5	11.5
3	9.56	1.72	5.8	12.8
4	9.48	1.60	5.9	11.4
5	9.81	1.66	6.4	11.9
6	9.20	1.55	6.4	11.2
7	9.36	1.38	6.8	11.2

Table 7. Interpolated current velocity readings for station CJ1. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	36	204
6	36	204
12	41	185
18	47	166
23	40	146
29	33	126
35	26	105
41	28	104
47	33	106
53	37	108
58	43	108
64	50	109
70	57	109
76	64	109
82	71	110
88	74	110
93	75	109
99	76	109
105	78	106
111	83	100
117	87	94
123	90	91
128	91	90
134	93	86
140	96	78
146	100	70
152	102	65
158	104	68
163	105	71
169	106	73
175	105	65
181	105	63
187	108	91
193	110	119
198	112	144
204	113	121
210	113	98
216	114	75
222	116	75
228	117	75
233	119	76
239	108	69
245	96	60
251	98	57
257	103	55
263	108	54
268	108	106
274	106	177
280	104	249
286	103	273
292	103	274
298	103	274
303	103	274
309	103	275
315	103	275
321	103	275
327	103	276
333	103	276
338	102	276
344	102	277
350	102	277
356	102	277
362	102	278
368	102	278

Table 7 (continued).

Time (min)	Speed (cm/s)	Direction
373	102	278
379	102	279
385	102	279
391	102	280
397	102	280
403	102	280
408	102	281
414	102	281
420	102	281
426	102	282
432	102	282
438	102	282
443	101	283
449	101	283
455	101	283
461	101	284
467	101	284
473	101	284
478	101	285
484	101	285
490	101	285
496	101	286
502	101	286
508	101	286
513	101	287
519	101	287
525	101	288
531	101	288
537	101	288
543	101	289
548	100	289
554	100	289
560	100	290
566	100	290
572	100	290
578	100	291
583	100	291
589	100	291
595	100	292
601	100	291
607	99	284
613	99	277
618	98	271
624	99	271
630	100	271
636	101	271
642	97	271
648	93	272
653	89	272
659	72	269
665	52	267
671	32	264
677	13	261
683	24	263
688	44	266
694	64	270
700	73	270
706	67	272
712	61	272
718	59	270
723	58	268
729	47	275
735	29	289
741	28	279
747	45	244

Table 8. Interpolated current velocity readings for station CJ2. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	62	228
6	62	228
12	62	228
18	62	228
23	59	227
29	55	226
35	51	225
41	48	224
47	46	220
53	44	214
58	42	209
64	41	203
70	39	198
76	37	193
82	36	187
88	35	193
93	36	206
99	36	219
105	36	228
111	36	235
117	35	242
123	35	248
128	35	255
134	34	262
140	34	262
146	35	251
152	36	239
158	37	227
163	38	216
169	39	204
175	40	193
181	41	181
187	42	170
193	43	158
198	44	147
204	44	135
210	45	124
216	46	112
222	47	101
228	48	89
233	49	78
239	50	66
245	51	55
251	52	43
257	53	32
263	56	29
268	60	28
274	64	27
280	60	27
286	52	26
292	45	26
298	46	28
303	52	31
309	58	34
315	64	37
321	67	36
327	68	33
333	69	29
338	72	27
344	75	28
350	79	29
356	80	30
362	73	28
368	67	27

Table 8 (continued).

Time (min)	Speed (cm/s)	Direction
373	61	26
379	59	26
385	56	25
391	53	25
397	50	25
403	47	24
408	45	24
414	42	24
420	39	23
426	36	23
432	33	22
438	31	22
443	28	22
449	25	21
455	22	21
461	19	21
467	17	20
473	14	20
478	28	20
484	49	20
490	50	27
496	43	38
502	43	39
508	48	35
513	54	30
519	52	28
525	46	28
531	39	28
537	32	28
543	26	28
548	19	28
554	12	28
560	6	28
566	18	25
572	72	17
578	106	11
583	81	17
589	56	22
595	35	27
601	35	27
607	35	27
613	35	27
618	35	27
624	35	27
630	35	27
636	35	27
642	35	27
648	35	27
653	35	27
659	35	27
665	35	27
671	35	27
677	35	27
683	35	27
688	35	27
694	35	27
700	35	27
706	35	27
712	35	27
718	35	27
723	35	27
729	35	27
735	35	27
741	35	27
747	35	27

Table 9. Interpolated current velocity readings for station CJ3. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	15	283
6	15	283
12	15	283
18	13	220
23	11	153
29	8	87
35	33	76
41	63	75
47	92	73
53	103	74
58	108	74
64	114	75
70	119	76
76	125	77
82	130	78
88	118	77
93	94	76
99	70	75
105	46	75
111	22	74
117	9	73
123	8	74
128	8	75
134	7	76
140	7	77
146	7	78
152	6	79
158	6	80
163	5	80
169	5	81
175	4	82
181	7	83
187	25	84
193	43	84
198	61	85
204	79	85
210	104	87
216	129	89
222	154	91
228	132	89
233	107	86
239	82	84
245	57	81
251	52	80
257	52	79
263	51	77
268	50	76
274	49	74
280	46	88
286	41	108
292	36	128
298	32	148
303	27	168
309	22	188
315	18	208
321	13	228
327	8	248
333	4	268
338	3	280
344	10	281
350	16	282
356	22	283
362	26	284
368	31	285

Table 9 (continued).

Time (min)	Speed (cm/s)	Direction
373	36	285
379	45	286
385	70	284
391	96	283
397	116	282
403	94	281
408	73	280
414	52	279
420	31	278
426	27	271
432	22	264
438	28	273
443	35	284
449	41	294
455	38	289
461	34	282
467	29	276
473	30	266
478	33	256
484	35	245
490	38	249
496	41	258
502	45	268
508	48	267
513	52	259
519	55	251
525	54	250
531	48	256
537	42	262
543	39	254
548	38	229
554	38	203
560	38	178
566	37	152
572	37	127
578	36	102
583	36	81
589	37	79
595	37	77
601	37	74
607	38	72
613	38	70
618	39	67
624	39	65
630	34	50
636	30	36
642	25	22
648	30	25
653	36	29
659	41	32
665	45	28
671	47	22
677	50	15
683	48	17
688	44	21
694	39	25
700	37	32
706	36	41
712	35	50
718	37	76
723	40	115
729	43	154
735	46	192
741	48	231
747	51	270

Table 10. Interpolated current velocity readings for station CJ4. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	49	262
6	49	262
12	42	264
18	36	267
23	30	279
29	25	293
35	20	307
41	26	243
47	34	163
53	42	84
58	39	65
64	33	67
70	33	64
76	36	59
82	40	54
88	41	52
93	40	52
99	39	51
105	39	51
111	38	51
117	37	51
123	37	50
128	36	50
134	35	50
140	35	50
146	34	50
152	33	49
158	33	49
163	32	49
169	32	49
175	31	48
181	30	48
187	30	48
193	29	48
198	28	47
204	28	47
210	27	47
216	21	47
222	14	47
228	32	47
233	51	47
239	70	48
245	89	48
251	92	46
257	91	44
263	91	41
268	90	39
274	92	39
280	95	41
286	99	43
292	102	44
298	86	45
303	57	46
309	29	46
315	19	46
321	27	45
327	35	45
333	42	45
338	50	44
344	58	44
350	66	44
356	73	43
362	77	42
368	69	39

Table 10 (continued).

Time (min)	Speed (cm/s)	Direction
373	60	36
379	54	35
385	55	45
391	57	55
397	58	65
403	59	75
408	60	85
414	61	95
420	63	105
426	64	115
432	65	125
438	66	135
443	67	146
449	69	156
455	70	166
461	71	176
467	72	186
473	74	196
478	75	206
484	76	216
490	77	226
496	78	236
502	80	246
508	81	250
513	83	251
519	85	252
525	86	252
531	88	253
537	88	255
543	86	260
548	83	265
554	83	268
560	84	268
566	85	252
572	83	202
578	82	151
583	80	100
589	81	74
595	93	142
601	104	211
607	113	272
613	100	270
618	89	269
624	86	268
630	84	266
636	81	265
642	83	266
648	85	267
653	87	268
659	78	271
665	67	274
671	66	275
677	67	275
683	68	275
688	68	271
694	69	266
700	70	261
706	66	260
712	59	261
718	50	262
723	40	264
729	31	266
735	26	267
741	26	267
747	26	267

Table 11. Interpolated current velocity readings for station CJ5. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	63	88
6	63	88
12	63	88
18	65	81
23	67	73
29	69	66
35	71	58
41	69	60
47	67	64
53	66	68
58	64	72
64	62	76
70	61	77
76	61	77
82	60	76
88	60	76
93	61	77
99	56	82
105	45	75
111	44	68
117	56	80
123	57	64
128	45	47
134	36	84
140	32	104
146	37	91
152	43	78
158	48	66
163	54	53
169	60	44
175	68	49
181	76	55
187	84	60
193	92	65
198	99	70
204	80	67
210	61	64
216	43	61
222	42	57
228	41	53
233	41	49
239	65	53
245	91	58
251	118	62
257	124	61
263	125	58
268	126	55
274	114	52
280	97	49
286	80	46
292	63	43
298	49	57
303	37	81
309	31	102
315	30	121
321	29	140
327	28	159
333	28	177
338	27	196
344	26	215
350	25	234
356	25	252
362	24	271
368	23	290

Table 11 (continued).

Time (min)	Speed (cm/s)	Direction
373	22	309
379	22	327
385	21	343
391	23	344
397	25	345
403	26	346
408	28	347
414	29	348
420	31	349
426	46	339
432	61	329
438	76	319
443	80	319
449	84	320
455	85	323
461	86	325
467	87	328
473	89	326
478	91	321
484	94	317
490	96	313
496	97	314
502	97	317
508	98	320
513	100	322
519	101	324
525	103	324
531	105	323
537	107	321
543	108	320
548	108	321
554	108	322
560	108	324
566	109	328
572	110	332
578	111	334
583	111	330
589	111	325
595	111	314
601	109	266
607	107	218
613	106	170
618	104	124
624	105	103
630	107	82
636	108	61
642	105	142
648	101	227
653	97	311
659	109	324
665	123	328
671	94	322
677	86	326
683	86	335
688	85	343
694	28	344
700	53	340
706	43	334
712	32	333
718	46	335
723	60	336
729	70	332
735	65	331
741	41	337
747	41	208

Table 12. Interpolated current velocity readings for station CJ8. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	1	200
6	1	200
12	2	196
18	2	191
23	3	187
29	3	183
35	4	178
41	4	174
47	5	169
53	6	165
58	6	160
64	7	156
70	7	152
76	8	147
82	9	143
88	9	138
93	10	134
99	10	130
105	11	125
111	11	121
117	12	116
123	13	112
128	13	108
134	14	103
140	14	99
146	15	94
152	16	90
158	16	86
163	17	81
169	17	77
175	18	72
181	18	68
187	18	64
193	13	63
198	7	61
204	2	60
210	4	60
216	7	60
222	9	60
228	10	58
233	11	56
239	12	54
245	14	52
251	15	50
257	16	48
263	17	47
268	18	45
274	20	43
280	39	46
286	67	51
292	62	49
298	37	44
303	13	38
309	2	34
315	2	33
321	2	31
327	2	30
333	3	29
338	3	27
344	3	26
350	3	25
356	3	23
362	3	22
368	3	20

Table 12 (continued).

Time (min)	Speed (cm/s)	Direction
373	4	19
379	4	18
385	4	16
391	5	37
397	16	192
403	25	333
408	26	327
414	26	322
420	27	317
426	30	323
432	33	330
438	31	323
443	28	315
449	25	307
455	30	317
461	37	330
467	42	326
473	46	318
478	51	309
484	52	315
490	51	327
496	56	329
502	63	325
508	68	324
513	71	323
519	74	323
525	73	323
531	70	322
537	67	321
543	67	320
548	71	321
554	75	322
560	77	324
566	75	329
572	73	334
578	70	336
583	68	327
589	65	318
595	63	309
601	60	301
607	57	293
613	55	285
618	52	277
624	51	280
630	51	282
636	50	285
642	49	288
648	47	292
653	73	285
659	102	276
665	130	268
671	123	265
677	108	262
683	93	259
688	79	256
694	64	253
700	49	250
706	48	247
712	55	243
718	61	240
723	64	238
729	64	238
735	64	238
741	64	238
747	64	238

Table 13. Interpolated current velocity readings for station CJ11. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	13	99
6	13	99
12	13	99
18	13	99
23	17	96
29	21	92
35	25	89
41	22	88
47	18	88
53	15	87
58	13	85
64	10	83
70	8	81
76	5	79
82	3	77
88	4	80
93	7	86
99	10	93
105	13	99
111	15	106
117	18	105
123	22	97
128	25	88
134	29	83
140	36	85
146	43	86
152	49	87
158	54	91
163	53	103
169	53	113
175	51	113
181	49	114
187	48	114
193	46	114
198	44	115
204	43	115
210	41	115
216	39	116
222	38	116
228	36	116
233	34	117
239	33	117
245	31	117
251	29	118
257	28	118
263	26	118
268	24	119
274	23	119
280	21	119
286	19	120
292	18	120
298	16	120
303	14	121
309	13	121
315	12	132
321	12	153
327	12	174
333	12	195
338	12	217
344	24	208
350	56	147
356	89	87
362	106	44
368	86	45

Table 13 (continued).

Time (min)	Speed (cm/s)	Direction
373	66	46
379	46	47
385	26	48
391	9	49
397	11	46
403	12	43
408	13	40
414	15	37
420	16	34
426	17	30
432	19	27
438	20	24
443	21	21
449	23	18
455	17	138
461	10	279
467	11	310
473	14	314
478	16	318
484	22	310
490	28	298
496	24	251
502	14	184
508	5	118
513	8	131
519	21	202
525	34	273
531	45	310
537	57	309
543	59	305
548	49	297
554	39	289
560	29	281
566	19	274
572	9	266
578	2	263
583	3	273
589	4	283
595	5	294
601	6	304
607	7	312
613	7	305
618	8	297
624	8	290
630	7	294
636	7	298
642	6	302
648	6	306
653	5	310
659	5	314
665	4	318
671	3	323
677	3	327
683	2	331
688	2	335
694	1	339
700	4	316
706	9	281
712	14	246
718	19	211
723	24	176
729	29	141
735	27	127
741	18	132
747	14	135

Table 14. Interpolated current velocity readings for station CJ13. Direction indicates source of flow (relative to true north).

Time (min)	Speed (cm/s)	Direction
0	41	10
6	43	10
12	45	10
18	47	10
23	48	10
29	49	11
35	46	12
41	42	13
47	38	15
53	39	18
58	42	22
64	45	27
70	47	30
76	48	32
82	50	35
88	51	38
93	53	40
99	54	43
105	55	46
111	52	48
117	44	49
123	35	51
128	27	52
134	24	59
140	30	74
146	36	89
152	39	102
158	36	109
163	32	112
169	30	102
175	27	92
181	24	82
187	21	72
193	19	61
198	16	51
204	20	41
210	24	31
216	31	26
222	39	22
228	46	17
233	44	18
239	41	20
245	39	22
251	39	30
257	40	41
263	41	48
268	42	53
274	44	59
280	43	61
286	42	61
292	41	61
298	42	62
303	46	65
309	50	67
315	45	101
321	30	165
327	15	229
333	11	247
338	21	202
344	30	158
350	40	113
356	49	69
362	56	38
368	54	40

Table 14 (continued).

Time (min)	Speed (cm/s)	Direction
373	52	43
379	49	46
385	39	50
391	29	54
397	20	57
403	19	50
408	17	43
414	16	36
420	11	28
426	5	20
432	4	77
438	3	135
443	2	193
449	6	162
455	10	120
461	14	77
467	10	46
473	5	17
478	5	64
484	9	137
490	12	211
496	13	232
502	13	225
508	12	219
513	12	213
519	12	206
525	12	200
531	11	194
537	11	187
543	11	181
548	11	175
554	10	168
560	10	162
566	10	155
572	10	149
578	10	143
583	9	136
589	9	130
595	9	124
601	9	117
607	8	111
613	8	105
618	8	98
624	8	92
630	7	85
636	7	79
642	7	73
648	7	66
653	6	60
659	6	54
665	6	47
671	6	41
677	6	35
683	5	28
688	5	22
694	8	19
700	12	18
706	16	16
712	20	15
718	24	13
723	28	12
729	30	11
735	30	11
741	30	11
747	30	11

Table 15. Surface drogue velocities (cm/s) calculated from straight-line distances between successive positional fixes. The lower case letters correspond to the positions indicated by dots in Fig. 56-63.

Run no.	Drogue position	Speed (cm/s)
1	1a-1b	13
	1b-1c	51
	2a-2b	21
	2b-2c	31
	2c-2d	0
	2d-2e	8
	3a-3b	37
	3b-3c	33
	3c-3d	72
	3d-3e	19
	4a-4b	34
	4b-4c	33
	4c-4d	87
	4d-4e	15
	5a-5b	42
	5b-5c	47
	5c-5d	48
	5d-5e	41
	6a-6b	35
	6b-6c	41
	6c-6d	43
	6d-6e	24
	7a-7b	34
	7b-7c	38
	7c-7d	58
	7d-7e	29
	8a-8b	32
	8b-8c	38
	8c-8d	58
	8d-8e	29
	9a-9b	71
	9b-9c	16
	9c-9d	17
	10a-10b	55
	10b-10c	13
	10c-10d	29
2	1a-1b	167
	1b-1c	9
	2a-2b	167
	2b-2c	9
	3a-3b	104
	3b-3c	9
	3c-3d	26
	4a-4b	137
	4b-4c	16
	4c-4d	42
	5a-5b	69
	5b-5c	76
	5c-5d	54
	6a-6b	83
	6b-6c	53
	6c-6d	25
2	7a-7b	71
	7b-7c	117
	7c-7d	55
	8a-8b	52
	8b-8c	79
	8c-8d	43
	9a-9b	61
	9b-9c	42
	9c-9d	65
	10a-10b	17
	10b-10c	36
	10c-10d	13
3	1a-1b	96
	1b-1c	69
	1c-1d	155
	1d-1e	71
	1e-1f	12
	1f-1g	23
	1g-1h	21
	2a-2b	99
	2b-2c	74
	2c-2d	155
	2d-2e	109
	2e-2f	12
	2f-2g	15
	2g-2h	12
	3a-3b	73
	3b-3c	92
	3c-3d	53
	3d-3e	54
	3e-3f	24
	3f-3g	57
	3g-3h	13
	4a-4b	39
	4b-4c	94
	4c-4d	181
	4d-4e	61
	4e-4f	15
	4f-4h	33
	5a-5b	48
	5b-5c	47
	5c-5d	96
	5d-5e	59
	5e-5f	7
	6a-6b	46
	6b-6c	47
	6c-6d	96
	6d-6e	59
	6e-6h	4
	7a-7b	52
	7b-7c	57
	7c-7d	55
	7d-7e	65
	7e-7f	18
	7f-7g	16
	7g-7h	24
3	8a-8b	34
	8b-8c	70
	8c-8d	59
	8d-8e	28
	8e-8f	25
	8f-8g	26
	8g-8h	31
	9a-9b	46
	9b-9c	44
	9c-9d	67
	9d-9e	20
	9e-9f	34
	9f-9g	28
	9g-9h	20
	10a-10b	47
	10b-10c	44
	10c-10d	49
	10d-10e	46
	10e-10f	16
	10f-10g	70
	10g-10h	25
4	1a-1b	83
	1b-1c	86
	2a-2b	49
	2b-2c	118
	3a-3b	58
	3b-3c	109
	4a-4b	38
	4b-4c	115
	5a-5b	57
	5b-5c	119
	6a-6b	69
	6b-6c	126
	7a-7b	75
	7b-7c	113
5	1a-1b	24
	1b-1c	46
	1c-1d	100
	1d-1e	90
	1e-1f	78
	1f-1g	141
	2a-2b	53
	2b-2c	60
	2c-2d	44
	2d-2e	105
	2e-2f	106
	2f-2g	154
	3a-3b	53
	3b-3c	119
	3c-3d	138
	3d-3e	174

Table 15 (continued).

Run no.	Drogue position	Speed (cm/s)
5	4a-4b	87
	4b-4c	70
	4c-4d	51
	4d-4e	84
	4e-4f	239
	5a-5b	40
	5b-5c	53
	5c-5d	91
	5d-5e	126
	5e-5f	118
6	1a-1b	57
	1b-1c	35
	1c-1d	18
	2a-2b	57
	2b-2c	29
	2c-2d	37
	2d-2e	7
	3a-3b	68
	3b-3c	35
	3c-3d	52
	3d-3e	23
	4a-4b	68
	4b-4c	40
	4c-4d	27
	4d-4e	13
	5a-5b	65
	5b-5c	38
	5c-5d	27
	5d-5e	37
	6a-6b	43
	6b-6c	48
	6c-6d	29
	6d-6e	11
	7a-7b	71
	7b-7c	20
	7c-7d	36
	7d-7e	14
	8a-8b	41
	8b-8c	43
	8c-8d	51
	8d-8e	5
	9a-9b	14
	9b-9c	39
	9c-9d	10
7	1a-1b	146
	1b-1c	47
	1c-1d	59
	2a-2b	167
	2b-2c	83
	2c-2d	63
	2d-2e	81
7	3a-3b	181
	3b-3c	135
	3c-3d	32
	3d-3e	73
	4a-4b	194
	4b-4c	153
	4c-4d	45
	4d-4e	51
	5a-5b	208
	5b-5c	79
	5c-5d	24
	5d-5e	128
	6a-6b	208
	6b-6c	61
	6c-6d	30
	6d-6e	111
	7a-7b	139
	7b-7c	98
	7c-7d	42
	7d-7e	78
	8a-8b	69
	8b-8c	102
	8c-8d	42
	8d-8e	78
	9a-9b	83
	9b-9c	91
	9c-9d	74
	9d-9e	86
	10a-10b	94
	10b-10c	49
	10c-10d	96
	10d-10e	72
8	1a-1b	8
	1b-1c	11
	2a-2b	100
	2b-2c	27
	2c-2d	4
	3a-3b	133
	3b-3c	36
	3c-3d	46
	4a-4b	133
	4b-4c	24
	4c-4d	51
	4d-4e	10
	4e-4f	9
	5a-5b	87
	5b-5c	33
	5c-5d	73
	5d-5e	14
	5e-5f	21
	6a-6b	73
	6b-6c	38
	6c-6d	42
	6d-6e	17
	6e-6f	27
	6f-6g	5
8	7a-7b	41
	7b-7c	43
	7c-7d	34
	8a-8b	17
	8b-8c	41
	8c-8d	29
	8d-8e	32
	8e-8f	26
	9a-9b	58
	9b-9c	31
	9c-9d	13
9	1a-1b	0
	1b-1c	24
	1c-1d	63
	2a-2b	33
	2b-2c	51
	3a-3b	89
	3b-3c	48
	4a-4b	61
	4b-4c	42
	4c-4d	85
	5a-5b	73
	5b-5c	31
	5c-5d	8
	6a-6b	16
	6b-6c	30
	7a-7b	28
	7b-7c	57
	7c-7d	121
10	1a-1b	63
	1b-1c	14
	1c-1d	48
	2a-2b	50
	2b-2c	53
	2c-2d	15
	3a-3b	33
	3b-3c	96
	3c-3d	69
	4a-4b	53
	4b-4c	83
	4c-4d	83
	5a-5b	59
	5b-5c	97
	5c-5d	79
	6a-6b	70
	6b-6c	37
	6c-6d	73
	7a-7b	70
	7b-7c	45
	7c-7d	49

Table 15 (continued).

Run no.	Drogue position	Speed (cm/s)
11	1a-1b	0
	1b-1c	74
	1c-1d	66
	1d-1e	70
	2a-2b	71
	2b-2c	29
	2c-2d	79
	2d-2e	35
	3a-3b	63
	3b-3c	38
	3c-3d	60
	3d-3e	100
	4a-4c	33
	4c-4d	37
	4d-4e	33
	5a-5b	43
	5b-5c	32
	5c-5d	31
	5d-5e	34
	6a-6c	18
	6c-6d	6
	6d-6e	32
	7a-7c	19
	7c-7d	7
	7d-7e	30
	8a-8b	26
	8b-8c	23
	9a-9b	22
	9b-9c	5
	9c-9d	20
	9d-9e	22
	10a-10b	25
	10b-10c	14
	10c-10d	8
	10d-10c	13
12	1a-1b	53
	1b-1c	5
	2a-2b	114
	2b-2c	24
	2c-2d	53
	3a-3b	124
	3b-3c	24
	3c-3d	13
	3d-3e	15
	4a-4b	141
	4b-4c	149
	5a-5b	178
	5b-5c	156
	6a-6b	185
	6b-6c	156
	7a-7b	145
	7b-7c	beached
	8a-8b	113
	8b-8c	14
	9a-9b	41
	9b-9c	143
13	1a-1b	167
	1b-1d	69
	1d-1e	58
	1e-1f	50
	1f-1i	19
	2a-2b	194
	2b-2d	69
	2d-2e	58
	2e-2f	49
	3a-3b	133
	3b-3d	75
	3d-3e	28
	3e-3f	80
	4a-4b	60
	4b-4c	153
	4c-4d	107
	4d-4e	28
	4e-4g	44
	4g-4h	19
	5a-5b	63
	5b-5c	60
	5c-5d	125
	5d-5f	42
	5f-5g	94
	5g-5h	39
	5h-5i	65
	6a-6b	36
	6b-6c	91
	6c-6d	45
	6d-6e	15
	6e-6f	56
	6f-6g	65
	6g-6h	69
14	1a-1b	25
	1b-1c	13
	1c-1d	18
	1d-1e	18
	2a-2b	63
	2b-2c	42
	2c-2d	8
	2d-2e	13
	3a-3b	36
	3c-3d	21
	3d-3e	48
	3e-3f	17
	4a-4b	19
	4b-4d	43
	4d-4e	29
	5a-5b	23
	5b-5c	36
	5c-5d	53
	5d-5e	22
14	6a-6b	25
	6b-6c	38
	6c-6d	42
	6d-6e	beached
	7a-7b	14
	7b-7d	19
	7d-7e	65
	8a-8b	31
	8b-8c	57
	8c-8d	31
	8d-8e	74
	9a-9b	33
	9b-9c	26
	9c-9d	58
	9d-9e	60
	10a-10b	45
	10b-10c	21
	10c-10d	61
	10d-10e	45
15	1a-1b	33
	1b-1c	19
	1c-1d	6
	1d-1e	5
	2a-2b	30
	2b-2c	27
	2c-2d	33
	2d-2e	61
	3a-3b	56
	3b-3c	32
	3c-3d	52
	3d-3e	69
	4a-4b	29
	4b-4c	35
	4c-4d	111
	4d-4e	54
	5a-5b	6
	5b-5c	24
	5c-5d	61
	5d-5e	63
	6a-6b	20
	6b-6c	27
	6c-6d	38
	6d-6e	38
	7a-7b	37
	7b-7c	43
	7c-7d	11
	7d-7e	44
	8a-8b	42
	8b-8c	41
	8c-8d	38
	8d-8e	51
	9a-9c	46
	9c-9d	76
	9d-9e	37
	10a-10b	63
	10b-10c	44
	10c-10d	76
	10d-10e	37

Table 15 (continued).

Run no.	Drogue position	Speed (cm/s)
16	1a-1b	37
	1b-1d	47
	1d-1e	20
	2a-2b	77
	2b-2c	13
	2c-2e	34
	2e-2f	42
	3a-3c	57
	4a-4c	44
	4c-4d	56
	4d-4e	68
	5a-5b	76
	5b-5c	72
	5c-5d	53
	5d-5e	30
	6a-6c	74
	6c-6d	53
	6d-6e	30
	7a-7c	100
	7c-7e	35
	8a-8b	51
	8b-8d	60
	8d-8e	39
	9a-9b	42
	9b-9d	83
	9d-9e	5
	10a-10b	48
	10b-10c	48
	10c-10d	141
	10d-10e	64
17	1a-1b	33
	1b-1c	40
	1c-1d	35
	1d-1e	62
	1e-1f	27
	1f-1g	18
	2a-2b	21
	2b-2c	53
	2c-2e	49
	2e-2f	18
	2f-2g	19
	3a-3b	26
	3b-3c	58
	3c-3d	37
	3d-3e	18
	3e-3f	34
	3f-3g	11
	4a-4b	34
	4b-4c	50
	4c-4d	37
	4d-4e	18
	4e-4f	34
	4f-4g	11
	5a-5b	36
	5b-5c	53
	5c-5d	51
	5d-5e	30
	6a-6b	41
	6b-6c	62
	6c-6d	43
17	7a-7b	44
	7b-7c	45
	7c-7d	35
	7d-7e	40
	7e-7f	10
	8a-8b	36
	8b-8c	35
	8c-8d	35
	8d-8e	27
	8e-8f	20
	8f-8g	12
	9a-9b	31
	9b-9c	20
	9c-9d	0.4
	9d-9e	20
	9e-9f	6
	9f-9g	7
	10a-10b	20
	10b-10d	21
	10d-10e	39
	10e-10f	2
	10f-10g	7
18	1a-1c	28
	1c-1e	52
	1e-1f	29
	2a-2d	39
	2d-2e	32
	3a-3d	72
	4a-4d	6
	4d-4e	6
	4e-4f	52
	5a-5f	3
	5f-5g	42
	6a-6g	3
19	1a-1b	38
	1b-1c	32
	1c-1d	18
	1d-1e	16
	1e-1f	4
	2a-2b	38
	2b-2c	32
	2c-2d	18
	2d-2e	16
	2e-2f	7
	3a-3b	36
	3b-3c	29
	3c-3d	32
	3d-3e	31
	4a-4b	19
	4b-4c	41
	4c-4d	29
	4d-4e	31
	5a-5b	19
	5b-5c	29
	5c-5d	33
	5d-5e	37
	6a-6b	24
	6b-6c	43
	6c-6d	21
	6d-6e	21
19	7a-7b	33
	7b-7c	37
	7c-7d	21
	7d-7e	21
	8a-8b	33
	8b-8c	1
	8c-8d	49
	8d-8e	50
	9a-9b	18
	9b-9c	32
	9c-9d	36
	9d-9e	21
	10a-10b	22
	10b-10c	21
	10c-10d	37
	10d-10e	21
20	1a-1b	67
	1b-1c	74
	2a-2b	67
	2b-2c	71
	3a-3b	75
	3b-3c	89
	4a-4b	100
	4b-4c	72
	5a-5b	100
	5b-5c	73
	6a-6b	121
	6b-6c	75
	7a-7b	121
	7b-7c	90
	8a-8b	95
	8b-8c	63
	9a-9b	72
	9b-9c	77
	10a-10b	21
	10b-10c	45
21	1a-1b	75
	1b-1c	33
	1c-1d	39
	1d-1e	15
	2a-2b	61
	2b-2c	21
	2c-2d	39
	2d-2e	9
	3a-3b	48
	3b-3c	25
	3c-3d	39
	3d-3e	17
	4a-4b	44
	4b-4c	32
	4c-4d	40
	4d-4e	12
	5a-5b	44
	5b-5c	33
	5c-5d	35
	5d-5e	29

Table 15 (continued).

Run no.	Drogue position	Speed (cm/s)
21	6a-6b	24
	6b-6c	14
	6c-6d	17
	6d-6e	7
	7a-7b	15
	7b-7c	25
	7c-7d	23
	7d-7e	22
	8a-8b	29
	8b-8c	21
	8c-8d	21
	8d-8e	17
	9a-9b	44
	9b-9c	27
	9c-9d	14
	9d-9e	25
	10a-10b	59
	10b-10c	29
	10c-10e	17
22	1a-1b	88
	2a-2b	68
	3a-3b	48
	4a-4b	65
	4b-4c	62
	5a-5b	61
	6a-6b	36
	6b-6c	65
	6c-6d	69
	7a-7b	45
	7b-7c	54
	7c-7d	76
	8a-8b	30
	8b-8c	51
	8c-8d	80
	9a-9c	35
	9c-9d	79
	10a-10b	16
	10b-10c	38
	10c-10d	91
23	1a-1b	53
	1b-1c	8
	2a-2b	93
	2b-2c	17
	3a-3b	233
	3b-3c	30
	3c-3d	57
	3d-3e	13
	4a-4b	175
	4b-4c	125
	4c-4d	29
	4d-4e	108
	4e-4f	50
	5a-5b	58
	5b-5c	200
	5c-5f	35
	6a-6b	40
	6b-6c	83
	6c-6e	50
24	1a-1b	42
	1b-1c	32
	1c-1e	25
	1e-1f	71
	1f-1h	9
	1h-1i	37
	2a-2b	50
	2b-2c	14
	2c-2d	68
	2d-2e	34
	2e-2g	40
	2g-2i	10
	3a-3b	42
	3b-3d	10
	3d-3f	52
	3f-3g	16
	3g-3i	31
	4a-4b	36
	4b-4c	65
	4c-4d	26
	4d-4e	28
	4e-4f	71
	4f-4g	48
	4g-4h	32
	4h-4i	25
	5a-5b	38
	5b-5c	21
	5c-5d	42
	5d-5f	21
	5f-5g	42
25	1a-1b	33
	1b-1c	15
	1c-1d	36
	1d-1e	20
	2a-2b	42
	2b-2c	15
	2c-2d	16
	2d-2e	7
	3a-3b	42
	3b-3c	15
	3c-3d	16
	3d-3e	13
	4a-4b	97
	4b-4c	11
	4c-4d	8
	4d-4e	29
	5a-5b	93
	5b-5c	6
	5c-5d	29
	5d-5e	17
	6a-6b	58
	6b-6c	67
	6c-6d	7
	6d-6e	10
	7a-7b	21
	7b-7c	33
	7c-7d	10
	7d-7e	10
	8a-8b	32
	8b-8c	11
	8c-8d	13
	8d-8e	27
25	9a-9b	32
	9b-9c	11
	9c-9d	13
	9d-9e	27
26	1a-1c	65
	1c-1d	125
	2a-2b	113
	2b-2c	90
	3a-3c	81
	3c-3d	67
	4a-4b	49
	4b-4c	69
	4c-4d	34
	5a-5b	59
	5b-5c	142
27	1a-1b	56
	1b-1c	64
	1c-1d	61
	2a-2b	83
	2b-2c	90
	2c-2d	47
	2d-2e	37
	3a-3b	23
	3b-3c	87
	3c-3d	53
	3d-3e	11
	4a-4b	63
	4b-4c	45
	4c-4d	104
	4d-4e	54
	5a-5b	29
	5b-5c	60
	5c-5d	15
	5d-5e	13
	6a-6b	11
	6b-6c	47
	6c-6d	22
	6d-6e	11
	7a-7b	17
	7b-7c	29
	7c-7d	15
	7d-7e	19
	8a-8c	9
	8c-8d	58
	9a-9b	32
	9b-9c	13
	9c-9d	63
28	1a-1b	26
	2a-2b	200
	2b-2c	40
	2c-2d	37
	3a-3b	92
	4a-4b	96
	4b-4c	222

Table 16. June echo survey records. Mean and standard deviations of the logged relative abundance indices are shown for each track and its corresponding transects; n indicates number of times track surveyed in given month.

