



**NOAA Technical Memorandum NMFS-F/NEC-68**

**MARMAP Surveys  
of the Continental Shelf  
from Cape Hatteras, North Carolina,  
to Cape Sable, Nova Scotia (1984-87)  
Atlas No. 3. Summary of Operations**

**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Fisheries Center  
Woods Hole, Massachusetts**

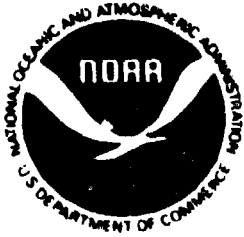
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## **NOAA Technical Memorandum NMFS-F/NEC-68**

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**MARMAP Contribution No. FED/NEFC 88-12**

# **MARMAP Surveys of the Continental Shelf from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia (1984-87) Atlas No. 3 Summary of Operations**

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Northeast Fisheries Center  
Woods Hole, Massachusetts**

**July 1989**

## **MARMAP ATLAS SERIES**

This is the third in a series of atlases containing data on the phytoplankton, zooplankton, ichthyoplankton, hydrography, chlorophyll *a* and phaeopigments, nutrients, and primary productivity of the Northeast Continental Shelf Ecosystem. The sampling was conducted as part of the Marine Resources Monitoring, Assessment, and Prediction (MARMAP) Program of the Northeast Fisheries Center. The cooperating institutions in the program are:

Manomet Bird Observatory, Manomet, MA  
Morski Instytut Rybacki (MIR), Gdynia, POL

MARMAP atlases are issued as individual issues in the *NOAA Technical Memorandum NMFS-F/NEC* series as they become available. They provide processed measurements of variability in key components of the Northeast Continental Shelf Ecosystem. A general description of the MARMAP Program is given in Sherman (1980).

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## INTRODUCTION

This atlas is the third in a series dealing with mesoscale plankton surveys and attendant information from a comprehensive fishery ecosystem study known as the MARMAP<sup>1</sup> program (Sherman 1980, 1988). It summarizes sampling methods, station activities, and geographic coverage for MARMAP surveys conducted off the northeastern United States from 1984 through 1987, the final four years of an 11-year multidisciplinary survey program that began in 1977 (Sibunka and Silverman 1984).

The basic MARMAP research strategy is to integrate survey information on seasonal and annual variability in biological and environmental components of the shelf ecosystem with fine-scale, process-oriented field studies and laboratory research to determine influences on the size of recruiting fish populations. The survey data have been used to prepare reports on changing biotic and abiotic components of the continental shelf ecosystem off the northeastern United States. A list of reports is available on request to the Northeast Fisheries Center (NEFC) Narragansett Laboratory, Narragansett, Rhode Island. Fish eggs and larvae from the surveys have provided an effective, fishery-independent means for assessing adult spawning biomass of important fish stocks (Berrien *et al.* 1981; Morse 1982; Morse 1984; Berrien 1983; Berrien 1984 a,b; Berrien and Sissenwine 1988).

MARMAP surveys off the northeastern United States covered continental shelf waters from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia, an area of some 260,000 km<sup>2</sup>. On several cruises, additional stations were occupied as far south as Charleston, South Carolina. Survey measurements during the 1984-87 reporting period included: ichthyoplankton and zooplankton abundance, temperature, salinity, dissolved oxygen, concentration of chlorophyll *a* and phaeopigments, nutrients, and primary productivity. Water samples were taken for circulation studies using H<sub>2</sub><sup>18</sup>O/H<sub>2</sub><sup>16</sup>O ratios. Marine mammal and sea bird censuses were conducted on a regular basis by investigators from Manomet Bird Observatory, Manomet, Massachusetts. Ships and scientific personnel from Poland participated in survey operations during the spring and summer of 1987.

The successful 11-year series of surveys, the longest continuously running monitoring program of its kind ever conducted in the western North Atlantic, was broken in 1988 when recurring mechanical problems with R/V *Dela-ware II* forced cancellation of the January survey after completing just 65 stations. Shortly thereafter, MARMAP survey activities were scaled back to collections made with 0.61-m bongo tows on semi-annual trawl surveys and a summer mollusk survey to monitor changes in size composition and biomass of zooplankton. An intensive series of monthly to bimonthly ichthyoplankton surveys is planned at three-year intervals beginning in 1991 to monitor the

status of the Northeast Continental Shelf Ecosystem through fishery-independent estimates of total finfish biomass.

## SAMPLING PROCEDURES

The MARMAP data base of the Northeast Fisheries Center (NEFC) contains station information obtained from two types of cruises: (1) those in which the principal objective was to conduct ichthyoplankton surveys with supportive biological, chemical, and physical oceanographic data collection; and (2) resource surveys in which the principal objective was to assess the distribution and abundance of fish and mollusk populations. In addition, plankton samples were taken on two environmental assessment cruises (AL8406, GY8507). The latter cruise, a survey of coastal waters in the Gulf of Maine to determine the relationship of hydrographic conditions and the distribution of nutrients and plankton, was led by Dr. D. Townsend, Bigelow Laboratory for Ocean Science, West Boothbay Harbor, Maine. Finally, during the spring and early summer of 1987, a cooperative program involving the United States, Canada, and Poland was undertaken to estimate the spawning biomass of Atlantic mackerel, *Scomber scombrus*, based on the production of eggs. In support of this program, plankton cruises were made on Polish vessels *Admiral Arciszewski* and *Wieczno* (AA8704, W18701). Although a 0.20-m bongo sampler was used for the mackerel assessment, we took advantage of the ship time and geographic coverage by towing a 0.61-m bongo sampler along with the smaller sampler following standard MARMAP sampling procedures. Research ships, corresponding cruise numbers, principal cruise objectives, and related information are listed in chronological order in Table 1.

The station plan for most MARMAP cruises was fixed. Station positions for the bottom trawl surveys were based on a stratified random plan which changes with each cruise (Grosslein 1969). A summary list by cruise of each station in the MARMAP data base for 1984 through 1987 is presented in Table 2. Graphic presentations for both cruise and survey coverage are shown in Figures 1-36. Cruise maps show all stations occupied by one ship that are part of the MARMAP data base. Survey maps depict only those stations north of Cape Hatteras, North Carolina, where the 0.61-m bongo plankton sampler was towed, and include the most complete coverage resulting from either one or a combination of two cruises. Where parts of cruises were combined, geographically overlapping stations that were out of phase temporally were omitted from one of the cruises. Deleted stations are identified in Table 2.

This report summarizes sampling activities for 39 cruises which comprise 34 surveys. On an annual basis, coverage ranged from 9 to 11 cruises and 8 to 9 surveys.

<sup>1</sup> Marine Resource Monitoring, Assessment, and Prediction

Table 1. Listing of Northeast Fisheries Center MARMAP cruises and combinations of cruises to form surveys, 1984-87.

MARMAP Survey No.	Research Vessel	Cruise No.	Sampling Dates	No. Stations	Principal Cruise Objective
<b>1984</b>					
	<i>Delaware II</i>	84-01	Jan 10-Feb 8	161	Ichthyoplankton-Zooplankton
48	<i>Delaware II</i>	84-01	Jan 10-Feb 8	160	
49	<i>Albatross IV</i>	84-02	Mar 2-Apr 25	156	Bottom Trawl
	<i>Albatross IV</i>	84-03	May 9-Jun 2	181	Ichthyoplankton-Zooplankton
50	<i>Albatross IV</i>	84-03	May 9-Jun 2	178	
51	<i>Delaware II</i>	84-05	Jun 17-24	41	Bottom Trawl
	<i>Albatross IV</i>	84-06	Jul 4-18	70	Ocean Pulse
52	<i>Albatross IV</i>	84-06	Jul 4-18	68	
53	<i>Delaware II</i>	84-06	Jul 10-30	107	Shellfish Assessment
54	<i>Albatross IV</i>	84-07	Jul 25-Aug 30	119	Scallop Assessment
55	<i>Albatross IV</i>	84-08	Sep 17-Nov 3	158	Bottom Trawl
	<i>Delaware II</i>	84-09	Nov 1-Dec 5	146	Ichthyoplankton-Zooplankton
56	<i>Delaware II</i>	84-09	Nov 1-Dec 5	144	
<b>1985</b>					
	<i>Delaware II</i>	85-01	Jan 8-Feb 6	132	Ichthyoplankton-Zooplankton
57	<i>Delaware II</i>	85-01	Jan 8-Feb 6	126	
	<i>Albatross IV</i>	85-02	Feb 27-Apr 12	130	Bottom Trawl
58	<i>Albatross IV</i>	85-02	Feb 27-Apr 12	120	Bottom Trawl
	<i>Delaware II</i>	85-03	Apr 2-30	191	Ichthyoplankton-Zooplankton
59	<i>Delaware II</i>	85-03	Apr 2-30	130	
	<i>Albatross IV</i>	85-04	May 9-Jun 4	173	Ichthyoplankton-Zooplankton
60	<i>Albatross IV</i>	85-04	May 9-Jun 4	134	
	<i>Gyre</i>	85-07	Jul 17-Jul 22	22	Oceanographic
	<i>Albatross IV</i>	85-07	Jul 23-Aug 29	128	Scallop Assessment
61	<i>Albatross IV</i>	85-07	Jul 17-Aug 29	150	
	<i>Gyre</i>	85-07	Jul 17-Aug 29		
	<i>Delaware II</i>	85-07	Aug 29-Sep 22	193	Ichthyoplankton-Zooplankton
62	<i>Delaware II</i>	85-07	Aug 29-Sep 22	173	
	<i>Albatross IV</i>	85-08	Sep 10-Nov 15	60	Bottom Trawl
	<i>Delaware II</i>	85-08	Oct 1-Oct 25	80	Bottom Trawl
63	<i>Albatross IV</i>	85-08	Sep 10-Nov 15	140	
	<i>Delaware II</i>	85-08	Sep 10-Nov 15		
	<i>Delaware II</i>	85-10	Nov 7-Dec 12	180	Ichthyoplankton-Zooplankton
64	<i>Delaware II</i>	85-10	Nov 7-Dec 12	179	
<b>1986</b>					
	<i>Delaware II</i>	86-01	Jan 10-Feb 12	174	Ichthyoplankton-Zooplankton
65	<i>Delaware II</i>	86-01	Jan 10-Feb 12	173	
	<i>Albatross IV</i>	86-02	Mar 4-Apr 27	150	Bottom Trawl
66	<i>Albatross IV</i>	86-02	Mar 4-Apr 27	145	Bottom Trawl
	<i>Delaware II</i>	86-03	May 8-Jun 6	165	Ichthyoplankton-Zooplankton



MARMAP Survey No.	Research Vessel	Cruise No.	Sampling Dates	No. Stations	Principal Cruise Objective
<b>1986</b>					
67	<i>Delaware II</i>	86-03	May 8-Jun 6	160	
68	<i>Delaware II</i>	86-04	Jun 17-Jul 17	105	Shellfish Assessment
69	<i>Albatross IV</i>	86-04	Jul 29-Aug 29	116	Scallop Assessment
	<i>Delaware II</i>	86-07	Aug 25-Sep 24	174	Ichthyoplankton-Zooplankton- Ocean Pulse
70	<i>Delaware II</i>	86-07	Aug 28-Sep 24	155	
	<i>Albatross IV</i>	86-05	Sep 14-Nov 6	106	Bottom Trawl
	<i>Delaware II</i>	86-08	Sep 30-Oct 10	41	Bottom Trawl
71	<i>Albatross IV</i>	86-05	Sep 14-Nov 6	147	
	<i>Delaware II</i>	86-08	Sep 14-Nov 6		
	<i>Delaware II</i>	86-10	Nov 5-Dec 11	161	Ichthyoplankton-Zooplankton
72	<i>Delaware II</i>	86-10	Nov 5-Dec 11	159	
<b>1987</b>					
	<i>Delaware II</i>	87-01	Jan 7-Feb 8	134	Ichthyoplankton-Zooplankton
73	<i>Delaware II</i>	87-01	Jan 7-Feb 8	133	
	<i>Albatross IV</i>	87-01	Mar 24-Apr 28	123	Bottom Trawl
	<i>Delaware II</i>	87-03	Apr 21-28	32	Bottom Trawl
74	<i>Albatross IV</i>	87-01	Mar 24-Apr 28	155	
	<i>Delaware II</i>	87-03	Mar 24-Apr 28		
75	<i>Admiral Arciszewski</i>	87-04	Apr 13-22	91	Ichthyoplankton-Zooplankton
	<i>Delaware II</i>	87-04	May 7-Jun 7	253	Ichthyoplankton-Zooplankton
76	<i>Delaware II</i>	87-04	May 7-Jun 7	193	
	<i>Wieczno</i> Parts I-III	87-01	May 31-Jul 14	221	Ichthyoplankton-Zooplankton
77	<i>Wieczno</i> Parts I&II	87-01	May 31-Jun 30	129	
	<i>Albatross IV</i>	87-05	Jul 7-Aug 10	109	Scallop Assessment
78	<i>Wieczno</i> Part III	87-01	Jul 7-Aug 10	155	
	<i>Albatross IV</i>	87-05	Jul 7-Aug 10		
	<i>Delaware II</i>	87-08	Aug 19-Sep 20	180	Ichthyoplankton-Zooplankton
79	<i>Delaware II</i>	87-08	Aug 19-Sep 20	179	
80	<i>Albatross IV</i>	87-07	Sep 11-Oct 30	144	Bottom Trawl
	<i>Delaware II</i>	87-10	Nov 4-Dec 10	125	Ichthyoplankton-Zooplankton
81	<i>Delaware II</i>	87-10	Nov 4-Dec 10	124	

## ICHTHYOPLANKTON-ZOOPLANKTON

The 0.61-m bongo sampler used to collect fish eggs and larvae was described by Posgay and Marak (1980). This sampler was fitted with 0.505- and 0.333-mm mesh nets on all cruises. Standard methods employed in sampling operations are given in Smith and Richardson (1977) and Jossi and Marak (1983). For special studies, a 0.20-m bongo sampler was towed with the larger bongos. Various

mesh nets (0.505-, 0.333-, 0.253-, 0.165- and 0.053-mm) were used to collect these smaller samples. After the nets were washed down, plankton samples were transferred to sample jars and preserved in five-percent buffered formalin.

To determine the volume of water filtered, a General Oceanics<sup>2</sup> digital flowmeter was suspended within each bongo frame. These flowmeters were calibrated routinely before and after each cruise in a flume tank at the NEFC

<sup>2</sup> Use of trade names does not imply endorsement by NOAA/National Marine Fisheries Service

Woods Hole Laboratory (Potter 1978). To eliminate wind-milling by the flowmeters when setting the gear, disposable beverage cups were placed over the fins before the 0.61-m bongo array was deployed. The cup was washed immediately into the net when the flowmeter was submerged and later discarded when the plankton sample was preserved. If a flowmeter malfunctioned, it was repaired or replaced and the amount of water sampled during the tow was estimated from a regression line derived from plotting previous flowmeter readings versus the total tow time.

A Mendix Model T-1 mechanical time-depth recorder (TDR) was attached to the towing wire immediately above the 0.61-m bongo array to record tow profile and maximum sampling depth. Calibration of TDRs was done ashore, both intermittently and after any repairs. A hydraulic pump fitted with a pressure gauge assembly was used to simulate water pressure at nominal depth. A calibration scale was derived from a plot of resultant TDR deflection points at simulated depths. If the TDR malfunctioned, maximum sampling depth of the plankton tow was estimated by multiplying the total amount of wire out (in the water) by the sine of the occurring horizontal wire angle at maximum depth (see Smith and Richardson 1977).

Plankton tows were smooth double-oblique from the surface to a maximum depth of 200 m or to within 5 m of the bottom. A 45-kg ball was attached beneath the bongo array to depress the sampler(s). Vessel speed of 1-2 kn was adjusted to maintain a 45° wire angle throughout the tow. The wire angle was measured from the horizontal with an inclinometer. An electric meter block was used to monitor rate of wire payout and retrieval (m/min) and the amount of wire out. Wire was payed out at 50 m/min and retrieved at 20 m/min. These rates were adjusted at depths less than or equal to 60 m to tow for 5 min, with a wire payout time of 1 min and 15 sec and a retrieval time of 4 min. This towing scheme was adopted to insure sampling a minimum of 100 m<sup>3</sup> of water (Houde 1977).

The 0.61-m plankton samples were sent to the Morski Instytut Rybacki (MIR), Szczecin, Poland, for sorting, identification, and enumeration according to procedures described by Jossi and Marak (1983). The MARMAP 0.505-mm samples were sorted for all ichthyoplankton. Larval fish were identified, counted, and measured to the nearest 0.1 mm of standard length. Up to 50 randomly selected larvae of a species were measured from each sample. Larvae and related data sheets were sent to the NEFC Sandy Hook Laboratory for verification, further analysis, data entry, and archiving.

The 0.333-mm plankton samples were analyzed for invertebrate zooplankton composition and abundance. The volume of the entire sample was determined and organisms greater than 2.5 cm were removed. Volumes determined separately. A subsample of approximately 500 organisms was taken, then each organism identified to the lowest taxon possible (Jossi and Marak 1983). The zooplankton samples were archived at the MIR laboratory.

Vertical plankton hauls were made at 24 stations on

Georges Bank on cruise DL8708 to collect scallop larvae for Dr. M. J. Tremblay, Fisheries and Oceans, Halifax, Nova Scotia, Canada. A 0.40-m bongo frame fitted with paired 0.085-mm nets was used along with 68 kg of weight to depress the sampler. A TSK analog flowmeter was suspended within each bongo frame and a TDR attached to the towing wire to record actual tow depth. Sampling procedures required that the ship be stopped. Tows were made to within 5 m of bottom or to a maximum depth of 100 m. Wire was payed out and retrieved at 50 m/min and the wire angle recorded. The plankton samples collected were preserved in five-percent buffered formalin and returned to Dr. Tremblay for analysis.

Two neuston samplers were towed on MARMAP surveys. One consisted of a 0.5- by 1.0-m tubular frame fitted with a conical 0.505-mm net (Jossi and Marak 1983). This net was towed for 10 min in conjunction with the bongo haul. After the tow, large pieces of debris or seaweed were rinsed of adhering plankton, the amount of weed recorded and discarded. The resultant catch was preserved in five-percent formalin. Excessively large catches were measured volumetrically and subsampled; the remainder of the catch was drained and then discarded. Samples were archived at the NEFC Narragansett Laboratory.

A Haedrich neuston sampler was towed at 3.5 kn for 15 min at selected stations to collect juvenile fish that avoid the slower towed 0.5- x 1.0-m sampler. It consisted of a 1.0- x 0.3-m fiberglass rectangular frame with a built-in pontoon on each end (Bartlett and Haedrich 1968). The frame was fitted with a 1.8-mm mesh conical meter net. Samples from this neuston net were sorted at sea, the fish preserved in five-percent formalin, and the remaining sample discarded. The fish were identified, counted, and measured to the nearest 0.1 mm SL at NEFC Sandy Hook and Woods Hole facilities.

## HYDROGRAPHY

Hydrographic procedures used on MARMAP surveys are described by Kirschner (1980) and Patanjo *et al.* (1982). Minor modifications in hydrographic methodology were implemented over time, either to expedite survey operations or to meet the needs of short-term studies.

Both 1.7- and 5-liter polyvinyl chloride Niskin bottles were used to collect water samples. Bottles were attached to a 1/4-in diameter wire and the array depressed with a 45-kg weight. An electronic meter block was used to attain nominal sampling depths. To aid in determining actual depths sampled, a mechanical TDR was attached near the deepest bottle. In water depths greater than 75 m, a second TDR was used, usually at the 50-m bottle. Normally all bottles were fitted with protected and unprotected reversing thermometers. Nominal sampling depths were: 1, 5, 10, 15, 20, 25, 30, 35, 50, 75, 100, 150, 200, 250 m, and within 5 m of the bottom, if water depth was less than 300 m. If station depth exceeded 300 m, the cast was made to a

maximum depth of 300 m. This procedure changed in 1987 (DL8708) when reversing thermometers were not used, but water bottle casts were made to a maximum depth of 100 m to collect water for chlorophyll *a* and phaeopigments, and salinity determinations. Twice a day, at stations where primary productivity samples were collected, additional bottles were added and some standard sampling depths were adjusted to sample at predetermined light levels.

After the cast was set at depth, bottles were allowed to flush and thermometers to equilibrate for 3-5 min before the messenger was released. At that time, the wire angle was measured and recorded. A modified Niskin bottle without reversing thermometers, known as the "bottom trip bottle" (BTB), was attached just above the 45-kg weight at station depths less than 101 m. After all bottles had been tripped, the entire array was lowered slowly until the weight made contact with the seabed, the closing mechanism on the BTB was activated automatically, and a water sample obtained within 1 m of the bottom. The total amount of wire was recorded and used in conjunction with the TDR trace to establish actual bottom depth at that time. The BTB was used on cruise DL8607 in depths greater than 100 m in support of a special study involving benthic sampling.

After the hydrographic cast was completed, reversing thermometers were read twice, allowing a minimum time lapse of 20 min from cast completion. Samples for analysis were drawn immediately from water bottles in the following order: dissolved oxygen, primary productivity, chlorophyll *a* and phaeopigments, phytoplankton, nutrients, salinity, and  $H_2^{18}O/H_2^{16}O$ . Dissolved oxygen samples collected in 1984 and 1985 were taken from all bottles at primary productivity stations and at selected transect stations. These samples were processed at sea using the modified Winkler method (Carpenter 1965). The procedure changed in 1986 in that dissolved oxygen samples were drawn from the BTB only. An alternate procedure, the azide modification of the Winkler method (Kroner *et al.* 1964; American Public Health Association 1975), was used on two cruises, DL8607 and DL8708. Salinity samples were taken from all water bottles and analyzed ashore with a Guildline AutoSal Model 8400. This procedure changed with the introduction of a Seabird Model SBE9 conductivity, temperature, depth (CTD) instrument in 1987. The Seabird CTD was used on MARMAP cruises DL8708, 8710, and part of 8704. In addition, a SeaMarTech Model 6000 AR fluorometer was integrated with the CTD and used intermittently on cruises DL8708 and 8710. CTD casts were made to within 5 m of the bottom if water depth was less than 300 m. In water depths greater than 300 m, the CTD was lowered to a maximum depth of 300 m. After each cast, data from the CTD were unloaded into a COMPAQ personnel computer. On cruise DL8704, a single Niskin bottle was attached to the hydrographic wire just above the CTD. The array was lowered to maximum wire out, the winch stopped, and a messenger deployed on the wire to trip the water bottle. Both the temperature record

salinity sample were used to calibrate the CTD. During cruise DL8707, salinity samples were taken from the 1-m depth and deepest water bottle used on station to calibrate the CTD. Samples collected for  $H_2^{18}O/H_2^{16}O$  measurements were taken from all bottles and were analyzed at the Lamont-Doherty Geological Observatory, Palisades, New York, using methods described by Fairbanks (1982). The latter sampling was discontinued after cruise DL8610.

On cruise GY8507, a Neil Brown Mark III CTD was used along with both a General Oceanics rosette water sampler fitted with Niskin bottles to collect discrete depth samples and a Sea Tech 25-cm path length transmissometer to measure light transparency in the water. CTD and transmissometer data were collected during cast decent, and the discrete-depth water samples were obtained during cast ascent. This array was lowered to near bottom on each cast. The hydrographic results from this cruise were presented in Townsend and Christensen (1986).

On cruises where hydrographic casts were not made, *i.e.*, when plankton sampling was conducted in conjunction with trawl surveys, or if continuous temperature profiles were desired, a Sippican expendable bathythermograph (XBT) was used. Two probe types, one effective from 0 to 200 m and another from 0 to 450 m were utilized. On MARMAP cruises, XBT casts were routinely made at all stations on selected transects (usually Transect A, C, D) and on other transect stations where water depths were greater than 150 m. This procedure was discontinued in 1985 (DL8507). In support of a special ichthyoplankton study undertaken in the spring of 1987 (AA8704, W18701), XBT casts were made at alternate stations. XBT drops were either made near the time of messenger release for the water bottle cast or near the time of the plankton tow on trawl surveys.

Sea surface temperature was measured with a stem thermometer to the nearest 0.1°C at all stations. On two cruises in 1987 (AA8704 and part of DL8710), a thermistor affixed to the vessel's seawater intake pipe recorded sea surface temperature. A sample of water from the surface bucket was kept for salinity analysis on trawl surveys, but this practice was discontinued in 1987 (AL8701).

A Secchi disc reading was taken to measure water transparency when the vessel was stopped for hydrographic observations. This reading, recorded to the nearest 0.5 m, was not taken at night or in rough sea conditions.

At each station, observations of barometric pressure, wind speed and direction, wave height, air temperature, cloud type, and amount of cover were recorded.

## CHLOROPHYLL *a* AND PHAEOPIGMENTS

The determination of chlorophyll *a* and phaeopigment (phaeophorbide and phaeophytin) concentrations was based on methods described by Strickland and Parsons (1972) and Evans and O'Reilly (1983). Water samples were taken at each station at standard sampling depths from surface to

100 m (see Hydrography section). Additional samples for chlorophyll *a* and phaeopigment measurements were taken twice a day at primary productivity stations from water bottles. Determinations were completed at sea.

After water bottles were retrieved, a measured volume of seawater (approximately 200-800 ml) from each was filtered. Phytoplankton were size-fractionated by filtration to separate the netplankton (greater than or equal to 20  $\mu\text{m}$ ) and nannoplankton (less than 20 $\mu\text{m}$ ). The sample filters were then transferred to individual grinding tubes and pulverized in 90-percent acetone with the aid of an electric grinding rod. After grinding, the acetone volume in each tube was brought to 10 ml and the sample centrifuged for clarification. A portion of the supernatant was poured into a test tube and the fluorescence was measured with a Turner Designs fluorometer.

Approximately 0.1 ml (two drops) of five-percent HCl was added to degrade chlorophyll *a* to phaeopigments and the fluorescence was re-read. The two fluorescence readings were used to calculate chlorophyll *a* and phaeopigment concentrations. The chlorophyll *a* and phaeopigment concentrations in the netplankton and nannoplankton were summed to obtain the total amount of chlorophyll *a* and phaeopigment at each depth sampled.

A modified version of the above procedure, based on methods described in Parsons *et al.* (1984), was initiated in 1985 (DL8510). Following the filtration process, sample filters were submerged in a tube containing 10 ml of 90-percent acetone and refrigerated in darkness for 24 h while chlorophyll *a* and phaeopigments transfused into the acetone solution. In 1987 (DL8708), the time period allowed for chlorophyll *a* and phaeopigments to transfuse into the acetone solution was reduced to 12 h. Standard methods for centrifuging samples and reading fluorescence were then followed. Procedures were again modified in 1987 (DL8708, 8710) in that samples were centrifuged only when necessary to clarify the solution. This extraction procedure was also used on cruise GY8507 with minor differences. A 100-ml sample of seawater was filtered through a 0.45- $\mu\text{m}$  filter, and a minimum period of 6 h was allowed for chlorophyll *a* and phaeopigment transfusion into acetone before fluorometric analysis.

Fluorescence of near-surface water was measured continuously using a modified Turner Designs fluorometer (Lorenzen 1966; Turner Designs 1981) on two surveys in 1984 (DL8401 and AL8403) and on all MARMAP surveys from DL8510 through DL8710 with the exception of AA8704 and W18701. Water for underway measurements was provided through the laboratory seawater system of the ship. A strip chart recorder was used along with this system in 1984. This procedure was changed in 1985 (DL8510) in that fluorescence was read and recorded by scientific personnel. In 1987 (DL8704), this procedure again changed and the fluorometry system was interfaced with a Hewlett-Packard 71B microcomputer, a cassette drive, printer, and a North Star 800 Loran C navigation unit to record location and fluorescence automatically. The flow-through under-

way fluorescence measurements were calibrated routinely at sea by measuring the pigment (chlorophyll *a* and phaeopigments) content of water taken from the fluorometer effluent using standard methods.

Fluorescence in the water column was also measured by a SeaMarTec Model 6000 AR fluorometer integrated with the CTD unit on several 1987 cruises (see Hydrography section).

## NUTRIENTS

Techniques used to collect and analyze inorganic nutrients in seawater are found in Matte *et al.* (1983). Additional analytical procedures were based on methodology presented in Kaczmarek *et al.* (1974). Seawater samples were collected at designated stations on cruise DL8401 from selected water bottles, except at station depths less than or equal to 25 m, where samples were taken from all bottles. At depths greater than 25 m but less than or equal to 35 m, samples were taken from 1, 5, 10, and 15 m and the bottom bottle. At depths greater than 35 m, samples were taken from 1, 10, 20, 30, 50, 75, 100, 150, 200, and 250 m and the bottom bottle, or to a maximum depth of 300 m. Samples were also taken from the bottom trip bottle when used (see Hydrography section).

Paired samples for inorganic nitrogen (nitrite and nitrate), orthophosphate, and reactive silicon analysis were drawn from a Niskin bottle into acid-cleaned, twice-rinsed, 30-ml polyethylene vials. In addition, a 25-ml sample was also drawn into a 40-ml acid-cleaned, twice-rinsed, glass vial for determination of ammonium concentration. One milliliter of phenol alcohol reagent (10-percent phenol in alcohol) was added to the 25-ml sample as the first reagent of the ammonium analysis (Liddicoat *et al.* 1975) and as a preservative (Degobbis 1973). The glass vial was then sealed with aluminum foil and Teflon-lined cap. All samples were frozen for analyses ashore.

Several times during a cruise, replicate samples were taken from the same Niskin bottle (usually from the 5- or 10-m depth sample) to measure precision of collection and analytical procedures. In addition, seven replicates were frozen for standardization of the laboratory analysis for each 75 to 100 samples collected for ammonium determination.

Estimates of nitrite, nitrate, orthophosphate, and reactive silicon were obtained using a Technicon Autoanalyzer II and techniques found in Kaczmarek *et al.* (1974). Analyses for ammonium were performed separately using a modified procedure by Liddicoat *et al.* (1975) in which samples were processed in batch modes and absorbance was measured using the autoanalyzer.

Water samples collected on cruise GY8507 (see Hydrography section) were analyzed at sea for concentrations of nitrate, nitrite, phosphate, silicate, and ammonium using a Technicon autoanalyzer and methods found in Strickland and Parsons (1972). Determination of urea was based on

procedures in Aminot and Kerwel (1982), but modified in that 1.0 ml of sample per minute was injected into the autoanalyzer. The diluent used was 2.0 ml of Brij 30 plus 11 ml of distilled deionized water.

## PRIMARY PRODUCTIVITY

Primary productivity measurements using methods described by O'Reilly and Thomas (1984) were made at two stations per day, one shortly after sunrise for morning incubation and another near time of local solar noon for afternoon incubation. A LICOR submersible quantum cosine sensor was used to determine the depths where light intensities were of 100, 69, 46, 25, 10, 3, and 1 percent of subsurface irradiance. Water samples from these depths were filtered through a 300- $\mu\text{m}$  screen to remove large zooplankton. For each depth sampled, two replicate "light" and one "dark" 125-ml productivity bottles were filled with seawater. Twenty-five  $\mu\text{Ci}$  of  $^{14}\text{C}$ -bicarbonate were added to each bottle. Light bottles were placed in glass tubes which were screened to match the corresponding light intensity at depth and dark bottles were placed in an opaque tube. All bottles were allowed to incubate in a continuous flow seawater bath for 5 h. The  $^{14}\text{C}$  uptake in dark bottles was subtracted from the  $^{14}\text{C}$  uptake in light bottles to determine the amount of  $^{14}\text{C}$  utilized by the phytoplankton community at each depth.

After incubation, the samples were filtered serially with 20- and 0.45- $\mu\text{m}$  mesh discs to separate netplankton, nanoplankton, and organic  $^{14}\text{C}$  released as dissolved organic carbon by the active phytoplankton. The filters were then fumed over concentrated HCl vapor for 1 min to remove residual inorganic  $^{14}\text{C}$  and placed in individual vials to which 0.2 ml of water and 1.0 ml of Soluene-100 (Packard Instrument Company) were added. After 2 h, two drops of 30-percent hydrogen peroxide were added to each vial, and following an additional 2 h, 9 ml of Insta-Gel were added to (fix) the contents of each vial. Concurrently, a 10-ml subsample of the filtrate containing the dissolved organic  $^{14}\text{C}$ -labeled carbon was placed in a glass liquid scintillation vial, acidified to pH 2.8, and sparged with air (100 cc/vial/min) for 30 min to remove the inorganic  $^{14}\text{C}$ . Thereafter, 10 ml of Insta-Gel fluor were added to the filtrate. All fixed samples were analyzed ashore using a liquid scintillation spectrometer.

Daily primary productivity ( $\text{mg C m}^{-3} \text{ d}^{-1}$ ) was estimated by integrating the results from the light depths sampled and extrapolating the  $^{14}\text{C}$  uptake measured during the 5-h incubation period to the total photoperiod. Photosynthetically active radiation was measured using a quantum sensor (400-700 nm) and a digital integrator (LICOR 500) affixed to the incubator.

## PHYTOPLANKTON

Seawater samples for phytoplankton species composition and enumeration were collected for two different studies on MARMAP cruises. These samples are designated PHYTO TYPE 1 and 2, respectively, in Table 2.

The PHYTO TYPE 1 series was collected for subsequent species identifications, cell counts, and spatial and temporal distributions. Unfiltered surface water (1-m depth Niskin bottle) samples of 500 ml were taken at all stations and preserved with two-percent buffered formalin in polyethylene bottles. In 1987 (DL8701), this procedure was changed and samples were taken from even-numbered stations. Sample analyses were done ashore according to procedures described by Marshall and Cohn (1981).

The PHYTO TYPE 2 series of phytoplankton samples was collected to quantify the vertical distribution of the dinoflagellate *Ceratium tripos* in the euphotic layer. At the morning primary productivity station, 1 l of seawater from each of the light depths sampled was gravity filtered through a separate 20- $\mu\text{m}$  filter disc. The filtration funnel was rinsed with filtered seawater (0.45  $\mu\text{m}$ ) and the filter disc placed in a vial and preserved with approximately two-percent buffered formalin. This PHYTO TYPE 2 sampling routine was modified for cruise DL8501 in that 1-l water samples were also collected from those hydrographic depths sampled for chlorophyll *a* and phaeopigment measurements on transects A, B, and C to identify an early spring bloom. All samples were analyzed at Rutgers University, New Brunswick, New Jersey.

## BENTHIC SAMPLES

On cruise DL8607, benthic samples were taken at selected stations with a 0.1- $\text{m}^2$  Smith-McIntyre stainless steel grab. Methods followed in the collection and processing of grab samples are described by Reid *et al.* (1982). The bottom trip bottle (see Hydrography section) was used on hydrographic casts at grab stations to collect water samples for dissolved oxygen and salinity determinations.

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Table 2. Summary of MARMAI survey operations, 1984-87.

CRUISE	=	name of vessel, year, and cruise number.
TR	=	transect letter designation.
STA	=	consecutive station number by cruise. (Stations with a leading asterisk were deleted when forming a survey from one or more cruises.)
DATE	=	sampling date (year, month, day) in Greenwich Mean Time (GMT).
LAT and LONG	=	station coordinates to the nearest whole minute. (Coordinates listed for each station may vary from coordinates used in other publications due to vessel drift and the use of exact starting coordinates for each activity on station.)
DEPTH	=	water depth in meters at the start of the 0.61-m bongo tow.
0.61-M START TIME	=	time the 0.61-m bongo began sampling: GMT = Greenwich Mean Time; Local = local mean time.
DNT	=	day, night, and twilight. [The DNT designation is based on light levels at the start time of the plankton tow. If no plankton tow was made, then the time of the principal observation ( <i>i.e.</i> , messenger or XBT drop) was used. Twilight is defined as that part of the day which occurs within one hour of sunrise and sunset, respectively.]
0.20-M BONGO PAIR:	5:3 =	0.505- and 0.333-mm mesh nets; 2:1 = 0.253- and 0.165-mm mesh nets; 1:0 = 0.165- and 0.053-mm mesh nets.
OTH BON	=	0.40-m bongo with paired 0.085-mm mesh nets.
NEU	=	1/2 x 1-m neuston net.
HAE	=	Haedrich neuston net.
XBT	=	expendable bathythermograph.
CTD	=	conductivity, temperature, depth instrument.
HYDRO MES TIME	=	GMT time of messenger release on bottle cast.
TEMP	=	temperature from reversing thermometers on water bottle..
SAL	=	salinity.
$^{18}\text{O}$	=	samples for measuring $\text{H}_2^{18}\text{O}/\text{H}_2^{16}\text{O}$ isotope.
CHL	=	chlorophyll <i>a</i> and phaeopigments.
DO	=	dissolved oxygen.
NUT	=	nutrient.
SEC	=	Secchi disc.
$^{14}\text{C}$	=	primary productivity.
PHYTO TYPE 1, 2	=	phytoplankton samples.



TABLE 2.

## CRUISE: DL8401 SURVEY NO. 48

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO								
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 <sup>0</sup> CHL	DO	NUT	SEC	14 <sup>C</sup> TYPE 1 2	
	1	840110	42 06	70 20	61	0248	2148	N							0241	X	X	X	X	X			X	
	2	840110	41 58	69 50	95	0558	0058	N							0546	X	X	X	X	X			X	
	3	840110	42 15	69 43	225	0848	0348	N							0834	X	X	X	X				X	
	4	840110	42 25	70 14	67	1202	0702	T		X		X			1242	X	X	X	X	X		X	X	X
	5	840110	42 26	70 38	82	1655	1155	D		X		X	X		1647	X	X	X	X	X		X	X	X
	6	840110	42 48	70 32	94	2007	1507	D				X	X		1950	X	X	X	X			X		X
	7	840110	42 50	70 00	183	2345	1845	N				X			2333	X	X	X	X			X		X
	8	840111	43 08	69 58	153	0243	2143	N				X			0232	X	X	X	X					X
	9	840111	43 24	70 12	90	0749	0249	N				X	X		0700	X	X	X	X			X		X
E	10	840111	43 40	69 22	105	1710	1210	D		X	X	X	X		1700	X	X	X	X	X		X	X	X
E	11	840111	43 18	69 24	180	2050	1550	T				X		X	2037	X	X	X	X			X		X
	12	840111	43 08	69 01	155	2354	1854	N				X			2343	X	X	X	X					X
E	13	840112	42 58	69 17	163	0240	2140	N		X		X		X	0228	X	X	X	X			X		X
E	14	840112	42 35	69 14	220	0605	0105	N				X	X	X	0550	X	X	X						X
E	15	840112	42 11	69 12	196	1008	0508	N		X		X		X	0955	X	X	X	X			X		X
E	16	840112	41 54	69 10	210	1312	0812	D			X	X	X	X	1300	X	X	X	X			X	X	X
E	17	840112	41 39	69 09	170	1533	1033	D		X	X	X		X	1633	X	X	X	X			X	X	X
	18	840112	41 37	68 53	110	1909	1409	D				X			1858	X	X	X	X					X
	19	840112	41 59	68 39	168	2338	1838	N				X			2326	X	X	X	X			X		X
	20	840113	42 19	68 27	190	0545	0045	N				X			0532	X	X	X	X					X
	21	840113	42 45	68 46	192	1156	0656	T			X	X			1251	X	X	X	X			X	X	X
	22	840113	42 55	68 22	145	1730	1230	D		X		X			1650	X	X	X	X			X	X	X
	23	840113	43 23	68 08	205	2146	1646	T				X			2134	X	X	X	X					X
	24	840114	43 22	68 41	135	0106	2006	N				X			0057	X	X	X	X			X		X
	25	840114	43 37	68 56	129	0345	2245	N				X			0336	X	X	X	X					X
	26	840114	43 58	68 35	69	1206	0706	T			X	X			1252	X	X	X	X			X	X	X
	27	840114	43 58	68 11	125	1556	1056	D			X	X			1647	X	X	X	X			X	X	X
F	28	840114	44 20	67 43	65	2040	1540	T				X	X		2031	X	X	X	X			X	X	X
F	29	840115	43 49	67 43	227	0124	2024	N		X		X	X	X	0055	X	X	X	X			X		X
F	30	840115	43 24	67 43	245	0504	0004	N				X	X	X	0448	X	X	X	X					X
F	31	840115	42 59	67 42	175	0832	0332	N		X		X		X	0821	X	X	X	X			X		X
F	32	840115	42 36	67 42	203	1249	0749	T			X	X	X	X	1236	X	X	X	X			X	X	X
F	33	840115	42 18	67 42	236	1528	1028	D		X	X	X		X	1636	X	X	X	X			X	X	X
	34	840115	42 46	66 58	168	2145	1645	T				X			2133	X	X	X	X			X		X
	35	840116	43 12	66 48	144	0126	2026	N				X			0105	X	X	X	X					X
	36	840116	43 35	66 34	122	0442	2342	N				X			0431	X	X	X	X			X		X
	37	840116	43 42	67 26	205	0830	0330	N				X			0818	X	X	X	X					X
	38	840116	44 02	67 10	148	1149	0649	T			X	X			1238	X	X	X	X			X	X	X
G	39	840116	44 00	66 12	22	1732	1232	D				X			1728	X	X	X	X			X	X	X

TABLE 2. (CONTINUED)

## CRUISE: DL8401 SURVEY NO. 48

TR STA	DATE	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				14		PHYTO				
		LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BONGO	PAIR	BON	OTH	NEU	HAE	XBT	CTD	MESS	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1
G	40	840116	43 32	66 20	70	2050	1550	T							2042	X	X	X	X		X	X		X	
G	41	840116	43 17	66 20	73	2328	1828	N							2319	X	X	X	X					X	
G	42	840117	43 01	66 20	140	0212	2112	N	X			X	X		0203	X	X	X	X		X			X	
G	43	840117	42 49	66 20	62	0410	2310	N				X			0404	X	X	X	X					X	
G	44	840117	42 39	65 20	100	0547	0047	N				X			0536	X	X	X	X					X	
G	45	840117	42 28	66 20	245	0775	0225	N	X			X	X	X	0713	X	X	X	X		X			X	
G	46	840117	42 17	66 20	240	0935	0435	N				X	X	X	0923	X	X	X	X					X	
G	47	840117	42 09	66 20	183	1132	0632	T		X		X	X	X	1238	X	X	X	X			X	X	X	X
G	48	840117	41 47	66 20	83	1535	1035	D	X	X		X			1627	X	X	X	X		X	X	X	X	X
G	49	840117	41 30	66 20	88	1825	1325	D				X	X		1815	X	X	X	X					X	
G	50	840117	41 10	56 19	136	2050	1550	T	X			X	X	X	2040	X	X	X	X		X	X		X	
	51	840117	41 36	66 31	80	0008	1908	N				X			2359	X	X	X	X					X	
	52	840118	42 02	66 50	74	0319	2219	N				X			0308	X	X	X	X		X			X	
	53	840118	42 11	67 15	175	0642	0142	N				X			0630	X	X	X	X					X	
	54	840118	41 59	67 24	23	0835	0335	N				X			0828	X	X	X	X		X			X	
	55	840118	41 33	67 01	64	1239	0739	T		X		X			1231	X	X	X	X		X	X	X	X	X
	56	840118	41 13	66 56	70	1550	1050	D		X		X			1631	X	X	X	X		X	X	X	X	X
	57	840121	40 40	67 05	138	1202	0702	T		X		X	X		1253	X	X	X	X		X	X	X	X	X
	58	840121	40 44	67 25	94	1540	1040	D		X		X	X		1635	X	X	X	X		X	X	X	X	X
F	59	840121	40 37	67 41	82	1908	1408	D				X	X		1900	X	X	X	X		X	X		X	
F	60	840121	40 21	67 41	825	2231	1731	T	X			X		X	2215	X	X	X	X		X			X	
	61	840122	40 31	67 56	109	0252	2152	N				X			0242	X	X	X	X					X	
F	62	840122	40 56	67 41	67	0634	0134	N	X			X			0627	X	X	X	X		X			X	
F	63	840122	41 16	67 41	37	1004	0504	N				X	X		0958	X	X	X	X		X			X	
F	64	840122	41 30	67 41	42	1240	0740	T	X	X		X			1233	X	X	X	X		X	X	X	X	X
F	65	840122	41 48	67 42	34	1552	1052	D		X		X	X		1630	X	X	X	X		X	X	X	X	X
	66	840122	41 51	68 10	183	2005	1505	D				X			1927	X	X	X	X		X	X		X	
	67	840122	41 37	68 06	40	2157	1657	T				X			2152	X	X	X	X		X			X	
	68	840123	41 11	68 08	22	0038	1938	N				X			0033	X	X	X	X		X			X	
	69	840123	40 48	68 17	58	0338	2238	N				X			0329	X	X	X	X		X			X	
	70	840123	40 20	68 21	128	0728	0228	N				X	X		0717	X	X	X	X					X	
	71	840123	40 29	68 37	85	0951	0451	N				X	X		0944	X	X	X	X					X	
	72	840123	40 46	68 43	64	1240	0740	T		X		X			1232	X	X	X	X			X	X	X	X
	73	840123	41 20	68 42	93	1647	1147	D		X		X			1639	X	X	X	X		X	X	X	X	X
	74	840123	41 32	59 26	65	2104	1604	T				X			2058	X	X	X	X		X	X		X	
E	75	840123	41 20	69 07	160	2318	1818	N				X	X	X	2308	X	X	X	X					X	
E	76	840124	41 04	69 06	84	0130	2030		X			X			0120	X	X	X	X		X			X	
E	77	840124	40 55	69 06	75	0250	2150	N				X	X		0242	X	X	X	X					X	
	78	840124	40 53	69 34	38	0546	0046	N				X			0541	X	X	X	X		X			X	

TABLE 2. (CONTINUED)

CRUISE: DL8401

SURVEY NO. 48

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18° CHL	DO	NUT	14° C		PHYTO TYPE
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO	PAR	BON	NEU	MAE	XBT	CTD				TEMP	SAL	
E 79	840124	40 39	69 05	80	0856	0356	N			X							X		X	
E 80	840124	40 25	69 03	84	1143	0643	T			X	X						X	X	X	
E 81	840124	40 05	69 01	175	1517	1017	D		X	X							X	X	X	
	82	840124	40 08	69 34	93	1911	1411	D			X	X					X	X	X	
	83	840124	40 24	69 42	72	2135	1635	T			X						X		X	
	84	840125	40 41	70 11	46	0100	2000	N			X						X		X	
	85	840125	41 03	70 33	47	0413	2313	N			X						X		X	
	86	840125	40 42	70 35	60	0730	0230	N			X								X	
	87	840125	40 13	70 25	112	1152	0652	T			X	X						X	X	
D 88	840125	39 59	70 40	280	1521	1021	D			X	X	X					X	X	X	
D 89	840125	40 10	70 46	131	1833	1333	D		X		X	X					X	X	X	
C 90	840125	40 21	70 51	97	2030	1530	D			X	X	X					X		X	
D 91	840125	40 41	71 02	62	2342	1842	N		X		X	X					X		X	
D 92	840126	40 58	71 10	51	0224	2124	N			X	X	X							X	
	93	840126	41 10	71 00	36	0439	2339	N			X								X	
D 94	840126	41 09	71 15	35	0745	0245	N		X		X	X					X		X	
D 95	840126	41 20	71 21	30	0935	0435	N				X	X							X	
	96	840126	41 04	71 42	49	1307	0807	D		X	X	X					X	X	X	
	97	840126	40 49	72 08	40	1632	1132	D		X		X					X	X	X	
	98	840126	40 44	72 40	29	1937	1437	D			X						X		X	
	99	840126	40 34	72 28	44	2123	1623	T			X						X		X	
	100	840126	40 19	72 43	53	2349	1849	N			X	X					X		X	
	101	840131	40 31	71 36	76	0315	2215	N			X	X							X	
	102	840131	40 04	71 30	92	0659	0159	N			X	X							X	
	103	840131	39 52	71 49	166	0959	0459	N			X	X					X		X	
	104	840201	40 28	73 13	30	1748	1248	D			X						X	X	X	
	105	840202	40 14	71 57	75	0034	1934	N			X						X		X	
	106	840202	39 51	72 27	78	0434	2334	N			X						X		X	
	107	840202	39 33	72 07	245	0758	0258	N			X	X							X	
C 108	840202	39 18	72 19	251	1059	0559	T		X		X	X				X	X		X	
C 109	840202	39 28	72 33	108	1324	0824	D			X	X	X					X	X	X	
C 110	840202	39 39	72 46	69	1549	1049	D		X	X							X	X	X	
C 111	840202	39 52	73 05	68	1830	1330	D			X	X	X					X		X	
C 112	840202	40 06	73 23	42	2112	1612	D			X	X	X					X	X	X	
C 113	840202	40 16	73 36	27	2311	1811	T		X		X	X					X		X	
C 114	840203	40 26	73 50	29	0120	2020	N		X		X	X					X	X	X	
	115	840203	40 15	73 54	22	0310	2210	N			X	X					X		X	
	116	840203	40 07	73 48	29	0436	2036	N			X	X					X		X	
	117	840203	39 55	73 56	22	0635	0135	N			X	X					X		X	



TABLE 2. (CONTINUED)

CRUISE: DL8401

SURVEY NO. 48

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME			0.20-M				HYDRO MESS				18				14		PHYTO TYPE		
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	CHL	DO	NUT		SEC	C
A 157	840208	36 45	74 35	900	0514	0014	N				X		X	0457	X	X	X	X		X				X
158	840208	36 39	74 52	49	0800	0300	N				X	X		0753	X	X	X	X						X
159	840208	36 23	75 15	38	1207	0707	T		X	X				1221	X	X	X	X	X	X	X	X	X	X
160	840208	36 43	75 22	20	1548	1048	D		X	X				1626	X	X	X	X	X				X	X
161	840208	36 33	75 47	20	1902	1402	D			X				1857	X	X	X	X		X	X			X

TABLE 2. (CONTINUED)

CRUISE: AL8402

SURVEY NO. 49

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14			PHYTO			
		LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT		CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT
1	840302	37 27	74 26	155	1811	1311	D						X			X						
4	840302	37 11	74 46	65	2228	1728	T						X			X						
7	840303	36 52	74 38	295	0437	2337	N						X			X						
8	840303	36 26	74 46	205	0910	0410	N						X			X						
12	840303	36 01	75 04	37	1506	1006	D						X			X						
13	840303	36 05	74 48	142	1704	1204	D						X			X						
15	840303	35 42	74 55	63	2157	1657	T						X			X						
17	840304	35 19	75 14	29	0157	2057	N						X			X						
73	840308	35 46	75 17	36	1825	1325	D						X			X						
76	840308	35 55	75 32	16	2200	1700	T						X			X						
79	840309	36 20	75 41	23	0230	2130	N						X			X						
82	840309	36 34	75 33	26	0635	0135	N						X			X						
83	840309	36 37	75 12	27	0846	0346	N						X			X						
85	840309	36 48	75 04	35	1313	0813	D						X			X						
86	840309	36 51	75 30	27	1810	1310	D						X			X						
88	840309	37 01	75 46	15	2344	1844	N						X			X						
91	840310	37 13	75 24	28	0440	2340	N						X			X						
93	840310	37 28	75 35	11	0736	0236	N						X			X						
97	840310	37 35	75 14	26	1234	0734	D						X			X						
102	840310	38 04	75 03	17	2017	1517	D						X			X						
104	840311	37 37	74 52	44	0118	2018	N						X			X						
106	840311	37 47	74 22	66	0531	0031	N						X			X						
111	840311	37 53	74 05	150	1356	0856	D						X			X						
112	840311	38 18	73 43	117	1756	1256	D						X			X						
115	840312	38 29	74 09	50	0025	1925	N						X			X						
116	840312	38 22	74 39	34	0340	2240	N						X			X						
119	840312	38 23	75 02	15	0829	0329	N						X			X						
124	840312	38 45	74 37	31	1547	1047	D						X			X						
126	840312	38 49	74 54	15	1748	1248	D						X			X						
130	840313	39 02	74 17	75	0005	1905	N						X			X						
133	840313	39 12	74 34	12	0354	2254	N						X			X						
136	840313	38 59	74 05	39	0829	0329	N						X			X						
137	840313	39 17	74 07	27	1113	0613	T						X			X						
139	840313	39 34	74 07	19	1716	1216	D						X			X						
142	840313	39 43	73 46	20	2335	1835	T						X			X						
143	840314	39 55	73 34	28	0245	2145	N						X			X						
145	840314	40 08	73 52	28	0730	0230	N						X			X						
150	840314	40 30	73 51	16	1330	0830	D						X			X						
153	840314	40 14	73 19	40	1958	1458	D						X			X						

TABLE 2. (CONTINUED)

CRUISE: AL8402

SURVEY NO. 49

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			18 D	CHL	DO	NUT	SEC	14 C		PHYTO TYPE 1 2
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO	PAIR	BON	1:0	OTH	NEU	HAE	XBT						CTD	TIME	
157	840315	40 33	73 17	22	0031	1931	N								X						X		
161	840315	40 43	72 48	19	0508	0008	N								X						X		
165	840315	40 25	72 37	47	1008	0508	T								X						X		
168	840315	40 45	72 17	40	1635	1135	D								X						X		
173	840315	40 55	72 07	22	2228	1728	T								X						X		
176	840320	40 42	71 32	69	0125	2025	N								X						X		
177	840320	40 26	71 56	69	0439	2339	N								X						X		
179	840320	33 56	72 37	57	1045	0545	T								X						X		
181	840320	39 40	72 24	112	1419	0919	D								X						X		
183	840320	39 22	72 14	300	1853	1353	D								X						X		
186	840321	39 17	72 44	104	0142	2042	N								X						X		
188	840321	39 37	72 57	66	0526	0026	N								X						X		
190	840321	39 20	73 08	64	0930	0430	N								X						X		
194	840321	39 00	72 52	115	1911	1411	D								X						X		
197	840322	38 37	73 10	215	0052	1952	N								X						X		
198	840322	38 47	73 24	77	0430	2330	N								X						X		
199	840322	39 11	73 36	40	0755	0255	N								X						X		
200	840322	39 36	73 24	36	1117	0617	T								X						X		
203	840322	39 51	71 47	230	2128	1628	D								X						X		
206	840323	40 13	71 34	88	0300	2200	N								X						X		
210	840323	40 00	71 18	205	0830	0330	N								X						X		
212	840323	40 09	70 57	141	1213	0713	D								X						X		
213	840323	40 23	71 16	84	1518	1018	D								X						X		
214	840323	40 38	70 50	69	1838	1338	D								X						X		
216	840323	41 01	71 17	45	2327	1827	T								X						X		
219	840324	41 05	71 38	37	0238	2138	N								X						X		
221	840324	41 12	71 02	33	1007	0507	T								X						X		
222	840324	41 06	70 41	44	1226	0726	D								X						X		
223	840324	41 13	70 20	30	1457	0957	D								X						X		
224	840324	40 50	70 11	40	1621	1321	D								X						X		
225	840324	40 52	70 33	56	2051	1551	D								X						X		
228	840325	40 43	69 55	43	0236	2136	N								X						X		
230	840325	40 30	69 33	68	0621	0121	N								X						X		
232	840325	40 16	70 09	95	1130	0630	T								X						X		
233	840325	40 11	70 26	119	1350	0850	D								X						X		
234	840325	40 01	70 32	242	1555	1055	D								X						X		
238	840326	40 04	69 48	122	0048	1948	N								X						X		
239	840326	40 11	69 17	95	0553	0053	N								X						X		
240	840326	40 35	69 10	70	0915	0415	N								X						X		





TABLE 2. (CONTINUED)

CRUISE: AL8402

SURVEY NO. 49

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 O	14 C	PHYTO					
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	MAE	XBT			CTD	TIME	TEMP	SAL	CHL	DO
317	840411	41 43	65 53	125	1720	1220	D											X				
318	840411	41 46	66 08	92	1934	1434	D											X				
319	840411	41 58	65 56	111	2202	1702	T											X				
322	840412	42 00	66 24	83	0546	0046	N											X				
326	840417	41 56	70 19	32	0627	0127	N											X				
330	840417	42 13	70 38	24	1408	0908	D											X				
336	840417	42 20	70 22	91	2134	1634	D											X				
339	840419	42 20	69 51	207	0210	2110	N											X				
340	840418	42 24	69 13	238	0616	0116	N											X				
345	840418	42 53	69 34	172	1505	1005	D											X				
351	840419	42 49	70 26	123	0122	2022	N											X				
353	840419	43 17	70 08	138	0554	0054	N											X				
355	840419	43 35	69 45	107	1008	0508	T											X				
356	840419	43 20	69 30	168	1239	0739	D											X				
358	840419	43 39	68 43	145	1129	1629	D											X				
362	840420	43 28	68 16	169	0326	2226	N											X				
365	840420	43 37	67 47	241	0949	0449	T											X				
366	840420	44 03	67 33	222	1331	0831	D											X				
369	840420	44 15	67 46	100	1843	1343	D											X				
371	840421	44 07	66 58	162	0016	1916	T											X				
373	840421	43 58	66 32	88	0436	2336	N											X				
376	840421	43 37	67 04	195	1100	0600	D											X				
379	840421	43 38	66 24	78	1619	1119	D											X				
381	840421	43 14	66 45	149	2040	1540	D											X				
382	840422	43 03	66 53	164	1508	1008	D											X				
386	840422	42 40	66 26	150	2232	1732	T											X				
388	840423	42 43	66 00	75	0141	2041	N											X				
390	840423	42 41	65 49	98	0442	2342	N											X				
391	840423	42 39	65 37	95	0637	0137	N											X				
392	840423	42 26	65 17	116	0934	0434	T											X				
394	840423	42 19	65 47	194	1340	0840	D											X				
396	840423	42 28	65 59	200	1720	1220	D											X				
397	840423	42 12	66 25	204	2108	1608	D											X				
398	840424	42 23	66 42	343	0015	1915	T											X				
400	840424	42 29	67 09	347	0413	2313	N											X				
402	840424	42 49	67 54	207	0945	0445	T											X				
403	840424	42 27	67 58	194	1255	0755	D											X				
406	840424	43 08	68 30	202	2144	1644	D											X				
407	840425	42 48	68 40	213	0055	1955	N											X				

TABLE 2. (CONTINUED)

CRUISE: AL8403

SURVEY NO. 59

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO MESS			18				PHYTO						
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DMT	BONGO	PAIR	BON	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C
	1	840509	35 41	74 58	54	1345	0945	D								1430	X	X	X	X				X	X
	2	840509	35 16	75 14	26	1747	1347	D								1815	X	X	X	X				X	X
	3	840509	35 28	75 15	28	1928	1528	D								1951	X	X	X	X				X	X
	4	840509	35 51	75 29	20	2222	1822	D								2246	X	X	X	X				X	X
	5	840510	36 09	75 06	40	0112	2112	N								0136	X	X	X	X				X	X
	6	840510	36 16	74 46	327	0332	2332	N								0424	X	X	X	X				X	X
	7	840510	36 23	75 15	38	0652	0252	N								0719	X	X	X	X				X	X
	8	840510	36 15	75 32	27	0858	0458	N								0923	X	X	X	X				X	X
	9	840510	36 28	75 44	19	1128	0728	D		X						1122	X	X	X	X	X		X	X	X
	10	840510	36 43	75 22	23	1344	0944	D								1405	X	X	X	X				X	X
	11	840510	36 41	74 59	32	1632	1232	D		X						1625	X	X	X	X	X		X	X	X
A	12	840510	36 46	74 35	1119	1938	1538	D								1926	X	X	X	X				X	X
A	13	840510	36 49	74 50	48	2105	1705	D		X						2136	X	X	X	X	X		X	X	X
A	14	840510	36 51	75 05	37	2259	1859	T								2322	X	X	X	X				X	X
A	15	840511	36 53	75 19	32	0031	2031	T		X						0055	X	X	X	X	X			X	X
A	16	840511	36 55	75 33	23	0218	2218	N								0240	X	X	X	X				X	X
A	17	840511	36 56	75 48	20	0357	2357	N		X						0421	X	X	X	X	X			X	X
	18	840511	37 15	75 40	12	0614	0214	N								0639	X	X	X	X				X	X
	19	840511	37 17	75 08	31	0902	0502	T								0928	X	X	X	X				X	X
	20	840511	37 13	74 45	72	1154	0754	D		X						1145	X	X	X	X	X		X	X	X
	21	840511	37 31	74 39	58	1349	0949	D								1445	X	X	X	X				X	X
	22	840511	37 38	74 21	97	1652	1252	D		X						1640	X	X	X	X	X		X	X	X
	23	840511	37 48	74 46	41	1911	1511	D								1941	X	X	X	X				X	X
	24	840511	37 31	74 57	33	2138	1738	D								2204	X	X	X	X				X	X
	25	840511	37 37	75 19	27	2357	1957	T								0017	X	X	X	X				X	X
	26	840512	37 48	75 17	18	0125	2125	N								0151	X	X	X	X				X	X
	27	840512	38 10	74 54	25	0429	0029	N								0456	X	X	X	X				X	X
B	*28	840512	38 34	74 53	22			N								1717	X	X	X	X				X	X
B	29	840512	38 45	74 57	20	0823	0423	N		X						0849	X	X	X	X	X			X	X
B	30	840512	38 35	74 49	26	1032	0632	T			X					1127	X	X	X	X	X		X	X	X
B	31	840512	38 25	74 39	32	1255	0855	D		X						1320	X	X	X	X	X		X	X	X
B	32	840512	38 14	74 31	42	1458	1058	D			X					1555	X	X	X	X	X		X	X	X
B	33	840512	38 04	74 22	47	1718	1318	D		X						1749	X	X	X	X	X		X	X	X
B	34	840512	37 51	74 11	108	1944	1544	D								2018	X	X	X	X				X	X
B	35	840512	37 41	74 03	1500	2213	1813	D		X						2303	X	X	X	X	X			X	X
	36	840513	37 59	73 58	147	0058	2058	N								0131	X	X	X	X				X	X
	37	840513	38 21	73 39	126	0412	0012	N								0448	X	X	X	X				X	X
	38	840513	38 25	74 07	56	0727	0327	N								0756	X	X	X	X				X	X
	39	840513	38 40	74 19	44	1042	0642	T			X					1121	X	X	X	X	X		X	X	X

1 A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: AL8403

SURVEY NO. 50

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			18	14	PHYTO		
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD			MESS TIME	TEMP	SAL
	1	840509	35 41	74 58	54	1345	0945	D											X	X
	2	840509	35 16	75 14	26	1747	1347	D											X	X
	3	840509	35 28	75 15	28	1928	1528	D											X	X
	4	840509	35 51	75 29	20	2222	1822	D											X	X
	5	840510	36 09	75 06	40	0112	2112	N											X	X
	6	840510	36 16	74 46	327	0332	2332	N											X	X
	7	840510	36 23	75 15	38	0652	0252	N											X	X
	8	840510	36 15	75 32	27	0858	0458	N											X	X
	9	840510	36 28	75 44	19	1128	0728	D		X									X	X
	10	840510	36 43	75 22	23	1344	0944	D											X	X
	11	840510	36 41	74 59	32	1632	1232	D		X									X	X
A	12	840510	36 46	74 35	1119	1938	1538	D											X	X
A	13	840510	36 49	74 50	48	2105	1705	D		X									X	X
A	14	840510	36 51	75 05	37	2259	1859	T											X	X
A	15	840511	36 53	75 19	32	0031	2031	T		X									X	X
A	16	840511	36 55	75 33	23	0218	2218	N											X	X
A	17	840511	36 56	75 48	20	0357	2357	N		X									X	X
	18	840511	37 15	75 40	12	0614	0214	N											X	X
	19	840511	37 17	75 08	31	0902	0502	T											X	X
	20	840511	37 13	74 45	72	1154	0754	D		X									X	X
	21	840511	37 31	74 39	58	1349	0949	D											X	X
	22	840511	37 38	74 21	97	1652	1252	D		X									X	X
	23	840511	37 48	74 46	41	1911	1511	D											X	X
	24	840511	37 31	74 57	33	2138	1738	D											X	X
	25	840511	37 37	75 19	27	2357	1957	T											X	X
	26	840512	37 48	75 17	18	0125	2125	N											X	X
	27	840512	38 10	74 54	25	0429	0029	N											X	X
B	*28	840512	38 34	74 53	22			N											X	X
B	29	840512	38 45	74 57	20	0823	0423	N		X									X	X
B	30	840512	38 35	74 49	26	1032	0632	T			X								X	X
B	31	840512	38 25	74 39	32	1255	0855	D		X									X	X
B	32	840512	38 14	74 31	42	1458	1058	D			X								X	X
B	33	840512	38 04	74 22	47	1718	1318	D		X									X	X
B	34	840512	37 51	74 11	108	1944	1544	D											X	X
B	35	840512	37 41	74 03	1500	2213	1813	D		X									X	X
	36	840513	37 59	73 58	147	0058	2058	N											X	X
	37	840513	38 21	73 39	126	0412	0012	N											X	X
	38	840513	38 25	74 07	56	0727	0327	N											X	X
	39	840513	38 40	74 19	44	1042	0642	T			X								X	X