Transect	Track		
	I (n=3)	II (n=3)	III (n=3)
1	0.0	0.0	0.0
2	0.0	0.0	0.0
3	0.0	0.0	0.0
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	0.0	0.0	0.0
7	0.0	0.0	0.0
8	0.0	0.0	0.0
9	0.0	0.0	0.0
10	n.a.	0.0	0.0
11	n.a.	0.0	0.0
12	n.a.	0.0	n.a.

Table 17. July echo survey records. Mean and standard deviations of the logged relative abundance indices are shown for each track and its corresponding transects; n indicates number of times track surveyed in given month.

Transect	Track		
	I (n=2)	II (n=5)	III (n=2)
1	0.0	0.0	0.0
2	0.0	0.0	1.69 ± 2.39
3	0.0	0.0	0.0
4	0.0	0.0	0.0
5	0.0	0.0	0.0
6	0.0	0.0	0.0
7	0.0	0.0	0.0
8	0.0	0.0	0.0
9	0.0	0.0	1.88 ± 2.65
10	n.a.	0.0	1.74 ± 2.46
11	n.a.	0.0	2.03 ± 2.88
12	n.a.	0.0	n.a.

Table 18. August echo survey records. Mean and standard deviations of the logged relative abundance indices are shown for each track and its corresponding transects; n indicates number of times track surveyed in given month.

Transect	Track		
	I (n=8)	II (n=14)	III (n=3)
1	2.29±1.91	1.42±1.99	2.50±2.31
2	0.79±1.50	0.70±1.42	2.51±2.23
3	1.91±2.04	0.87±1.45	1.31±2.28
4	2.25±1.90	0.40±1.04	2.48±2.18
5	2.11±1.74	1.14±1.41	1.28±2.23
6	1.80±1.94	1.49±1.83	2.26±2.05
7	1.40±1.59	1.83±1.98	2.35±2.03
8	1.21±1.69	0.81±1.36	2.21±1.94
9	2.90±1.22	1.30±1.61	1.02±1.77
10	n.a.	1.26±1.58	3.24±0.46
11	n.a.	1.47±1.82	2.20±1.91
12	n.a.	1.50±1.83	n.a

Table 19. September echo survey records. Mean and standard deviations of the logged relative abundance indices are shown for each track and its corresponding transects; n indicates number of times track surveyed in given month.

Transect	Track I (n=3)	Track II (n=3)	Track III (n=3)
1	0.0	0.97±1.69	0.0
2	0.0	1.15±2.00	0.0
3	0.0	1.98±1.71	0.0
4	0.0	0.0	0.0
5	0.0	0.85±1.48	0.0
6	0.0	1.22±2.11	0.0
7	0.0	2.09±1.84	0.0
8	0.0	0.0	0.0
9	0.0	0.0	0.0
10	n.a.	0.97±1.69	0.0
11	n.a.	1.14±1.98	0.0
12	n.a.	0.0	n.a.

Table 20. Echo survey records showing mean and standard deviation of the logged relative abundance indices for each track and its corresponding transects averaged over June to September; n indicates number of times track surveyed during study period.

Transect	Track		
	I (n=16)	II (n=25)	III (n=11)
1	4.32±3.54	3.40±3.76	3.68±4.11
2	2.70±3.23	2.65±3.07	3.42±3.83
3	3.32±3.52	2.50±2.83	3.28±3.51
4	3.35±3.60	2.01±2.68	3.25±3.61
5	3.29±3.68	2.68±2.63	2.96±3.49
6	3.16±3.42	3.17±3.52	3.13±3.56
7	2.66±3.03	3.66±4.17	2.92±3.19
8	2.78±3.20	2.66±2.74	2.82±3.17
9	3.20±3.39	2.89±3.45	2.94±3.31
10	n.a.	2.88±3.36	3.11±3.24
11	n.a.	3.31±3.87	3.30±3.61
12	n.a.	3.12±3.57	n.a.

Table 21. Analysis of variance table for logged relative abundance indices of Track 1 echo sounding transects blocked by month ($\bar{x}$ = 0.62 , SD = 0.36). Significant differences (at $p < 0.01$) exist only between monthly values of the relative abundance index at each transect.

Source	df	SS	MS	F
Transect	8	1.08	0.13	
Month	2	20.66	10.33	76.09 a
Error	16	2.17	0.13	
TOTAL	26	23.81		

a $p < 0.01$

Table 22. Analysis of variance table for logged relative abundance indices of Track 2 echo sounding transects blocked by month ($\bar{x}$ = 0.51, SD = 0.40). Significant differences (at $p < 0.01$) exist only between monthly values of the relative abundance index at each transect.

Source	df	SS	MS	F
Transect	11	2.56	0.23	
Month	3	13.30	4.43	27.27 a
Error	33	5.36		
TOTAL	47	21.22		

a $p < 0.01$

Table 23. Analysis of variance table for logged relative abundance indices of Track 3 echo sounding transects blocked by month ($\bar{x}$ = 0.97, SD = 0.67). Significant differences (at $p < 0.01$) exist only between monthly values of the relative abundance index at each transect.

Source	df	SS	MS	F
Transect	10	3.47	0.37	
Month	2	25.48	12.74	27.88 a
Error	20	9.13	0.45	
TOTAL	32	38.35		

a $p < 0.01$

Table 24. Analysis of variance table for logged relative abundance indices of echo sounding transects, irrespective of track, blocked by month ($\bar{x}$ = 0.73, SD = 0.58). Significant differences exist between monthly values of the relative abundance index at each transect (at $p < 0.01$) and between relative abundance indices for all transects (at $p < 0.05$).

Source	df	SS	MS	F
Transect	34	19.10	0.56	1.67 a
Month	3	38.64	12.88	38.35 b
Error	102	34.25	0.34	
TOTAL	139	91.99		

a $p < 0.05$
b $p < 0.01$

Table 25. Mean and standard deviations of zooplankton densities (no/m^3) by length class for each station and depth stratum sampled (A = 20 - 0 m, B = bottom - 0 m). For all stations and depths, densities calculated from 5 replicate hauls. Note unexpectedly low counts for 0.5 - 0.9 mm group indicating consistent undersampling by 400-μ mesh net.

Station	Depth	Length class (mm)			
		0.5-0.9	1.0-1.9	2.0-3.9	4.0 and over
1	A	7.0±5.7	774.2±301.5	316.2±228.3	6.4±6.5
1	B	4.4±5.1	487.8±103.1	187.0±103.6	1.6±2.3
2	A	9.2±11.9	1064.6±195.6	408.2±247.0	4.0±2.2
3	A	4.4±8.7	568.0±347.5	574.6±274.1	5.0±5.0
3	B	4.6±4.8	436.0±99.7	290.4±186.2	3.4±3.1
4	A	5.4±8.4	688.2±281.7	401.0±196.1	2.4±2.5
4	B	4.4±4.6	446.8±232.9	313.8±156.8	4.4±5.6
5	A	7.0±6.7	594.2±207.3	528.8±323.6	14.4±10.6
5	B	2.2±3.3	237.6±141.5	193.6±145.9	2.4±3.5
6	A	8.0±10.9	488.6±349.4	775.6±324.6	10.6±13.0
6	B	2.4±3.3	224.4±148.9	401.2±411.1	4.4±3.8
7	A	6.0±10.8	366.2±294.8	555.6±381.5	6.8±8.3
8	A	3.6±5.4	496.2±375.4	610.8±520.7	10.2±9.2
9	A	19.6±33.2	1131.2±1400.1	739.4±222.7	7.4±7.5
9	B	4.0±5.4	337.8±268.6	352.6±64.6	8.6±9.1
10	A	2.0±2.7	370.0±249.0	592.6±382.6	5.0±5.0
10	B	2.0±1.8	256.8±187.2	393.2±190.2	2.6±2.6
11	A	12.6±17.7	593.0±331.6	451.0±262.6	12.2±10.7
11	B	0.0	167.8±114.7	391.8±282.2	26.4±34.0
12	A	11.8±14.0	440.2±227.6	584.8±405.0	8.4±9.6
12	B	0.0	148.8±127.1	555.8±353.1	15.6±13.7
13	A	6.0±8.9	829.8±332.6	864.6±908.9	28.4±29.6
13	B	2.0±3.0	257.8±136.6	516.2±339.8	12.2±10.6
14	A	8.2±13.4	675.6±394.7	327.0±220.2	9.2±14.0
14	B	2.4±2.0	183.2±150.9	307.4±389.0	10.6±11.3

Table 26. Mean zooplankton densities (individals/m^3) in the study area categorized by length class. Calculated from 125 samples irrespective of station or depth obtained. Unexpectedly low counts for 0.5-0.9 mm group suggest consistent undersampling by 400-μ mesh net.

Statistic	Length class (mm)			
	0.5-0.9	1.0-1.9	2.0-3.9	4.0 & over
Mean	3.1	363.1	354.8	5.25
SD	13.7	280.0	300.8	9.3

Table 27. Analysis of variance table for logged densities (no/m^3) of zooplankton 1.0 - 1.9 mm in length ($\bar{x}$ = 2.56, SD = 0.26). Split-plot design utilized station as main plot and depth as sub-plot. Significant differences exhibited for counts between stations (at $p < 0.01$) and depths (at $p < 0.05$).

Source	df	SS	MS	F
Station	13	5.22	0.40	2.04 a
Depth	1	3.11	3.11	45.30 b
Station and Depth	13	1.95	0.15	2.18 a
Replicates by Station	56	11.06	0.20	2.87 b
Error	56	3.85	0.06	
TOTAL	139	25.19		

a $p < 0.05$
b $p < 0.01$

Table 28. Analysis of variance table for logged densities (no/m^3) of zooplankton 2.0-3.9 mm in length ($\overline{x}$ = 2.55, SD = 0.31). Split-plot design utilized station as main plot and depth as sub-plot. Significant differences exhbited for counts between depths (at $p < 0.05$).

Source	df	SS	MS	F
Station	13	2.45	0.19	
Depth	1	1.27	1.27	13.50 a
Station and Depth	13	0.89	0.07	
Replicates by Station	56	11.65	0.21	
Error	56	5.29		
TOTAL	139	21.55		

a $p < 0.05$

Table 29. Analysis of variance table for logged densities (no/m3) of zooplankton 4.0 mm and over in length ($\overline{x}$ = 0.72 , SD = 0.41). Split-plot design utilized station as main plot and depth as sub-plot. No significant differences between stations or between depths were detected.

Source	df	SS	MS	F
Station	13	4.71	0.36	
Depths	1	0.28	0.28	
Station and Depth	13	1.55	0.12	
Replicates by Station	56	21.05	0.38	
Error	56	9.35		
TOTAL	139	36.94		

Table 30. Mean and standard deviation of zooplankton densities (no/m^3) by taxon for each station and depth stratum sampled (A = 20 - 0 m, B = bottom - 0 m). For all stations and depths, densities calculated from 5 replicate hauls.

Taxon	Station - Depth		
	1-A	1-B	2-A
COPEPODS			
Acartia	297.2±192.3	192.6±68.6	422.6±156.6
Calanus	321.6±226.4	198.2±110.4	407.6±248.1
Centropages	241.6±164.2	129.4±45.6	334.0±154.6
Cyclopoda	<1.0	<1.0	<1.0
Eurytemora	128.6±126.2	115.8±104.9	131.6±98.7
Harpacticoida	<1.0	<1.0	<1.0
Metridia	10.0±7.0	9.3±4.0	15.0±14.1
Psuedocalanus	41.2±23.2	22.0±8.2	74.0±36.2
Temora	22.6±14.1	20.6±10.7	57.6±46.0
Tortanus	8.3±5.7	9.0±8.4	10.0±7.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	0.0	0.0
Thyssanoessa	12.5±6.4	7.7±3.3	14.0±10.2
OTHERS			
Amphipoda	0.0	0.0	0.0
Appendicularia	0.0	0.0	0.0
Balanus	7.5±3.5	5.5±3.5	4.0±1.4
Carcinus	6.0±3.6	3.0±3.0	4.3±1.1
Crangon	<1.0	0.0	0.0
Ctenophora	<1.0	0.0	0.0
Echinodermata	0.0	0.0	<1.0
Evadnae	21.5±26.1	8.0±0.5	76.4±44.8
Insecta	0.0	0.0	0.0
Podon	0.0	0.0	<1.0
Polychaeta	0.0	0.0	0.0
Sagitta	7.5±3.5	3.0±3.0	5.0±1.0
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	3-A	3-B	4-A
COPEPODS			
Acartia	136.0±86.4	160.0±68.9	250.2±170.3
Calanus	531.0±252.6	305.6±197.3	397.6±191.4
Centropages	239.4±134.5	138.8±46.2	267.2±158.1
Cyclopoda	0.0	0.0	0.0
Eurytemora	68.6±21.8	70.4±82.0	85.2±75.1
Harpacticoida	0.0	<1.0	0.0
Metridia	12.4±10.0	5.7±2.9	11.0±3.6
Psuedocalanus	69.4±44.2	37.2±15.0	45.0±16.9
Temora	46.6±31.5	16.8±13.3	28.6±17.8
Tortanus	5.0±0.5	6.3±6.1	5.0±0.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	0.0	0.0
Thyssanoessa	5.6±2.6	5.7±1.5	12.0±6.7
OTHERS			
Amphipoda	0.0	0.0	<1.0
Appendicularia	0.0	0.0	<1.0
Balanus	<1.0	<1.0	6.5±4.9
Carcinus	<1.0	<1.0	4.0±1.4
Crangon	0.0	0.0	0.0
Ctenophora	<1.0	<1.0	<1.0
Echinodermata	0.0	0.0	0.0
Evadnae	105.0±113.1	60.0±45.9	61.5±68.5
Insecta	0.0	0.0	0.0
Podon	0.0	2.0±0.5	<1.0
Polychaeta	0.0	0.0	0.0
Sagitta	6.6±2.8	5.3±4.0	<1.0
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	4-B	5-A	5-B
COPEPODS			
Acartia	148.4±93.2	178.0±104.2	93.4±60.9
Calanus	332.6±167.8	532.0±313.8	193.4±147.6
Centropages	182.4±113.5	247.2±154.5	89.0±62.0
Cyclopoda	0.0	<1.0	<1.0
Eurytemora	49.6±46.1	85.0±13.2	24.5±23.3
Harpacticoida	0.0	0.0	0.0
Metridia	3.5±1.0	11.2±6.2	2.0±0.8
Psuedocalanus	44.3±22.7	40.6±22.3	18.0±9.8
Temora	28.0±18.0	38.0±13.7	8.4±7.2
Tortanus	0.0	<1.0	<1.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	3.0±1.0	2.0±2.0
Thyssanoessa	10.2±2.0	12.0±5.7	3.3±0.5
OTHERS			
Amphipoda	0.0	0.0	0.0
Appendicularia	0.0	0.0	0.0
Balanus	5.0±2.8	7.5±3.5	0.0
Carcinus	6.5±4.0	<1.0	<1.0
Crangon	0.0	0.0	0.0
Ctenophora	<1.0	<1.0	<1.0
Echinodermata	0.0	0.0	0.0
Evadnae	40.3±20.5	77.5±60.1	8.6±7.0
Insecta	0.0	0.0	0.0
Podon	0.0	0.0	0.0
Polychaeta	0.0	0.0	0.0
Sagitta	5.5±6.3	15.0±5.7	<1.0
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	6-A	6-B	7-A
COPEPODS			
Acartia	90.0±69.7	45.0±27.0	69.6±75.6
Calanus	799.0±335.4	430.8±437.8	557.0±385.5
Centropages	248.4±163.2	129.6±88.1	156.2±115.7
Cyclopoda	<1.0	<1.0	<1.0
Eurytemora	18.0±18.0	5.7±2.9	19.2±14.9
Harpacticoida	0.0	0.0	<1.0
Metridia	7.5±3.5	10.2±8.7	9.0±0.0
Psuedocalanus	59.0±34.3	27.5±17.8	64.0±64.2
Temora	26.6±20.7	18.0±17.2	28.7±19.9
Tortanus	0.0	<1.0	<1.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	0.0	0.0
Thyssanoessa	15.0±7.0	3.0±0.0	15.0±14.1
OTHERS			
Amphipoda	<1.0	<1.0	0.0
Appendicularia	0.0	0.0	0.0
Balanus	6.0±1.4	0.0	<1.0
Carcinus	12.5±10.6	<1.0	4.0±1.4
Crangon	0.0	0.0	<1.0
Ctenophora	0.0	<1.0	0.0
Echinodermata	0.0	0.0	0.0
Evadnae	100.0±84.8	31.0±31.1	60.3±65.4
Insecta	0.0	<1.0	0.0
Podon	5.8±1.2	<1.0	2.0±0 .5
Polychaeta	0.0	0.0	0.0
Sagitta	0.0	<1.0	11.5±12.0
Scyphozoa	<1.0	6.3±4.7	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	8-A	9-A	9-B
COPEPODS			
Acartia	97.8±71.6	213.6±192.9	85.2±97.3
Calanus	610.0±537.5	736.8±235.1	350.6±67.1
Centropages	249.6±206.4	577.6±836.3	130.6±117.5
Cyclopoda	<1.0	0.0	0.0
Eurytemora	15.0±7.7	44.6±30.5	32.2±22.5
Harpacticoida	0.0	0.0	0.0
Metridia	26.5±19.0	37.6±49.8	19.3±16.0
Psuedocalanus	56.0±25.3	114.2±84.6	49.6±44.0
Temora	45.6±45.5	86.2±103.0	21.0±8.0
Tortanus	<1.0	8.5±2.1	<1.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	0.0	0.0
Thyssanoessa	9.5±5.5	20.6±6.0	4.5±3.6
OTHERS			
Amphipoda	0.0	0.0	0.0
Appendicularia	0.0	0.0	0.0
Balanus	<1.0	13.0±0.5	5.6±2.3
Carcinus	5.0±2.0	12.6±2.5	6.5±4.9
Crangon	0.0	0.0	0.0
Ctenophora	0.0	<1.0	<1.0
Echinodermata	0.0	0.0	0.0
Evadnae	62.0±78.8	166.0±231.5	46.5±37.4
Insecta	0.0	0.0	0.0
Podon	0.0	0.0	0.0
Polychaeta	0.0	0.0	0.0
Sagitta	13.0±12.1	10.6±8.1	14.6±6.8
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	10-A	10-B	11-A
COPEPODS			
Acartia	92.0±87.8	42.0±54.5	147.2±64.5
Calanus	595.6±384.6	401.6±195.3	466.0±270.1
Centropages	150.0±93.3	117.8±101.9	239.6±140.8
Cyclopoids	0.0	0.0	0.0
Eurytemora	38.7±41.7	27.0±25.3	41.2±22.5
Harpacticoida	0.0	0.0	0.0
Metridia	30.0±14.1	4.5±2.3	9.3±9.2
Psuedocalanus	48.2±56.1	36.7±24.7	82.6±72.4
Temora	42.6±30.3	18.0±12.3	34.6±29.1
Tortanus	5.0±0.5	<1.0	0.0
EUPHAUSIIDS			
Meganyctiphanes	0.0	0.0	3.0±0.0
Thyssanoessa	5.0±0.0	<1.0	13.0±8.4
OTHERS			
Amphipoda	0.0	0.0	<1.0
Appendicularia	0.0	0.0	0.0
Balanus	5.0±0.5	<1.0	5.0±1.0
Carcinus	<1.0	0.0	6.5±3.1
Crangon	0.0	0.0	0.0
Ctenophora	<1.0	0.0	0.0
Echinodermata	0.0	0.0	0.0
Evadnae	<1.0	19.5±6.3	29.2±43. 8
Insecta	0.0	0.0	0.0
Podon	0.0	0.0	6.0±5.0
Polychaeta	0.0	0.0	0.0
Sagitta	2.0±1.0	4.5±2.1	16.0±12.7
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth		
	11-B	12-A	12-B
COPEPODS			
Acartia	60.0±48.1	92.0±70.1	36.8±28.5
Calanus	395.6±288.5	595.6±414.8	562.8±356.2
Centropages	59.0±52.7	200.6±98.8	67.6±59.4
Cyclopoda	0.0	0.0	0.0
Eurytemora	9.6±8.3	18.2±16.6	4.0±2.0
Harpacticoida	0.0	0.0	0.0
Metridia	6.2±5.5	9.5±4.9	7.6±10.6
Psuedocalanus	29.6±27.6	37.6±17.5	11.5±14.1
Temora	15.0±13.1	37.6±17.5	11.5±14.1
Tortanus	0.0	0.0	<1.0
EUPHAUSIIDS			
Meganyctiphanes	38.5±51.6	<1.0	8.5±9. 1
Thyssanoessa	5.3±4.5	11.0±7.9	4.0±4.2
OTHERS			
Amphipoda	0.0	0.0	0.0
Appendicularia	0.0	0.0	
Balanus	<1.0	10.0±7.0	<1.0
Carcinus	<1.0	2.0±0.5	<1.0
Crangon	0.0	0.0	0.0
Ctenophora	0.0	<1.0	<1.0
Echinodermata	0.0	0.0	0.0
Evadnae	0.0	25.0±20.0	5.0±0.5
Insecta	0.0	0.0	0.0
Podon	<1.0	<1.0	0.0
Polychaeta	0.0	0.0	0.0
Sagitta	12.0±12.5	10.7±9.6	12.0±14.1
Scyphozoa	0.0	0.0	0.0

Table 30 (Continued).

Taxon	Station - Depth			
	13-A	13-B	14-A	14-B
COPEPODS				
Acartia	164.0±4.6	79.8±66.6	162.5±54.6	40.8±41.8
Calanus	869.0±924.0	481.2±272.3	328.4±211.7	308.4±402.4
Centropages	399.0±150.3	101.0±57.1	288.6±164.0	90.8±79.2
Cyclopoda	0.0	0.0	0.0	0.0
Eurytemora	23.0±14.4	7.2±2.0	28.0±13.3	4.3±3.0
Harpacticoids	0.0	0.0	<1.0	0.0
Metridia	46.2±75.8	58.7±100.0	8.5±5.1	9.0±6.2
Psuedocalanus	116.0±72.9	43.6±27.6	106.2±58.3	22.8±16.3
Temora	65.0±54.9	15.4±9.5	104.2±49.9	15.0±15.5
Tortanus	<1.0	0.0	0.0	0.0
EUPHAUSIIDS				
Meganyctiphanes	0.0	<1.0	<1.0	<1.0
Thyssanoessa	15.0±5.0	8.0±6.5	24.0±11.5	3.6±3.7
OTHERS				
Amphipoda	0.0	0.0	0.0	0.0
Appendicularia	0.0	0.0	0.0	0.0
Balanus	<1.0	<1.0	6.5±2.1	<1.0
Carcinus	13.7±4.7	<1.0	9.3±5.1	2.0±1.0
Crangon	0.0	0.0	0.0	0.0
Ctenophora	<1.0	<1.0	<1.0	<1.0
Echinodermata	0.0	0.0	0.0	0.0
Evadnae	51.6±51.0	14.5±10.6	71.3±75.0	11.3±9.2
Insecta	<1.0	<1.0	0.0	0.0
Podon	<1.0	0.0	<1.0	<1.0
Polychaeta	<1.0	<1.0	0.0	<1.0
Sagitta	21.6±5.7	11.6±7.6	4.0±1.4	12.7±10.7
Scyphozoa	<1.0	<1.0	<1.0	0.0

Table 31. Horizontal tow data summary, Deer Island; $\bar{x}$ and SD reported as no/m^3 . Nobs refers to number of tows in which a given genus occurred.

Tow	Tide	Genus	$\bar{x}$	SD	Nobs
1A	Ebb	Acartia	7.150	1.0607	2
1A	Ebb	Aurelia	1.450	0.6364	2
1A	Ebb	Calanus	91.300	22.0617	2
1A	Ebb	Centropages	52.800	17.2534	2
1A	Ebb	Euphausiidae	1.000	.	1
1A	Ebb	Eurytemora	1.650	0.3536	2
1A	Ebb	Evadnae	3.900	.	1
1A	Ebb	Nanomia	1.400	.	1
1A	Ebb	Psuedocalanus	14.650	2.4749	2
1A	Ebb	Temora	3.000	2.8284	2
1A	Ebb	Zoea	1.000	0.0000	2
1A	Flood	Acartia	20.020	27.5981	5
1A	Flood	Aurelia	4.100	.	1
1A	Flood	Balanus	1.367	0.6351	3
1A	Flood	Calanus	114.160	57.8542	5
1A	Flood	Centropages	19.160	21.9106	5
1A	Flood	Euphausiidae	2.800	2.1182	4
1A	Flood	Eurytemora	3.250	3.7189	4
1A	Flood	Evadnae	7.580	11.2277	5
1A	Flood	Podon	4.650	2.1920	2
1A	Flood	Polychaete	1.000	.	1
1A	Flood	Psuedocalanus	22.840	19.4629	5
1A	Flood	Sagitta	1.000	0.0000	3
1A	Flood	Temora	5.200	4.3197	4
1A	Flood	Tortanus	1.133	0.1528	3
1A	Flood	Zoea	1.167	0.2887	3
1B	Ebb	Acartia	14.825	15.4189	4
1B	Ebb	Appendicularia	1.000	0.0000	2
1B	Ebb	Aurelia	1.000	0.0000	2
1B	Ebb	Balanus	2.233	1.2097	3
1B	Ebb	Calanus	101.967	74.2951	6
1B	Ebb	Centropages	6.320	7.3087	5
1B	Ebb	Euphausiidae	2.375	1.6661	4
1B	Ebb	Eurytemora	1.225	0.2872	4
1B	Ebb	Evadnae	4.720	3.7090	5
1B	Ebb	Megalops	1.000	.	1
1B	Ebb	Metridia	1.000	0.0000	2
1B	Ebb	Nanomia	1.250	0.3536	2
1B	Ebb	Podon	1.567	0.9815	3
1B	Ebb	Psuedocalanus	13.150	10.4630	6
1B	Ebb	Temora	1.725	1.1413	4
1B	Ebb	Tortanus	1.250	0.3536	2
1B	Ebb	Zoea	4.067	5.3116	3
1B	Flood	Acartia	4.900	1.6703	3
1B	Flood	Appendicularia	1.800	0.0000	2
1B	Flood	Aurelia	1.500	.	1
1B	Flood	Balanus	1.433	0.4041	3
1B	Flood	Calanus	57.867	13.9120	3
1B	Flood	Centropages	74.900	.	1
1B	Flood	Euphausiidae	2.267	1.7786	3
1B	Flood	Eurytemora	3.033	1.4189	3
1B	Flood	Evadnae	8.467	5.3144	3
1B	Flood	Metridia	1.000	.	1
1B	Flood	Nanomia	1.200	.	1
1B	Flood	Podon	1.200	.	1
1B	Flood	Psuedocalanus	13.533	7.6592	3
1B	Flood	Sagitta	1.500	.	1
1B	Flood	Temora	2.800	2.546	2
1B	Flood	Tortanus	3.300	.	1
1B	Flood	Zoea	2.650	0.354	2
2A	Ebb	Acartia	6.733	6.314	3

Table 31 (continued).

Tow	Tide	Genus	$\bar{x}$	SD	Nobs
2A	Ebb	Balanus	3.400	.	1
2A	Ebb	Calanus	84.400	51.020	3
2A	Ebb	Centropages	61.100	.	1
2A	Ebb	Euphausiidae	2.633	1.457	3
2A	Ebb	Eurytemora	1.367	0.635	3
2A	Ebb	Evadnae	2.700	0.566	2
2A	Ebb	Metridia	1.000	.	1
2A	Ebb	OITH	1.000	.	1
2A	Ebb	Psuedocalanus	18.300	6.745	3
2A	Ebb	Sagitta	2.100	.	1
2A	Ebb	Temora	7.200	.	1
2A	Ebb	Tortanus	1.000	0.000	2
2A	Ebb	Zoea	1.800	0.700	3
2A	Flood	Acartia	36.200	29.933	3
2A	Flood	Appendicularia	1.000	.	1
2A	Flood	Aurelia	1.000	.	1
2A	Flood	Balanus	1.467	0.808	3
2A	Flood	Calanus	142.533	141.637	3
2A	Flood	Centropages	5.900	6.647	2
2A	Flood	Euphausiidae	3.467	1.436	3
2A	Flood	Eurytemora	7.300	4.371	3
2A	Flood	Evadnae	29.067	46.024	3
2A	Flood	Podon	4.800	.	1
2A	Flood	Psuedocalanus	18.667	6.000	3
2A	Flood	Temora	1.100	0.141	2
2A	Flood	Tortanus	2.467	1.450	3
2A	Flood	Zoea	1.850	0.919	2
2B	Flood	Acartia	7.920	6.011	5
2B	Flood	Appendicularia	1.150	0.071	2
2B	Flood	Aurelia	5.100	.	1
2B	Flood	Balanus	1.200	.	1
2B	Flood	Calanus	100.120	60.616	5
2B	Flood	Centropages	39.425	32.741	4
2B	Flood	Cyclopoda	1.000	.	1
2B	Flood	Euphausiidae	1.140	0.313	5
2B	Flood	Eurytemora	3.280	1.564	5
2B	Flood	Evadnae	10.075	9.996	4
2B	Flood	OITH	1.000	.	1
2B	Flood	Psuedocalanus	22.880	9.182	5
2B	Flood	Temora	4.920	5.501	5
2B	Flood	Tortanus	1.000	0.000	3
2B	Flood	Zoea	1.700	0.616	4
2C	Ebb	Acartia	29.160	35.790	5
2C	Ebb	Appendicularia	1.000	.	1
2C	Ebb	Aurelia	1.000	.	1
2C	Ebb	Balanus	1.167	0.289	3
2C	Ebb	Calanus	113.260	85.118	5
2C	Ebb	Centropages	26.833	12.009	3
2C	Ebb	Euphausiidae	2.500	2.105	5
2C	Ebb	Eurytemora	1.125	0.250	4
2C	Ebb	Evadnae	5.300	3.752	4
2C	Ebb	Psuedocalanus	13.9200	11.9890	5
2C	Ebb	Sagitta	1.0000	0.0000	2
2C	Ebb	Temora	5.3000	0.2646	3
2C	Ebb	Tortanus	1.0000	0.0000	2
2C	Ebb	Zoea	2.1667	2.0207	3
3A	Flood	Acartia	17.4500	14.2573	8
3A	Flood	Appendicularia	1.0500	0.0707	2
3A	Flood	Aurelia	1.1000	0.1414	2
3A	Flood	Balanus	2.4750	1.4408	4
3A	Flood	Calanus	99.1500	48.6272	8
3A	Flood	Centropages	23.0714	27.8833	7
3A	Flood	Euphausiidae	2.4000	1.8248	7
3A	Flood	Eurytemora	15.6000	28.3133	6
3A	Flood	Evadnae	14.2625	18.0115	8

Table 31 (continued).

Tow	Tide	Genus	$\overline{x}$	SD	Nobs
3A	Flood	OITH	1.0000	.	1
3A	Flood	Podon	1.3500	0.4950	2
3A	Flood	Psuedocalanus	19.9375	18.3321	8
3A	Flood	Sagitta	1.0000	.	1
3A	Flood	Temora	4.8286	3.3435	7
3A	Flood	Tortanus	3.6800	5.8815	5
3A	Flood	Zoea	6.4500	8.1086	4
4A	Ebb	Acartia	5.8333	6.0302	3
4A	Ebb	Aurelia	1.0000	.	1
4A	Ebb	Balanus	1.4500	0.6364	2
4A	Ebb	Calanus	73.6000	18.3273	3
4A	Ebb	Centropages	6.9667	7.9563	3
4A	Ebb	Euphausiidae	1.6500	0.3536	2
4A	Ebb	Evadnae	3.1000	0.2828	2
4A	Ebb	Podon	1.8000	.	1
4A	Ebb	Psuedocalanus	9.9333	3.1786	3
4A	Ebb	Temora	1.5000	0.8660	3
4A	Ebb	Zoea	1.0000	0.0000	2
4A	Flood	Acartia	6.4000	7.6368	2
4A	Flood	Calanus	64.3500	32.3148	2
4A	Flood	Centropages	68.1000	.	1
4A	Flood	Euphausiidae	1.2000	.	1
4A	Flood	Eurytemora	1.4500	0.6364	2
4A	Flood	Evadnae	3.9000	4.1012	2
4A	Flood	Metridia	1.0000	.	1
4A	Flood	OITH	1.0000	.	1
4A	Flood	Psuedocalanus	7.7500	2.1920	2
4A	Flood	Temora	9.9000	.	1
4A	Flood	Tortanus	1.0000	.	1
4A	Flood	Zoea	1.0000	.	1
4B	Ebb	Acartia	4.7000	3.2696	3
4B	Ebb	Balanus	3.9000	.	1
4B	Ebb	Calanus	64.1000	50.1402	3
4B	Ebb	Centropages	22.5000	37.1525	3
4B	Ebb	Euphausiidae	1.9000	1.2728	2
4B	Ebb	Eurytemora	1.1333	0.2309	3
4B	Ebb	Evadnae	17.2000	24.7000	3
4B	Ebb	Nanomia	7.1000	.	1
4B	Ebb	Psuedocalanus	22.6000	4.6033	3
4B	Ebb	Temora	3.6500	3.7477	2
4B	Ebb	Tortanus	1.100	0.141	2
4B	Ebb	Zoea	3.750	2.333	2
4B	Flood	Acartia	12.800	11.314	2
4B	Flood	Aurelia	4.600	.	1
4B	Flood	Balanus	2.800	2.546	2
4B	Flood	Calanus	96.150	114.198	2
4B	Flood	Centropages	14.350	18.880	2
4B	Flood	Euphausiidae	2.550	1.909	2
4B	Flood	Eurytemora	1.750	0.778	2
4B	Flood	Evadnae	4.100	2.263	2
4B	Flood	Metridia	1.000	.	1
4B	Flood	Psuedocalanus	21.400	27.011	2
4B	Flood	Sagitta	2.300	.	1
4B	Flood	Temora	2.800	2.546	2
4B	Flood	Tortanus	1.000	.	1
4B	Flood	Zoea	1.650	0.636	2
4C	Ebb	Acartia	5.150	0.071	2
4C	Ebb	Appendicularia	1.600	.	1
4C	Ebb	Aurelia	1.000	.	1
4C	Ebb	Balanus	1.000	.	1
4C	Ebb	Calanus	125.900	126.289	2
4C	Ebb	Centropages	27.800	.	1
4C	Ebb	Euphausiidae	1.200	.	1
4C	Ebb	Evadnae	2.450	0.071	2

Table 31 (continued).

Tow	Tide	Genus	$\bar{x}$	SD	Nobs
4C	Ebb	Psuedocalanus	7.100	6.647	2
4C	Ebb	Temora	15.200	.	1
4C	Ebb	Tortanus	1.200	.	1
4C	Ebb	Zoea	1.000	.	1
4C	Flood	Acartia	11.575	18.131	4
4C	Flood	Aurelia	8.650	9.970	2
4C	Flood	Balanus	1.000	0.000	2
4C	Flood	Calanus	95.500	109.174	4
4C	Flood	Centropages	23.800	28.386	4
4C	Flood	Euphausiidae	1.000	0.000	2
4C	Flood	Eurytemora	1.767	1.328	3
4C	Flood	Evadnae	7.775	7.300	4
4C	Flood	Nanomia	1.000	.	1
4C	Flood	Calanus	1.000	.	1
4C	Flood	Podon	6.750	8.132	2
4C	Flood	Psuedocalanus	10.325	6.907	4
4C	Flood	Temora	2.867	2.139	3
4C	Flood	Tortanus	1.000	0.000	4
4C	Flood	Zoea	2.700	.	1
5A	Ebb	Acartia	7.457	9.638	7
5A	Ebb	Appendicularia	1.200	.	1
5A	Ebb	Aurelia	1.250	0.354	2
5A	Ebb	Balanus	1.140	0.313	5
5A	Ebb	Calanus	91.575	56.186	8
5A	Ebb	Centropages	33.180	28.211	5
5A	Ebb	Euphausiidae	1.350	0.612	6
5A	Ebb	Eurytemora	1.400	0.566	2
5A	Ebb	Evadnae	5.117	3.491	6
5A	Ebb	Nanomia	1.000	0.000	2
5A	Ebb	Podon	3.300	.	1
5A	Ebb	Psuedocalanus	17.387	5.785	8
5A	Ebb	Sagitta	1.000	.	1
5A	Ebb	Temora	3.840	3.034	5
5A	Ebb	Tortanus	1.000	.	1
5A	Ebb	Zoea	1.520	0.909	5
5A	Flood	Acartia	56.387	111.990	8
5A	Flood	ANOMALOC	1.000	.	1
5A	Flood	Appendicularia	1.000	0.000	2
5A	Flood	Balanus	1.180	0.205	5
5A	Flood	Calanus	74.650	78.232	8
5A	Flood	Centropages	36.000	46.473	8
5A	Flood	Euphausiidae	1.640	1.172	5
5A	Flood	Eurytemora	8.480	9.852	5
5A	Flood	Evadnae	45.750	97.972	8
5A	Flood	HARPACT	1.900	.	1
5A	Flood	Nanomia	1.000	.	1
5A	Flood	PARACalanus	1.000	.	1
5A	Flood	Podon	3.500	3.536	2
5A	Flood	Polychaete	1.000	.	1
5A	Flood	Psuedocalanus	13.175	11.258	8
5A	Flood	Temora	4.017	4.433	6
5A	Flood	Tortanus	2.917	2.106	6
5A	Flood	Zoea	1.925	1.850	4
6A	Ebb	Acartia	8.567	4.980	3
6A	Ebb	Appendicularia	1.000	.	1
6A	Ebb	Aurelia	1.250	0.354	2
6A	Ebb	Balanus	1.000	.	1
6A	Ebb	Calanus	58.025	23.655	4
6A	Ebb	Centropages	27.533	38.910	3
6A	Ebb	Euphausiidae	1.000	.	1
6A	Ebb	Evadnae	4.867	4.008	3
6A	Ebb	Podon	1.200	.	1
6A	Ebb	Psuedocalanus	10.975	5.836	4
6A	Ebb	Temora	2.650	1.626	2

Table 31 (continued).

Tow	Tide	Genus	$\bar{x}$	SD	Nobs
6A	Flood	Acartia	8.233	6.004	3
6A	Flood	Balanus	1.550	0.778	2
6A	Flood	Calanus	113.533	77.205	3
6A	Flood	Centropages	41.000	47.376	2
6A	Flood	Euphausiidae	1.250	0.354	2
6A	Flood	Eurytemora	3.450	3.323	2
6A	Flood	Evadnae	6.900	6.788	2
6A	Flood	HARPACT	1.100	.	1
6A	Flood	Psuedocalanus	38.200	38.360	3
6A	Flood	Temora	4.200	4.384	2
6A	Flood	Tortanus	1.200	0.265	3
6A	Flood	Zoea	1.250	0.354	2
6B	Ebb	Acartia	20.400	22.849	4
6B	Ebb	Balanus	2.000	1.732	3
6B	Ebb	Calanus	95.600	79.918	4
6B	Ebb	Centropages	17.800	20.191	3
6B	Ebb	Euphausiidae	1.467	0.808	3
6B	Ebb	Eurytemora	3.050	2.899	2
6B	Ebb	Evadnae	3.050	2.869	4
6B	Ebb	Metridia	1.300	.	1
6B	Ebb	Nanomia	1.000	.	1
6B	Ebb	OITH	1.000	.	1
6B	Ebb	Podon	2.550	2.1920	2
6B	Ebb	Psuedocalanus	13.675	7.9780	4
6B	Ebb	Sagitta	1.000	.	1
6B	Ebb	Temora	5.200	7.2746	3
6B	Ebb	Tortanus	3.100	.	1
6B	Ebb	Zoea	1.200	0.3464	3
6B	Flood	Acartia	18.200	12.8886	5
6B	Flood	Appendicularia	1.250	0.3536	2
6B	Flood	Aurelia	3.350	1.2021	2
6B	Flood	Balanus	1.380	0.5541	5
6B	Flood	Calanus	108.460	62.0516	5
6B	Flood	Centropages	28.400	41.7166	4
6B	Flood	Cyclopoda	1.100	.	1
6B	Flood	Euphausiidae	1.900	0.9354	5
6B	Flood	Eurytemora	2.420	1.4307	5
6B	Flood	Evadnae	9.060	10.2761	5
6B	Flood	Metridia	1.000	.	1
6B	Flood	OITH	1.100	.	1
6B	Flood	Podon	2.750	0.7778	2
6B	Flood	Psuedocalanus	14.940	9.9229	5
6B	Flood	Sagitta	1.000	.	1
6B	Flood	Temora	4.525	4.8630	4
6B	Flood	Tortanus	1.767	1.0017	3
6B	Flood	Zoea	3.300	3.4516	4
7A	Ebb	Acartia	18.662	31.1210	8
7A	Ebb	Aurelia	1.000	.	1
7A	Ebb	Balanus	1.000	0.0000	2
7A	Ebb	Calanus	108.112	76.0530	8
7A	Ebb	Centropages	21.233	26.6080	6
7A	Ebb	Euphausiidae	1.100	0.1414	5
7A	Ebb	Eurytemora	2.175	1.1087	4
7A	Ebb	Evadnae	5.967	3.3285	6
7A	Ebb	Metridia	1.000	.	1
7A	Ebb	Nanomia	1.000	.	1
7A	Ebb	PARACalanus	1.000	0.0000	2
7A	Ebb	Podon	3.400	.	1
7A	Ebb	Psuedocalanus	21.762	14.1709	8
7A	Ebb	Sagitta	1.150	0.2121	2
7A	Ebb	Temora	3.720	3.5245	5
7A	Ebb	Tortanus	2.367	2.3671	3
7A	Ebb	Zoea	1.843	1.2700	7
7A	Flood	Acartia	19.843	14.6907	7

Table 31 (continued).

Tow	Tide	Genus	$\bar{x}$	SD	Nobs
7A	Flood	Aurelia	1.000	0.0000	2
7A	Flood	Balanus	1.450	0.6364	2
7A	Flood	Calanus	78.000	44.6329	7
7A	Flood	Centropages	26.780	30.0259	5
7A	Flood	Cyclopoda	1.500	0.7071	2
7A	Flood	Euphausiidae	1.000	0.0000	2
7A	Flood	Eurytemora	7.980	7.2420	5
7A	Flood	Evadnae	14.567	14.8364	6
7A	Flood	Podon	1.450	0.6364	2
7A	Flood	Psuedocalanus	12.343	5.1604	7
7A	Flood	Temora	7.733	7.0152	3
7A	Flood	Tortanus	1.800	1.3856	3
7A	Flood	Zoea	1.680	1.5205	5

Table 32. Euphausiid length frequency data. Numbers per year class for each species are given; 1978 data courtesy of B. Braune.

Year	Month	Tow no.	*M. norvegica*			*T. inermis*		Total
			0	1	2	0	1	
1977	June	2			1	1		2
	July	3				2	2	4
	Aug	6		344	46	49	2	441
	Sep	8	1	387	59	275	285	1007
	Oct	6	42	1681	143	350	20	2236
1978	June	4					1	1
	July	4		19	87	5	1	112
	Aug	11	59	1673	3091	35	20	4878
	Sep	3		3	2	13	2	20
	Nov	1	57	308	57	5	5	432

Fig. 1. Map of the Quoddy region showing place names mentioned in the text.

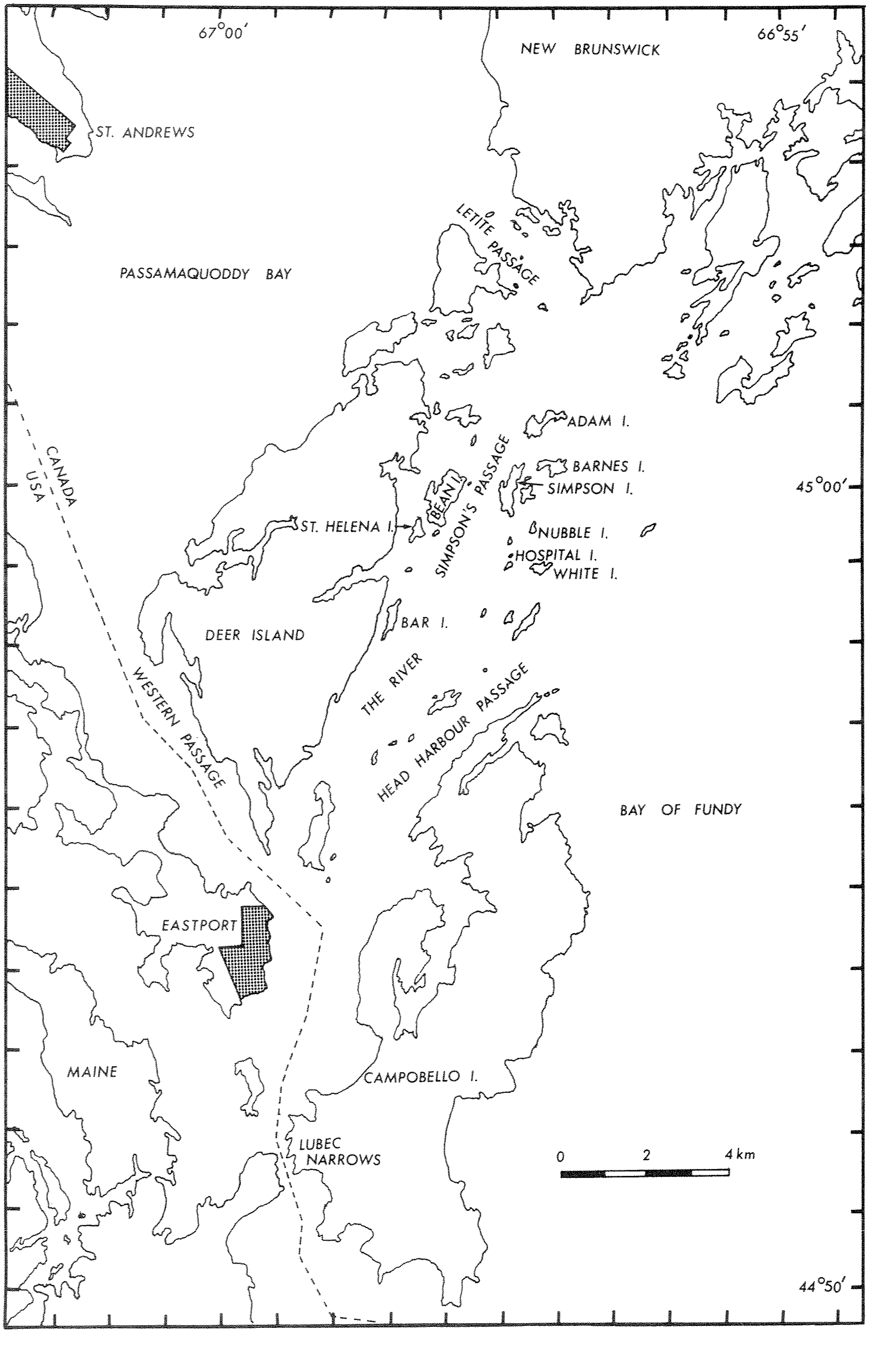
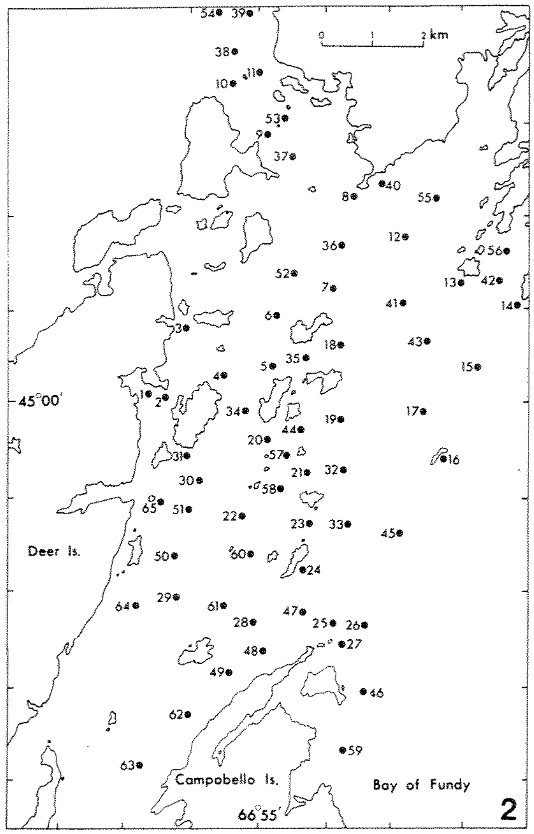

67°00′
NEW BRUNSWICK
66°55′
ST. ANDREWS
LETITE PASSAGE
PASSAMAQUODDY BAY
ADAM I.
BARNES I.
SIMPSON I.
45°00′
CANADA
USA
BEAN I.
SIMPSON'S PASSAGE
ST. HELENA I.
NUBBLE I.
HOSPITAL I.
WHITE I.
BAR I.
DEER ISLAND
THE RIVER
HEAD HARBOUR PASSAGE
WESTERN PASSAGE
BAY OF FUNDY
EASTPORT
MAINE
CAMPOBELLO I.
LUBEC NARROWS
0
2
4 km
44°50′

Fig. 2. Map showing the location of stations where temperatures were measured in 1977.

Fig. 3. Map showing the location of stations where temperatures were measured in 1978 and 1979.


0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
2

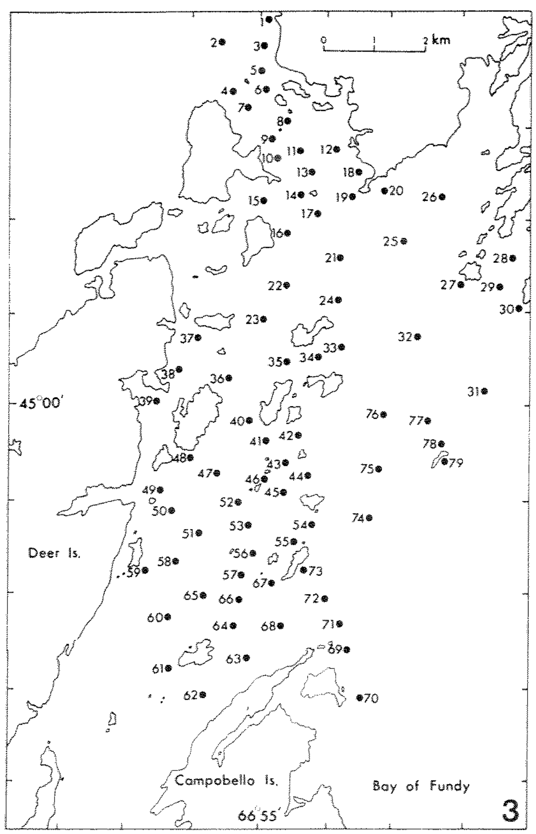
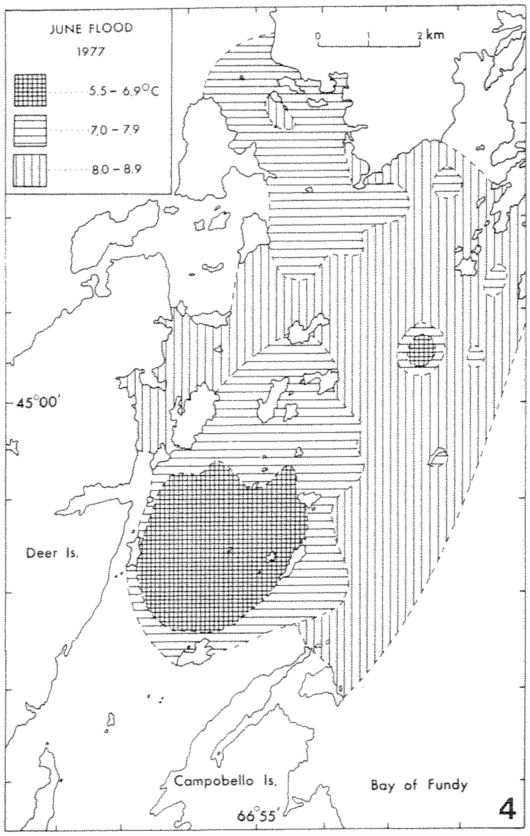
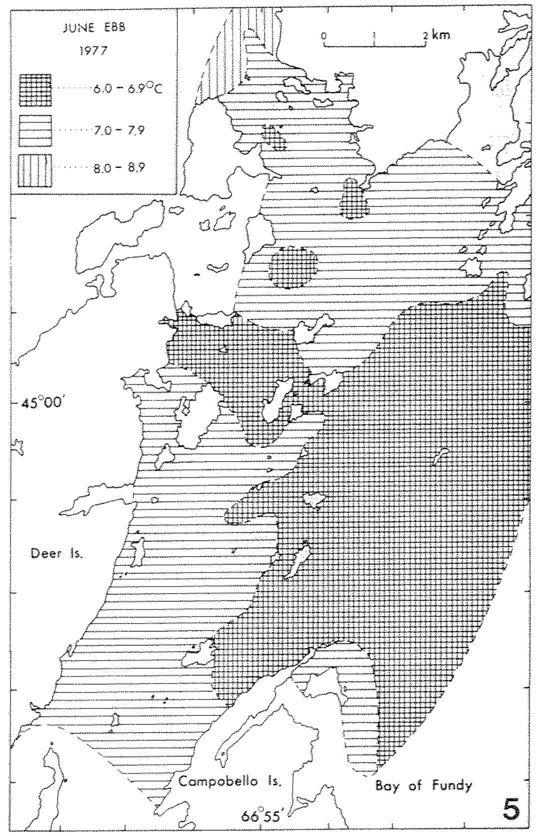
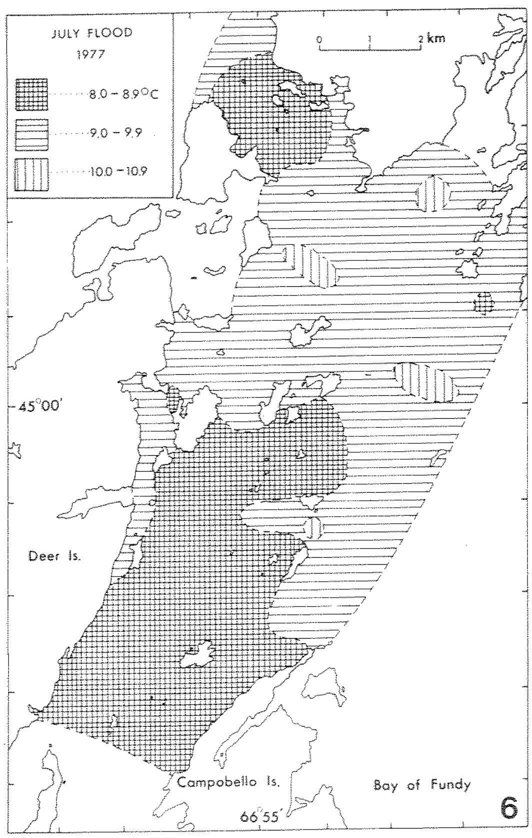
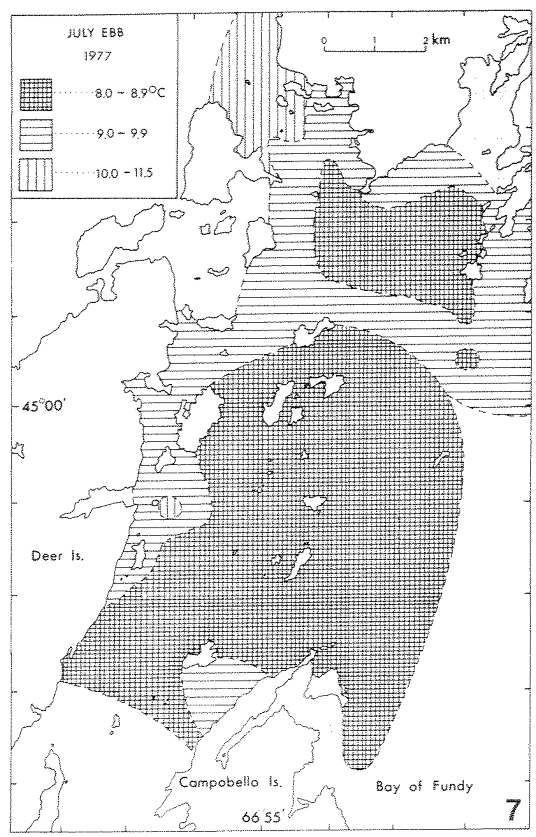

0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
3

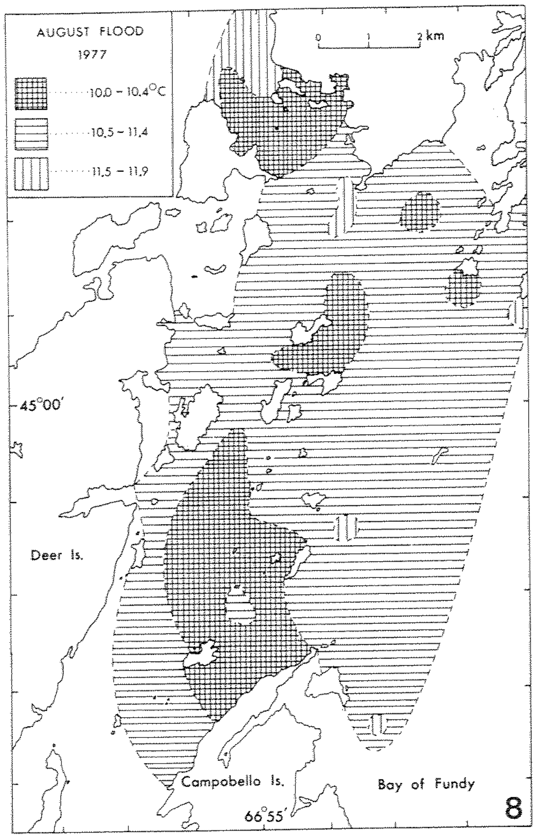
Fig. 4-29. Surface isotherm maps of the Inner Quoddy region by year, month and tide phase. The three temperature ranges were selected to keep the number of single station 'pockets' to a minimum. Blank areas represent areas for which no data were available.

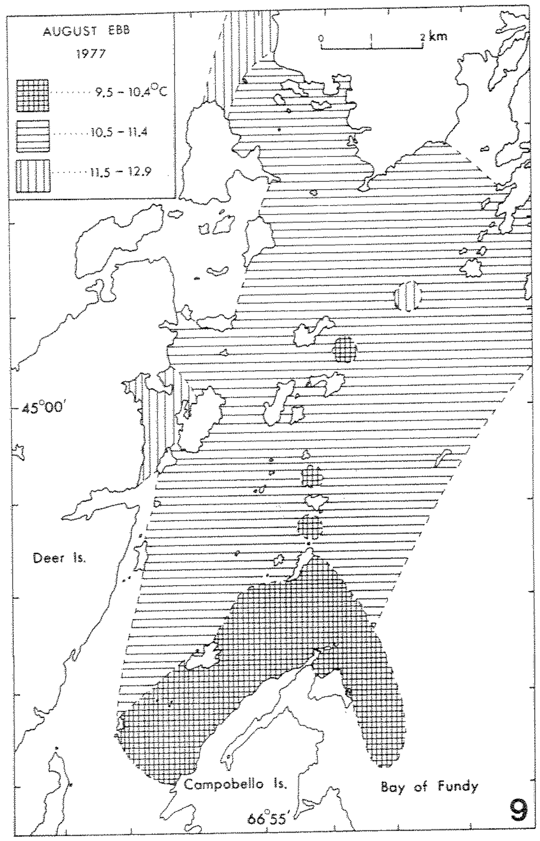

JUNE FLOOD
1977
5.5 - 6.9°C
7.0 - 7.9
8.0 - 8.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
4

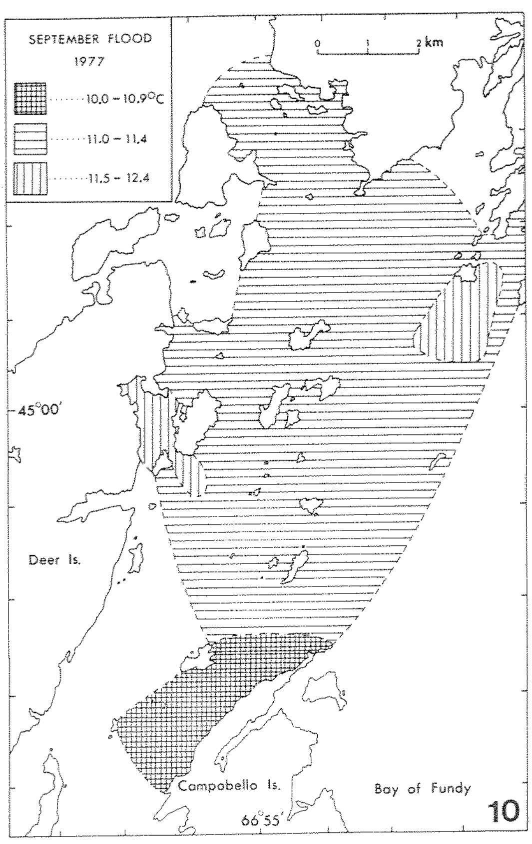

JUNE EBB
1977
6.0 - 6.9°C
7.0 - 7.9
8.0 - 8.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
5

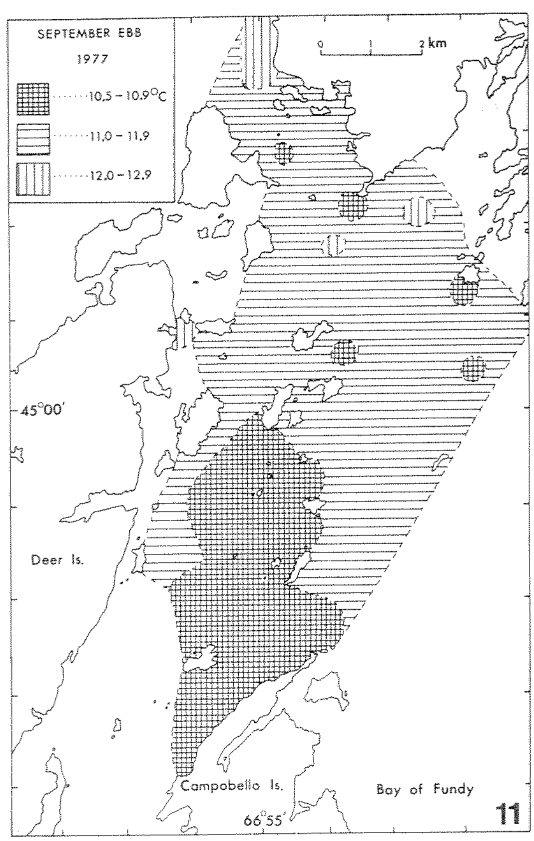

JULY FLOOD
1977
8.0 - 8.9°C
9.0 - 9.9
10.0 - 10.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
6

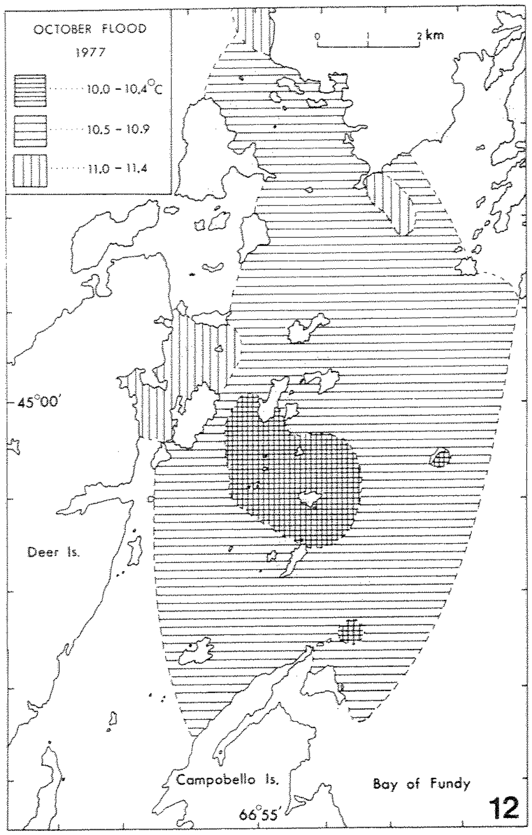

JULY EBB
1977
8.0 - 8.9°C
9.0 - 9.9
10.0 - 11.5
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
7