1 A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: AL8403

SURVEY NO. 50

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO								
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	BON OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL <sup>1</sup>	DO	NUT	SEC	14 C
	40	840513	38 55	74 33	25	1307	0907	D							1329	X	X	X	X					X	X
	41	840513	38 57	74 07	41	1523	1123	D		X					1600	X	X	X	X	X			X	X	X
	42	840513	39 14	74 26	17	1820	1420	D							1844	X	X	X	X				X	X	
	43	840513	39 21	74 06	26	2027	1627	D							2054	X	X	X					X	X	
	44	840513	39 11	73 39	45	2314	1914	T							2337	X	X	X	X					X	
	45	840514	38 45	73 45	51	0212	2212	N							0241	X	X	X	X					X	
	46	840514	38 39	73 09	176	0529	0129	N							0622	X	X	X	X					X	
	47	840514	38 59	73 08	91	0848	0448	T							0920	X	X	X	X					X	
	48	840514	39 15	72 53	80	1156	0756	D		X					1146	X	X	X	X	X			X	X	X
	49	840514	39 39	73 23	37	1535	1135	D		X					1614	X	X	X	X	X			X	X	X
	50	840514	39 52	73 33	36	1755	1355	D							1822	X	X	X	X				X	X	
	51	840514	39 34	73 49	25	2023	1623	D							2052	X	X	X	X				X	X	
	52	840514	39 43	74 03	16	2210	1810	D							2235	X	X	X	X				X	X	
	53	840514	39 55	73 56	22	2351	1951	T							0014	X	X	X	X					X	
	54	840515	40 07	73 48	31	0134	2134	N							0155	X	X	X	X					X	
	55	840515	40 15	73 54	22	0250	2250	N							0311	X	X	X	X					X	
C	56	840515	40 26	73 50	25	0420	0020	N		X					0445	X	X	X	X	X				X	
C	57	840515	40 16	73 36	25	0610	0210	N							0637	X	X	X	X					X	
C	58	840515	40 06	73 23	42	0809	0409	N		X					0838	X	X	X	X					X	
C	59	840515	39 52	73 05	71	1035	0635	T			X				1117	X	X	X	X	X			X	X	X
C	60	840515	39 39	72 46	72	1316	0916	D		X					1341	X	X	X	X	X			X	X	
C	61	840515	39 28	72 33	106	1508	1108	D			X				1551	X	X	X	X	X			X	X	
C	62	840515	39 18	72 19	230	1814	1414	D		X					1902	X	X	X	X	X			X	X	
	63	840515	39 33	72 07	190	2054	1654	D							2137	X	X	X	X				X	X	
	64	840515	39 52	71 49	167	2357	1957	T							0033	X	X	X	X					X	
	65	840516	40 04	71 30	93	0235	2235	N							0302	X	X	X	X					X	
	66	840516	40 31	71 36	76	0602	0202	N							0637	X	X	X	X					X	
	67	840516	40 14	71 58	66	0838	0438	T							0908	X	X	X	X					X	
	68	840516	39 57	72 21	75	1148	0748	D		X					1140	X	X	X	X	X			X	X	X
	69	840516	40 19	72 43	55	1421	1021	D							1504	X	X	X	X				X	X	
	*70	840516	40 21	72 54	43			D							1623	X	X	X	X	X			X	X	
	71	840516	40 28	73 13	29	1757	1357	D							1832	X	X	X	X				X	X	
	72	840516	40 44	72 40	27	2112	1712	D							2139	X	X	X	X				X	X	
	73	840516	40 34	72 28	44	2301	1901	D							2324	X	X	X	X					X	
	74	840517	40 49	72 08	42	0127	2127	N							0148	X	X	X	X					X	
	75	840517	41 04	71 42	47	0409	0009	N							0436	X	X	X	X					X	
D	76	840517	41 20	71 21	30	0704	0304	N							0729	X	X	X	X					X	
D	77	840517	41 09	71 14	38	0853	0453	T		X					0920	X	X	X	X	X				X	
D	78	840517	40 58	71 10	51	1043	0643	D			X				1120	X	X	X	X	X			X	X	X

1 A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: AL8403 SURVEY NO. 50

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO MESS			18				14		PHYTO TYPE				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DMT	BONGO	PAIR	BON	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL		DO	NUT	SEC	C
D	79	840517	40 41	71 02	64	1310	0910	D		X		X			1340	X	X	X	X	X			X		X
D	80	840517	40 21	70 51	96	1635	1235	D			X	X	X		1623	X	X	X	X	X			X	X	X
D	81	840517	40 10	70 46	131	1611	1411	D		X		X			1846	X	X	X	X	X			X		X
D	82	840517	39 59	70 40	293	2016	1616	D				X	X	X	2106	X	X	X	X				X		X
	83	840517	40 13	70 25	114	2330	1930	T				X	X		0000	X	X	X	X						X
	84	840521	41 09	71 00	37	2131	1731	D				X			2155	X	X	X	X				X		X
	85	840522	41 03	70 33	44	0008	2008	T				X			0033	X	X	X	X						X
	86	840522	40 42	70 35	59	0245	2245	N				X			0311	X	X	X	X						X
	87	840522	40 41	70 12	45	0521	0121	N				X			0543	X	X	X	X						X
	88	840522	40 24	69 42	71	0847	0447	T				X			0912	X	X	X	X						X
	89	840522	40 08	69 34	94	1153	0753	D			X	X	X		1141	X	X	X	X	X			X	X	X
E	90	840522	40 05	69 01	274	1454	1054	D		X	X	X	X		1620	X	X	X	X	X			X	X	X
E	91	840522	40 25	69 03	84	1845	1445	D				X	X		1910	X	X	X	X				X		X
E	92	840522	40 39	69 05	79	2050	1650	D		X		X			2119	X	X	X	X	X			X		X
	93	840523	40 53	69 34	41	0019	2019	T				X			0044	X	X	X	X						X
E	94	840523	40 55	69 06	72	0306	2306	N				X	X		0344	X	X	X	X						X
E	95	840523	41 03	69 07	84	0459	0059	N		X		X			0528	X	X	X	X	X					X
E	96	840523	41 20	69 07	158	0709	0309	N				X	X	X	0746	X	X	X	X						X
	97	840523	41 32	69 26	64	1038	0638	D			X	X			1121	X	X	X	X	X			X	X	X
	98	840523	41 15	68 42	64	1518	1118	D			X	X			1558	X	X	X	X	X			X	X	X
	99	840523	40 51	68 44	69	1859	1459	D				X			1924	X	X	X	X				X		
	100	840523	40 29	68 38	84	2245	1845	D				X	X		2310	X	X	X	X						X
	101	840524	40 20	68 21	128	0107	2107	N				X	X		0141	X	X	X	X						X
	102	840524	40 48	68 17	47	0456	0056	N				X			0524	X	X	X	X						X
	103	840524	41 12	68 09	27	0803	0403	N				X			0827	X	X	X	X						X
	104	840524	41 36	68 04	40	1135	0735	D			X	X			1127	X	X	X	X	X			X	X	X
	105	840524	41 51	68 08	154	1328	0928	D				X			1405	X	X	X	X				X		X
F	106	840524	41 48	67 43	31	1619	1219	D			X	X	X		1609	X	X	X	X	X			X	X	X
F	107	840524	41 30	67 41	34	1839	1439	D		X		X			1908	X	X	X	X	X			X		X
F	108	840524	41 16	67 41	39	2113	1713	D				X	X		2139	X	X	X	X				X		X
F	109	840525	40 56	67 41	67	0033	2033	T		X		X			0102	X	X	X	X	X					X
	110	840525	40 31	67 56	102	0413	0013	N				X			0444	X	X	X	X						X
F	111	840525	40 22	67 40	560	0635	0235	N		X		X	X		0719	X	X	X	X	X					X
F	112	840525	40 37	67 41	81	0857	0457	T				X			0926	X	X	X	X						X
	113	840525	40 45	67 25	93	1138	0738	D			X	X	X		1128	X	X	X	X	X			X	X	X
	114	840525	40 41	67 07	108	1322	0922	D				X			1352	X	X	X	X				X		X
	*115	840525	41 07	67 01	71			D							1624	X	X	X	X	X			X	X	
	116	840525	41 13	66 57	69	1754	1354	D				X			1815	X	X	X	X				X		X
	117	840525	41 33	67 02	62	2028	1628	D							2056	X	X	X	X				X		X

1 A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: AL8403

SURVEY NO. 50

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			18				14		PHYTO TYPE									
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DWT	BONGO PAIR 5:3	2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	1 DO		NUT	SEC	C	1	2				
	118	840525	41 59	67 24	27	2344	1944	T							0007	X	X	X	X												X
	119	840526	42 11	67 15	180	0126	2126	N							0205	X	X	X	X											X	
	120	840526	42 01	66 50	66	0446	0046	N							0432	X	X	X	X											X	
	121	840526	41 36	66 32	77	0740	0340	N							0804	X	X	X	X											X	
G	122	840526	41 10	66 19	136	1154	0754	D	X	X					1142	X	X	X	X	X						X	X	X	X	X	
G	123	840526	41 27	66 15	97	1350	0950	D							1422	X	X	X	X							X	X	X		X	
	124	840526	41 37	65 59	106	1645	1245	D			X				1655	X	X	X	X	X						X	X	X		X	
	125	840526	41 54	65 49	149	1847	1447	D							1941	X	X	X	X							X				X	
G	126	840526	41 52	66 20	84	2228	1828	D	X						2257	X	X	X	X	X										X	
G	127	840527	42 09	66 20	188	0133	2133	N							0120	X	X	X	X											X	
G	128	840527	42 17	66 20	246	0304	2304	N							0350	X	X	X	X											X	
G	129	840527	42 28	66 20	252	0513	0113	N	X						0600	X	X	X	X	X										X	
G	130	840527	42 39	66 20	110	0733	0333	N							0801	X	X	X	X											X	
G	131	840527	42 49	66 20	46	0912	0512	T							0941	X	X	X	X											X	
G	132	840527	43 01	66 21	139	1141	0741	D	X	X					1128	X	X	X	X							X	X	X	X	X	
G	133	840527	43 17	66 20	71	1333	0933	D							1359	X	X	X	X							X	X	X		X	
G	134	840527	43 32	66 20	68	1627	1227	D			X				1616	X	X	X	X	X						X	X	X		X	
G	135	840527	44 00	66 13	21	1935	1535	D							1957	X	X	X	X							X				X	
	136	840527	44 16	66 37	202	2223	1823	D							2301	X	X	X	X											X	
	137	840528	44 16	67 07	115	0134	2134	N							0207	X	X	X	X											X	
	138	840528	44 02	67 10	154	0336	2336	N							0420	X	X	X	X											X	
	139	840528	43 42	67 26	210	0637	0237	N							0716	X	X	X	X											X	
	140	840528	43 30	67 00	202	1017	0617	D			X				1125	X	X	X	X	X						X	X	X		X	
	141	840528	43 35	66 44	129	1254	0854	D							1326	X	X	X	X							X	X	X		X	
	142	840528	43 12	66 48	148	1705	1305	D			X				1628	X	X	X	X	X						X	X	X		X	
	143	840528	42 46	66 58	166	1947	1547	D							2023	X	X	X	X							X				X	
	144	840528	42 43	67 29	204	2245	1845	D							2325	X	X	X	X											X	
F	145	840529	42 18	67 42	240	0206	2206	N	X						0249	X	X	X	X	X										X	
F	146	840529	42 36	67 41	206	0442	0042	N							0525	X	X	X	X											X	
F	147	840529	42 59	67 42	185	0757	0357	T	X						0837	X	X	X	X	X										X	
F	148	840529	43 18	67 42	254	1125	0725	D			X				1114	X	X	X	X	X						X	X	X		X	
F	149	840529	43 49	67 43	228	1458	1058	D	X	X					1606	X	X	X	X	X						X	X	X		X	
F	150	840529	44 20	67 43	72	2038	1638	D							2108	X	X	X	X											X	
	151	840530	43 58	68 11	152	0035	2035	T							0118	X	X	X	X											X	
	152	840530	43 58	68 35	81	0318	2318	N							0355	X	X	X	X											X	
	153	840530	43 37	68 56	125	0656	0256	N							0734	X	X	X	X											X	
	154	840530	43 22	68 36	158	1011	0611	D			X				1101	X	X	X	X	X						X	X	X		X	
	155	840530	43 23	68 08	209	1334	0934	D							1416	X	X	X	X							X	X	X		X	
	156	840530	43 15	68 02	227	1620	1220	D			X				1605	X	X	X	X	X						X	X	X		X	

1 A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: AL8403

SURVEY NO. 50

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO					18			14		PHYTO			
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DMT	BONGO	PAIR	BOW	MESS	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1	2					
	157	840530	42 55	68 22	170	1919	1519	D				X				1958	X	X	X	X			X	X
	158	840530	42 45	68 46	194	2213	1812	D				X				2252	X	X	X	X				X
	159	840531	42 40	68 19	205	0108	2108	N				X				0150	X	X	X	X				X
	160	840531	42 19	68 27	205	0419	0019	N				X				0504	X	X	X	X				X
	161	840531	42 10	68 48	192	0719	0319	N				X				0759	X	X	X	X				X
	162	840531	41 54	68 42	158	1026	0626	D		X		X				1112	X	X	X	X	X		X	X
	163	840531	41 38	68 53	117	1318	0918	D				X				1354	X	X	X	X				X
E	164	840531	41 39	69 10	184	1612	1212	D	X	X		X		X		1559	X	X	X	X	X		X	X
F	165	840531	41 54	69 10	209	1759	1359	D				X	X	X		1840	X	X	X	X				X
E	166	840531	42 11	69 13	195	2044	1644	D	X			X		X		2126	X	X	X	X	X			X
E	167	840531	42 35	69 14	228	2355	1955	T				X	X	X		0035	X	X	X	X				X
E	168	840601	42 58	69 17	168	0353	2353	N	X			X		X		0340	X	X	X	X	X			X
	169	840601	43 08	69 01	165	0705	0305	N				X				0743	X	X	X	X				X
F	170	840601	43 22	69 20	173	1009	0609	D		X		X		X		1103	X	X	X	X	X		X	X
E	171	840601	43 40	69 22	110	1317	0917	D	X			X				1351	X	X	X	X	X			X
	172	840601	43 25	69 37	159	1632	1232	D		X		X				1616	X	X	X	X	X		X	X
	173	840601	43 24	70 12	100	1859	1459	D				X	X			1923	X	X	X	X				X
	174	840601	43 08	69 58	145	2149	1749	D				X				2224	X	X	X	X				X
	175	840602	42 50	70 00	200	0016	2016	T				X				0057	X	X	X	X				X
	176	840602	42 48	70 32	116	0335	2335	N				X	X			0409	X	X	X	X				X
	177	840602	42 26	70 ~	76	0643	0243	N				X	X	X		0710	X	X	X	X				X
	178	840602	42 26	70 00	91	1034	0634	D				X				1107	X	X	X	X				
	179	840602	42 15	69 43	224	1333	0933	D				X				1414	X	X	X	X				
	180	840602	41 58	69 50	91	1615	1215	D				X				1647	X	X	X	X				
	181	840602	42 06	70 19	64	1953	1553	D				X				2019	X	X	X	X				

<sup>1</sup> A FLOW THRU UNDERWAY FLUORESCENCE RECORDER WAS USED ON STATIONS 84-181.

TABLE 2. (CONTINUED)

CRUISE: DL8405

SURVEY NO. 51

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			PHYTO						
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO PAIR 5:3	2:1	BON 1:0	MESS	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
1	840617	35 16	75 15	21	1441	1041	D													X
2	840617	35 27	75 15	30	2007	1607	D													X
3	840617	35 41	74 58	49	2221	1821	D													X
4	840618	35 51	75 29	18	0411	0011	N													X
5	840618	36 15	75 31	24	1105	0705	D													X
6	840618	36 09	75 06	35	1317	0917	D													X
7	840618	36 16	74 46	320	1512	1112	D													X
8	840618	36 39	74 51	47	1820	1420	D													X
9	840618	36 47	74 35	1170	2006	1606	D													X
10	840618	36 52	75 18	31	2355	1955	T													X
11	840619	36 33	75 47	18	0309	2309	N													X
12	840619	36 57	75 49	13	0713	0313	N													X
13	840619	37 15	75 40	11	1147	0747	D													X
14	840619	37 37	75 19	17	1453	1053	D													X
15	840619	37 18	75 08	28	1717	1317	D													X
16	840619	37 13	74 46	70	1939	1539	D													X
17	840619	37 48	74 46	40	2330	1930	T													X
18	840620	37 51	74 11	106	0238	2238	N													X
19	840620	38 14	74 30	43	0727	0327	N													X
20	840620	38 10	74 54	25	0958	0558	T													X
21	840620	38 35	74 48	29	1908	1508	D													X
22	840621	38 55	74 32	22	0430	0030	N													X
23	840621	38 25	74 07	55	0807	0407	N													X
24	840621	38 21	73 39	122	1037	0637	D													X
25	840621	38 45	73 45	50	1324	0924	D													X
26	840621	38 59	73 07	84	1706	1306	D													X
27	840621	39 17	72 51	81	2003	1603	D													X
28	840622	39 12	73 39	45	0027	2027	T													X
29	840622	38 57	74 06	38	0310	2310	N													X
30	840622	39 21	74 06	26	0713	0313	N													X
31	840622	39 43	74 03	16	1022	0622	T													X
32	840622	39 39	73 23	33	1421	1021	D													X
33	840622	39 53	73 05	68	1634	1234	D													X
34	840622	40 07	73 47	29	2113	1713	D													X
35	840622	40 16	73 36	26	2248	1848	D													X
36	840623	40 28	73 13	29	0706	0306	N													X
37	840623	40 11	72 43	55	0956	0556	T													X
38	840623	39 51	72 27	80	1223	0823	D													X
39	840623	40 35	72 24	44	1715	1315	D													X





TABLE 2. (CONTINUED)

CRUISE: AL8406

SURVEY NO. 52

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO				PHYTO									
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DWT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	MAE	XBT	CTD	MESS TIME	TEMP	SAL	18 O	CHL	DO	NUT	SEC	14 C
18	840704	41 00	70 50	49	2155	1755	D																	
19	840705	40 37	70 45	65	0028	2028	T																	
21	840705	40 15	70 48	121	0733	0333	N																	
22	840705	39 55	70 48	492	1229	0829	D																	
23	840705	39 53	71 25	510	1559	1159	D																	
24	840705	40 18	71 24	82	1931	1531	D																	
25	840705	40 41	71 21	60	2208	1808	D																	
26	840706	41 05	71 10	35	0211	2211	N																	
28	840706	41 24	71 25	30	0904	0504	T																	
29	840706	41 13	71 51	54	1318	0918	D																	
31	840706	41 04	71 42	47	1922	1522	D																	
32	840706	40 45	71 52	48	2258	1858	D																	
33	840707	40 16	72 01	64	0250	2250	N																	
34	840707	39 58	72 05	82	0633	0233	N																	
35	840707	40 30	72 20	51	1019	0619	T																	
36	840707	40 48	72 28	23	1250	0850	D																	
37	840707	40 36	72 50	35	1536	1136	D																	
38	840707	40 10	72 44	56	1900	1500	D																	
39	840707	40 25	73 11	34	2146	1746	D																	
40	840708	40 25	73 45	33	0401	0001	N																	
42	840708	40 15	73 47	40	0834	0434	N																	
47	840708	39 55	73 56	22	1051	0651	D																	
48	840708	40 02	73 27	80	1503	1103	D																	
49	840708	39 48	72 59	74	1707	1307	D																	
50	840708	39 37	72 37	78	2054	1654	D																	
51	840708	39 17	72 21	245	2323	1923	T																	
52	840709	39 20	72 58	72	0240	2240	N																	
53	840709	39 35	73 20	35	0646	0246	N																	
54	840709	39 36	73 54	27	0922	0522	T																	
55	840709	39 18	74 12	22	1212	0812	D																	
56	840709	39 11	73 48	44	1456	1056	D																	
57	840709	38 59	73 18	70	1930	1530	D																	
58	840709	38 58	72 44	800	2246	1846	D																	
59	840710	38 32	73 13	587	0225	2225	N																	
60	840710	38 30	73 43	68	0510	0110	N																	
61	840710	38 44	74 02	49	0725	0325	N																	
62	840710	39 00	74 30	22	1117	0717	D																	
*63	840710	38 56	75 05	14	1603	1203	D																	
64	840710	38 45	75 01	20	1830	1430	D																	



TABLE 2. (CONTINUED)

CRUISE: DL8406

SURVEY NO. 53

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO		18			14		PHYTO TYPE C 1 2			
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL DMT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL		CHL	DO	NUT
3	840710	40 52	72 17	23	0524	0124	N														
6	840710	40 33	73 05	26	1759	1359	D														
8	840710	40 30	73 34	19	2115	1715	D														
12	840711	40 20	73 53	21	0104	2104	T														
14	840711	40 16	73 39	25	0312	2312	N														
17	840711	40 05	73 40	37	0610	0210	N														
24	840711	40 06	73 59	21	1148	0748	D														
28	840711	39 52	73 59	18	1432	1032	D														
40	840711	39 48	73 14	44	2329	1929	T														
41	840712	39 45	73 30	38	0127	2127	N														
45	840712	39 33	73 22	34	0510	0110	N														
48	840712	39 18	73 40	43	0820	0420	N														
50	840712	39 34	73 39	35	1032	0632	T														
57	840712	39 39	73 54	27	1648	1248	D														
65	840712	39 28	74 10	18	2112	1712	D														
74	840713	39 14	74 04	28	0440	0040	N														
86	840713	39 13	74 28	17	1339	0939	D														
90	840713	39 01	74 35	16	1632	1232	D														
99	840713	38 42	74 40	27	2326	1926	T														
103	840714	38 54	74 18	38	0255	2255	N														
111	840714	38 41	74 19	37	0904	0504	T														
117	840714	38 11	74 24	37	1427	1027	D														
120	840714	38 26	74 30	39	1753	1353	D														
126	840714	38 38	74 51	23	2256	1856	D														
128	840715	38 30	75 00	14	0105	2105	T														
131	840715	38 18	74 55	21	0350	2350	N														
137	840715	38 06	74 44	34	0812	0412	N														
139	840715	37 53	74 46	32	1025	0625	T														
146	840715	37 56	75 07	19	1622	1222	D														
147	840715	37 43	75 07	30	1804	1404	D														
151	840715	37 43	75 30	14	2214	1814	D														
153	840716	37 26	75 24	23	0037	2037	T														
154	840716	37 13	75 40	12	0258	2258	N														
155	840716	37 01	75 51	10	0450	0050	N														
157	840716	36 56	75 32	18	0659	0259	N														
161	840716	36 44	75 53	10	1102	0702	D														
164	840716	36 33	75 34	21	1454	1054	D														
169	840716	36 22	75 45	18	2007	1607	D														
172	840716	36 04	75 30	26	2355	1955	T														



TABLE 2. (CONTINUED)

CRUISE: DL8406

SURVEY NO. 53

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18				14		PHYTO TYPE C 1 2			
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGC 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0		CHL	DO	NUT
289	840724	40 51	70 07	27	2221	1821	D						X			X							
294	840725	41 03	70 16	31	0252	2252	N									X							
297	840725	41 11	70 08	22	0502	0102	M					X				X							
300	840725	41 04	70 41	45	0847	0447	T					X				X							
306	840726	41 10	68 44	69	0144	2144	N					X				X							
309	840726	41 16	68 21	58	0524	0124	N					X				X							
319	840726	41 38	68 19	54	1230	0830	D					X				X							
327	840726	41 47	68 02	44	1920	1520	D					X				X							
330	840726	41 53	67 42	37	2352	1952	T					X				X							
340	840727	42 02	67 32	62	1543	1143	D					X				X							
342	840727	41 59	67 14	46	1809	1409	D					X				X							
344	840727	42 04	66 52	66	2150	1750	D					X				X							
347	840728	41 47	66 59	67	0244	2244	N					X				X							
348	840728	41 36	66 57	59	0555	0155	N					X				X							
352	840728	41 46	67 31	49	1034	0634	D					X				X							
355	840728	41 34	67 28	31	1352	0952	D					X				X							
360	840728	41 23	67 03	61	1800	1400	D					X				X							
362	840728	41 11	67 25	48	2133	1733	D					X				X							
364	840728	41 23	67 29	40	2342	1942	T					X				X							
366	840729	41 33	67 44	42	0127	2127	N					X				X							
370	840729	41 27	68 04	25	0533	0133	N					X				X							
375	840729	41 23	67 49	40	0905	0505	T					X				X							
376	840729	41 20	67 45	40	0954	0554	T					X				X							
379	840729	41 06	67 45	43	1243	0843	D					X				X							
381	840729	40 58	67 39	61	1430	1030	D					X				X							
382	840729	40 47	67 57	71	1654	1254	D					X				X							
387	840729	41 06	68 07	47	2206	1806	D					X				X							
391	840730	40 58	68 34	45	0215	2215	N					X				X							
394	840730	40 52	68 23	55	0506	0106	N					X				X							



TABLE 2. (CONTINUED)

CRUISE: AL8407

SURVEY NO. 54

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO MESS			18 0	14 C			PHYTO TYPE						
		LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BONGG 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT		CTD	TIME	TEMP	SAL	CHL	DO	NUT	SEC	1	2
175	840801	38 56	73 05	83	0707	0307	N							X			X								
179	840801	39 06	73 17	63	1018	0618	T							X			X								
182	840801	39 14	72 54	73	1320	0920	D							X			X								
192	840801	39 29	72 59	63	2156	1756	D							X			X								
197	840802	39 28	72 36	100	0233	2233	N							X			X								
205	840802	39 58	72 51	54	1005	0605	T							X			X								
208	840802	39 47	72 29	72	1311	0911	D							X			X								
228	840807	40 58	71 49	34	0334	2334	N							X			X								
240	840807	40 52	72 08	34	1125	0725	D							X			X								
242	840807	40 45	72 29	30	1319	0919	D							X			X								
248	840807	40 35	72 08	53	1743	1343	D							X			X								
258	840808	40 07	72 22	70	0216	2216	N							X			X								
264	840808	40 06	71 57	81	0715	0315	N							X			X								
265	840808	40 19	71 54	71	0902	0502	T							X			X								
267	840808	40 08	71 26	90	1211	0811	D							X			X								
268	840808	40 20	71 20	83	1351	0951	D							X			X								
269	840808	40 34	71 44	68	1635	1235	D							X			X								
273	840808	40 56	71 19	56	2113	1713	D							X			X								
276	840809	41 11	70 20	30	0242	2242	N							X			X								
277	840809	41 01	70 35	47	0433	0033	N							X			X								
279	840809	40 44	71 02	58	0741	0341	N							X			X								
281	840809	40 22	70 40	93	1119	0719	D							X			X								
284	840809	40 12	70 04	99	1504	1104	D							X			X								
286	840809	40 28	70 09	70	1802	1402	D							X			X								
291	840809	40 45	70 15	45	2255	1856	T							X			X								
295	840810	40 42	69 46	51	0229	2229	N							X			X								
296	840810	40 54	69 41	43	0408	0008	N							X			X								
303	840810	40 27	69 28	66	0954	0554	T							X			X								
305	840810	40 28	69 08	81	1217	0817	D							X			X								
309	840810	40 48	69 12	66	1532	1132	D							X			X								
313	840810	40 59	68 50	66	1922	1522	D							X			X								
317	840810	40 41	68 47	63	2352	1952	T							X			X								
326	840811	40 31	68 13	104	1006	0606	T							X			X								
329	840811	40 34	67 47	101	1312	0912	D							X			X								
331	840811	40 54	68 08	60	1642	1242	D							X			X								
336	840811	40 49	67 39	74	2221	1821	D							X			X								
341	840812	40 44	67 09	100	0233	2233	N							X			X								
342	840812	40 48	66 53	104	0408	0008	N							X			X								
345	840812	41 01	66 58	72	0707	0307	N							X			X								













TABLE 2. (CONTINUED)

CRUISE: AL8408

SURVEY NO. 55

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M			HYDRO			18 0	14								
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL	DWT	BONGO PAIR 5:3 2:1	BON 1:0	OTH	NEU	MAE	XBT		CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	PHYTO TYPE C 1 2
353	841022	42 17	65 50	224	0126	2126	N					X										X
357	841022	42 26	65 37	94	0833	0433	N					X										X
359	841022	42 40	65 25	95	1133	0733	T															X
364	841022	42 45	66 15	63	2131	1731	T					X										X
365	841022	42 35	66 25	185	2339	1939	N					X										X
367	841023	43 03	66 50	159	0501	0101	N					X										X
368	841023	43 22	67 06	237	0825	0425	N					X										X
369	841023	43 25	66 28	88	1242	0842	D					X										X
371	841023	43 39	66 28	79	1536	1136	D					X										X
373	841023	43 44	66 56	146	1922	1522	D					X										X
377	841024	43 59	66 29	70	0256	2256	N					X										X
378	841024	44 06	66 49	153	0557	0157	N					X										X
379	841024	44 21	67 02	135	0856	0456	N					X										X
380	841024	44 19	67 19	163	1111	0711	T					X										X
383	841024	43 26	67 56	258	2225	1825	T					X										X
385	841025	43 00	68 20	169	0330	2330	N					X										X
388	841025	42 33	68 53	204	1058	0658	T					X										X
390	841025	42 08	68 25	192	1605	1205	D					X										X
393	841030	42 18	70 30	80	0531	0031	N					X										X
395	841030	42 27	70 33	51	0951	0451	N					X										X
396	841030	42 30	70 12	73	1214	0714	D					X										X
397	841030	42 37	69 51	223	1446	0946	D					X										X
399	841030	42 34	69 25	236	1844	1344	D					X										X
401	841031	42 56	69 28	150	0016	1916	N					X										X
402	841031	42 56	70 11	121	0534	0034	N					X										X
403	841031	43 06	70 19	128	0742	0242	N					X										X
404	841031	43 13	70 12	106	0932	0432	N					X										X
405	841031	43 25	70 08	90	1142	0642	T					X										X
406	841031	43 22	69 56	161	1416	0916	D					X										X
407	841031	43 30	69 49	99	1616	1116	D					X										X
411	841101	43 16	68 57	146	0016	1916	N					X										X
413	841101	43 41	69 01	62	1003	0503	N					X										X
415	841101	43 39	68 42	139	0947	0447	N					X										X
416	841101	43 48	68 11	183	1329	0829	D					X										X
418	841101	44 04	68 05	102	1717	1217	D					X										X
421	841101	44 16	67 43	102	2132	1632	T					X										X
422	841102	43 19	67 32	210	0457	2357	N					X										X
424	841102	42 48	67 37	247	1012	0512	T					X										X
425	841102	42 27	68 13	176	1435	0935	D					X										X



TABLE 2. (CONTINUED)

## CRUISE: DL8409 SURVEY NO. 56

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO				PHYTO											
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO	PAIR	BON	NEU	HAE	XBT	CTD	MESS	TEMP	SAL	18	0	CHL	DO	MUT	SEC	14	C	1	2	TYPE
	1	841101	35 41	74 58	52	0835	0335	N						0826	X	X	X	X										X
	2	841101	35 16	75 14	26	1140	0640	T		X				1226	X	X	X	X	X				X	X	X		X	
	3	841101	35 27	75 15	29	1411	0911	D						1402	X	X	X	X						X			X	
	4	841101	35 51	75 29	21	1727	1227	D		X				1720	X	X	X	X	X				X	X	X		X	
	5	841101	36 09	75 06	35	2028	1528	D						2022	X	X	X	X					X				X	
	6	841101	36 16	74 46	411	2310	1810	N						2332	X	X	X	X									X	
	7	841102	36 23	75 15	36	0224	2124	N						0217	X	X	X	X									X	
	8	841102	36 14	75 31	25	0421	2321	N						0417	X	X	X	X									X	
	9	841102	36 33	75 47	19	0724	0224	N						0720	X	X	X	X									X	
	10	841102	36 43	75 22	20	1005	0505	N						1002	X	X	X	X									X	
	11	841102	36 40	74 55	30	1250	0750	D		X				1246	X	X	X	X	X				X	X	X	X	X	
A	12	841102	36 45	74 35	1097	1534	1034	D						1517	X	X	X	X					X				X	
A	13	841102	36 48	74 47	70	1759	1259	D		X	X			1750	X	X	X	X	X				X	X	X		X	
A	14	841102	36 51	75 04	36	2008	1508	D						2002	X	X	X	X					X				X	
A	15	841102	36 53	75 19	30	2154	1654	T		X				2145	X	X	X	X	X				X				X	
A	16	841102	36 55	75 33	21	2351	1851	N						2342	X	X	X	X									X	
A	17	841103	36 57	75 48	13	0131	2031	N		X				0123	X	X	X	X	X								X	
	18	841103	37 14	75 40	11	0434	2334	N						0429	X	X	X	X									X	
	19	841103	37 18	75 09	27	0906	0406	N						0900	X	X	X	X									X	
	20	841103	37 13	74 45	67	1159	0659	T		X				1249	X	X	X	X	X					X	X	X	X	
	21	841103	37 31	74 39	58	1833	1333	D						1826	X	X	X	X					X				X	
	22	841103	37 38	74 21	99	2320	1820	N						2256	X	X	X	X									X	
	23	841104	37 48	74 46	39	0234	2134	N						0208	X	X	X	X									X	
	24	841104	37 31	74 56	33	0445	2345	N						0440	X	X	X	X									X	
	25	841104	37 37	75 19	18	0716	0216	N						0709	X	X	X	X									X	
	26	841104	37 48	75 17	19	0856	0356	N						0850	X	X	X	X									X	
	27	841104	38 10	74 54	20	1209	0709	T		X				1244	X	X	X	X	X				X	X	X	X	X	
	*28	841104	38 34	74 53	24			D						1533	X	X	X	X					X				X	
B	29	841104	38 44	74 56	19	1646	1146	D		X	X			1717	X	X	X	X	X				X	X	X		X	
B	30	841104	38 35	74 48	27	1850	1350	D						1846	X	X	X	X					X				X	
B	31	841104	38 25	74 39	32	2046	1546	D		X				2041	X	X	X	X	X				X				X	
B	32	841104	38 14	74 31	43	2231	1731	T						2225	X	X	X	X									X	
B	33	841105	38 04	74 22	50	0027	1927	N		X				0019	X	X	X	X	X								X	
B	34	841105	37 51	74 11	107	0241	2141	N						0224	X	X	X	X									X	
B	35	841105	37 40	74 03	1116	0459	2359	N		X				0441	X	X	X	X	X								X	
	36	841105	37 59	73 58	141	0745	0245	N						0735	X	X	X	X									X	
	37	841105	38 21	73 39	123	1150	0650	T		X				1249	X	X	X	X	X				X	X	X	X	X	
	38	841105	38 25	74 07	58	1536	1036	D						1529	X	X	X	X									X	
	39	841105	38 36	74 17	44	1751	1251	D		X				1744	X	X	X	X	X				X	X	X		X	





TABLE 2. (CONTINUED)

CRUISE: DL8409

SURVEY NO. 56

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				18				14		PHYTO TYPE					
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	G.H	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO		NUT	SEC	C	1	2
D	79	841115	40 41	71 02	62	2240	1746	N							2231	X	X	X	X	X							X
D	80	841116	40 21	70 51	95	0150	2050	N							0141	X	X	X	X							X	
D	81	841116	40 15	70 46	128	0424	2324	N							0416	X	X	X	X	X						X	
	82	841118	41 03	70 33	43	1437	0937	D							1430	X	X	X	X							X	
	83	841118	40 43	70 13	45	1731	1231	D		X					1724	X	X	X	X	X			X	X	X	X	
	84	841118	40 42	70 35	58	1945	1445	D							1938	X	X	X	X				X	X	X	X	
	85	841118	40 13	70 25	110	2336	1836	N							2326	X	X	X	X							X	
	86	841119	40 08	69 34	92	0412	2312	N							0402	X	X	X	X							X	
	87	841119	40 24	69 42	70	0646	0146	N							0639	X	X	X	X							X	
	88	841119	40 53	69 34	40	1145	0645	T		X					1226	X	X	X	X	X			X	X	X	X	
E	89	841119	40 05	69 01	293	1821	1321	D		X					1808	X	X	X	X	X			X	X	X	X	
E	90	841119	40 25	69 03	82	2119	1619	T							1212	X	X	X	X							X	
E	91	841119	40 39	69 05	76	2346	1846	T		X					2335	X	X	X	X	X						X	
E	92	841120	40 55	69 06	75	0226	2126	T							0219	X	X	X	X							X	
E	93	841120	41 04	69 06	80	0454	2354	T		X					0446	X	X	X	X	X						X	
E	94	841120	41 20	69 07	158	0805	0305	N							0755	X	X	X	X							X	
	95	841120	41 32	69 26	64	1203	0703	T		X					1214	X	X	X	X	X			X	X	X	X	
	96	841120	41 20	68 42	78	1700	1200	D		X					1651	X	X	X	X	X			X	X	X	X	
	97	841120	40 51	68 44	64	1954	1454	D							1948	X	X	X	X				X	X	X	X	
	98	841128	40 29	68 37	82	0648	0148	N							0639	X	X	X	X							X	
	99	841128	40 20	68 21	128	0915	0415	N							0936	X	X	X	X							X	
	100	841128	40 48	68 17	58	1303	0803	D		X					1253	X	X	X	X	X			X	X	X	X	
	101	841128	41 17	68 05	41	1657	1157	D		X					1651	X	X	X	X	X			X	X	X	X	
	102	841128	41 37	68 06	38	1912	1412	D							1905	X	X	X	X				X	X	X	X	
	103	841128	41 52	68 11	179	2146	1646	T							2115	X	X	X	X							X	
F	104	841128	41 48	67 42	33	0012	1912	N							0008	X	X	X	X							X	
F	105	841129	41 30	67 41	35	0245	2145	N		X					0240	X	X	X	X	X						X	
F	106	841129	41 16	67 41	41	0458	2358	N							0440	X	X	X	X							X	
F	107	841129	40 56	67 41	66	0756	0256	N		X					0748	X	X	X	X	X						X	
	108	841129	40 31	67 56	105	1205	0705	T			X				1243	X	X	X	X	X			X	X	X	X	
F	109	841129	40 22	67 40	732	1458	0958	D		X					1447	X	X	X	X	X			X	X	X	X	
F	110	841129	40 37	67 41	87	1727	1227	D			X				1717	X	X	X	X	X			X	X	X	X	
	111	841129	40 46	67 19	95	2018	1518	T							2010	X	X	X	X							X	
	112	841129	40 40	67 05	230	2231	1731	N							2219	X	X	X	X							X	
	113	841130	40 52	66 37	245	0200	2100	N							0145	X	X	X	X							X	
	114	841130	41 13	66 56	69	1908	1408	D							1900	X	X	X								X	
	115	841130	41 33	67 01	62	2219	1719	N							2210	X	X	X	X							X	
	116	841201	41 59	67 24	28	0247	2147	N							0242	X	X	X	X							X	
	117	841201	42 11	67 15	178	0456	2356	N							0445	X	X	X	X							X	

TABLE 2. (CONTINUED)

CRUISE: DL8409

SURVEY NO. 56

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR BON				HYDRO MESS		18 CHL DO NUT SEC				14 PHYTO TYPE								
			LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1
	118	841201	42 02	66 50	77	0745	0245	N						0735	X	X	X	X								X
	119	841201	41 36	66 31	80	1137	0637	T		X				1220	X	X	X	X	X			X	X	X	X	X
G	120	841201	41 30	66 20	88	1346	0846	D			X	X		1240	X	X	X	X			X				X	
G	121	841201	41 10	66 19	168	1555	1055	D	X	X			X												X	
	122	841201	41 39	65 55	125	2039	1539	T					X	2029	X	X	X	X								X
	123	841201	41 54	65 49	155	2248	1748	N					X	2238	X	X	X	X								X
G	124	841202	41 52	66 20	84	0331	2231	N		X				0322	X	X	X	X	X			X				X
G	125	841202	42 09	66 20	175	0656	0156	N			X	X	X	0643	X	X	X	X								X
G	126	841202	42 17	66 20	240	1234	0734	T																		
G	127	841202	42 28	66 20	248	1505	1005	D		X																
G	128	841202	42 39	66 20	104	1746	1246	D															X			
G	129	841202	42 49	66 20	64	1938	1438	D						1931	X	X	X	X			X					X
G	130	841202	43 01	66 20	132	2146	1646	T		X		X		2134	X	X	X	X	X							X
G	131	841203	43 17	66 20	82	0049	1949	N						0041	X	X	X	X								X
G	*132	841203	43 32	66 20	73			N						0315	X	X	X	X								X
	133	841203	43 58	68 11	164	1620	1120	D		X				1706	X	X	X	X	X			X	X	X	X	X
	134	841203	43 58	68 35	81	1918	1418	D						1910	X	X	X	X			X					X
	135	841203	43 37	68 56	126	2243	1743	N						2230	X	X	X	X								X
E	136	841204	43 40	69 22	93	0130	2030	N		X		X		0120	X	X	X	X	X							X
	137	841204	42 48	70 32	108	1013	0513	N						1003	X	X	X	X								X
	138	841204	42 26	70 38	84	1259	0759	D		X		X		1250	X	X	X	X	X			X	X	X	X	X
	139	841204	42 06	70 20	62	1601	1101	D		X				1632	X	X	X	X	X			X	X	X	X	X
	140	841204	41 58	69 50	95	1913	1413	D						1900	X	X	X	X			X					X
	141	841204	42 15	69 43	238	2153	1653	T						2140	X	X	X	X								X
	142	841205	42 26	70 09	77	0641	0141	N						0632	X	X	X	X								X
	143	841205	42 50	70 00	220	1010	0510	N						0957	X	X	X	X								X
	144	841205	43 08	69 58	165	1251	0751	T		X		X		1241	X	X	X	X	X				X	X	X	X
	145	841205	43 24	70 12	100	1557	1057	D			X	X		1634	X	X	X	X	X			X	X	X	X	X
	146	841205	43 20	69 41	174	1935	1435	D				X		1923	X	X	X	X			X					X

TABLE 2. (CONTINUED)

CRUISE: DL8501 SURVEY NO. 57

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			18 <sup>0</sup>				14 <sup>C</sup>		PHYTO									
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	CHL	DO	NUT	SEC	C	1	2						
	1	850108	42 05	70 20	61	0345	2245	N							0339	X	X	X	X												X
	2	850108	41 58	69 50	77	0816	0316	N							0801	X	X	X	X												X
	3	850108	42 15	69 43	223	1139	0639	T							1245	X	X	X	X	X										X	X
	4	850108	42 25	70 08	80	1639	1139	D			X				1627	X	X	X	X	X										X	X
G	5	850111	42 17	66 20	238	1814	1314	D							1800	X	X	X	X												
G	6	850111	42 09	66 20	181	1950	1450	D							1941	X	X	X	X												X
G	7	850111	41 52	66 20	84	2220	1720	N			X				2212	X	X	X	X	X											X
	8	850112	41 54	65 49	142	0117	2017	N							0107	X	X	X	X												X
	9	850112	41 39	65 55	117	0324	2224	N							0315	X	X	X	X												X
G	10	850112	41 30	66 20	90	0605	0105	N							0539	X	X	X	X												X
G	11	850112	41 15	66 19	108	0832	0332	N			X				0824	X	X	X	X	X											X
	12	850112	41 36	66 31	82	1248	0748	T							1240	X	X	X	X	X										X	X
	13	850112	41 57	66 44	75	1655	1155	D			X				1647	X	X	X	X	X										X	X
	14	850112	42 11	67 15	176	2038	1538	T							2027	X	X	X	X												X
	15	850112	41 59	67 24	22	2236	1736	N							2231	X	X	X	X												X
	16	850113	41 33	67 01	62	0145	2045	N							0139	X	X	X	X												X
	17	850113	41 13	66 56	71	0424	2324	N							0417	X	X	X	X												X
	18	850113	40 52	66 37	274	0744	0244	N							0731	X	X	X	X												X
	19	850113	40 40	67 05	144	1853	1353	D							1842	X	X	X	X												X
	20	850113	40 46	67 19	91	2125	1625	T							2117	X	X	X	X												X
F	21	850114	40 37	67 41	82	0101	2001	N							0054	X	X	X	X												X
F	22	850114	40 21	67 40	420	0336	2236	N			X				0315	X	X	X	X	X											X
	23	850114	40 31	67 56	106	0601	0101	N							0554	X	X	X	X												X
F	24	850114	40 56	67 41	66	0910	0410	N			X				0902	X	X	X	X	X											X
F	25	850114	41 16	67 41	38	1208	0708	T				X			1243	X	X	X	X	X										X	X
F	26	850114	41 30	67 41	38	1457	0957	D			X				1453	X	X	X	X	X										X	X
F	27	850114	41 39	67 38	55	1657	1157	D				X			1651	X	X	X	X	X										X	X
F	28	850114	42 18	67 42	240	2108	1608	T			X				2056	X	X	X	X	X											X
	29	850115	41 52	68 11	168	0304	2204	N							0251	X	X	X	X												X
	30	850115	41 37	68 06	36	0458	2358	N							0454	X	X	X	X												X
	*31	850116	41 10	71 00	36	2343	1843	N							2335	X	X	X	X												X
	32	850117	41 03	70 33	46	1226	0726	T							1220	X	X	X	X												X
	*33	850117	40 42	70 35	59	1457	0957	D							1448	X	X	X	X												X
	*34	850117	40 41	70 11	46	1714	1214	D							1708	X	X	X	X												X
	*35	850117	40 13	70 25	113	2035	1535	D							2027	X	X	X	X												X
	*36	850118	40 08	69 34	95	0100	2000	N							0050	X	X	X	X												X
	*37	850118	40 24	69 42	71	0317	2217	N							0307	X	X	X													X
	38	850124	41 11	68 08	40	1854	1354	D							1846	X	X	X	X												X
	39	850124	40 48	68 17	58	2241	1741	N							2231	X	X	X	X												X

TABLE 2. (CONTINUED)

CRUISE: DL8501

SURVEY NO. 57

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO									
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	BON OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	40	850125	40 20	68 21	142	0243	2143	N							0227	X	X	X	X							X
	41	850125	40 29	68 37	84	0520	0020	N							0510	X	X	X	X							X
	42	850125	40 51	68 44	65	0840	0340	N							0832	X	X	X	X						X	
	43	850125	41 20	68 42	90	1201	0701	T		X					1247	X	X	X	X	X			X	X	X	
	44	850125	41 37	68 53	115	1503	1003	D							1455	X	X	X	X				X	X	X	
E	45	850125	41 38	59 05	157	1651	1151	D	X	X					1638	X	X	X	X	X			X	X	X	
	46	850125	41 32	69 26	64	1920	1420	D							1912	X	X	X	X				X	X	X	
E	47	850125	41 20	69 07	160	2151	1651	T							2142	X	X	X	X				X	X	X	
E	48	850126	41 04	69 06	86	0002	1902	N	X						2354	X	X	X	X	X					X	
E	49	850126	40 55	69 06	73	0126	2026	N							0114	X	X	X	X						X	
	50	850126	40 53	69 34	42	0419	2319	N							0404	X	X	X	X						X	
	51	850127	41 10	71 00	36	1455	0955	D							1449	X	X	X	X				X	X	X	
	52	850127	41 05	70 40	44	1700	1200	D		X					1651	X	X	X	X	X			X	X	X	
	53	850127	40 42	70 35	59	2007	1507	D							1955	X	X	X	X				X	X	X	
	54	850127	40 41	70 11	46	2311	1811	N							2304	X	X	X	X						X	
	55	850128	40 24	69 42	69	0313	2213	N							0256	X	X	X	X						X	
E	56	850128	40 39	69 05	78	0646	0146	N	X						0637	X	X	X	X	X					X	
E	57	850128	40 25	69 03	80	0857	0357	N							0846	X	X	X	X						X	
E	58	850128	40 05	69 01	170	1142	0642	T	X	X					1246	X	X	X	X	X			X	X	X	
	59	850128	40 08	69 34	93	1704	1204	D		X					1647	X	X	X	X	X			X	X	X	
	60	850128	40 13	70 25	113	2127	1627	T							2117	X	X	X	X				X	X	X	
D	61	850128	39 59	70 40	280	0011	1911	N							2354	X	X	X	X						X	
D	62	850129	40 10	70 46	131	0224	2124	N	X						0214	X	X	X	X	X					X	
D	63	850129	40 21	70 51	97	0421	2321	N							0411	X	X	X	X						X	
D	64	850129	40 41	71 02	64	0709	0209	N	X						0700	X	X	X	X	X					X	
D	65	850129	40 56	71 10	52	0932	0432	N							0922	X	X	X	X						X	
D	66	850129	41 09	71 15	42	1138	0638	T	X	X					1235	X	X	X	X	X			X	X	X	
D	67	850129	41 20	71 21	32	1419	0919	D							1411	X	X	X	X				X	X	X	
	68	850129	41 04	71 42	38	1654	1154	D		X					1645	X	X	X	X	X			X	X	X	
	69	850129	40 31	71 36	75	2032	1532	D							2024	X	X	X	X				X	X	X	
	70	850129	40 14	71 57	66	2318	1818	N							2312	X	X	X	X						X	
	71	850130	40 04	71 30	92	0205	2105	N							0154	X	X	X	X						X	
	72	850130	39 52	71 49	175	0447	2347	N							0434	X	X	X	X						X	
	73	850130	39 33	72 07	237	0806	0306	N							0749	X	X	X	X						X	
	74	850130	39 51	72 27	77	1139	0639	T		X					1245	X	X	X	X	X			X	X	X	
	75	850130	40 19	72 43	51	1549	1049	D		X					1636	X	X	X	X	X			X	X	X	
	76	850130	40 28	72 13	29	1926	1428	D							1922	X	X	X	X				X	X	X	
	77	850130	40 44	72 40	27	2246	1746	T							2241	X	X	X	X						X	
	78	850131	40 34	72 28	38	0036	1936	N							0028	X	X	X	X						X	

TABLE 2. (CONTINUED)

CRUISE: DL8501

SURVEY NO. 57

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO				18				14		PHYTO				
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	BONGO	PAIR	BON	OTH	NEU	MAE	XBT	CTD	MESS	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1	2
C	79	850131	40 49	72 08	40	0308	2208	N						0301	X	X	X	X							X	
	80	850201	40 26	73 50	27	1036	0536	N		X				1030	X	X	X	X	X						X	X
	81	850201	40 15	73 54	20	1155	0655	T			X			1242	X	X	X	X	X			X	X	X	X	X
	82	850201	40 07	73 48	25	1357	0857	D						1352	X	X	X	X				X		X		
C	83	850201	40 16	73 36	24	1545	1045	D			X	X	X	1639	X	X	X	X	X				X	X	X	X
C	84	850201	40 06	73 23	42	1842	1342	D		X				1835	X	X	X	X	X				X		X	X
	85	850201	39 52	73 33	35	2048	1548	D						2041	X	X	X	X				X		X		
	86	850201	39 39	73 23	35	2246	1746	T						2239	X	X	X	X						X		
C	87	850202	39 52	73 05	68	0123	2023	N		X		X	X	0114	X	X	X	X						X	X	X
C	88	850202	39 39	72 46	66	0402	2302	N		X		X	X	0355	X	X	X	X	X						X	X
C	89	850202	39 28	72 33	106	0610	0110	N		X		X	X	0601	X	X	X	X						X	X	X
C	90	850202	39 18	72 19	238	0852	0352	N		X			X	0827	X	X	X	X	X					X	X	X
	91	850202	39 17	72 51	78	1138	0638	T			X	X		1245	X	X	X	X	X			X	X	X	X	X
	92	850202	38 59	73 08	75	1523	1023	D			X	X		1636	X	X	X	X	X				X	X	X	
	93	850202	39 12	73 39	44	1955	1455	D						1948	X	X	X	X				X		X		
	94	850202	39 34	73 49	21	2300	1800	T						2254	X	X	X	X						X		
	95	850203	39 55	73 56	18	0140	2040	N						0132	X	X	X	X						X		
	96	850203	39 43	74 03	10	0318	2218	N						0314	X	X	X	X						X		
	97	850203	39 21	74 06	22	0537	0037	N						0532	X	X	X	X						X		
	98	850203	39 14	74 26	15	0736	0236	N						0731	X	X	X	X						X		
	99	850203	38 57	74 07	40	1020	0520	N						1015	X	X	X	X						X		
	100	850203	38 45	73 45	48	1301	0801	D			X	X		1254	X	X	X	X	X			X	X	X	X	X
	101	850203	38 39	73 09	330	1702	1202	D			X	X	X	1644	X	X	X	X	X				X	X	X	
	102	850203	38 21	73 39	124	2105	1605	D				X	X	2054	X	X	X	X				X		X		
	103	850203	38 25	74 07	55	2356	1856	N						2347	X	X	X	X						X		
	104	850204	38 40	74 19	40	0213	2113	N						0205	X	X	X	X						X		
	105	850204	38 55	74 33	23	0446	2346	N						0438	X	X	X	X						X		
B	106	850204	38 45	74 57	19	0711	0211	N		X				0705	X	X	X	X						X		X
	*107	850204	38 34	74 53	24			N						0844	X	X	X	X						X		
B	108	850204	38 35	74 48	30	0952	0452	N		X		X	X	0947	X	X	X	X						X	X	X
B	109	850204	38 25	74 39	34	1142	0642	T			X	X		1236	X	X	X	X	X			X	X	X	X	X
	110	850204	38 13	74 51	21	1415	0915	D				X		1410	X	X	X	X				X	X	X	X	X
B	111	850204	38 14	74 31	42	1606	1106	D			X	X	X	1638	X	X	X	X	X			X	X	X	X	X
B	112	850204	38 04	74 22	48	1833	1333	D		X		X		1824	X	X	X	X				X		X	X	X
	113	850204	37 59	73 58	137	2150	1650	T				X	X	2102	X	X	X	X				X		X		
B	114	850204	37 51	74 11	108	2350	1850	N		X		X	X	2333	X	X	X	X	X					X	X	X
B	115	850205	37 41	74 03	1280	0159	2059	N		X		X	X	0144	X	X	X	X	X					X	X	X
	116	850205	37 38	74 21	96	0408	2308	N				X	X	0358	X	X	X	X						X		
	117	850205	37 48	74 46	40	0654	0154	N						0647	X	X	X	X						X		

TABLE 2. (CONTINUED)

CRUISE: DL8501

SURVEY NO. 57

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18			14		PHYTO						
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	O	CHL	DO	NUT	SEC	C	1	2		
	118 850205	37 48	75 17	20	0932	0432	N							0927	X	X	X	X						X		
	119 850205	37 37	75 19	24	1154	0654	T		X	X				1240	X	X	X	X	X			X	X	X	X	
	120 850205	37 11	75 41	14	1559	1059	D			X				1630	X	X	X	X	X			X	X			
A	121 850205	36 57	75 48	12	1818	1318	D	X		X	X			1830	X	X	X	X	X			X		X	X	
A	122 850205	36 55	75 33	21	2018	1518	D	X		X				2012	X	X	X	X	X			X		X	X	
A	123 850205	36 53	75 19	30	2204	1704	T	X		X	X			2158	X	X	X	X	X			X		X	X	
A	124 850205	36 51	75 04	38	0009	1909	N	X		X				0002	X	X	X	X	X					X	X	
A	125 850206	36 49	74 50	48	0159	2059	N	X		X	X			0151	X	X	X	X	X	X					X	X
A	126 850206	36 46	74 35	1152	0408	2308	N	X		X		X		0355	X	X	X	X	X						X	X
	127 850206	36 39	74 52	47	0609	0109	N			X	X			0602	X	X	X	X	X						X	
	128 850206	36 43	75 22	21	0858	0358	N			X				0851	X	X	X	X	X						X	
	129 850206	37 13	74 45	69	1357	0857	D			X	X			1350	X	X	X	X	X					X	X	
	130 850206	37 18	75 09	28	1630	1130	D			X				1625	X	X	X	X	X					X	X	
	131 850206	37 31	74 57	32	1850	1350	D			X				1844	X	X	X	X	X					X	X	
	132 850206	37 31	74 39	57	2100	1600	D			X				2051	X	X	X	X	X					X	X	







TABLE 2. (CONTINUED)

CRUISE: AL8502

SURVEY NO. 58

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR BOW					HYDRO MESS			18 0	14 C	PHYTO TYPE									
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT			CTD	TIME	TEMP	SAL	CHL	DO	MUT	SEC	1	2
241	850325	40 44	67 38	79	0209	2109	N										X					X				
245	850325	40 21	67 48	210	1042	0542	T										X					X				
247	850325	40 30	67 36	141	1802	1302	D										X					X				
248	850325	40 35	67 07	110	2156	1656	T										X					X				
250	850326	40 56	66 33	193	0437	2337	N										X					X				
252	850326	41 06	66 27	97	1116	0616	T															X				
253	850326	41 17	66 47	76	1757	1257	D										X					X				
256	850327	41 09	67 24	58	0515	0015	N										X					X				
260	850327	41 16	68 37	69	1736	1236	D										X					X				
263	850327	41 26	69 32	30	2339	1839	T										X					X				
264	850328	41 40	69 50	25	0203	2103	N										X					X				
267	850328	42 02	69 55	78	0623	0123	N										X					X				
270	850328	42 07	70 17	65	1209	0709	D										X					X				
280	850402	41 30	68 20	52	0712	0212	N										X					X				
282	850402	41 43	68 32	170	1032	0532	T										X					X				
286	850402	41 53	68 04	174	1647	1147	D										X					X				
289	850402	41 55	67 36	36	2356	1856	T										X					X				
291	850403	41 21	67 55	47	0459	2359	N										X					X				
293	850403	41 37	67 28	49	0923	0423	N										X					X				
295	850403	41 53	67 09	63	1241	0741	D										X					X				
297	850403	42 04	66 41	73	1614	1114	D										X					X				
299	850403	41 41	66 38	65	1935	1435	D										X					X				
302	850404	41 30	66 04	118	0245	2145	N										X					X				
305	850404	41 49	66 10	86	0855	0355	N										X					X				
306	850404	41 56	65 44	237	1200	0700	D										X					X				
309	850404	42 07	66 08	119	1854	1354	D										X					X				
312	850405	42 25	66 43	352	0138	2038	N										X					X				
315	850405	42 38	67 20	260	0946	0446	T										X					X				
319	850405	42 28	66 03	222	1926	1426	D										X					X				
320	850405	42 19	66 05	270	2142	1642	D										X					X				
332	850406	42 48	66 15	53	2315	1815	N										X					X				
339	850407	43 35	66 56	165	1854	1354	D										X					X				
340	850407	43 40	66 23	79	2230	1730	D										X					X				
345	850408	44 09	66 52	182	0847	0347	N										X					X				
347	850408	44 21	67 38	72	1423	0923	D										X					X				
348	850408	44 15	67 58	67	1649	1149	D										X					X				
351	850409	43 41	68 22	190	0054	1954	N										X					X				
352	850409	43 39	68 56	103	0414	2314	N										X					X				
353	850409	43 22	69 23	179	0734	0234	N										X					X				



TABLE 2. (CONTINUED)

CRUISE: DL8503

SURVEY NO. 59

TR ST	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				14		PHYTO				
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1	2
	1	850402	41 39	65 55	126	1758	1258	D					X			1747	X	X	X						X
	2	850402	41 54	65 49	140	2045	1545	D					X			2036	X	X	X						X
G	3	850403	42 17	66 20	241	0050	1950	N					X		X	0039	X	X	X						X
G	4	850403	42 09	66 20	186	0236	2136	N					X	X		0024	X	X	X						X
G	5	850403	41 52	66 20	84	0523	0023	N	X				X			0512	X	X	X		X				X
	6	850403	41 36	66 31	83	0749	0249	N					X			0738	X	X	X						X
G	7	850403	41 30	66 20	89	0936	0436	T					X	X		0928	X	X	X						X
G	8	850403	41 10	66 19	137	1232	0732	D	X				X		X	1221	X	X	X		X				X
	9	850403	40 52	66 37	257	1535	1035	D					X			1522	X	X	X						X
	10	850403	40 40	67 05	129	1914	1414	D					X	X		1854	X	X	X						X
	11	850403	40 46	67 19	95	2127	1627	D					X	X		2117	X	X	X						X
	12	850404	41 13	66 56	71	0119	2019	N					X			0115	X	X	X						X
	13	850404	41 33	67 01	64	0348	0348	N					X			0342	X	X	X						X
	14	850404	42 02	66 50	79	0746	0246	N					X			0730	X	X	X						X
	15	850404	42 11	67 15	180	1030	0530	T					X			1019	X	X	X						X
F	16	850404	42 18	67 42	237	1354	0854	D	X				X		X	1343	X	X	X		X				X
	17	850404	41 59	67 24	26	1656	1156	D					X			1651	X	X	X						X
F	18	850404	41 48	67 42	32	2023	1523	D					X	X		2016	X	X	X						X
F	19	850404	41 30	67 41	46	2311	1811	T	X				X			2305	X	X	X		X				X
F	20	850405	41 16	67 41	37	0137	2037	N					X	X		0133	X	X	X						X
F	21	850405	40 56	67 41	68	0428	2328	N	X				X			0420	X	X	X		X				X
F	22	850405	40 37	67 41	86	0646	0146	N					X	X		0637	X	X	X						X
	23	850405	40 43	67 56	107	0851	0351	N					X			0839	X	X	X						X
F	24	850405	40 22	67 40	329	1124	0624	D	X				X		X	1109	X	X	X		X				X
	25	850405	40 20	68 21	128	1522	1022	D					X	X		1514	X	X	X						X
	26	850405	40 29	68 37	85	1806	1306	D					X	X		1758	X	X	X						X
	27	850405	40 48	68 17	58	2135	1635	D					X			2130	X	X	X						X
	28	850406	40 51	68 44	69	0012	1912	N					X			0005	X	X	X						X
	29	850406	41 20	68 42	95	0314	2214	N					X			0306	X	X	X						X
	30	850406	41 11	68 08	42	0627	0127	N					X			0620	X	X	X						X
	31	850406	41 37	68 06	36	1016	0516	T					X			1011	X	X	X						X
	32	850406	41 52	68 11	190	1226	0726	D					X			1216	X	X	X						X
	33	850406	41 37	68 53	102	2031	1531	D					X			2027	X	X	X						X
	34	850407	41 58	69 50	94	0451	2351	F					X	X		0444	X	X	X						X
	35	850407	41 32	69 26	65	0827	0327	N					X			0820	X	X	X						X
E	36	850407	41 39	69 09	171	1036	0536	T	X				X		X	1026	X	X	X		X				X
E	37	850407	41 20	69 07	158	1343	0843	D					X	X	X	1334	X	X	X						X
E	38	850407	41 04	69 06	91	1654	1154	D	X				X			1643	X	X	X		X				X
E	39	850407	40 55	69 06	75	1833	1333	D					X	X		1828	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: DL8503

SURVEY NO. 59

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 <sup>0</sup>	14 <sup>C</sup>	PHYTO		
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO PAIR 5:3	BON 2:1	OTH 1:0	NEU	HAE	XBT	MESS TIME			TEMP	SAL	CHL
E	40	850407	40 39	69 05	75	2045	1545	D	X					2039	X	X	X	X	X
E	41	850407	40 25	69 03	84	2234	1734	T						2227	X	X	X		X
E	42	850408	40 05	69 01	190	0134	2034	N	X					0118	X	X	X	X	X
	43	850408	40 08	69 34	97	0438	2338	N						0430	X	X	X		X
	44	850408	40 24	69 42	71	0710	0210	N						0701	X	X	X		X
	45	850408	40 53	69 34	37	1056	0556	T						1050	X	X	X		X
	46	850408	40 41	70 11	46	1424	0924	D						1417	X	X	X		X
	47	850408	40 42	70 35	59	1811	1311	D						1806	X	X	X		X
	48	850408	41 03	70 33	46	2120	1620	D						2115	X	X	X		X
	49	850409	41 10	71 00	36	0001	1901	T						2356	X	X	X		X
D	50	850409	41 20	71 21	30	0227	2127	N						0223	X	X	X		X
D	51	850409	41 09	71 15	40	0414	2314	N	X					0409	X	X	X	X	X
D	52	850409	40 58	71 10	52	0545	0045	N						0540	X	X	X		X
D	53	850409	40 41	71 02	65	0806	0306	N	X					0759	X	X	X	X	X
D	54	850409	40 21	70 51	99	1040	0540	T						1032	X	X	X		X
D	55	850409	40 10	70 46	132	1240	0740	D	X					1232	X	X	X	X	X
	56	850409	40 13	70 25	115	1508	1008	D						1501	X	X	X		X
D	57	850409	39 59	70 40	276	1758	1258	D						1744	X	X	X		X
	58	850409	40 04	71 30	92	2210	1710	D						2205	X	X	X		X
	59	850410	39 52	71 49	174	0048	1948	N						0036	X	X	X		X
	60	850410	40 14	71 57	68	0408	2308	N						0401	X	X	X		X
	61	850410	40 31	71 36	76	0753	0253	N						0747	X	X	X		X
	62	850410	41 04	71 42	46	1205	0705	D						1159	X	X	X		X
	63	850410	40 49	72 08	42	1444	0944	D						1439	X	X	X		X
	64	850410	40 34	72 28	44	1712	1212	D						1706	X	X	X		X
	65	850410	40 44	72 40	27	1900	1400	D						1856	X	X	X		X
	66	850410	40 28	73 13	28	2227	1727	D						2224	X	X	X		X
	67	850411	40 19	72 43	52	0120	2020	N						0115	X	X	X		X
	68	850411	39 51	72 27	81	0515	0015	N						0509	X	X	X		X
	69	850411	39 33	72 07	323	0842	0342	N						0821	X	X	X		X
	70	850411	39 17	72 51	81	1402	0902	D						1355	X	X	X		X
	71	850411	39 39	73 23	35	1804	1304	D						1800	X	X	X		X
C	72	850416	39 18	72 19	274	1149	0649	D	X					1119	X	X	X	X	X
C	73	850416	39 28	72 33	109	1424	0924	D						1414	X	X	X		X
C	74	850416	39 39	72 46	71	1655	1155	D	X					1648	X	X	X	X	X
C	75	850416	39 52	73 05	68	2019	1519	D						2001	X	X	X		X
C	76	850416	40 06	73 23	42	2316	1816	T	X					2308	X	X	X	X	X
C	77	850417	40 16	73 36	27	0131	2031	N						0126	X	X	X		X
C	78	850417	40 26	73 50	31	0350	2250	N	X					0344	X	X	X	X	X

TABLE 2. (CONTINUED)

CRUISE: DL8503

SURVEY NO. 59

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18			14			PHYTO TYPE				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	MESS TIME	TEMP	SAL	0	CML	DO		NUT	SEC	C	1
	79	850417	40 15	73 54	21	0522	0022	N						X	0514	X	X	X							X
	80	850417	40 07	73 48	29	0724	0224	N						X	0719	X	X	X							X
	81	850417	39 52	73 33	35	0940	0440	T						X	0934	X	X	X							X
	82	850417	39 55	73 56	22	1216	0716	D						X	1210	X	X	A						X	
	83	850417	39 43	74 03	16	1355	0855	D						X	1351	X	X	X							X
	84	850417	39 21	74 06	25	1616	1116	D						X	1612	X	X	X							X
	85	850417	39 34	73 49	24	1842	1342	D						X	1837	X	X	X							X
	86	850417	39 12	73 39	44	2135	1635	D						X	2129	X	X	X							X
	87	850418	38 59	73 08	89	0050	1950	N						X	0043	X	X	X							X
	88	850418	38 39	73 09	148	0343	2243	N						X	0324	X	X	X							X
	89	850418	38 45	73 45	50	0710	0210	N						X	0702	X	X	X							X
	90	850418	38 57	74 07	42	0944	0444	T						X	0938	X	X	X							X
	91	850418	39 14	74 26	10	1216	0716	D						X	1211	X	X	X							X
	92	850418	38 55	74 33	22	1433	0933	D						X	1429	X	X	X							X
	93	850418	38 40	74 19	44	1647	1147	D						X	1640	X	X	X							X
	94	850418	38 25	74 07	55	1901	1401	D						X	1856	X	X	X							X
	95	850418	38 21	73 39	123	2149	1649	D						X	2139	X	X	X							X
	96	850419	37 59	73 58	150	0123	2023	N						X	0114	X	X	X							X
B	97	850419	37 41	74 03	1317	0512	0012	N		X				X	0435	X	X	X		X					X
B	98	850419	37 51	74 11	107	0757	0257	N						X	0737	X	X	X							X
B	99	850419	38 04	74 22	50	1022	0522	T		X				X	1015	X	X	X		X					X
B	100	850419	38 14	74 31	40	1210	0710	D						X	1203	X	X	X							X
B	101	850419	38 25	74 39	36	1406	0906	D		X				X	1402	X	X	X		X					X
B	102	850419	38 35	74 48	30	1557	1057	D						X	1552	X	X	X							X
B	103	850419	38 45	74 57	19	1753	1253	D		X				X	1748	X	X	X		X					X
	*104	850419	38 34	74 53	22			D							1913	X	X	X							X
	105	850419	38 10	74 54	22	2150	1650	D						X	2145	X	X	X							X
	106	850420	37 48	75 17	21	0107	2007	N						X	0100	X	X	X							X
	107	850420	37 37	75 19	24	0240	2140	N						X	0236	X	X	X							X
	108	850420	37 31	74 57	33	0455	2355	N						X	0440	X	X	X							X
	109	850420	37 48	74 46	40	0720	0220	N						X	0714	X	X	X							X
	110	850420	37 38	74 21	97	1005	0505	T						X	0958	X	X	X							X
	111	850420	37 31	74 39	62	1227	0727	D						X	1219	X	X	X							X
	112	850420	37 13	74 45	70	1444	0944	D						X	1438	X	X	X							X
	113	850420	37 18	75 09	27	1724	1224	D						X	1719	X	X	X							X
	114	850420	37 5	75 40	11	2006	1506	D						X	2003	X	X	X							X
A	115	850420	36 57	75 48	13	2224	1724	D		X				X	2222	X	X	X		X					X
A	116	850421	36 55	75 33	21	0014	1914	T						X	0011	X	X	X							X
A	117	850421	36 53	75 19	26	0150	2050	N		X				X	0140	X	X	X		X					X

TABLE 2. (CONTINUED)

CRUISE: DL8503

SURVEY NO. 59

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 °	14 C				PHYTO TYPE				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT		MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	1	2
A 118	850421	36 51	75 04	37	0333	2233	N					X		X	0329	X	X	X						X
A 119	850421	36 49	74 50	50	0502	0002	N	X				X	X	X	0456	X	X	X	X					X
A 120	850421	36 46	74 35	1173	0804	0304	N					X		X	0745	X	X	X						X
121	850421	36 39	74 52	47	1026	0526	T					X	X		1019	X	X	X						X
122	850421	36 43	75 22	20	1312	0812	D					X			1308	X	X	X						X
123	850421	36 33	75 47	17	1542	1042	D					X			1539	X	X	X						X
124	850421	36 15	75 32	25	1809	1309	D					X	X		1804	X	X	X						X
125	850421	36 23	75 15	37	2025	1525	D					X	X		2018	X	X	X						X
126	850421	36 16	74 46	439	2344	1844	T					X			2329	X	X	X						X
127	850422	36 09	75 06	25	0207	2107	N					X			0203	X	X	X						X
128	850422	35 51	75 29	21	0514	0014	N					X			0509	X	X	X						X
129	850422	35 41	74 58	53	0817	0317	N					X			0810	X	X	X						X
130	850422	35 28	75 15	30	1028	0528	T					X			1023	X	X	X						X
131	850422	35 16	75 14	27	1159	0659	D					X	X		1155	X	X	X						X
*132	850422	35 14	75 26	19	1334	0834	D					X			1330	X	X	X						X
*133	850422	35 10	75 17	28	1452	0952	D					X			1449	X	X	X						X
*134	850422	35 07	75 08	265	1622	1122	D					X			1612	X	X	X						X
*135	850422	35 03	74 58	2377	1845	1345	D					X			1827	X	X	X						X
*136	850422	34 54	75 18	479	2135	1635	D					X			2120	X	X	X						X
*137	850423	34 41	75 16	2414	0009	1909	T					X			2355	X	X	X						X
*138	850423	34 37	75 36	640	0411	2311	N					X			0357	X	X	X						X
*139	850423	34 54	75 40	34	0638	0138	N					X			0632	X	X	X						X
*140	850423	35 01	75 58	19	0847	0347	N					X			0844	X	X	X						X
*141	850423	34 50	76 10	21	1038	0538	T					X			1033	X	X	X						X
*142	850423	34 32	75 59	46	1259	0759	D					X			1253	X	X	X						X
*143	850423	34 38	76 25	18	1529	1029	D					X			1523	X	X	X						X
*144	850423	34 28	76 16	34	1704	1204	D					X			1659	X	X	X						X
*145	850423	34 19	76 06	59	1918	1418	D					X			1910	X	X	X						X
*146	850423	34 10	75 57	391	2113	1613	D					X			2058	X	X	X						X
*147	850423	34 01	75 48	1042	2322	1822	T					X			2307	X	X	X						X
*148	850424	33 52	75 38	3109	0152	2052	N					X			0139	X	X	X						X
*149	850424	33 52	76 17	365	0627	0127	N					X			0608	X	X	X						X
*150	850424	34 10	76 27	34	0923	0423	N					X			0917	X	X	X						X
*151	850424	34 29	76 40	21	1151	0651	D					X			1147	X	X	X						X
*152	850424	34 34	76 59	17	1346	0846	D					X			1343	X	X	X						X
*153	850425	34 24	77 18	16	1720	1220	D					X			1717	X	X	X						X
*154	850425	34 16	77 38	14	1944	1444	D					X			1939	X	X	X						X
*155	850425	33 59	77 26	26	2210	1710	D					X			2205	X	X	X						X
*156	850426	34 08	77 01	30	0040	1940	T					X			0035	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: DL8503

SURVEY NO. 59

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO			18				14		PHYTO TYPE C 1 2	
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL DWT	BONGO PAIR	BON	NEU	HAL	XBT	MESS	TEMP	SAL	0	CHL	DO	NUT	SEC		
*157	850426	33 54	76 42	42	0305	2205	N						0300	X	X	X					X
*158	850426	33 34	76 18	580	0626	0126	N						0605	X	X	X					X
*159	850426	33 31	76 48	200	1059	0559	T						1047	X	X	X					X
*160	850426	33 42	77 17	33	1356	0858	D						1353	X	X	X					X
*161	850426	33 51	77 53	13	1702	1202	D						1659	X	X	X					X
*162	850426	33 44	77 42	22	1844	1314	D						1840	X	X	X					X
*163	850426	33 35	77 32	24	2025	1525	D						2020	X	X	X					X
*164	850426	33 27	77 21	34	2203	1703	D						2158	X	X	X					X
*165	850426	33 19	77 10	120	2353	1853	T						2345	X	X	X					X
*166	850427	33 11	76 59	314	0217	2117	N						0145	X	X	X					X
*167	850427	33 03	76 49	515	0458	2358	N						0440	X	X	X					X
*168	850427	32 55	76 38	713	0759	0259	N						0742	X	X	X					X
*169	850427	32 59	77 22	293	1234	0734	D						1228	X	X	X					X
*170	850427	33 14	77 37	42	1525	1025	D						1522	X	X	X					X
*171	850427	33 32	77 44	17	1742	1242	D						1733	X	X	X					X
*172	850427	33 37	78 09	19	2022	1522	D						2018	X	X	X					X
*173	850427	33 40	78 29	16	2231	1731	D						2229	X	X	X					X
*174	850428	33 35	78 49	11	0042	2042	T						0039	X	X	X					X
*175	850428	33 22	78 33	22	0249	2249	N						0245	X	X	X					X
*176	850428	33 18	78 06	31	0528	0128	N						0513	X	X	X					X
*177	850428	32 56	77 56	138	0825	0425	N						0815	X	X	X					X
*178	850428	32 36	78 07	253	1111	0711	T						1058	X	X	X					X
*179	850428	32 43	78 18	166	1307	0907	D						1259	X	X	X					X
*180	850428	32 50	78 30	40	1508	1108	D						1504	X	X	X					X
*181	850428	33 04	78 33	25	1657	1257	D						1652	X	X	X					X
*182	850428	32 57	78 42	33	1825	1425	D						1819	X	X	X					X
*183	850428	33 04	78 54	17	2019	1619	D						2002	X	X	X					X
*184	850428	33 08	79 01	14	2133	1733	D						2130	X	X	X					X
*185	850428	32 56	79 12	16	2331	1931	T						2327	X	X	X					X
*186	850429	32 39	79 34	17	0221	2221	N						0217	X	X	X					X
*187	850429	32 30	79 09	39	0458	0058	N						0451	X	X	X					X
*188	850429	32 43	78 52	32	0715	0315	N						0709	X	X	X					X
*189	850429	32 17	78 48	340	1036	0636	T						1020	X	X	X					X
*190	850430	33 42	75 29	3109	1242	0842	D						1226	X	X	X					X
*191	850430	34 13	75 28	2506	1620	1220	D						1607	X	X	X					X



TABLE 2. (CONTINUED)

CRUISE: AL8504

SURVEY NO. 60

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14			PHYTO TYPE C 1 2					
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT		CTD	TIME	TEMP		SAL	CHL	DO	NUT	SEC
	1	850509	41 58	69 50	91	0223	2223	N							0212	X	X	X	X						X
E	2	850509	41 54	69 10	218	0527	0127	N							0625	X	X	X	X						X
	3	850509	41 37	68 53	118	0843	0443	T							0925	X	X	X	X						X
	4	850509	41 57	68 41	163	1205	0805	D							1252	X	X	X	X					X	X
	5	850509	41 52	68 11	176	1700	1300	D			X				1632	X	X	X	X				X	X	X
F	6	850509	42 18	67 41	240	2108	1708	D		X					2053	X	X	X	X			X			X
	7	850510	42 11	67 15	158	0044	2044	N							2335	X	X	X	X						X
	8	850510	41 59	67 24	46	0244	2244	N							0235	X	X	X	X						X
	9	850510	42 02	66 50	70	0604	0204	N							0553	X	X	X	X						X
G	10	850510	42 28	66 18	251	0959	0559	T		X					0944	X	X	X	X			X			X
G	11	850510	42 20	66 18	243	1215	0815	D			X				1200	X	X	X	X			X		X	X
G	12	850510	42 03	66 20	87	1449	1049	D			X				1553	X	X	X	X			X		X	X
G	13	850510	41 52	66 20	83	1946	1546	D		X					1930	X	X	X	X			X			X
	14	850510	41 54	65 48	154	2244	1844	T							2232	X	X	X	X						X
	15	850511	41 39	65 54	130	0137	2137	N							0125	X	X	X	X						X
G	16	850511	41 30	66 20	91	0501	0101	N							0448	X	X	X	X						X
	17	850511	41 33	67 00	60	0944	0544	T							0933	X	X	X	X						X
	18	850511	41 13	66 55	70	1301	0901	D							1253	X	X	X	X				X		X
G	19	850511	41 10	66 23	106	1635	1235	D		X	X				1621	X	X	X	X			X		X	X
	20	850511	40 52	66 37	183	2001	1601	D							1946	X	X	X	X			X			X
	21	850511	40 40	67 05	180	2314	1914	T							2302	X	X	X	X						X
F	22	850512	40 37	67 41	84	0239	2239	N							0231	X	X	X	X						X
F	23	850512	40 22	67 40	642	0459	0059	N		X					0443	X	X	X	X			X			X
	24	850512	40 31	67 56	105	0719	0319	N							0812	X	X	X	X						X
F	25	850512	40 56	67 41	67	1056	0656	T		X	X				1145	X	X	X	X			X		X	X
F	26	850512	41 16	67 41	38	1425	1025	D							1415	X	X	X	X			X			X
F	27	850512	41 27	67 42	32	1657	1257	D		X	X				1646	X	X	X	X			X		X	X
F	28	850512	41 48	67 42	38	2042	1642	D							2025	X	X	X	X			X			X
	29	850512	41 37	68 05	36	2342	1942	T							2332	X	X	X	X						X
	30	850513	41 11	68 08	33	0219	2219	N							0213	X	X	X	X						X
	31	850513	41 20	68 42	93	0544	0144	N							0532	X	X	X	X						X
	32	850513	41 32	69 26	65	0926	0526	D							0916	X	X	X	X						X
E	33	850513	41 23	69 11	146	1202	0802	D			X				1130	X	X	X	X			X		X	X
	34	850513	40 58	69 14	68	1500	1100	D		X	X				1557	X	X	X	X			X		X	X
	35	850513	40 53	69 35	40	1808	1408	D							1755	X	X	X	X			X			X
	36	850513	40 50	69 23	37	2006	1606	D							1958	X	X	X				X			X
	37	850513	40 51	69 14	61	2116	1716	D							2107	X	X	X				X			X
	38	850513	40 52	68 59	73	2252	1852	T							2244	X	X	X	X			X			X
	39	850514	40 51	68 39	57	0112	2112	N							0048	X	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: AL8504

SURVEY NO. 60

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO					18				14		PHYTO					
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1	2	
	40	850514	40 52	68 30	53	0219	2219	N							0211	X	X	X									
	41	850514	40 48	68 30	56	0308	2308	N							0258	X	X	X	X								X
	42	850514	40 38	68 25	74	0458	0058	N							0448	X	X	X									
	43	850514	40 23	68 17	123	0721	0321	N							0707	X	X	X	X								X
	44	850514	40 15	68 10	364	0953	0553	T							0933	X	X	X									
	*45	850514	40 19	68 19	144			D							1122	X	X	X	X	X				X	X		
	46	850514	40 29	68 37	84	1341	0941	D							1334	X	X	X	X	X				X	X		X
E	47	850514	40 35	69 02	70	1701	1301	D	X	X					1631	X	X	X	X	X	X			X	X	X	X
E	48	850514	40 25	69 04	84	1850	1450	D							1841	X	X	X	X	X				X			X
E	49	850514	40 05	69 02	217	2138	1738	D	X						2125	X	X	X	X	X	X						X
	50	850515	40 08	69 34	94	0050	2050	N							0040	X	X	X	X								X
	51	850515	40 24	69 43	71	0358	2358	N							0349	X	X	X	X								X
	52	850515	40 13	70 25	112	0742	0342	N							0731	X	X	X	X								X
D	53	850515	39 58	70 41	334	1004	0604	T			X				1125	X	X	X	X	X				X	X	X	X
D	54	850515	40 21	70 51	96	1422	1022	D							1413	X	X	X	X								X
D	55	850515	40 40	71 02	67	1711	1311	D	X	X					1704	X	X	X	X	X	X				X	X	X
	56	850515	40 42	70 35	59	1959	1559	D							1951	X	X	X	X								X
	57	850515	40 41	70 12	45	2217	1817	D							2209	X	X	X	X								X
	58	850516	41 03	70 33	46	0112	2112	N							0104	X	X	X	X								X
D	59	850516	40 58	71 10	51	0443	0043	N							0436	X	X	X	X								X
D	60	850516	41 09	71 15	49	0634	0234	N	X						0627	X	X	X	X	X	X						X
D	61	850516	41 20	71 22	35	0809	0409	N							0803	X	X	X	X								X
	62	850516	41 10	71 00	35	1036	0636	D			X				1111	X	X	X	X	X				X	X	X	X
	63	850517	41 04	71 42	44	0216	2216	N							0208	X	X	X	X								X
	64	850517	40 49	72 09	41	0503	0103	N							0452	X	X	X	X								X
	65	850517	40 34	72 28	43	0734	0334	N							0726	X	X	X	X								X
	66	850517	40 44	72 40	28	0921	0521	T							0916	X	X	X	X								X
	*67	850517	40 44	72 42	25			N							1126	X	X	X	X					X	X		
	68	850517	40 28	73 13	29	1438	1038	D							1429	X	X	X	X								X
	69	850517	40 19	72 43	52	1800	1400	D							1751	X	X	X	X								X
	70	850517	39 51	72 27	74	2142	1742	D							2128	X	X	X	X								X
	71	850518	40 14	71 57	67	0113	2113	N							0106	X	X	X	X								X
	72	850518	40 31	71 36	75	0355	2355	N							0344	X	X	X	X								X
	73	850518	40 06	71 31	89	0712	0312	N							0700	X	X	X	X								X
	74	850518	39 48	71 55	167	1004	0604	T			X				1113	X	X	X	X	X				X	X	X	X
	75	850518	39 33	72 07	221	1337	0937	D							1326	X	X	X	X								X
C	76	850518	39 17	72 18	308	1629	1229	D	X	X					1611	X	X	X	X	X				X	X	X	X
C	77	850518	39 27	72 34	110	2029	1629	D							2017	X	X	X									X
	78	850518	39 17	72 51	83	2305	1905	T							2254	X	X	X	X								X

TABLE 2. (CONTINUED)

CRUISE: AL8504

SURVEY NO. 60

TR	STA	DATE GMT	LOCAT: N		DEPTH [M]	0.61-M		0.20-M				HYDRO				18				14		PHYTO TYPE					
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	BONGO	PAIR	BON	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	CHL	DO	NUT	SEC		C	1	2		
C	79	850519	39 39	72 46	71	0157	2157	N		X					0149	X	X	X	X	X							X
C	80	850519	39 52	73 05	67	0431	0031	N				X	X		0420	X	X	X	X							X	
	81	850519	39 39	73 23	33	0711	0311	N				X			0702	X	X	X	X							X	
	82	850519	39 52	73 33	36	0909	0509	T				X			0859	X	X	X	X							X	
C	83	850519	40 06	73 23	42	1049	0649	D		X	X	X			1125	X	X	X	X	X				X	X		
C	84	850519	40 16	73 36	28	1347	0947	D				X	X		1330	X	X	X	X							X	
C	85	850519	40 24	73 48	35	1527	1127	D		X	X	X			1623	X	X	X	X	X			X	X	X		
	86	850519	40 14	73 53	22	1814	1414	D				X			1802	X	X	X	X				X		X		
	87	850519	40 07	73 48	30	1933	1533	D				X			1924	X	X	X	X				X		X		
	88	850519	39 55	73 56	21	2122	1722	D				X			2113	X	X	X	X				X		X		
	89	850519	39 43	74 03	15	2307	1907	T				X			2256	X	X	X	X				X		X		
	90	850520	39 34	73 49	23	0055	2055	T				X			0050	X	X	X	X							X	
	91	850520	39 21	74 06	26	0321	2321	N				X			0315	X	X	X	X							X	
	92	850520	39 12	73 39	44	0605	0205	N				X			0557	X	X	X	X							X	
	93	850520	38 58	73 08	80	1042	0642	D			X	X			1125	X	X	X	X	X			X	X	X		
	94	850520	38 39	73 09	163	1400	1000	D				X	X		1348	X	X	X	X				X		X		
	*95	850520	38 41	73 31	98			D							1625	X	X	X	X	X			X	X			
	96	850520	38 45	73 45	48	1808	1408	D				X			1759	X	X	X	X				X		X		
	97	850520	38 57	74 07	43	2037	1637	D				X			2026	X	X	X	X				X		X		
	98	850520	39 14	74 26	18	2307	1907	D				X			2301	X	X	X	X							X	
	99	850521	38 55	74 53	22	0132	2132	N				X			0126	X	X	X	X							X	
	100	850521	38 40	74 19	44	0347	2347	N				X			0340	X	X	X	X							X	
	101	850521	38 25	74 07	55	0559	0159	N				X			0549	X	X	X	X							X	
	102	850521	38 20	73 35	127	0841	0441	N				X	X		0828	X	X	X	X							X	
	103	850521	38 04	73 54	133	1141	0741	D				X	X		1128	X	X	X	X	X			X	X	X		
B	104	850521	37 41	74 03	1235	1455	1055	D			X	X			1605	X	X	X	X	X			X	X	X		
B	105	850521	37 51	74 11	105	1845	1445	D				X	X		1832	X	X	X					X		X		
B	106	850521	38 04	74 22	48	2046	1646	D				X			2039	X	X	X	X	X			X		X		
B	107	850521	38 14	74 31	44	2228	1828	D		X		X	X		2220	X	X	X	X				X		X		
B	108	850522	38 25	74 39	34	0016	2016	T		X		X			0011	X	X	X	X	X						X	
B	109	850522	38 35	74 43	29	0151	2151	N				X	X		0146	X	X	X	X							X	
B	110	850522	38 45	74 57	20	0328	2328	N		X		X			0322	X	X	X	X	X						X	
	*111	850522	38 34	74 53	22			N							0445	X	X	X	X							X	
	112	850522	38 10	74 54	25	0741	0341	N				X			0736	X	X	X	X							X	
	113	850522	37 48	75 17	17	1039	0639	T			X	X			1118	X	X	X	X	X			X	X	X		
	114	850522	37 44	74 39	52	1532	1132	D			X				1614	X	X	X	X	X			X		X		
	115	850522	37 38	74 21	93	1932	1532	D				X	X		1915	X	X	X	X				X		X		
	116	850522	37 31	74 39	61	2145	1745	D				X			2134	X	X	X	X				X		X		
	117	850522	37 31	74 57	32	2329	1929	T				X			2311	X	X	X	X							X	

TABLE 2. (CONTINUED)

CRUISE: AL8504

SURVEY NO. 60

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO MESS				18				PHYTO					
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	118	850523	37 37	75 19	22	0138	2138	N							0133	X	X	X	X						X
	119	850523	37 15	75 39	15	0444	0044	N							0436	X	X	X	X						X
	120	850523	37 18	75 09	27	0715	0315	N							0709	X	X	X	X						X
	121	850523	37 13	74 51	49	0913	0513	T				X	X		0905	X	X	X	X						X
	*122	850523	37 00	74 43	83			D							1121	X	X	X	X	X			X	X	X
A	123	850523	36 46	74 35	1129	1332	0932	D				X		X	1314	X	X	X	X				X	X	X
A	124	850523	36 49	74 50	48	1533	1133	D	X	X		X	X	X	1617	X	X	X	X	X			X	X	X
A	125	850523	36 51	75 04	34	1800	1400	D				X			1748	X	X	X	X						X
A	126	850523	36 53	75 19	25	1938	1538	D	X			X	X		1930	X	X	X	X	X			X	X	X
A	127	850523	36 55	75 33	19	2135	1735	D				X			2129	X	X	X	X				X	X	X
A	128	850523	36 57	75 48	13	2313	1913	T	X			X	X		2308	X	X	X	X	X					X
	129	850524	36 33	75 47	20	0157	2157	N				X			0151	X	X	X	X						X
	130	850524	36 43	75 22	22	0430	0030	N				X			0424	X	X	X	X						X
	131	850524	36 39	74 52	46	0730	0330	N				X	X		0720	X	X	X	X						X
	132	850524	36 16	74 46	423	1020	0620	T		X		X	X	X	1125	X	X	X	X	X			X	X	X
	133	850530	36 23	75 15	35	0717	0317	N				X			0711	X	X	X	X						
	134	850530	36 15	75 32	27	0920	0520	T				X			0914	X	X	X	X						
	135	850530	36 09	75 06	37	1210	0810	D		X		X	X		1201	X	X	X	X	X			X	X	X
	136	850530	35 51	75 29	20	1500	1100	D	X			X	X		1622	X	X	X	X	X			X	X	X
	137	850530	35 41	74 58	52	1926	1526	D				X			1915	X	X	X	X				X	X	X
	138	850530	35 28	75 15	30	2148	1748	D				X			2143	X	X	X	X				X	X	X
	139	850530	35 16	75 14	26	2338	1938	T				X			2330	X	X	X	X				X	X	X
	*140	850531	35 14	75 26	19	0110	2110	T				X			0102	X	X	X	X						X
	*141	850531	35 10	75 17	16	0236	2236	N				X			0226	X	X	X	X						X
	*142	850531	35 07	75 08	170	0414	0014	N				X			0402	X	X	X	X						X
	*143	850531	35 03	74 58	2700	0624	0224	N				X	X		0606	X	X	X	X						X
	*144	850531	34 54	75 18	422	0940	0540	T				X			0927	X	X	X	X						X
	*145	850531	34 41	75 16	2516	1212	0812	D		X		X			1256	X	X	X	X	X			X	X	X
	*146	850531	34 15	75 27	2940	1707	1307	D		X		X			1653	X	X	X	X	X			X	X	X
	*147	850601	34 54	75 40	33	0134	2134	N				X	X		0120	X	X	X	X						X
	*148	850601	35 01	75 58	19	0406	0006	N				X			0400	X	X	X	X						X
	*149	850601	34 50	76 10	21	0609	0209	N				X	X		0606	X	X	X	X						X
	*150	850601	34 38	76 25	17	0840	0440	N				X			0836	X	X	X	X						X
	*151	850601	34 32	75 57	47	1209	0809	D		X		X			1200	X	X	X	X	X			X	X	X
	*152	850601	34 19	76 06	55	1434	1034	D		X		X			1630	X	X	X	X				X	X	X
	*153	850601	34 03	75 47	1070	1953	1553	D				X			1937	X	X	X	X				X	X	X
	*154	850601	33 42	75 29	3110	2355	1955	T				X			2331	X	X	X	X				X	X	X
	*155	850602	33 34	76 18	562	0607	0207	N				X			0551	X	X	X	X						X
	*156	850602	33 53	76 17	330	0823	0423	N				X			0807	X	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: AL8504

SURVEY NO. 60

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR			HYDRO MESS			18 °	14 °	PHYTO TYPE								
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU			HAE	XBT	CTD	TIME	TEMP	SAL	CHL	DO	NUT
*157	850602	34 10	76 27	36	1033	0633	T		X	X		1130	X	X	X	X		X	X	X			
*158	850602	34 29	76 40	20	1422	1022	D			X		1417	X	X	X	X		X					
*159	850602	34 33	76 56	18	1604	1204	D		X	X		1700	X	X	X	X		X	X	X			
*160	850602	34 24	77 18	15	1918	1518	D			X		1914	X	X	X	X		X					
*161	850602	34 08	77 01	30	2203	1803	D			X		2155	X	X	X	X		X					
*162	850603	33 54	76 42	42	0037	2037	T			X		0029	X	X	X	X							
*163	850603	33 31	76 48	200	0547	2347	N			X		0332	X	X	X	X							
*164	850603	33 42	77 17	30	0658	0258	N			X		0652	X	X	X	X							
*165	850603	33 59	77 26	26	0909	0509	T					0904	X	X	X	X							
*166	850603	34 16	77 38	16	1103	0703	D		X	X		1145	X	X	X	X		X	X	X			
*167	850603	33 51	77 53	12	1446	1046	D			X		1439	X	X	X	X		X					
*168	850603	33 43	77 42	22	1656	1256	D		X	X		1645	X	X	X	X		X	X	X			
*169	850603	33 30	77 35	18	1842	1442	D			X		1834	X	X	X	X		X					
*170	850603	33 26	77 22	32	2028	1628	D			X		2020	X	X	X	X		X					
*171	850603	32 59	77 22	296	0009	2009	T			X		2351	X	X	X	X							
*172	850604	33 11	76 59	326	0326	2326	N			X		0309	X	X	X	X							
*173	850604	32 56	76 37	739	0655	0255	N			X		0638	X	X	X	X							

TABLE 2. (CONTINUED)

CRUISE: AL8507

SURVEY NO. 61

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO MESS				18 °C	14 C	PHYTO TYPE									
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT			CTD	TIME	TEMP	SAL	DO	NUT	SEC	1	2	
5	850723	40 53	71 11	52	0425	0025	N																	X		
7	850723	40 40	71 29	64	0739	0339	N																		X	
9	850723	40 18	71 30	83	1032	0632	T																		X	
10	850723	40 05	71 37	84	1216	0816	D																		X	
11	850723	40 18	72 00	65	1444	1044	D																		X	
20	850723	40 10	72 10	69	2229	1829	D																		X	
26	850724	39 55	72 12	89	0417	0017	N																		X	
29	850724	40 00	72 32	66	0752	0352	N																		X	
37	850724	39 47	72 44	57	1434	1034	D																		X	
40	850724	39 39	72 30	91	1721	1321	D																		X	
47	850724	39 32	72 51	61	2336	1936	T																		X	
50	850725	39 18	72 43	104	0245	2245	N																		X	
55	850725	38 57	73 02	80	0924	0524	T																		X	
62	850725	38 41	73 20	81	1609	1209	D																		X	
69	850725	38 33	73 39	65	2208	1808	D																		X	
78	850726	38 20	73 57	62	0437	0037	N																		X	
82	850726	38 04	74 01	104	0810	0410	N																		X	
94	850726	37 45	74 27	62	1813	1413	D																		X	
100	850726	37 28	74 34	63	2338	1938	T																		X	
104	850727	37 11	74 40	90	0308	2308	N																		X	
110	850727	36 45	74 46	72	0911	0511	T																		X	
130	850728	36 20	74 55	44	0023	2023	T																		X	
132	850728	36 05	74 47	129	0241	2241	N																		X	
134	850728	35 38	74 50	82	0620	0220	N																		X	
137	850728	35 52	75 07	33	0908	0508	T																		X	
138	850728	36 10	75 23	34	1147	0747	D																		X	
141	850728	36 35	75 15	26	1557	1157	D																		X	
142	850728	36 50	75 27	21	1756	1356	D																		X	
143	850728	37 06	75 11	36	1958	1558	D																		X	
144	850728	37 27	75 13	34	2215	1815	D																		X	
153	850729	37 38	74 47	47	0650	0250	N																		X	
154	850729	37 53	75 02	23	0919	0519	T																		X	
156	850729	38 09	74 51	20	1130	0730	D																		X	
162	850729	38 03	74 23	47	1648	1248	D																		X	
177	850730	38 37	74 18	39	0615	0215	N																		X	
178	850730	38 21	74 31	32	0829	0429	N																		X	
179	850730	38 39	74 38	29	1020	0620	T																		X	
181	850730	39 00	74 21	30	1301	0901	D																		X	
182	850730	38 47	74 01	46	1522	1122	D																		X	

TABLE 2. (CONTINUED)

CRUISE: AL8507

SURVEY NO. 61

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				14		PHYTO TYPE C 1 2		
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL		DO	NUT
187	850730	38 59	73 28	54	2103	1703	D					X				X							
191	850731	39 17	73 37	45	0033	2033	T					X				X							
192	850731	39 10	73 22	56	0218	2218	N					X				X							
199	850731	39 22	73 09	62	0739	0339	N					X				X							
208	850731	39 39	73 09	41	1542	1142	D					X				X							
211	850731	39 55	73 08	70	1856	1456	D					X				X							
214	850731	39 57	73 21	63	2210	1810	D					X				X							
218	850801	39 36	73 43	29	0320	2320	N					X				X							
219	850801	39 52	73 45	31	0529	0129	N					X				X							
221	850801	40 09	73 41	42	0801	0401	N					X				X							
222	850801	40 10	73 26	35	0917	0517	T					X				X							
225	850801	40 01	73 24	75	1218	0818	D					X				X							
234	850801	40 00	72 49	54	1953	1553	D					X				X							
237	850801	40 07	73 02	47	2248	1848	D					X				X							
241	850802	40 19	72 44	50	0229	2229	N					X				X							
243	850802	40 25	73 08	34	0525	0125	N					X				X							
245	850802	40 29	72 42	44	0809	0409	N					X				X							
248	850802	40 19	72 23	54	1127	0727	D					X				X							
249	850802	40 30	72 15	56	1314	0914	D					X				X							
252	850802	40 40	72 34	34	1602	1202	D					X				X							
254	850802	40 48	72 19	32	1805	1405	D					X				X							
261	850803	40 36	71 57	55	0012	2012	T					X				X							
265	850803	40 50	72 00	43	0346	2346	N					X				X							
271	850803	40 49	71 46	52	0906	0506	T					X				X							
273	850803	40 56	71 29	54	1207	0807	D					X				X							
276	850803	40 51	70 51	53	1621	1221	D					X				X							
277	850803	41 13	70 40	27	1901	1501	D					X				X							
281	850803	40 57	70 28	46	2310	1910	T					X				X							
283	850804	40 38	70 12	50	0201	2201	N					X				X							
285	850804	40 31	70 31	57	0412	0012	N					X				X							
287	850804	40 31	71 04	76	0720	0320	N					X				X							
288	850804	40 16	71 12	92	0925	0525	T					X				X							
290	850804	40 18	70 33	99	1409	1009	D					X				X							
291	850804	40 19	70 19	89	1558	1158	D					X				X							
292	850804	40 29	69 54	70	1822	1422	D					X				X							
295	850804	40 08	69 51	100	2253	1853	T					X				X							
297	850805	40 04	69 23	97	0151	2151	N					X				X							
298	850805	40 18	69 12	88	0424	0024	N					X				X							
301	850805	40 17	68 42	103	0823	0423	N					X				X							

TABLE 2. (CONTINUED)

CRUISE: AL8507

SURVEY NO. 61

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO				18				PHYTO							
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	MAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C	TYPE 1 2	
303	850805	40 27	68 27	96	1145	0745	D																		X	
305	850805	40 39	68 19	74	1509	1109	D																			X
307	850805	40 36	68 43	61	1745	1345	D																			X
312	850805	40 44	68 53	65	2320	1920	T																			X
323	850806	40 45	69 21	55	0924	0524	T																			X
329	850806	40 30	69 19	64	1625	1225	D																			X
333	850806	40 54	69 39	44	2102	1702	D																			X
341	850820	41 01	69 07	75	1511	1111	D																			X
345	850820	40 51	68 11	53	2122	1722	D																			X
351	850821	40 32	67 55	96	0233	2233	N																			X
358	850821	40 54	67 45	63	0819	0419	N																			X
362	850821	40 37	67 31	95	1249	0849	D																			X
366	850821	40 49	67 07	95	1714	1314	D																			X
372	850821	41 08	67 29	57	2359	1959	T																			X
383	850822	41 14	67 11	57	0634	0234	N																			X
388	850822	41 03	66 54	71	1120	0720	D																			X
392	850822	40 58	66 35	94	1459	1059	D																			X
397	850822	41 15	66 42	76	1904	1504	D																			X
402	850822	41 14	66 20	97	2235	1835	T																			X
405	850823	41 24	66 32	92	0202	2202	N																			X
407	850823	41 23	66 52	72	0411	0011	N																			X
410	850823	41 28	67 20	46	0854	0454	T																			X
413	850823	41 29	67 39	37	1153	0753	D																			X
416	850823	41 36	67 00	51	1603	1203	D																			X
419	850823	41 39	66 39	71	2036	1636	D																			X
422	850823	41 28	66 14	96	2340	1940	T																			X
426	850824	41 38	66 18	84	0316	2316	N																			X
428	850824	41 44	66 00	101	0542	0142	N																			X
430	850824	41 53	66 10	90	0758	0358	N																			X
433	850824	42 03	66 03	97	1135	0735	D																			X
438	850824	42 05	66 26	82	1551	1151	D																			X
448	850825	41 58	66 41	65	0112	2112	N																			X
454	850825	42 07	66 48	71	0643	0243	N																			X
461	850825	42 05	67 05	55	1450	1050	D																			X
466	850825	41 46	66 47	64	2000	1600	D																			X
470	850826	41 51	67 10	55	0002	2002	T																			X
486	850826	41 49	67 31	37	1443	1043	D																			X
489	850826	42 04	67 35	120	1735	1335	D																			X
497	850827	41 51	67 58	62	0046	2046	N																			X





TABLE 2. (CONTINUED)

CRUISE: GY8507

SURVEY NO. 61

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 <sup>0</sup>			14 <sup>C</sup>		PHYTO	
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DMT	BONGO	PAIR	BON	NEU	MAE	XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	TYPE 1 2	
3	850717	42 14	69 52	212	0620	0220	N							X	X	X	X	X			
7	850717	42 16	70 21	64	1130	0730	D							X	X	X	X	X			
100	850717	42 48	70 32	104	1820	1420	D														
17	850718	42 54	70 01	126	0415	0015	N							X	X	X	X	X			
21	850718	42 39	69 36	267	1108	0708	D							X	X	X	X	X			
22	850718	43 02	69 19	181	1452	1052	D							X	X	X	X	X			
26	850718	43 19	69 28	160	2115	1715	D							X	X	X	X	X			
29	850719	43 34	69 35	168	0042	2042	T							X	X	X	X	X			
37	850719	43 41	68 56	73	1558	1158	D							X	X	X	X	X			
40	850719	43 28	68 47	122	2217	1817	D							X	X	X	X	X			
43	850720	43 15	68 37	172	0309	2309	N							X	X	X	X	X			
101	850720	43 25	67 49	236	0922	0522	T							X	X	X	X	X			
44	850720	43 32	68 06	191	1205	0805	D							X	X	X	X	X			
47	850720	43 45	68 17	182	1610	1210	D							X	X	X	X	X			
54	850721	44 06	68 03	105	0703	0303	N							X	X	X	X	X			
58	850721	43 50	67 46	219	1350	0950	D							X	X	X	X	X			
59	850721	44 04	67 23	148	1725	1325	D							X	X	X	X	X			
61	850721	44 12	67 31	186	2015	1615	D							X	X	X	X	X			
63	850722	44 20	67 38	67	0020	2020	T							X	X	X	X	X			
70	850722	44 19	66 54	157	0940	0540	T							X	X	X	X	X			
73	850722	44 10	66 37	89	1323	0923	D							X	X	X	X	X			
76	850722	44 02	66 21	59	1723	1323	D							X	X	X	X	X			

TABLE 2. (CONTINUED)

CRUISE: DL8507

SURVEY NO. 62

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	PHYTO									
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT		CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	14 C	TYPE 1 2
*1	850829	33 42	75 29	3109	0113	2113	M								0057	X	X	X							X
*2	850829	33 52	75 36	3109	0743	0343	M								0726	X	X	X							X
*3	850829	34 01	75 48	1189	1029	0629	T								1015	X	X	X							X
*4	850829	34 10	75 57	391	1401	1001	D								1244	X	X	X							X
*5	850829	34 19	76 06	57	1553	1153	D								1546	X	X	X							X
*6	850829	34 28	76 16	33	1730	1330	D								1724	X	X	X							X
*7	850829	34 38	76 25	16	1902	1502	D								1857	X	X	X							X
*8	850829	34 32	75 59	45	2143	1743	D								2136	X	X	X							X
*9	850829	34 50	76 10	22	2357	1957	T								2353	X	X	X							X
*10	850830	35 01	75 58	19	0137	2137	M								0135	X	X	X							X
*11	850830	34 54	75 40	38	0331	2331	N								0327	X	X	X							X
*12	850830	34 37	75 36	620	0603	0203	M								0548	X	X	X							X
*13	850830	34 13	75 27	2743	0910	0510	N								0854	X	X	X							X
*14	850830	34 41	75 16	2395	1244	0844	D								1230	X	X	X							X
*15	850830	34 54	75 18	438	1447	1047	D								1433	X	X	X							X
*16	850830	35 03	74 58	2195	722	1322	D								1706	X	X	X							X
*17	850830	35 07	75 08	184	1932	1532	D								1911	X	X	X							X
*18	850830	35 10	75 17	29	2104	1704	D								2059	X	X	X							X
*19	850830	35 14	75 26	19	2223	1823	D								2220	X	X	X							X
20	850830	35 16	75 14	27	2343	1943	T								2339	X	X	X							X
21	850831	35 28	75 15	29	0111	2111	N								0107	X	X	X							X
22	850831	35 41	74 58	51	0317	2317	N								0312	X	X	X							X
23	850831	35 51	75 29	22	0631	0231	N								0625	X	X	X							X
24	850831	36 09	75 06	34	0926	0526	N								0919	X	X	X							X
25	850831	36 16	74 46	421	1206	0806	D								1151	X	X	X							X
26	850831	36 23	75 15	38	1511	1111	D								1501	X	X	X							X
27	850831	36 15	75 32	27	1658	1258	D								1653	X	X	X							X
28	850831	36 33	75 47	18	1924	1524	D								1919	X	X	X							X
29	850831	36 43	75 22	20	2201	1801	D								2158	X	X	X							X
30	850901	36 39	74 52	48	0053	2053	N								0047	X	X	X							X
A	31	850901	36 46	74 35	1189	0329	2329	N							0316	X	X	X							X
A	32	850901	36 49	74 50	52	0524	0124	N	X						0514	X	X	X			X				X
A	33	850901	36 51	75 04	36	0712	0312	N							0716	X	X	X							X
A	34	850901	36 53	75 19	25	0847	0447	N	X						0842	X	X	X			X				X
A	35	850901	36 55	75 33	22	1022	0622	T							1018	X	X	X							X
A	36	850901	36 57	75 48	13	1152	0752	D	X						1149	X	X	X			X				X
	37	850901	37 15	75 40	13	1421	1021	D							1418	X	X	X							X
	38	850901	37 18	75 09	30	1710	1310	D							1703	X	X	X							X
	39	850901	37 13	74 45	69	1932	1532	D							1924	X	X	X							X

TABLE 2. (CONTINUED)

CRUISE: DL8507

SURVEY NO. 62

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO				18 °C	14 °C	PHYTO	
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	BONGO	PAIR	BON	NEU	HAE	XBT	CTD	MESS TIME			TEMP	SAL
		40 850901	37 31	74 39	58	2212	1812	D											X
		41 850902	37 38	74 21	96	0025	2025	T											X
		42 850902	37 48	74 46	38	0303	2303	N											X
		43 850902	37 31	74 57	33	0518	0118	N											X
		44 850902	37 37	75 19	21	0731	0331	N											X
		45 850902	37 48	75 17	18	0902	0502	N											X
		46 850902	38 10	74 54	22	1205	0805	D											X
		*47 850902	38 34	74 53	23			D											X
B		48 850902	38 45	74 57	22	1606	1206	D	X										X
B		49 850902	38 35	74 48	28	1746	1346	D		X	X								X
B		50 850902	36 25	74 39	35	1925	1525	D	X										X
B		51 850902	38 14	74 31	40	2104	1704	D		X	X								X
B		52 850902	38 04	74 22	49	2253	1853	T	X			X							X
B		53 850903	37 51	74 11	107	0049	2049	N		X	X								X
B		54 850903	37 41	74 03	1202	0257	2257	N	X										X
		55 850903	37 59	73 58	163	0541	0141	N		X	X								X
		56 850903	38 21	73 39	121	0917	0517	N		X	X								X
		57 850903	38 25	74 07	55	1156	0756	D		X									X
		58 850903	38 40	74 19	45	1409	1009	D		X		X							X
		59 850903	38 55	74 33	23	1520	1220	D		X									X
		60 850903	38 57	74 07	39	1843	1443	D		X									X
		61 850903	39 14	74 26	17	2108	1708	D		X									X
		62 850903	39 21	74 06	25	2302	1902	T		X									X
		63 850904	39 12	73 39	44	0132	2132	N		X									X
		64 850904	38 45	73 45	51	0436	0036	N		X									X
		65 850904	38 39	73 09	224	0743	0343	N		X	X								X
		66 850904	38 59	73 08	84	1034	0634	T		X	X	X							X
		67 850904	39 17	72 51	81	1348	0948	D		X	X								X
		68 850904	39 39	73 23	34	1742	1342	D		X									X
		69 850904	39 52	73 33	35	1941	1541	D		X									X
		70 850904	39 34	73 49	23	2208	1808	D		X									X
		71 850904	39 43	74 03	15	2358	1958	T		X		X							X
		72 850905	39 55	73 56	22	0136	2136	N		X									X
		73 850905	40 07	73 48	29	0317	2317	N		X									X
		74 850905	40 15	73 54	23	0433	0033	N		X									X
C		75 850905	40 26	73 50	26	0614	0214	N	X										X
C		76 850905	40 16	73 36	28	0801	0401	N		X	X								X
C		77 850905	40 06	73 23	40	0950	0550	T	X										X
C		78 850905	39 52	73 05	67	1201	0801	D		X	X								X

TABLE 2. (CONTINUED)

CRUISE: DL8507

SURVEY NO. 62

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO			18				14		PHYTO C 1 2		
			LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL GMT	DNT	BONGO PAIR 5:3 2:1	BON 1:0	OTH NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO		NUT	SEC
C	79	850905	39 39	72 46	70	1429	1029	D	X		X				1423	X	X	X	X				X
C	80	850905	39 28	72 33	111	1629	1229	D			X	X	X		1619	X	X	X	X				X
C	81	850905	39 18	72 19	257	1954	1554	D	X		X				1933	X	X	X	X		X		X
	82	850910	40 31	71 36	74	0124	2124	N			X				0117	X	X	X	X				X
	83	850910	40 14	71 57	65	0410	0010	N			X				0403	X	X	X	X				X
	84	850910	40 04	71 30	92	0651	0251	N			X	X			0643	X	X	X	X				X
	85	850910	39 52	71 49	160	0927	0527	T			X	X			0917	X	X	X	X				X
	86	850910	39 33	72 07	292	1256	0856	D			X	X			1241	X	X	X	X				X
	87	850910	39 51	72 27	70	1609	1209	D			X				1602	X	X	X	X				X
	88	850910	40 19	72 43	52	1928	1528	D			X				1922	X	X	X	X				X
	89	850910	40 28	73 13	29	2210	1810	T			X				2206	X	X	X	X				X
	90	850911	40 44	72 40	26	0128	2128	M			X				0124	X	X	X	X				X
	91	850911	40 34	72 28	42	0314	2314	N			X				0310	X	X	X	X				X
	92	850911	40 49	72 08	39	0548	0148	N			X				0542	X	X	X	X				X
	93	850911	41 04	71 42	40	0854	0454	N			X				0849	X	X	X	X				X
D	94	850911	41 20	71 21	30	1158	0758	D			X	X			1154	X	X	X	X				X
D	95	850911	41 09	71 15	35	1347	0947	D	X		X				1341	X	X	X	X		X		X
	96	850911	41 10	71 00	35	1528	1128	D			X				1523	X	X	X	X				X
D	97	850911	40 58	71 10	52	1722	1322	D			X	X			1716	X	X	X	X		X		X
D	98	850911	40 41	71 02	63	1950	1550	D	X		X				1939	X	X	X	X		X		X
D	99	850911	40 21	70 51	96	2240	1840	T			X	X			2231	X	X	X	X				X
D	100	850912	40 10	70 46	130	0042	2042	N	X		X				0033	X	X	X	X		X		X
D	101	850912	39 59	70 40	292	0301	2301	N			X	X			0240	X	X	X	X				X
	102	850912	40 13	70 25	112	0546	0146	N			X	X			0538	X	X	X	X				X
	103	850912	40 42	70 35	58	0920	0520	T			X				0914	X	X	X	X				X
	104	850912	41 03	70 33	46	1144	0744	D			X				1138	X	X	X	X				X
	105	850912	40 41	70 11	45	1450	1050	D			X				1443	X	X	X	X				X
	106	850912	40 24	69 42	70	1752	1352	D			X				1747	X	X	X	X				X
	107	850912	40 08	69 34	94	2002	1602	D			X				1955	X	X	X	X				X
E	108	850912	40 05	69 01	182	2315	1915	T	X		X				2305	X	X	X	X		X		X
E	109	850913	40 25	69 03	80	0149	2149	N			X				0142	X	X	X	X				X
E	110	850913	40 39	69 05	74	0332	2332	N	X		X	X			0326	X	X	X	X		X		X
	111	850913	40 29	68 37	84	0627	0227	N			X				0620	X	X	X	X				X
	112	850913	40 14	68 10	357	0943	0543	T					X		0929	X	X	X	X				X
	113	850913	40 23	68 17	120	1124	0724	D			X	X			1115	X	X	X	X				X
	114	850913	40 38	68 25	72	1329	0929	D							1323	X	X	X	X				X
	115	850913	40 48	68 30	55	1451	1051	D			X				1446	X	X	X	X				X
	116	850913	40 52	68 30	44	1601	1201	D							1556	X	X	X	X				X
	117	850913	40 51	68 39	60	1717	1317	D			X				1709	X	X	X	X				X

TABLE 2. (CONTINUED)

CRUISE: DL8507

SURVEY NO. 62

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M				HYDRO			18				14		PHYTO				
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	BOMGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	C	TYPE 1 2
E 118	850913	40 51	68 59	79	1945	1545	D				X	X		1916	X	X	X							X
	119	850913	40 51	69 14	57	2124	1724	D						2118	X	X	X							X
	120	850913	40 50	69 23	40	2231	1831	T						2225	X	X	X							X
	121	850913	40 53	69 34	37	2345	1945	T			X	X		2339	X	X	X							X
E 122	850914	41 04	69 06	86	0233	2233	N	X		X				0226	X	X	X	X						X
E 123	850914	41 20	69 07	160	0443	0043	N			X	X			0433	X	X	X							X
	124	850914	41 32	69 26	67	0728	0328	N			X			0721	X	X	X							X
	125	850914	41 20	68 42	91	1116	0716	D			X			1108	X	X	X							X
	126	850914	41 11	68 08	38	1436	1036	D			X			1431	X	X	X							X
	127	850914	41 37	68 06	32	1739	1339	D			X			1733	X	X	X							X
	128	850914	41 52	68 11	177	2025	1625	D			X			2001	X	X	X							X
F 129	850914	41 48	67 42	35	2356	1906	T			X	X			2303	X	X	X							X
F 130	850915	41 30	67 41	39	0204	2204	N	X		X				0159	X	X	X	X						X
F 131	850915	41 16	67 41	38	0356	2356	N			X	X			0351	X	X	X							X
F 132	850915	40 56	67 41	66	0623	0223	N	X		X				0617	X	X	X	X						X
	133	850915	40 31	67 56	108	0907	0507	N			X			0901	X	X	X							X
F 134	850915	40 22	67 40	585	1120	0720	D	X		X		X		1106	X	X	X	X						X
F 135	850915	40 37	67 41	80	1331	0931	D			X	X			1324	X	X	X							X
	136	850915	40 46	67 19	94	1601	1201	D			X	X		1553	X	X	X							X
	137	850915	40 40	67 05	144	1759	1359	D			X	X		1748	X	X	X							X
	138	850915	40 52	66 37	241	2227	1827	T			X			2122	X	X	X							X
	139	850916	41 13	66 56	69	0119	2119	N			X			0113	X	X	X							X
	140	850916	41 33	67 01	61	0330	2330	N			X			0322	X	X	X							X
	141	850916	41 59	67 24	24	0655	0255	N			X			0650	X	X	X							X
	142	850916	42 11	67 15	182	0905	0505	N			X			0856	X	X	X							X
	143	850916	42 02	66 50	77	1125	0725	D			X			1118	X	X	X							X
	144	850916	41 36	66 31	79	1515	1115	D			X			1509	X	X	X							X
G 145	850916	41 10	66 19	188	1851	1451	D	X		X				1842	X	X	X	X						X
G 146	850916	41 30	66 20	89	2130	1730	D			X	X			2124	X	X	X							X
	147	850917	41 39	65 55	117	0029	2029	N			X			0018	X	X	X							X
	148	850917	41 54	65 49	142	0239	2239	N			X			0229	X	X	X							X
G 149	850917	41 52	66 20	84	0518	0118	N	X		X				0511	X	X	X	X						X
G 150	850917	42 09	66 20	166	0732	0332	N			X	X			0721	X	X	X							X
G 151	850917	42 17	66 20	240	0922	0522	T			X				0909	X	X	X							X
G 152	850917	42 28	66 20	248	1117	0717	D	X		X	X			1103	X	X	X	X						X
G 153	850917	42 39	66 20	120	1309	0909	D			X				1259	X	X	X							X
G 154	850917	42 49	66 20	72	1432	1032	D			X				1425	X	X	X							X
G 155	850917	43 01	66 20	128	1616	1216	D	X		X	X			1606	X	X	X	X						X
G 156	850917	43 17	66 20	82	1854	1454	D			X				1847	X	X	X							X



TABLE 2. (CONTINUED)

CRUISE: AL8508

SURVEY NO. 63

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME			0.20-M				HYDRO			18			PHYTO						
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C
1	850910	33 13	73 39	276	1335	0935	D						X				X							
3	850910	38 02	74 12	70	1800	1400	D						X				X							
5	850911	37 38	74 14	200	0006	2006	T						X				X							
6	850911	37 32	74 34	67	0242	2242	N						X				X							
9	850911	37 15	74 49	47	0711	0311	N						X				X							
10	850911	37 14	74 31	166	0949	0549	T						X				X							
14	850911	36 45	74 53	40	1802	1402	D						X				X							
15	850911	36 13	74 57	40	2155	1755	D						X				X							
17	850915	36 51	75 58	10	0056	2056	N						X				X							
18	850915	36 24	75 17	25	0510	0100	N						X				X							
19	850915	36 00	74 47	332	0928	0528	N						X				X							
277	851023	42 00	69 14	211	0426	0026	N						X				X							
281	851023	42 12	68 48	187	1146	0746	D						X				X							
282	851023	41 49	68 07	84	1910	1510	D						X				X							
286	851024	42 05	67 51	200	0128	2128	N						X				X							
289	851024	42 09	67 00	94	0843	0443	N						X				X							
290	851024	41 57	66 38	75	1201	0801	D						X				X							
293	851024	41 25	66 51	72	1811	1411	D						X				X							
295	851024	41 11	66 57	68	2118	1718	T						X				X							
297	851025	41 24	66 28	94	0132	2132	N						X				X							
298	851025	41 17	66 11	215	0341	2341	N						X				X							
303	851025	41 43	65 52	120	1230	0830	D						X				X							
306	851025	42 00	66 14	80	1925	1525	D						X				X							
307	851025	42 07	66 14	104	2300	1900	N						X				X							
312	851031	42 32	69 31	280	0657	0157	N						X				X							
314	851031	42 33	68 56	214	1211	0711	D						X				X							
31E	851031	42 38	67 49	199	1936	1436	D						X				X							
319	851101	42 22	67 02	338	0333	2233	N						X				X							
321	851101	42 28	66 20	249	0944	0444	N						X				X							
331	851102	42 42	66 02	78	1505	1005	D						X				X							
335	851102	42 50	66 35	172	2247	1747	N						X				X							
339	851103	43 08	67 01	184	0507	0007	N						X				X							
341	851103	43 15	66 33	84	1415	0915	D						X				X							
343	851103	44 01	66 25	73	2320	1820	N						X				X							
348	851104	44 21	66 42	203	1201	0701	D						X				X							
349	851104	44 24	67 11	70	1556	1056	D						X				X							
354	851105	43 59	67 04	154	0321	2221	N						X				X							
35E	851105	43 38	67 28	225	0710	0210	N						X				X							
356	851105	43 17	67 29	194	1103	0603	T						X				X							



TABLE 2. (CONTINUED)

CRUISE: AL8508

SURVEY NC. 63

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18	PHYTO									
			LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO	PAIR	BON	MESS	TEMP	SAL		0	CHL	DO	NUT	SEC	14 C	1	2		
357	851105	43 16	67 57	187	1451	0951	D						X		X										
360	851106	42 53	68 20	165	0413	2313	N						X		X										
361	851106	43 10	68 29	204	0732	0232	N						X		X										
362	851106	43 24	68 37	150	1122	0622	T						X		X										
363	851106	43 57	68 15	100	1556	1056	D						X		X										
364	851106	44 07	68 01	97	1834	1334	D						X		X										
366	851106	43 48	68 32	136	2332	1832	N						X		X										
368	851107	43 13	69 07	180	0545	0145	N						X		X										
370	851107	42 58	68 51	176	1116	0616	T						X		X										
373	851107	41 54	69 53	42	2253	1753	N						X		X										
379	851113	41 54	70 17	35	0329	2229	N						X		X										
383	851113	42 23	70 04	90	1220	0720	D						X		X										
386	851113	42 13	70 23	68	1754	1254	D						X		X										
390	851113	42 18	70 44	31	2329	1829	N						X		X										
395	851114	43 01	70 00	147	1137	0637	T						X		X										
396	851114	43 06	69 38	72	1444	0944	D						X		X										
397	851114	43 29	69 19	150	1811	1311	D						X		X										
398	851114	43 45	68 53	93	2150	1650	T						X		X										
400	851115	43 23	69 48	147	0510	0010	N						X		X										
402	851115	43 13	70 04	156	0952	0452	N						X		X										
405	851115	42 44	70 39	45	1719	1219	D						X		X										

TABLE 2. (CONTINUED)

CRUISE: DL8508

SURVEY NO. 63

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18				14		
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DRIFT	BONGO PAIR	BON	MESS	TEMP	SAL	CHL	DO	NUT	SEC	TYPE C 1 2			
23	851001	38 39	74 20	37	1602	1202	D					X			X					
25	851001	37 54	74 42	39	2208	1808	T					X			X					
27	851002	37 34	75 01	31	0238	2238	N					X			X					
29	851002	36 59	75 17	31	0917	0517	N					X			X					
30	851002	35 50	75 44	20	1209	0809	D					X			X					
31	851002	36 34	75 41	21	1406	1006	D					X			X					
33	851002	35 55	75 22	22	1921	1521	D					X			X					
35	851003	35 38	74 48	93	0040	2040	N					X			X					
38	851003	35 19	75 23	24	0559	0159	N					X			X					
39	851003	35 35	75 12	28	0818	0418	N					X			X					
43	851003	36 13	75 43	18	1746	1346	D					X			X					
52	851004	37 17	75 24	24	0857	0437	N					X			X					
55	851004	37 36	75 33	13	1350	0950	D					X			X					
57	851004	37 53	75 11	18	1736	1336	D					X			X					
62	851005	38 12	74 49	21	0148	2148	N					X			X					
64	851005	38 28	74 51	20	0523	0123	N					X			X					
72	851005	38 51	74 33	26	1905	1505	D					X			X					
77	851006	38 56	74 03	38	0322	2322	N					X			X					
90	851006	38 34	73 47	58	0808	0408	N					X			X					
83	851006	38 33	73 14	189	1357	0957	D					X			X					
85	851006	38 51	73 21	65	1958	1558	D					X			X					
86	851006	38 51	72 56	164	2136	1736	T					X			X					
89	851007	39 09	72 35	203	0248	2248	N					X			X					
92	851007	39 19	73 05	65	0847	0447	N					X			X					
94	851007	39 26	73 40	36	1259	0859	D					X			X					
98	851007	39 31	74 14	10	1926	1526	D					X			X					
100	851007	39 41	73 59	22	2211	1814	T					X			X					
105	851008	40 09	73 58	17	0457	0057	N					X			X					
108	851008	40 11	73 38	39	0917	0517	N					X			X					
109	851008	39 51	73 31	36	1151	0751	T					X			X					
110	851008	39 42	73 04	52	1437	1037	D					X			X					
111	851008	39 31	72 31	100	1753	1353	D					X			X					
112	851008	39 20	72 15	305	2029	1629	D					X			X					
114	851009	39 45	71 50	246	0200	2200	N					X			X					
117	851009	39 54	72 27	71	0815	0415	N					X			X					
120	851009	40 13	72 30	59	1314	0914	D					X			X					
124	851009	40 19	73 07	39	2000	1600	D					X			X					
125	851009	40 27	73 36	23	2302	1902	T					X			X					
132	851010	40 38	73 08	13	0853	0453	N					X			X					



TABLE 2. (CONTINUED)

CRUISE: DL8508

SURVEY NO. 63

TR STA	DATE		LOCATION		DEPTH [M]	0.61-M START TIME			0.20-M BONGO PAIR			BON			HYDRO MESS			18 <sup>0</sup> CHL	DO	NUT	SEC	14 PHYTO TYPE		
	GMT		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DMT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME					TEMP	SAL	C
233	851025		40 59	69 44	32	1258	0858	D																
237	851025		40 55	70 07	25	213?	1732	T																

TABLE 2. (CONTINUED)