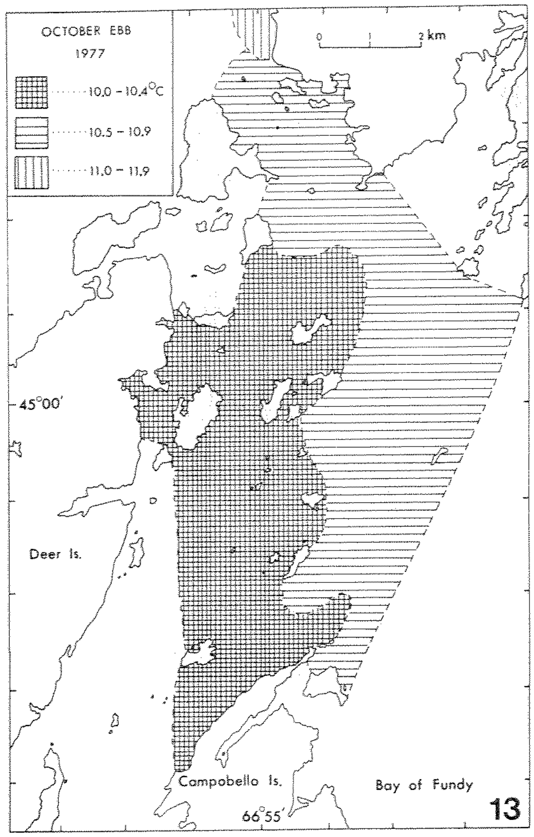

AUGUST FLOOD
1977
10.0 - 10.4°C
10.5 - 11.4
11.5 - 11.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
8

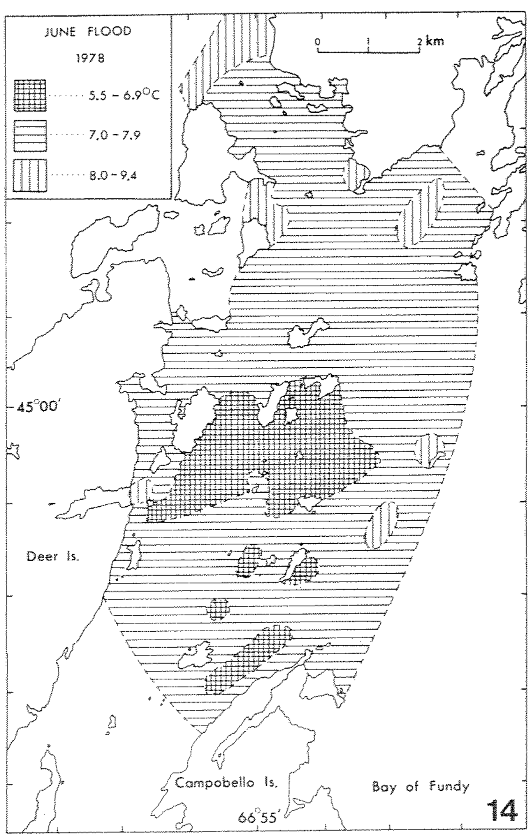

AUGUST EBB
1977
9.5 - 10.4°C
10.5 - 11.4
11.5 - 12.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
9

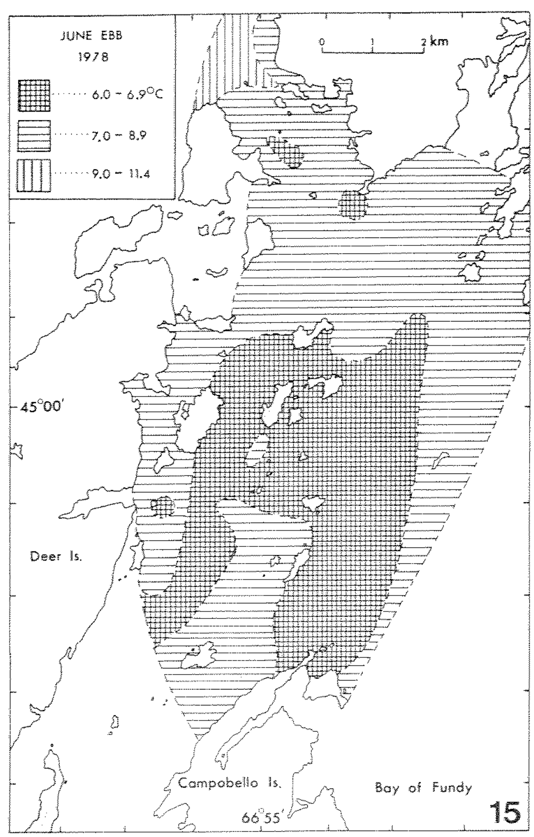

SEPTEMBER FLOOD
1977
10.0 - 10.9°C
11.0 - 11.4
11.5 - 12.4
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
10

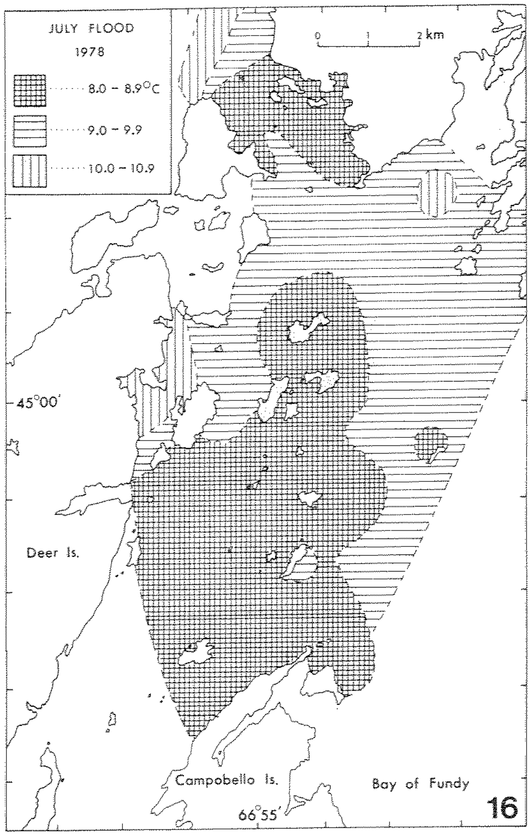

SEPTEMBER EBB
1977
10.5 - 10.9°C
11.0 - 11.9
12.0 - 12.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
11


OCTOBER FLOOD
1977
10.0 - 10.4°C
10.5 - 10.9
11.0 - 11.4
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
12

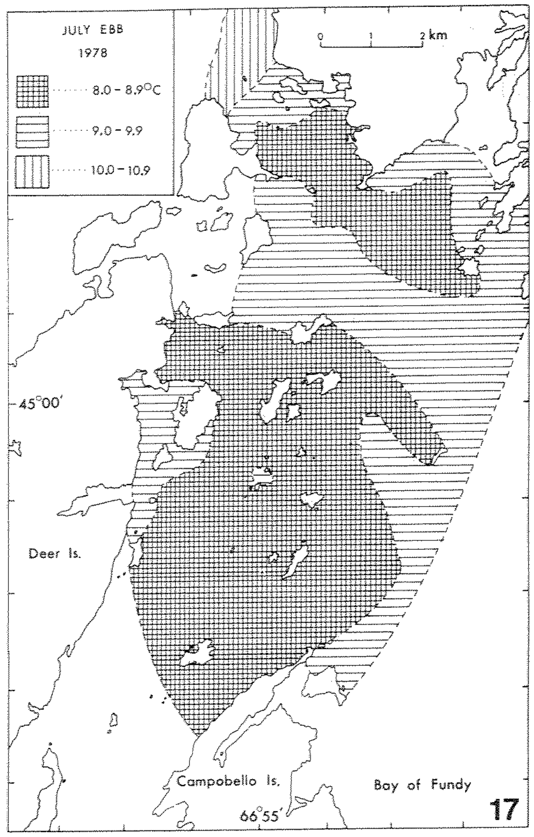

OCTOBER EBB
1977
10.0 - 10.4°C
10.5 - 10.9
11.0 - 11.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
13


JUNE FLOOD
1978
5.5 - 6.9°C
7.0 - 7.9
8.0 - 9.4
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
14

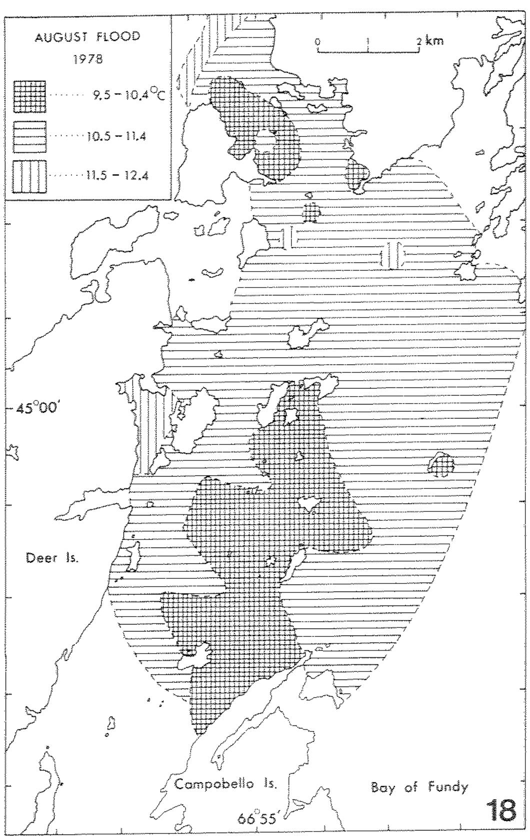

JUNE EBB
1978
6.0 - 6.9°C
7.0 - 8.9
9.0 - 11.4
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'
15


JULY FLOOD
1978
8.0 - 8.9°C
9.0 - 9.9
10.0 - 10.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'

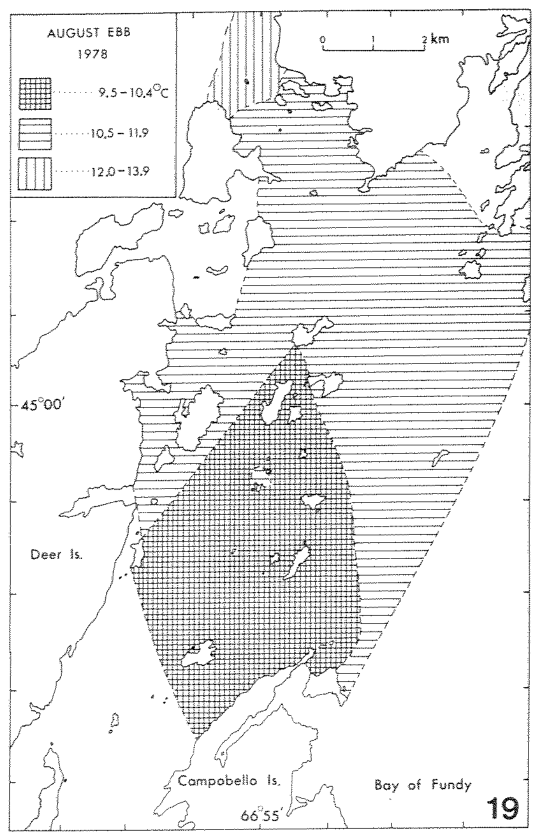
16


JULY EBB
1978
8.0 - 8.9°C
9.0 - 9.9
10.0 - 10.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'

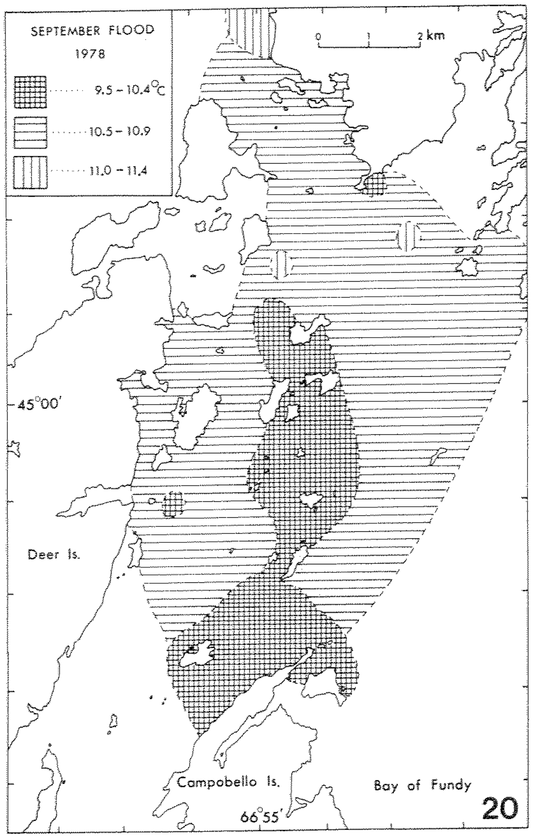
17


AUGUST FLOOD
1978
9.5 - 10.4°C
10.5 - 11.4
11.5 - 12.4
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'

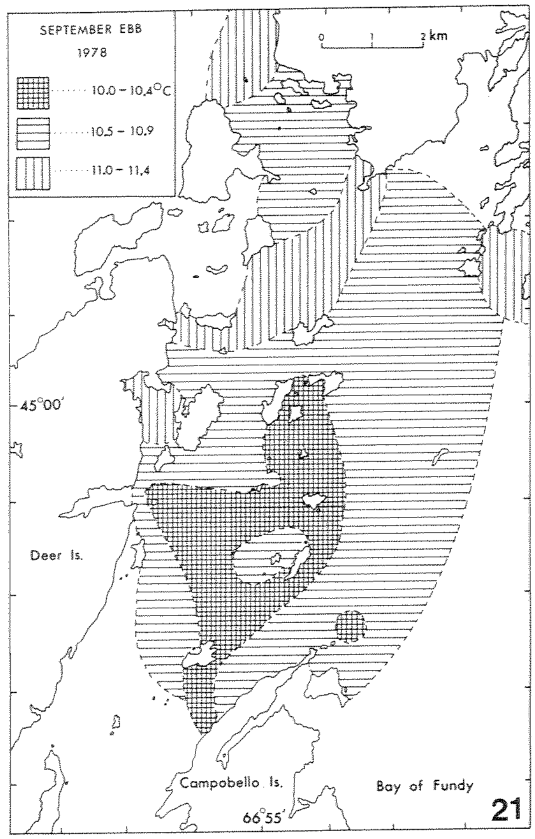
18


AUGUST EBB
1978
9.5 - 10.4°C
10.5 - 11.9
12.0 - 13.9
0 1 2 km
45°00'
Deer Is.
Campobello Is.
Bay of Fundy
66°55'

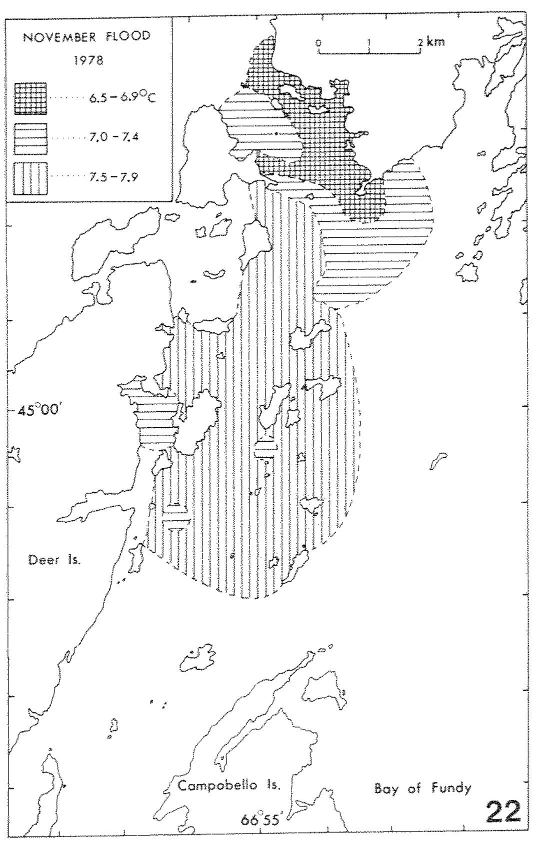
19


SEPTEMBER FLOOD
1978
9.5 – 10.4°C
10.5 – 10.9
11.0 – 11.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′

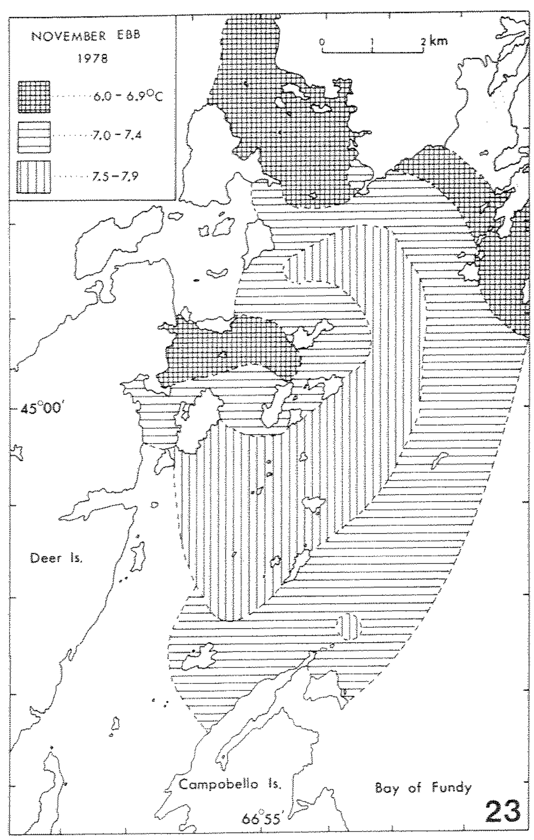
20


SEPTEMBER EBB
1978
10.0 – 10.4°C
10.5 – 10.9
11.0 – 11.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′

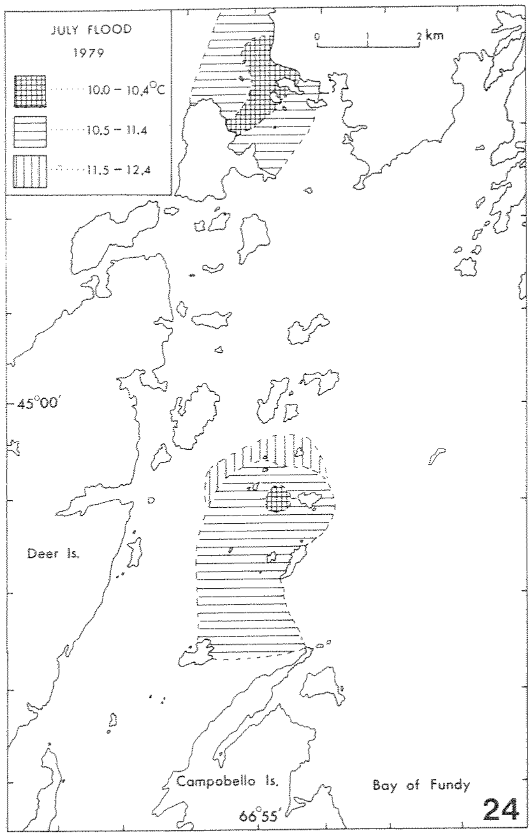
21

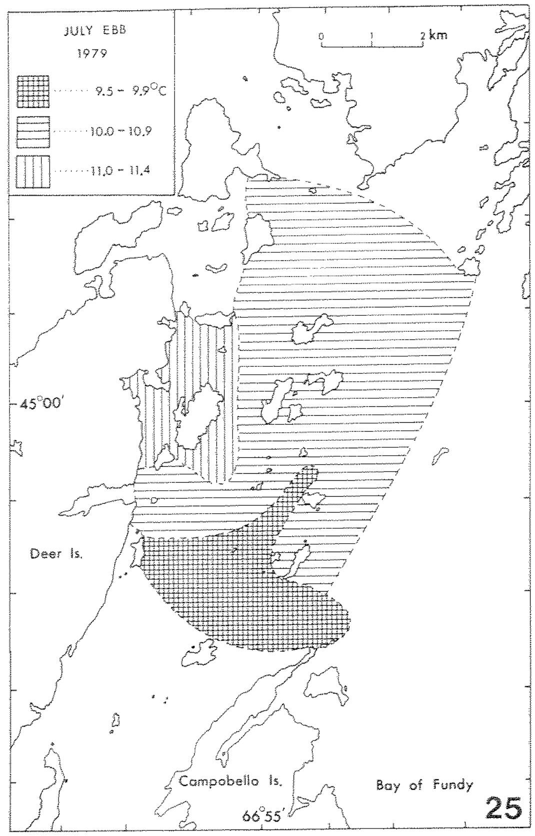

NOVEMBER FLOOD
1978
6.5 – 6.9°C
7.0 – 7.4
7.5 – 7.9
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′

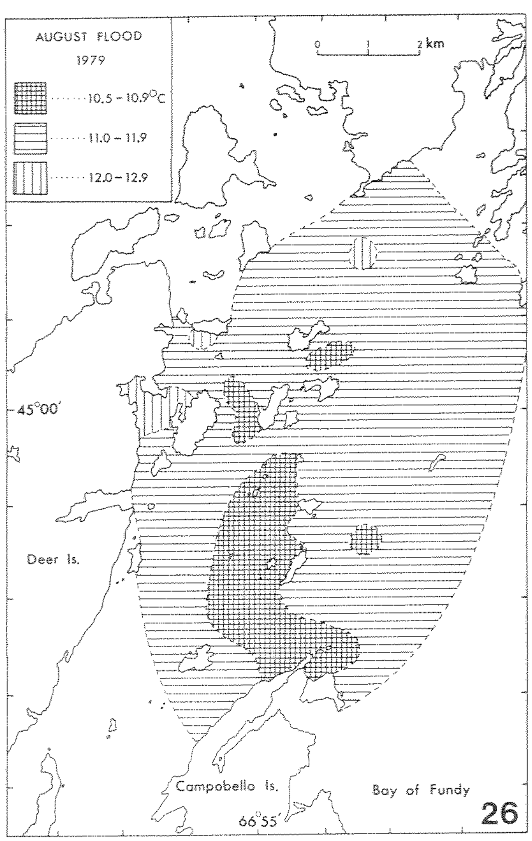
22

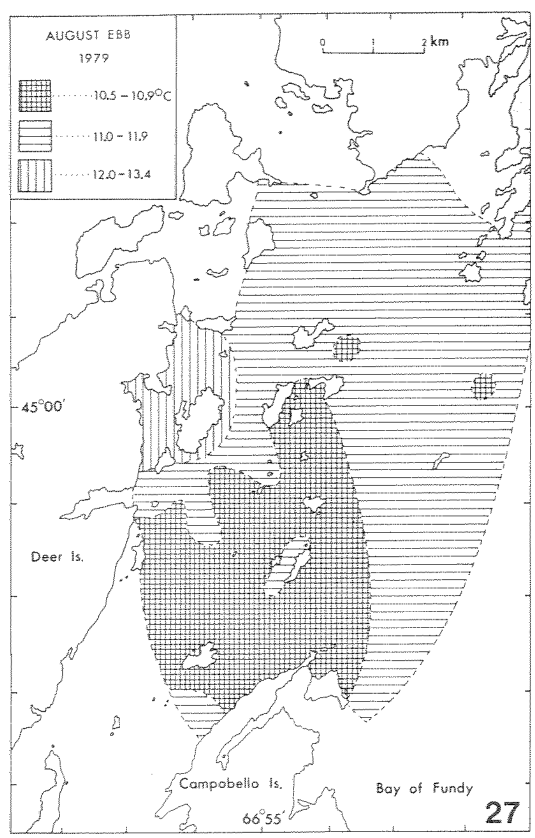

NOVEMBER EBB
1978
6.0 – 6.9°C
7.0 – 7.4
7.5 – 7.9
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′

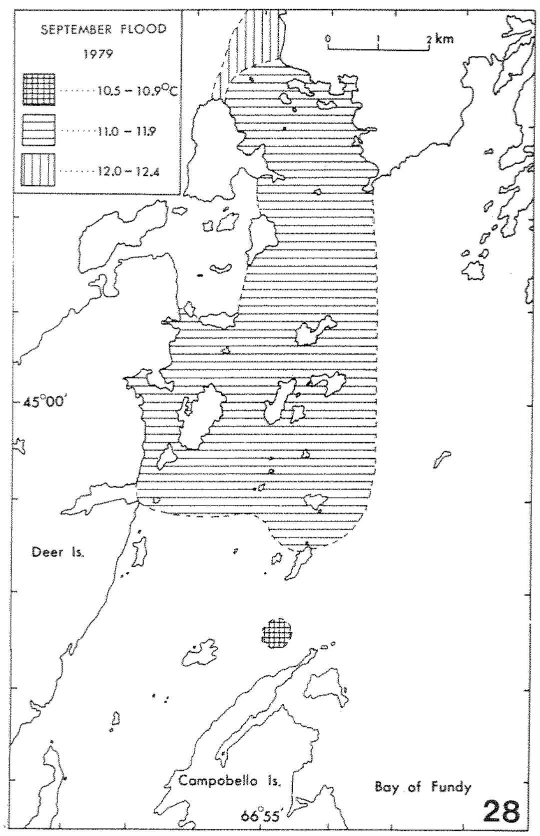
23

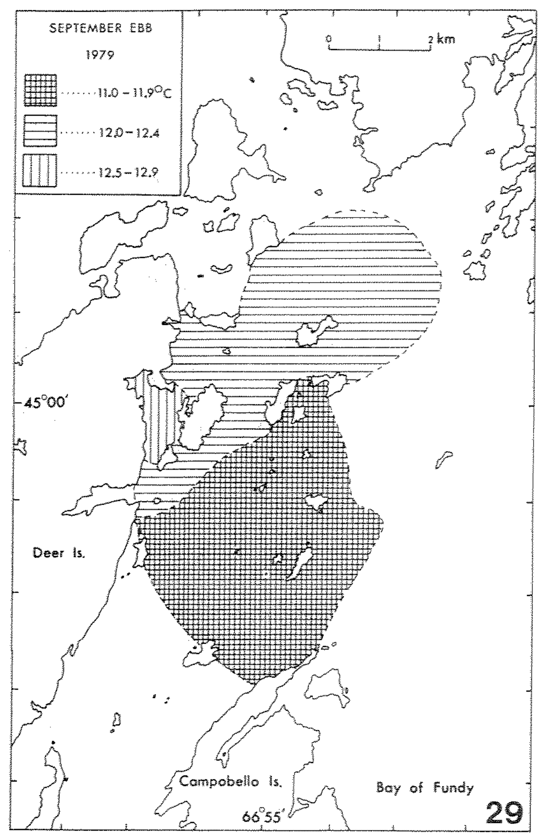

JULY FLOOD
1979
10.0 - 10.4°C
10.5 - 11.4
11.5 - 12.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
24


JULY EBB
1979
9.5 - 9.9°C
10.0 - 10.9
11.0 - 11.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
25


AUGUST FLOOD
1979
10.5 - 10.9°C
11.0 - 11.9
12.0 - 12.9
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
26


AUGUST EBB
1979
10.5 - 10.9°C
11.0 - 11.9
12.0 - 13.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
Bay of Fundy
66°55′
27


SEPTEMBER FLOOD
1979
10.5 – 10.9°C
11.0 – 11.9
12.0 – 12.4
0 1 2 km
45°00′
Deer Is.
Campobello Is.
66°55′
Bay of Fundy
28


SEPTEMBER EBB
1979
11.0 – 11.9°C
12.0 – 12.4
12.5 – 12.9
0 1 2 km
45°00′
Deer Is.
Campobello Is.
66°55′
Bay of Fundy
29

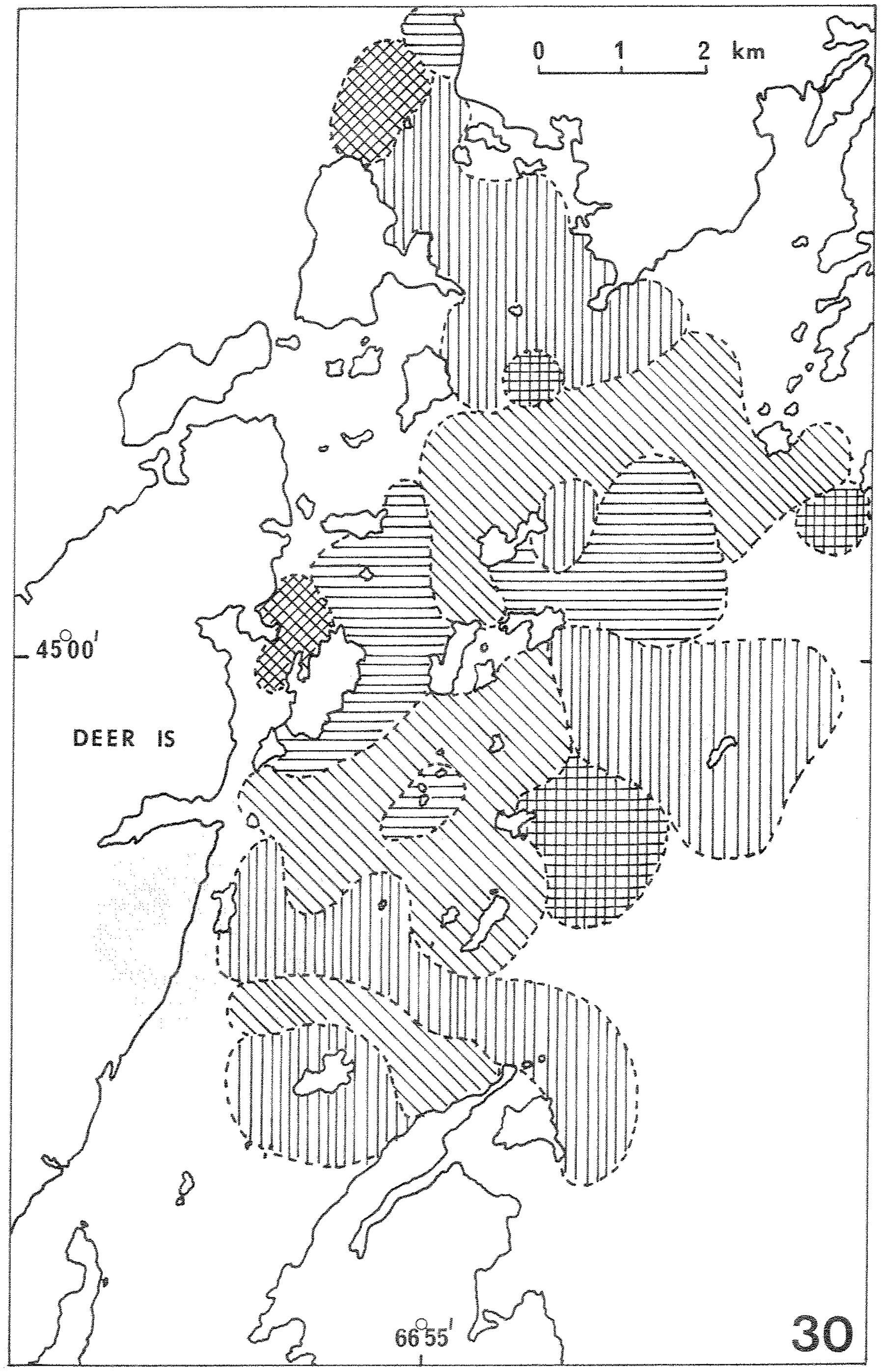


Fig. 30. Cluster map of temperature readings for the ebb tide.

Cluster 1 -
Cluster 2 -
Cluster 3 -
Cluster 4 -
Cluster 5 -

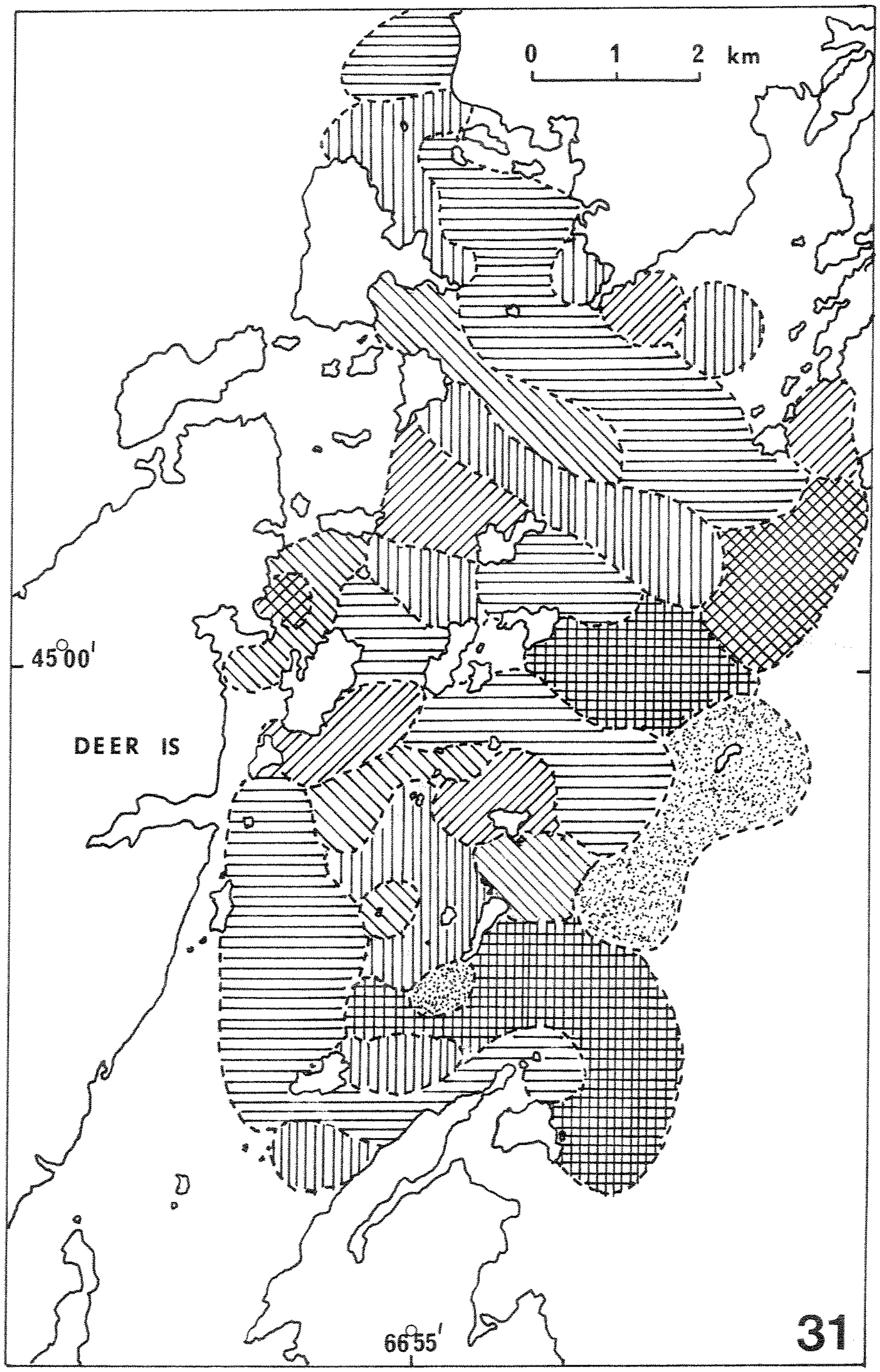


Fig. 31. Cluster map of temperature readings for the flood tide.