CRUISE: DL8510

SURVEY NO. 64

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	PHYTO										
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT		CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	14 C	TYPE 1 2	
	1	851107	35 41	74 58	51	1958	1458	D								1950	X	X	X							
	2	851107	35 16	75 14	26	2400	1900	N								2355	X	X	X							
	3	851108	35 28	75 15	29	0141	2041	N								0137	X	X	X							
	4	851108	35 51	75 29	21	0425	2325	N								0422	X	X	X							
	5	851108	36 09	75 06	40	0707	0207	N								0700	X	X	X							
	6	851108	36 16	74 46	750	0956	0456	N								0938	X	X	X							
	7	851108	36 23	75 15	36	1342	0842	D								1336	X	X	X							
	8	851108	36 15	75 32	25	1604	1104	D								1601	X	X	X							
	9	851108	36 33	75 47	20	1932	1432	D								1927	X	X	X							
	10	851108	36 43	75 22	20	2218	1718	T								2213	X	X	X							
A	11	851109	36 57	75 48	13	0104	2004	N	X							0101	X	X	X							
A	12	851109	36 55	75 33	22	0245	2145	N								0241	X	X	X							
A	13	851109	36 53	75 19	29	0414	2314	N	X							0410	X	X	X							
A	14	851109	36 51	75 04	36	0603	0103	N								0558	X	X	X							
A	15	851109	36 49	74 50	52	0748	0248	N	X							0742	X	X	X							
	16	851109	36 39	74 52	47	0929	0429	N								0922	X	X	X							
A	17	851109	36 46	74 35	1262	1155	0655	T								1141	X	X	X							
	18	851109	37 13	74 45	65	1513	1013	D								1506	X	X	X							
	19	851109	37 31	74 39	61	1743	1243	D								1736	X	X	X							
	20	851109	37 38	74 21	98	1954	1454	D								1945	X	X	X							
	21	851109	37 48	74 46	41	2243	1743	T								2238	X	X	X							
	22	851110	37 31	74 57	34	0110	2010	N								0106	X	X	X							
	23	851110	37 18	75 09	29	0317	2217	N								0314	X	X	X							
	24	851110	37 15	75 40	12	0611	0111	N								0607	X	X	X							
	25	851110	37 37	75 19	21	0915	0415	N								0910	X	X	X							
	26	851110	37 48	75 17	17	1040	0540	T								1035	X	X	X							
	27	851110	38 10	74 54	24	1331	0831	D								1328	X	X	X							
	*28	851110	38 34	74 53	21			D								1608	X	X	X							
B	29	851110	38 45	74 57	23	1733	1233	D	X							1728	X	X	X							
B	30	851110	38 35	74 48	27	1909	1409	D								1901	X	X	X							
E	31	851110	38 25	74 39	34	2105	1605	T	X							2100	X	X	X							
B	32	851110	38 14	74 31	44	2253	1753	N								2248	X	X	X							
B	33	851111	38 04	74 22	50	0044	1944	N	X							0039	X	X	X							
B	34	851111	37 51	74 11	109	0243	2143	N								0236	X	X	X							
B	35	851111	37 41	74 03	1200	0456	2356	N	X							0440	X	X	X							
	36	851111	37 59	73 58	144	0752	0252	N								0742	X	X	X							
	37	851111	38 21	73 39	123	1207	0707	T								1159	X	X	X							
	38	851111	38 25	74 07	57	1540	1040	D								1501	X	X	X							
	39	851111	38 40	74 19	42	1818	1318	D								1811	X	X	X							



TABLE 2. (CONTINUED)

CRUISE: DL8510

SURVEY NO. 64

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				18 0	PHYTO						
			LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL	DWT	BONGO PAIR 5:3 2:1 1:0	BON OTH NEU HAE XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT		SEC	14 C	TYPE 1 2				
D	79	851120	40 41	71 02	63	0917	0417	N	X		X			0910	X	X	X							
D	80	851120	40 21	70 51	95	1212	0712	T			X	X		1202	X	X	X							
D	81	851120	40 10	70 46	129	1418	0918	D	X		X			1408	X	X	X							
D	82	851120	39 59	70 40	294	1623	1123	D			X	X		1607	X	X	X							
	83	851120	40 13	70 25	109	1905	1405	D			X	X		1854	X	X	X							
	84	851120	40 42	70 35	58	2249	1749	N			X			2242	X	X	X							
	85	851121	41 03	70 33	45	0122	2022	N			X			0117	X	X	X							
	86	851121	40 41	70 11	45	0420	2328	N			X			0423	X	X	X							
	87	851121	40 24	69 42	71	0746	0246	N			X			0739	X	X	X							
	88	851121	40 08	69 34	93	1009	0509	N			X	X		1001	X	X	X							
E	89	851121	40 05	69 01	172	1338	0838	D	X		X			1327	X	X	X							
E	90	851121	40 25	69 03	82	1627	1127	D			X	X		1621	X	X	X							
E	91	851121	40 39	69 05	81	1842	1342	D	X		X			1835	X	X	X							
	92	851121	40 53	69 34	35	2130	1630	T			X			2125	X	X	X							
E	93	851121	40 55	69 06	73	2400	1900	N			X	X		2353	X	X	X							
E	94	851122	41 04	69 06	81	0212	2112	N	X		X			0204	X	X	X							
E	95	851122	41 20	69 07	158	0534	0034	N			X	X		0524	X	X	X							
	96	851122	41 32	69 26	61	0835	0335	N			X			0829	X	X	X							
	97	851122	41 20	68 42	91	1256	0756	D			X			1249	X	X	X							
	98	851122	40 51	68 44	67	1624	1124	D			X			1619	X	X	X							
	99	851122	40 29	68 37	81	1913	1413	D			X	X		1905	X	X	X							
	100	851122	40 20	68 21	128	2155	1655	T			X	X		2145	X	X	X							
	101	851123	40 48	68 17	55	0151	2051	N			X			0146	X	X	X							
	102	851123	41 11	68 08	32	0502	0002	N			X			0456	X	X	X							
	103	851123	41 37	68 06	35	0849	0349	N			X			0844	X	X	X							
	104	851123	41 52	68 11	183	1103	0603	T			X			1051	X	X	X							
F	105	851123	41 48	67 42	33	1424	0924	D			X	X		1421	X	X	X							
F	106	851123	41 30	67 41	51	1653	1153	D	X		X			1647	X	X	X							
F	107	851123	41 16	67 41	39	1836	1336	D			X	X		1831	X	X	X							
F	108	851123	40 56	67 41	66	2112	1612	T	X		X			2105	X	X	X							
	109	851124	40 31	67 56	108	0039	1939	N			X			0033	X	X	X							
F	110	851124	40 22	67 40	725	0304	2204	N	X		X			0251	X	X	X							
F	111	851124	40 37	67 41	85	0556	0056	N			X	X		0550	X	X	X							
	112	851124	40 46	67 19	94	0905	0405	N			X	X		0858	X	X	X							
	113	851124	40 41	67 05	124	1152	0652	T			X	X		1142	X	X	X							
	114	851124	40 53	66 36	167	1517	1017	D			X			1510	X	X	X							
	115	851124	41 13	66 56	69	1835	1335	D			X			1829	X	X	X							
	116	851124	41 33	67 01	62	2136	1636	T			X			2130	X	X	X							
	117	851125	41 59	67 24	24	0640	0140	N			X			0636	X	X	X							

TABLE 2. (CONTINUED)

CRUISE: DL8510      SURVEY NO. 64

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 °C	PHYTO TYPE		
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT			CTD	MESS TIME
	118 851125	42 11	67 15	183	0951	0451	N								0941	X	X	X
	119 851125	42 02	66 50	78	1259	0759	D								1252	X	X	X
	120 851125	41 36	66 31	83	1633	1133	D								1626	X	X	X
G	121 851125	41 10	66 19	143	2015	1515	T	X							1950	X	X	X
G	122 851205	41 30	66 20	87	0900	0400	N				X	X			0851	X	X	X
	123 851205	41 39	65 55	130	1142	0642	T								1133	X	X	X
	124 851205	41 54	65 49	147	1402	0902	D								1354	X	X	X
G	125 851205	41 52	66 20	84	1650	1150	D	X							1641	X	X	X
G	126 851205	42 09	66 20	179	1914	1414	D								1854	X	X	X
G	127 851205	42 17	66 20	243	2108	1608	T								2055	X	X	X
G	128 851205	42 28	66 20	250	2315	1815	N	X							2251	X	X	X
G	129 851206	42 39	66 20	104	0110	2010	N								0105	X	X	X
G	130 851206	42 49	66 20	62	0242	2142	N								0237	X	X	X
G	131 851206	43 01	66 20	134	0432	2332	N	X							0424	X	X	X
G	132 851206	43 17	66 20	71	0654	0154	N								0644	X	X	X
	133 851206	43 35	66 44	124	1034	0534	N								1024	X	X	X
G	134 851206	43 33	66 24	87	1241	0741	T								1235	X	X	X
G	135 851206	43 58	66 13	23	1540	1040	D								1537	X	X	X
	136 851206	44 16	66 36	201	1838	1338	D								1826	X	X	X
	137 851206	44 16	67 07	132	2149	1649	N								2140	X	X	X
	138 851207	44 02	67 10	157	0008	1908	N								2334	X	X	X
	139 851207	43 42	67 26	212	0248	2148	N								0238	X	X	X
	140 851207	43 30	67 00	208	0553	0053	N								0542	X	X	X
	141 851207	43 12	66 48	143	0849	0349	N								0839	X	X	X
	142 851207	42 46	66 58	173	1213	0713	T								1203	X	X	X
	143 851207	42 43	67 28	217	1518	1018	D								1509	X	X	X
F	144 851207	42 18	67 42	232	1853	1353	D	X							1844	X	X	X
F	145 851207	42 36	67 42	205	2204	1704	N								2152	X	X	X
F	146 851208	42 59	67 42	188	0208	2108	N	X							0159	X	X	X
F	147 851208	43 24	67 43	254	0601	0101	N								0548	X	X	X
F	148 851208	43 49	67 43	223	0925	0425	N	X							0913	X	X	X
F	149 851208	44 20	67 43	76	1312	0812	D								1306	X	X	X
	150 851208	43 58	68 11	119	1639	1139	D								1632	X	X	X
	151 851208	43 58	68 35	83	1900	1400	D								1854	X	X	X
	152 851208	43 37	68 56	118	2218	1718	N								2209	X	X	X
	153 851209	43 22	68 41	146	0043	1943	N								0034	X	X	X
	154 851209	43 23	68 08	215	0347	2247	N								0336	X	X	X
	155 851209	43 12	67 59	203	0550	0050	N								0537	X	X	X
	156 851209	42 55	68 22	162	0901	0401	N								0850	X	X	X





TABLE 2. (CONTINUED)

CRUISE: DL8601

SURVEY NO. 65

TR	STA	DATE	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14			PHTYO				
			GMT	LAT DEG MIN		LONG DEG MIN	START GMT	LOCAL	DNT	BONGO	PAIR	BON	NEU	HAE	XBT		CTD	TIME	TEMP	SAL	CHL	DO	NUT	SEC
	1	860110	35 41	74 58	52	0106	2006	N				X	X		0101	X	X	X				X		
	2	860110	35 16	75 14	27	0438	2338	N				X			0435	X	X	X				X		
	3	860110	35 28	75 15	30	0628	0128	N				X			0618	X	X	X				X		
	4	860110	35 51	75 29	19	0923	0423	N				X			0918	X	X	X				X		
	5	860110	36 09	75 06	35	1222	0722	T				X	X		1215	X	X	X				X		
	6	860110	36 16	74 46	549	1457	0957	D				X	X		1443	X	X	X				X		
	7	860110	36 23	75 15	37	1840	1340	D				X			1833	X	X	X				X		
	8	860110	36 15	75 32	26	2046	1546	D				X			2043	X	X	X				X		
	9	860110	36 33	75 47	19	2317	1817	N				X			2312	X	X	X				X		
	10	860111	36 43	75 22	21	0146	2046	N				X			0142	X	X	X				X		
	11	860111	36 39	74 52	46	0432	2332	N				X	X		0427	X	X	X				X		
A	12	860111	36 46	74 35	1042	0814	0314	N				X			0749	X	X	X				X		
A	13	860111	36 49	74 50	51	1027	0527	N		X		X	X		1023	X	X	X				X		
A	14	860111	36 51	75 04	38	1235	0735	T				X			1229	X	X	X				X		
A	15	860111	36 53	75 19	25	1427	0927	D		X		X	X		1422	X	X	X				X		
A	16	860111	36 55	75 33	19	1632	1132	D				X			1628	X	X	X				X		
A	17	860111	36 57	75 48	12	1832	1332	D		X		X	X		1827	X	X	X				X		
	18	860111	37 15	75 40	11	2131	1631	T				X			2128	X	X	X				X		
	19	860112	37 18	75 09	26	0044	1944	N				X			0040	X	X	X				X		
	20	860112	37 13	74 45	68	0316	2216	N				X	X		0309	X	X	X				X		
	21	860112	37 31	74 39	60	0554	0054	N				X			0544	X	X	X				X		
	22	860112	37 38	74 21	100	0811	0311	N				X	X		0802	X	X	X				X		
	23	860112	37 48	74 46	40	1119	0619	T				X			1113	X	X	X				X		
	24	860112	37 31	74 57	36	1349	0949	D				X			1343	X	X	X				X		
	25	860112	37 37	75 19	16	1623	1123	D				X			1619	X	X	X				X		
	26	860112	37 48	75 17	16	1754	1254	D				X			1749	X	X	X				X		
	27	860112	38 10	74 54	21	2112	1612	T				X			2107	X	X	X				X		
	*28	860112	38 34	74 53	21			N							2344	X	X	X				X		
B	29	860113	38 45	74 57	20	0106	2006	N		X		X			0103	X	X	X				X		
B	30	860113	38 35	74 48	29	0300	2200	N				X	X		0255	X	X	X				X		
B	31	860113	38 25	74 39	34	1523	1023	D		X		X			1519	X	X	X				X		
B	32	860113	38 14	74 31	43	1705	1205	D				X	X		1658	X	X	X				X		
B	33	860113	38 04	74 22	46	1856	1356	D		X		X			1849	X	X	X				X		
B	34	860113	37 51	74 11	113	2058	1558	D				X	X		2051	X	X	X				X		
B	35	860113	37 41	74 03	1506	2307	1807	N		X		X			2251	X	X	X				X		
	36	860114	37 59	73 58	145	1515	1016	D				X	X		1459	X	X	X				X		
	37	860114	38 21	73 39	125	1917	1417	D				X	X		1909	X	X	X				X		
	38	860114	38 24	74 07	54	2246	1746	T				X			2241	X	X	X				X		
	39	860115	38 40	74 19	43	0112	2012	N				X			0107	X	X	X				X		

TABLE 2. (CONTINUED)

CRUISE: DL8601

SURVEY NO. 65

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14 C	PHTYO	
			LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT			CTD	TEMP
		40 860115	38 55	74 33	23	0337	2237	N											X
		41 860115	38 57	74 07	44	0611	0111	N											X
		42 860115	39 14	74 26	18	1040	0540	N											X
		43 860115	39 21	74 06	25	2049	1549	D											X
		44 860115	39 12	73 39	43	2328	1828	N											X
		45 860116	38 45	73 45	50	0238	2138	N											X
		46 860116	38 39	73 09	240	0604	0104	N											X
		47 860116	38 59	73 08	77	0910	0410	N											X
		48 860116	39 17	72 51	81	1212	0712	T											X
		49 860116	39 39	73 23	35	1601	1101	D											X
		50 860116	39 52	73 33	37	1759	1259	D											X
		51 860116	39 34	73 49	25	2041	1541	D											X
		52 860116	39 43	74 03	14	2230	1730	T											X
		53 860117	39 55	73 56	21	0009	1909	N											X
		54 860117	40 07	73 48	30	0154	2054	N											X
		55 860117	40 15	73 54	23	0310	2210	N											X
C		56 860117	40 25	73 50	30	0432	2332	N	X										X
C		57 860117	40 16	73 36	29	0620	0120	N		X	X								X
C		58 860117	40 06	73 23	41	0617	0317	N	X		X								X
C		59 860117	39 52	73 05	67	1034	0534	N		X	X								X
C		60 860117	39 39	72 46	71	1305	0805	T	X		X								X
C		61 860117	39 28	72 33	112	1509	1009	D		X	X								X
C		62 860117	39 18	72 19	256	1728	1228	D	X		X								X
		63 860117	39 35	72 07	327	2014	1514	D		X	X								X
		64 860117	39 52	71 49	162	2322	1822	N		X	X								X
		65 860118	40 04	71 30	92	0202	2102	N		X	X								X
		66 860122	40 31	71 36	76	0448	2348	N		X									X
		67 860122	40 14	71 57	67	0739	0239	N		X									X
		68 860122	39 51	72 27	79	1121	0621	T		X									X
		69 860122	40 19	72 43	52	1456	0956	D		X									X
		70 860122	40 28	73 13	29	1755	1255	D		X									X
		71 860122	40 44	72 40	28	2118	1618	T		X									X
		72 860122	40 34	72 28	44	2312	1812	N		X									X
		73 860123	40 49	72 08	40	0144	2044	N		X									X
		74 860123	41 04	71 42	50	0437	2337	N		X									X
D		75 860123	41 20	71 21	32	0735	0235	N		X	X								X
D		76 860123	41 09	71 15	40	0931	0431	N	X		X								X
		77 860123	41 10	71 00	36	1112	0612	T		X									X
D		78 860123	40 58	71 10	52	1308	0808	D		X	X								X

TABLE 2. (CONTINUED)

CRUISE: DL8601

SURVEY NO. 65

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR BOM				HYDRO MESS			18 0	14 C			PHTYO TYPE 1 2													
			LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE		XBT	CTD	TIME		TEMP	SAL	CHL	DO	NUT	SEC							
D	79	860123	40 41	71 02	64	1537	1037	D		X					1532	X	X	X														X
D	80	860123	40 21	70 51	98	1820	1320	D			X	X			1813	X	X	X													X	
D	81	860123	40 10	70 46	131	2022	1522	D		X					2014	X	X	X													X	
D	82	860123	40 00	70 41	270	2241	1741	T			X	X			2228	X	X	X													X	
	83	860124	40 13	70 25	112	0305	2205	N			X	X			0258	X	X	X													X	
	84	860124	40 42	70 35	60	0804	0304	N			X				0758	X	X	X													X	
	85	860124	41 03	70 33	48	1100	0600	N			X				1055	X	X	X													X	
	86	860124	40 41	70 11	47	1408	0908	D			X				1403	X	X	X													X	
	87	860124	40 24	69 42	73	1909	1409	D			X				1904	X	X	X													X	
	88	860124	40 08	69 34	94	2201	1701	T			X	X			2152	X	X	X													X	
E	89	860125	40 05	69 01	237	0328	2228	N		X					0318	X	X	X													X	
E	90	860125	40 25	69 03	83	0731	0231	N			X	X			0725	X	X	X													X	
E	91	860125	40 39	69 05	81	1020	0520	N		X					1013	X	X	X													X	
	92	860125	40 53	69 34	38	1353	0853	D			X				1331	X	X	X													X	
E	93	860125	40 55	69 06	74	1648	1148	D			X	X			1641	X	X	X													X	
E	94	860125	41 04	69 06	86	1846	1346	D		X					1839	X	X	X													X	
E	95	860125	41 20	69 07	157	2144	1644	T			X	X			2134	X	X	X													X	
	96	860129	41 32	69 26	68	0358	2258	N			X				0350	X	X	X													X	
	97	860129	41 20	68 42	83	0934	0434	N			X				0925	X	X	X													X	
	98	860129	40 51	68 44	61	1424	0924	D			X				1417	X	X	X													X	
	99	860129	40 29	68 37	85	1839	1339	D			X	X			1833	X	X	X													X	
	100	860129	40 20	68 21	135	2104	1604	T			X	X			2055	X	X	X													X	
	101	860130	40 48	68 17	58	0124	2024	N			X				0119	X	X	X													X	
	102	860130	41 11	68 08	38	0430	2330	N			X				0425	X	X	X													X	
	103	860130	41 37	68 06	37	0742	0242	N			X				0738	X	X	X													X	
	104	860130	41 52	68 11	171	1025	0525	N			X				1015	X	X	X													X	
F	105	860130	41 48	67 42	32	1310	0810	D			X	X			1304	X	X	X													X	
F	106	860130	41 30	67 41	45	1649	1149	D		X					1603	X	X	X													X	
F	107	860130	41 16	67 41	40	1902	1402	D			X	X			1858	X	X	X													X	
F	108	860130	40 56	67 41	57	2143	1643	T		X					2137	X	X	X													X	
	109	860204	40 31	67 56	108	0817	0317	N			X				0810	X	X	X														
F	110	860204	40 22	67 40	732	1048	0548	T		X					1032	X	X	X														
F	111	860204	40 37	67 41	85	1308	0808	D			X	X			1300	X	X	X														
	112	860204	40 46	67 19	95	1601	1101	D			X	X			1552	X	X	X														
	113	860204	40 40	67 05	162	1820	1320	D			X	X			1812	X	X	X														
	114	860204	40 52	66 37	197	2213	1713	T			X				2159	X	X	X														
	115	860205	41 13	66 56	70	0122	2022	N			X				0115	X	X	X														
	116	860205	41 33	67 01	63	0409	2309	N			X				0402	X	X	X														
	117	860205	41 59	67 24	25	0751	0251	N			X				0746	X	X	X														

TABLE 2. (CONTINUED)

CRUISE: DL8601

SURVEY NO. 65

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRD			PHTYO						
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO	PAIR	BON	OTH	NEU	MAE	XBT	CTD	MESS	TEMP	SAL	18 0	14 C	TYPE 1 2
	118	860205	42 11	67 15	200	1031	0531	N							1004	X	X	X			
	119	860205	42 02	66 50	67	1457	0957	D							1448	X	X	X			
	120	860205	41 36	66 31	87	1905	1405	D							1858	X	X	X			
G	121	860205	41 10	66 19	162	2322	1822	N	X				X		2310	X	X	X			
G	122	860206	41 30	66 20	89	0259	2159	N					X	X	0251	X	X	X			
	123	860206	41 39	65 55	116	0609	0109	N							0601	X	X	X			
	124	860206	41 54	65 49	144	0904	0404	N							0854	X	X	X			
G	125	860206	41 52	66 20	84	1223	0723	T	X						1214	X	X	X			
G	126	860207	42 09	66 20	186	0150	2050	N					X	X	0136	X	X	X			
G	127	860207	42 17	66 20	240	0422	2322	N							0406	X	X	X			
G	128	860207	42 28	66 20	250	0728	0228	N	X						0715	X	X	X			
G	129	860207	42 39	66 20	112	1018	0518	N							1010	X	X	X			
G	130	860207	42 49	66 20	75	1246	0746	D							1238	X	X	X			
G	131	860207	43 01	66 20	135	1448	0948	D	X					X	1437	X	X	X			
G	132	860207	43 17	66 20	81	1803	1303	D							1756	X	X	X			
G	133	860207	43 32	66 20	67	2053	1553	T							2046	X	X	X			
G	134	860207	43 57	66 21	60	2355	1855	N							2349	X	X	X			
	135	860208	44 16	66 36	204	0236	2136	N						X	0224	X	X	X			
	136	860208	44 16	67 07	130	0539	0039	N							0531	X	X	X			
	137	860208	44 02	67 10	149	0757	0257	N							0749	X	X	X			
F	138	860208	44 20	67 43	74	1150	0550	T						X	1138	X	X	X			
	139	860208	43 58	68 11	135	1535	1035	D							1527	X	X	X			
F	140	860208	43 49	67 43	230	1827	1327	D	X					X	1815	X	X	X			
	141	860208	43 42	67 26	210	2050	1550	D							2037	X	X	X			
F	142	860208	43 24	67 43	252	2351	1851	N						X	2338	X	X	X			
F	143	860209	42 59	67 42	190	0328	2228	N	X						0317	X	X	X			
	144	860209	43 12	67 59	206	0614	0114	N							0604	X	X	X			
	145	860209	43 23	68 08	214	0840	0340	N							0829	X	X	X			
	146	860209	43 22	68 41	142	1201	0701	T							1152	X	X	X			
	147	860209	43 37	68 56	123	1441	0941	D							1433	X	X	X			
E	148	860209	43 40	69 22	113	1717	1217	D	X					X	1710	X	X	X			
E	149	860209	43 17	69 20	163	2016	1516	D							2007	X	X	X			
	150	860209	43 08	69 01	164	2231	1731	T							2222	X	X	X			
	151	860210	42 45	68 46	198	0140	2040	N							0131	X	X	X			
	152	860210	42 55	68 22	155	0433	2333	N							0423	X	X	X			
	153	860210	42 40	68 19	197	0643	0143	N							0633	X	X	X			
F	154	860210	42 36	67 42	205	1009	0509	N						X	0958	X	X	X			
F	155	860210	42 18	67 42	232	1259	0759	D	X						1245	X	X	X			
	156	860210	42 19	68 27	203	1656	1156	D							1645	X	X	X			

TABLE 2. (CONTINUED)

CRUISE: DL8601

SURVEY NO. 65

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME			0.20-M BONGO PAIR BON				CTD	HYDRO MESS			SAL	18 ° C	CHL DO	NUT SEC	PHTYO TYPE	
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH		NEU	HAE	XBT					TEMP	14 ° C
157	860210	42 10	68 48	186	1931	1431	D								1923	X	X	X			
158	860210	41 59	68 39	168	2120	1620	T								2111	X	X	X			
159	860211	41 37	68 53	118	0016	1916	N								0008	X	X	X			
E 160	860211	41 39	69 09	171	0209	2109	N	X							0158	X	X	X			
E 161	860211	41 54	69 10	217	0424	2324	N			X X					0411	X	X	X			
E 162	860211	42 11	69 12	195	0706	0206	N	X		X					0656	X	X	X			
E 163	860211	42 35	69 14	227	1035	0535	N			X X					1026	X	X	X			
E 164	860711	42 58	69 17	172	1415	0915	D	X		X					1344	X	X	X			
165	860211	43 20	69 41	180	1750	1250	D			X					1732	X	X	X			
166	860211	43 24	70 12	97	2032	1532	D			X X					2026	X	X	X			
167	860211	43 08	69 58	142	2310	1810	N			X					2300	X	X	X			
168	860212	42 50	70 00	176	0146	2045	N			X					0133	X	X	X			
169	860212	42 48	70 32	96	0439	2339	N			X X					0430	X	X	X			
170	860212	42 26	70 38	85	0737	0237	N			X X					0730	X	X	X			
171	860212	42 26	70 09	78	1030	0530	N			X					1022	X	X	X			
172	860212	42 15	69 43	230	1320	0820	D			X					1307	X	X	X			
173	860212	41 58	69 50	86	1557	1057	D			X					1541	X	X	X			
174	860212	42 06	70 20	65	1931	1431	D			X					1926	X	X	X			



TABLE 2. (CONTINUED)

CRUISE: AL8602

SURVEY NO. 66

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME			0.20-M BONGO PAIR BON				HYDRO MESS			18 <sup>0</sup> CHL	DO	NUT	SEC	14 PHYTO TYPE			
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT					CTD	TIME	TEMP	SAL
94	860314	38 51	74 45	14	0710	0210	N												X			
99	860314	39 08	74 30	19	1315	0815	J						X						X			
103	860314	39 22	74 15	15	1931	1431	D						X						X			
105	860315	39 16	73 47	41	0016	1916	N						X						X			
107	860315	39 10	73 27	54	0447	2347	N						X						X			
110	860315	39 24	72 57	70	2635	1535	D						X						X			
112	860316	39 21	72 22	154	0233	2133	N						X						X			
117	860316	39 12	72 51	86	1108	0609	T						X						X			
118	860316	39 04	72 44	159	1257	0757	D						X						X			
123	860327	41 13	71 04	38	0131	2031	N						X						X			
125	860327	41 03	70 56	39	0442	2342	N						X						X			
126	860327	40 52	71 35	58	0857	0357	N						X						X			
128	860327	41 02	71 43	39	1214	0714	D						X						X			
131	860327	40 41	71 47	55	1815	1315	D						X						X			
136	860328	40 53	72 11	26	0144	2044	N						X						X			
141	860328	40 47	72 34	23	0725	0225	N						X						X			
142	860328	40 28	72 26	50	1004	0504	T						X						X			
144	860328	40 08	72 34	67	1450	0950	D						X						X			
146	860328	40 31	72 54	38	2005	1505	D						X						X			
151	860329	40 35	73 12	22	0213	2113	N						X						X			
155	860329	39 51	73 16	47	1057	0557	T						X						X			
156	860329	40 18	73 36	28	1458	0958	D						X						X			
159	860329	40 25	73 55	19	2131	1631	D						X						X			
165	860330	39 54	74 02	19	0652	0152	N						X						X			
167	860330	39 37	74 02	23	0956	0456	T						X						X			
169	860330	39 29	73 23	35	1541	1041	D						X						X			
171	860330	39 46	72 32	65	2125	1625	D						X						X			
172	860331	39 44	72 01	152	0046	1946	N						X						X			
174	860331	40 04	72 04	76	0636	0136	N						X						X			
177	860331	40 14	71 35	86	1229	0729	D						X						X			
179	860331	39 56	71 27	230	1609	1109	D						X						X			
182	860331	40 06	70 51	141	2313	1813	T						X						X			
184	860401	40 20	70 35	98	0254	2154	N						X						X			
186	860401	40 12	70 10	102	0905	0405	N						X						X			
188	860401	39 57	69 59	240	1420	0920	D						X						X			
201	860402	40 45	70 00	36	1846	1346	D						X						X			
204	860403	40 37	70 39	65	0017	1917	N						X						X			
206	860403	40 59	70 06	25	0519	0019	N															
210	860403	41 12	70 37	31	1947	1447	D															





TABLE 2. (CONTINUED)

CRUISE: AL8602

SURVEY NO. 66

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M			HYDRO			18			14		PHYTO TYPE C 1 2
			LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	SONGO PAIR 5:3 2:1 1:0	BON OTH NEU HAE XBT	MESS CTD TIME	TEMP	SAL	CHL	DO	NUT	SEC		
291	860417	42 45	67 28	220	0620	0120	N					X			X				
293	860417	43 04	67 02	177	1143	0643	D					X			X				
296	860417	42 56	66 32	142	2000	1500	D					X			X				
301	860418	42 42	66 09	65	0745	0245	N					X			X				
308	860421	43 27	66 17	81	0307	2207	N					X			X				
310	860421	43 30	66 47	166	0806	0306	N					X			X				
312	860421	43 46	67 01	160	1226	0726	D					X			X				
313	860421	43 50	66 33	101	1524	1024	D					X			X				
317	860421	44 13	66 54	186	2238	1738	T					X			X				
319	860422	44 11	67 20	204	0341	2241	N					X			X				
321	860422	44 18	67 55	71	0820	0320	N					X			X				
324	860422	43 22	67 32	228	1706	1206	D					X			X				
325	860422	43 28	67 54	271	2045	1545	D					X			X				
326	860423	43 58	68 23	101	0117	2017	N					X			X				
328	860423	43 43	68 58	94	0631	0131	N					X			X				
329	860423	43 28	68 50	125	1100	0600	D					X			X				
331	860423	43 00	69 02	164	1659	1159	D					X			X				
333	860423	43 08	68 38	185	2314	1814	T					X			X				
334	860424	42 46	68 16	195	0335	2235	N					X			X				
338	860424	42 23	68 46	204	1135	0635	D					X			X				
341	860424	42 35	69 07	200	1734	1234	D					X			X				
342	860424	42 51	69 36	170	2304	1804	T					X			X				
343	860425	43 16	69 37	152	0257	2157	N					X			X				
345	860425	43 33	69 46	119	0910	0410	T					X			X				
347	860425	43 13	70 20	88	1351	0851	D					X			X				
348	860425	42 45	70 40	38	1800	1300	D					X			X				
351	860426	43 01	69 59	195	0056	1956	N					X			X				
353	860426	42 49	70 05	135	0432	2332	N					X			X				
356	860426	42 29	70 38	76	1128	0628	D					X			X				
358	860426	42 17	70 27	86	1457	0957	D					X			X				
360	860426	42 18	69 58	237	1830	1330	D					X			X				
361	860426	41 57	69 46	110	2146	1646	D					X			X				
364	860427	42 02	70 29	45	0311	2211	N					X			X				

TABLE 2. (CONTINUED)

## CRUISE: DL8603 SURVEY NO. 67

TR STA <sup>1</sup>	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO										
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	Oth	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 O	CHL	DO	NUT	SEC	14 C	TYPE 1 2	
	1	860508	35 41	74 58	52	1034	0634	T						X	X					X					X	
	2	860508	35 16	75 14	27	140P	1008	D						X						X					X	
	3	860508	35 28	75 15	29	1552	1152	D						X						X					X	
	4	860508	35 51	75 29	20	1856	1456	D						X						X					X	
	5	860508	36 09	75 06	37	2219	1819	D						X	X					X					X	
	6	860509	36 16	74 46	354	0116	2116	N						X						X					X	
	7	860509	36 23	75 15	38	0442	0042	N						X						X					X	
	8	860509	36 15	75 32	26	0643	0243	N						X						X					X	
	9	860509	36 33	75 47	18	0935	0535	T						X						X					X	
	10	860509	36 43	75 22	22	1542	1142	D						X						X					X	
	*11	860509	36 57	74 52	45			D												X					X	
A	12	860510	36 57	75 48	12	1917	1517	D	X		X	X							X						X	
A	13	860510	36 55	75 33	20	2118	1718	D			X	X							X						X	
A	14	860510	36 53	75 19	29	2343	1943	T	X		X	X							X						X	
A	15	860511	36 51	75 04	37	0145	2145	N			X	X							X						X	
A	16	860511	36 49	74 50	55	0342	2342	N	X		X	X							X						X	
A	17	860511	36 46	74 35	1170	0619	0219	N			X	X							X						X	
	18	860511	37 13	74 45	68	1126	0726	D			X	X							X						X	
	19	860511	37 31	74 39	58	1405	1005	D			X	X							X						X	
	20	860511	37 38	74 21	96	1634	1234	D			X	X							X						X	
	21	860511	37 48	74 46	40	1921	1521	D			X	X							X						X	
	22	860511	37 31	74 57	32	2139	1739	D			X	X							X						X	
	23	860511	37 18	75 09	29	2343	1943	T			X	X							X						X	
	24	860512	37 15	75 40	13	0220	2220	N			X	X							X						X	
	25	860512	37 37	75 19	22	0532	0132	N			X	X							X						X	
	26	860512	37 48	75 19	15	0707	0307	N			X	X							X						X	
	27	860512	38 10	74 54	22	1047	0647	T			X	X							X						X	
	*28	860512	38 34	74 53	23			D												X						X
B	29	860512	38 45	74 57	20	1505	1105	D	X		X	X							X						X	
B	30	860512	36 35	74 48	28	1652	1252	D			X	X							X						X	
B	31	860512	38 25	74 39	33	1842	1442	D	X		X	X							X						X	
B	32	860512	38 14	74 31	44	2019	1619	D			X	X							X						X	
B	33	860512	38 04	74 22	50	2220	1820	D	X		X	X							X						X	
B	34	860513	37 51	74 11	106	0102	2102	N			X	X							X						X	
B	35	860513	37 41	74 03	1207	0415	0015	N	X		X	X							X						X	
	36	860513	37 59	73 58	142	0757	0357	N			X	X							X						X	
	37	860513	38 21	73 39	119	1346	0946	D			X	X							X						X	
	38	860513	38 25	74 07	55	1731	1331	D			X	X							X						X	
	39	860513	38 40	74 19	43	1944	1544	D			X	X							X						X	

<sup>1</sup> STATIONS 82-139 ARE NOT PART OF THE NARMAP DATA BASE.

TABLE 2. (CONTINUED)

CRUISE: DL8603

SURVEY NO. 67

TR	STA <sup>1</sup>	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO			18				14		PHYTO TYPE C 1 2	
			LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	BONGO PAIR	BON	NEU	HAE	XBT	CTD	MESS	TEMP	SAL	CHL	DC	NUT	SEC		
	40	860513	38 55	74 33	22	2205	1805	D							2201	X	X			X		X
	41	860514	38 57	74 07	39	0035	2035	T							0030	X	X			X		X
	42	860514	39 14	74 26	18	0257	2257	N							0253	X	X			X		X
	43	860514	39 21	74 06	26	0452	0052	N							0449	X	X			X		X
	44	860514	39 12	73 39	44	0733	0333	N							0728	X	X			X		X
	45	860514	38 45	73 45	50	1042	0542	D							1035	X	X			X		X
	46	860514	38 39	73 09	179	1417	1017	D							1409	X	X					X
	47	860514	38 59	73 08	86	1744	1344	D							1736	X	X			X		X
	48	860514	39 17	72 51	79	2047	1647	D							2044	X	X			X		X
	49	860515	39 39	73 23	34	0028	2028	T							0025	X	X			X		X
	50	860515	39 52	73 33	35	0216	2216	N							0211	X	X			X		X
	51	860515	39 34	73 49	24	0448	0048	N							0444	X	X			X		X
	52	860515	39 43	74 03	16	0633	0233	N							0630	X	X			X		X
	53	860515	39 55	73 56	22	0816	0416	N							0812	X	X			X		X
	54	860515	40 07	73 48	29	1001	0601	T							0957	X	X			X		X
	55	860515	40 15	73 54	22	1122	0722	D							1117	X	X			X		X
C	56	860515	40 16	73 36	27	1412	1012	D	X		X	X			1408	X	X			X		X
C	57	860515	40 06	73 23	42	1618	1218	D	X		X				1612	X	X			X		X
C	58	860515	39 52	73 05	67	1846	1446	D			X	X			1840	X	X			X		X
C	59	860515	39 39	72 46	70	2126	1726	D	X		X				2119	X	X			X		X
C	60	860515	39 28	72 33	108	2329	1929	T			X	X			2319	X	X					X
C	61	860516	39 18	72 19	232	0147	2147	N	X		X				0136	X	X					X
	62	860516	39 36	72 08	152	0437	0037	N			X	X			0429	X	X					X
	63	860516	39 51	72 27	75	0730	0330	N			X				0723	X	X			X		X
	64	860516	40 19	72 43	51	1056	0656	D			X				1050	X	X			X		X
	65	860516	40 28	73 13	29	1344	0944	D			X				1340	X	X			X		X
	66	860516	40 44	72 40	28	1651	1251	D			X				1648	X	X			X		X
	67	860516	40 34	72 28	44	1839	1439	D			X				1834	X	X			X		X
	68	860516	40 49	72 08	40	2101	1701	D			X				2055	X	X			X		X
	69	860516	41 04	71 42	51	2347	1947	T			X				2348	X	X			X		X
D	70	860517	41 20	71 21	31	0222	2222	N			X	X			0216	X	X					X
D	71	860517	41 09	71 15	41	0408	0008	N	X		X				0404	X	X					X
D	72	860517	40 58	71 10	52	0544	0144	N			X	X			0539	X	X					X
	73	860517	41 10	71 00	35	0738	0338	N			X				0733	X	X					X
D	74	860518	40 41	71 02	64	0024	2024	T	X		X				0018	X	X					X
	75	860518	40 31	71 36	75	0337	2337	N			X				0329	X	X			X		X
	76	860518	40 14	71 57	68	0630	0230	N			X				0624	X	X			X		X
	77	860518	39 52	71 49	165	0922	0522	T			X	X			0913	X	X					X
	78	860518	40 04	71 30	91	1208	0808	D			X	X			1201	X	X			X		X

<sup>1</sup> STATIONS 82-139 ARE NOT PART OF THE MARMAP DATA BASE.

TABLE 2. (CONTINUED)

CRUISE: DL8603

SURVEY NO. 67

TR	STA <sup>1</sup>	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				14		PHYTO			
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C
D	79	860518	40 21	70 51	97	1611	1211	D							1603	X	X								X
D	80	860518	40 10	70 46	130	1807	1407	D	X						1758	X	X								X
D	81	860518	39 59	70 40	29)	1934	1534	D																	X
	140	860527	41 03	70 33	45	2316	1916	T							2310	X	X								X
	141	860528	40 42	70 35	59	0157	2157	N							0151	X	X								X
	142	860528	40 41	70 11	46	0413	0013	N							0402	X	X								X
	143	860528	40 13	70 25	110	0759	0359	N							0750	X	X								X
	144	860528	40 24	69 42	71	1214	0814	D							1206	X	X								X
	145	860528	40 08	69 34	92	1501	1101	D							1455	X	X								X
E	146	860528	40 05	69 01	167	1929	1529	D	X						1920	X	X								X
E	147	860528	40 25	69 03	82	2241	1841	D							2233	X	X								X
E	148	860529	40 39	69 05	74	0115	2115	N	Y						0110	X	X								X
	*149	860529	40 50	69 18	39			N							0318	X	X								X
	150	860529	40 53	69 34	41	0458	0058	N							0454	X	X								X
E	151	860529	40 51	68 58	81	0811	0411	T							0804	X	X								X
E	152	860529	41 04	69 06	81	1032	0632	D							1024	X	X								X
E	153	860529	41 20	69 07	157	1316	0916	D							1305	X	X								X
	154	860529	41 32	69 26	64	1554	1154	D							1549	X	X								X
	155	860529	41 20	68 42	92	1948	1548	D							1941	X	X								X
	156	860529	40 52	68 32	59	2307	1907	T							2302	X	X								X
	157	860530	40 29	68 37	84	0144	2144	N							0137	X	X								X
	158	860530	40 21	68 14	142	0419	0019	N							0412	X	X								X
	*159	860530	40 36	68 24	81			N							0633	X	X								
	160	860530	40 48	68 17	51	0812	0412	T							0807	X	X								X
	161	860530	41 11	68 08	33	1059	0659	D							1054	X	X								X
	162	860530	41 37	68 06	34	1432	1032	D							1429	X	X								X
	163	860530	41 52	68 11	186	1647	1247	D							1639	X	X								X
F	164	860530	41 48	67 42	34	1941	1541	D							1937	X	X								X
F	165	860530	41 30	67 41	36	2223	1823	D	X						2218	X	X								X
F	166	860531	41 16	67 41	37	0006	2006	T							0002	X	X								X
F	167	860531	40 56	67 41	67	0231	2231	N	X						0225	X	X								X
	168	860531	40 31	67 56	105	0540	0140	N							0534	X	X								X
F	169	860531	40 22	67 40	512	0758	0358	N	X						0744	X	X								X
F	170	860531	40 37	67 41	82	1022	0622	D							1016	X	X								X
	171	860531	40 46	67 19	95	1250	0850	D							1242	X	X								X
	172	860531	40 40	67 05	146	1446	1046	D							1434	X	X								X
	173	860531	40 52	66 37	237	1830	1430	D							1820	X	X								X
	174	860531	41 13	66 56	71	2132	1732	D							2126	X	X								X
	175	860601	41 33	67 01	61	0005	2005	T							2356	X	X								X

<sup>1</sup> STATIONS 82-139 ARE NOT PART OF THE MARMAP DATA BASE.

TABLE 2. (CONTINUED)

CRUISE: DL8603

SURVEY NO. 67

TR	STA <sup>1</sup>	DATE		LOCATION		DEPTH (M)	0.61-M		0.20-M				HYDRO			18				PHYTO						
		GMT	LAT DEG MIN	LONG DEG MIN	START GMT		TIME LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	176	860601	41 59	67 24	22	0352	2352	X								0347	X	X								X
	177	860601	42 11	67 15	179	0559	0159	X								0545	X	X								X
	178	860601	42 02	66 50	78	0846	0446	T								0839	X	X								X
	179	860601	41 36	66 31	81	1230	0830	D								1225	X	X								X
G	180	860601	41 10	66 19	167	1531	1131	D	X							1528	X	X								X
G	181	860601	41 30	66 20	88	1819	1419	D					X	X		1812	X	X								X
	182	860601	41 39	65 55	117	2110	1710	D								2102	X	X								X
	183	860601	41 54	65 49	164	2313	1913	T								2306	X	X								X
G	184	860602	41 52	66 20	83	0232	2232	N	X							0225	X	X								X
G	185	860602	42 09	66 20	173	0534	0134	N					X	X		0525	X	X								X
G	186	860602	42 17	66 20	243	0727	0327	N								0717	X	X								X
G	187	860602	42 28	66 20	252	0921	0521	T	X							0909	X	X								X
G	188	860602	42 39	66 20	100	1112	0712	D								1106	X	X								X
G	189	860602	42 49	66 20	46	1242	0842	D								1236	X	X								X
	190	860602	42 46	66 58	168	1616	1216	D								1610	X	X								X
	191	860602	42 43	67 28	209	1902	1502	D								1854	X	X								X
F	192	860602	42 36	67 42	208	2109	1709	D								2058	X	X								X
F	193	860602	42 18	67 42	234	2352	1952	T	X							2340	X	X								X
	194	860603	42 19	68 27	201	0403	0003	N								0354	X	X								X
	195	860603	42 40	68 19	200	0714	0314	N								0705	X	X								X
	196	860603	42 45	68 46	195	1021	0621	D								1011	X	X								X
E	197	860603	42 35	69 14	226	1327	0927	D								1305	X	X								X
E	198	860603	42 11	69 12	198	1653	1253	D								1643	X	X								X
	199	860603	42 10	68 48	186	1931	1531	D								1922	X	X								X
	200	860603	41 59	68 39	166	2133	1733	D								2126	X	X								X
	201	860604	41 37	68 53	119	0042	2042	T								0035	X	X								X
E	202	860604	41 39	69 09	170	0234	2234	N	X							0225	X	X								X
E	203	860604	41 54	69 10	216	0458	0058	N	X							0447	X	X								X
	204	860604	41 58	69 50	91	0900	0500	T								0852	X	X								X
	205	860604	42 15	69 43	238	1124	0724	D								1113	X	X								X
	206	860604	42 06	70 20	63	1452	1052	U								1446	X	X								X
	207	860604	42 26	70 09	82	1732	1332	D								1726	X	X								X
	208	860604	42 26	70 38	70	2017	1617	D								2012	X	X								X
	209	860604	42 48	70 32	118	2311	1911	D								2303	X	X								X
	210	860605	42 50	70 00	219	0213	2213	N								0205	X	X								X
	211	860605	43 08	69 58	163	0505	0105	N								0457	X	X								X
	212	860605	43 24	70 12	108	0750	0350	N								0740	X	X								X
	213	860605	43 20	69 41	205	1053	0653	D								1042	X	X								X
E	214	860605	42 58	69 17	165	1423	1023	D	X							1415	X	X								X

<sup>1</sup> STATIONS 82-139 ARE NOT PART OF THE MARMAP DATA BASE.

TABLE 2. (CONTINUED)

CRUISE: DL8603      SURVEY NO. 67

TR STA <sup>1</sup>	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO MESS			18 <sup>0</sup>	14 <sup>C</sup>	PHYTO																	
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	CON 1:0	OTH	NEU	HAE	XBT	CTD			TIME	TEMP	SAL	CHL	DO	NUT	SEC	TYPE 1	TYPE 2									
215	860605	43 08	69 01	168	1632	1232	D																		X									X	
E 216	860605	43 17	69 20	166	1857	1457	D																												X
E 217	860605	43 40	69 22	93	2145	1745	D		X								X																		X
218	860606	43 37	68 53	127	0021	2021	T																												X
219	860606	43 22	68 41	140	0246	2246	N																												X
220	860606	42 55	68 22	164	0638	0238	N																												X
F 221	860606	42 59	67 42	183	1037	0637	D			X																									X
222	860606	43 12	67 59	202	1305	0905	D																												X
223	860606	43 23	68 08	201	1508	1108	D																												X

<sup>1</sup> STATIONS 82-139 ARE NOT PART OF THE MARMAP DATA BASE.

TABLE 2. (CONTINUED)

CRUISE: DL8604

SURVEY NO. 68

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				PHYTO						
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NU <sub>1</sub>	SEC	14 C	TYPE 1 2
2	860617	40 54	71 57	35	2219	1819	D										X								
3	860618	40 43	72 35	32	0250	2250	N										X								
5	860618	40 33	73 11	24	0625	0225	N										X								
12	860618	40 15	73 32	29	1231	0831	D										X								
15	860618	39 59	73 25	47	1600	1200	D										X								
20	860618	40 13	73 52	23	2056	1656	D										X								
26	860619	39 55	74 02	19	0307	2307	N										X								
31	860619	39 56	73 51	26	0652	0252	N										X								
36	860619	39 41	73 50	29	1752	1352	D										X								
41	860619	39 36	74 07	17	2114	1714	D										X								
47	860620	39 28	73 36	32	0234	2234	N										X								
54	860620	39 05	74 05	36	1945	1545	D										X								
62	860621	39 20	74 09	28	0225	2225	N										X								
65	860621	39 15	74 30	14	0535	0135	N																		
67	860621	39 04	74 39	13	0725	0325	N																		
72	860621	38 53	74 21	29	1315	0915	D						X												
75	860621	38 40	74 25	34	1535	1135	D						X												
80	860621	38 47	74 43	16	1935	1535	D						X												
83	860621	38 38	74 48	20	2329	1929	T						X												
86	860622	38 26	75 01	14	0148	2148	N						X												
89	860622	38 15	74 53	19	0422	0022	N						X												
92	860622	38 26	74 39	29	2038	1638	D						X												
95	860622	38 15	74 33	40	2315	1915	D						X												
99	860623	38 01	74 49	30	0312	2312	N						X												
103	860623	37 51	75 10	14	0725	0325	N						X												
109	860623	37 23	75 03	29	1347	0947	D						X												
113	860623	37 03	75 12	34	1816	1416	D						X												
118	860623	37 24	75 24	26	2325	1925	D						X												
121	860624	37 33	75 19	21	0145	2145	N						X												
124	860624	37 16	75 39	14	0528	0128	N						X												
128	860624	36 53	75 43	16	1017	0617	T						X												
130	860624	36 51	75 35	19	1217	0817	D						X												
135	860624	36 36	75 38	20	1820	1420	D						X												
138	860624	36 13	75 38	24	2222	1822	D						X												
140	860625	36 07	75 21	30	0040	2040	T						X												
142	860625	36 11	75 01	38	0302	2302	N						X												
145	860625	36 26	75 14	33	0622	0222	N						X												
148	860625	36 31	74 51	42	0932	0532	T						X												
150	860625	36 46	75 00	30	1240	0840	D						X												





TABLE 2. (CONTINUED)

CRUISE: DL8604

SURVEY NO. 68

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR			BON OTH	HYDRO MESS			18 0	14 C			PHYTO TYPE 1 2
			LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	5:3	2:1	1:0		CTD	TIME	TEMP		SAL	CHL	DO	
272	860714	40 34	69 15	70	0806	0406	N												X
273	860714	40 28	68 48	74	1036	0636	D												X
275	860714	40 51	68 44	62	1413	1013	D												X
279	860714	41 00	68 23	47	2034	1634	D												
283	860715	41 14	68 42	68	0129	2129	N												X
287	860715	41 14	68 07	40	0600	0200	N												X
289	860715	41 21	67 47	41	0835	0435	T												X
291	860715	41 26	68 01	35	1039	0639	D												X
293	860715	41 29	68 22	47	1252	0852	D												X
295	860715	41 43	68 17	62	1522	1122	D												X
301	860715	41 38	67 48	34	2127	1727	D												X
304	860716	41 51	67 55	55	0215	2215	N												X
307	860716	41 48	67 36	48	0454	0054	N												X
309	860716	41 38	67 28	46	0657	0257	N												X
310	860716	41 43	67 18	51	0815	0415	T												X
312	860716	41 55	67 28	51	1402	1002	D												X
315	860716	42 03	67 20	51	1649	1249	D												X
318	860716	42 06	67 08	53	1814	1414	D												X
319	860716	41 46	67 10	52	2107	1707	D												X
32	860716	41 24	67 20	48	0025	2025	T												X
32	860716	41 12	67 21	50	0241	2241	N												X
324	860716	41 08	67 01	65	0502	0102	N												X
326	860716	41 23	66 58	66	0730	0330	N												X
328	860717	41 01	66 47	74	1044	0644	D												X
330	860717	40 53	67 12	85	1344	0944	J												X
332	860717	40 56	67 58	56	1755	1355	D												X
334	860717	40 44	68 18	50	2020	1620	D												X



TABLE 2. (CONTINUED)

CRUISE: AL8604

SURVEY NO. 69

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0 20-M				HYDRO MESS			18				14		PHYTO		
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	CHL	DO	NUT	SEC	C
162	860805	35 32	75 11	35	0641	0241	N					X			X								
163	860805	36 17	75 28	29	1146	0746	D					X			X								
164	860806	36 33	75 25	31	2127	1727	D					X			X								
165	860806	36 46	75 27	24	2318	1918	T					X			X								
166	860807	37 18	75 11	28	0307	2307	N					X			X								
167	860807	37 28	75 07	31	0435	0035	N					X			X								
175	860807	37 55	74 41	41	1235	0835	D					X			X								
176	860807	38 02	74 51	27	1359	0959	D					X			X								
177	860807	38 12	74 43	35	1530	1130	D					X			X								
179	860807	37 58	74 29	52	1840	1440	D					X			X								
186	860808	38 13	74 18	54	0015	2015	T					X			X								
198	860808	38 36	74 14	45	1025	0625	T					X			X								
199	860808	38 32	74 33	37	1224	0824	D								X								
200	860808	38 44	74 43	17	1404	1004	D					X			X								
201	860808	38 48	74 18	40	1630	1230	D					X			X								
202	860808	39 01	74 16	27	1806	1406	D					X			X								
203	860808	39 12	74 06	23	1949	1549	D					X			X								
205	860809	38 40	73 50	50	0011	2011	T					X			X								
208	860809	38 54	73 41	44	0330	2330	N					X			X								
211	860809	39 05	73 20	60	0648	0248	N					X			X								
217	860809	39 21	73 18	52	1309	0909	D					X			X								
223	860809	39 40	73 02	49	1845	1445	D					X			X								
234	860810	39 54	73 16	52	0315	2315	N					X			X								
238	860810	40 05	73 20	40	0617	0217	N					X			X								
241	860810	39 42	73 45	25	1054	0654	T					X			X								
242	860810	39 58	73 45	27	1259	0859	D					X			X								
246	860810	40 12	73 44	45	1617	1217	D					X			X								
248	860810	40 25	73 21	27	1955	1555	D					X			X								
254	860811	39 54	72 51	55	0255	2255	N					X			X								
259	860811	40 08	72 56	47	0715	0315	N					X			X								
263	860811	40 19	72 37	51	1117	0717	D					X			X								
265	860811	40 30	72 30	45	1328	0928	D					X			X								
266	860811	40 35	72 44	35	1503	1103	D					X			X								
268	860811	40 43	72 27	34	1722	1322	D					X			X								
272	860811	40 36	72 12	50	2017	1617	D					X			X								
276	860812	40 26	72 17	58	0012	2012	T					X			X								
284	860812	40 43	71 51	50	0623	0223	N					X			X								
292	860812	40 51	72 05	39	1311	0911	D					X			X								
293	860820	40 44	69 50	44	0252	2252	N					X			X								

TABLE 2 (CONTINUED)

CRUISE: AL8604		SURVEY NO. 69																						
TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			PHYTO								
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO PAIR	BON	OTH	NEU	HAE	XBT	CTD	MESS	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
300	860820	40 53	69 27	42	1022	0622	T										X							X
302	860820	41 01	69 10	49	1239	0839	D										X							X
312	860821	41 14	69 20	57	0355	2355	N										X							X
329	860821	41 34	69 39	36	1600	1200	D										X							X
332	860821	41 44	69 50	38	1851	1451	D										X							X
334	860821	41 59	69 55	51	2103	1703	D										X							X
357	860822	41 26	69 21	64	2046	1646	D										X							X
368	860823	41 02	68 54	70	0545	0145	N										X							X
373	860823	41 12	68 43	68	1022	0622	T										X							X
375	860823	41 23	68 40	100	1310	0910	D										X							X
380	860823	41 25	68 21	60	1713	1313	D										X							X
382	860823	41 31	68 27	81	1918	1518	D										X							X
386	860823	41 48	68 11	87	2303	1903	T										X							X
395	860824	41 45	67 53	33	0540	0140	N										X							X
397	860824	41 48	67 31	37	0823	0423	N										X							X
402	860824	41 56	67 48	62	1409	1009	D										X							X
412	860824	41 59	67 32	44	2006	1606	D										X							X
415	860824	41 52	67 17	46	2310	1910	T										X							X
421	860825	42 06	67 21	87	0452	0052	N										X							X
426	860825	42 01	67 02	62	1227	0827	D										X							X
433	860825	41 46	66 53	66	2150	1750	D										X							X
438	860826	41 32	67 04	60	0227	2227	N										X							X
441	860826	41 40	67 23	45	0630	0230	N										X							X
443	860826	41 24	67 36	40	0922	0522	T										X							X
449	860826	41 20	67 03	63	1633	1233	D										X							X
453	860826	41 26	66 36	87	2146	1746	D										X							X
458	860827	41 08	66 34	93	0226	2226	N										X							X
461	860827	41 10	66 51	72	0551	0151	N										X							X
468	860827	40 52	66 47	98	1223	0823	D										X							X
470	860827	40 46	67 06	98	1515	1115	D										X							X
474	860827	40 56	67 18	80	1911	1511	D										X							X
481	860828	40 59	67 44	60	0219	2219	N										X							X
486	860828	40 43	67 47	71	0713	0313	N										X							X
491	860828	40 35	67 29	99	1310	0910	D										X							X
492	860828	40 31	67 55	105	1556	1156	D										X							X
497	860828	40 51	68 07	61	2125	1725	D										X							X
499	860829	40 41	68 19	77	0018	2018	N										X							X
504	860829	40 28	68 21	98	0346	2346	N										X							X

TABLE 2. (CONTINUED)

CRUISE: DL8607

SURVEY NO. 70

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BONGO PAIR BON				HYDRO MESS			18 0				14 C		PHYTO TYPE 1 2		
		LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	CHL		DO	NUT
	*1	860825	41 29	70 53	18									1942	X						X	
	*2	860826	40 41	71 20	59									0158	X						X	
	*3	860826	39 20	72 59	72									1325	X						X	
	*4	860826	38 46	73 30	69									1828	X						X	
	*5	860826	38 44	74 02	47									2324	X						X	
	*6	860827	38 17	74 17	51									0248	X						X	
	*7	860827	36 47	75 11	35									1319	X						X	
	*8	860827	36 40	74 45	86									1647	X						X	
	9	860828	35 41	74 58	52	0002	2002	T			X	X		2357	X	X	X					X
	10	860828	35 16	75 14	25	0337	2337	N			X			0333	X	X	X					X
	11	860828	35 28	75 15	30	0548	0148	N			X			0515	X	X	X					X
	12	860828	35 51	75 29	16	0838	0438	N			X			0834	X	X	X					X
	13	860828	36 09	75 06	39	1142	0742	D			X	X		1137	X	X	X					X
	14	860828	36 16	74 46	457	1424	1024	D			X	X		1409	X	X	X					X
	15	860828	36 23	75 15	37	1742	1342	D			X			1736	X	X	X					X
	16	860828	36 15	75 32	27	1956	1556	D			X			1948	X	X	X					X
	17	860829	36 34	75 48	13	0202	2202	N			X			0108	X	X	X			X		X
	*18	860829	36 50	75 50	17			N						0635	X					X		
A	19	860829	36 57	75 48	12	2337	1937	T		X		X	X	2233	X	X	X					X
A	20	860830	36 55	75 33	20	0130	2130	N			X			0125	X	X	X					X
	21	860830	36 43	75 22	19	0312	2312	N			X			0319	X	X	X					X
A	22	860830	36 53	75 19	25	0443	0043	N		X		X	X	0419	X	X	X					X
A	23	860830	36 51	75 04	37	0638	0238	N			X			0612	X	X	X					X
A	24	860830	36 49	74 50	52	0825	0425	N		X		X	X	0819	X	X	X					X
	25	860830	36 39	74 52	47	1012	0612	T			X	X		1008	X	X	X					X
A	26	860830	36 46	74 35	1170	1249	0849	D			X			1235	X	X	X					X
	27	860830	37 13	74 45	61	1620	1220	D			X	X		1611	X	X	X					X
	28	860830	37 31	74 39	57	1849	1449	D			X			1843	X	X	X					X
	29	860830	37 38	74 21	95	2121	1721	D			X	X		2107	X	X	X					X
	30	860831	37 48	74 46	40	0004	2004	T			X			2354	X	X	X					X
	31	860831	37 31	74 57	30	0216	2216	N			X			0212	X	X	X					X
	32	860831	37 18	75 09	26	0421	0021	N			X			0416	X	X	X					X
	33	860831	37 15	75 49	12	0714	0314	N			X			0709	X	X	X					X
	34	860831	37 37	75 19	18	1019	0619	T			X			1015	X	X	X					X
	35	860831	37 48	75 17	16	1149	0749	D			X			1143	X	X	X					X
	36	860831	38 10	74 54	22	1457	1057	D			X			1453	X	X	X					X
	*37	860831	38 31	74 58	16			D						1739	X	X	X			X		X
B	38	860831	38 45	75 00	25	2030	1630	D		X		X		2025	X	X	X			X		X
B	39	860831	38 35	74 48	30	2235	1835	D			X	X		2231	X	X	X					X

TABLE 2. (CONTINUED)

CRUISE: PL8607

SURVEY NO. 70

TR STA	DATE GMT	LOCATION			0.61-M			0.20-M				HYDRO				PHYTO								
		LAT DEG MIN	LONG DEG MIN	DEPTH [M]	START GMT	TIME LOCAL	DNT	BONGO	PAIR	BON	NEU	HAE	XBT	CTD	MESS	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
B	40	860901	38 25	74 39	35	0027	2027	T		X				0023	X	X	X							X
B	41	860901	38 14	74 31	41	0210	2210	N			X	X		0201	X	X	X							X
B	42	860901	38 04	74 22	47	0353	2353	N		X				0348	X	X	X							X
B	43	860901	37 51	74 11	107	0600	0200	N			X	X		0551	X	X	X							X
B	44	860901	37 41	74 03	1270	0812	0412	N		X				0757	X	X	X							X
	45	850901	37 59	73 58	140	1050	0650	T			X	X		1041	X	X	X							X
	46	860901	38 21	73 39	122	1410	1010	D			X	X		1401	X	X	X							X
	47	860901	38 25	74 07	54	1703	1303	D			X			1657	X	X	X							X
	48	860901	38 40	74 19	44	1914	1514	D			X			1906	X	X	X							X
	49	860901	38 55	74 33	23	2119	1719	D			X			2116	X	X	X							X
	50	860901	38 57	74 07	42	2350	1950	T			X			2345	X	X	X							X
	51	860902	39 14	74 26	17	0223	2223	N			X			0219	X	X	X							X
	52	860902	39 21	74 06	25	0419	0019	N			X			0412	X	X	X							X
	53	860902	39 12	73 39	44	0700	0300	N			X			0655	X	X	X							X
	54	860902	38 45	73 45	50	1018	0618	T			X			1012	X	X	X							X
	55	860902	38 39	73 09	180	1348	0948	D			X	X		1338	X	X	X							X
	56	860902	38 59	73 08	78	1630	1230	D			X	X		1621	X	X	X							X
	57	860902	39 17	72 51	78	1927	1527	D			X	X		1920	X	X	X							X
	58	860902	39 39	73 23	34	2305	1905	T			X			2300	X	X	X							X
	59	860903	39 52	73 33	35	0059	2059	N			X			0053	X	X	X							X
	60	860903	39 34	73 49	23	0330	2330	N			X			0326	X	X	X							X
	*61	860903	39 35	73 54	26			N						0414	X	X	X			X				
	62	860903	39 43	74 03	14	0609	0209	N			X			0607	X	X	X							X
	63	860903	39 55	73 56	22	0755	0355	N			X			0751	X	X	X							X
	64	860903	40 07	73 48	29	0954	0554	T			X			0949	X	X	X							X
	65	860903	40 15	73 54	21	1118	0718	T			X			1112	X	X	X							X
	*66	850903	40 25	73 44	26			D						1254	X	X	X			X				
	*67	860903	40 25	73 46	33			D						1359	X	X	X			X				
C	68	860903	40 25	73 52	17	1551	1151	D		X		X		1548	X	X	X			X				X
C	69	860903	40 16	73 36	27	1814	1414	D			X	X		1810	X	X	X							X
C	70	860903	40 06	73 23	42	2026	1626	D		X		X		2021	X	X	X							X
	*71	860903	40 01	73 20	72			D						2119	X	X	X			X				
C	72	850904	39 52	73 05	70	0006	2006	T			X	X		0001	X	X	X							X
C	73	860904	39 39	72 46	70	0247	2247	N		X		X		0240	X	X	X							X
C	74	860904	39 28	72 33	107	0500	0100	N			X	X		0451	X	X	X							X
C	75	860904	39 18	72 19	223	0733	0333	N		X		X		0720	X	X	X							X
	76	860904	39 33	72 07	225	1021	0621	T			X	X		1007	X	X	X							X
	77	860904	39 51	72 27	69	1327	0927	D			X			1320	X	X	X							X
	78	860904	39 52	71 49	173	1728	1328	D			X	X		1710	X	X	X							X

TABLE 2. (CONTINUED)

CRUISE: DL8607

SURVEY NO. 70

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18	PHYTO											
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:C	OTH	NEU	HAE		XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	79	860904	40 04	71 30	90	2019	1619	D				X	X		2009	X	X	X								X
	80	860904	40 31	71 36	75	2332	1932	T				X			2325	X	X	X								X
	81	860909	40 14	71 57	67	0329	2329	N				X			0322	X	X	X								X
	82	860909	40 19	72 43	52	0731	0331	N				X			0724	X	X	X								X
	83	860909	40 26	73 11	32	1049	0649	T				X			1042	X	X	X			X					X
	84	860909	40 44	72 40	28	1410	1010	D				X			1407	X	X	X								X
	85	860909	40 34	72 28	43	1557	1157	D				X			1552	X	X	X								X
	86	860909	40 49	72 08	39	1829	1429	D				X			1824	X	X	X								X
	87	860909	41 04	71 42	49	2115	1715	D				X			2109	X	X	X								X
	*88	860909	41 13	71 51	45			T							2254		X				X					
	*89	860910	41 24	71 25	31			N							0143		X				X					
D	90	860910	41 20	71 21	32	0307	2307	N				X	X		0303	X	X	X								X
D	91	860910	41 09	71 15	42	0501	0101	N		X		X			0455	X	X	X								X
	92	860910	41 10	71 00	35	0638	0238	N				X			0633	X	X	X								X
D	93	860910	40 58	71 10	50	0831	0431	N				X	X		0824	X	X	X								X
D	94	860910	40 41	71 02	63	1057	0657	T		X		X			1050	X	X	X								X
D	95	860910	40 21	70 51	97	1339	0939	D				X	X		1332	X	X	X								X
	*96	860910	40 15	70 49	118			D							1440		X				X					
D	97	860910	40 10	70 46	129	1643	1243	D		X		X			1627	X	X	X								X
D	98	860910	39 59	70 40	271	1844	1444	D				X	X		1830	X	X	X								X
	99	860910	40 13	70 25	109	2121	1721	D				X	X		2134	X	X	X								X
	100	860911	40 42	70 35	58	0109	2109	N				X			0103	X	X	X								X
	101	860911	41 03	70 33	46	0403	0003	N				X			0357	X	X	X								X
	102	860913	40 41	70 11	45	1949	1549	D				X			1943	X	X	X								X
	*103	860913	40 30	70 12	66			D							2110		X				X					
	104	860914	40 24	69 42	68	0054	2054	N				X			0049	X	X	X								X
	105	860914	40 08	69 34	92	0258	2258	N				X	X		0248	X	X	X								X
E	106	860914	40 05	69 01	170	0604	0204	N		X		X			0553	X	X	X								X
E	107	860914	40 25	69 03	82	0844	0444	N				X	X		0838	X	X	X								X
E	108	860914	40 39	69 05	76	1046	0646	T		X		X			1039	X	X	X								X
	109	860914	40 53	69 34	31	1415	1015	D				X			1408	X	X	X								X
E	110	860914	40 55	69 06	74	1720	1320	D				X	X		1712	X	X	X								X
E	111	860914	41 04	69 06	85	1916	1516	D		X		X			1907	X	X	X								X
E	112	860914	41 20	69 07	159	2201	1801	T				X	X		2125	X	X	X								X
	113	860915	41 32	69 26	64	0035	2035	N				X			0029	X	X	X								X
	114	860915	41 20	68 42	85	0434	0034	N				X			0426	X	X	X								X
	115	860915	40 51	68 44	69	0743	0343	N				X			0736	X	X	X								X
	116	860915	40 29	68 37	83	1054	0654	T				X	X		1046	X	X	X								X
	117	860915	40 20	68 21	130	1313	0913	D				X	X		1305	X	X	X								X



TABLE 2. (CONTINUED)

CRUISE: DL8607		SURVEY NO. 70																								
TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.29-M				HYDRO				18				14		PHYTO TYPE				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	0	CHL	DO		NUT	SEC	C	1
	118	860915	40 48	68 17	57	1653	1253	D							1646	X	X	X								X
	119	860915	41 11	68 08	33	2016	1616	D							2009	X	X	X								X
	120	860915	41 37	68 06	41	2323	1923	T							2315	X	X	X								X
	121	860916	41 52	68 11	190	0132	2132	N							0122	X	X	X								X
F	122	860916	41 48	67 42	35	0404	0004	N							0359	X	X	X								X
F	123	860916	41 30	67 41	40	0646	0246	N	X						0617	X	X	X								X
F	124	860916	41 16	67 41	39	0824	0424	N							0818	X	X	X								X
F	125	860916	40 58	67 33	68	1125	0725	T	X						1117	X	X	X			X					X
	126	860917	40 30	68 00	127	1431	1031	D							1420	X	X	X			X					X
F	127	860917	40 22	67 40	928	1753	1353	D	X						1725	X	X	X								X
F	128	860917	40 37	67 41	86	2107	1707	D							2058	X	X	X								X
	129	860918	40 46	67 19	94	0018	2018	N							0010	X	X	X								X
	130	860918	40 40	67 05	147	0232	2232	N							0222	X	X	X								X
	131	860918	40 52	66 37	263	0559	0159	N							0546	X	X	X								X
	132	860918	41 13	66 56	68	0940	0540	T							0933	X	X	X								X
	133	860918	41 33	67 01	59	2007	1607	D							1208	X	X	X								X
	134	860918	41 59	67 24	28	2336	1936	T							2332	X	X	X								X
	135	860919	42 11	67 15	177	0136	2136	N							0126	X	X	X								X
	136	860919	42 02	66 50	77	0426	0026	N							0418	X	X	X								X
	137	860919	41 36	66 31	80	0733	0333	N							0724	X	X	X								X
G	138	860919	41 10	66 19	156	1030	0630	T	X						1021	X	X	X								X
G	139	860919	41 30	66 20	93	1311	0911	D							1302	X	X	X								X
	140	860919	41 39	65 55	125	1618	1218	D							1610	X	X	X								X
	141	860919	41 54	65 49	53	1832	1432	D							1823	X	X	X								X
G	142	860919	41 52	66 20	83	2203	1803	T	X						2154	X	X	X								X
G	143	860920	42 09	66 20	180	0044	2044	N							0034	X	X	X								X
G	144	860920	42 28	66 20	248	0348	2348	N	X						0333	X	X	X								X
G	145	860920	42 49	66 20	60	0652	0252	N							0544	X	X	X								X
G	146	860920	43 17	66 20	77	1029	0629	T							1022	X	X	X								X
	147	860920	43 30	67 00	202	1402	1002	D							1350	X	X	X								X
	148	860920	43 12	66 48	138	1704	1304	D							1655	X	X	X								X
	149	860920	42 46	66 58	172	2043	1643	D							2019	X	X	X								X
F	150	860921	42 36	67 42	202	0131	2131	N							0042	X	X	X								X
F	151	860921	42 18	67 42	233	0406	0006	N	X						0354	X	X	X								X
	152	860921	42 19	68 27	197	0814	0414	N							0803	X	X	X								X
	153	860921	41 59	68 39	167	1102	0702	T							1053	X	X	X								X
	154	860921	41 37	68 53	113	1412	1012	D							1405	X	X	X								X
E	155	860921	41 54	69 10	214	1648	1248	D							1637	X	X	X								X
	*156	860921	41 51	69 10	192			D							1852		X				X					





TABLE 2. (CONTINUED)

CRUISE: AL8605		SURVEY NO. 71														PHYTO					
TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M				HYDRO		18		14		TYPE C 1 2				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL	DNT	BONGO PAIR 5:3 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL		CHL	DO	NUT	SEC
207	861016	40 42	70 26	52	0705	0305	N														X
210	861016	40 02	70 53	223	1800	1400	D														X
214	861017	39 59	70 22	315	0300	2300	N														X
217	861017	39 56	69 53	214	0921	0521	N														X
219	861017	40 32	68 20	98	2133	1733	T														X
221	861018	40 24	67 45	144	0325	2325	N														X
224	861018	40 32	67 17	144	1720	1320	D														X
228	861019	40 48	66 42	209	0749	0349	N														X
230	861019	40 49	67 15	94	1432	1032	D														X
234	861019	41 05	67 08	65	2319	1919	N														X
237	861020	41 22	67 37	38	0539	0139	N														X
241	861020	41 39	67 29	47	1214	0814	D														X
243	861020	41 29	67 11	54	1542	1142	D														X
244	861020	41 47	66 55	64	1839	1439	D														X
245	861020	41 32	66 41	74	2117	1717	T														X
247	861021	41 18	66 28	96	0210	2210	N														X
250	861021	41 29	66 01	137	0733	0333	N														X
251	861021	41 45	65 48	134	1032	0632	T														X
254	861021	42 00	65 52	193	1714	1314	D														X
256	861021	42 04	66 20	86	2147	1747	T														X
258	861022	42 00	66 47	65	0250	2250	N														X
260	861022	42 12	67 03	194	0625	0225	N														X
263	861022	42 04	67 33	107	1252	0852	D														X
265	861022	42 01	68 02	210	1805	1405	D														X
266	861022	41 50	68 07	90	2026	1626	D														X
268	861022	41 40	68 01	30	2359	1959	N														X
271	861023	41 34	68 22	26	0704	0304	N														X
273	861023	41 55	68 45	144	1118	0718	T														X
274	861023	41 03	69 23	43	1910	1510	D														X
285	861028	42 15	69 59	107	0608	0208	N														X
288	861028	42 36	69 30	250	1220	0820	D														X
289	861028	42 21	69 11	243	1528	1128	D														X
291	861028	42 41	68 59	153	2012	1612	D														X
293	861029	42 54	69 01	136	0122	2122	N														X
296	861029	42 31	68 27	212	0756	0356	N														X
298	861029	42 38	67 51	204	1236	0836	D														X
300	861029	42 56	67 19	255	1732	1332	D														X
302	861029	42 24	67 31	307	2257	1857	N														X
303	861030	42 28	67 03	349	0212	2212	N														X







TABLE 2. (CONTINUED)

CRUISE: DL8610

SURVEY NO. 72

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18				PHYTO					
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	BON OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	1	861105	35 41	74 58	52	0630	0130	N							0623	X	X	X						X
	2	861105	35 16	75 14	25	1005	0505	N							0958	X	X	X						X
	3	861105	35 28	75 15	29	1157	0657	T							1150	X	X	X						X
	4	861105	35 51	75 29	22	1455	0955	D							1450	X	X	X						X
	5	861105	36 09	75 06	37	1814	1314	D							1809	X	X	X						X
	6	861105	36 16	74 46	326	2056	1556	D							2041	X	X	X						X
	7	861106	36 23	75 15	37	0006	1906	N							2359	X	X	X						X
	8	861106	36 15	75 32	26	0210	2110	N							0205	X	X	X						X
	9	861106	36 33	75 47	19	0448	2348	N							0444	X	X	X						X
	10	861106	36 43	75 22	21	0732	0232	N							0726	X	X	X						X
	11	861106	36 39	74 52	47	1034	0534	T							1027	X	X	X						X
A	12	861106	36 46	74 35	1170	1317	0817	D							1308	X	X	X						X
A	13	861106	36 49	74 50	55	1522	1022	D	X						1509	X	X	X						X
A	14	861106	36 51	75 04	37	1712	1212	D							1706	X	X	X						X
A	15	861106	36 53	75 19	28	1855	1355	D	X						1851	X	X	X						X
A	16	861106	36 55	75 33	19	2040	1540	D							2037	X	X	X						X
A	17	861106	36 57	75 48	12	2216	1716	T	X						2213	X	X	X						X
	18	861107	37 15	75 40	12	0052	1952	N							0049	X	X	X						X
	19	861107	37 18	75 09	28	0350	2250	N							0345	X	X	X						X
	20	861107	37 13	74 45	67	0627	0127	N							0620	X	X	X						X
	21	861107	37 31	74 39	56	0911	0411	N							0904	X	X	X						X
	22	861107	37 38	74 21	93	1138	0638	T							1125	X	X	X						X
	23	861107	37 48	74 46	40	1416	0916	D							1410	X	X	X						X
	24	861107	37 31	74 57	32	1632	1132	D							1627	X	X	X						X
	25	861107	37 37	75 19	21	1844	1344	D							1841	X	X	X						X
	26	861107	37 48	75 17	18	2014	1514	D							2010	X	X	X						X
	27	861107	38 10	74 54	20	2339	1839	N							2334	X	X	X						X
	*28	861108	38 34	74 53	22			N							0224	X	X	X						X
B	29	861108	38 45	74 57	19	0344	2244	N	X						0340	X	X	X						X
B	30	861108	38 35	74 48	26	0547	0047	N							0531	X	X	X						X
B	31	861108	38 25	74 39	34	0738	0238	N	X						0731	X	X	X						X
B	32	861108	38 14	74 31	42	0932	0432	N							0926	X	X	X						X
B	33	861108	38 04	74 22	49	1125	0625	T	X						1120	X	X	X						X
B	34	861108	37 51	74 11	106	1332	0832	D							1325	X	X	X						X
B	35	861108	37 41	74 03	1280	1557	1057	D	X						1543	X	X	X						X
	36	861108	37 59	73 58	147	1838	1338	D							1829	X	X	X						X
	37	861108	38 21	73 39	123	2212	1712	T							2203	X	X	X						X
	38	861109	38 25	74 07	54	0107	2007	N							0101	X	X	X						X
	39	861109	38 40	74 19	44	0320	2220	N							0314	X	X	X						X



TABLE 2. (CONTINUED)

CRUISE: DL8610		SURVEY NO. 72																						
TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO					18				PHYTO				
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO	PAJR	BON	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	40	861109	38 55	74 33	22	0530	0030	N							0526	X	X	X						X
	41	861109	38 57	74 07	41	0800	0300	N							0753	X	X	X						X
	42	861109	39 14	74 26	17	1052	0552	T							1046	X	X	X						X
	43	861109	39 21	74 06	25	1255	0755	D							1250	X	X	X						X
	44	861109	39 12	73 39	44	1543	1043	D							1537	X	X	X						X
	45	861109	38 45	73 45	50	2107	1607	T							2100	X	X	X						X
	46	861110	38 39	73 09	296	0029	1929	N							0018	X	X	X						X
	47	861110	38 59	73 09	82	0348	2248	N							0341	X	X	X						X
	48	861110	39 17	72 51	80	0700	0200	N							0651	X	X	X						X
	49	861110	39 39	73 23	35	1326	0826	D							1320	X	X	X						X
	50	861110	39 52	73 33	35	1531	1031	D							1526	X	X	X						X
	51	861110	39 34	73 49	23	1759	1259	D							1756	X	X	X						X
	52	861110	39 43	74 03	16	1947	1447	D							1944	X	X	X						X
	53	861110	39 55	73 56	21	2135	1635	T							2131	X	X	X						X
	54	861110	40 07	73 48	29	2322	1822	N							2317	X	X	X						X
	55	861111	40 15	73 54	21	0042	1942	N							0038	X	X	X						X
C	56	861111	40 26	73 50	27	0214	2114	N	X						0209	X	X	X						X
C	57	861111	40 16	73 36	27	0404	2304	N							0400	X	X	X						X
C	58	861111	40 06	73 23	42	0605	0105	N	X						0600	X	X	X						X
C	59	861111	39 52	73 05	68	0830	03	N							0828	X	X	X						X
C	60	861111	39 39	72 46	69	1112	06	T	X						1105	X	X	X						X
C	61	861111	39 23	72 33	108	1314	0814	D							1306	X	X	X						X
C	62	861111	39 18	72 19	223	1535	1035	D	X						1522	X	X	X						X
	63	861111	39 33	72 07	223	1831	1331	D							1820	X	X	X						X
	64	861111	39 52	71 49	157	2200	1700	T							2149	X	X	X						X
	65	861112	40 04	71 30	92	0205	2105	N							0158	X	X	X						X
	66	861112	40 31	71 36	75	0532	0032	N							0526	X	X	X						X
	67	861112	40 14	71 57	66	0819	0319	N							0810	X	X	X						X
	68	861112	39 51	72 27	75	1157	0657	T							1149	X	X	X						X
	69	861112	40 19	72 43	51	1532	1032	D							1526	X	X	X						X
	70	861112	40 28	73 13	29	1827	1327	D							1821	X	X	X						X
	71	861112	40 44	72 40	27	2205	1705	T							2148	X	X	X						X
	72	861112	40 34	72 28	43	1851	1851	N							2346	X	X	X						X
	73	861113	40 49	72 08	39	0216	2116	N							0211	X	X	X						X
	74	861113	41 04	71 42	43	0505	0005	N							0501	X	X	X						X
	75	861113	41 10	71 00	37	0841	0341	N							0837	X	X	X						X
	76	861113	41 03	70 33	46	1123	0623	T							1117	X	X	X						X
	77	861113	40 42	70 35	59	1353	0853	D							1348	X	X	X						X
D	78	861117	41 20	71 21	32	2306	1806	N							2229	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: DL8610

SURVEY NO. 72

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M START TIME		0.20-M BGNGO PAIR BOM				HYDRO MESS				18				14		PHYTO TYPE				
			LAT DEG MIN	LONG DEG MIN		GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C	1
D	79	861118	41 09	71 15	41	0054	1954	N			X				0049	X	X	X								X
D	80	861118	40 58	71 10	52	0233	2133	N			X	X			0227	X	X	X								X
D	81	861118	40 41	71 02	63	0508	0008	N			X				0459	X	X	X								X
D	82	861118	40 21	70 51	97	0750	0250	N			X	X			0742	X	X	X								X
D	83	861118	40 10	70 46	130	0952	0452	N			X				0941	X	X	X								X
D	84	861118	39 59	70 40	335	1203	0703	T			X	X			1150	X	X	X								X
	85	861118	40 13	70 25	112	1450	0950	D			X	X			1442	X	X	X								X
	86	861118	40 41	70 11	45	1833	1333	D			X				1827	X	X	X								X
	87	861118	40 24	69 42	71	2208	1708	T			X				2159	X	X	X								X
	88	861119	40 08	69 34	94	0036	1936	N			X	X			0027	X	X	X								X
	89	861119	40 53	69 34	41	0523	0023	N			X				0516	X	X	X								X
E	90	861120	40 05	69 01	327	1140	0640	T			X				1130	X	X	X								X
E	91	861120	40 25	69 03	82	1451	0951	D			X	X			1445	X	X	X								X
E	92	861120	40 39	69 05	79	1700	1200	D			X				1652	X	X	X								X
E	93	861120	40 55	69 06	71	1905	1405	D			X	X			1857	X	X	X								X
E	94	861120	41 04	69 06	83	2054	1554	T			X				2045	X	X	X								X
E	95	861120	41 20	69 07	156	2329	1829	N			X	X			2320	X	X	X								X
	96	861121	41 32	69 26	64	0205	2105	N			X				0150	X		X								X
	97	861123	41 20	68 42	87	0115	2015	N			X				0106	X	X	X								X
	98	861123	40 51	68 44	65	0432	2332	N			X				0426	X	X	X								X
	99	861123	40 29	68 37	82	0745	0245	N			X	X			0738	X	X	X								X
	100	861123	40 20	68 21	130	1906	0506	N			X	X			0956	X	X	X								X
	101	861123	40 48	68 17	57	1346	0846	D			X				1342	X	X	X								X
	102	861123	40 31	67 56	105	1711	1211	D			X				1703	X	X	X								X
F	103	861123	40 22	67 40	512	1943	1443	D			X				1914	X	X	X								X
F	104	861123	40 37	67 41	80	2156	1656	T			X	X			2149	X	X	X								X
F	105	861124	40 56	67 41	66	0042	1942	N			X				0035	X	X	X								X
	106	861124	41 11	68 08	26	0329	2229	N			X				0325	X	X	X								X
	107	861124	41 37	68 06	36	0636	0136	N			X				0631	X	X	X								X
	108	861124	41 52	68 11	190	0833	0333	N			X				0823	X	X	X								X
F	109	861124	41 48	67 42	33	1135	0635	T			X	X			1128	X	X	X								X
F	110	861124	41 30	67 41	45	1459	0959	D			X				1435	X	X	X								X
F	111	861124	41 16	67 41	36	1727	1227	D			X	X			1723	X	X	X								X
	112	861124	40 46	67 19	94	2219	1719	N			X	X			2211	X	X	X								X
	113	861125	40 40	67 05	179	0026	1926	N			X	X			0015	X	X	X								X
	114	861125	40 52	66 37	250	0357	2257	N			X				0347	X	X	X								X
	115	861125	41 13	66 56	69	0711	0211	N			X				0705	X	X	X								X
	116	861125	41 33	67 01	62	0952	0452	N			X				0944	X	X	X								X
	117	861125	41 36	66 31	83	1232	0732	D			X				1224	X	X	X								X

TABLE 2. (CONTINUED)

		LOCATION			0.61-M			0.20-M				HYDRO				PHYTO										
DATE		LAT	LONG	DEPTH	START TIME			BONGO	PAIR	BON	MESS				18											
TR	STA	GMT	DEG MIN	DEG MIN	[M]	GMT	LOCAL	DNT	5:3	2:1	1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	14	TYPE
																	C									
																	1 2									
	118	861125	42 02	66 50	76	1707	1207	D					X				1700	X	X	X						X
	119	861125	42 11	67 15	183	2011	1511	T					X				2003	X	X	X						X
	120	861125	41 59	67 24	25	2215	1715	N					X				2210	X	X	X						X
G	121	861202	41 10	66 19	151	1527	1027	D		X			X				1517	X	X	X						X
G	122	861202	41 30	66 20	90	1811	1311	D					X	X			1805	X	X	X						X
G	123	861205	43 32	66 20	77	1739	1239	D					X				1732	X	X	X						X
G	124	861205	43 17	66 20	83	2008	1508	T					X				1958	X	X	X						X
G	125	861205	43 01	66 20	124	2232	1732	N		X			X	X			2219	X	X	X						X
G	126	861206	42 49	66 20	62	0103	2003	N					X				0055	X	X	X						X
G	127	861206	42 39	66 20	109	0255	2155	N					X				0256	X	X	X						X
G	128	861206	42 28	66 20	249	1022	0522	N		X			X	X			1010	X	X	X						X
G	129	861206	42 17	66 20	236	1250	0750	D					X				1238	X	X	X						X
G	130	861206	42 09	66 20	174	1440	0940	D					X	X			1430	X	X	X						X
	131	861206	41 54	65 49	154	1844	1344	D					X				1836	X	X	X						X
	132	861206	41 39	65 55	129	2104	1604	T					X				2056	X	X	X						X
G	133	861207	41 52	66 20	84	0053	1953	N		X			X				0045	X	X	X						X
F		861207	42 18	67 42	233	1200	0700	T					X				1148	X	X	X						X
F	135	861207	42 36	67 42	204	1530	1030	D					X	X			1510	X	X	X						X
	136	861207	42 43	67 28	209	1755	1255	D					X				1746	X	X	X						X
	137	861207	42 46	66 58	182	2105	1605	T					X				2056	X	X	X						X
	138	861208	43 12	66 48	139	0032	1932	N					X				0023	X	X	X						X
	*139	861208	43 42	67 26	214			N									2123	X	X	X						X
F	140	861209	43 49	67 43	248	0046	1946	N					X				0032	X	X	X						X
	141	861209	43 58	68 11	150	0426	2326	N					X				0417	X	X	X						X
	142	861209	43 58	68 35	80	0652	0152	N					X				0541	X	X	X						X
	143	861209	43 37	68 56	135	1000	0500	N					X				0952	X	X	X						X
E	144	861209	43 40	69 22	104	1241	0741	T		X			X	X			1232	X	X	X						X
	145	861209	43 20	69 41	215	1555	1055	D					X				1546	X	X	X						X
	146	861209	43 24	70 12	99	1846	1346	D					X	X			1841	X	X	X						X
	147	861209	43 08	69 58	128	2148	1648	T					X				2139	X	X	X						X
	148	861210	42 50	70 00	192	0141	2041	N					X				0131	X	X	X						X
	149	861210	42 48	70 32	102	0614	0114	N					X	X			0556	X	X	X						X
	150	861210	42 26	70 38	78	0927	0427	N					X	X			0919	X	X	X						X
	151	861210	42 06	70 20	63	1229	0729	T					X				1223	X	X	X						X
	152	861210	42 26	70 09	80	1512	1012	D					X				1507	X	X	X						X
	153	861210	42 15	69 43	239	1832	1332	D					X				1821	X	X	X						X
	154	861210	41 58	69 50	87	2109	1609	T					X				2102	X	X	X						X
E	155	861211	41 54	69 10	216	0049	1949	N					X	X			0038	X	X	X						X
E	156	861211	42 11	69 12	194	0339	2239	N		X			X				0329	X	X	X						X

TABLE 2. (CONTINUED)

CRUISE: DL8610

SURVEY NO. 72

TR	STA	DATE		LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO				18				14		PHYTO						
		GMT	DEG	MIN	DEG		MIN	START GMT	LOCAL	DMT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	°	CHL	DO	NUT	SEC	C	1	2
	157	861211	42	10	68	48	188	1254	0754	D							1245	X	X	X									X
	158	861211	42	19	68	27	203	1537	1037	D							1528	X	X	X									X
	159	861211	41	59	68	39	166	1935	1335	D							1826	X	X	X									X
	160	861211	41	37	68	53	116	2151	1651	T							2141	X	X	X									X
E	161	861211	41	39	69	09	175	2355	1855	M		X					2346	X	X	X									X



TABLE 2. (CONTINUED)

CRUISE: DL8701

SURVEY NO. 73

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 <sup>0</sup>	14 <sup>C</sup>	PHYTO TYPE 1 2	
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT				CTD
	40	870113	38 57	74 07	43	0508	0008	N										X
	41	870113	39 14	74 26	18	0814	0314	N										X
	42	870113	39 21	74 06	26	1034	0534	N										X
	43	870113	39 12	73 39	43	1329	0829	D										X
	44	870113	38 45	73 45	51	2204	1704	T										X
	45	870114	38 21	73 39	126	0201	2101	N										X
	46	870114	38 39	73 09	342	0651	0151	N										X
	47	870114	38 59	73 08	79	1040	0540	N										X
	48	870114	39 17	72 51	81	1338	0838	D										X
	49	870114	39 39	73 23	31	1754	1254	D										X
	50	870114	39 52	73 33	35	1956	1456	D										X
	51	870114	39 34	73 49	24	2250	1750	T										X
	52	870115	39 43	74 03	16	0044	1944	N										X
	53	870115	39 55	73 56	21	0231	2131	N										X
	54	870115	40 07	73 48	29	0416	2316	N										X
	55	870115	40 15	73 54	23	0540	0040	N										X
C	56	870115	40 26	73 50	29	0718	0218	N	X		X							X
C	57	870115	40 16	73 36	26	0916	0416	N			X							X
C	58	870115	40 06	73 23	42	1112	0612	N	X		X							X
C	59	870115	39 52	73 05	67	1341	0841	D			X							X
C	60	870115	39 39	72 46	70	1602	1102	D	X		X							X
C	61	870115	39 28	72 33	114	1804	1304	D			X							X
C	62	870115	39 18	72 19	265	2034	1534	D	X		X							X
	63	870121	40 31	71 36	76	0227	2127	N			X							X
	64	870121	40 14	71 57	67	0518	0018	N			X							X
	65	870121	40 04	71 30	92	0812	0312	N			X							X
	66	870121	39 52	71 49	169	1042	0542	N			X							X
	67	870121	39 33	72 07	230	1348	0848	D			X							X
	68	870121	39 51	72 27	78	1656	1156	D			X							X
	69	870121	40 19	72 43	53	2046	1546	D			X							X
	70	870121	40 28	73 13	28	2353	1853	N			X							X
	71	870128	40 44	72 40	26	0452	2352	N			X							X
	72	870128	40 34	72 28	44	0652	0152	N			X							X
	73	870128	40 49	72 08	42	0935	0435	N			X							X
	74	870128	41 04	71 42	45	1233	0733	T			X							X
D	75	870128	41 20	71 21	30	1522	1022	D			X							X
D	76	870128	41 09	71 15	41	1704	1204	D	X		X							X
	77	870128	41 10	71 00	36	1934	1434	D			X							X
D	78	870128	40 58	71 10	52	2124	1624	T			X							X



TABLE 2. (CONTINUED)

CRUISE: DL8701

SURVEY NO. 73

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14 C	PHYTO				
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO	PAIR	BOM	NEU	HAE	XBT	CTD			MESS	TEMP	SAL	CHL	DO
	118 870207	42 11	67 15	176	0614	0114	N							0603	X	X					X
	119 870207	42 02	66 50	76	0913	0413	N							0906	X	X					
	120 870207	41 36	66 31	81	1237	0737	D							1232	X	X					X
G	121 870207	41 10	66 19	172	1551	1051	D	X						1535	X	X					
G	122 870207	41 31	66 20	89	1839	1339	D							1832	X	X					X
	123 870207	41 39	65 55	124	2125	1625	T							2116	X	X					
	124 870207	41 54	65 49	154	2334	1834	N							2327	X	X					X
G	125 870208	41 52	66 20	85	0254	2154	N	X						0246	X	X					
G	126 870208	42 09	66 20	181	0521	0021	N							0511	X	X					X
G	127 870208	42 17	66 20	242	0715	0215	N							0703	X	X					
G	128 870208	42 28	66 20	254	0925	0425	N	X						0911	X	X					X
G	129 870208	42 39	66 20	109	1124	0624	T							1117	X	X					
G	130 870208	42 49	66 20	65	1305	0805	D							1300	X	X					X
G	131 870208	43 01	66 20	127	1457	0957	D	X						1452	X	X					
G	132 870208	43 17	66 20	85	1737	1237	D							1731	X	X					X
G	133 870208	43 32	66 20	76	1948	1448	D							1941	X	X					
G	134 870208	43 55	66 20	55	2226	1726	T							2220	X	X					X





TABLE 2. (CONTINUED)

CRUISE: AL8701

SURVEY NO. 74

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO				PHYTO								
		LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL DO	NUT SEC	14 C	TYPE 1 2
89	870401	40 11	73 58	24	1622	1122	D																X
90	870401	39 53	74 02	20	1857	1357	D																X
92	870401	39 58	73 42	34	2227	1727	T																X
94	870402	39 40	73 44	28	0130	2030	N																X
95	870402	39 30	73 26	38	0422	2322	N																X
96	870402	38 59	73 10	73	0806	0306	N																X
97	870402	38 51	73 15	82	1043	0543	T																X
99	870402	38 52	72 56	238	1408	0908	D																X
101	870406	41 20	70 54	35	1957	1457	D																X
104	870407	40 58	71 56	30	0317	2217	N																X
109	870407	40 49	72 09	41	0948	0448	T																X
110	870407	40 38	72 18	50	1149	0649	D																X
112	870407	40 44	72 45	24	1455	0955	D																X
117	870407	40 32	73 25	21	2125	1625	D																X
124	870408	40 19	73 39	28	0719	0219	N																X
125	870408	40 02	73 15	47	1021	0521	T																X
128	870408	40 18	72 42	54	1544	1044	D																X
130	870408	40 02	72 31	64	2004	1504	D																X
131	870408	39 40	72 37	75	2151	1651	D																X
132	870409	39 27	72 48	74	0010	1910	T																X
136	870409	39 05	72 47	127	0650	0150	N																X
138	870409	39 22	72 29	138	1026	0526	T																X
142	870409	39 31	72 13	163	1817	1317	D																X
143	870409	39 51	71 59	116	2232	1732	T																X
146	870409	40 21	72 10	66	0315	2215	N																X
148	870410	40 09	71 58	76	0607	0107	N																X
151	870410	40 34	71 29	70	1130	0630	D																X
152	870410	40 22	71 05	92	1428	0928	D																X
154	870410	40 08	71 36	87	1909	1409	D																X
155	870410	40 02	71 08	239	2318	1818	T																X
158	870411	40 02	70 38	166	0540	0040	N																X
160	870411	40 19	70 27	97	1021	0521	T																X
163	870411	40 52	70 52	57	1832	1332	D																X
165	870411	41 10	70 23	40	2304	1804	T																X
167	870411	40 55	70 09	28	0228	2128	N																X
168	870412	40 30	70 00	70	0528	0028	N																X
170	870412	40 04	70 05	159	0932	0432	T																X
172	870412	39 57	69 34	180	1519	1019	D																X
174	870412	40 14	69 29	83	2052	1552	D																X



TABLE 2. (CONTINUED)

CRUISE: AL8701

SURVEY NO. 74

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO									
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO	PAIR	BON	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
278	870427	43 08	66 30	85	2047	1547	D																		
279	870427	43 30	66 20	61	2354	1854	T																		
281	870428	43 13	66 29	89	0243	2143	N																		
282	870428	43 43	66 34	101	0422	2322	N																		
284	870428	43 32	66 59	177	0815	0315	N																		
286	870428	44 07	66 44	99	1303	0803	D																		













TABLE 2. (CONTINUED)

CRUISE: DL8704

SURVEY NO. 76

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO				PHYTO										
			LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	40	870510	37 59	73 58	137	1449	1049	D	X				X	X	1442	X	X									
	41	870510	38 21	73 39	124	1805	1405	D	X				X	X	1759	X	X									
	42	870510	38 39	73 09	176	2137	1737	D	X				X	X	2130	X	X									
	43	870511	38 45	73 45	50	0115	2115	N	X				X	X	0112	X	X									
	44	870511	38 35	73 54	55	0254	2254	N	X				X	X	0250	X	X									
	45	870511	38 25	74 07	58	0448	0048	N	X				X	X	0443	X	X									
	46	870511	38 40	74 19	43	0709	0309	N	X				X	X	0705	X	X									
	47	870511	38 55	74 33	23	0923	0523	T	X				X	X	0920	X	X									
	48	870511	38 57	74 07	42	1150	0750	D	X				X	X	1146	X	X									
	49	870511	39 06	74 18	22	1327	0927	D	X				X	X	1324	X	X									
	50	870511	39 14	74 26	17	1444	1044	D	X				X	X	1440	X	X									
	51	870511	39 21	74 06	24	1644	1244	D	X				X	X	1640	X	X									
	52	870511	39 12	73 39	44	1928	1528	D	X				X	X	1925	X	X									
	53	870511	39 18	73 16	58	2140	1740	D	X				X	X	2136	X	X									
	54	870511	38 59	73 08	80	2359	1959	T	X				X	X	2355	X	X									
	55	870512	39 17	72 51	81	0239	2239	N	X				X	X	0234	X	X									
	56	870512	39 31	73 01	68	0451	0051	N	X				X	X	0447	X	X									
	57	870512	39 39	73 23	33	0715	0315	N	X				X	X	0712	X	X									
	58	870512	39 52	73 33	35	0905	0505	T	X				X	X	0902	X	X									
	59	870512	39 34	73 49	23	1144	0744	D	X				X	X	1141	X	X									
	60	870512	39 43	74 03	16	1336	0936	D	X				X	X	1333	X	X									
	61	870512	39 55	73 56	21	1516	1116	D	X				X	X	1512	X	X									
	62	870512	40 07	73 48	28	1658	1258	D	X				X	X	1654	X	X									
	63	870512	40 15	73 54	20	1817	1417	D	X				X	X	1814	X	X									
C	64	870512	40 26	73 50	26	1946	1546	D	X				X	X	1943	X	X									
C	65	870512	40 16	73 36	28	2135	1735	D	X				X	X	2133	X	X									
C	66	870512	40 06	73 23	42	2325	1925	T	X				X	X	2321	X	X									
C	67	870513	39 52	73 05	77	0152	2152	N	X				X	X	0148	X	X									
C	68	870513	39 39	72 46	70	0407	0007	N	X				X	X	0401	X	X									
C	69	870513	39 28	72 33	110	0609	0209	N	X				X	X	0602	X	X									
C	70	870513	39 18	72 19	238	0824	0424	N	X				X	X	0816	X	X									
	71	870513	39 33	72 07	220	1142	0742	D	X				X	X	1130	X	X									
	72	870513	39 51	72 27	77	1451	1051	D	X				X	X	1446	X	X									
	73	870513	40 10	72 20	68	1845	1445	D	X				X	X	1840	X	X									
	74	870513	40 19	72 43	51	2059	1659	D	X				X	X	2055	X	X									
	75	870513	40 06	72 58	50	2318	1918	T	X				X	X	2314	X	X									
	76	870514	40 28	73 13	30	0211	2211	N	X				X	X	0207	X	X									
	77	870514	40 32	72 50	38	0425	0025	N	X				X	X	0421	X	X									
	78	870514	40 44	72 40	25	0511	0211	N	X				X	X	0608	X	X									

TABLE 2. (CONTINUED)

CRUISE: DL8704

SURVEY NO. 76

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO				
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 ° CHL DO	14 ° C
	79	870514	40 34	72 28	42	0800	0400	N	X				X	X	0757	X	X			
	80	870514	40 49	72 08	40	1034	0634	D	X				X	X	1031	X	X			
	81	870514	40 31	72 04	59	1247	0847	D	X				X	X	1244	X	X			
	82	870514	40 14	71 57	67	1507	1107	D	X				X	X	1502	X	X			
	83	870514	39 52	71 49	158	1828	1428	D	X				X	X	1748	X	X			
	84	870514	40 04	71 30	92	2055	1655	D	X				X	X	2050	X	X			
	85	870514	40 22	71 14	84	2325	1925	T	X				X	X	2321	X	X			
	86	870515	40 31	71 36	76	0138	2138	N	X				X	X	0133	X	X			
	87	870515	40 48	71 37	64	0337	2337	N	X				X	X	0333	X	X			
	88	870515	41 04	71 42	43	0538	0138	N	X				X	X	0535	X	X			
D	89	870515	41 20	71 21	31	2155	1755	D	X				X	X	2151		X			
D	90	870515	41 09	71 15	41	2327	1927	T	X				X	X	2323		X			
	91	870516	41 10	71 00	35	0057	2057	N	X				X	X	0054		X			
D	92	870516	40 58	71 10	52	0245	2245	N	X				X	X	0241		X			
D	93	870516	40 41	71 02	64	0503	0103	N	X				X	X	0458		X			
D	94	870516	40 21	70 51	96	0739	0339	N	X				X	X	0734		X			
D	95	870516	40 10	70 46	130	0920	0520	T	X				X	X	0912		X			
D	96	870516	40 00	70 40	260	1120	0720	D	X				X	X	1106		X			
	97	870516	40 13	70 25	111	1407	1007	D	X				X	X	1400		X			
	98	870516	40 42	70 35	59	1741	1341	D	X				X	X	1737		X			
	99	870516	40 53	70 46	54	1925	1525	D	X				X	X	1921		X			
	100	870516	41 03	70 33	48	2138	1738	D	X				X	X	2129		X			
	101	870517	40 56	70 06	25	0012	2012	T	X				X	X	0008		X			
	102	870517	40 41	70 11	45	0220	2220	N	X				X	X	0216		X			
	103	870517	40 40	69 47	53	0431	0031	N	X				X	X	0426		X			
	104	870517	40 24	69 42	71	0630	0230	N	X				X	X	0625		X			
	105	870517	40 08	69 34	92	0839	0439	T	X				X	X	0826		X			
E	106	870517	40 05	69 01	165	1146	0746	D	X				X	X	1135		X			
E	107	870517	40 25	69 03	82	1438	1038	D	X				X	X	1431		X			
E	108	870517	40 39	69 05	78	1622	1222	D	X				X	X	1616		X			
	109	870517	40 53	69 34	43	1943	1543	D	X				X	X	1935		X			
E	110	870517	40 55	69 06	73	2203	1803	D	X				X	X	2157		X			
E	111	870517	41 04	69 06	84	2344	1944	T	X				X	X	2337		X			
E	112	870518	41 20	69 07	160	0232	2232	N	X				X	X	0250		X			
	113	870518	41 32	69 26	64	0500	0100	N	X				X	X	0455		X			
E	114	870518	41 39	69 09	174	0712	0312	N	X				X	X	0702		X			
E	115	870518	41 54	69 10	218	0938	0538	T	X				X	X	0928		X			
	116	870518	41 37	68 53	116	1223	0823	D	X				X	X	1215		X			
	117	870518	41 20	68 42	91	1445	1045	D	X				X	X	1439		X			

TABLE 2. (CONTINUED)

CRUISE: DL8704

SURVEY NO. 76

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				18 0	14 C	PHYTO					
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD			TIME	TEMP	SAL	CHL	DO	NUT
	118	870518	40 51	68 44	56	1841	1441	D	X					X	1837	X								
	119	870518	40 48	68 17	56	2103	1703	D	X				X		2059	X								
	120	870518	40 29	68 37	82	2349	1949	T					X	X	X	2345	X							
	121	870519	40 21	68 22	120	0237	2237	N					X	X	X	0153	X							
	122	870519	40 31	67 56	103	0557	0138	N					X	X	X	0532	X							
F	123	870519	40 22	67 40	472	0833	0433	T		X			X	X	X	0818	X							
F	124	870519	40 37	67 41	82	1052	0652	D					X		X	1047	X							
F	125	870519	40 56	67 41	66	1322	0922	D		X			X		X	1317	X							
	126	870519	40 46	67 19	95	1624	1209	D					X		X	1552	X							
	127	870519	40 40	67 05	140	1847	1447	D					X		X	1823	X							
	128	870519	40 53	66 37	170	2206	1806	D					X		X	2157	X							
G	129	870520	41 10	66 19	150	0050	2050	N		X			X	X	X	0040	X							
	130	870520	41 13	66 56	69	0422	0222	N					X	X	X	0417	X							
	131	870520	41 33	67 01	63	0646	0246	N					X	X	X	0641	X							
	132	870520	41 36	66 31	82	0935	0535	T					X		X	0930	X							
G	133	870520	41 30	66 20	88	1110	0710	D					X		X	1105	X							
	134	870520	41 39	65 55	127	1346	0946	D					X		X	1338	X							
	135	870520	41 54	65 49	147	1600	1200	D					X		X	1552	X							
G	136	870520	41 52	66 20	85	1903	1503	D		X			X		X	1857	X							
G	137	870520	42 09	66 20	188	2056	1656	D					X		X	2047	X							
	138	870521	42 02	66 50	75	0016	2016	T					X	X	X	0012	X							
	139	870521	42 11	67 15	178	0340	2340	N					X	X	X	0330	X							
	140	870521	41 58	67 25	35	0629	0229	N					X	X		0625	X	X						
F	141	870521	41 48	67 42	35	0852	0452	T					X			0848	X	X						
	142	870521	41 52	68 11	184	1134	0734	D					X		X	1126	X							
	143	870521	41 37	68 06	29	1333	0933	D					X		X	1330	X							
F	144	870521	41 30	67 41	41	1550	1150	D		X			X		X	1547	X	X						
F	145	870521	41 16	67 41	38	1735	1335	C					X		X	1732	X	X						
	146	870521	41 10	68 08	26	1955	1555	D					X		X	1951	X	X						
	*147	870527	39 52	71 49	155	0531	0131	N	X					X	X	0520	X							
	*148	870527	39 30	72 09	275	0940	0540	T	X					X	X	0917	X							
C	*149	870527	39 18	72 19	235	1201	0801	D	X					X	X	1149	X							
C	*150	870527	39 28	72 33	110	1404	1004	D	X					X	X	1356	X							
	*151	870507	39 17	72 51	79	1617	1217	D	X					X	X	1609	X							
C	*152	870527	39 39	72 46	68	1900	1500	D	X					X	X	1854	X							
	*153	870527	39 51	72 27	79	2129	1729	D	X					X	X	2123	X							
C	*154	870528	39 52	73 05	68	0102	2102	T	X					X	X	0056	X	X						
	*155	870528	39 39	73 23	34	0337	2337	N	X					X	X	0332	X	X						
	*156	870528	39 52	73 33	32	0558	0158	N	X						X	0552	X	X						



TABLE 2. (CONTINUED)

CRUISE: DL8704

SURVEY NO. 76

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18 0	14 C	PHYTO TYPE 1 2
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT			
E	*196	870601	40 39	69 05	78	0327	2327	N	X					X		0321	X	X
E	*197	870601	40 55	69 06	78	0615	0215	N	X									
	*198	870601	40 51	68 44	61	0831	0431	T	X						0824	X	X	
	*199	870601	40 48	68 17	54	1026	0626	D	X									
	*200	870601	41 11	68 08	32	1335	0935	D	X						1330	X	X	
	*201	870601	41 20	68 42	95	1619	1219	D	X									
E	*202	870601	41 20	69 07	160	1940	1504	D	X						1854	X	X	
	*203	870601	41 32	69 26	62	2236	1836	D	X									
E	*204	870602	41 39	69 09	172	0046	2046	T	X						0035	X	X	
	*205	870602	41 37	68 53	116	0222	2222	N	X									
	206	870602	41 59	68 39	165	0535	0135	N						X	0522	X	X	
	207	870602	42 10	68 48	195	0753	0353	N							0742	X	X	
E	*208	870602	41 54	69 10	219	1103	0703	D	X						1054	X	X	
E	209	870602	42 11	69 12	190	1326	0926	D		X					1316	X	X	
	210	870602	42 15	69 43	230	1645	1245	D	X						1633	X	X	
	211	870602	41 58	69 50	91	1913	1513	D	X									
	212	870602	42 06	70 20	62	2218	1818	D	X						2215	X	X	
	213	870603	42 26	70 38	74	0048	2048	T	X									
	214	870603	42 26	70 09	82	0340	2340	N	X						0334	X	X	
	215	870603	42 48	70 32	116	0637	0237	N	X									
	216	870603	42 50	70 00	199	0950	0550	T	X					X	0941	X	X	
	217	870603	43 08	69 58	160	1204	0804	D	X									
	218	870603	43 24	70 12	107	1452	1037	D	X						1430	X	X	
	219	870603	43 20	69 41	192	1742	1342	D	X									
E	220	870603	43 17	69 20	168	2007	1607	D	X						1958	X	X	
E	221	870603	43 40	69 22	98	2317	1917	T	X									
	222	870604	43 37	68 56	119	0145	2145	N	X						0138	X	X	
	223	870604	43 58	68 35	80	0507	0107	N						X	0456	X	X	
	224	870604	43 58	68 11	123	0752	0352	N						X	0739	X	X	
F	225	870604	43 49	67 43	227	1045	0645	D		X					1035	X	X	
	226	870604	43 42	67 26	211	1253	0853	D							1243	X	X	
	227	870604	44 02	67 10	136	1549	1149	D						X	1541	X	X	
F	228	870604	44 20	67 43	73	1928	1528	D						X	1922	X	X	
	229	870604	44 16	67 07	127	2241	1841	D						X	2234	X	X	
	230	870605	44 16	66 36	199	0137	2137	N						X	0128	X	X	
G	231	870605	44 00	66 24	65	0410	0010	N						X	0404		X	
G	232	870605	43 32	66 20	75	0759	0359	N						X	0751	X	X	
	233	870605	43 12	66 48	144	1145	0745	D						X	1138	X	X	
G	234	870605	43 01	66 20	137	1433	1033	D						X	1426	X	X	



TABLE 2. (CONTINUED)

CRUISE: WI8701

SURVEY NO. 77

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18			14		PHYTO TYPE C 1 2	
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO 5:3	PAIR 2:1	BOM 1:0	OTH	NEU	HAE	XBT	CTD	TIME	TEMP	SAL	0	CHL		DO
	1	870531	37 59	73 58	157	2245	1845	D	X											
	2	870601	38 20	73 40	124	0149	2149	N	X											
	3	870601	38 35	73 55	52	0410	0010	N	X											
	4	870601	38 39	74 19	40	0738	0338	N	X											
B	5	870601	38 45	74 57	19	1140	0740	D	X											
	6	870601	38 54	74 33	22	1446	1046	D	X											
	7	870601	38 57	74 07	36	1847	1447	D	X											
	8	870601	38 45	73 45	52	2114	1714	D	X											
	9	870601	38 39	73 09	220	2355	1955	T	X											
	10	870602	38 59	73 09	80	0238	2238	N	X											
	11	870602	39 11	73 38	38	0550	0150	N	X											
	12	870602	39 20	74 05	24	0845	0445	T	X											
	13	870602	39 14	74 26	17	1051	0651	D	X											
	14	870602	39 06	74 19	24	1200	0800	D	X											
	15	870602	39 43	74 04	16	1615	1215	D	X											
	16	870602	39 34	73 49	22	1800	1400	D	X											
	17	870602	39 17	73 17	57	2115	1715	D	X											
	18	870602	39 17	72 51	79	2330	1930	T	X											
	19	870602	39 32	73 02	70	0230	2230	N	X											
	20	870603	39 39	73 23	35	0445	0045	N	X											
	21	870603	39 52	73 33	35	0653	0253	N	X											
	22	870603	39 55	73 55	17	0912	0512	T	X											
	23	870603	40 07	73 47	28	1115	0715	D	X											
	24	870603	40 15	73 53	20	1310	0910	D	X											
C	25	870603	40 25	73 50	27	1455	1055	D	X											
C	26	870603	40 16	73 36	27	1700	1300	D	X											
C	27	870603	40 07	73 23	41	1859	1459	D	X											
C	28	870603	39 52	73 05	71	2311	1911	D	X											
C	29	870604	39 39	72 46	72	0244	2244	N	X											
C	30	870604	39 28	72 34	108	0400	2400	N	X											
C	31	870604	39 18	72 19	235	0600	0200	N	X											
	32	870604	39 33	72 06	220	0930	0530	T	X											
	33	870604	39 51	72 27	80	1257	0857	D	X											
	34	870604	40 07	72 58	50	1610	1210	D	X											
	35	870604	40 27	73 13	31	1822	1422	D	X											
	36	870604	40 32	72 59	42	2310	1910	N	X											
	37	870605	40 44	72 40	26	0120	2120	N	X											
	38	870605	40 34	72 29	42	0315	2315	N	X											
	39	870605	40 19	72 43	50	0540	0140	N	X											





TABLE 2. (CONTINUED)

CRUISE: WI8701

SURVEY NO. 77

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.51-M			0.20-M				HYDRO MESS TIME	TEMP	SAL	18 O	CHL	DO	NUT	SEC	PHYTO 14 TYPE		
		LAT DEG MIN	LONG DEG MIN		START GMT	LOCAL	DNT	BON	PAIR	BON	OTH									NEU	HAE	XBT
	79	870610	42 26	70 38	72	0410	0010	N	X													
	80	870610	42 25	70 09	75	0640	0240	N	X													
	81	870610	42 31	69 46	270	0915	0515	T	X													
	82	870610	42 15	69 44	220	1140	0740	D	X													
E	83	870610	42 22	69 13	194	1455	1055	D	X													
	84	870610	42 10	68 48	188	1804	1404	D	X													
	85	870610	41 59	68 39	168	2150	1750	D	X													
	86	870611	41 38	68 54	112	0110	2110	N	X													
	87	870611	41 20	68 42	92	0350	2350	N	X													
	88	870611	41 11	68 08	34	0700	0300	N	X													
F	89	870611	41 16	67 41	38	0946	0546	T	X													
F	90	870611	41 30	67 41	40	1127	0727	D	X													
	91	870611	41 37	68 06	37	1352	0952	D	X													
	92	870611	41 52	68 11	180	1555	1155	D	X													
F	93	870611	41 48	67 42	34	2005	1605	D	X													
	94	870611	41 59	67 25	27	2230	1830	D	X													
	95	870612	41 32	67 01	64	0244	2244	N	X													
	96	870612	41 13	66 57	69	0504	0104	N	X													
	97	870612	40 52	66 37	245	0739	0339	N	X													
	98	870612	40 40	67 05	180	1040	0640	D	X													
	99	870612	40 46	67 20	96	1225	0825	F	X													
F	100	870612	40 56	67 41	67	1440	1040	J	X													
F	101	870612	40 37	67 41	80	1715	1315	D	X													
F	102	870612	40 22	67 40	580	2010	1610	D	X													
	103	870612	40 31	67 50	105	2235	1835	D	X													
	104	870613	40 48	68 17	56	0920	0520	T	X													
	105	870613	40 20	68 21	132	1315	0915	D	X													
	106	870613	40 29	68 37	86	1611	1211	D	X													
	107	870613	40 51	68 44	61	1920	1520	D	X													
C	*108	870618	39 18	72 20	236	1110	0710	D	X													
C	*109	870618	39 28	72 33	109	1349	0949	D	X													
C	*110	870618	39 39	72 46	71	1546	1146	D	X													
C	*111	870618	39 52	73 05	68	1827	1427	D	X													
C	*112	870618	40 06	73 23	41	2055	1655	D	X													
C	*113	870618	40 16	73 36	26	2310	1910	D	X													
C	*114	870619	40 26	73 50	29	0200	2200	N	X													
	*115	870619	40 28	73 13	29	0544	0144	N	X													
	*116	870619	40 07	72 58	49	0840	0440	T	X													
	*117	870619	39 51	72 27	74	1240	0840	D	X													



TABLE 2. (CONTINUED)

CRUISE: WI8701

SURVEY NO. 77

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			PHYTO				
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO 5:3	PAIR 2:1	BON 1:0	MESS CTD	TEMP	SAL	18 0	14 TYPE C 1 2					
	*157	870624	41 32	69 26	64	1200	0800	D	X									
E	*158	870624	41 39	69 09	170	1405	1005	D	X			X		X				
	*159	870624	41 54	69 10	216	1629	1229	D	X									
	*160	870624	41 37	68 53	116	2042	1642	D	X			X		X				
	*161	870624	41 20	68 42	92	2335	1935	T	X									
	*162	870625	40 51	68 4A	66	2310	2310	N	X			X		X				
	*163	870625	40 48	68 17	61	0550	0150	N	X									
	*164	870625	40 29	68 37	84	0835	0435	T	X			X		X				
	*165	870625	40 20	68 21	132	1058	0658	D	X									
	*166	870625	40 31	67 55	105	1330	0930	D	X			X		X				
F	*167	870625	40 22	67 40	700	1655	1255	D	X									
F	*168	870625	40 37	67 41	82	1853	1453	D	X			X		X				
F	*169	870625	40 56	67 41	68	2129	1729	D	X									
	*170	870626	41 11	68 08	31	0005	2005	T	X			X		X				
F	*171	870626	41 16	67 41	40	0318	2318	N	X									
F	*172	870626	41 30	67 41	46	0500	0100	N	X			X		X				
	*173	870626	41 37	68 06	36	0805	0405	T	X									
	*174	870626	41 52	68 11	182	1020	0620	D	X			X		X				
	*175	870626	41 59	68 39	168	1310	0910	D	X									
	*176	870626	42 10	68 48	188	1657	1257	D	X			X		X				
E	*177	870626	42 11	69 12	196	2101	1701	D	X									
	*178	870627	42 16	69 44	225	0000	2000	T	X			X		X				
	*179	870627	41 58	69 50	92	0308	2308	N	X									
	*180	870627	42 06	70 20	64	0646	0246	N	X			X		X				
	*181	870627	42 26	70 38	72	1025	0625	D	X									
	*182	870627	42 26	70 09	82	1300	0900	D	X			X		X				
	*183	870627	42 32	69 46	270	1534	1134	D	X									
	184	870627	42 50	70 00	195	1815	1415	D	X			X		X				
	185	870627	42 48	70 32	110	2130	1730	D	X									
	186	870627	43 04	70 30	40	2336	1936	T	X			X		X				
	187	870628	43 08	69 58	160	0237	2237	N	X									
	188	870628	43 24	70 12	104	0522	0122	N	X			X		X				
	189	870628	43 37	69 48	56	0819	0419	T	X									
	190	870628	43 20	69 41	176	1207	0807	D	X			X		X				
E	191	870628	42 58	69 17	163	1535	1135	D	X									
	192	870628	43 08	69 01	173	1758	1358	D	X			X		X				
E	193	870628	43 17	69 20	164	2006	1606	D	X									
E	194	870628	43 40	69 22	90	2334	1934	T	X			X		X				
	195	870629	43 37	68 56	132	0210	2210	N	X									



TABLE 2. (CONTINUED)

CRUISE: WI8701

SURVEY NO. 78

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO			18			14			PHYTO		
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	CHL	DO	NUT	SEC	C 1
D *206	870704	39 59	70 40	296	1010	0610	T	X															
*207	870704	40 13	70 25	112	1312	0912	D	X															
D *208	870704	40 10	70 46	132	1523	1123	D	X															
D *209	870704	40 21	70 51	96	1730	1330	D	X															
D *210	870704	40 41	71 02	60	2045	1645	D	X															
D *211	870704	40 58	71 10	50	2321	1921	T	X															
D *212	870705	41 09	71 15	42	0100	2100	T	X															
D *213	870705	41 20	71 21	32	0257	2257	N	X															
*214	870705	41 10	71 00	35	0524	0124	N	X															
*215	870705	41 03	70 33	46	0827	0427	T	X															
*216	870705	40 53	70 46	53	1037	0637	D	X															
*217	870705	40 42	70 35	59	1246	0846	D	X															
*218	870705	40 55	70 06	25	1558	1158	D	X															
*219	870705	40 41	70 11	46	1812	1412	D	X															
*220	870705	40 39	69 48	54	2109	1709	D	X															
*221	870705	40 53	69 34	36	2345	1945	T	X															
*222	870706	40 24	69 42	70	0318	2318	N	X															
*223	870706	40 07	69 34	55	0550	0150	N	X															
E *224	870706	40 05	69 01	161	0925	0525	T	X															
E *225	870706	40 25	69 03	82	1217	0817	D	X															
E *226	870706	40 39	69 05	76	1415	1015	D	X															
E *227	870706	40 51	69 06	74	1659	1259	D	X															
E *228	870706	41 04	69 06	82	1811	1411	D	X															
E *229	870706	41 20	69 07	160	2127	1727	D	X															
230	870707	41 32	69 26	64	0553	0153	N	X															
E 231	870707	41 39	69 09	170	0748	0348	N	X															
E 232	870707	41 54	69 10	216	0956	0556	T	X															
233	870707	41 37	68 52	120	1307	0907	D	X															
*234	870707	41 21	68 42	90	1725	1325	D	X															
*235	870707	40 51	68 44	60	2145	1745	C	X															
*236	870708	40 48	68 17	58	0022	2022	T	X															
*237	870708	40 29	68 37	84	0337	2337	N	X															
*238	870708	40 20	68 21	125	0538	0138	N	X															
*239	870708	40 31	67 56	105	0856	0456	T	X															
F *240	870708	40 22	67 40	780	1112	0712	D	X															
F *241	870708	40 37	67 41	82	1331	0931	D	X															
F *242	87C708	40 56	67 41	66	1724	1324	D	X															
*243	870708	41 11	68 08	28	2041	1641	D	X															
F *244	870708	41 16	67 41	39	2331	1931	T	X															



TABLE 2. (CONTINUED)

CRUISE: WI8701

SURVEY NO. 78

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			PHYTO					
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO	PAIR	BON	HAE	XBT	CTD	MESS	TEMP	SAL	18 °	CHL	DO	NUT	SEC	14 TYPE C 1 2	
F 284	870713	43 24	67 43	261	2130	1730	D	X				X	X								
285	870714	43 23	68 08	208	0004	2004	T	X					X								
286	870714	43 12	67 59	203	0157	2157	N	X				X	X								
F 287	870714	43 00	67 42	182	0431	0031	N	X					X								
F 288	870714	42 36	67 42	202	0726	0326	N	X				X	X								
F 289	870714	42 18	67 42	236	1000	0600	T	X					X								
290	870714	42 43	67 28	205	1300	0900	D	X				X	X								
291	870714	42 46	66 58	168	1750	1350	D	X					X								





TABLE 2. (CONTINUED)

CRUISE: AL8705

SURVEY NO. 78

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M					HYDRO		18				14		PHYTO TYPE C 1 2	
			LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	MESS	CTD	TIME	TEMP	SAL	CHL		DO
232	870716	40 13	73 22	38	2317	1917	D															X
235	870717	40 05	72 59	50	0313	2313	N															X
244	870717	40 31	72 54	36	1157	0757	D															X
245	870717	40 36	72 40	36	1331	0931	D															X
247	870717	40 30	72 22	49	1531	1131	D															X
255	870717	40 17	72 32	53	2122	1722	D															X
266	870718	40 04	72 03	73	0602	0202	N															X
268	870718	40 09	71 47	77	0822	0422	N															X
270	870718	40 19	72 04	61	1124	0724	D															X
276	870718	40 38	71 59	53	1724	1324	D															X
292	870719	40 47	72 22	32	0542	0142	N															X
295	870719	40 52	71 58	35	0855	0455	T															X
300	870719	40 54	71 19	55	1335	0935	D															X
304	870719	40 50	70 55	54	1705	1305	D															X
309	870719	41 11	70 56	29	2316	1916	T															X
311	870724	40 54	70 43	56	0125	2125	N															X
313	870724	40 32	71 28	68	0624	0224	N															X
315	870724	40 21	71 11	87	0922	0522	T															X
316	870724	40 23	70 51	89	1122	0722	D															X
317	870724	40 14	70 19	101	1422	1022	D															X
320	870724	40 26	70 21	73	1843	1443	D															X
323	870725	41 10	70 18	28	0017	2017	T															X
324	870725	40 52	70 11	33	0242	2242	N															X
327	870725	40 34	69 54	62	0651	0251	N															X
330	870725	40 52	69 36	39	1009	0609	T															X
338	870725	40 08	69 39	92	1503	1103	D															X
340	870725	40 04	69 18	104	2132	1732	D															X
343	870726	40 32	69 19	61	0149	2149	N															X
349	870726	40 52	69 14	64	0640	0240	N															X
366	870726	41 24	69 33	29	2324	1924	T															X
372	870727	41 39	69 47	36	0456	0056	N															X
378	870727	42 00	69 49	107	1015	0615	T															X
392	870728	41 14	69 08	100	0350	2350	N															X
403	870728	41 01	68 56	83	1502	1102	D															X
409	870728	40 42	68 52	66	2158	1758	D															X
417	870729	40 22	68 53	88	0543	0143	N															X
421	870729	40 27	68 22	103	1019	0619	T															X
425	870729	40 42	68 24	60	1405	1005	D															X
431	870729	40 42	67 59	82	1912	1512	D															X



TABLE 2. (CONTINUED)

CRUISE: DL8708

SURVEY NO. 79

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO								
		LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON <sup>1</sup> 1:0	OTH NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	1	870819	35 41	74 58	55	1140	0740	D					X	X	1110	X		X						
	2	870819	35 16	75 14	26	1507	1107	D					X	X	1458	X		X						
	3	870819	35 28	75 15	29	1658	1258	D					X	X	1649	X		X						
	4	870819	35 51	75 29	17	2003	1603	D					X	X	1956	X		X						
	5	870819	36 09	75 06	35	2307	1907	T					X	X	2256	X		X						
	6	870820	36 16	74 46	365	0153	2153	N					X	X	0120	X		X						
	7	870820	36 23	75 15	36	0514	0114	N					X	X	0502	X		X						
	8	870820	36 15	75 32	24	0726	0326	N					X	X	0716	X		X						
	9	870820	36 33	75 47	19	1030	0630	T					X	X	1022	X		X						
	10	870820	36 43	75 22	20	1319	0919	D					X	X	1311	X		X						
	11	870820	36 39	74 52	47	1639	1239	D					X	X	1626	X		X						
A	12	870820	36 46	74 35	365	1911	1511	D					X	X	1841	X		X						
A	13	870820	36 49	74 50	53	2101	1701	D	X				X	X	2049	X		X						
A	14	870820	36 51	75 04	38	2310	1910	T					X	X	2300	X		X						
A	15	870821	36 53	75 19	24	0107	2107	N	X				X	X	0057	X		X						
A	16	870821	36 55	75 33	19	0244	2244	N					X	X	0237	X		X						
A	17	870821	36 57	75 48	12	0445	0045	N	X				X	X	0438	X		X						
	18	870821	37 15	75 40	12	0742	0342	N					X	X	0736	X		X						
	19	870821	37 18	75 09	26	1641	1241	D					X	X	1634	X		X						
	20	870821	37 13	74 45	63	1922	1522	D					X	X	1909	X		X						
	21	870821	37 31	74 39	57	2152	1752	D					X	X	2140	X		X						
	22	870822	37 38	74 21	95	0013	2013	T					X	X	2356	X		X						
	23	870822	37 48	74 46	39	0259	2259	N					X	X	0248	X		X						
	24	870822	37 31	74 57	33	0530	0130	N					X	X	0521	X		X						
	25	870822	37 37	75 19	23	0752	0352	N					X	X	0745	X		X						
	26	870822	37 48	75 17	17	0924	0524	T					X	X	0919	X		X						
	27	870822	38 10	74 54	19	1234	0834	D					X	X	1226	X		X	X	X				
	*28	870822	38 34	74 53	20			D					X	X	1504	X		X	X	X				
B	29	870822	38 45	74 57	18	1653	1253	D	X				X	X	1648	X		X	X	X				
B	30	870822	38 35	74 48	26	1854	1454	D					X	X	1845	X		X	X	X				
B	31	870822	38 25	74 39	36	2043	1643	D	X				X	X	2032	X		X	X	X				
B	32	870822	38 14	74 31	41	2247	1847	T					X	X	2232	X		X	X	X				
B	33	870823	38 04	74 22	48	0050	2050	N	X				X	X	0036	X		X	X	X				
B	34	870823	37 51	74 11	115	0314	2314	N					X	X	0255	X		X	X	X				
B	35	870823	37 41	74 03	1300	0703	0303	N	X				X	X	0520	X		X	X	X				
	36	870823	37 59	73 58	151	1000	0600	T					X	X	0940	X		X	X	X				
	37	870823	38 21	73 39	125	1345	0945	D					X	X	1325	X		X	X	X				
	38	870823	38 25	74 07	54	1702	1302	D					X	X	1650	X		X	X	X				
	39	870823	38 40	74 19	43	1930	1530	D					X	X	1920	X		X	X	X				