Cluster 1 - Cluster 5 -
Cluster 2 - Cluster 6 -
Cluster 3 - Cluster 7 -
Cluster 4 -

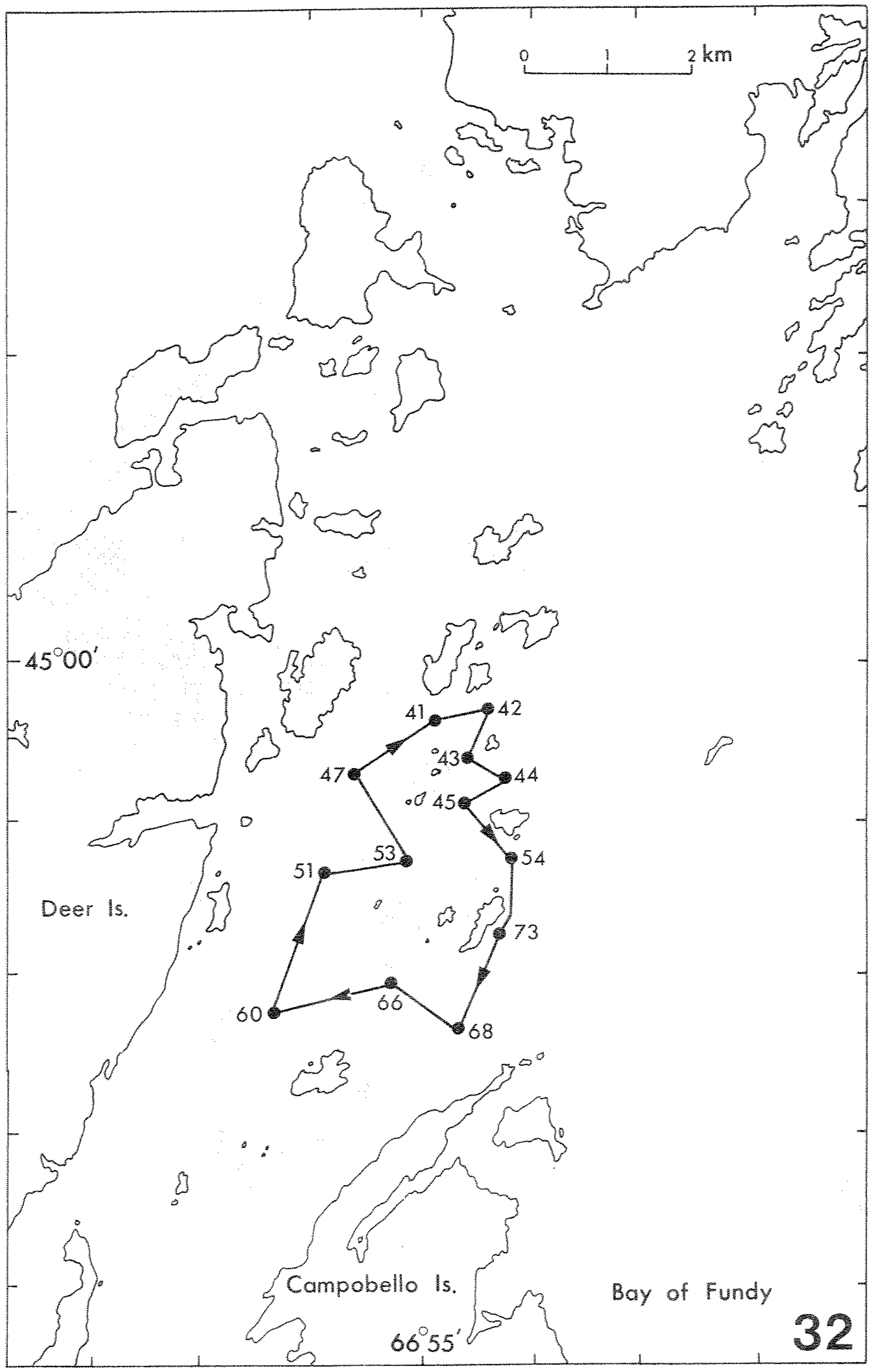
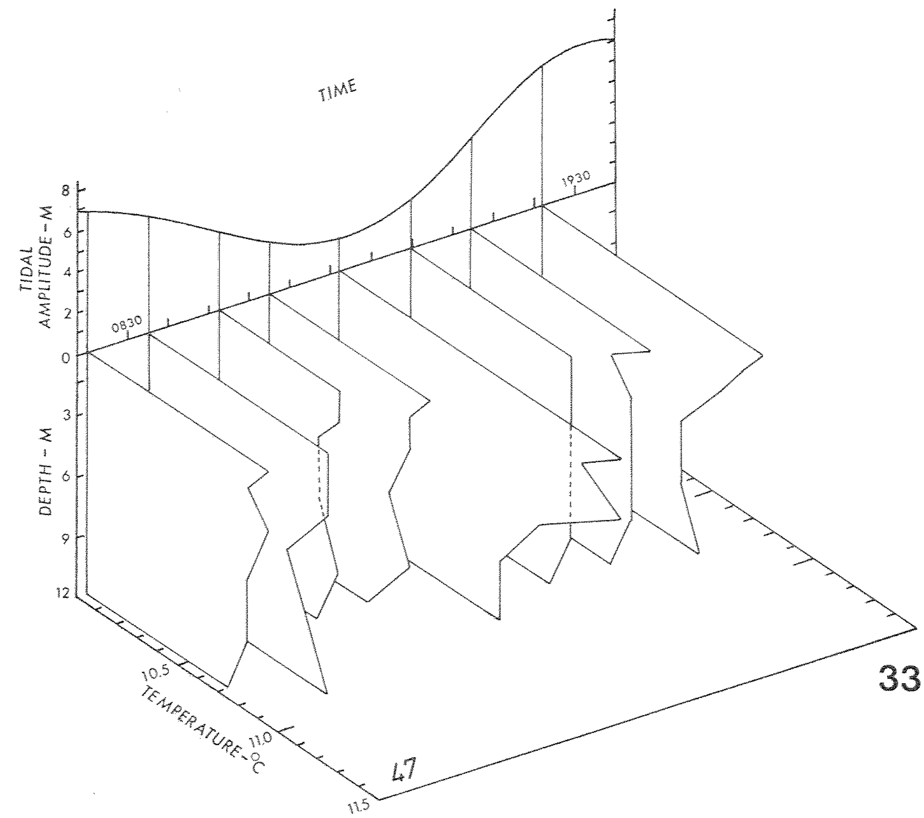
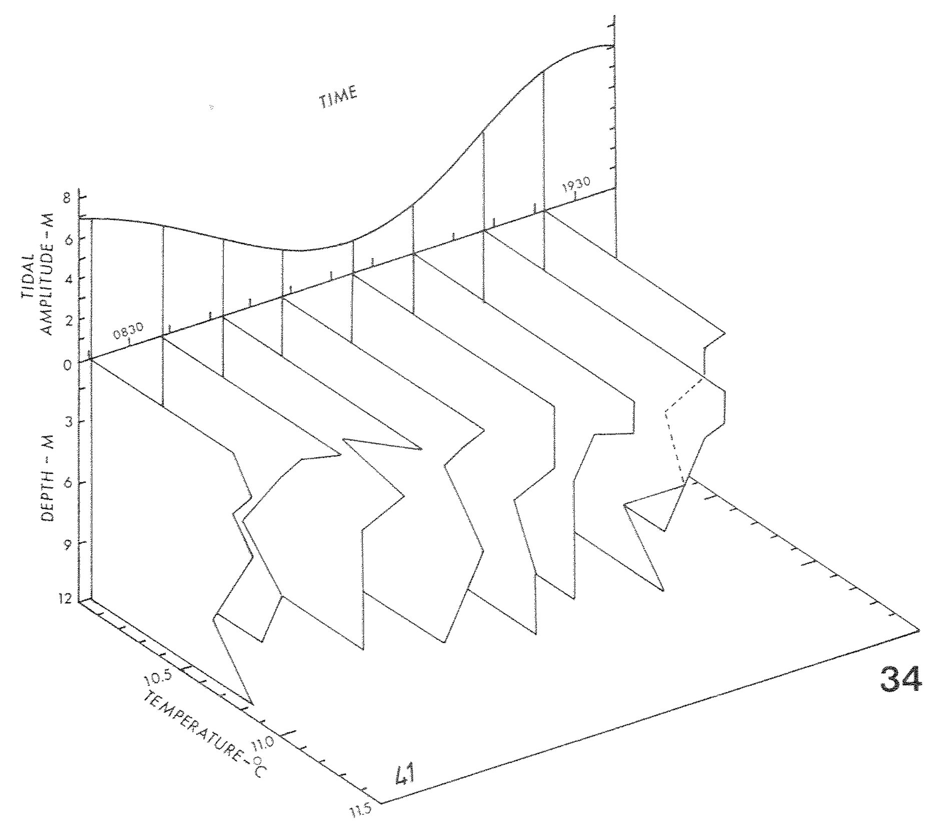


Fig. 32. Map showing cruise track and the location of stations monitored during one complete tidal cycle. Station numbers correspond to those given in Fig. 3.

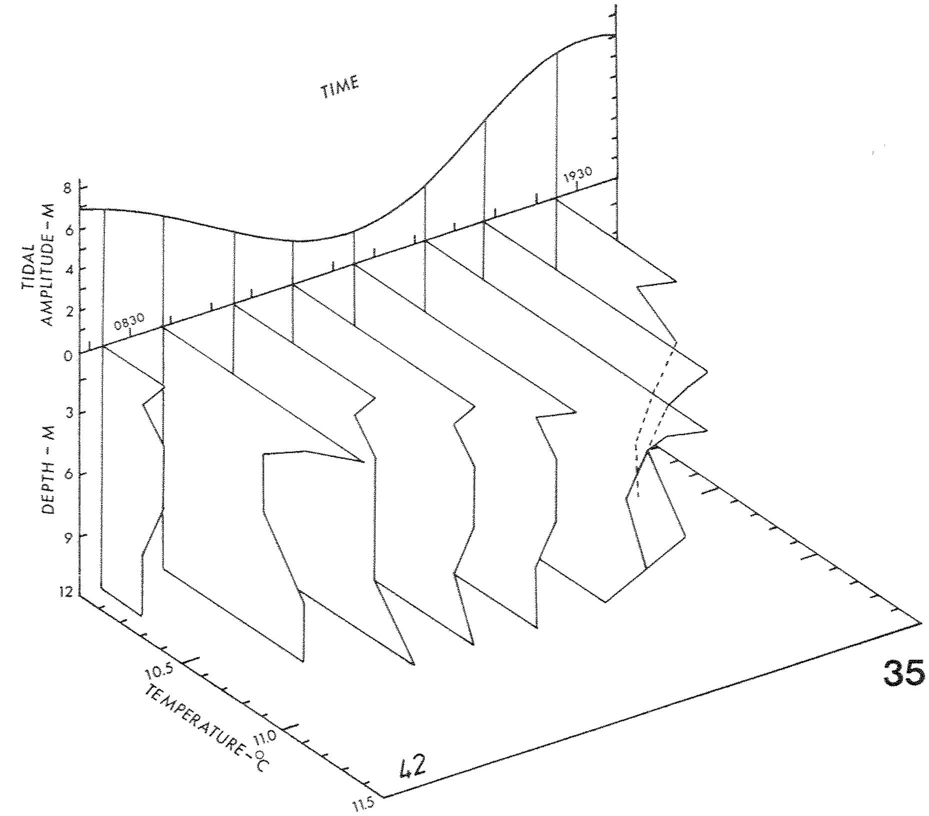
Fig. 33-45. Near-surface temperature profiles constructed from readings obtained at 0, 1.5, 3.0, 6.0, 9.0, and 12.0 m during one complete tidal cycle. Time of day and tide phase shown on the z-axis. Station number is given on the lower left corner of the x-plane.


TIME
1930
0830
TIDAL AMPLITUDE - M
DEPTH - M
TEMPERATURE - °C
10.5
11.0
11.5
47

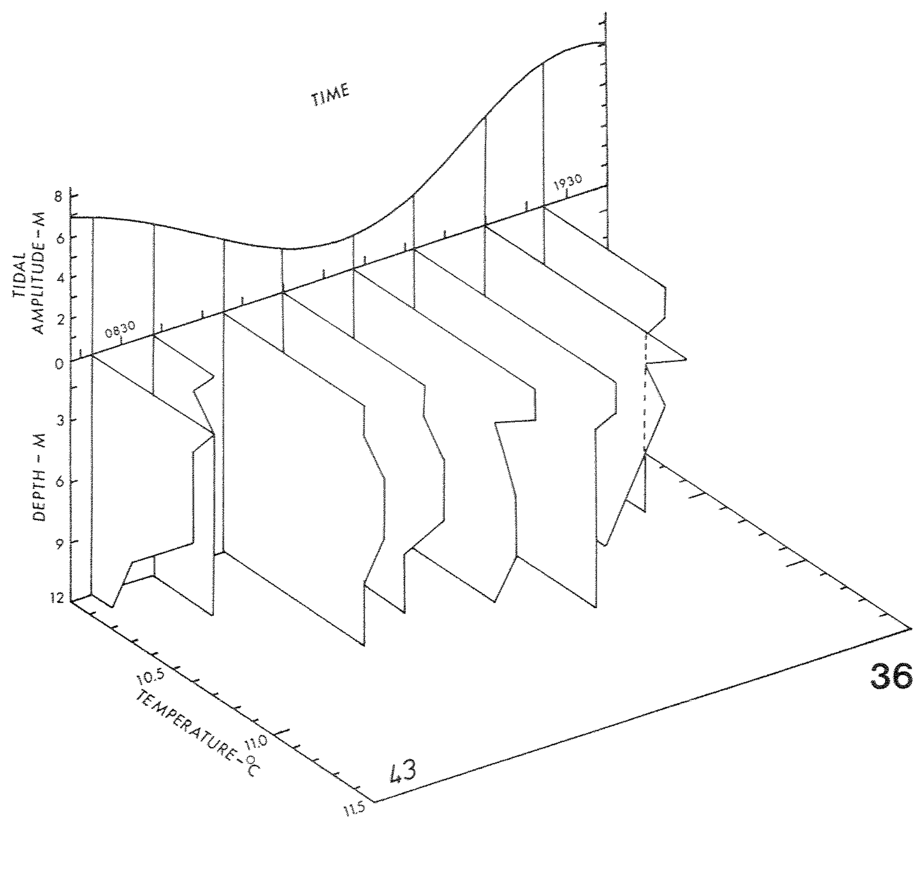
33


TIME
1930
0830
TIDAL AMPLITUDE - M
DEPTH - M
TEMPERATURE - °C
10.5
11.0
11.5
41

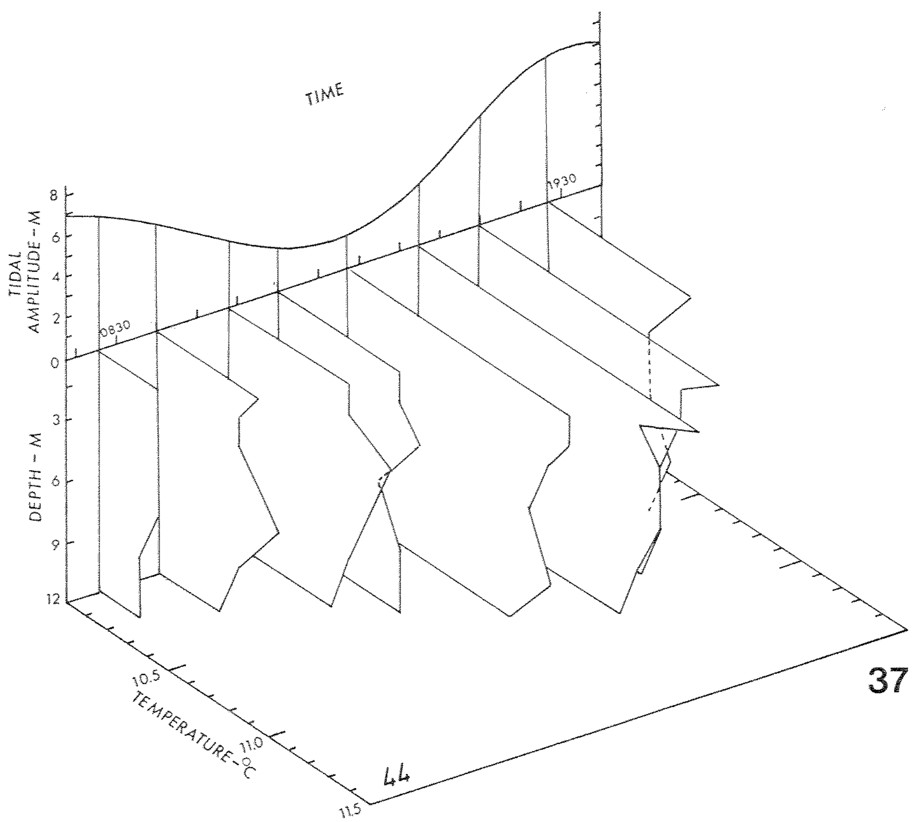
34


TIME
1930
0830
TIDAL AMPLITUDE - M
8
6
4
2
0
DEPTH - M
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
42

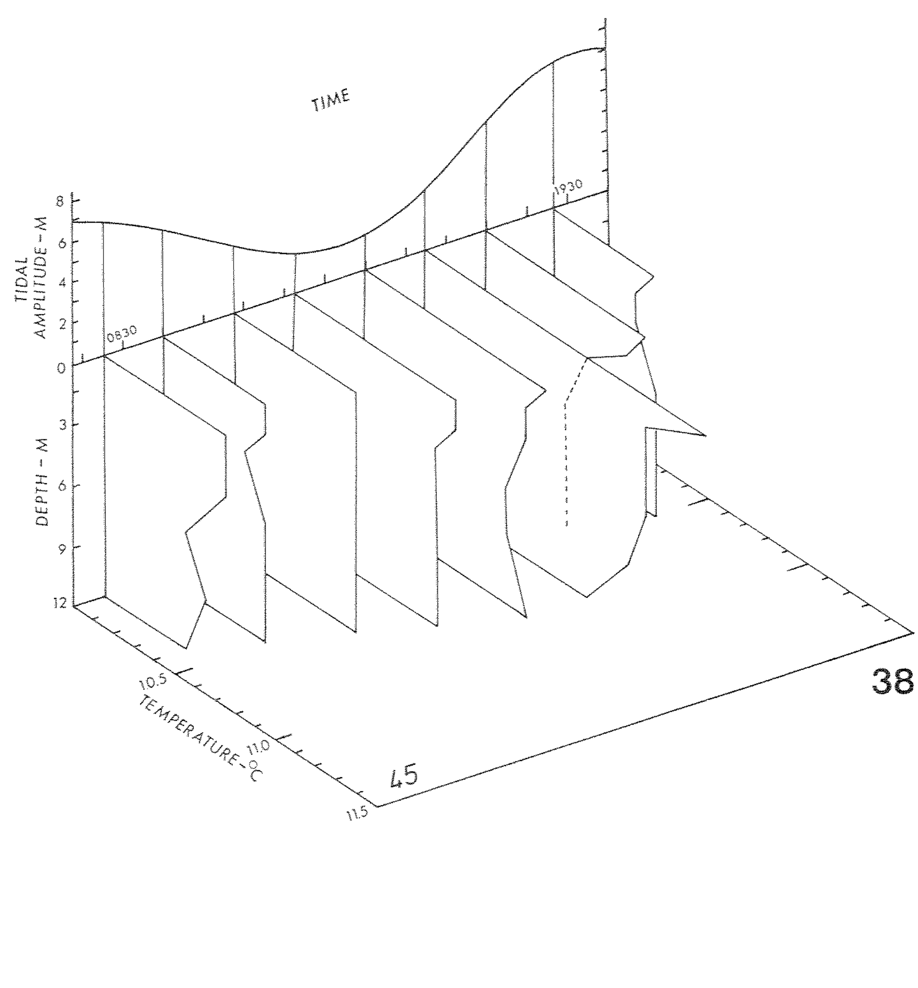
35


TIME
1930
0830
TIDAL AMPLITUDE - M
8
6
4
2
0
DEPTH - M
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
43

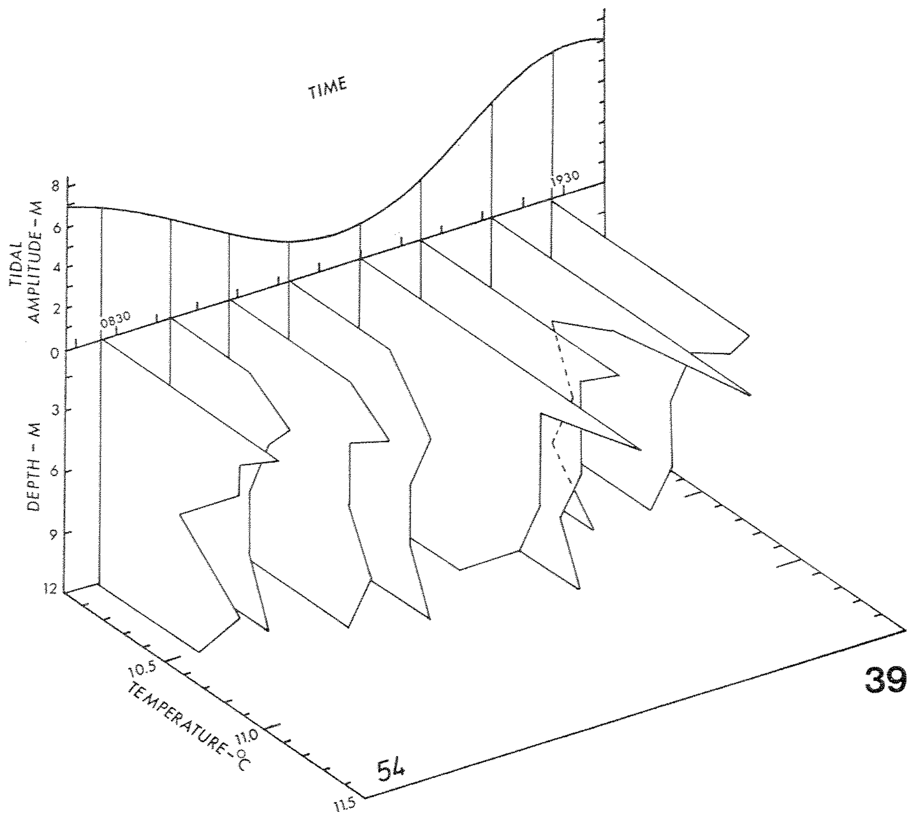
36


TIME
TIDAL AMPLITUDE - M
DEPTH - M
0830
1930
8
6
4
2
0
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
44

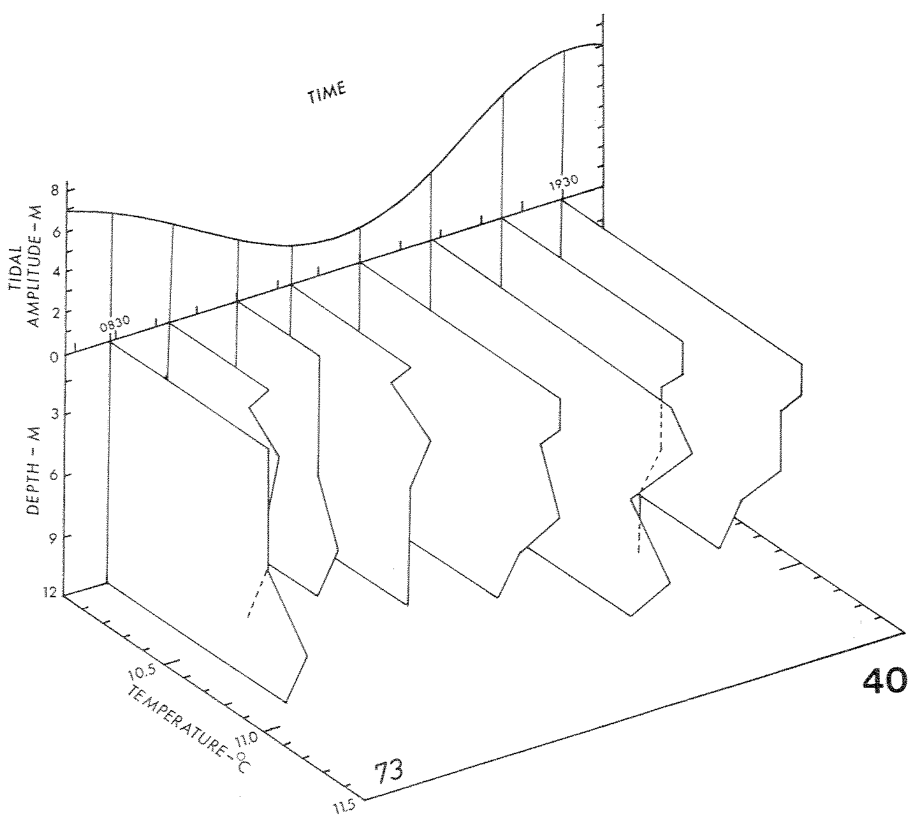
37


TIME
TIDAL AMPLITUDE - M
DEPTH - M
0830
1930
8
6
4
2
0
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
45

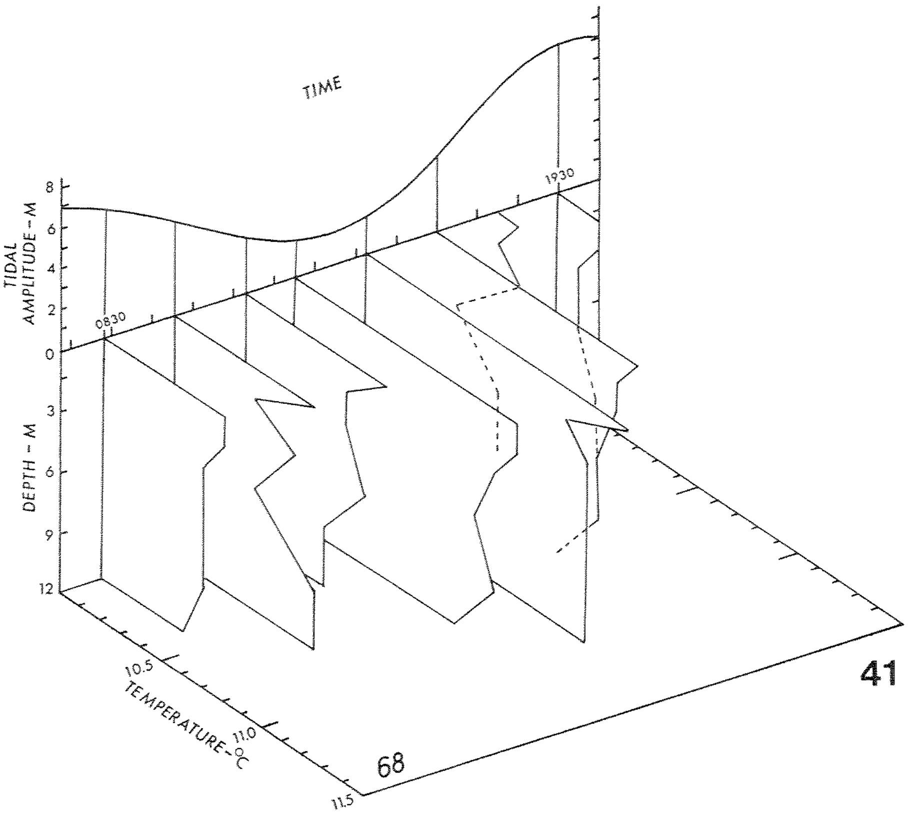
38


TIME
1930
0830
TIDAL AMPLITUDE - M
DEPTH - M
8
6
4
2
0
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
54

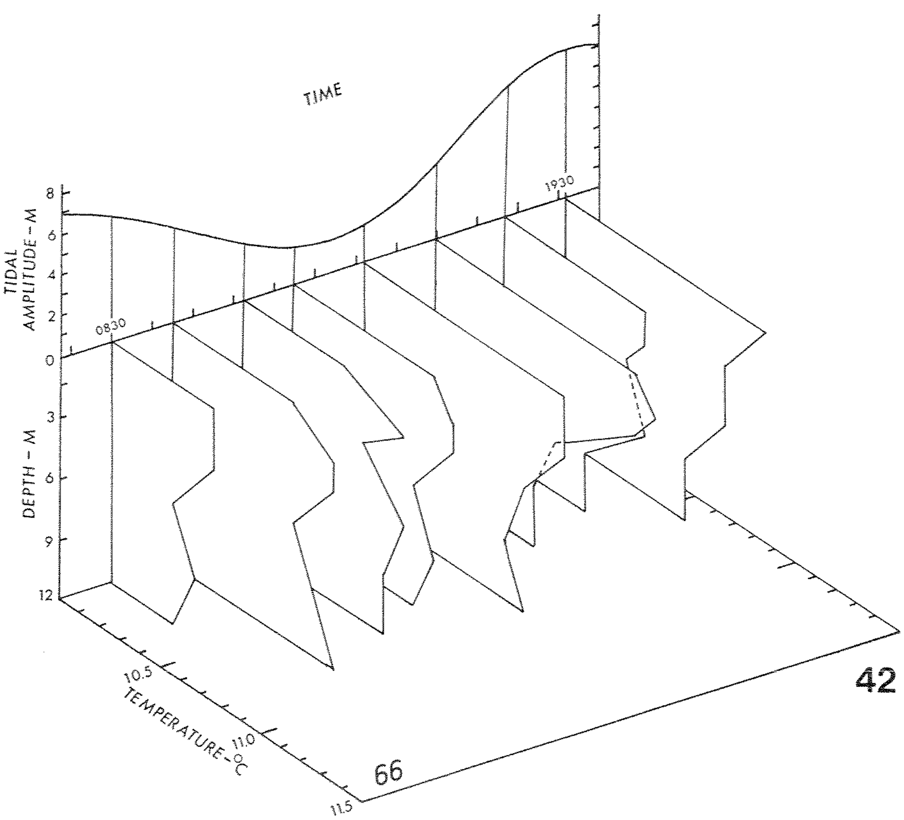
39


TIME
1930
0830
TIDAL AMPLITUDE - M
DEPTH - M
8
6
4
2
0
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
73