<sup>1</sup> 0.40-M BONGO WITH PAIRED 0.85-MM MESH NETS

TABLE 2. (CONTINUED)

		LOCATION			0.61-M			0.20-M				HYDRO				PHYTO									
TR	STA	DATE	LAT	LONG	DEPTH	START	TIME	BONGO PAIR		BON <sup>1</sup>	HAE	XBT	CTD	MESS	TEMP	SAL	18	0	CHL	DO	NUT	SEC	14	TYPE	
		GMT	DEG	MIN	[M]	GMT	LOCAL	DNT	5:3	2:1	1:C	OTH	NEU										C	1	2
	40	870823	38	55	74	33	23	2145	1745	D				X	2138	X		X	X						
	41	870824	38	57	74	07	42	0031	2031	T				X	0019	X		X	X						
	42	870824	39	14	74	26	17	0320	2320	N				X	0312	X		X	X						
	43	870824	39	21	74	06	25	0529	0129	N				X	0522	X		X	X						
	44	870824	39	12	73	39	43	0830	0430	N				X	0820	X		X	X						
	45	870824	38	45	73	45	50	1146	0746	D				X	1133	X		X	X						
	46	870824	38	39	73	09	283	1643	1243	D				X	1613	X		X							
	47	870824	38	59	73	08	78	1945	1545	D				X	1930	X		X	X						
	48	870824	39	17	72	51	82	2310	1910	T			X	X	2255	X		X	X						
	49	870825	39	39	73	23	34	0312	2312	N				X	0301	X		X	X						
	50	870825	39	52	73	33	34	0513	0113	N				X	0504	X		X	X						
	51	870825	39	34	73	49	24	0740	0340	N				X	0733	X		X	X						
	52	870825	39	43	74	03	15	0924	0524	T				X	0918	X		X	X						
	53	870825	39	55	73	56	21	1105	0705	T				X	1057	X		X	X						
	54	870825	40	07	73	48	30	1257	0857	D				X	1248	X		X	X						
	55	870825	40	15	73	54	20	1416	1016	D				X	1409	X		X	X						
C	56	870825	40	26	73	50	21	1549	1149	D	X			X	1543	X		X	X						
C	57	870825	40	16	73	36	27	1741	1341	D				X	1734	X		X	X						
C	58	870825	40	06	73	23	40	1935	1535	D	X			X	1924	X		X	X						
C	59	870825	39	52	73	05	71	2157	1757	D				X	2146	X		X	X						
C	60	870826	39	39	72	46	71	0038	2038	N	X			X	0022	X		X	X						
C	61	870826	39	28	72	33	113	0247	2247	N				X	0229	X		X							
C	62	870826	39	18	72	19	265	0512	0112	N	X			X	0439	X		X							
	63	870826	39	33	72	07	213	0802	0402	N				X	0729	X		X							
	64	870826	39	52	71	49	156	1113	0713	D			X	X	1052	X		X							
	65	870826	40	04	71	30	94	1348	0948	D				X	1332	X		X							
	66	870826	40	31	71	36	75	1802	1402	D				X	1749	X		X							
	67	870826	40	14	71	57	66	2055	1655	D				X	2041	X		X	X						
	68	870827	39	51	72	27	79	0043	2043	N				X	0027	X		X	X						
	69	870827	40	19	72	43	52	0421	0021	N				X	0410	X		X	X						
	70	870827	40	28	73	13	28	0725	0325	N				X	0715	X		X	X						
	71	870827	40	44	72	40	27	1044	0644	T				X	1035	X		X	X						
	72	870827	40	34	72	28	44	1245	0845	D				X	1234	X		X	X						
	73	870827	40	49	72	08	39	1528	1128	D				X	1514	X		X	X						
	74	870827	41	04	71	42	45	1830	1430	D				X	1819	X		X							
	75	870827	41	10	71	00	35	2223	1823	D				X	2213	X		X							
	76	870828	41	03	70	33	44	0147	2147	N				X	0135	X		X							
D	77	870901	41	20	71	21	30	2216	1816	D				X	2207	X		X							
D	78	870901	41	09	71	15	38	2400	2000	T	X			X	2350	X		X							

<sup>1</sup> 0.40-M BONGO WITH PAIRED 0.85-MM MESH NETS

TABLE 2. (CONTINUED)

CRUISE: DL8708

SURVEY NO. 79

TR STA	DATE GMT	LOCATION			0.61-M			0.20-M				HYDRO			PHYTO							
		LAT DEG MIN	LONG DEG MIN	DEPTH [M]	START TIME GMT	LOCAL	DNT	BONGO	PAIR	BON <sup>1</sup>	HAE	XBT	CTD	MESS	TEMP	SAL	18 <sup>0</sup>	CHL	DO	NUT	SEC	14 TYPE C 1 2
D 79	870902	40 58	71 10	52	0138	2138	N					X	X	0125	X	X						
D 80	870902	40 41	71 02	64	0404	0004	N	X				X	X	0347	X	X						
D 81	870902	40 21	70 51	98	0655	0255	N					X	X	0639	X	X						
D 82	870902	40 10	70 46	131	0840	0448	N	X				X	X	0829	X	X						
D 83	870902	39 59	70 40	300	1108	0708	T					X	X	1039	X	X						
D 84	870902	40 13	70 25	114	1422	1022	D					X	X	1402	X	X						
D 85	870902	40 42	70 35	59	1815	1415	D					X	X	1801	X	X						
D 86	870902	40 41	70 11	45	2027	1627	D					X	X	2016	X	X						
D 87	870902	40 24	69 42	71	2346	1946	T					X	X	2330	X	X						
D 88	870903	40 08	69 34	94	0215	2215	N					X	X	0158	X	X						
E 89	870903	40 05	69 01	168	0539	0139	N	X				X	X	0516	X	X						
E 90	870903	40 25	69 03	82	0825	0425	N					X	X	0809	X	X						
E 91	870903	40 39	69 05	80	1031	0631	T	X				X	X	1009	X	X						
E 92	870903	40 53	69 34	34	1347	0947	D					X	X	1337	X	X						
E 93	870903	40 55	69 06	75	1655	1255	D					X	X	1639	X	X						
E 94	870903	41 04	69 06	81	1839	1439	D	X				X	X	1823	X	X						
E 95	870903	41 20	69 07	160	2048	1648	D					X	X	2028	X	X						
E 96	870903	41 2	69 23	62	2310	1910	T					X	X	2257	X	X						
E 97	870904	41 20	68 42	90	0350	2350	N					X	X	0331	X	X						
E 98	870904	40 51	68 44	57	0732	0332	N					X	X	0718	X	X						
E 99	870904	40 29	68 37	82	1048	0648	T					X	X	1032	X	X						
E 100	870904	40 20	68 21	131	1310	0910	D					X	X	1247	X	X						
E 101	870904	40 48	68 17	58	1720	1320	D					X	X	1709	X	X						
E 102	870904	41 11	68 08	25	2038	1638	D					X	X	2030	X	X						
E 103	870904	41 37	68 06	39	2331	1931	T					X	X	2323	X	X						
E 104	870905	41 52	68 11	182	0200	2200	N					X	X	0134	X	X						
F 105	870905	41 48	67 42	32	0440	0040	N					X	X	0430	X	X						
F 106	870905	41 30	67 41	40	0653	0253	N	X				X	X	0642	X	X						
F 107	870905	41 16	67 41	39	0857	0457	N					X	X	0847	X	X						
F 108	870905	40 56	67 41	66	1159	0759	D	X				X	X	1147	X	X						
F 109	870905	40 31	67 56	108	1540	1140	D					X	X	1520	X	X						
F 110	870905	40 22	67 40	1015	1807	1407	D	X				X	X	1735	X	X						
F 111	870905	40 37	67 41	80	2041	1641	D					X	X	2027	X	X						
F 112	870905	40 46	67 19	94	2346	1946	T					X	X	2324	X	X						
F 113	870906	40 40	67 02	220	0212	2212	N					X	X	0146	X	X						
F 114	870906	40 52	66 37	260	0553	0153	N					X	X	0524	X	X						
F 115	870906	41 13	66 56	69	0929	0529	T					X	X	0914	X	X						
F 116	870906	41 33	67 01	62	1210	0810	D					X	X	1156	X	X						
F 117	870906	41 59	67 24	50	1545	1145	D					X	X	1525	X	X						

<sup>1</sup> 0.40-M BONGO WITH PA<sup>1</sup> ED 0.85-MM MESH NETS

TABLE 2. (CONTINUED)

CRUISE: DL8708

SURVEY NO. 79

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M		0.20-M			HYDRO					PHYTO										
			LAT DEG MIN	LONG DEG MIN		START GMT	TIME LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON <sup>1</sup> 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
	118	870906	42 11	67 15	184	1819	1419	D				X	X		X	1756	X		X							
	119	870906	42 02	66 50	72	2048	1648	D				X	X		X	2035	X		X							
	120	870907	41 36	66 31	82	0058	2058	N				X	X		X	0041	X		X							
G	121	870907	41 10	66 19	212	0447	0047	N	X			X	X		X	0425	X		X							
G	122	870907	41 30	66 20	92	0759	0359	N				X	X		X	0741	X		X							
	123	870907	41 39	65 55	113	1117	0717	D				X	X		X	1059	X		X							
	124	870907	41 54	65 49	144	1340	0940	D				X	X		X	1320	X		X							
G	125	870907	41 52	66 20	82	1704	1304	D	X			X	X		X	1650	X		X							
G	126	870907	42 09	66 20	160	2004	1604	D				X	X		X	1944	X		X							
G	127	870907	42 17	66 20	242	2210	1810	T				X	X		X	2140	X		X							
G	128	870908	42 28	66 20	252	0048	2048	N	X			X	X		X	0016	X		X							
G	129	870908	42 39	66 20	109	0245	2245	N				X	X		X	0228	X		X							
G	130	870908	42 49	66 20	73	0418	0018	N				X	X		X	0405	X		X							
G	131	870908	43 01	66 20	125	0618	0218	N	X			X	X		X	0558	X		X							
G	132	870908	43 17	66 20	82	0854	0454	N				X	X		X	0841	X		X							
G	133	870908	43 32	66 20	79	1115	0715	D				X	X		X	1100	X		X							
G	134	870908	44 00	66 12	22	1408	1008	D				X	X		X	1359	X		X							
	135	870908	44 16	66 36	200	1754	1354	D				X	X		X	1723	X		X							
	136	870908	44 16	67 07	114	2049	1649	D				X	X		X	2032	X		X							
	137	870908	44 02	67 10	137	2251	1851	T				X	X		X	2230	X		X							
	138	870909	43 42	67 26	212	0224	2224	N				X	X		X	0153	X		X							
	139	870909	43 30	67 00	209	0555	0155	N				X	X		X	0530	X		X							
	140	870909	43 35	66 44	123	0801	0401	N				X	X		X	0743	X		X							
	141	870909	43 12	66 48	140	1105	0705	D				X	X		X	1046	X		X							
	142	870909	42 46	66 58	171	1502	1102	D				X	X		X	1438	X		X							
	143	870909	42 43	67 28	214	1831	1431	D				X	X		X	1805	X		X							
F	144	870915	42 18	67 42	232	0951	0551	T	X			X	X		X	0918	X		X							
F	145	870915	42 36	67 42	205	1256	0856	D				X	X		X	1224	X		X							
F	146	870915	42 59	67 42	172	1628	1228	D	X			X	X		X	1600	X		X							
F	147	870915	43 24	67 43	249	2001	1601	D				X	X		X	1922	X		X							
F	148	870915	43 49	67 43	228	2359	1959	N	X			X	X		X	2330	X		X							
F	149	870916	44 20	67 43	72	0419	0019	N				X	X		X	0403	X		X							
	150	870916	43 58	68 11	137	0752	0352	N				X	X		X	0728	X		X							
	151	870916	43 58	68 35	70	1017	0617	T				X	X		X	1001	X		X							
	152	870916	43 37	68 56	120	1331	0931	D				X	X		X	1311	X		X							
	153	870916	43 22	68 41	140	1600	1200	D				X	X		X	1536	X		X							
	154	870916	43 23	68 08	217	1922	1522	D				X	X		X	1853	X		X							
	155	870916	43 12	67 59	208	2131	1731	D				X	X		X	2103	X		X							
	156	870917	42 55	68 22	150	0043	2043	N				X	X		X	0023	X		X							

<sup>1</sup> 0.40-M BONGO WITH PAIRED 0.85-MM MESH NETS

TABLE 2. (CONTINUED)

CRUISE: DL8708

SURVEY NO. 79

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M					HYDRO			PHYTO										
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON <sup>1</sup> 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	1 1	2 2
157	870917	42 45	68 46	206	0344	2344	N							X	X	0316	X		X							
158	870917	42 40	68 19	204	0632	0232	N							X	X	0605	X									
159	870917	42 19	68 27	202	1042	0642	T							X	X	0934	X		X							
160	870917	42 10	68 48	185	1328	0928	D							X	X	1301	X		X							
161	870917	41 59	68 39	168	1535	1135	D							X	X	1512	X		X							
162	870917	41 37	68 53	115	1825	1425	D							X	X	1806	X									
E 163	870917	41 39	69 09	175	2005	1605	D	X						X	X	1943	X									
E 164	870917	41 54	69 10	218	2224	1824	T							X	X	2156	X		X							
E 165	870918	42 11	69 12	195	0052	2052	N	X						X	X	0026	X		X							
E 166	870918	42 35	69 14	229	0446	0046	N							X	X	0412	X		X							
E 167	870918	42 58	69 17	177	0814	0414	N	X						X	X	0751	X									
168	870918	43 08	69 01	162	1052	0652	T							X	X	1029	X		X							
E 169	870918	43 17	69 20	168	1310	0910	D							X	X	1246	X		X							
E 170	870918	43 40	69 22	92	1608	1208	D	X						X	X	1550	X		X							
171	870918	43 20	69 41	170	1911	1511	D							X	X	1849	X									
172	870918	43 24	70 12	82	2224	1824	T							X	X	2204	X		X							
173	870919	43 08	69 58	138	0125	2125	N							X	X	0105	X		X							
174	870919	42 50	70 00	173	0424	0024	N							X	X	0357	X		X							
175	870919	42 48	70 32	115	0746	0346	N							X	X	0726	X									
176	870919	42 26	70 38	75	1148	0748	D							X	X	1134	X		X							
177	870919	42 26	70 09	84	1540	1140	D							X	X	1523	X		X							
178	870919	42 15	69 43	239	1923	1523	D							X	X											
179	870919	41 58	69 50	77	2252	1852	T							X	X	2231	X		X							
180	870920	42 06	70 20	63	0304	2304	N							X	X	0247	X		X							

<sup>1</sup> 0.40-M BONGO WITH PAIRED 0.85-MM MESH NETS





TABLE 2. (CONTINUED)

CRUISE: AL8707

SURVEY NO. 80

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.51-M			0.20-M				HYDRO			PHYTO										
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	Oth	NEU	MAE	XBT	CTD	MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	TYPE 1 2
103	870922	39 40	73 20	36	2146	1746	D																		X
105	870923	39 42	74 04	15	0221	2221	N																		X
107	870923	39 57	73 51	27	0542	0142	N																		X
111	870923	40 20	73 51	28	1318	0918	D																		X
116	870923	40 25	73 28	26	2313	1913	T																		X
121	870924	40 04	73 28	74	0308	2308	N																		X
122	870924	40 02	73 03	47	0554	0154	N																		X
123	870924	40 01	72 36	62	0840	0440	N																		X
125	870924	40 16	72 36	51	1607	1207	D																		X
126	870924	40 34	72 59	24	1955	1555	D																		X
129	870924	40 45	72 38	24	0020	2020	N																		X
130	870928	41 19	71 06	20	2204	1804	T																		X
138	870929	40 56	72 03	23	1428	1028	C																		X
142	870929	40 33	72 14	54	2133	1733	D																		X
145	870930	40 41	71 53	54	0212	2212	N																		X
146	870930	40 51	71 19	58	0554	0154	N																		X
148	870930	40 22	71 35	80	1033	0633	T																		X
149	870930	39 59	71 54	94	1407	1007	D																		X
152	870930	39 59	70 50	342	2125	1725	D																		X
154	870901	40 20	70 58	96	0206	2206	N																		X
156	871001	40 41	70 48	65	0631	0231	N																		X
157	871001	41 02	70 52	44	0913	0513	N																		X
159	871001	41 15	70 43	26	1919	1519	D																		X
160	871001	41 12	70 23	28	2134	1734	T																		X
162	871002	40 56	70 08	22	0102	2102	N																		X
164	871002	40 34	70 01	55	0537	0137	N																		X
166	871002	40 17	69 56	84	0911	0511	N																		X
169	871002	39 57	69 54	240	1804	1404	D																		X
171	871003	40 02	69 15	132	0026	2026	N																		X
173	871003	40 12	69 14	95	0234	2234	N																		X
175	871003	40 15	68 34	132	0927	0527	N																		X
177	871003	40 26	68 02	140	1428	1028	D																		X
178	871003	40 20	67 46	229	1648	1248	D																		X
180	871003	40 51	67 18	87	2225	1825	T																		X
182	871004	41 00	66 31	100	0510	0110	N																		X
183	871004	41 11	66 50	71	0807	0407	N																		X
185	871004	41 27	66 44	79	1210	0810	D																		X
186	871005	41 29	67 16	40	1130	0730	D																		X
188	871005	41 33	67 46	41	1857	1457	D																		X



TABLE 2. (CONTINUED)

## CRUISE: AL8707 SURVEY NO. 80

TR	STA	DATE	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO MESS TIME	TEMP	SAL	18 0	CHL	DO	NUT	SEC	14 C	PHYTO	
			LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO 5:2	PAIR 2:1	BON 1:0	OTH	NEU										HAE	XBT
280	871020	43 11	67 02	151	1157	0757	D															X
283	871020	43 19	66 29	62	1923	1523	D															X
285	871021	43 31	66 22	62	0103	2103	N															X
287	871021	43 49	67 11	164	1042	0542	T															X
291	871021	44 08	66 47	151	1742	1342	D															X
292	871021	44 21	67 17	119	2210	1810	T															X
295	871022	44 11	68 03	83	0443	0043	N															X
296	871022	43 47	69 02	60	1212	0812	D															X
298	871022	43 10	70 24	72	2215	1815	T															X
301	871027	42 17	70 42	38	0705	0305	N															X
304	871027	42 26	70 18	58	1210	0810	D															X
305	871027	42 31	69 58	170	1525	1125	D															X
307	871027	42 47	70 13	107	1704	1304	D															X
311	871028	42 54	70 37	73	0303	2303	N															X
312	871028	43 11	70 04	119	0711	0311	N															X
315	871028	42 57	70 08	140	0943	0543	N															X
316	871028	42 47	69 42	269	2041	1641	T															X
320	871029	42 25	68 36	198	0906	0506	N															X
321	871029	42 40	68 46	149	1246	0846	D															X
322	871029	42 56	69 03	174	1730	1330	D															X
324	871029	43 17	69 37	150	2303	1903	N															X
325	871030	43 29	69 17	167	0201	2201	N															X
326	871030	43 22	68 48	112	0511	0111	N															X
328	871030	43 26	68 15	185	0924	0524	N															X
329	871030	43 43	68 04	172	1207	0807	D															X
331	871030	43 39	67 37	238	1623	1223	D															X
332	871030	43 21	67 45	272	1913	1513	D															X

TABLE 2. (CONTINUED)

CRUISE: DL8710

SURVEY NO. 81

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				PHYTO								
		LAT DEG MIN	LONG DEG MIN		START TIME GMT	LOCAL	DNT	BONGO 5:3	PAIR 2:1	BON 1:0	OTH	NEU	HAE	XBT	CTD	MESS TIME	TEMP	SAL	18 <sup>0</sup> CHL	DO	NUT	SEC	14 <sup>C</sup> TYPE 1 2	
	1	871104	35 41	74 58	52	1158	0658	T						X		X	1146	X	X		X			
	2	871104	35 16	75 14	25	1523	1023	D						X		X	1511	X	X		X			
	3	871104	35 28	75 15	28	1650	1150	D						X		X	1649	X	X		X			
	4	871104	35 51	75 29	15	2015	1515	D						X		X	2007	X	X		X			
	5	871104	36 09	75 06	36	2318	1818	N						X		X	2307	X	X		X			
	6	871105	36 16	74 46	359	0154	2054	N						X		X	0124	X			X			
	7	871105	36 23	75 15	37	0505	0005	N						X		X	0455	X	X		X			
	8	871105	36 15	75 32	25	0731	0231	N						X		X	0722	X	X		X			
	9	871105	36 33	75 47	19	1008	0508	N						X		X	0959	X	X		X			
	10	871105	36 43	75 22	20	1248	0748	D						X		X	1240	X	X		X			
	11	871105	36 39	74 52	47	1537	1037	D						X		X	1524	X	X		X			
A	12	871105	36 46	74 35	1175	1810	1310	D						X		X	1738	X	X		X			
A	13	871105	36 49	74 50	52	2007	1507	D	X					X		X	1954	X	X		X			
A	14	871105	36 51	75 04	35	2150	1650	T						X		X	2141	X	X		X			
A	15	871105	36 53	75 19	31	2400	1900	N	X					X		X	2347	X	X		X			
A	16	871106	36 55	75 33	21	0151	2051	N						X		X	0142	X	X		X			
A	17	871106	36 57	75 48	12	0340	2240	N	X					X		X	0333	X	X		X			
	18	871106	37 15	75 40	11	0736	0236	N						X	X		0732	X	X		X			
	19	871106	37 18	75 09	27	2023	1523	D						X		X	2013	X	X		X			
	20	871106	37 13	74 45	70	2302	1802	N						X		X	2248	X	X		X			
	21	871107	37 31	74 39	60	0154	2054	N						X		X	0139	X	X		X			
	22	871107	37 38	74 21	99	0424	2324	N						X		X	0405	X	X		X			
	23	871107	37 48	74 46	40	0714	0214	N						X		X	0703	X	X		X			
	24	871107	37 31	74 57	33	0938	0438	N						X		X	0929	X	X		X			
	25	871107	37 37	75 19	23	1155	0655	T						X		X	1148	X	X		X			
	26	871107	37 48	75 17	18	1324	0824	D						X		X	1317	X	X		X			
	27	871107	38 10	74 54	21	1630	1130	D						X		X	1620	X	X		X			
	*28	871107	38 34	74 53	21			D						X		X	1912	X	X		X			
B	29	871107	38 45	74 57	19	2048	1548	D	X					X		X	2040	X	X		X			
B	30	871107	38 35	74 48	28	2224	1724	T						X		X	2215	X	X		X			
B	31	871108	38 25	74 39	34	0015	1915	N	X					X		X	0006	X	X		X			
B	32	871108	38 14	74 31	43	0209	2109	N						X		X	0200	X	X		X			
B	33	871108	38 04	74 22	48	0356	2256	N	X					X		X	0346	X	X		X			
B	34	871108	37 51	74 11	109	0612	0112	N						X		X	0554	X	X		X			
B	35	871108	37 41	74 03	1284	0831	0331	N	X					X		X	0757	X	X		X			
	36	871108	37 59	73 58	149	1127	0627	T						X		X	1107	X	X		X			
	37	871108	38 21	73 39	125	1453	0953	D						X		X	1436	X	X		X			
	38	871108	38 25	74 07	55	1800	1300	D						X		X	1749	X	X		X			
	39	871108	38 40	74 19	42	2020	1520	D						X		X	2010	X	X		X			

TABLE 2. (CONTINUED)

CRUISE: DL8710

SURVEY NO. 81

TR STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M			HYDRO			18 O	14 C	PHYTO			
		LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL	DNT	BONGO PAIR 5:3 2:1	BON 1:0 OTH	NEU	HAE	XBT	CTD	MESS TIME			TEMP	SAL	CHL	DO
	40	871108	38 55	74 33	22	2243	1743	T				X	X	2235	X	X	X		
	41	871109	38 57	74 07	40	0116	2016	N				X	X	0104	X	X	X		
	42	871109	39 14	74 26	17	0403	2303	N				X	X	0353	X	X	X		
	43	871109	39 21	74 06	24	0607	0107	N				X	X	0558	X	X	X		
	44	871109	39 12	73 39	43	0910	0410	N				X	X	0903	X	X	X		
	45	871109	38 45	73 45	50	1340	0840	D				X	X	1329	X	X	X		
	46	871109	38 39	73 09	174	1711	1211	D				X	X	1649	X	X	X		
	47	871109	38 59	73 08	83	2004	1504	D				X	X	1949	X	X	X		
	48	871109	39 17	72 51	86	2250	1750	N				X	X	2235	X	X	X		
C	49	871110	39 18	72 19	255	0256	2156	N	X			X	X	0229	X	X	X		
C	50	871110	39 28	72 33	111	0524	0024	N				X	X	0506	X	X	X		
C	51	871110	39 39	72 46	70	0737	0237	N	X			X	X	0724	X	X	X		
C	52	871110	39 52	73 05	71	1015	0515	N				X	X	1001	X	X	X		
C	53	871110	40 06	73 23	43	1304	0804	D	X			X	X	1252	X	X	X		
	54	871110	39 52	73 33	35	1506	1006	D				X	X	1456	X	X	X		
	55	871110	39 39	73 23	35	1728	1228	D				X	X	1707	X	X	X		
	56	871110	39 34	73 49	24	2012	1512	D				X	X	2007	X	X	X		
	57	871117	39 55	73 56	22	1258	0758	D				X	X	1247	X	X	X		
	58	871117	40 07	73 48	30	1450	0950	D				X	X	1439	X	X	X		
	59	871117	40 15	73 54	22	1614	1114	D				X	X	1505	X	X	X		
C	60	871117	40 26	73 50	26	1752	1252	D	X			X	X	1740	X	X	X		
C	61	871117	40 16	73 36	26	1954	1454	D				X	X	1944	X	X	X		
	62	871117	40 28	73 13	29	2224	1724	T				X	X	2214	X	X	X		
	63	871118	40 44	72 40	27	0150	2050	N				X	X	0138	X	X	X		
	64	871118	40 34	72 28	42	0353	2253	N				X	X	0341	X	X	X		
	65	871118	40 19	72 43	52	0708	0208	N				X	X	0654	X	X	X		
	66	871118	39 51	72 27	78	1227	0727	T				X	X	1208	X	X	X		
	67	871118	39 37	72 07	255	1616	1116	D				X	X	1544	X	X	X		
	68	871118	39 52	71 49	164	2104	1604	T				X	X	1927	X	X	X		X
	69	871119	40 04	71 30	93	0007	1907	N				X	X	2344	X	X	X		
	70	871119	40 14	71 57	66	0324	2224	N				X	X	0310	X	X	X		
	71	871119	40 31	71 36	75	0655	0155	N				X	X	0634	X	X	X		
	72	871119	40 49	72 08	40	1052	0552	T				X	X	1040	X	X	X		
	73	871119	41 04	71 42	47	1357	0857	D				X	X	1344	X	X	X		X
D	74	871119	41 20	71 21	31	1710	1210	D				X	X	1656	X	X	X		X
D	75	871119	41 09	71 15	40	1853	1353	D	X			X	X	1841	X	X	X		X
	76	871119	41 10	71 00	36	2033	1533	T				X	X	2022	X	X	X		X
D	77	871119	40 58	71 10	52	2246	1746	N				X	X	2233	X	X	X		
D	78	871120	40 41	71 02	64	0119	2019	N	X			X	X	0104	X	X	X		



TABLE 2. (CONTINUED)

CRUISE: DL8710

SURVEY NO. 81

TR	STA	DATE GMT	LOCATION		DEPTH [M]	0.61-M			0.20-M				HYDRO				18				14		PHYTO TYPE 1 2
			LAT DEG MIN	LONG DEG MIN		START TIME GMT LOCAL DNT	BONGO PAIR 5:3 2:1 1:0	BON OTH NEU HAE XBT CTD	MESS TIME	TEMP	SAL	0	CHL	DO	NUT	SEC	C						
	118	871209	42 02	66 50	77	1658	1158	D			X	X	1643	X	X	X							
	119	871209	41 36	66 31	80	2045	1545	T			X	X	2030	X	X	X							
G	120	871210	41 09	66 19	360	0010	1910	N	X		X	X	2336	X	X	X							
G	121	871210	41 30	66 20	82	0321	2221	N			X	X	0304	X	X	X							
	122	871210	41 39	65 55	125	0613	0113	N			X	X	0555	X	X	X							
	123	871210	41 54	65 49	152	0833	0333	N			X	X	0811	X	X	X							
G	124	871210	41 52	66 20	85	1221	0721	T	X		X	X	1205	X	X	X							
G	125	871210	42 09	66 20	180	1502	1002	D			X	X	1439	X	X	X						X	



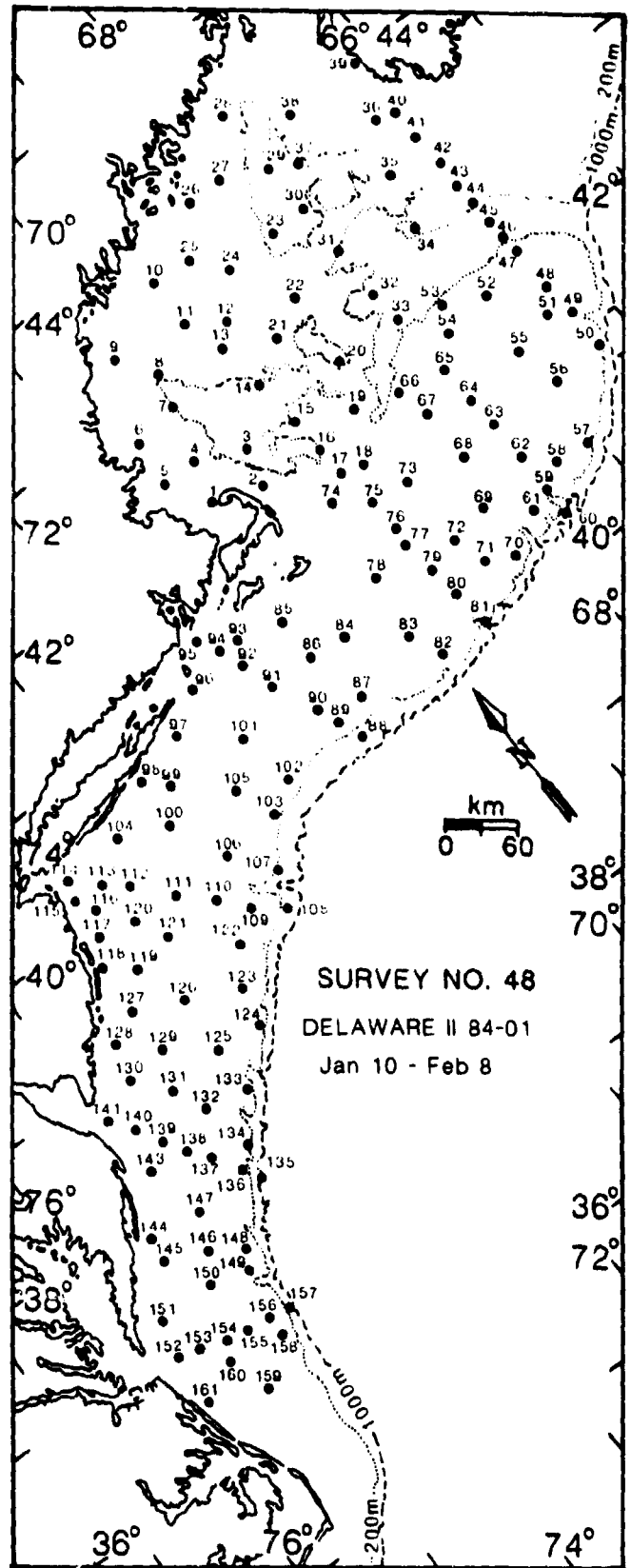
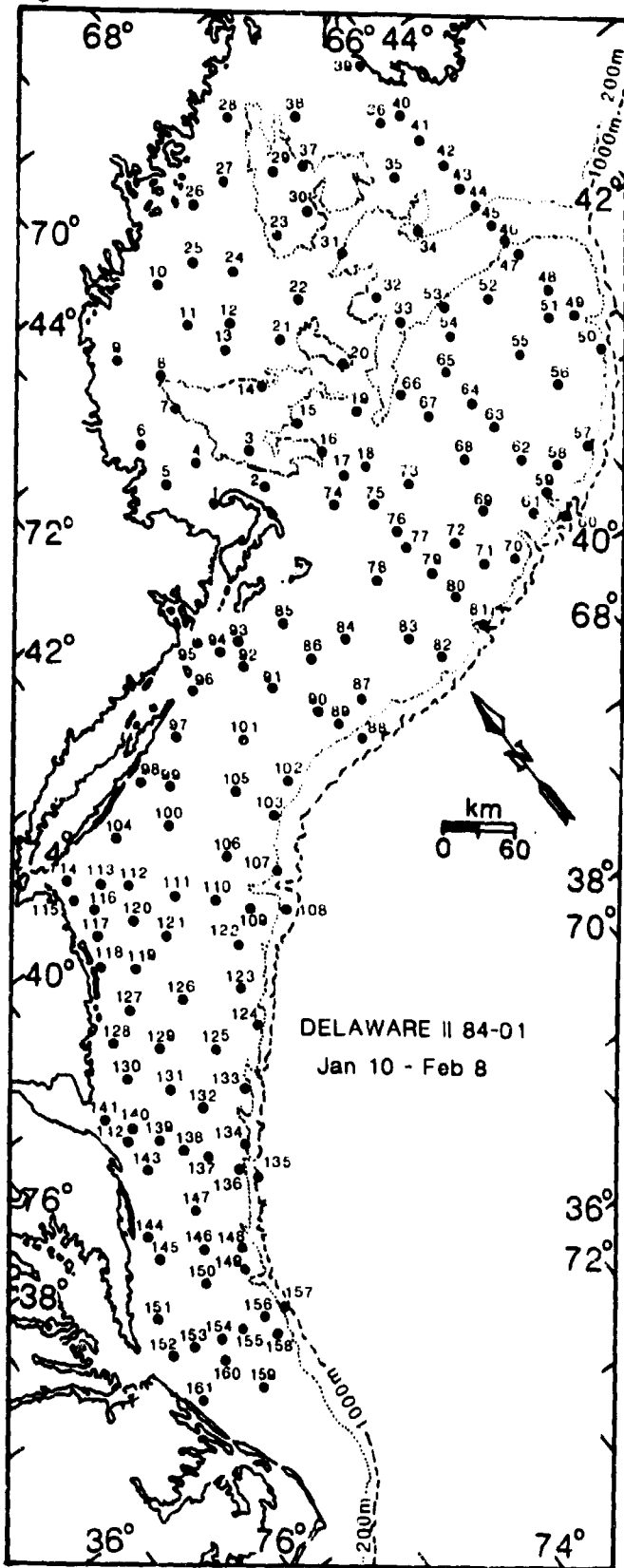


Figure 1. Station locations for *Delaware II* 1984-01 and *Delaware II* 1984-01 survey No. 48.

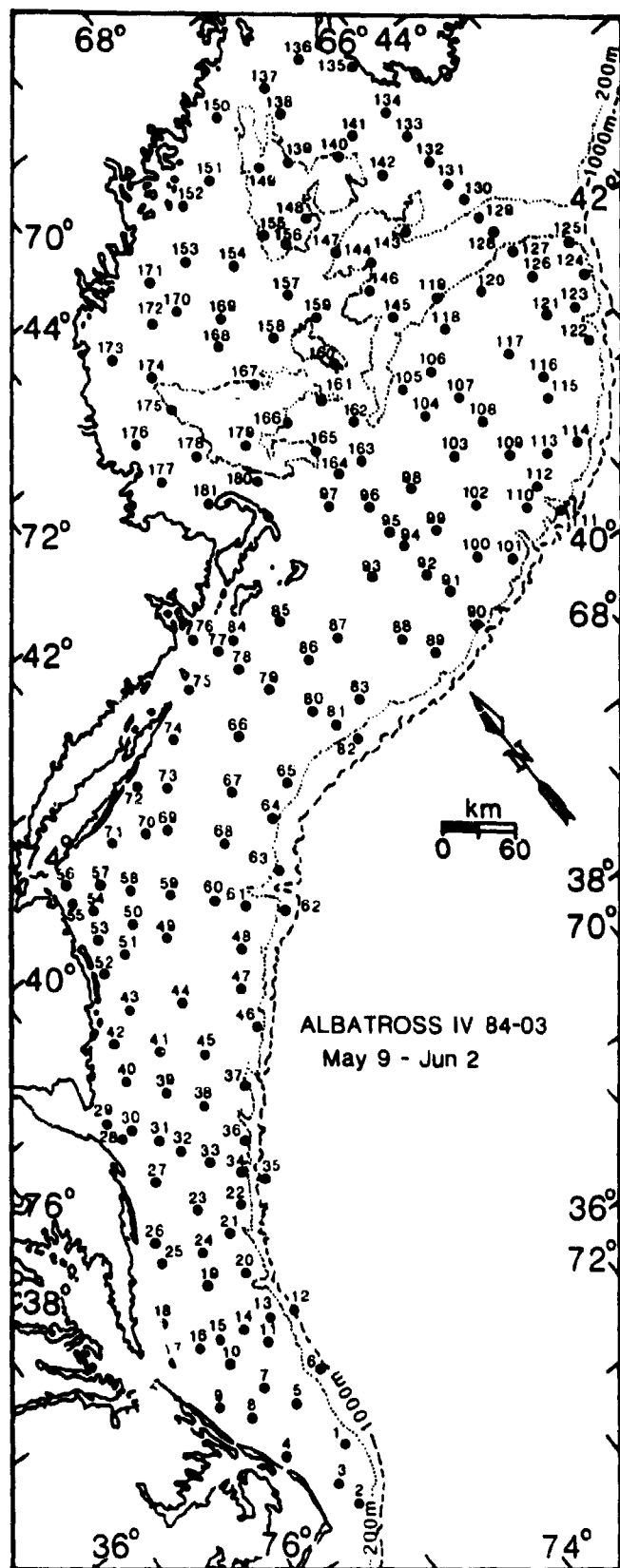
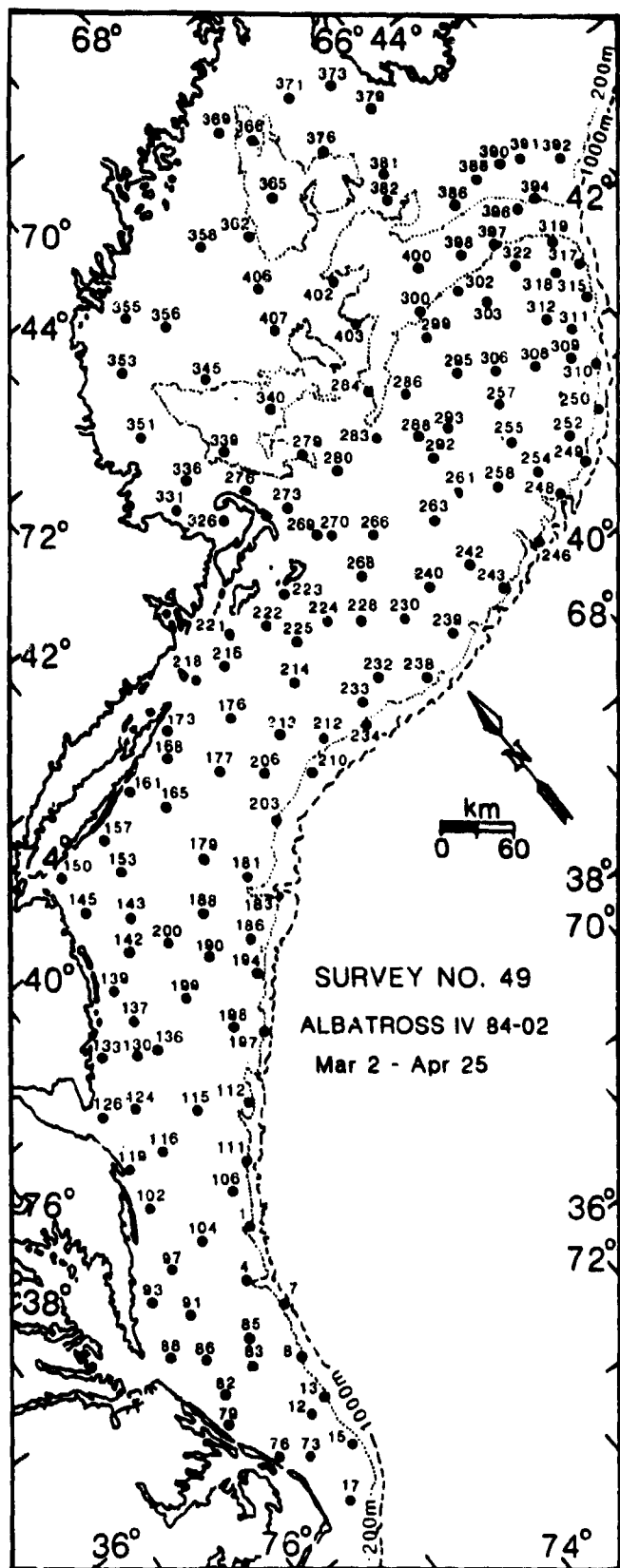


Figure 2. Station locations for *Albatross IV* 1984-02 survey No. 49 and *Albatross IV* 1984-03.

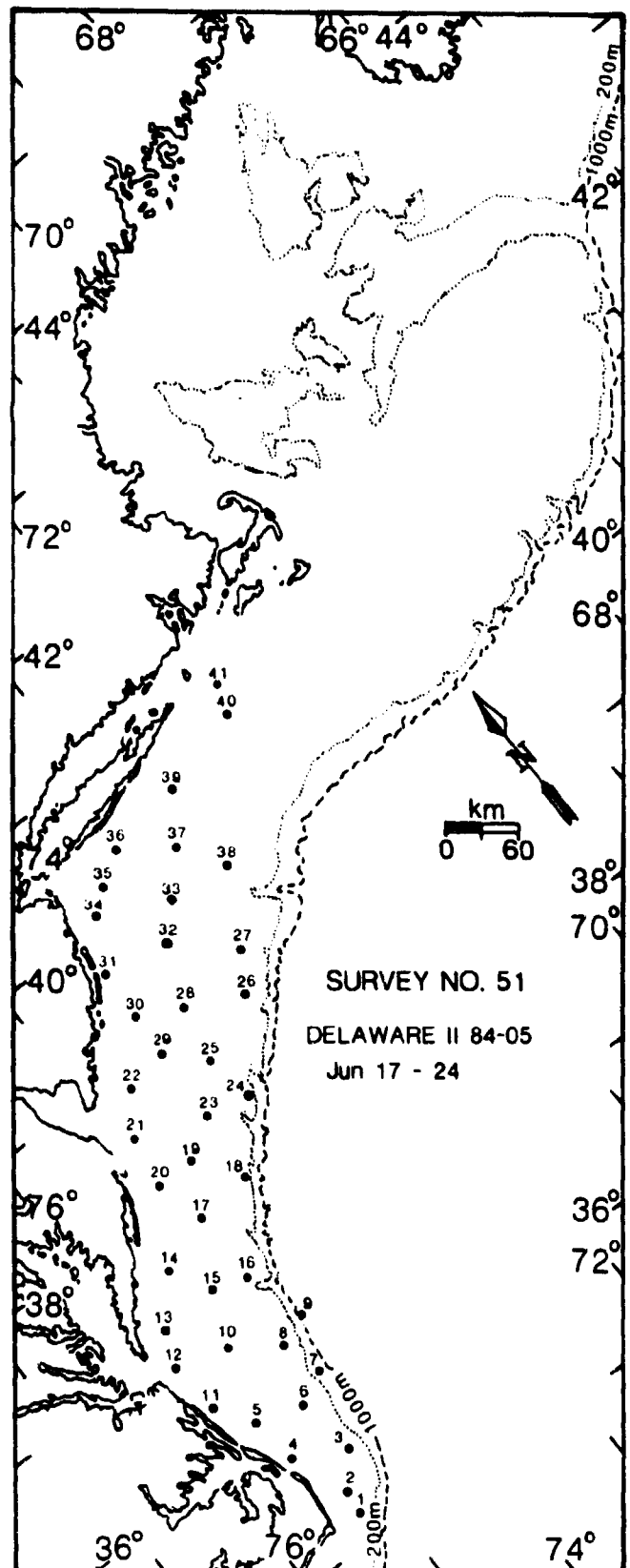
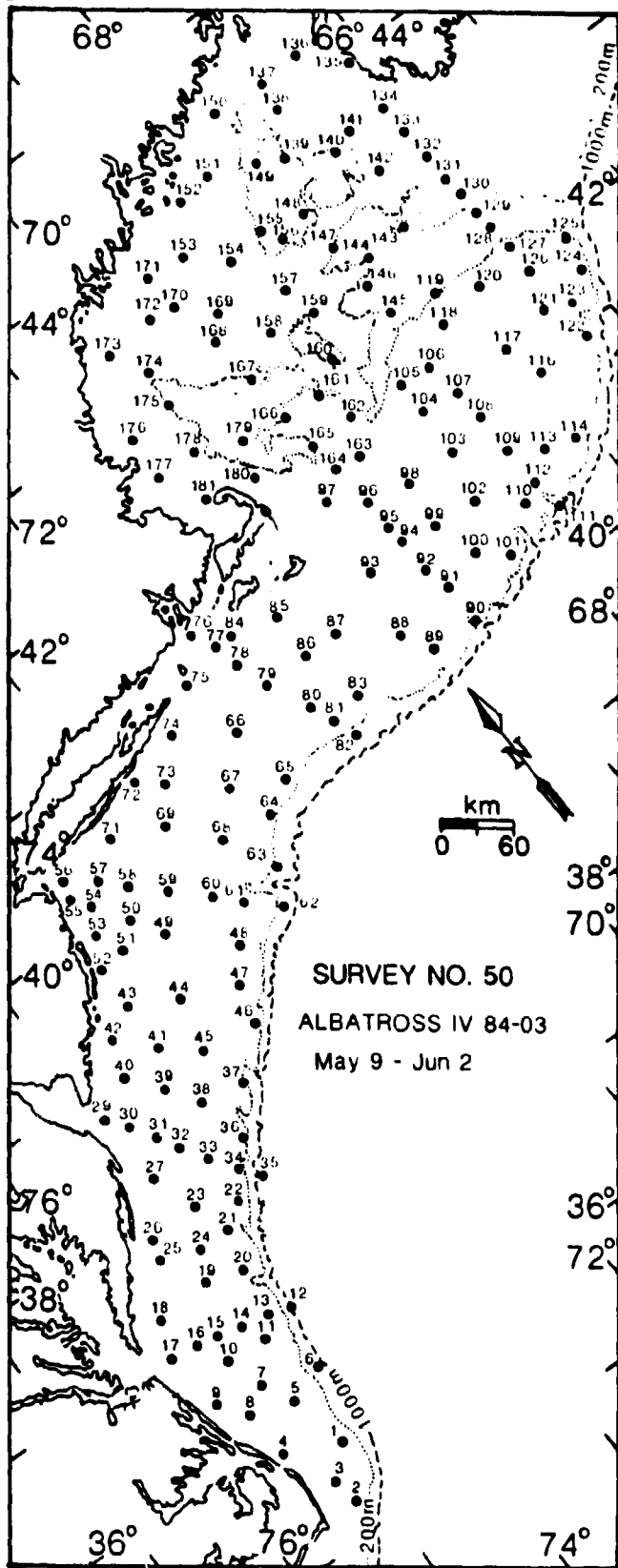


Figure 3. Station locations for *Albatross IV* 1984-03 survey No. 50 and *Delaware II* 1984-05 survey No. 51.

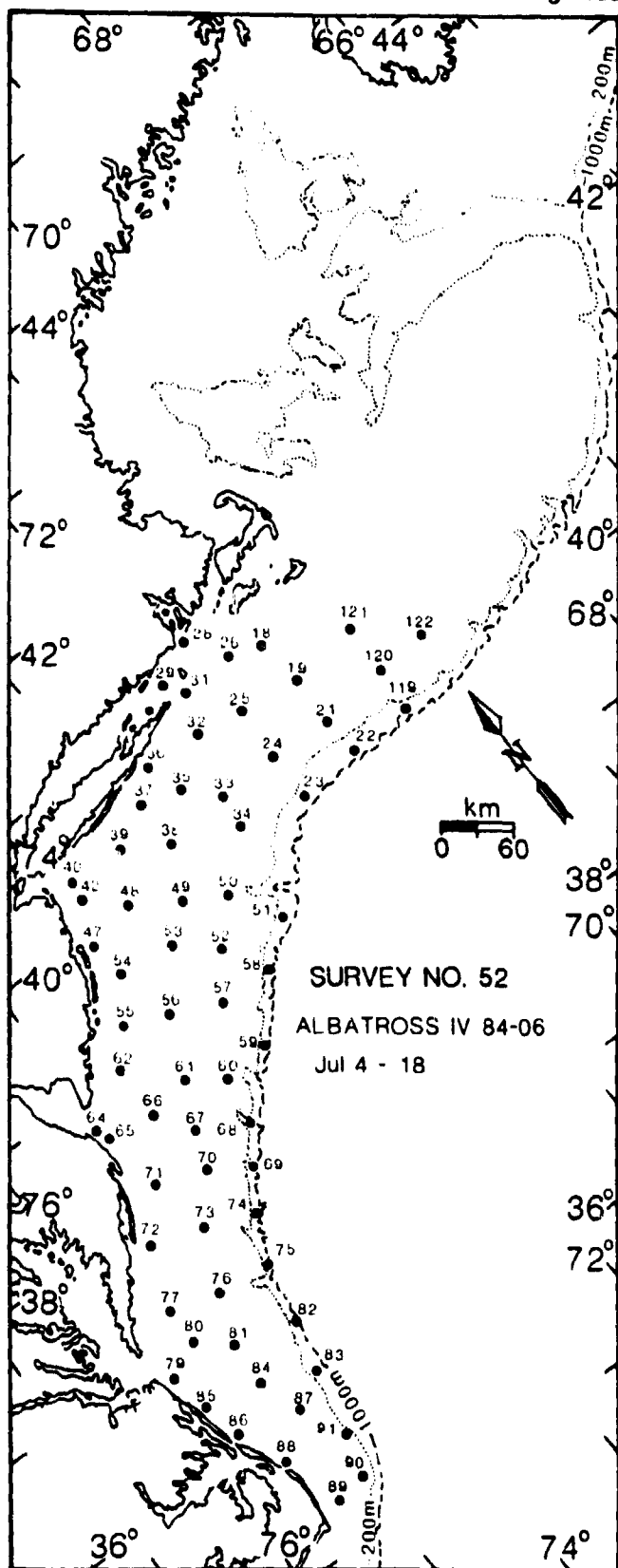
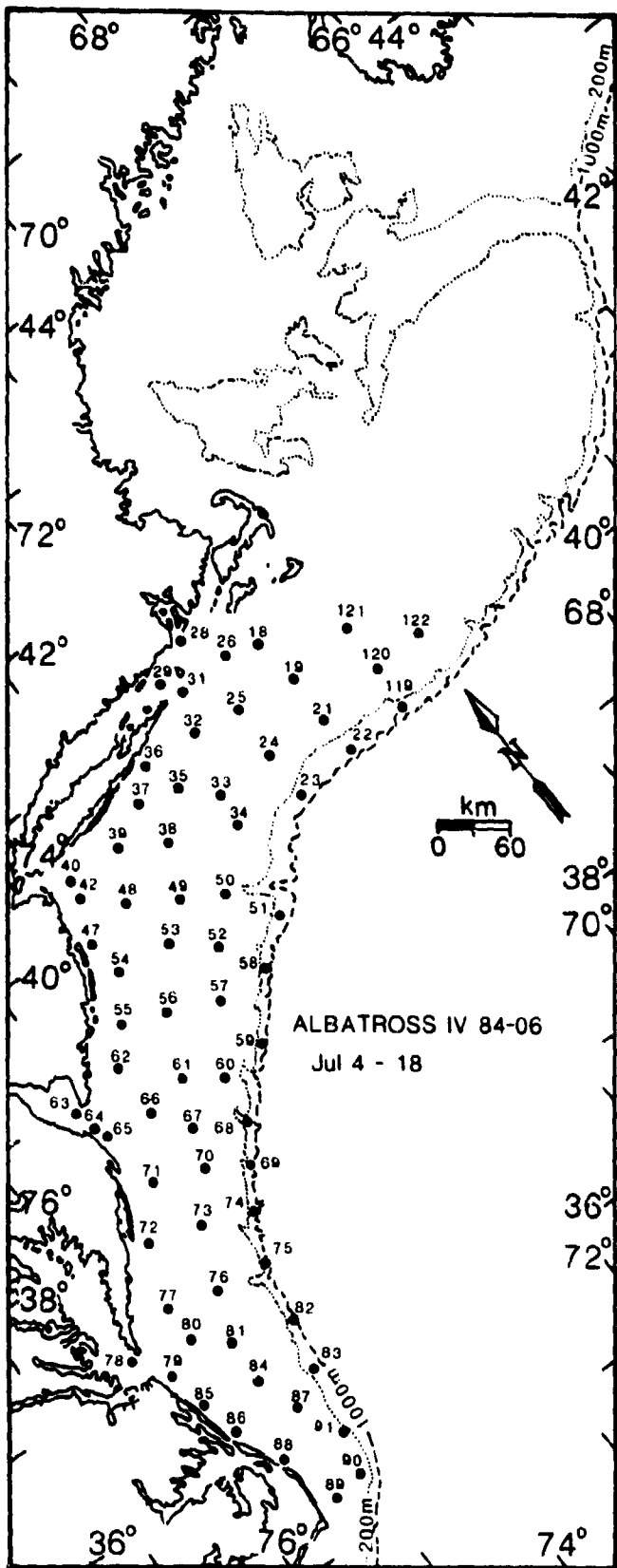


Figure 4. Station locations for *Albatross IV* 1984-06 and *Albatross IV* 1984-06 survey No. 52.

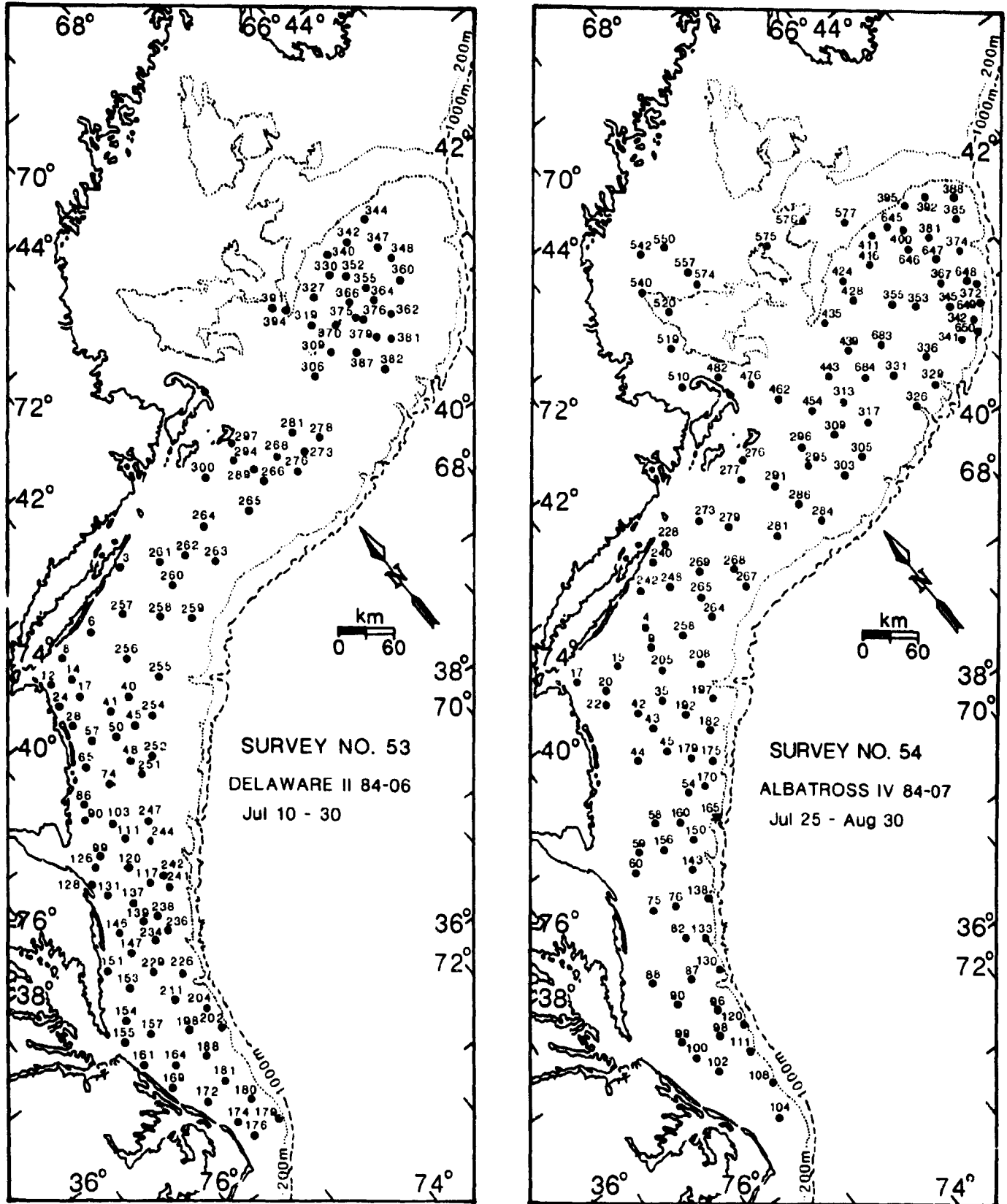


Figure 5. Station locations for Delaware II 1984-06 survey No. 53 and Albatross IV 1984-07 survey No. 54.

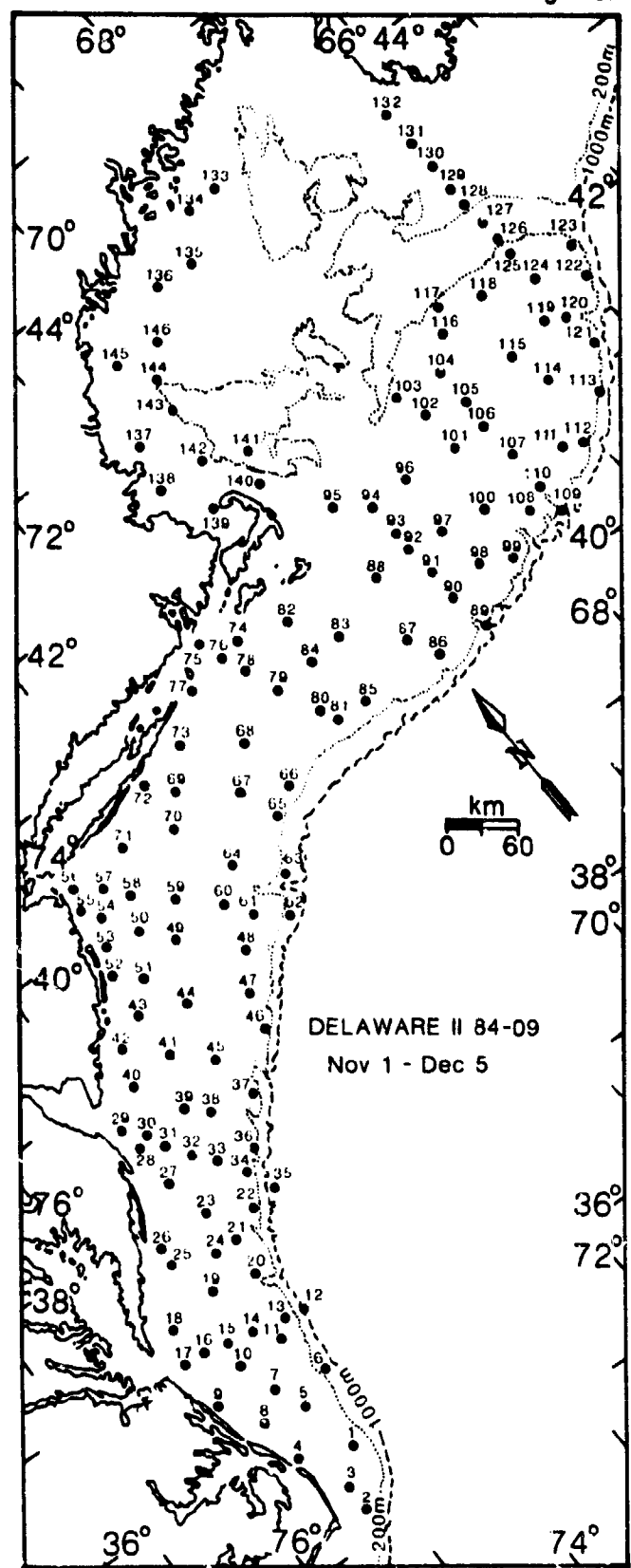
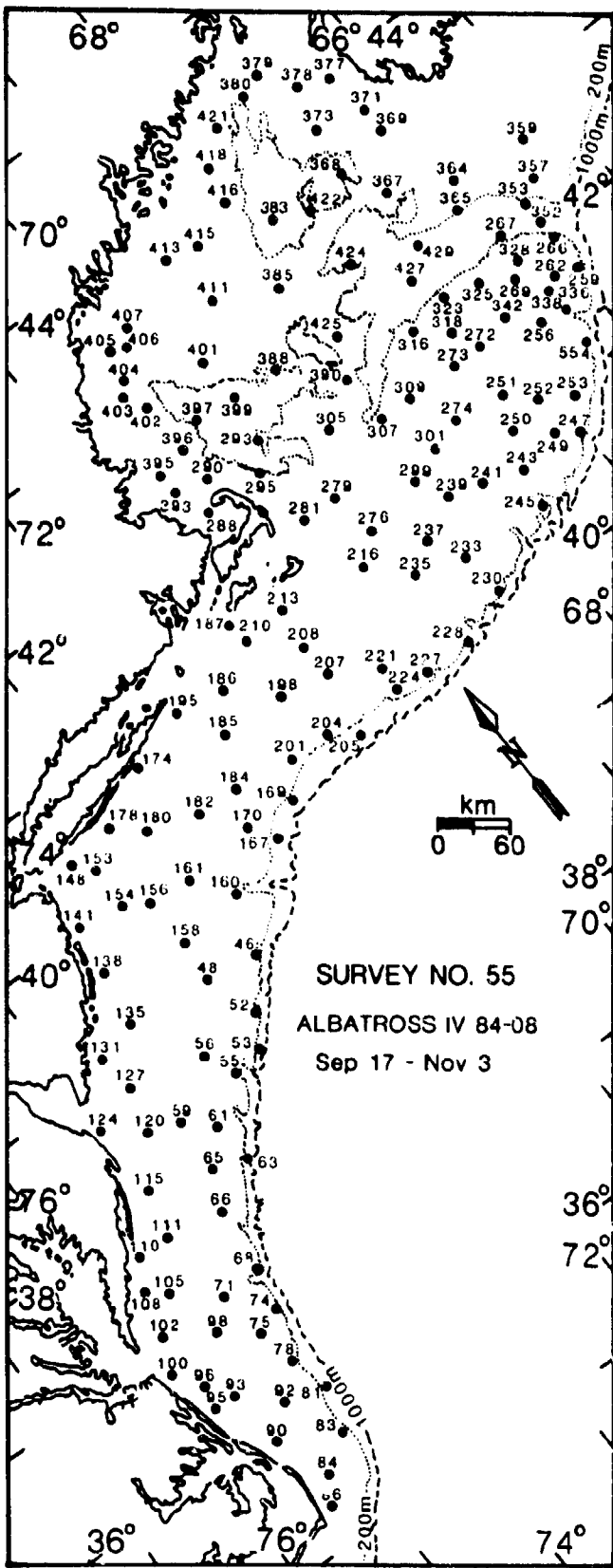


Figure 6. Station locations for *Albatross IV* 1984-08 survey No. 55 and *Delaware II* 1984-09.