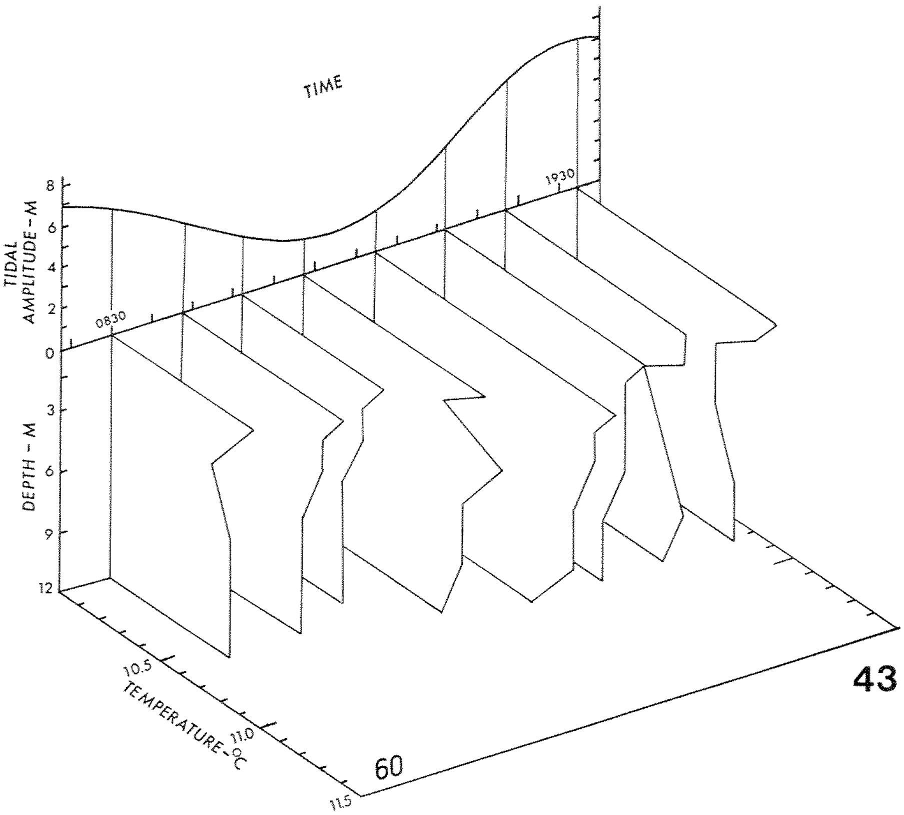
40


TIME
1930
8
6
4
2
0
TIDAL AMPLITUDE - M
0830
3
6
9
12
DEPTH - M
10.5
11.0
11.5
TEMPERATURE - °C
68

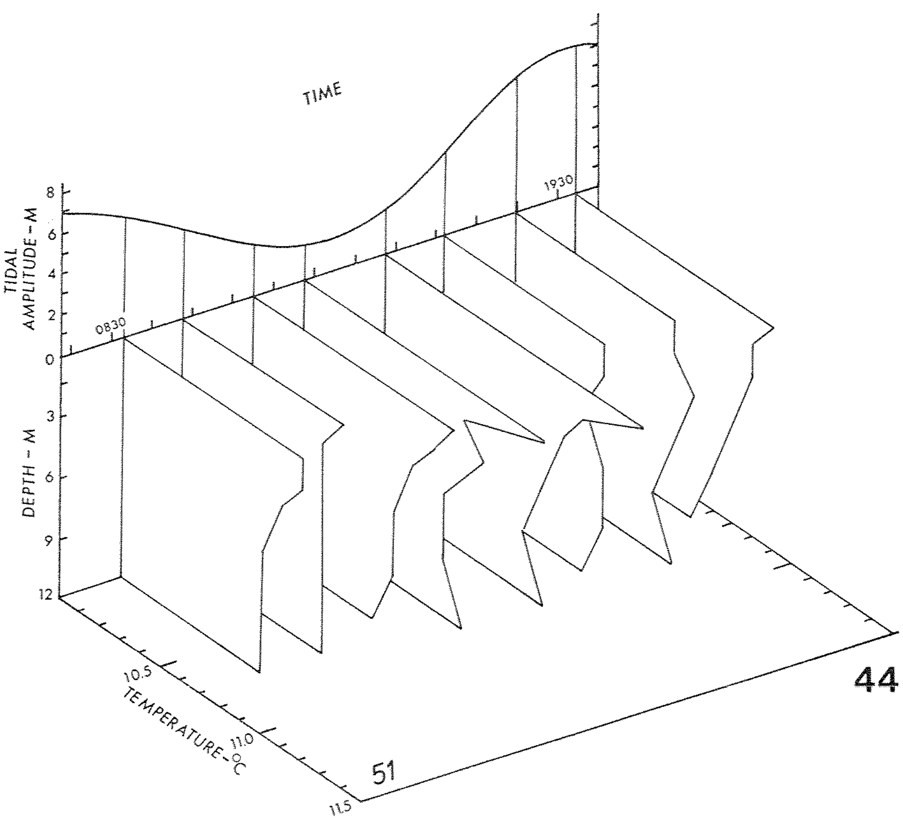
41


TIME
1930
8
6
4
2
0
TIDAL AMPLITUDE - M
0830
3
6
9
12
DEPTH - M
10.5
11.0
11.5
TEMPERATURE - °C
66

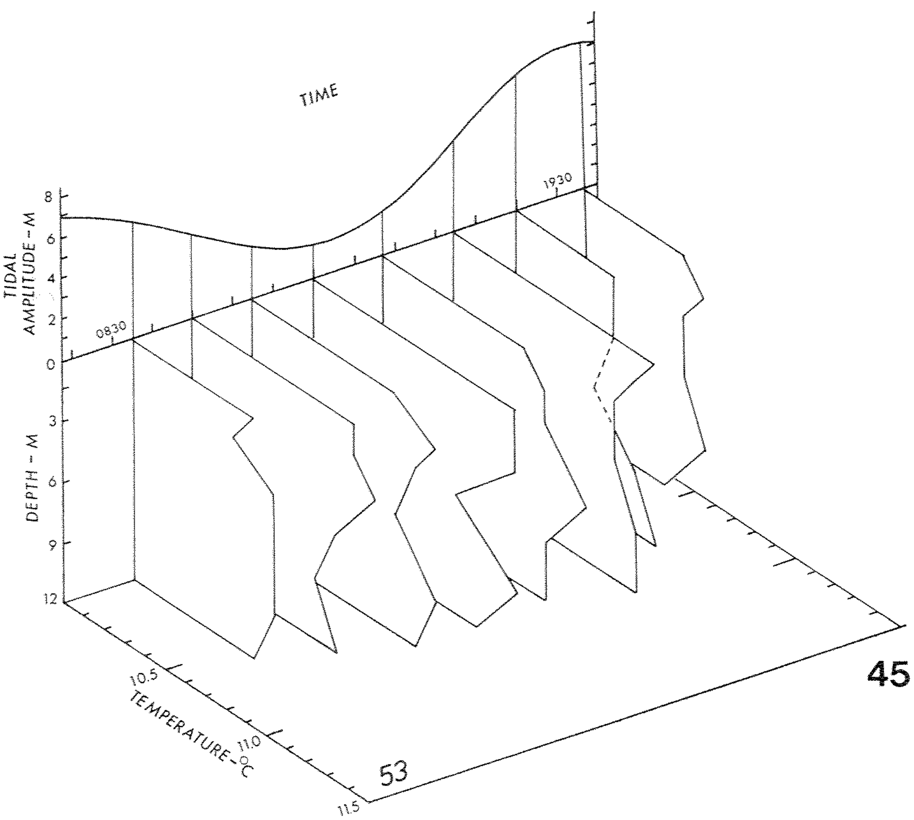
42


TIME
TIDAL AMPLITUDE - M
8
6
4
2
0
0830
1930
DEPTH - M
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
60

43


TIME
TIDAL AMPLITUDE - M
8
6
4
2
0
0830
1930
DEPTH - M
3
6
9
12
10.5
11.0
11.5
TEMPERATURE - °C
51

44


TIME
TIDAL AMPLITUDE - M
8
6
4
2
0
3
6
9
12
DEPTH - M
0830
1930
10.5
11.0
11.5
TEMPERATURE - °C
53
45

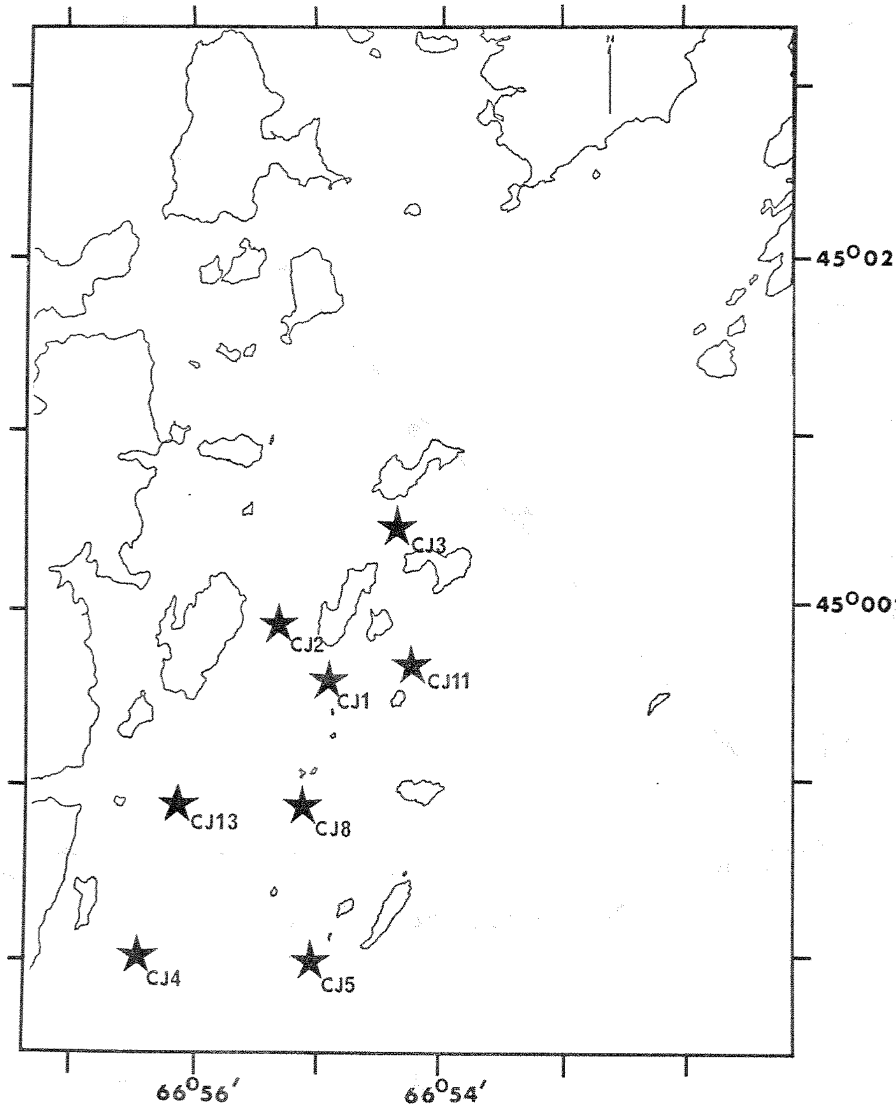


Fig. 46. Map showing positions of current meter stations.

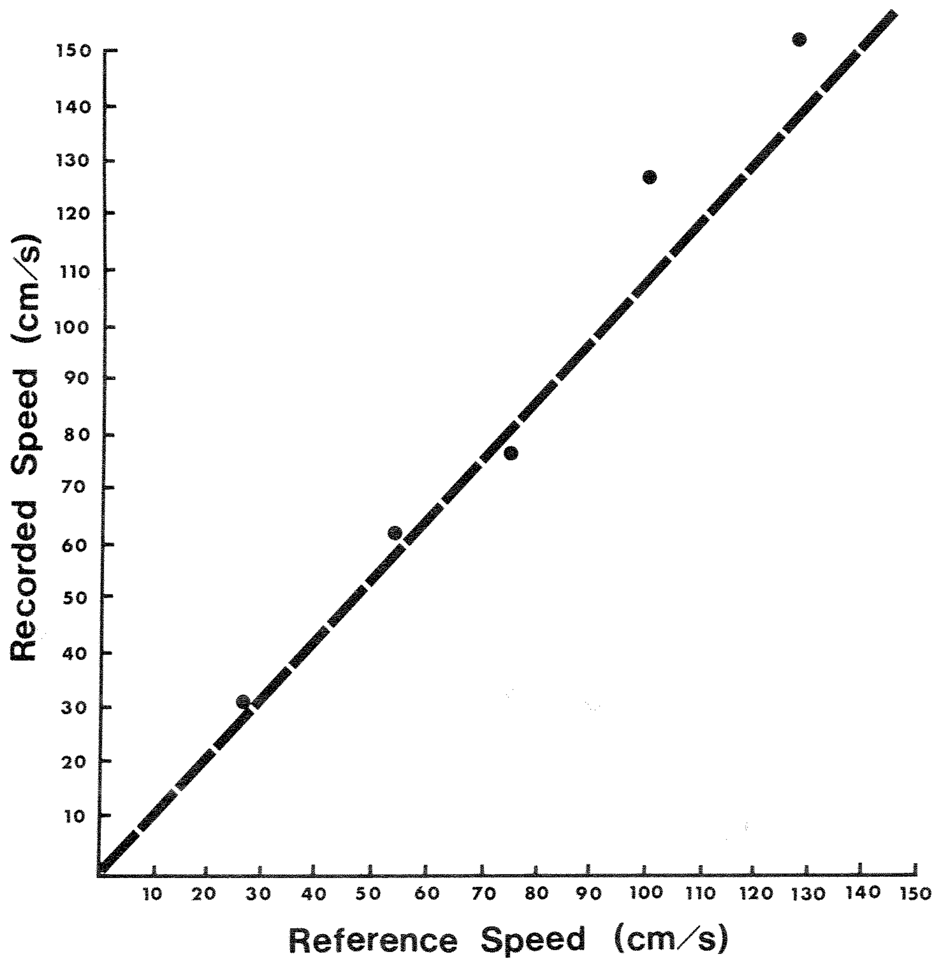
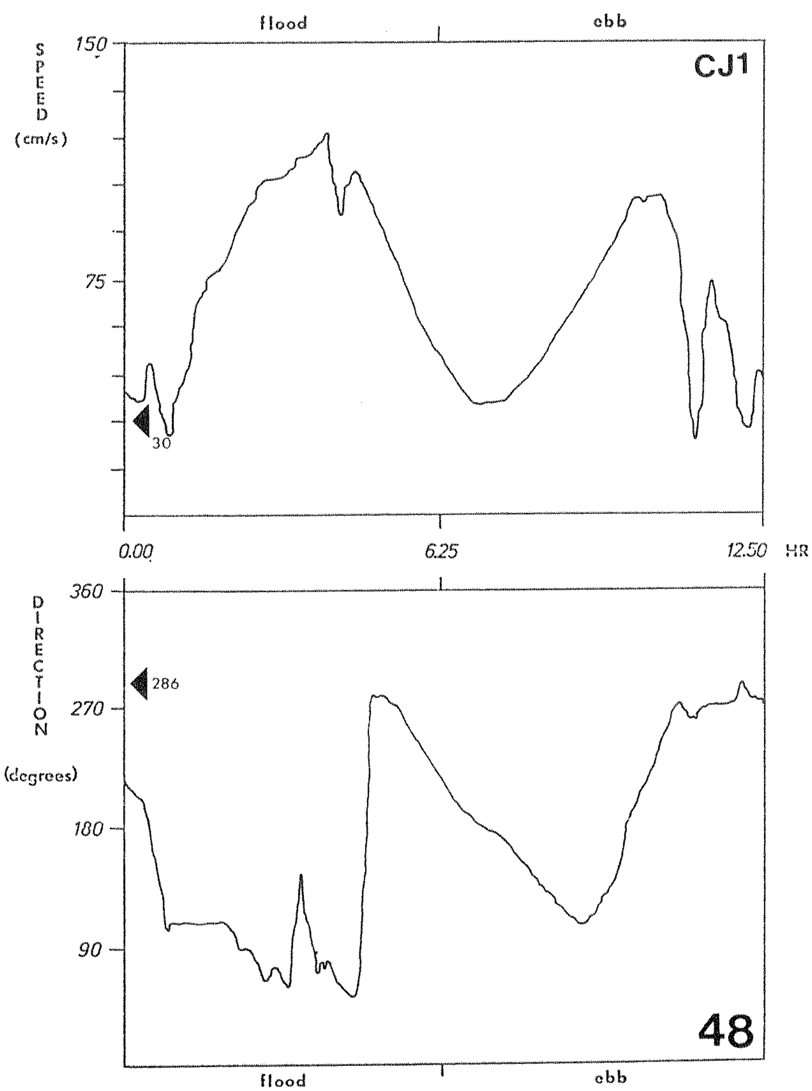
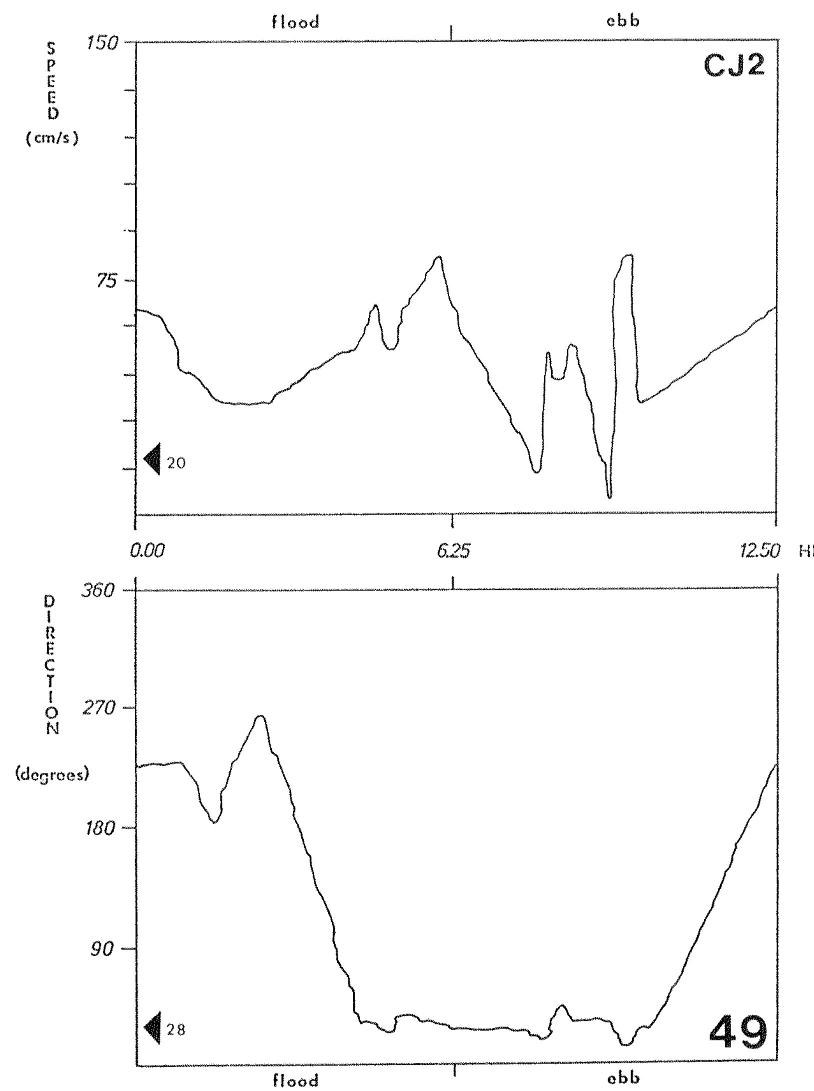
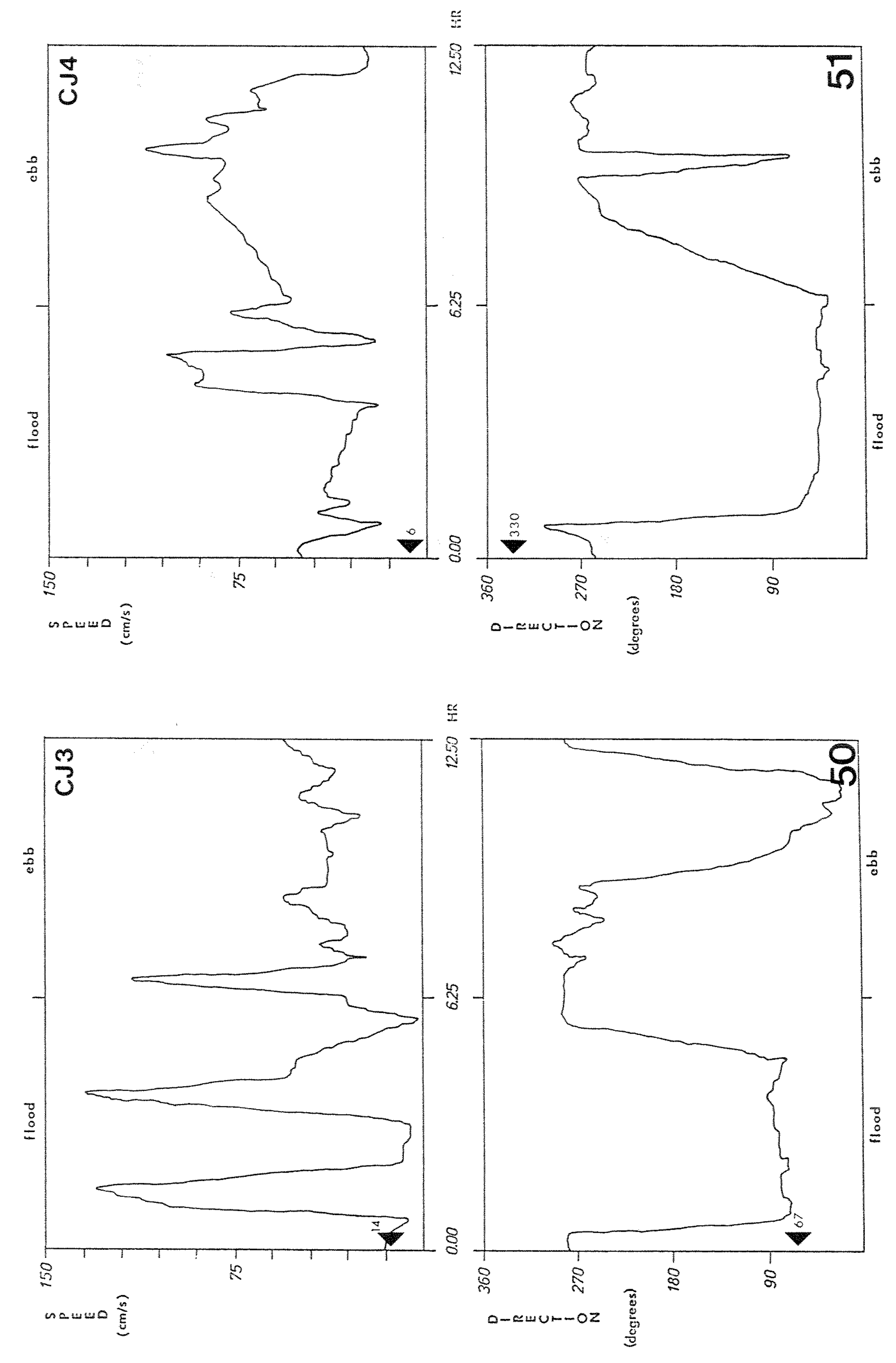


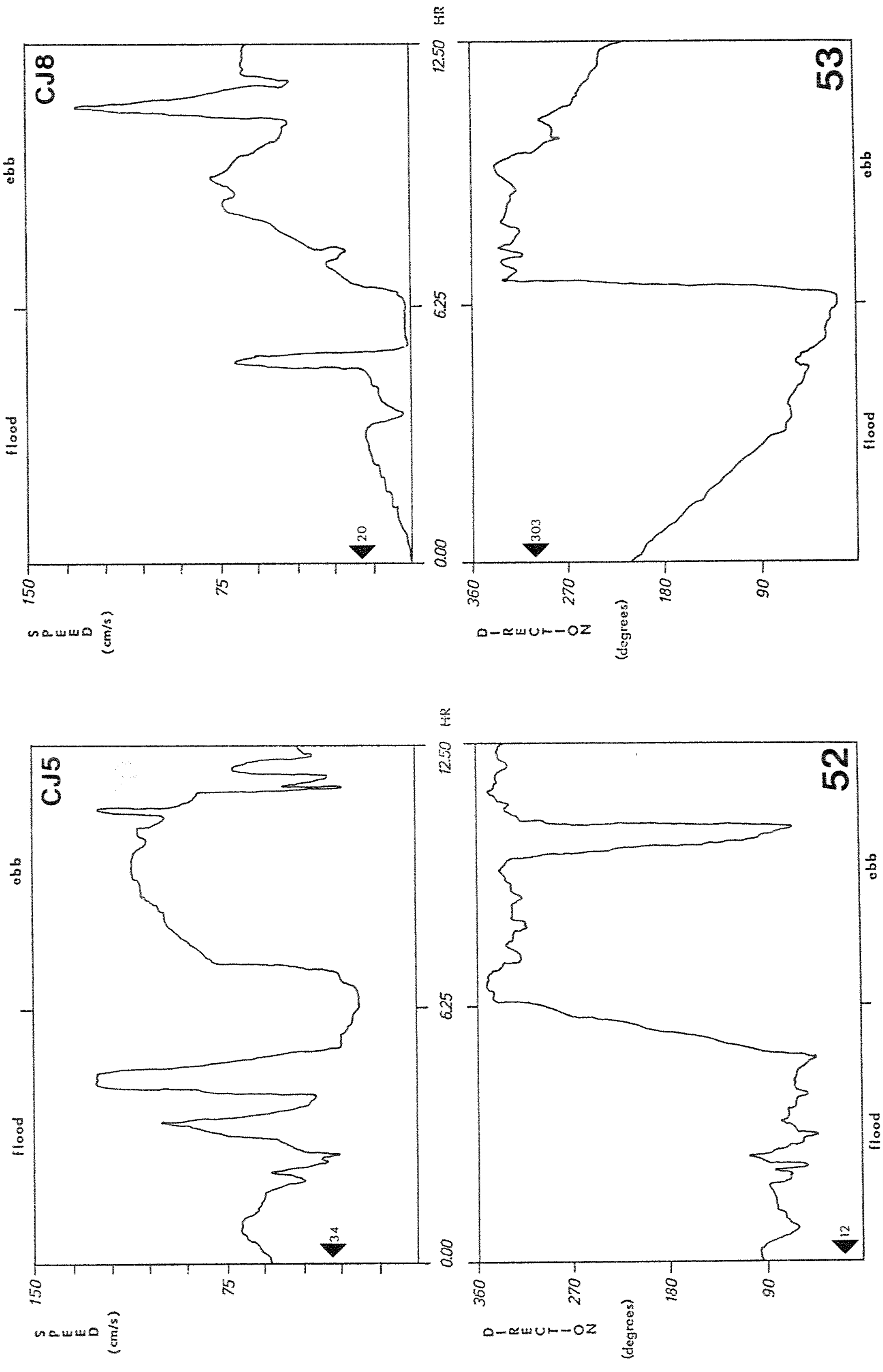
Fig. 47. Plot of current speeds (cm/s) recorded by Ekman current meter against reference values generated by swim mill. Dashed line shows expected correspondence between recorded and true current speeds. Note marked divergence from the ideal at speeds in excess of 110 cm/s.

Fig. 48-55. Time-series plot of current speed and direction for stations CJ1 - CJ13. Data presented relative to a standardized 12.5 h tidal cycle. Curves obtained by linear interpolation of recorded values.


flood
ebb
SPEED (cm/s)
150
75
CJ1
30
0.00
6.25
12.50 HR
DIRECTION (degrees)
360
270
180
90
286
48
flood
ebb


flood
ebb
SPEED (cm/s)
150
75
CJ2
20
0.00
6.25
12.50 HR
DIRECTION (degrees)
360
270
180
90
28
49
flood
ebb


CJ3
CJ4
50
51
flood
ebb
SPEED (cm/s)
DIRECTION (degrees)
150
75
360
270
180
90
0.00
6.25
12.50
HR
14
6
67
330


CJ8
53
CJ5
52
SPEED (cm/s)
DIRECTION (degrees)
flood
ebb
HR
0.00
6.25
12.50
150
75
360
270
180
90
20
303
34
12

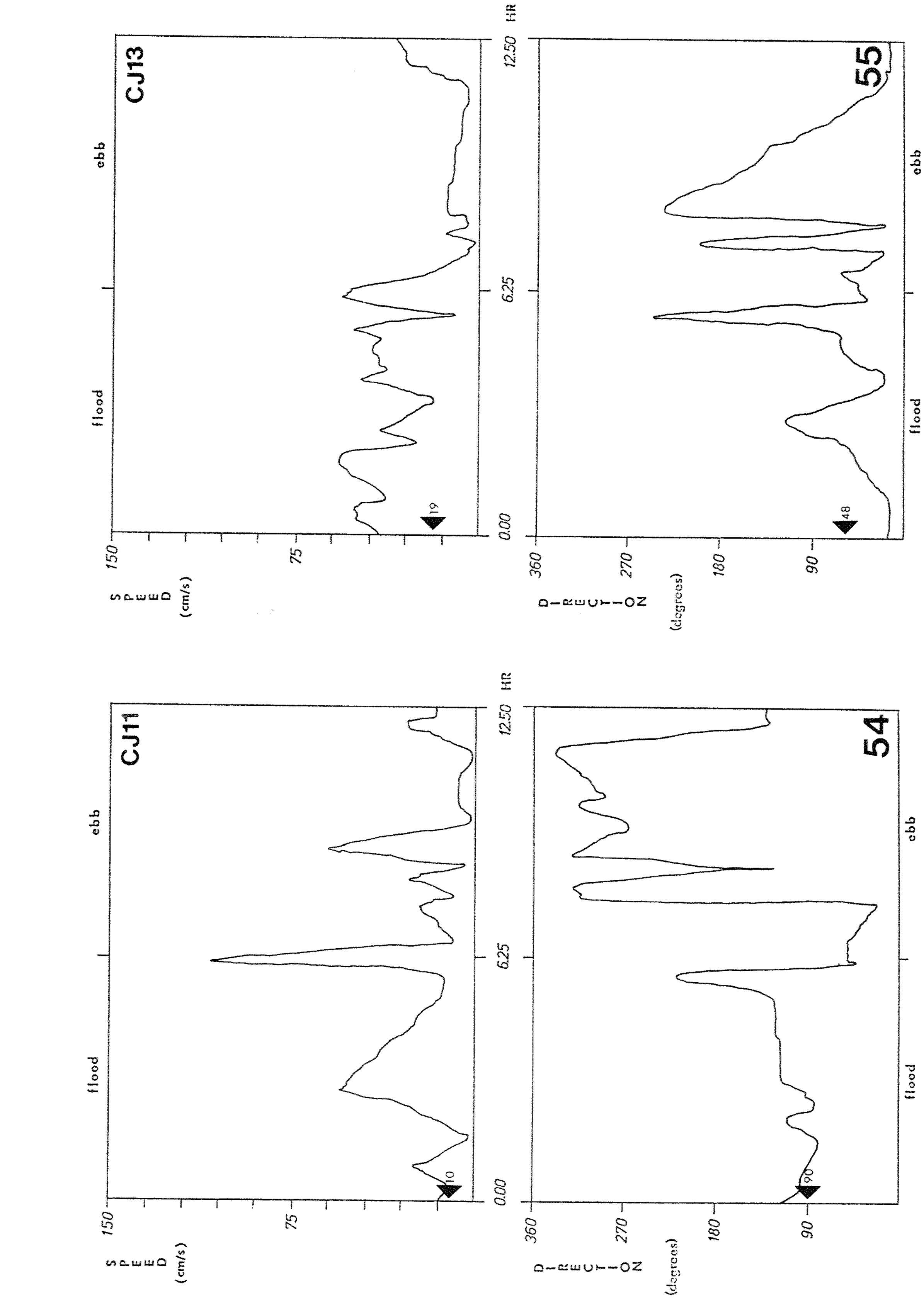
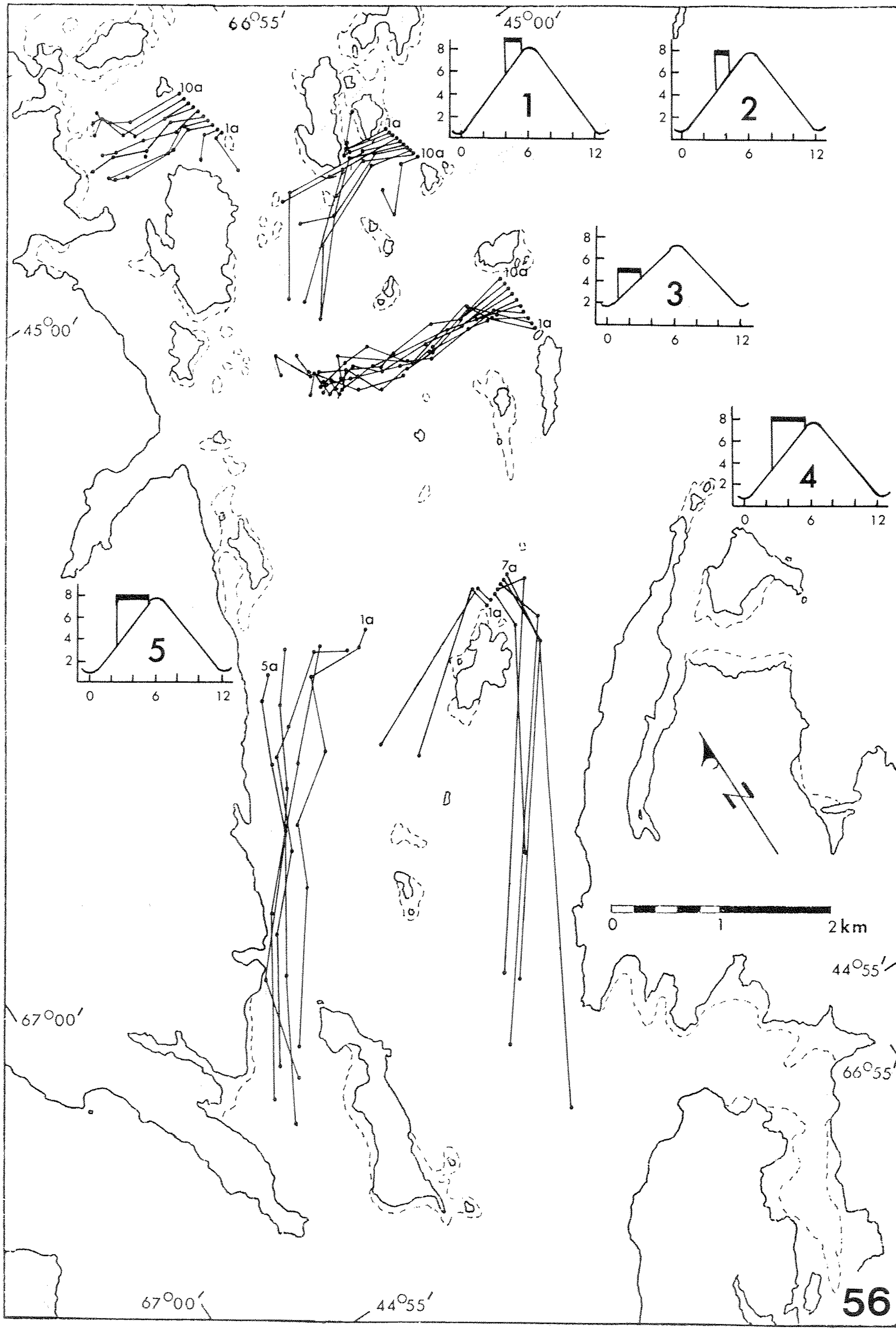
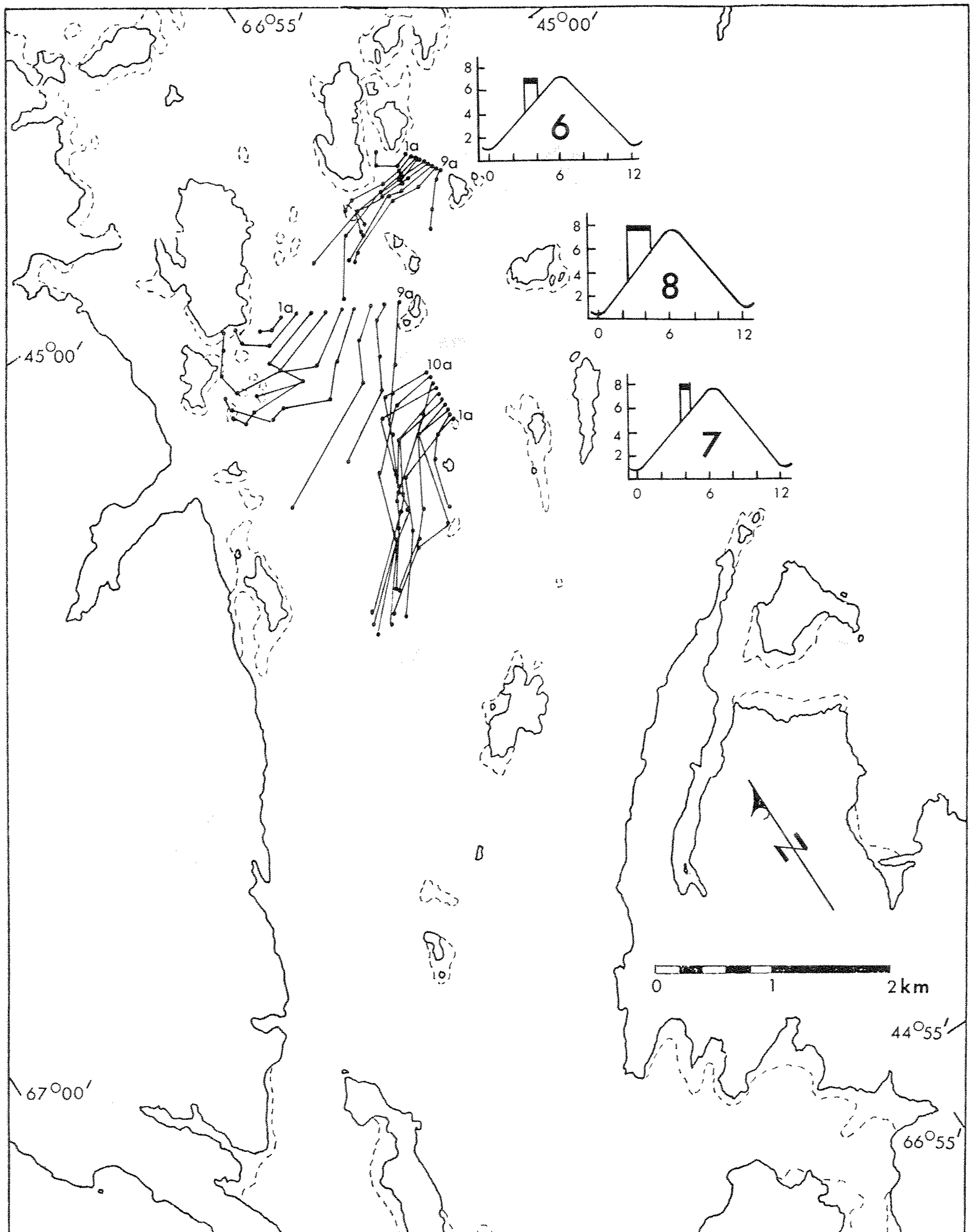
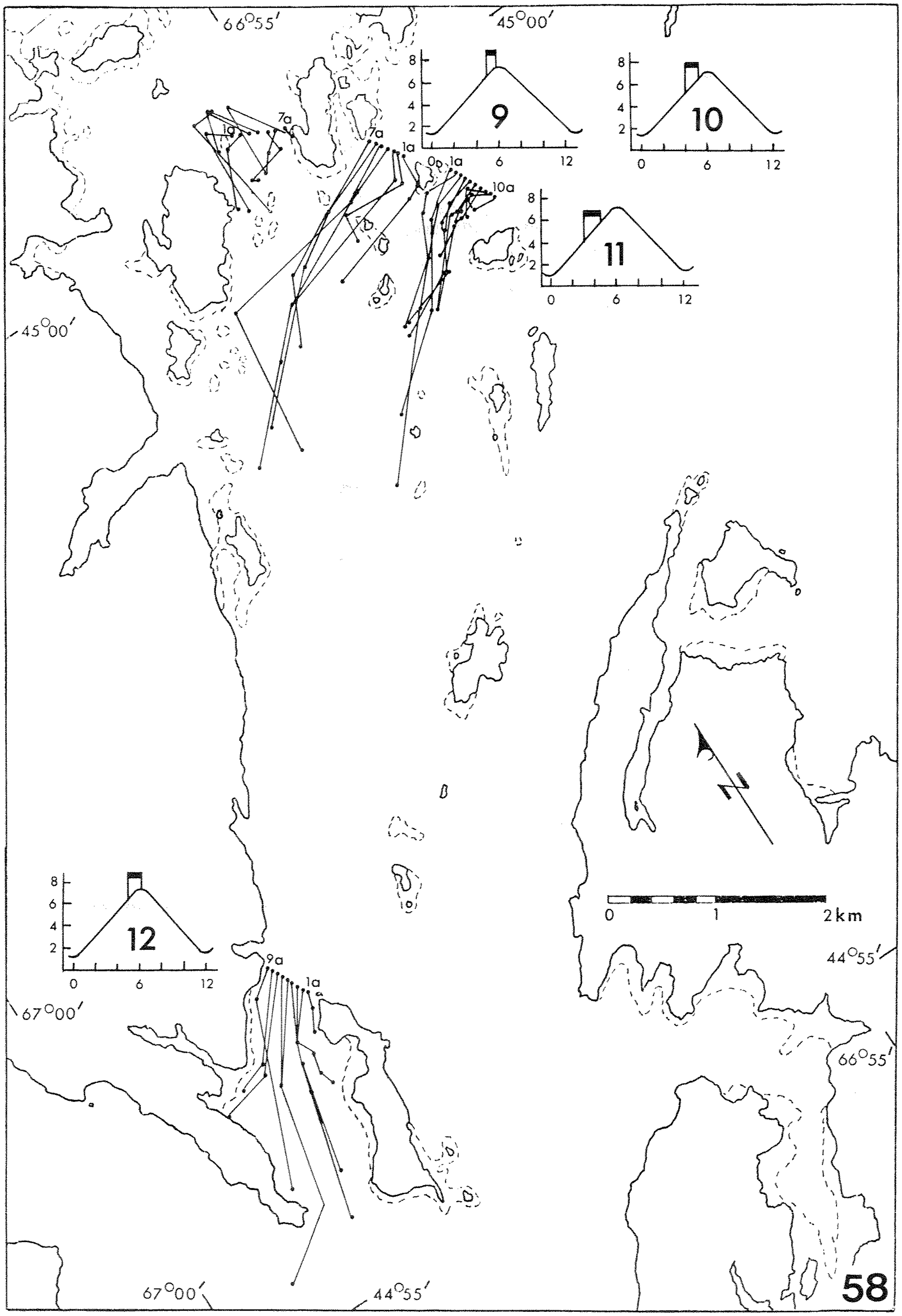

CJ11
CJ13
54
55
flood
ebb
SPEED (cm/s)
DIRECTION (degrees)
150
75
360
270
180
90
0.00
6.25
12.50
HR
10
19
90
48

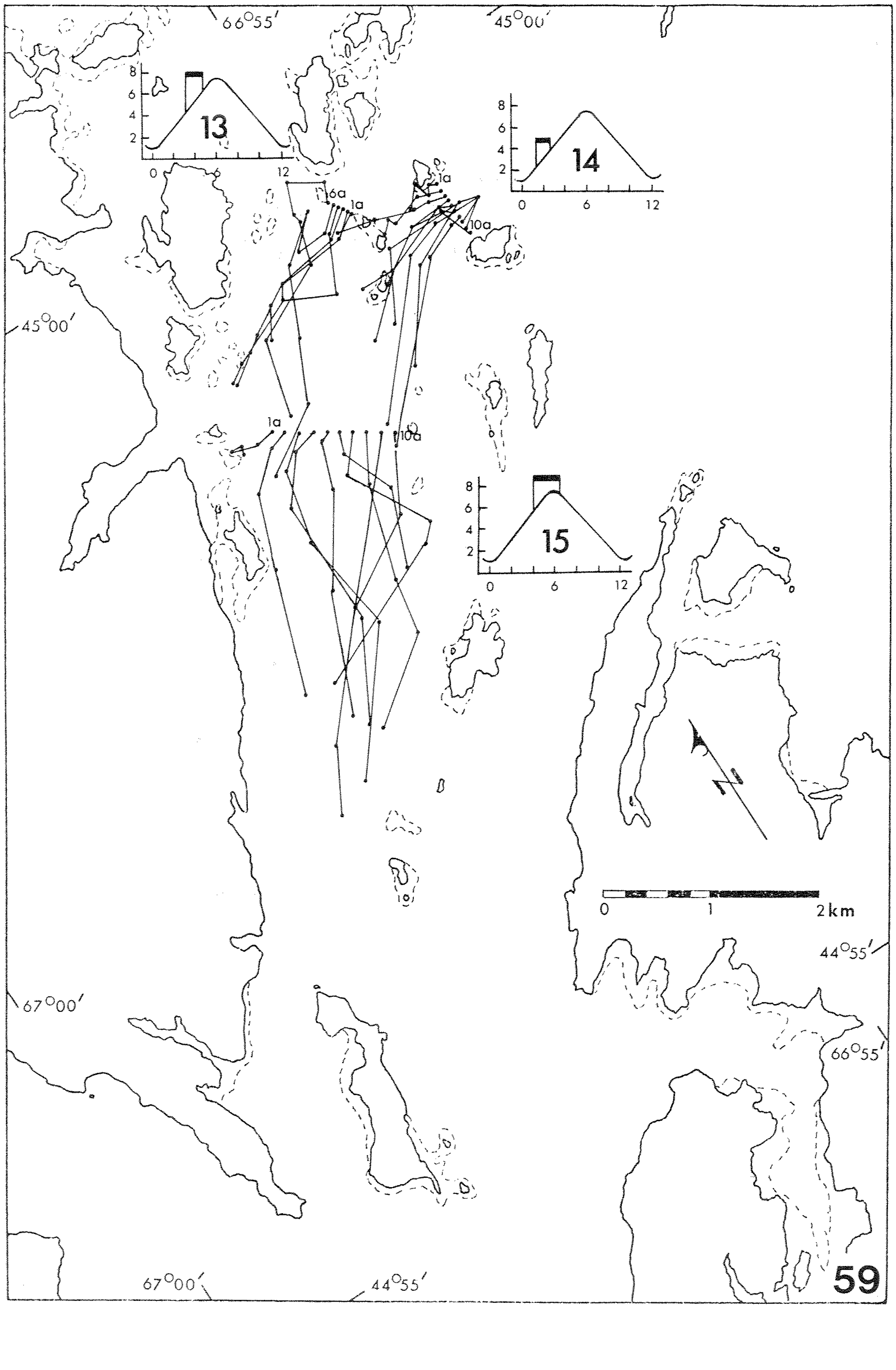
Fig. 56-63. Movement of surface drogues released at various times throughout the tidal cycle. Solid circles indicate triangulated positions. The numbers and letters indicate starting positions; see Table 15 for velocities. The tidal curves are accurate both in amplitude (y-axis, in m) and time (x-axis, in h) as predicted from tide tables. Horizontal bar above the tidal curve indicates the duration of a run.

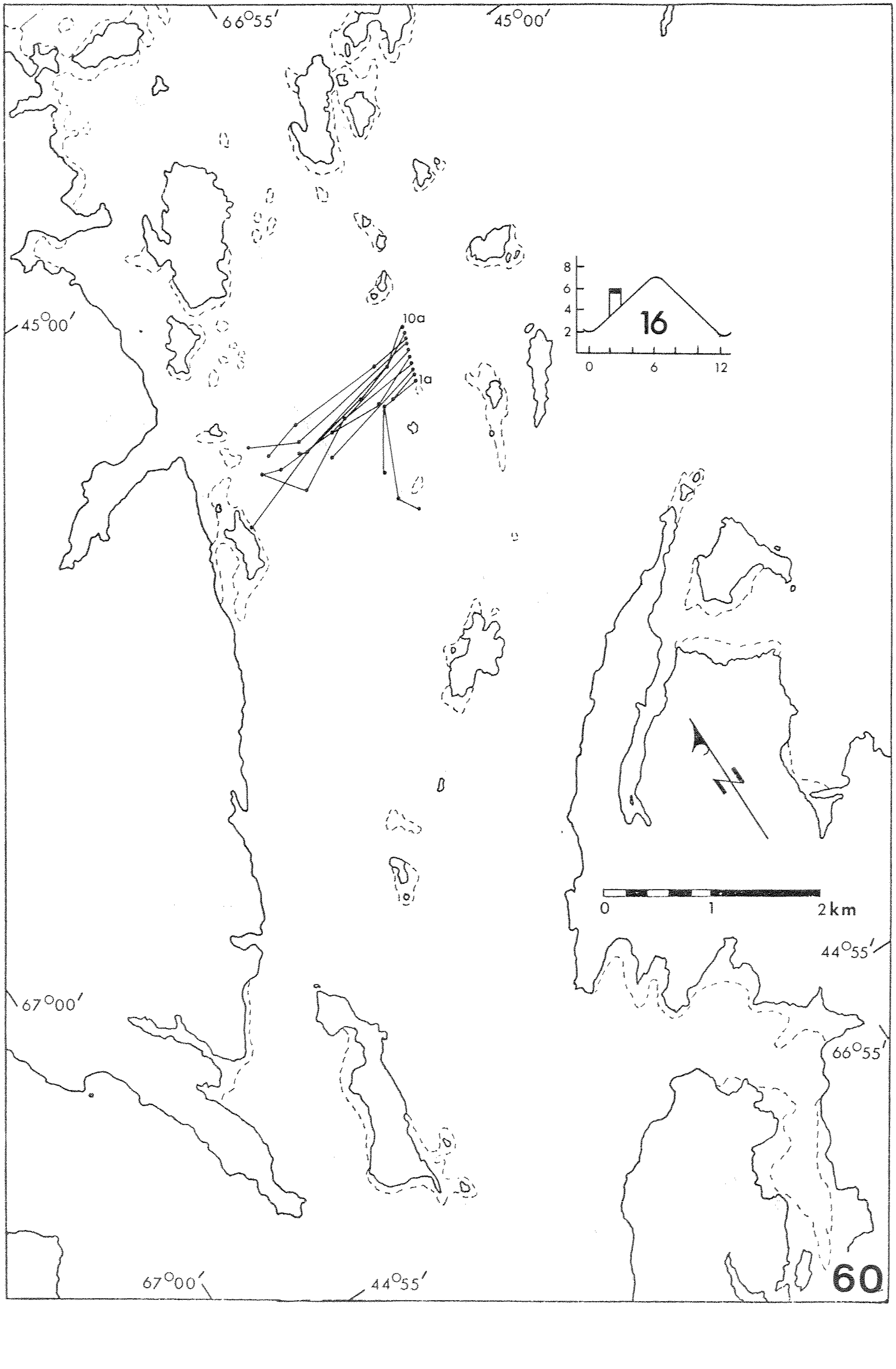

66°55'
45°00'
10a
1a
1a
10a
0
6
12
2
4
6
8
1
2
3
10a
1a
45°00'
4
7a
1a
1a
5a
5
N
0
1
2km
44°55'
67°00'
66°55'
67°00'
44°55'
56

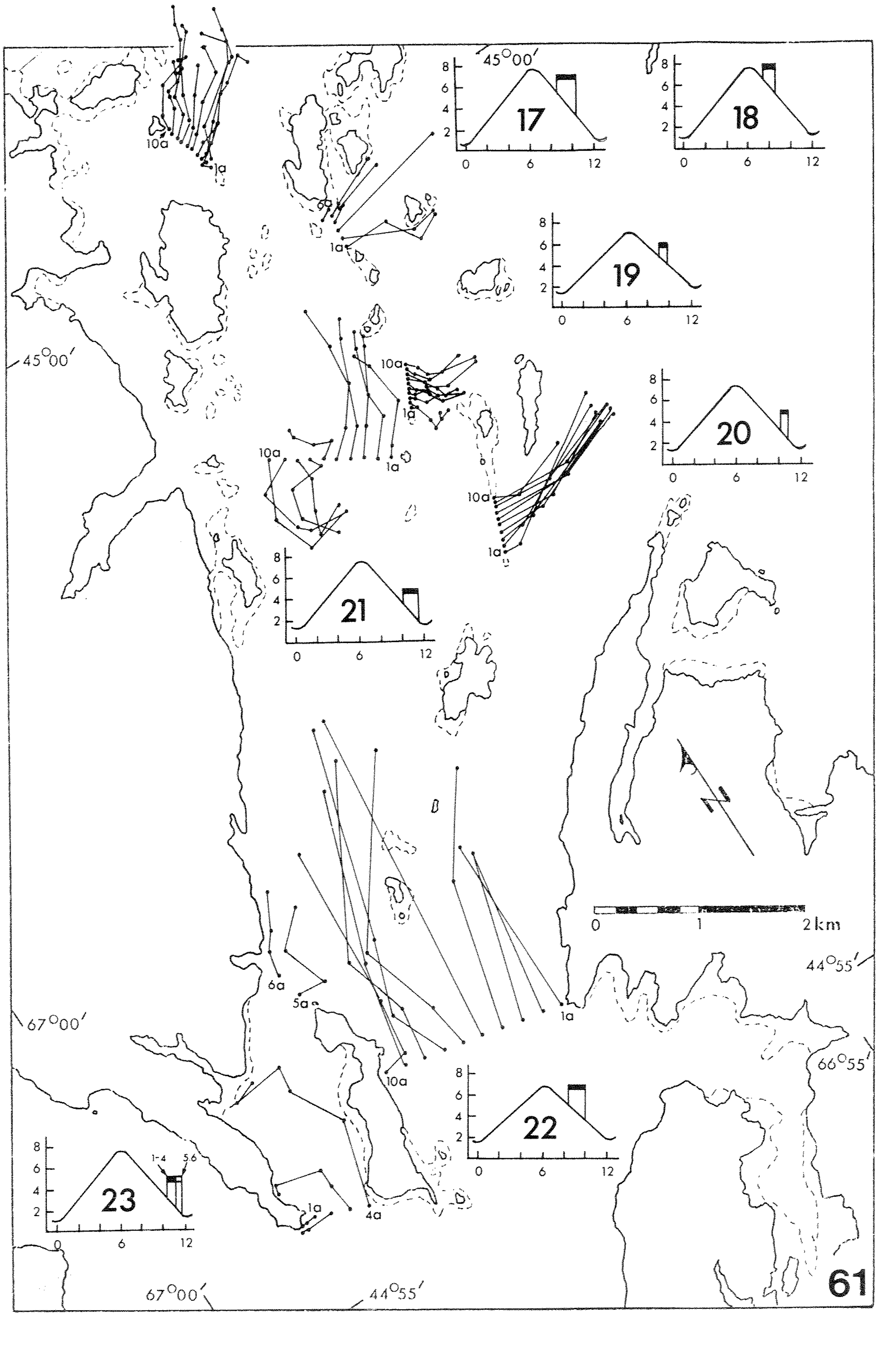

66°55′
45°00′
1a
9a
6
8
7
10a
45°00′
0
1
2km
44°55′
67°00′
66°55′
67°00′
44°55′
57

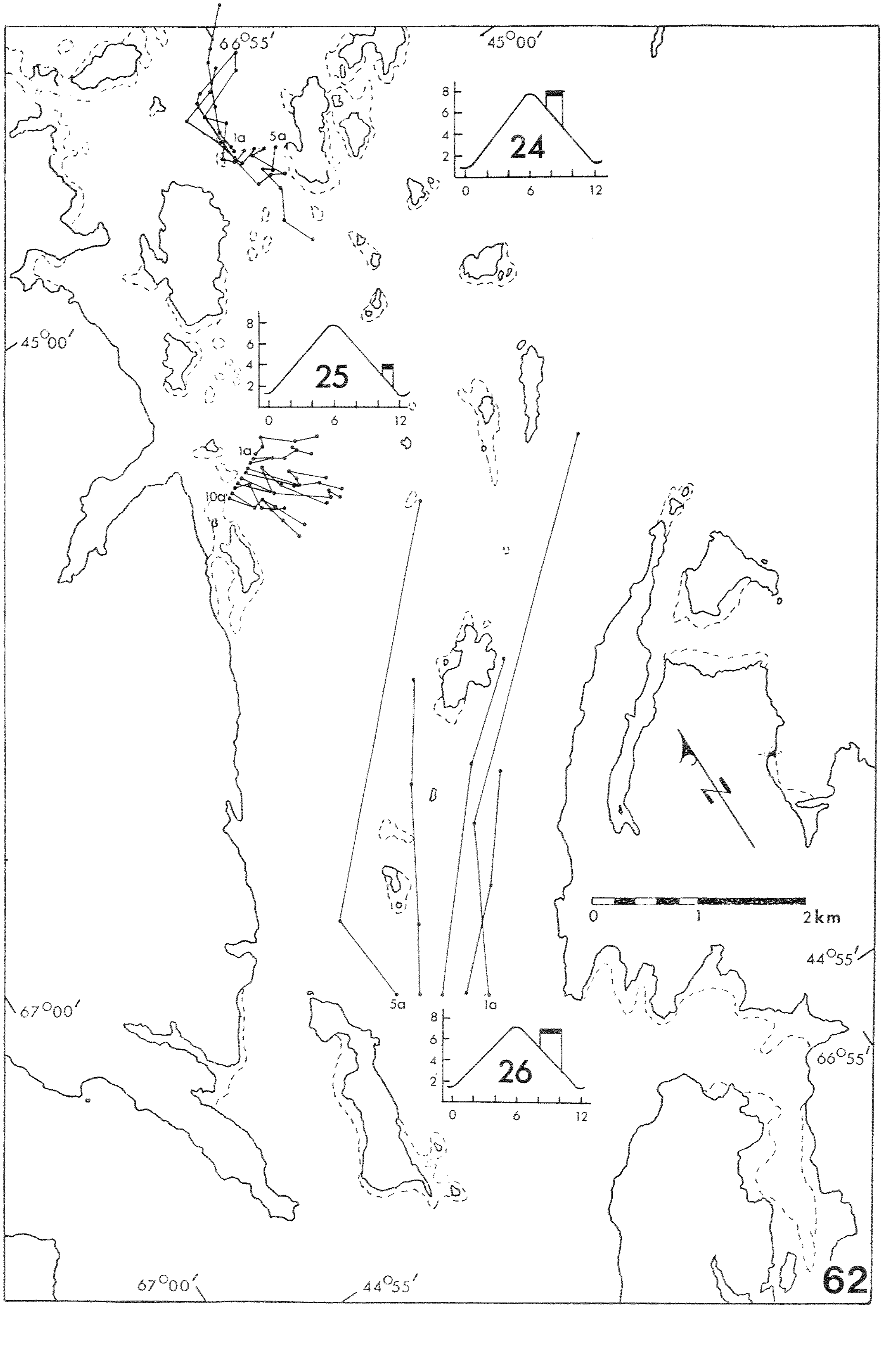


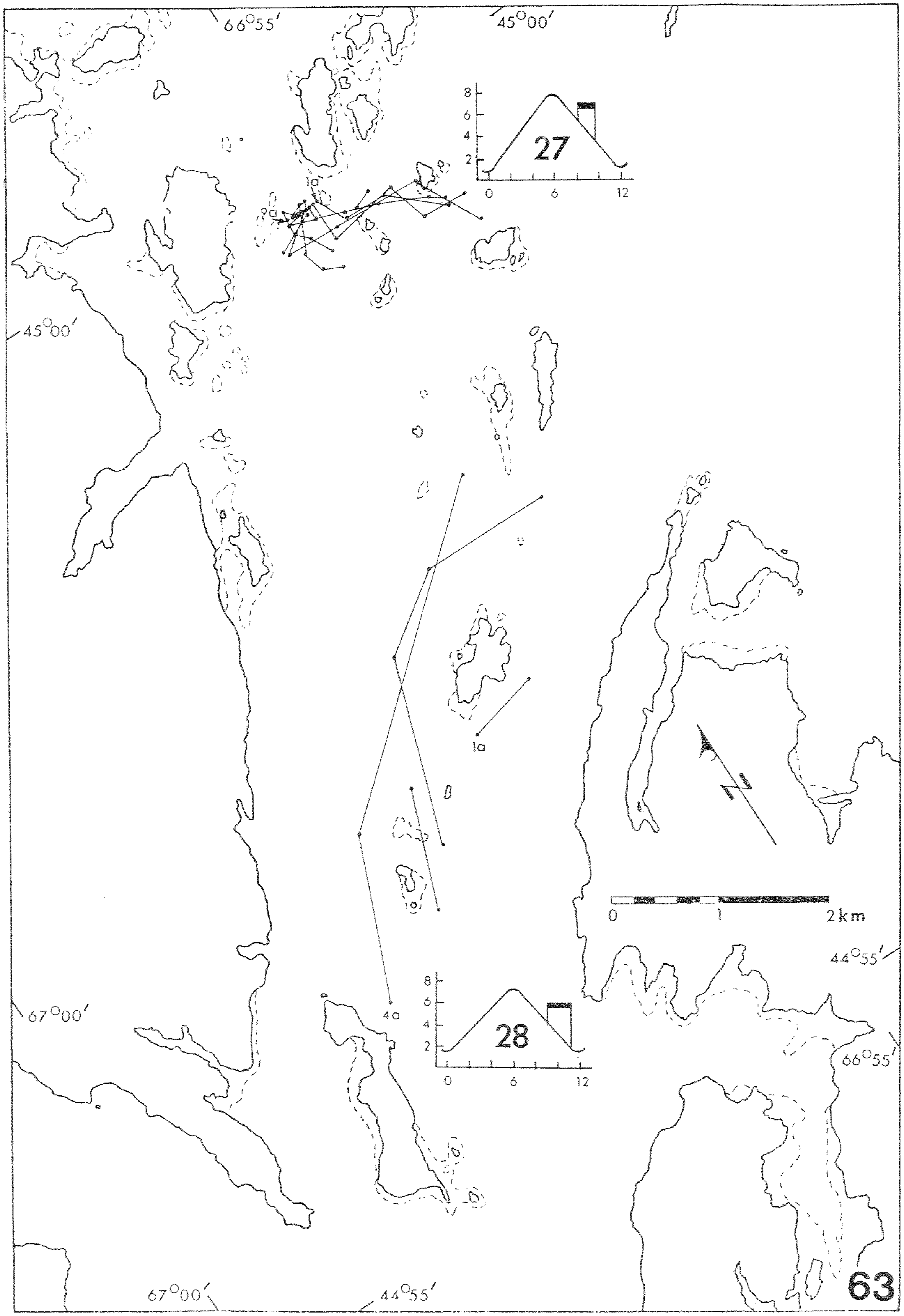
66°55′
45°00′
9
10
11
12
7a
1a
10a
9a
0
6
12
8
4
2
45°00′
0
1
2km
44°55′
67°00′
66°55′
67°00′
44°55′
58


66°55′
45°00′
13
14
15
6a
1a
10a
45°00′
2km
44°55′
67°00′
66°55′
67°00′
44°55′
59


66°55'
45°00'
45°00'
10a
1a
8
6
4
2
16
0
6
12
0
1
2km
44°55'
67°00'
66°55'
67°00'
44°55'
60


45°00′
17
18
19
20
21
22
23
10a
1a
6a
5a
4a
1-4
5,6
0
6
12
2
4
6
8
0 1 2km
45°00′
44°55′
67°00′
66°55′
67°00′
44°55′
61


66°55′
45°00′
24
25
26
1a
5a
10a
0 1 2km
44°55′
67°00′
66°55′
67°00′
44°55′
45°00′
62


66°55′
45°00′
45°00′
8
6
4
2
0
6
12
27
1a
9a
1a
2km
0
1
44°55′
67°00′
4a
8
6
4
2
0
6
12
28
66°55′
67°00′
44°55′
63

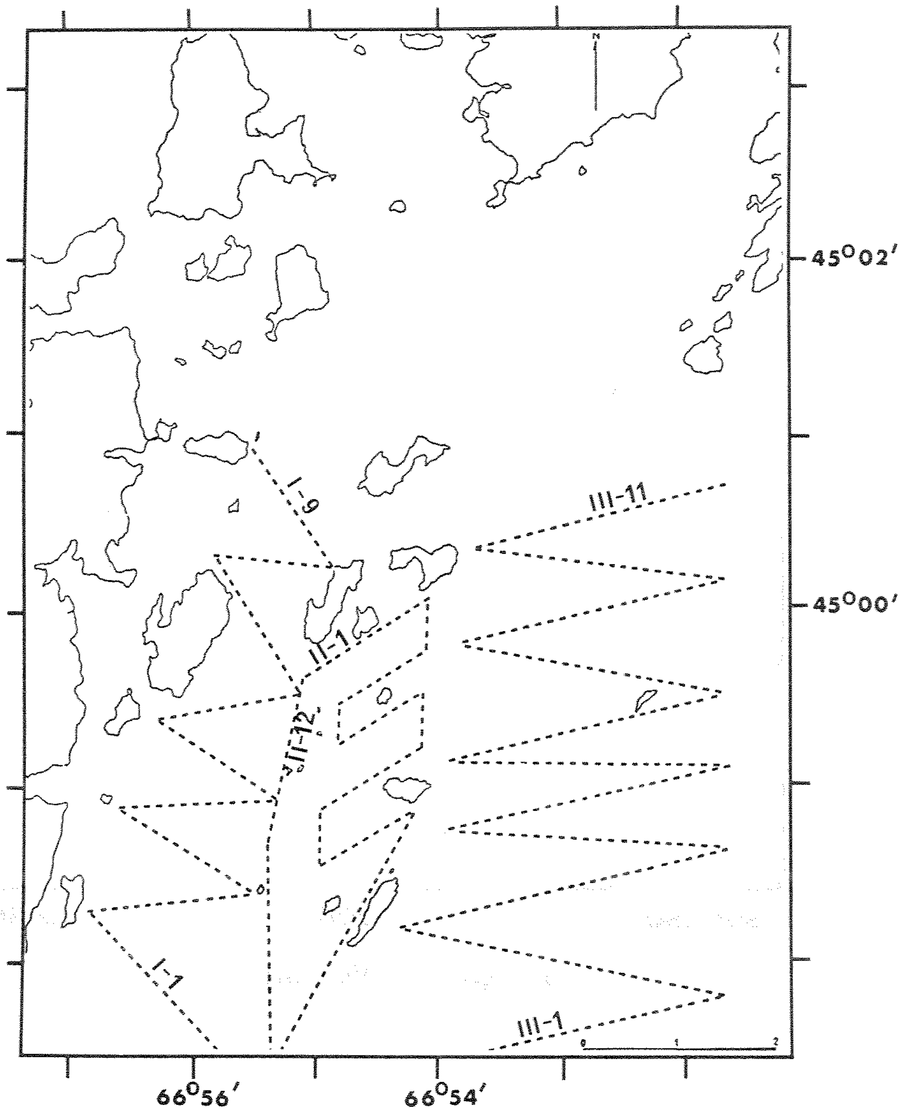


Fig. 64. Map showing positions of tracts (Roman numerals) and transects (arabic numerals) in echo surveys. Only first and last transects per track are numbered.