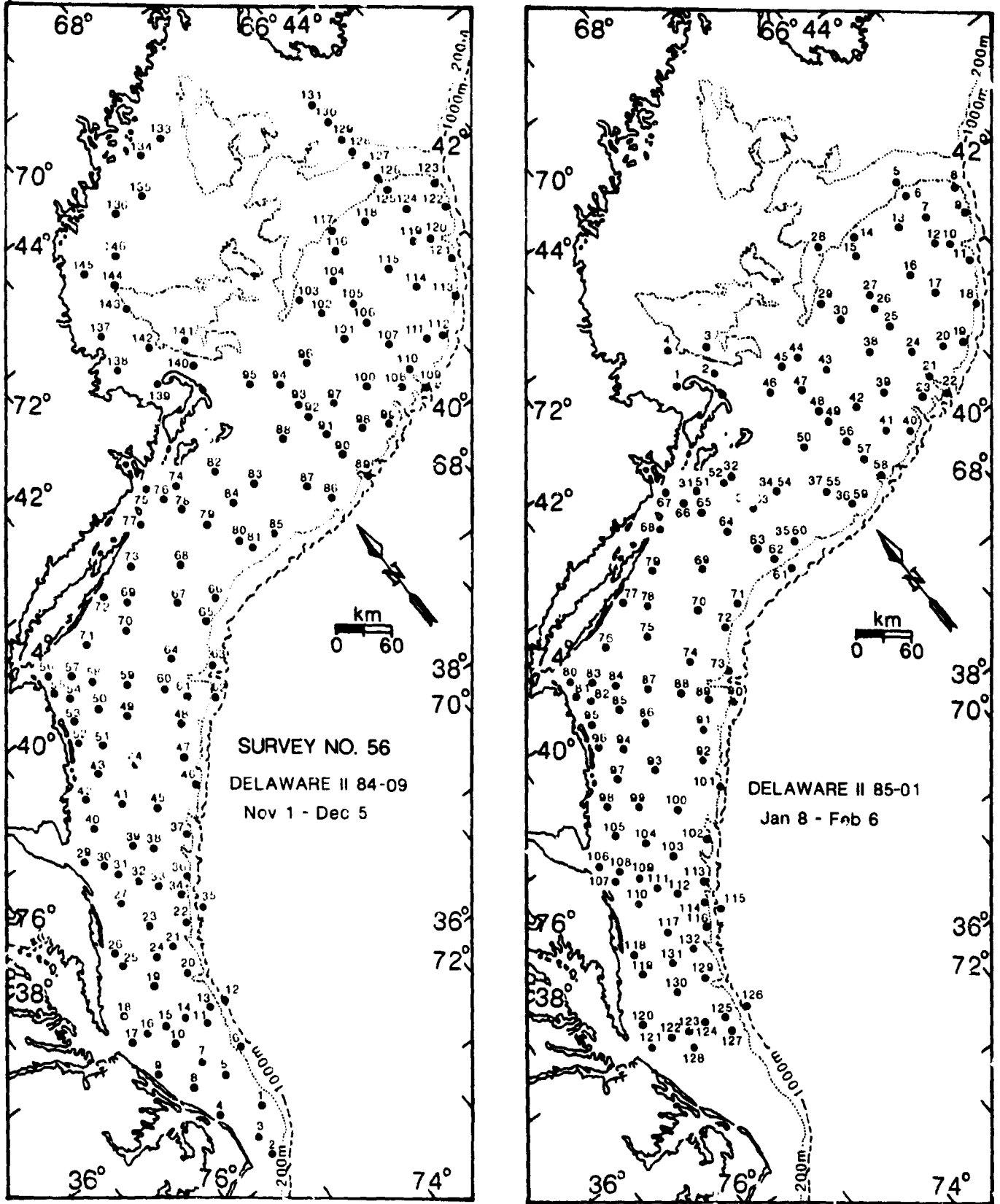


Figure 7. Station locations for Delaware II 1984-09 survey No. 56 and Delaware II 1985-01.

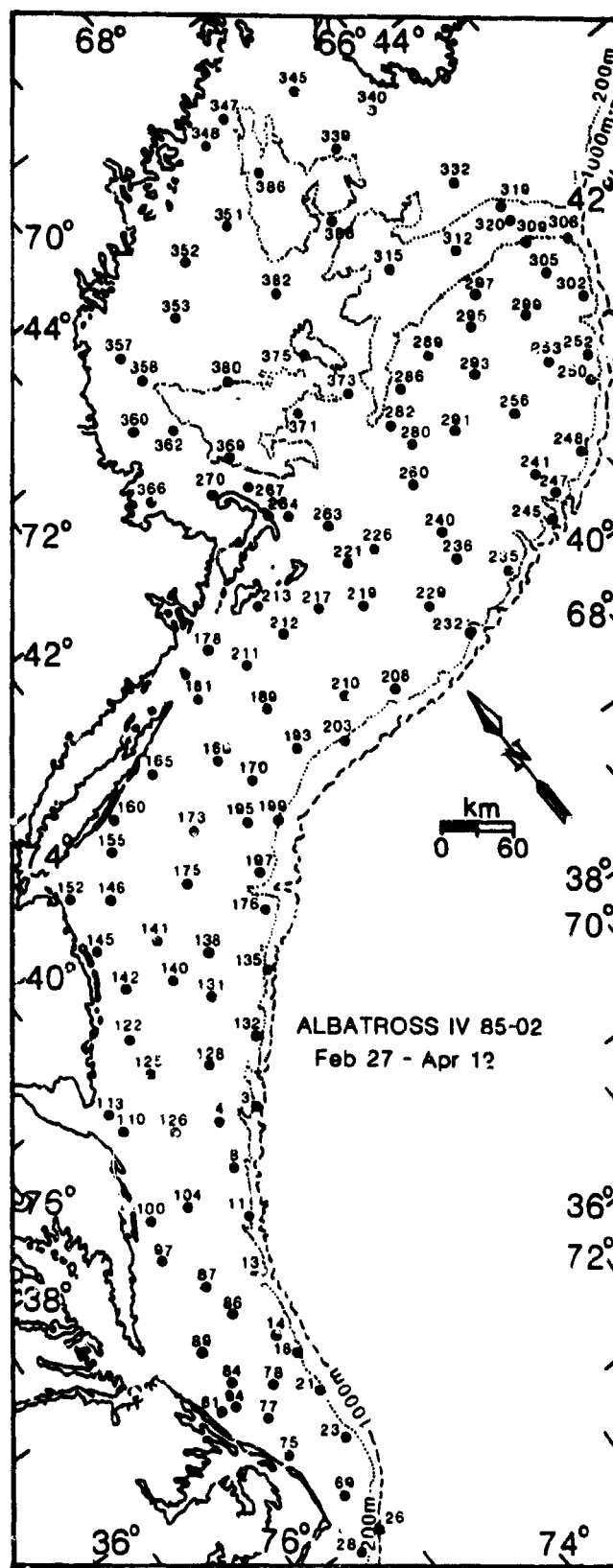
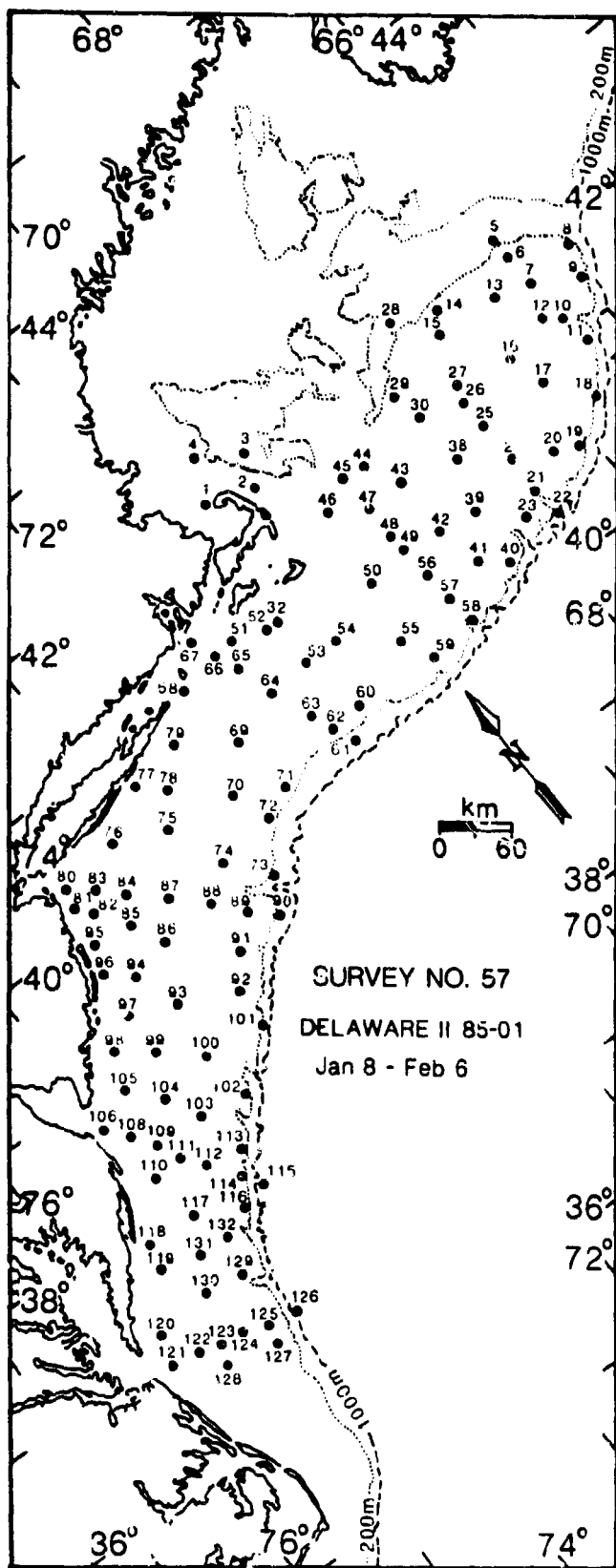


Figure 8. Station locations for *Delaware II* 1985-01 survey No. 57 and *Albatross IV* 1985-02.



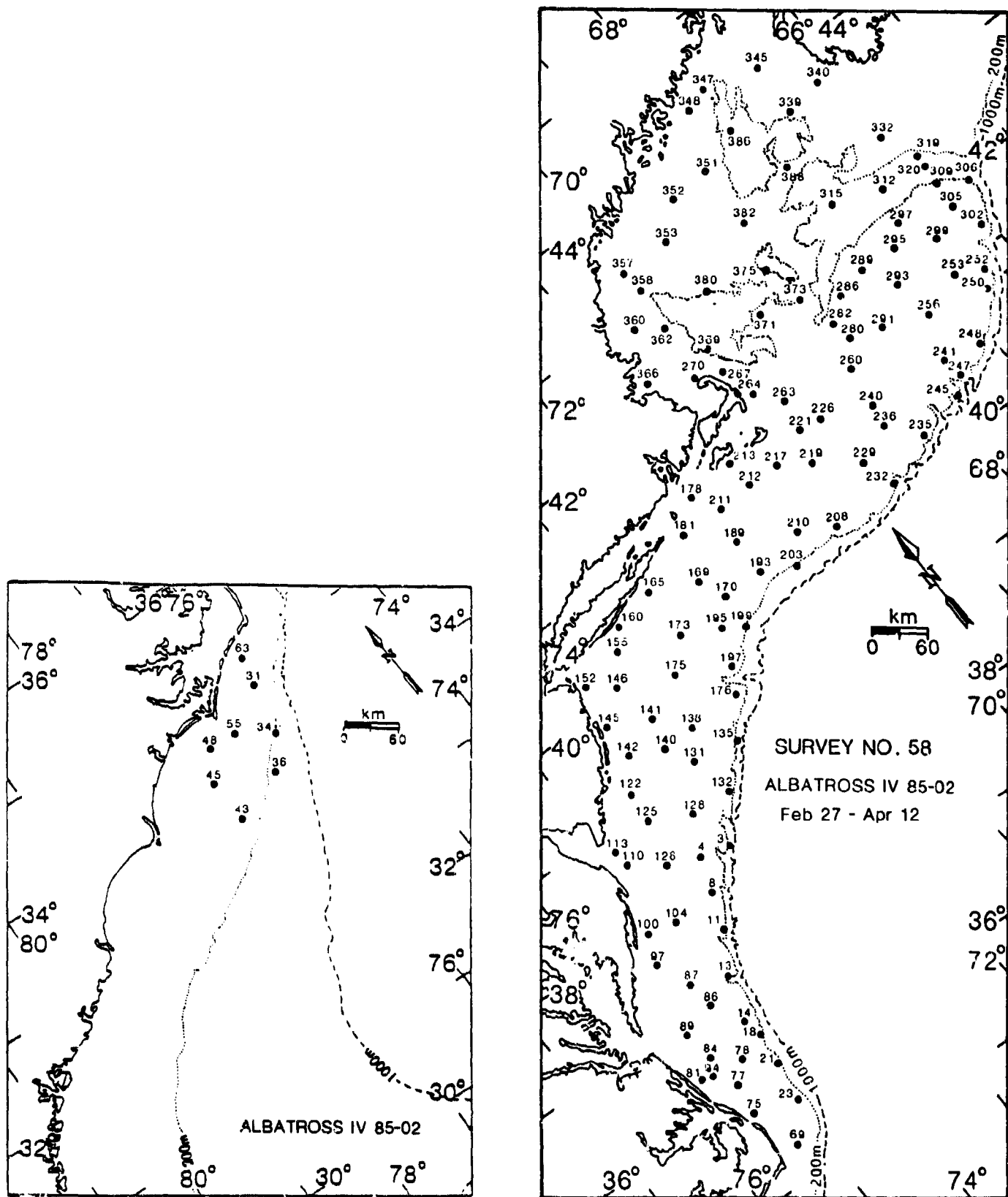


Figure 9. Station locations for *Albatross IV* 1985-02 and *Albatross IV* 1985-02 survey No. 58.

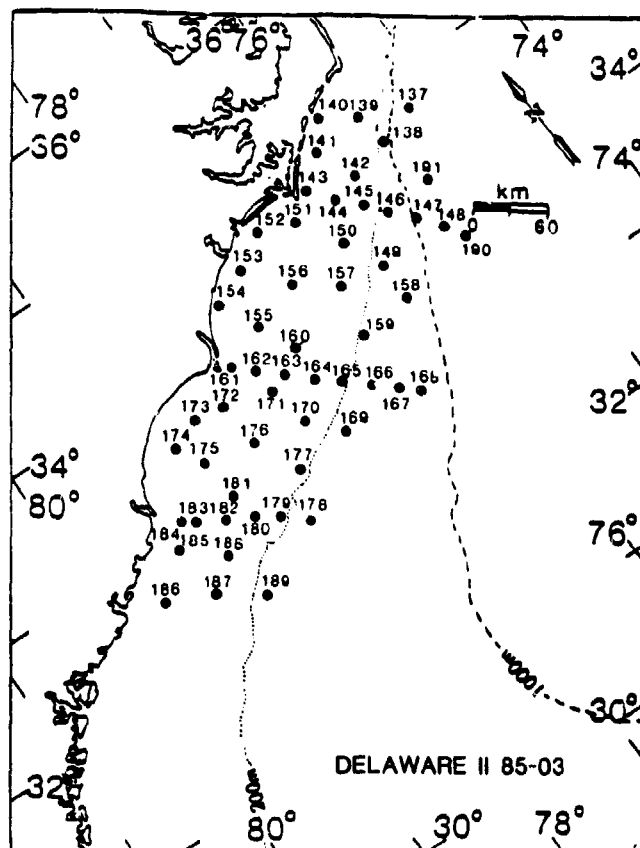
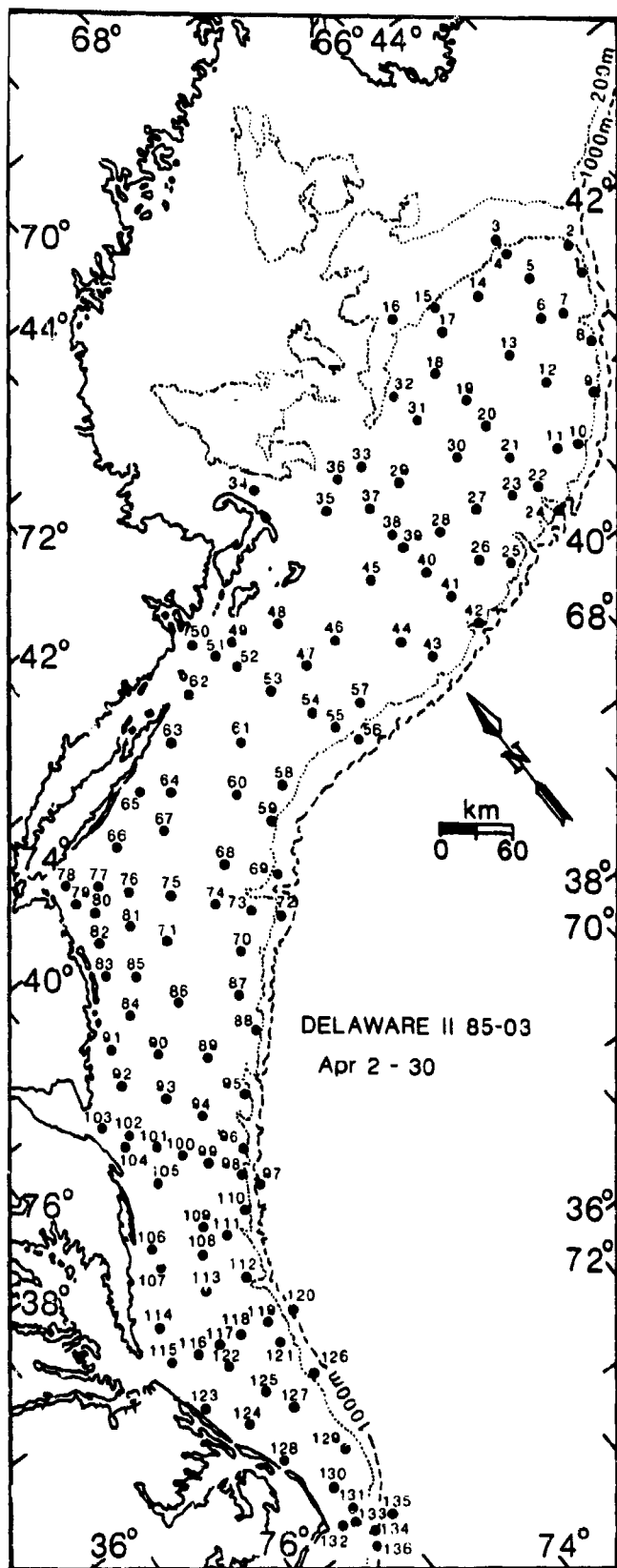


Figure 10. Station locations for *Delaware II* 1985-03.

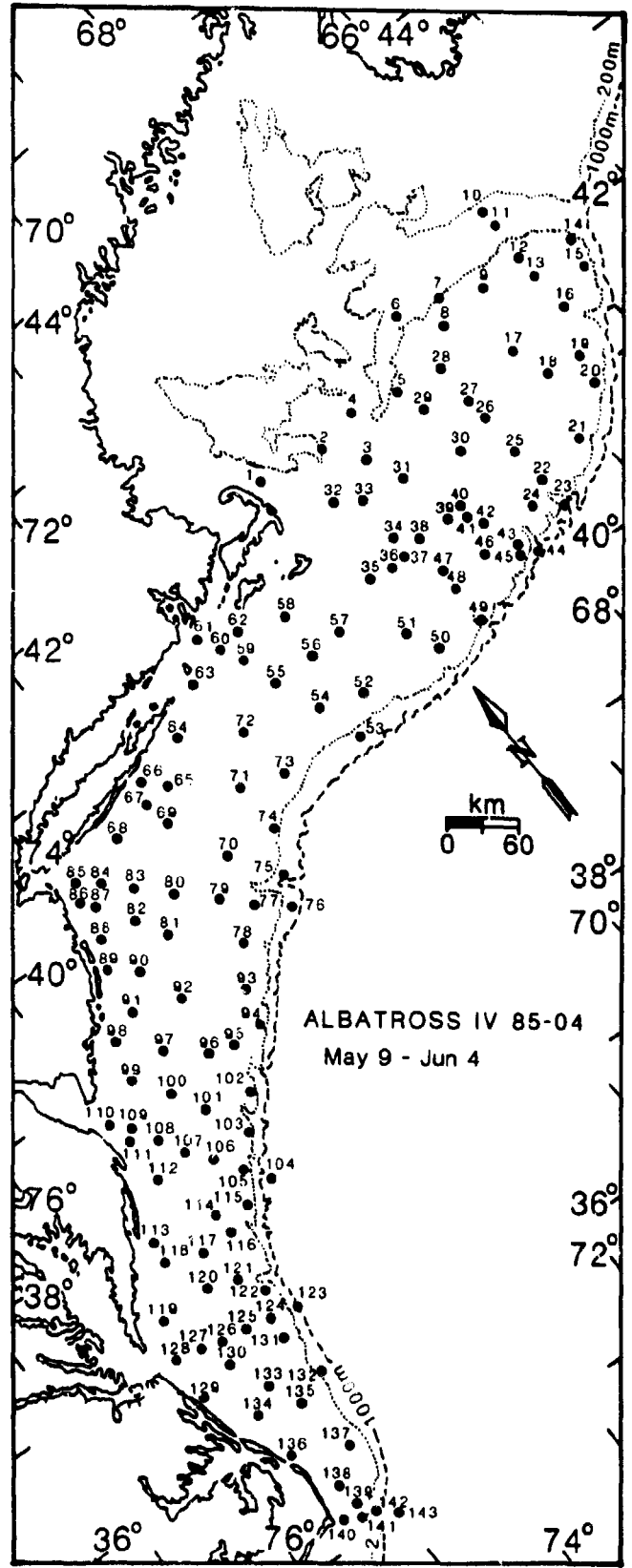
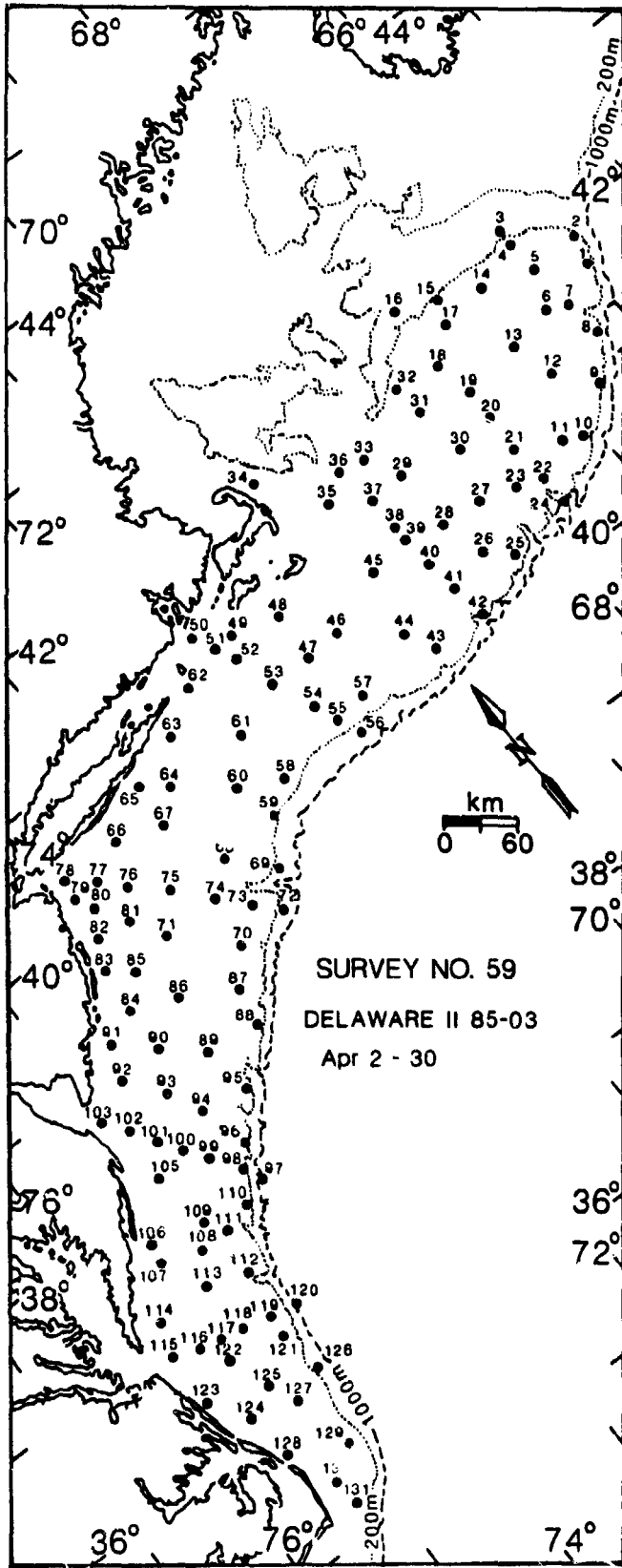


Figure 11. Station locations for *Delaware II* 1985-03 survey No. 59 and *Albatross IV* 1985-04.

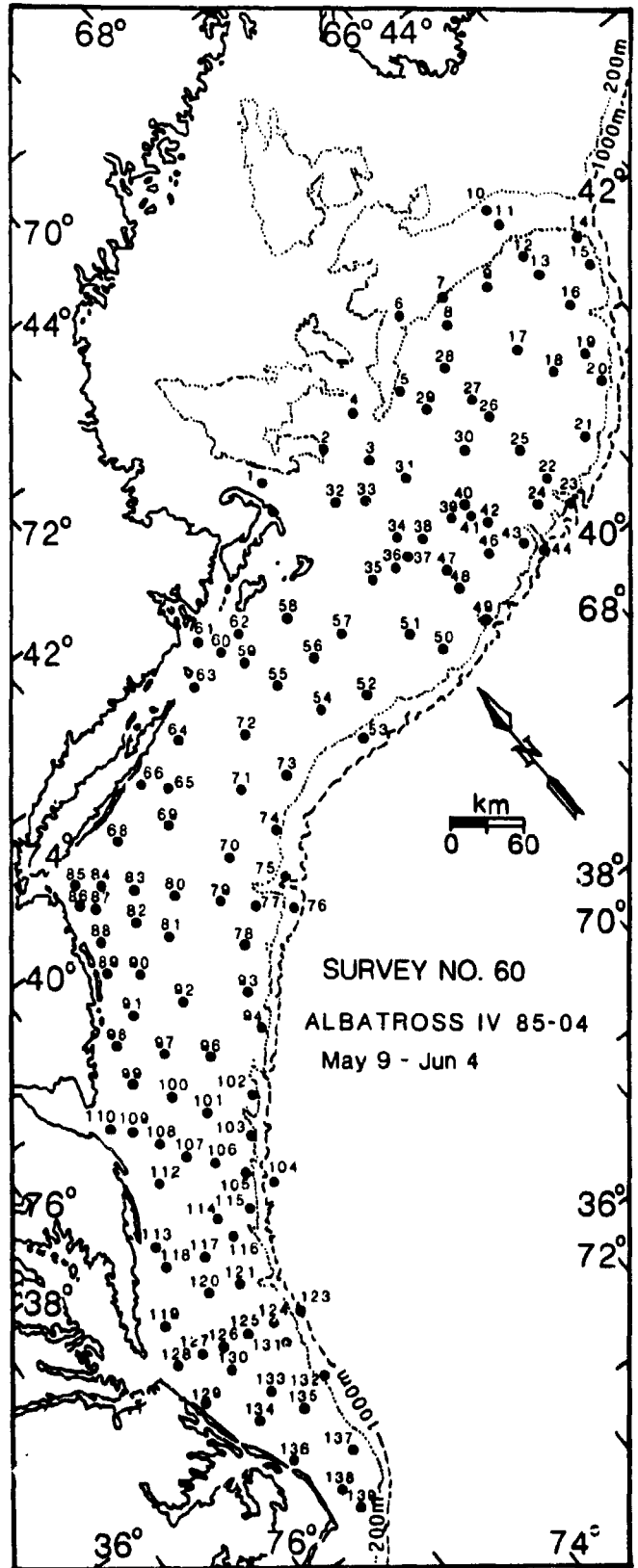
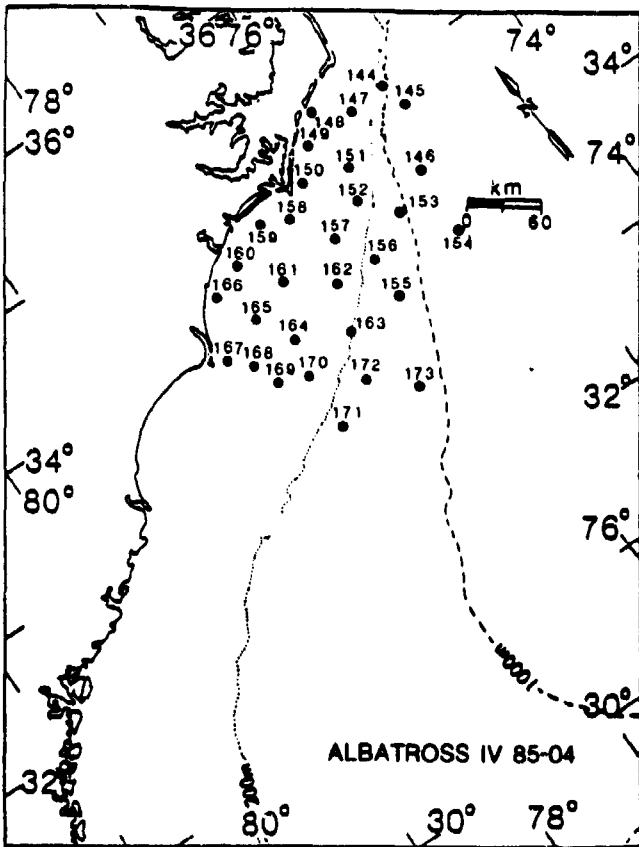


Figure 12. Station locations for *Albatross IV* 1985-04 and *Albatross IV* 1985-04 survey No. 60.

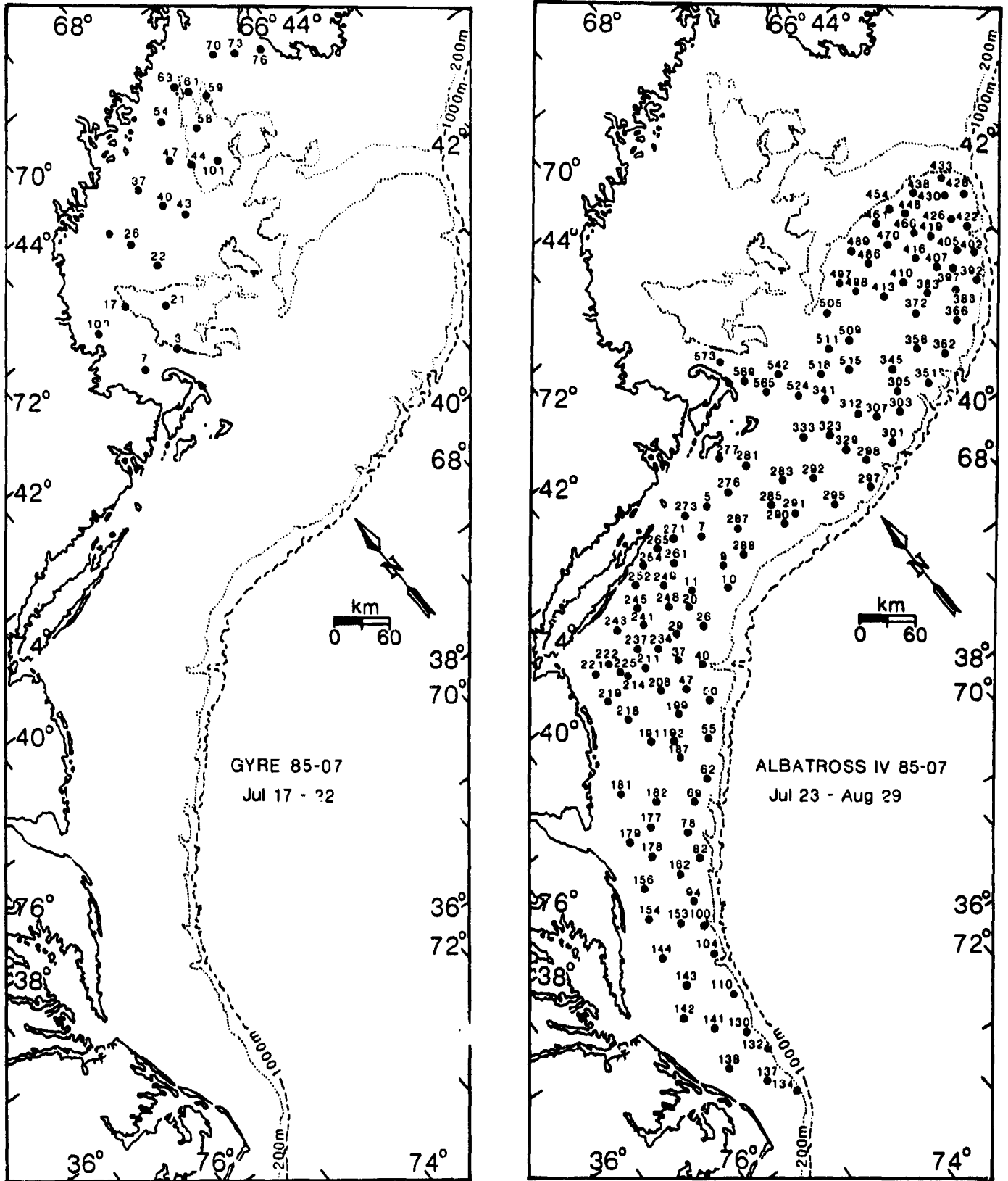


Figure 13. Station locations for Gyre 1985-07 and Albatross IV 1985-07.

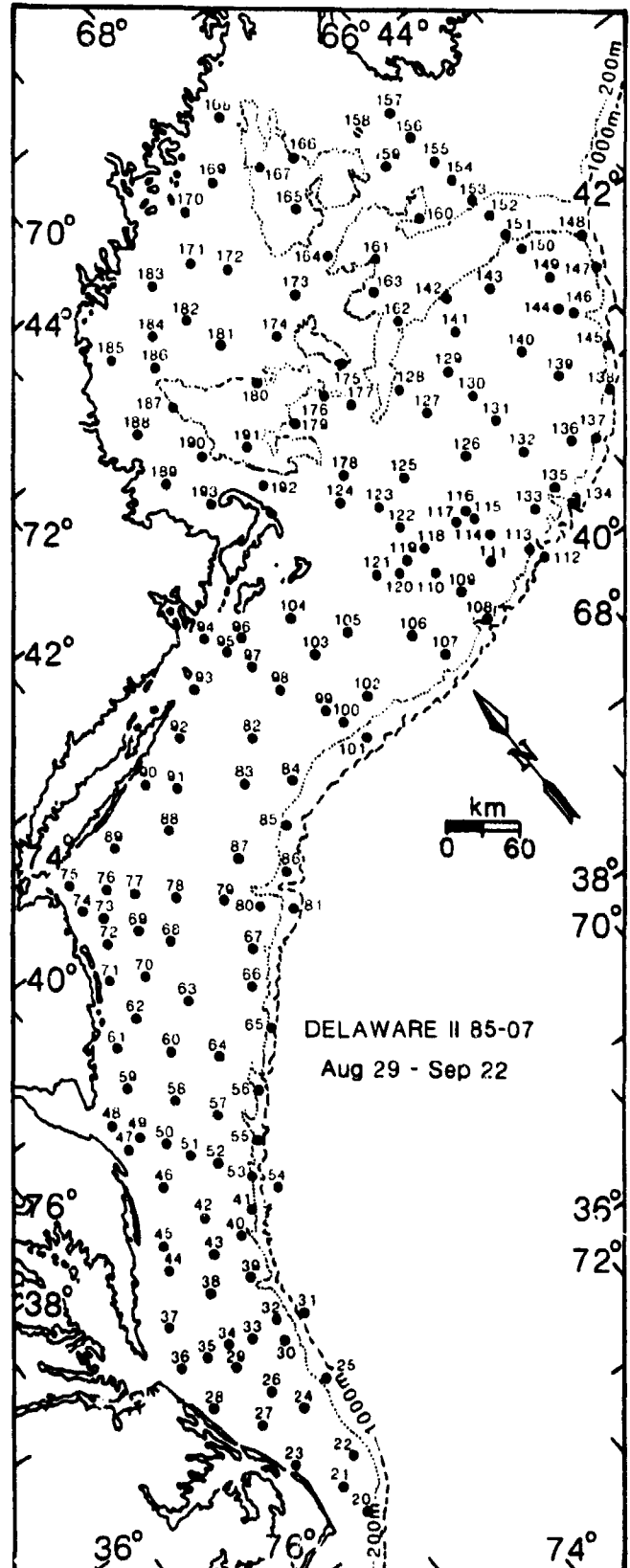
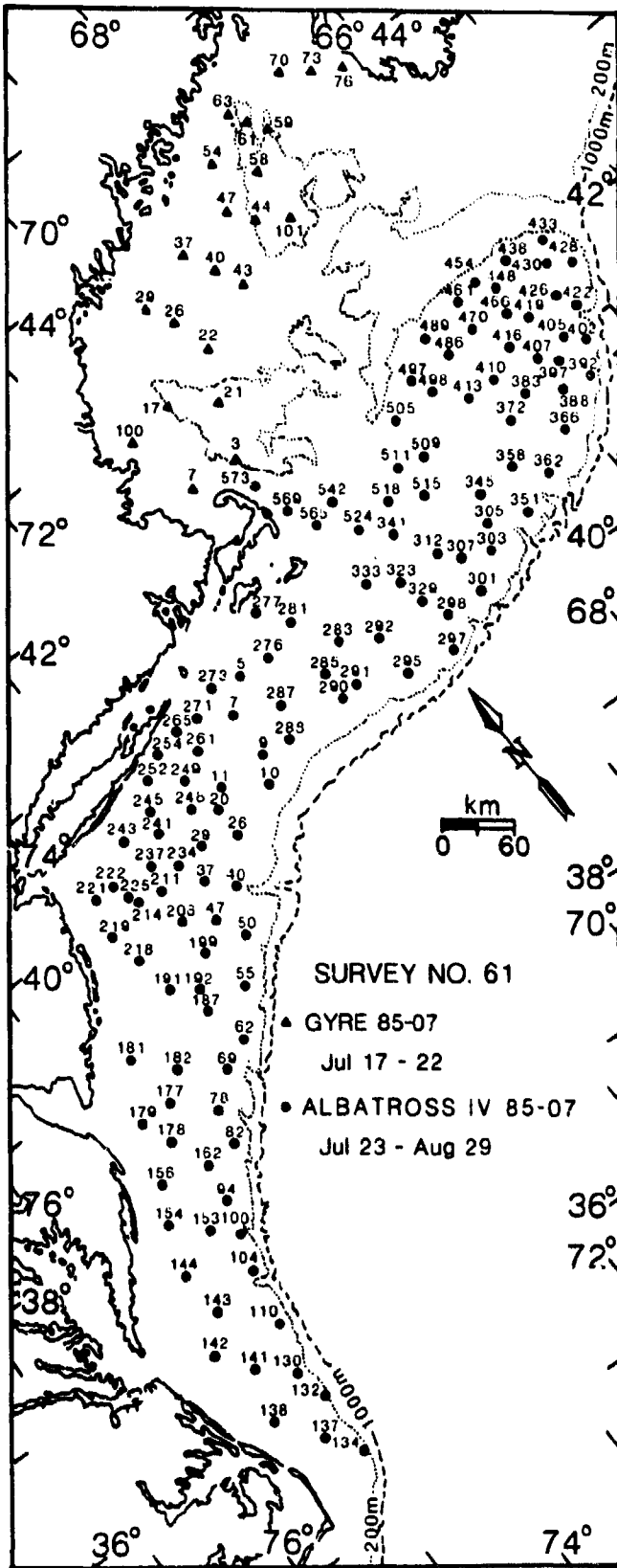


Figure 14. Station locations for Gyre 1985-07/Albatross IV 1985-07 survey No. 61 and Delaware II 1985-07.

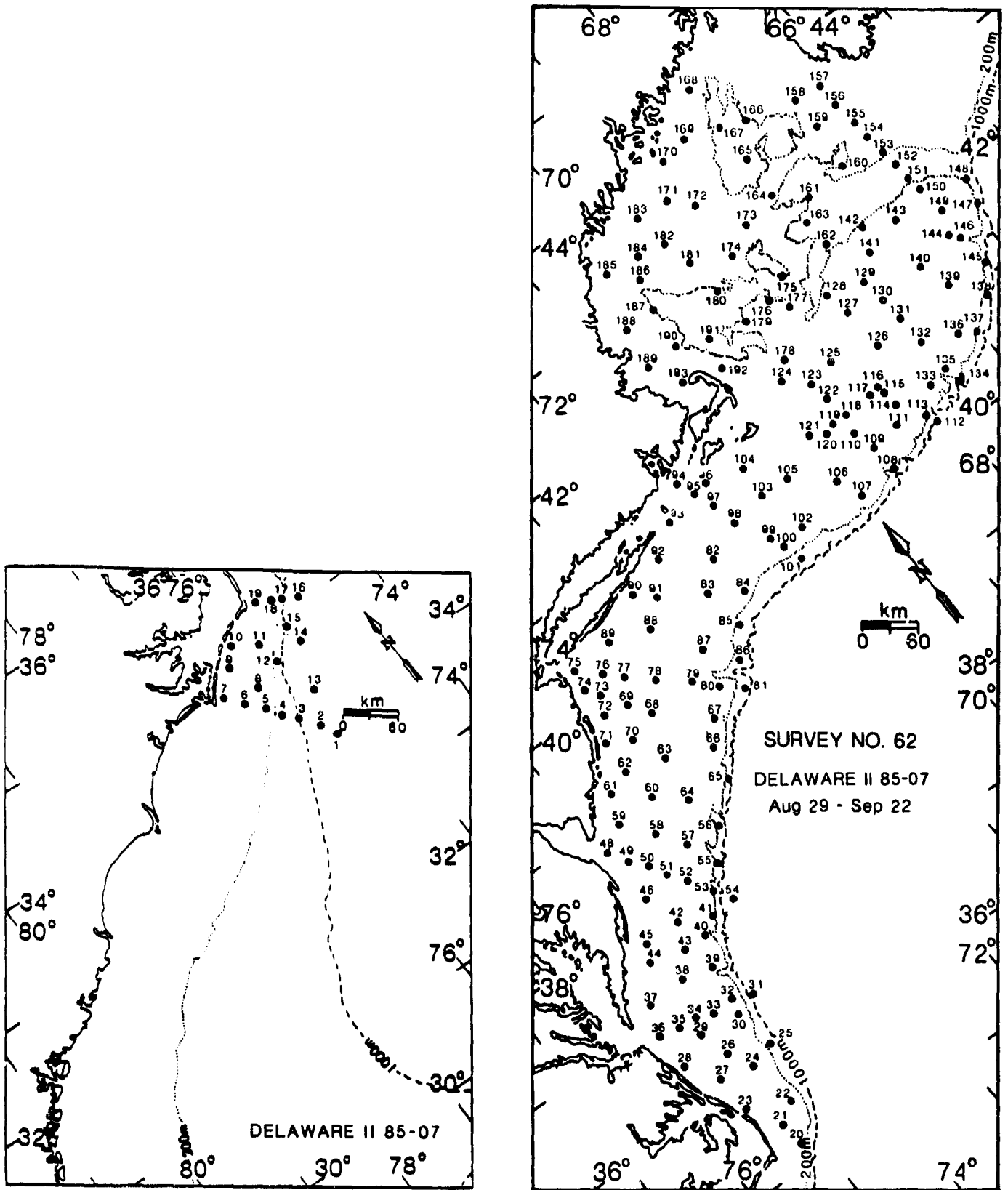


Figure 15. Station locations for *Delaware II* 1985-07 and *Delaware II* 1985-07 survey No. 62.

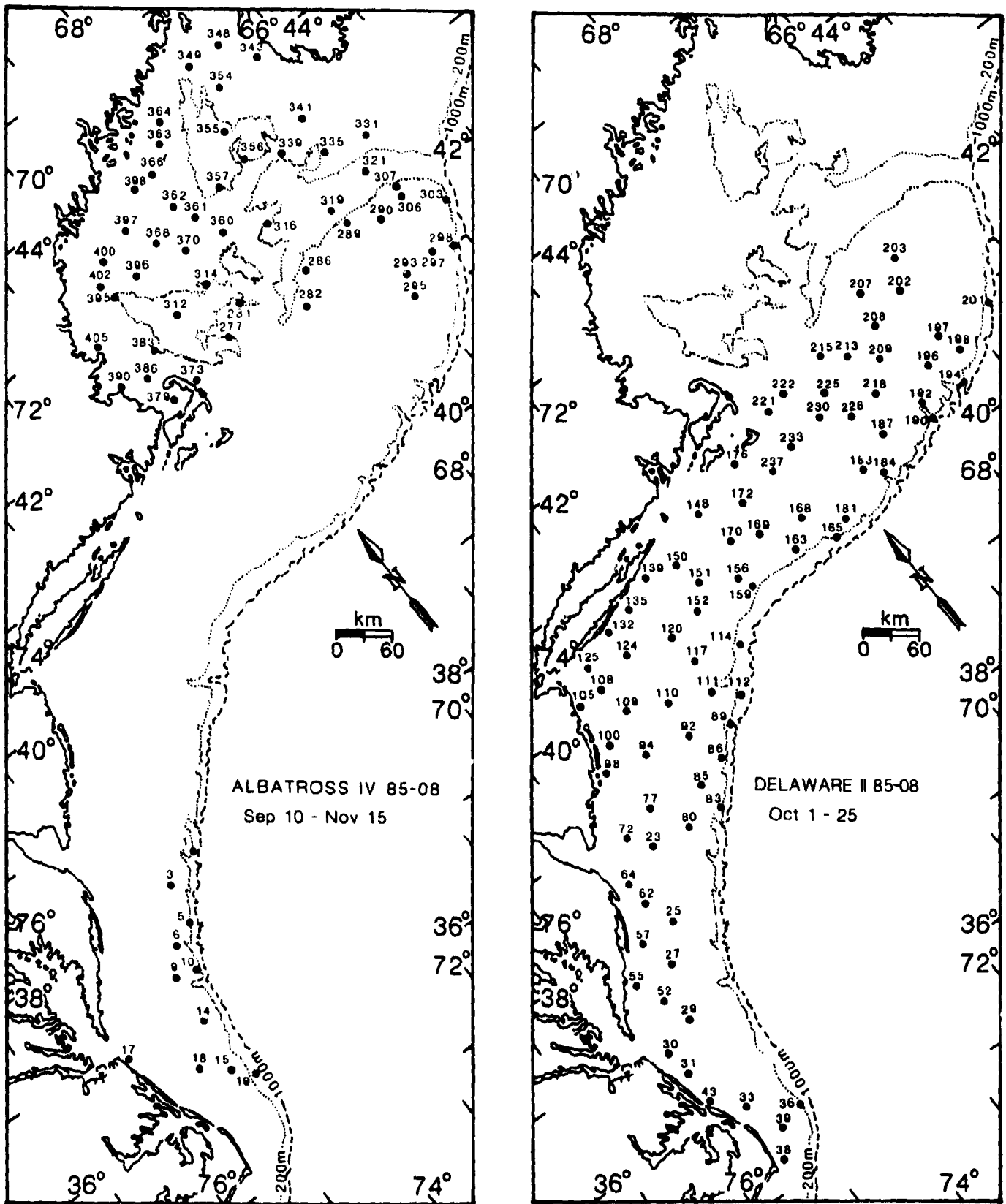


Figure 16. Station locations for *Albatross IV* 1985-08 and *Delaware II* 1985-08.



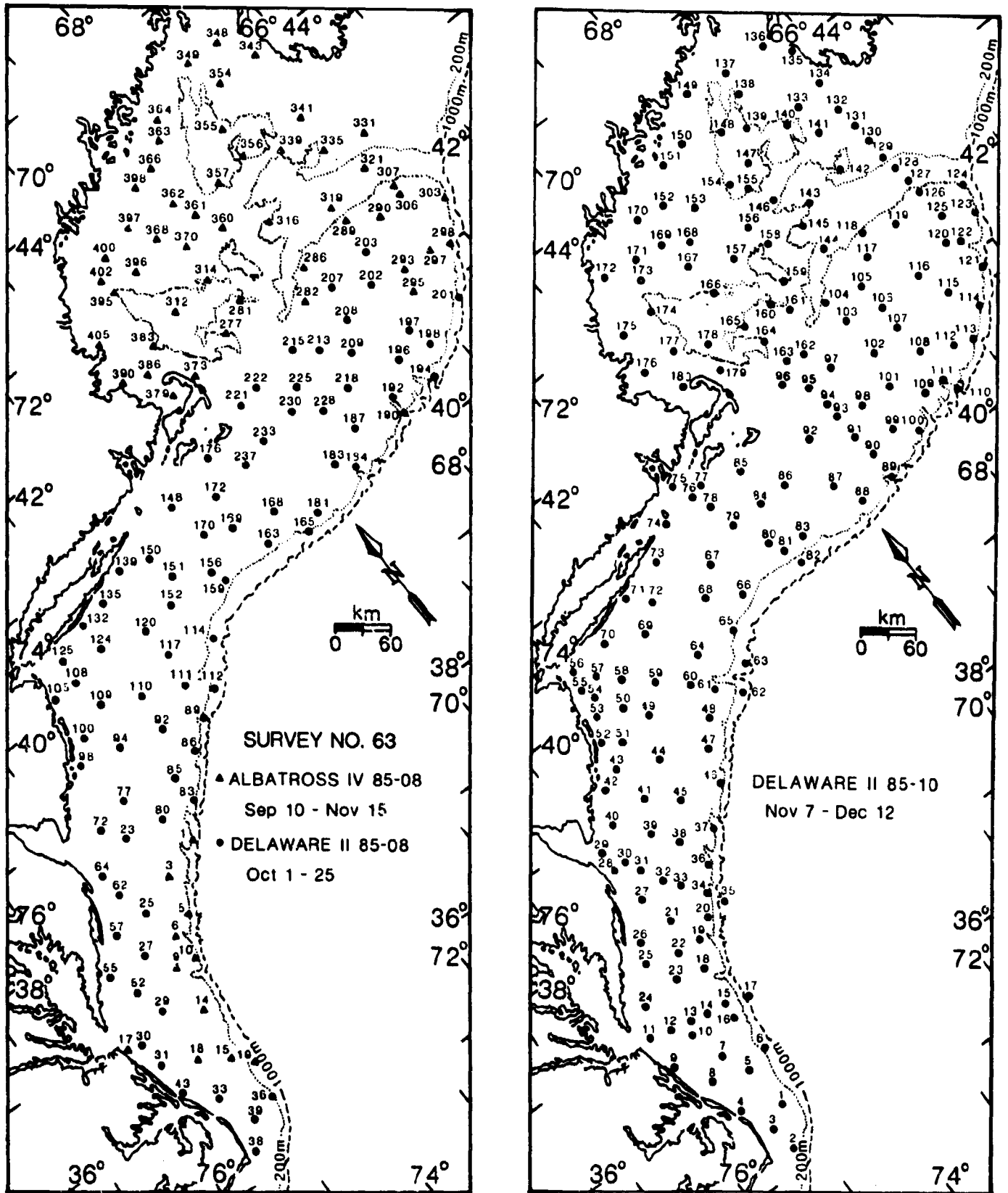


Figure 17. Station locations for *Albatross IV* 1985-08/*Delaware II* 1985-08 survey No. 63 and *Delaware II* 1985-10.

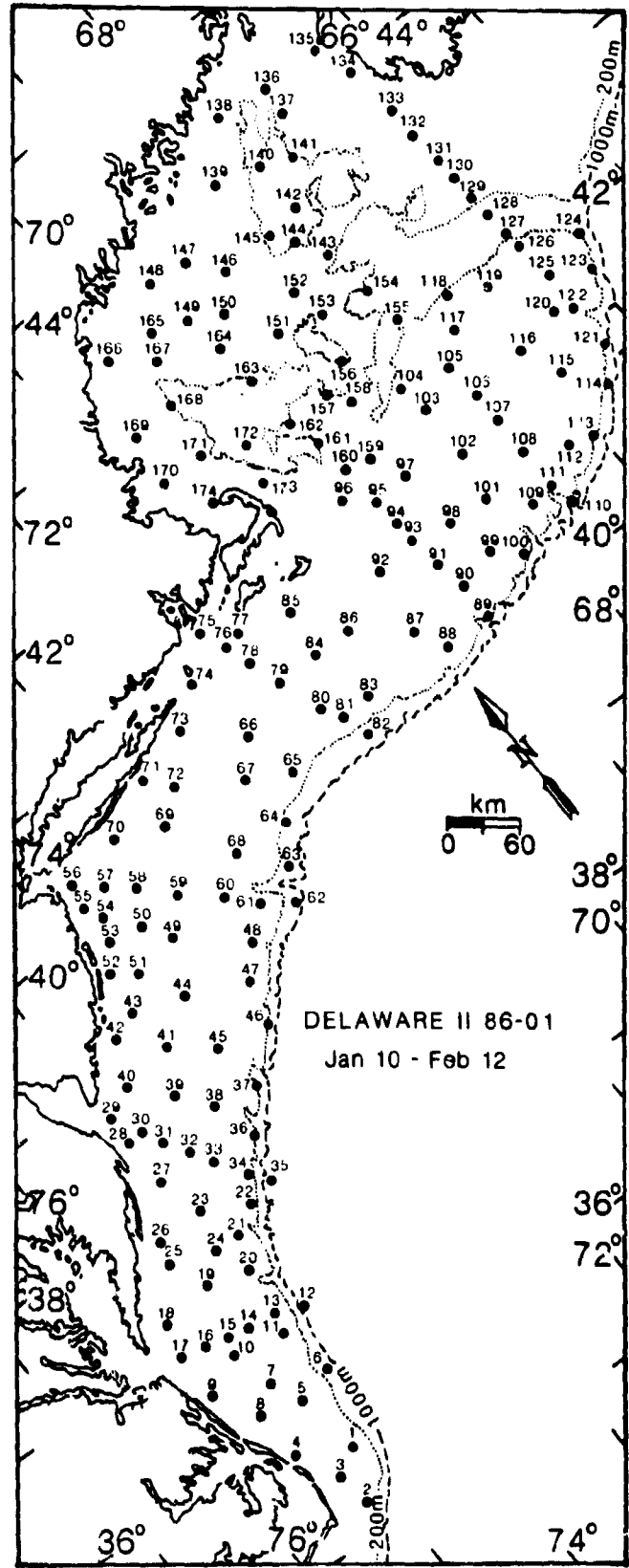
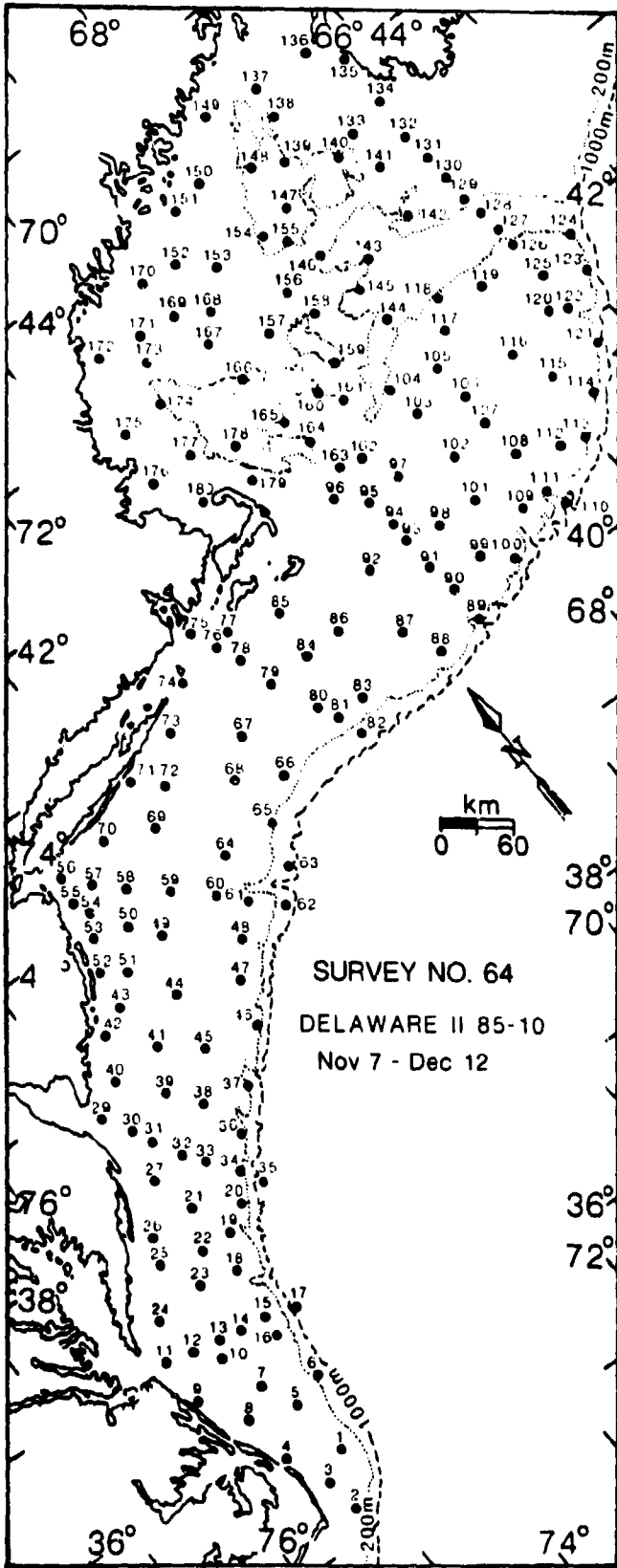


Figure 18. Station locations for Delaware II 1985-10 survey No. 64 and Delaware II 1986-01.

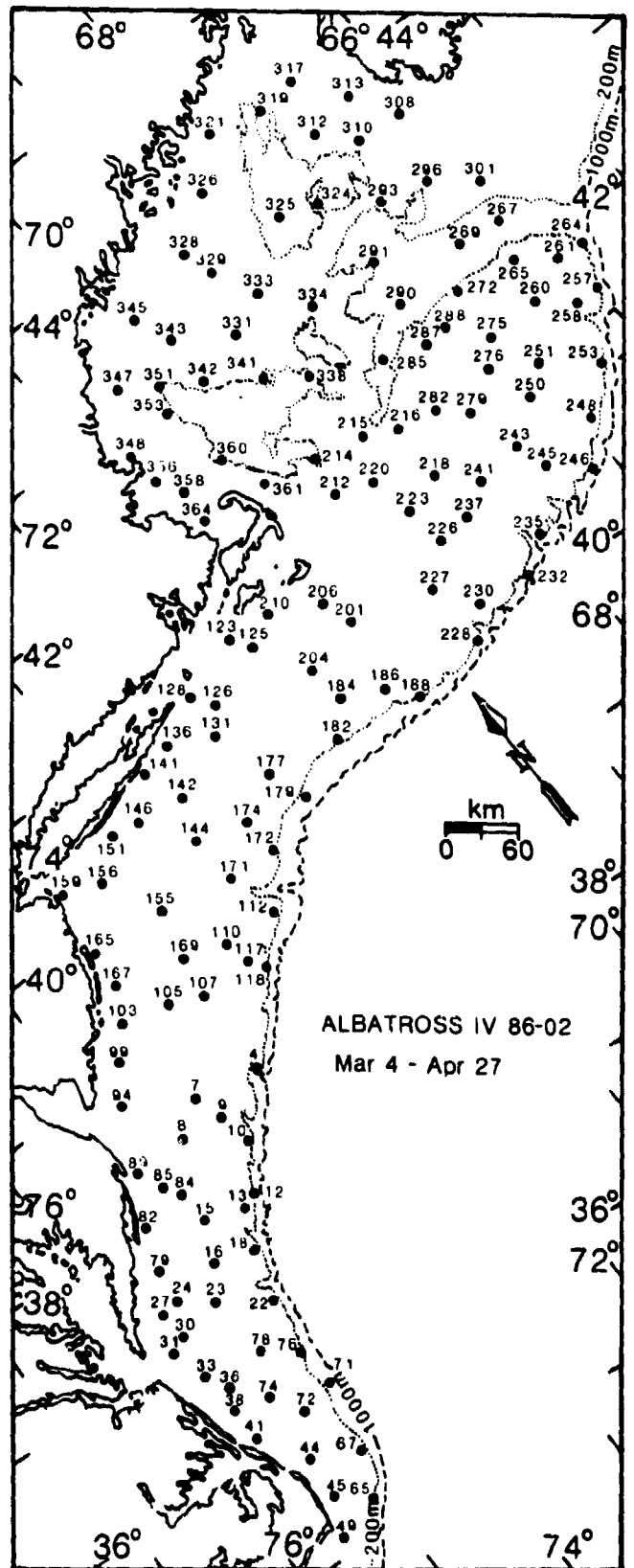
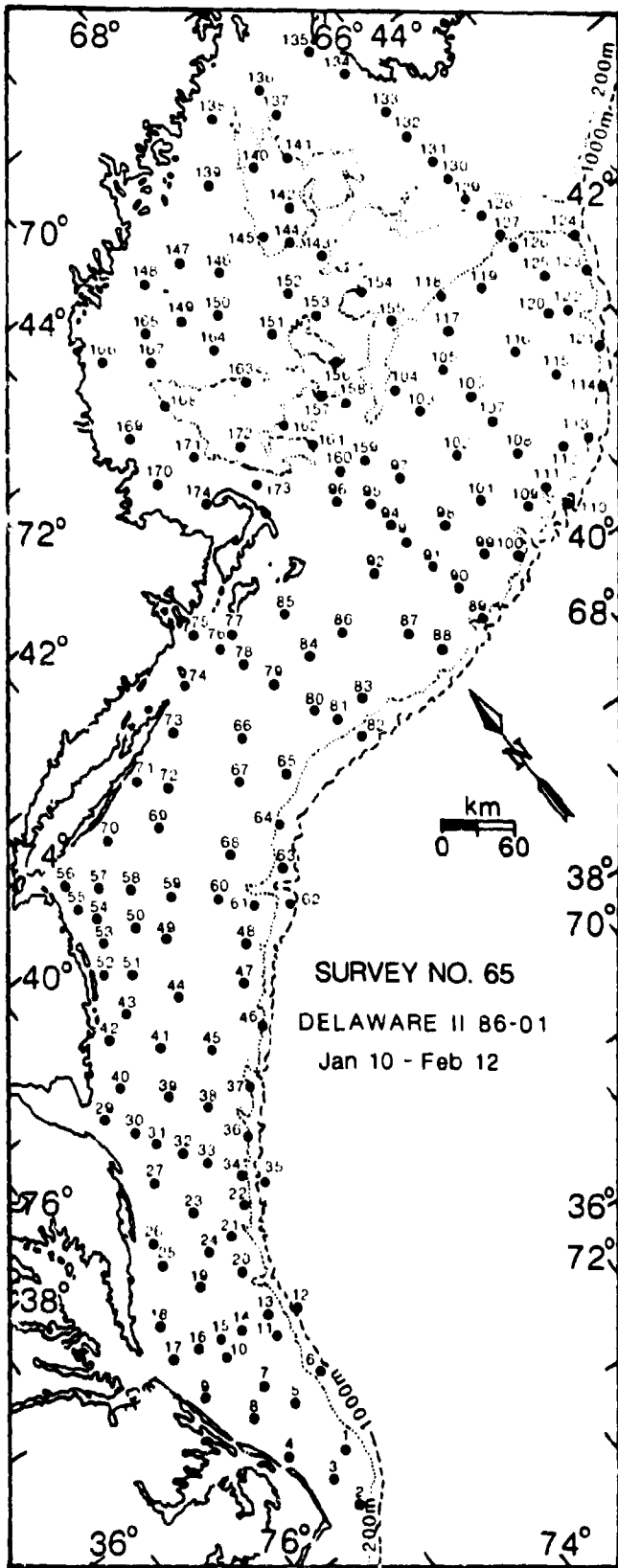


Figure 19. Station locations for Delaware II 1986-01 survey No. 65 and Albatross IV 1986-02.