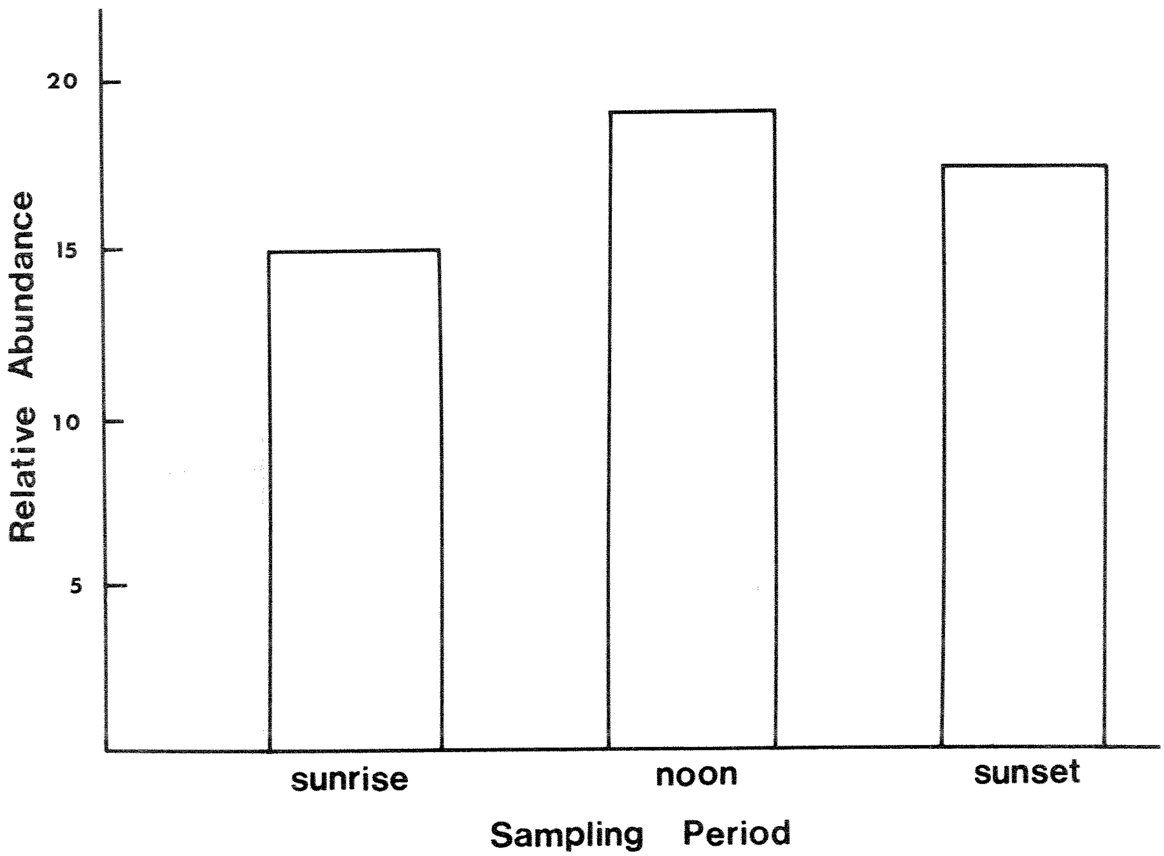


Fig. 65. Histogram of relative abundances of pelagic echo targets by sampling period. No significant differences exist between target abundances at sunrise (n=12), noon (n=18) or sunset (n=16).

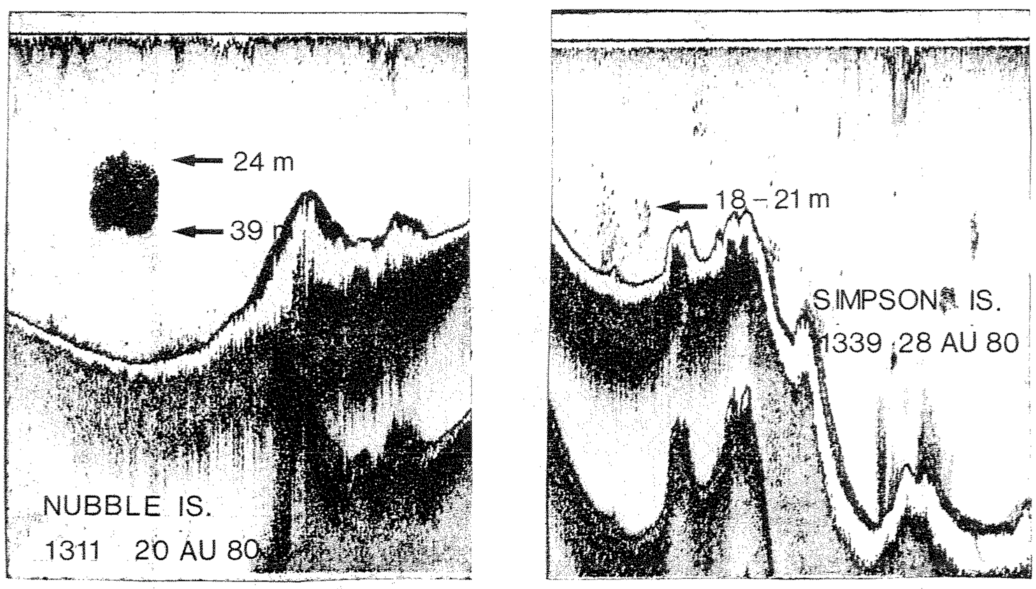


Fig. 66. Paper record example of large and small herring schools.

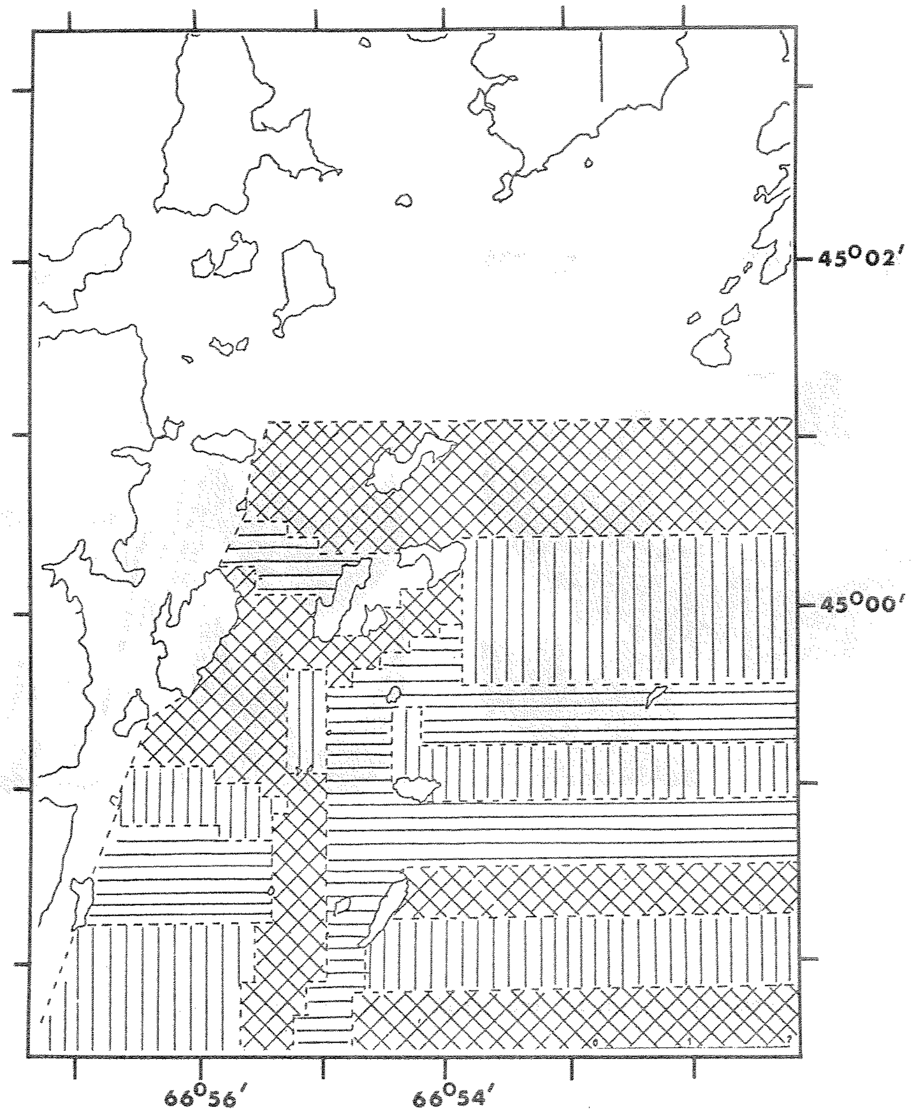


Fig. 67. Cluster map showing distribution of high, medium and low relative abundances of pelagic echo targets.

High -

Medium -

Low -

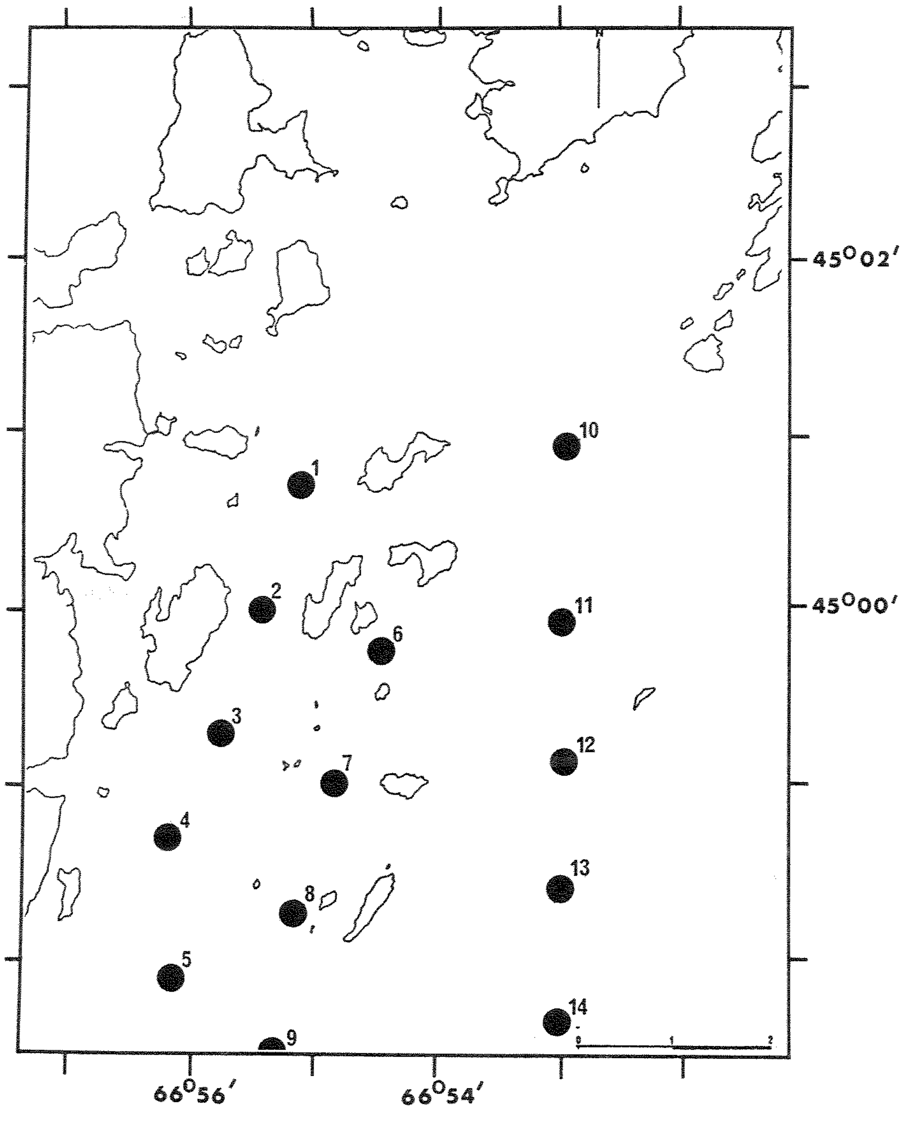


Fig. 68. Map showing locations of vertical haul stations. Two strata sampled per station (20 m - surface; bottom - surface).

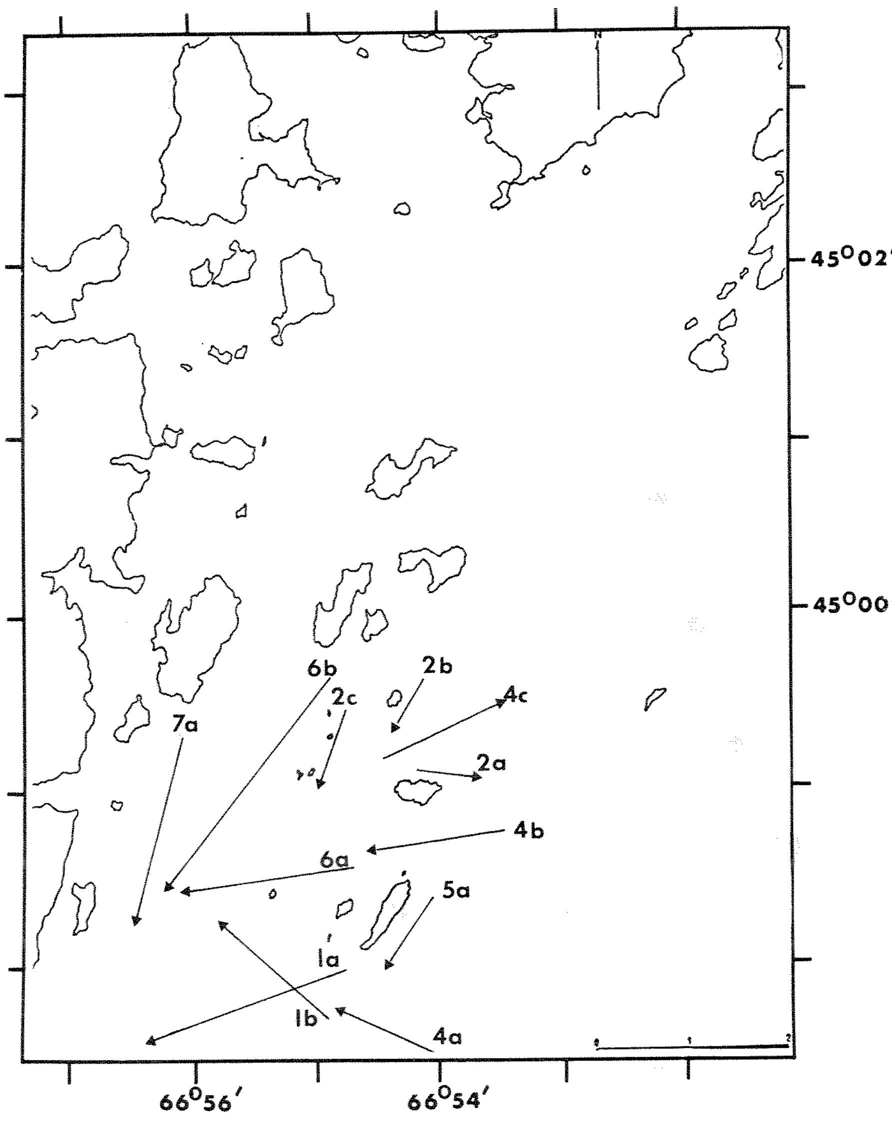


Fig. 69. Map showing locations of horizontal tow transects on the flood tide. Direction of tow indicated by arrowhead.

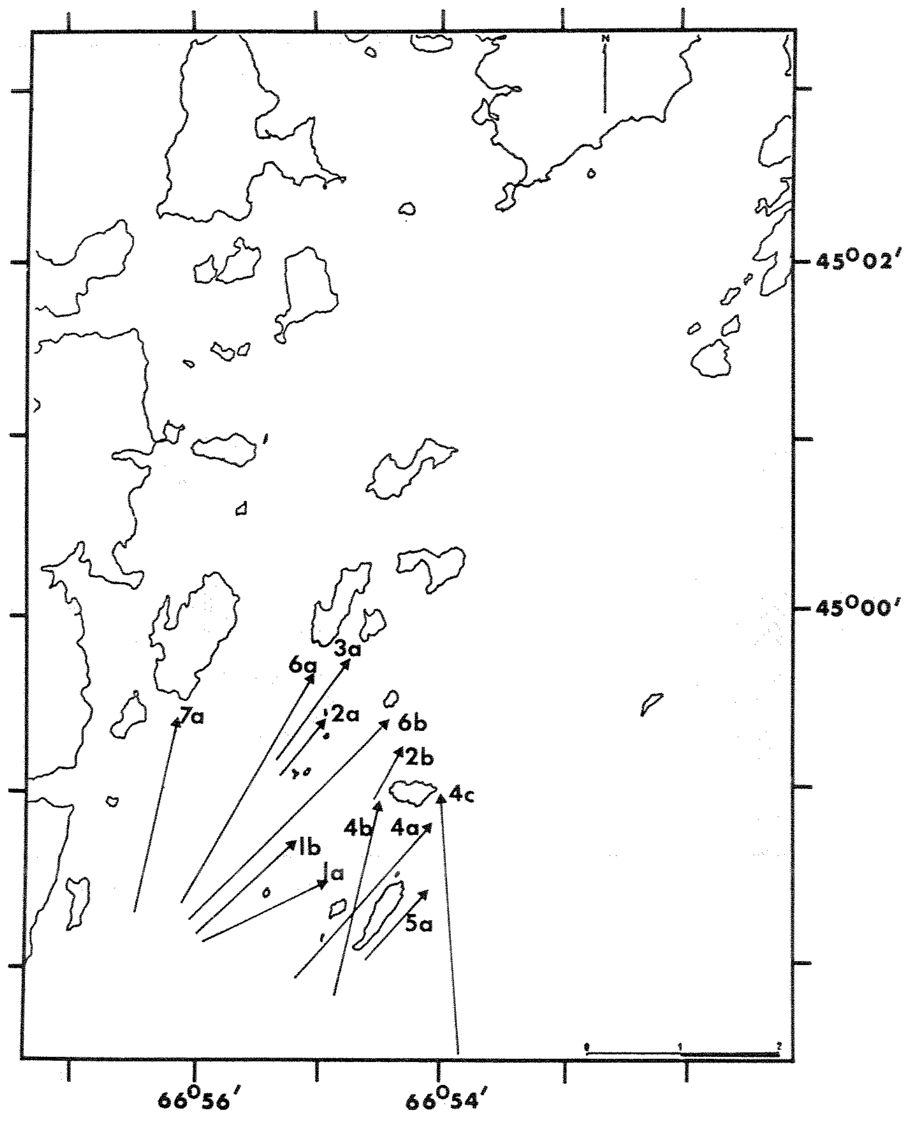


Fig. 70. Map showing locations of horizontal tow transects on the ebb tide. Direction of tow indicated by arrowhead.

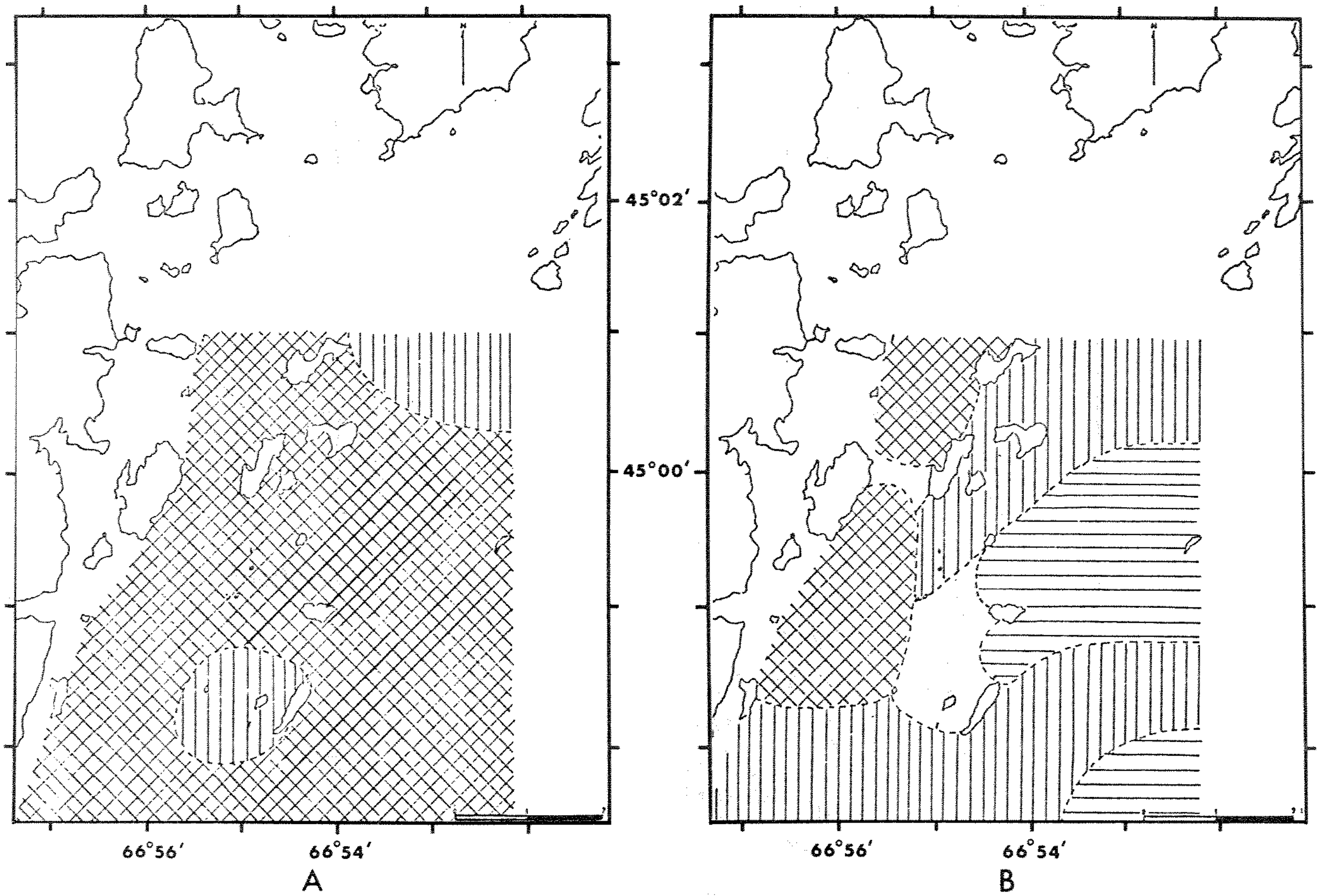
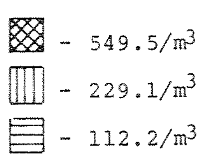


Fig. 71. Cluster map showing distribution of high, medium and low zooplankton densities for the 1.0 - 1.9 mm length class. A = 20 m to surface hauls; B = bottom to surface hauls.



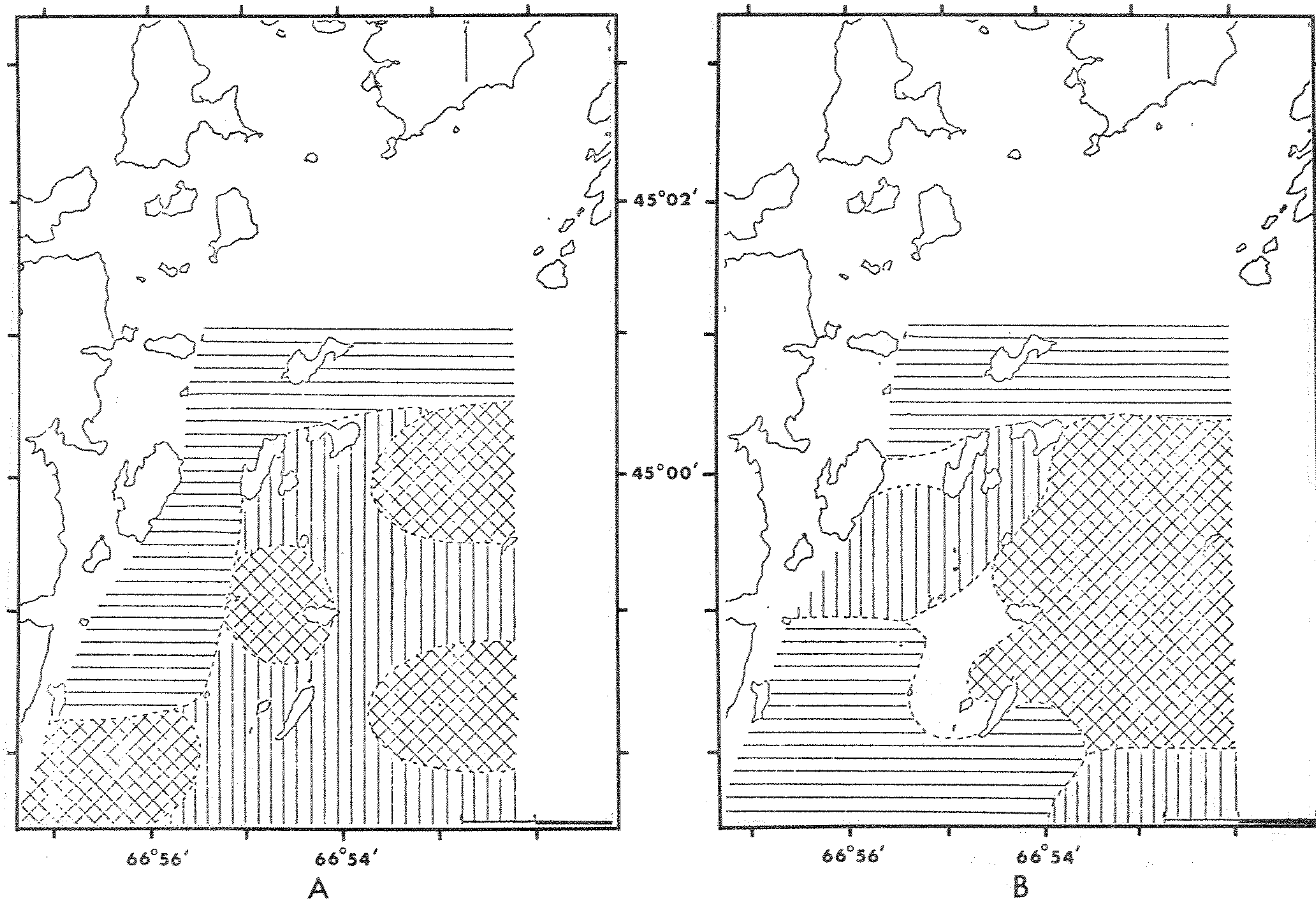


Fig. 72. Cluster map showing distribution of high, medium and low zooplankton densities for the 2.0 - 3.9 mm length class. A = 20 m to surface hauls; B = bottom to surface hauls.

- [cross-hatched] - 691.8/m^3
- [vertical lines] - 416.8/m^3
- [horizontal lines] - 213.8/m^3

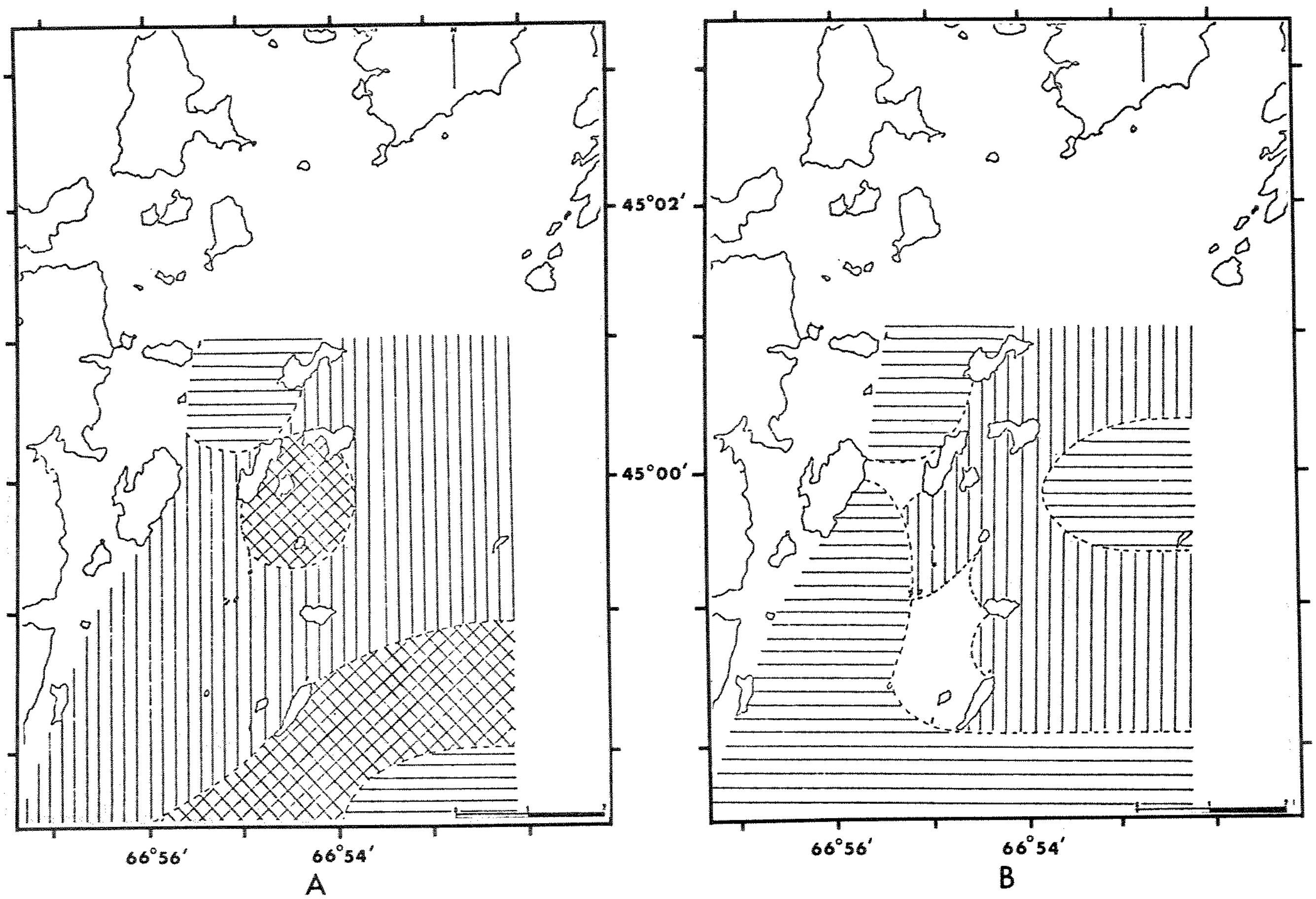
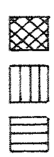


Fig. 73. Cluster map showing distribution of high, medium and low zooplankton densities for the 4.0 ± mm length class.



- $9.8/m^3$
- $5.5/m^3$
- $3.2/m^3$

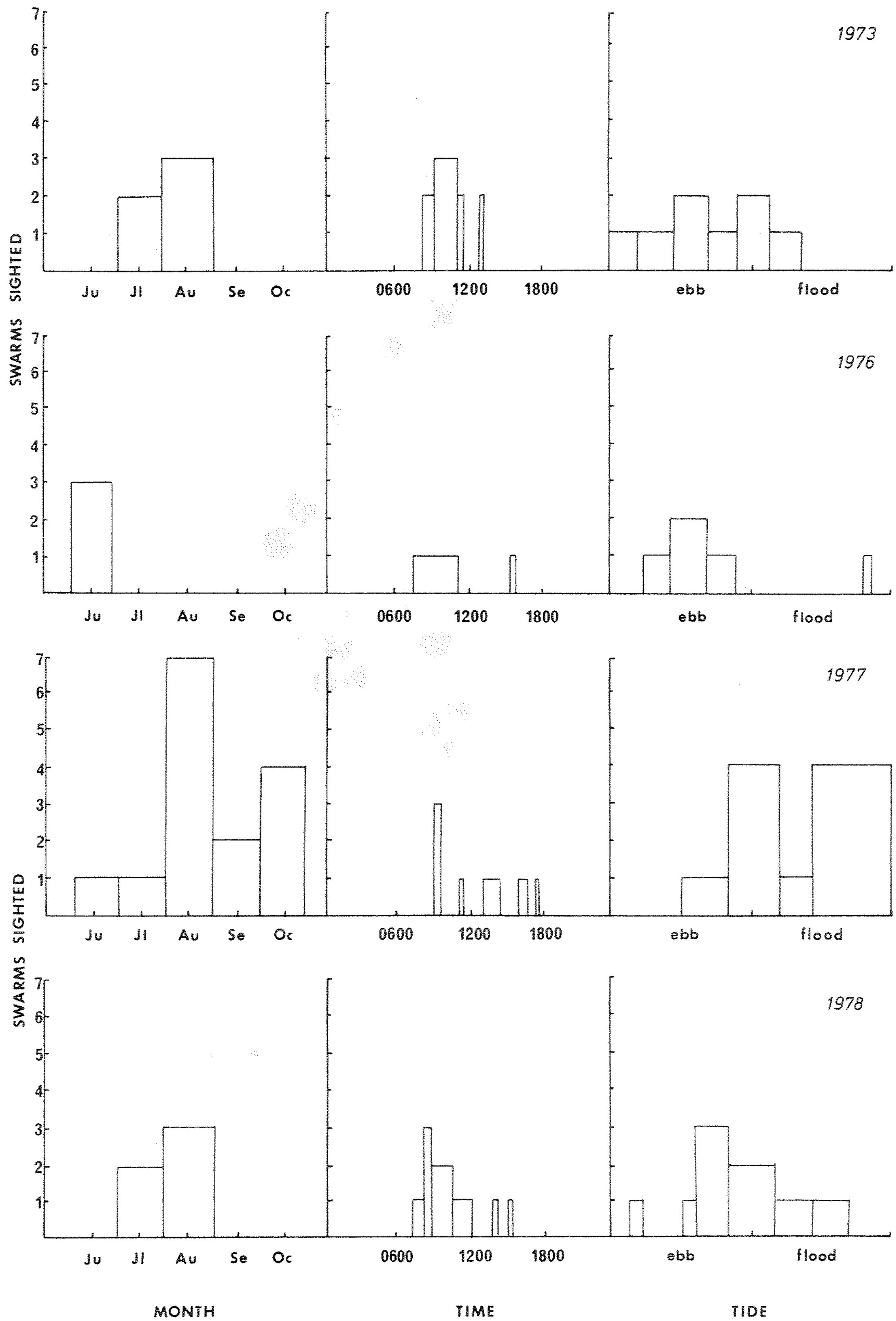


Fig. 74. Histogram showing distribution of euphausiid swarms by month, time of day and tide phase for the years 1973, 1976, 1977 and 1978.