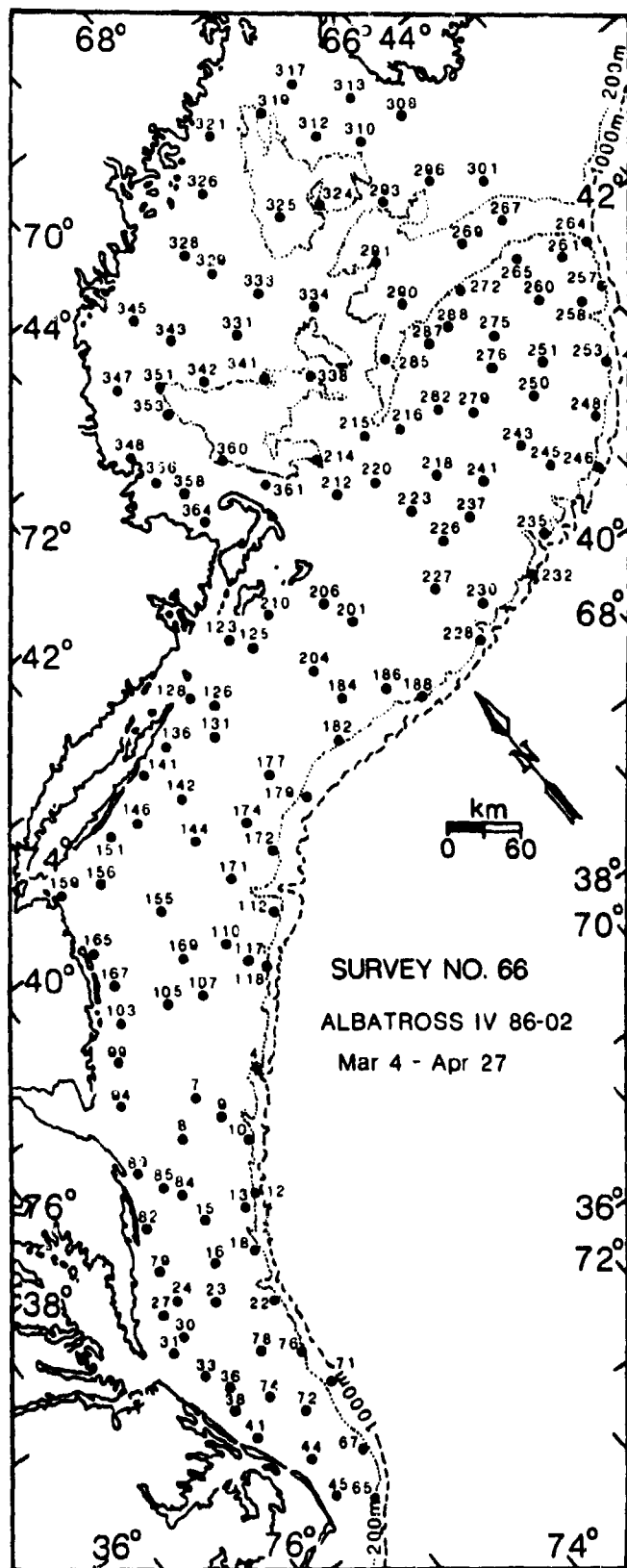
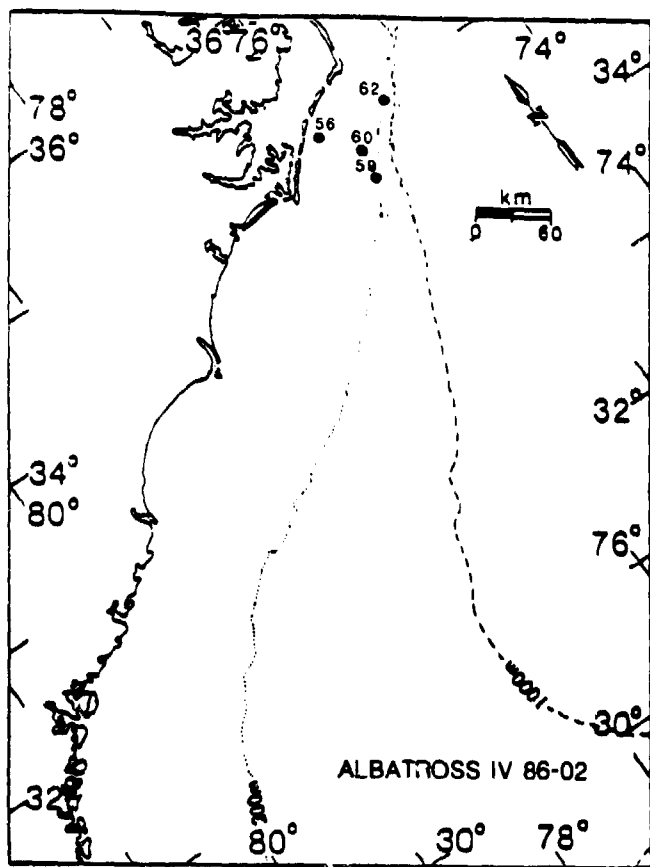


Figure 20. Station locations for Albatross IV 1986-02 and Albatross IV 1986-02 survey No. 66.

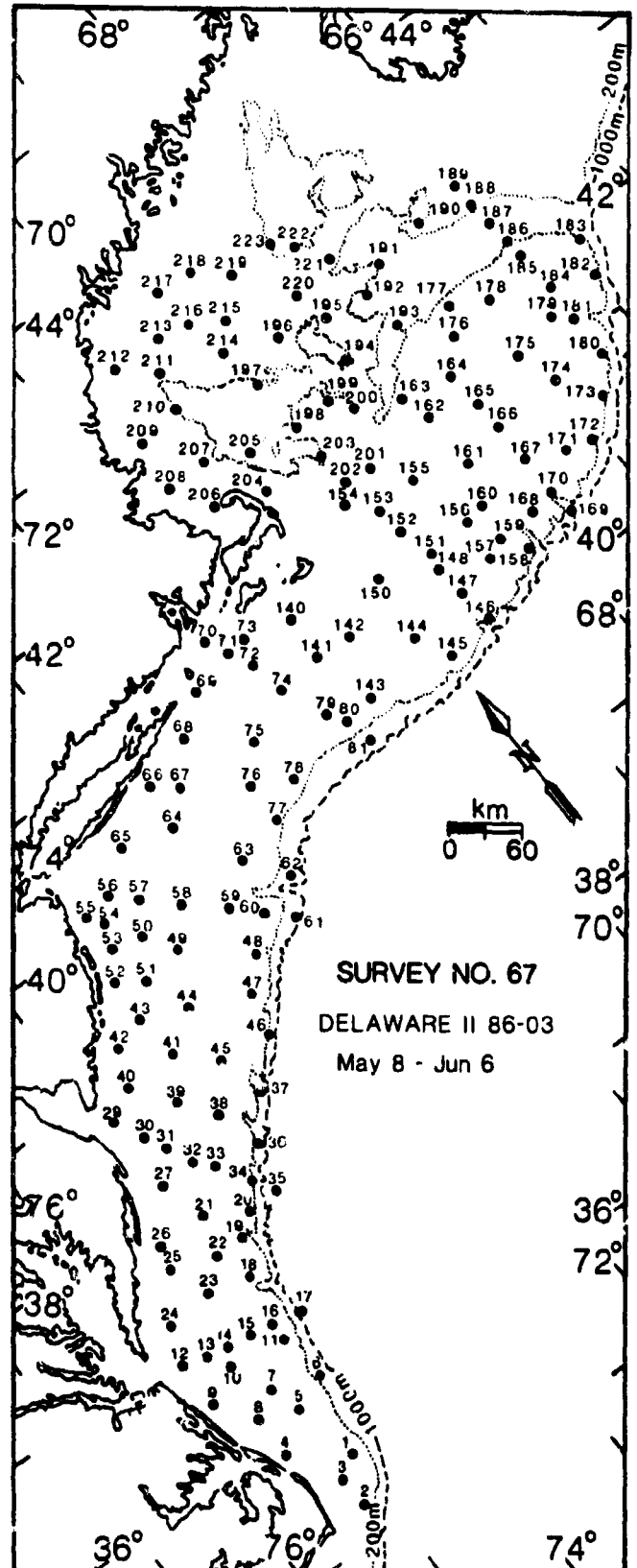
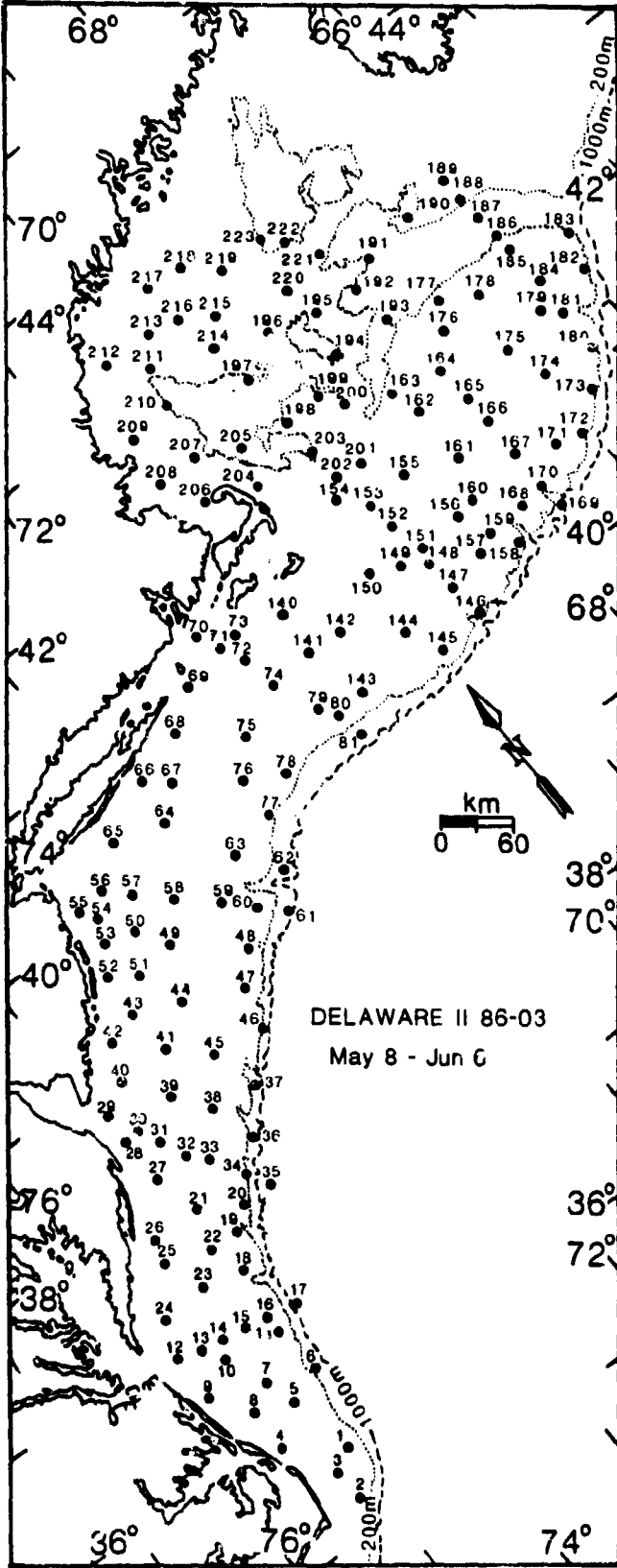


Figure 21. Station locations for *Delaware II* 1986-03 and *Delaware II* 1986-03 survey No. 67.

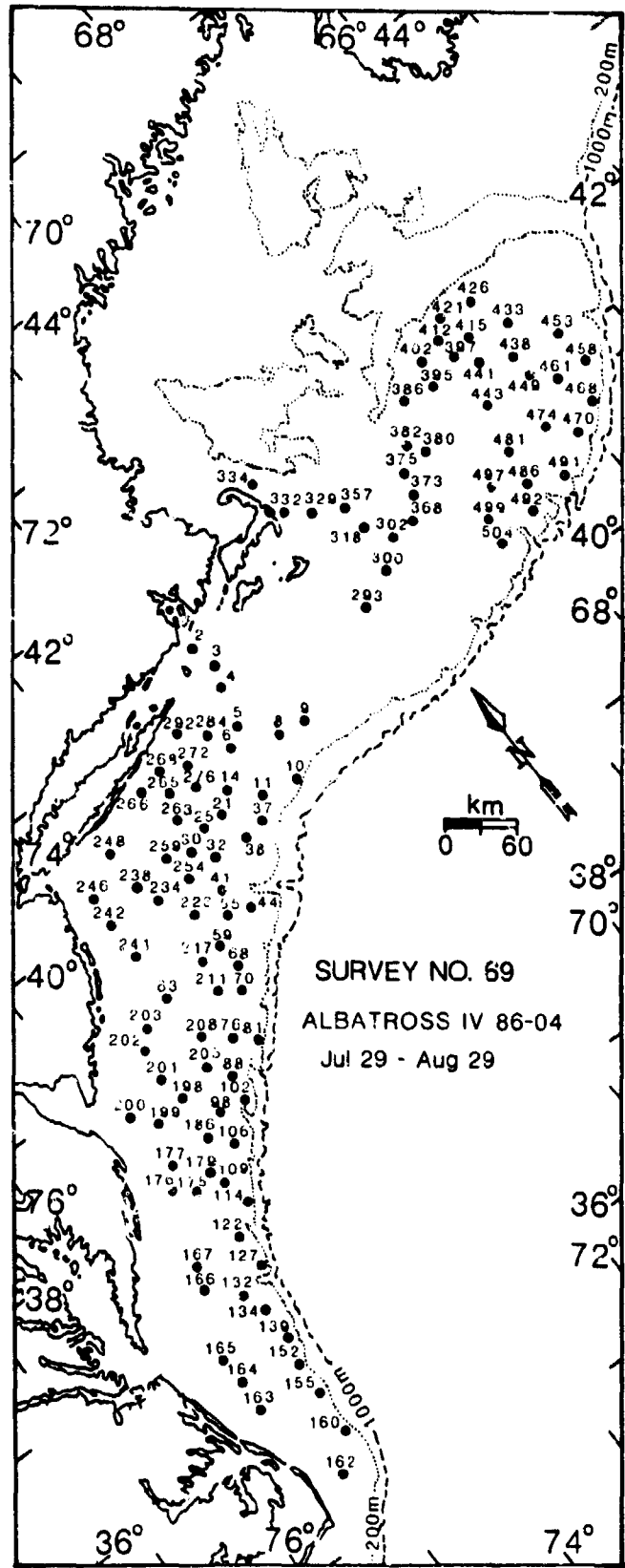
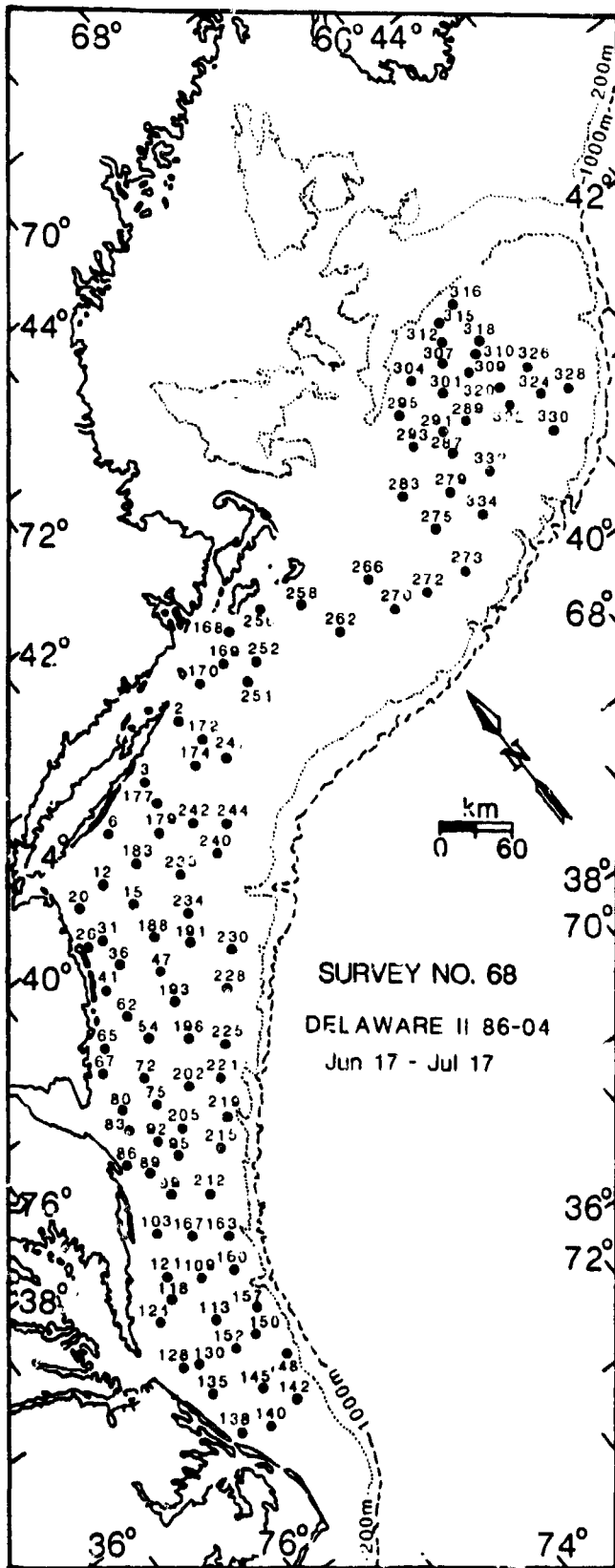


Figure 22. Station locations for *Delaware II* 1986-04 survey No. 68 and *Albatross IV* 1986-04 survey No. 69.



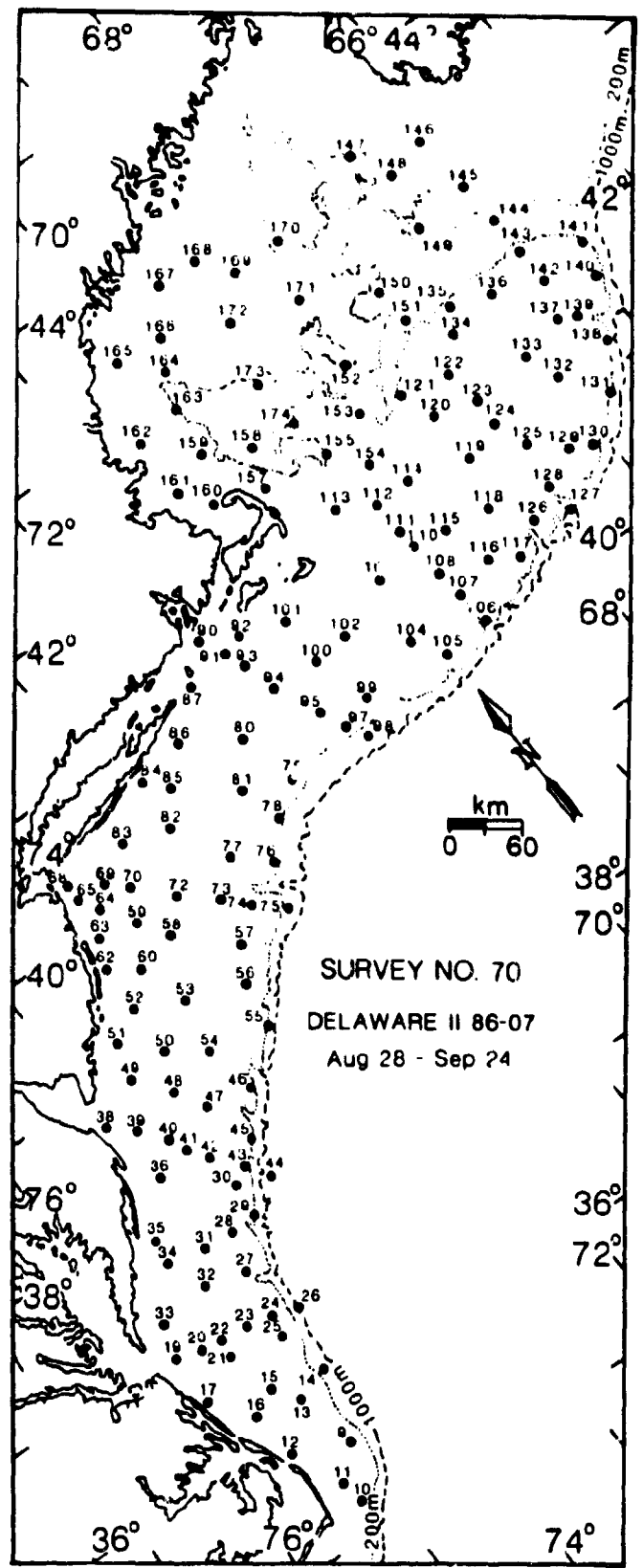
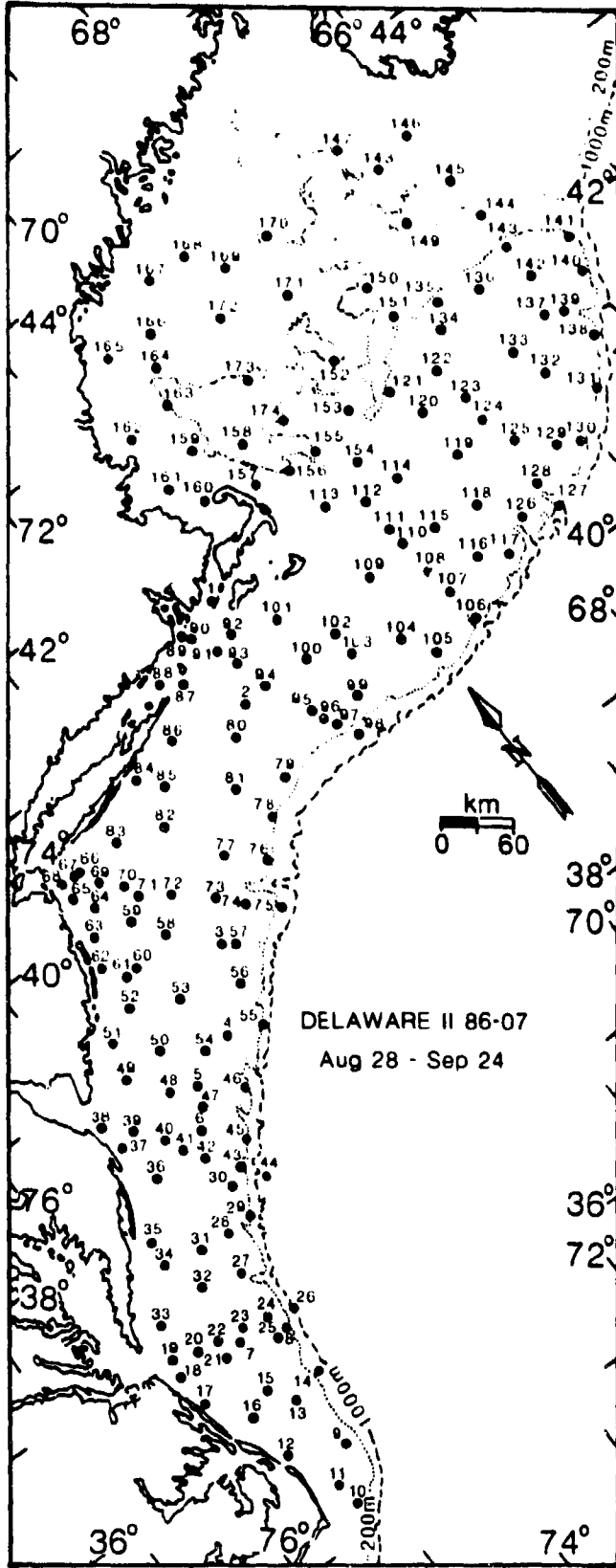


Figure 23. Station locations for Delaware II 1986-07 and Delaware II 1986-07 survey No. 70.



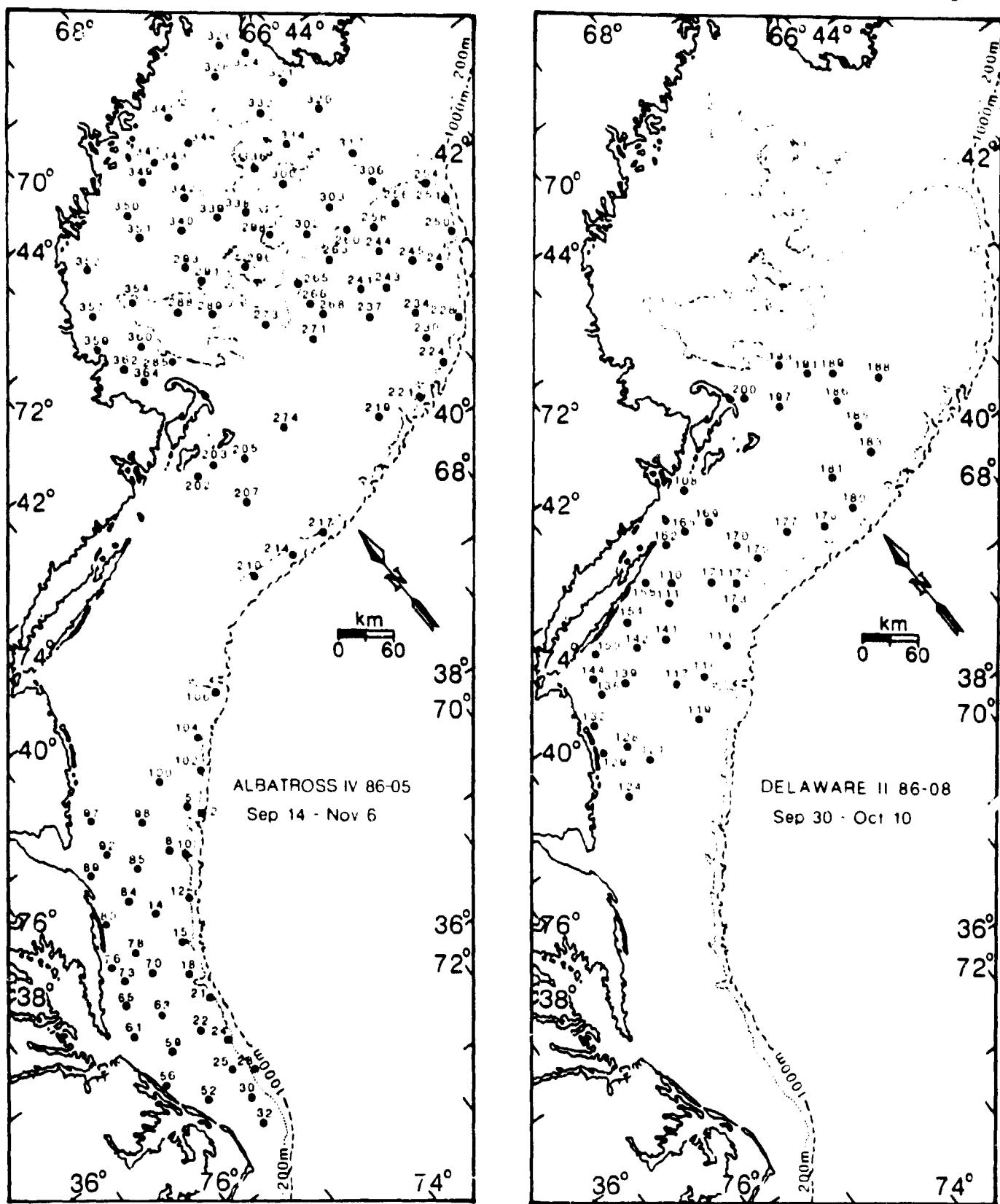


Figure 24. Station locations for *Albatross IV* 1986-05 and *Delaware II* 1986-08.

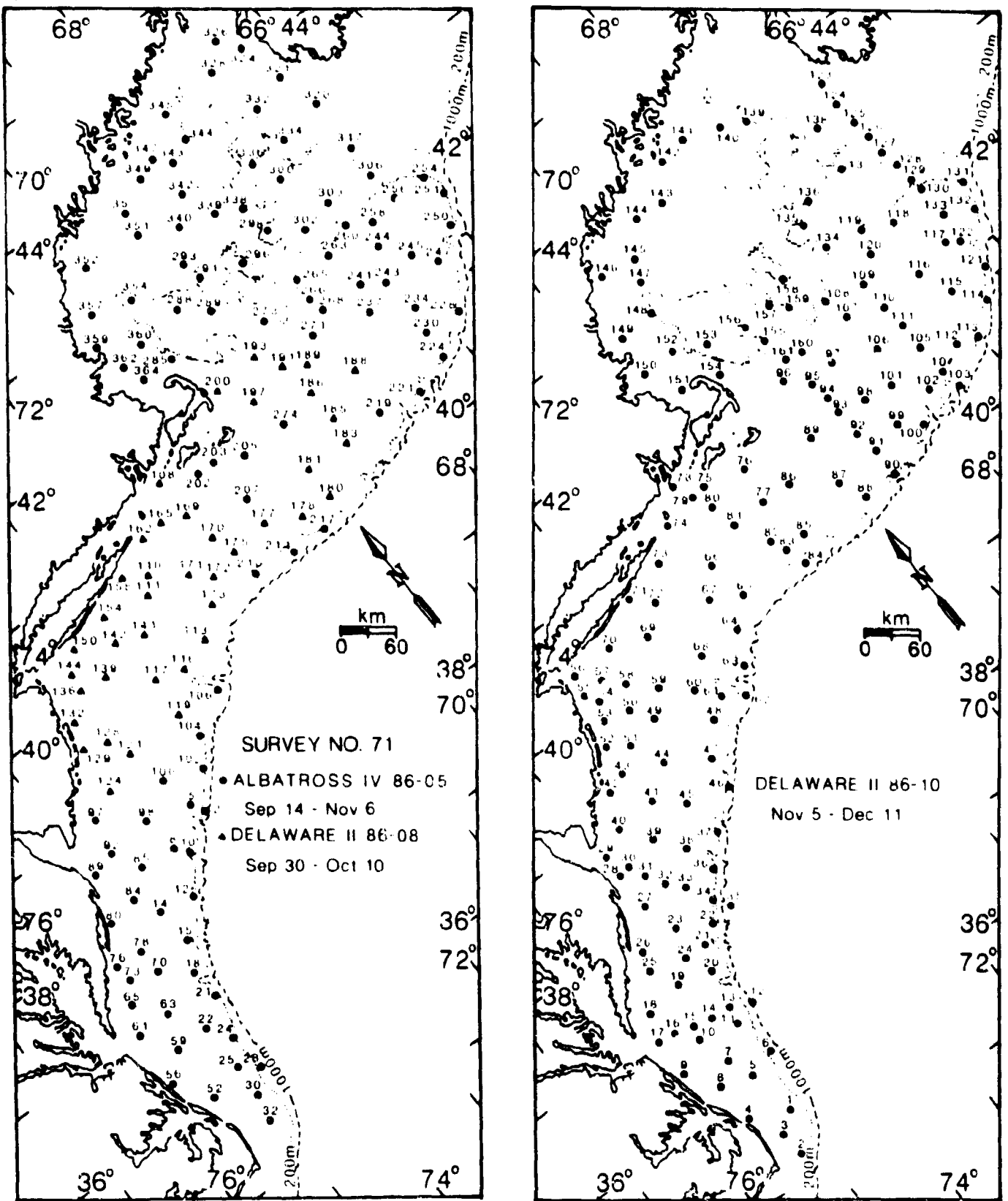


Figure 25. Station locations for *Albatross IV* 1986-05/*Delaware II* 1986-08 survey No. 71 and *Delaware II* 1986-10.

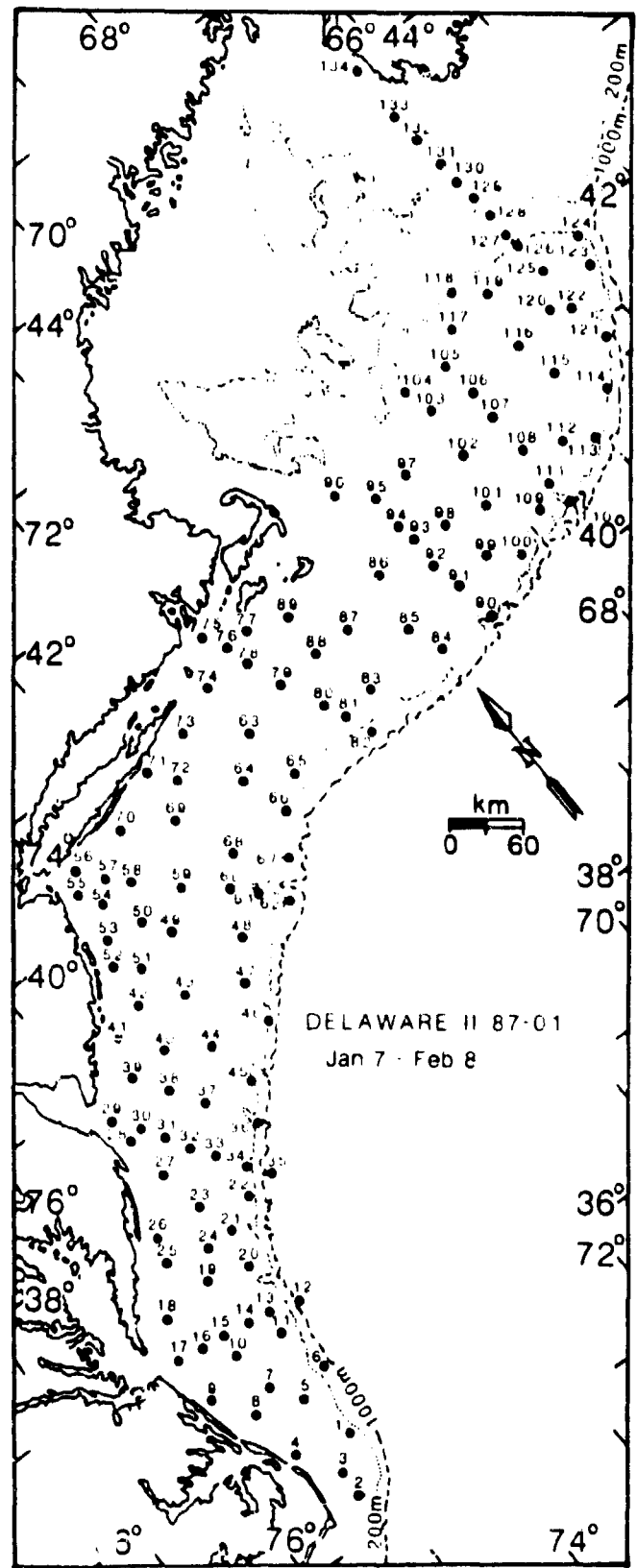
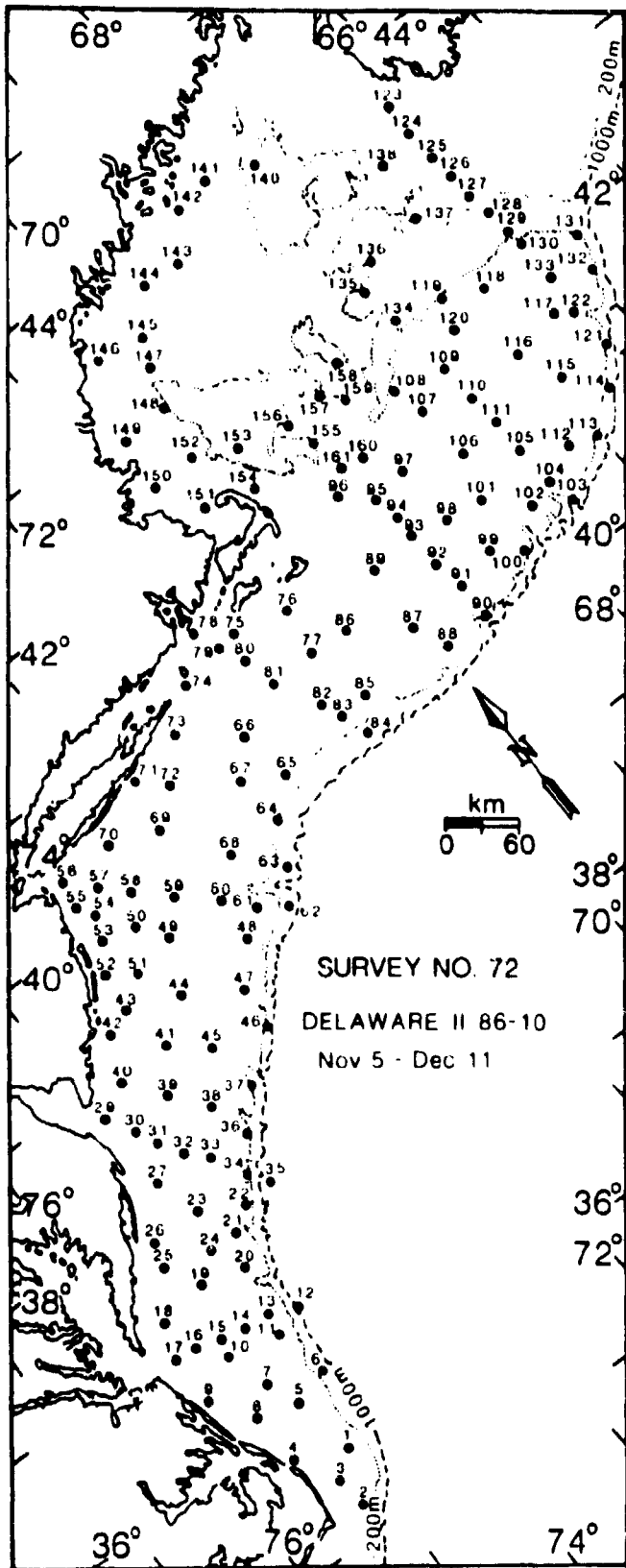


Figure 26. Station locations for *Delaware II* 1986-10 survey No. 72 and *Delaware II* 1987-01.

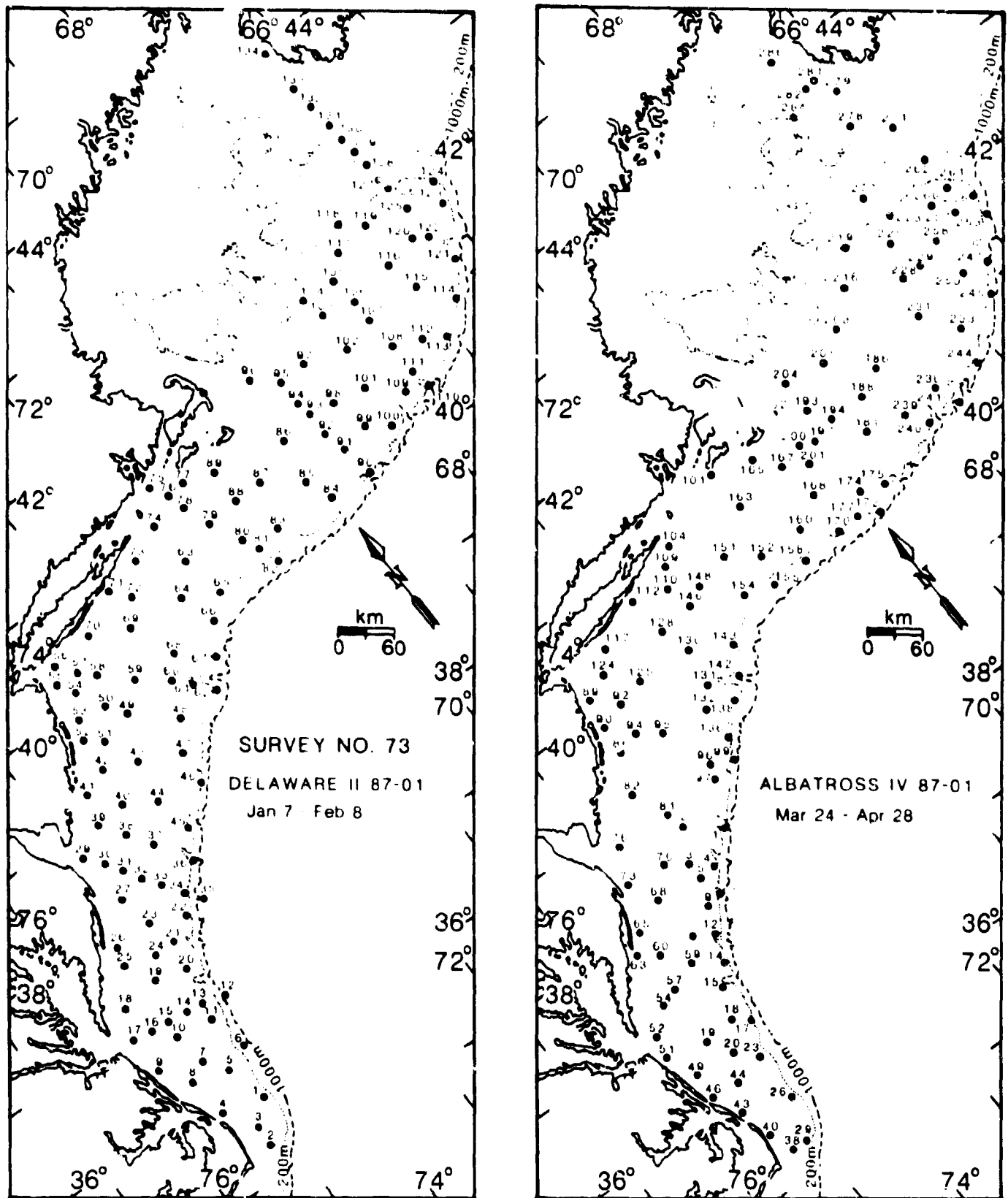


Figure 27. Station locations for *Delaware II* 1987-01 survey No. 73 and *Albatross IV* 1987-01.

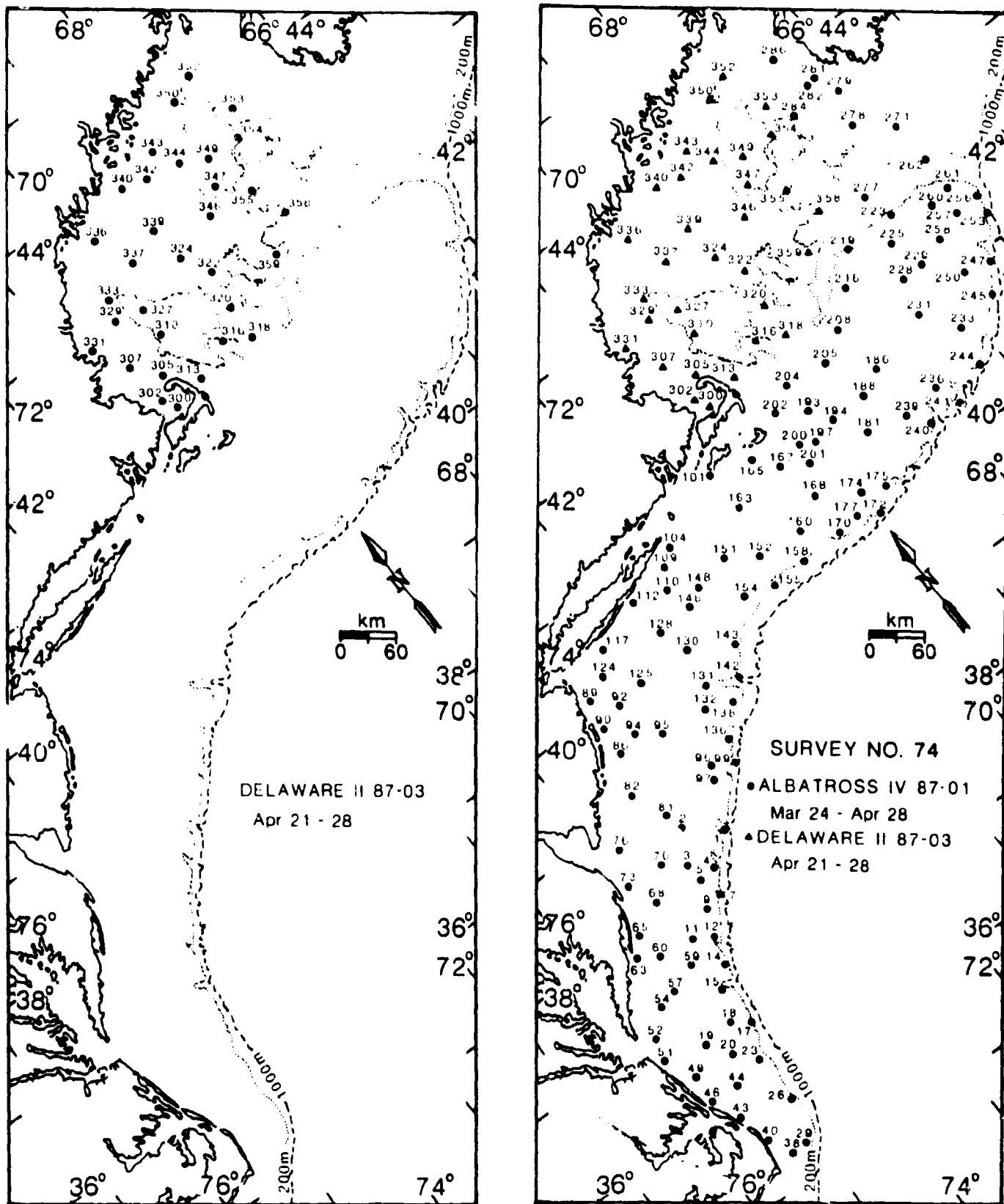


Figure 28. Station locations for Delaware II 1987-03 and Albatross IV 1987-01/Delaware II 1987-03 survey No. 74.

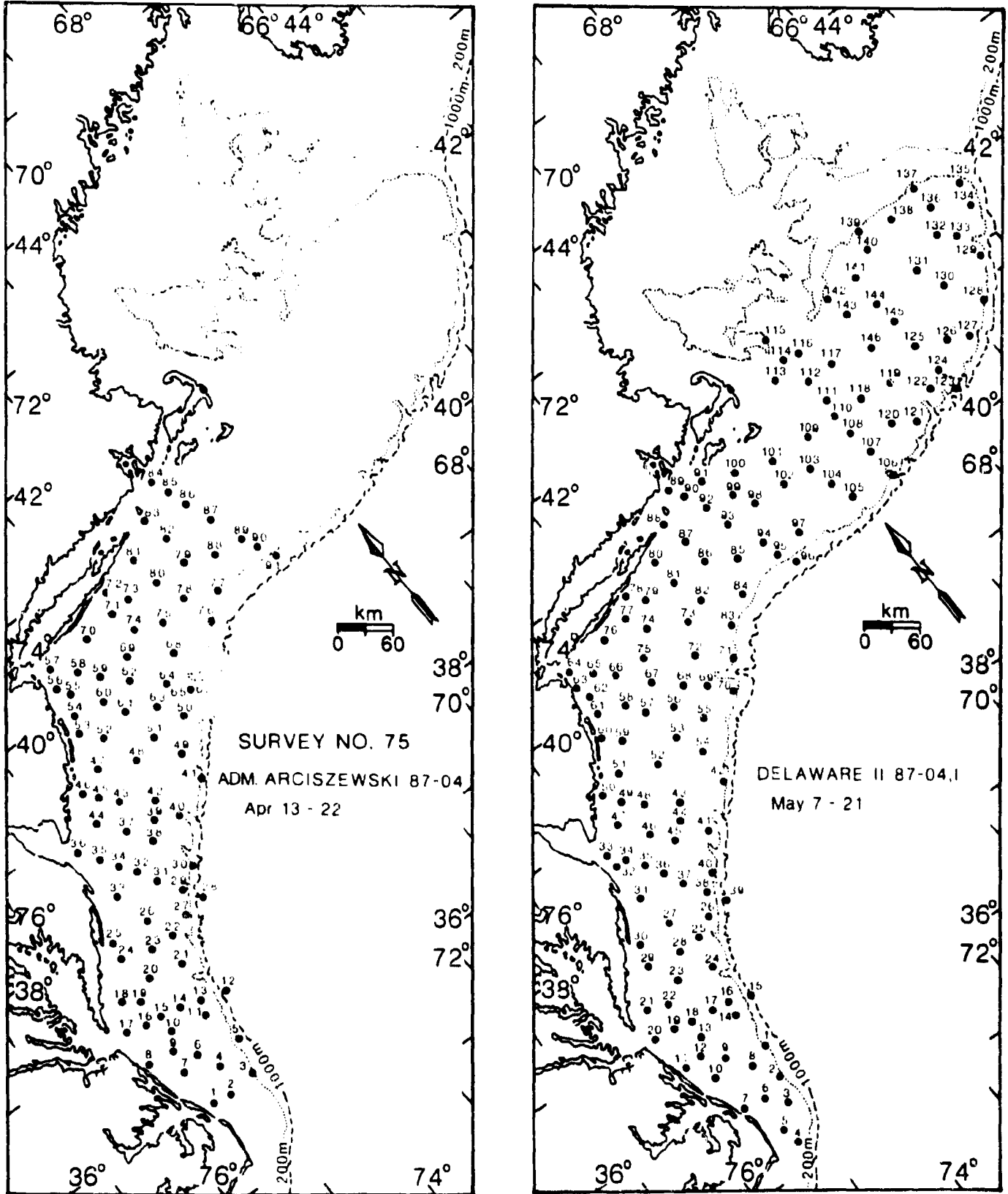


Figure 29. Station locations for Admiral Arciszewski 1987-04 survey No. 75 and Delaware II 1987-04 Part I.

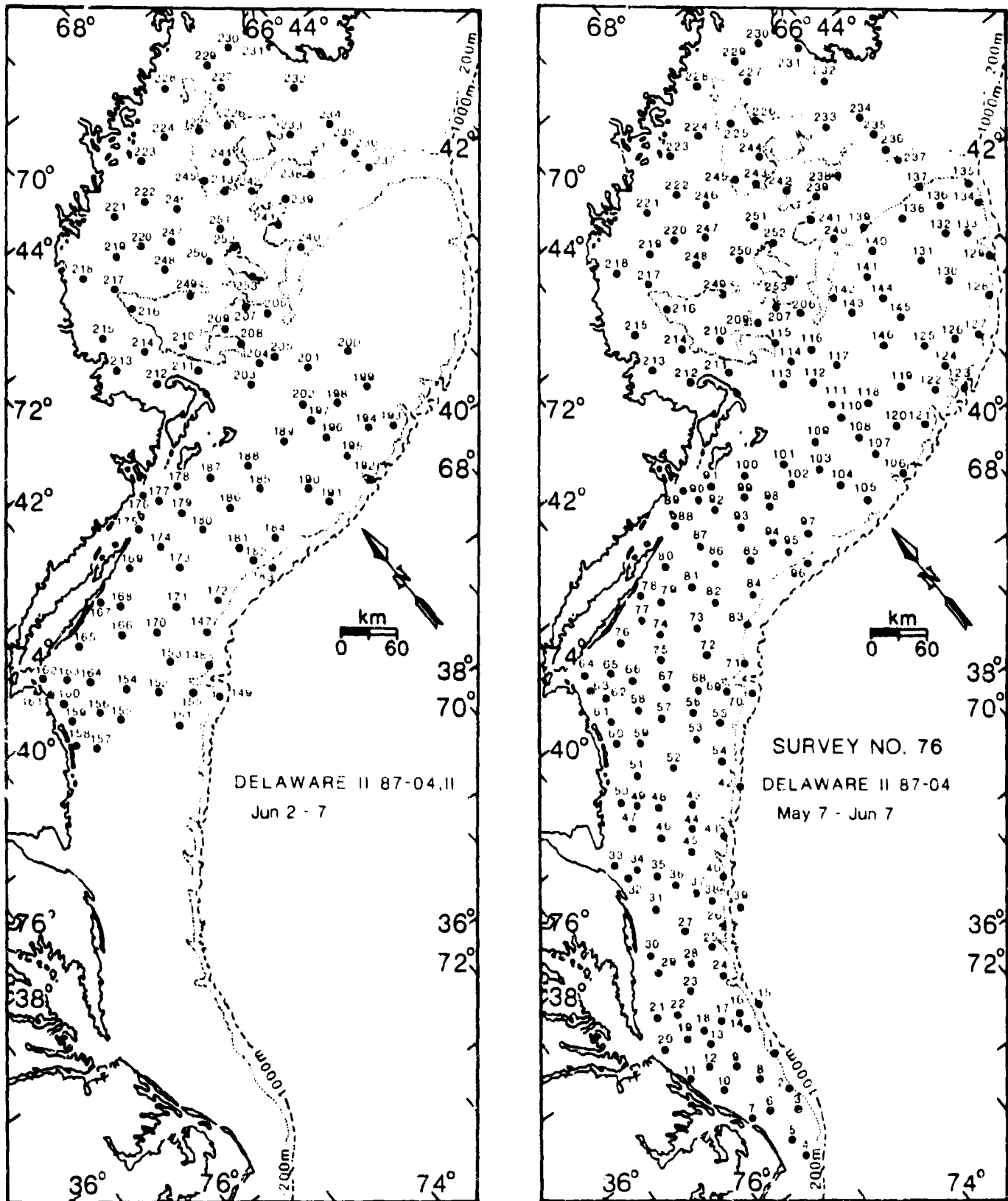


Figure 30. Station locations for Delaware II 1987-04 Part II and Delaware II 1987-04 survey No. 76.

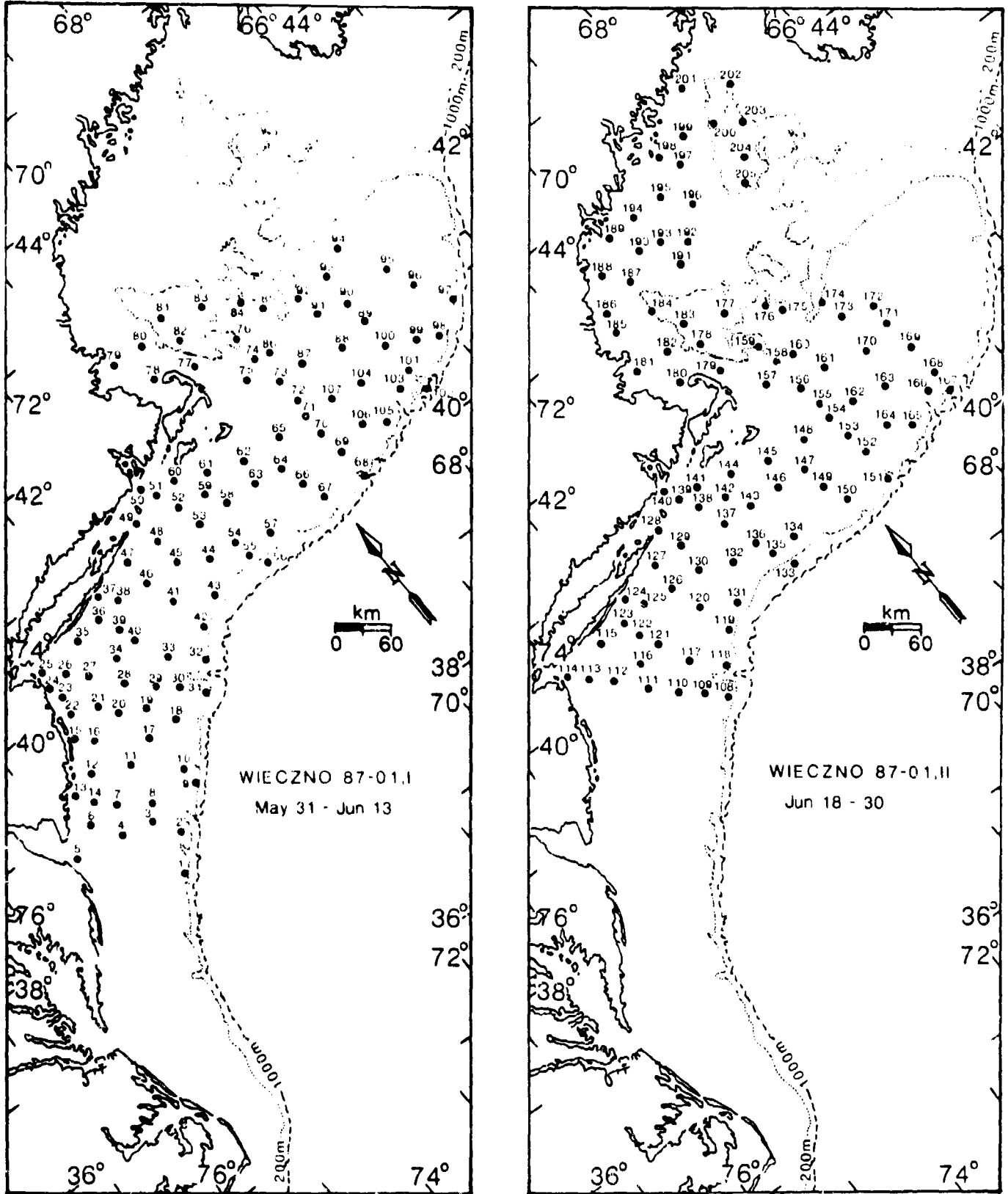


Figure 31. Station locations for *Wieczno* 1987-01 Part I and Part II.



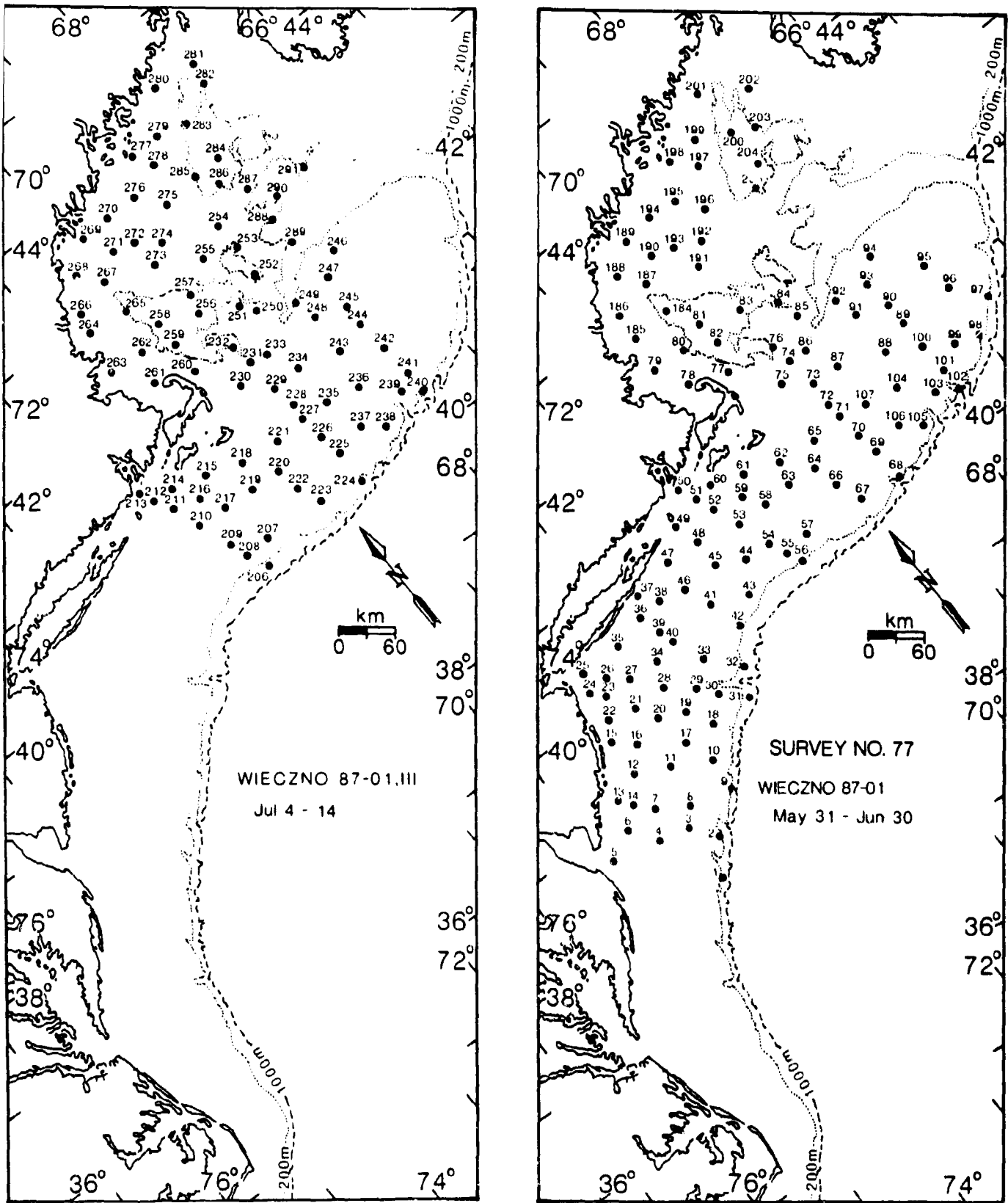


Figure 32. Station locations for *Wieczno* 1987-01 Part III and *Wieczno* 1987-01 survey No. 77.

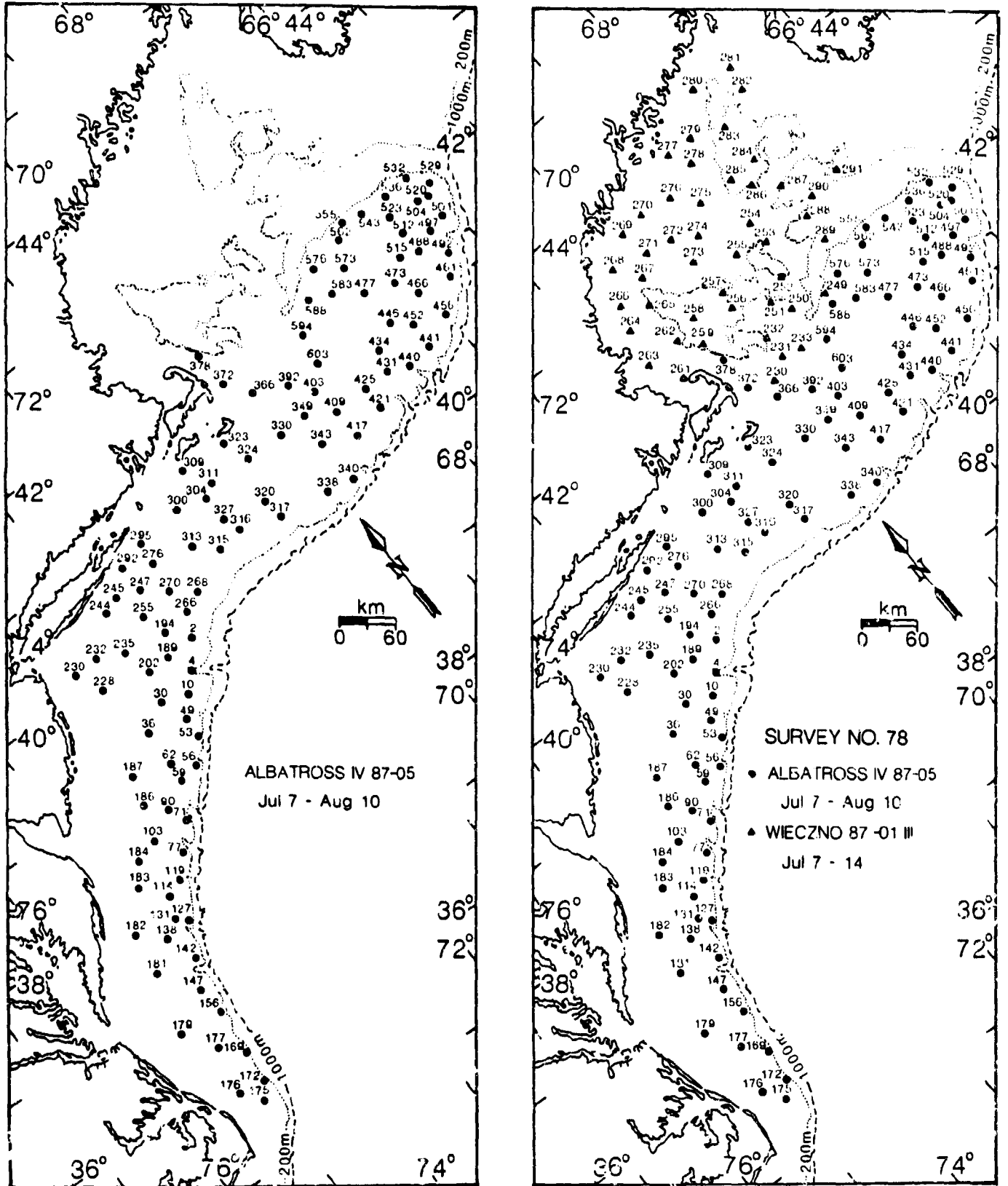


Figure 33. Station locations for *Albatross IV* 1987-05 and *Albatross IV* 1987-05/*Wieczno* 1987-01 (part III) survey No. 78.

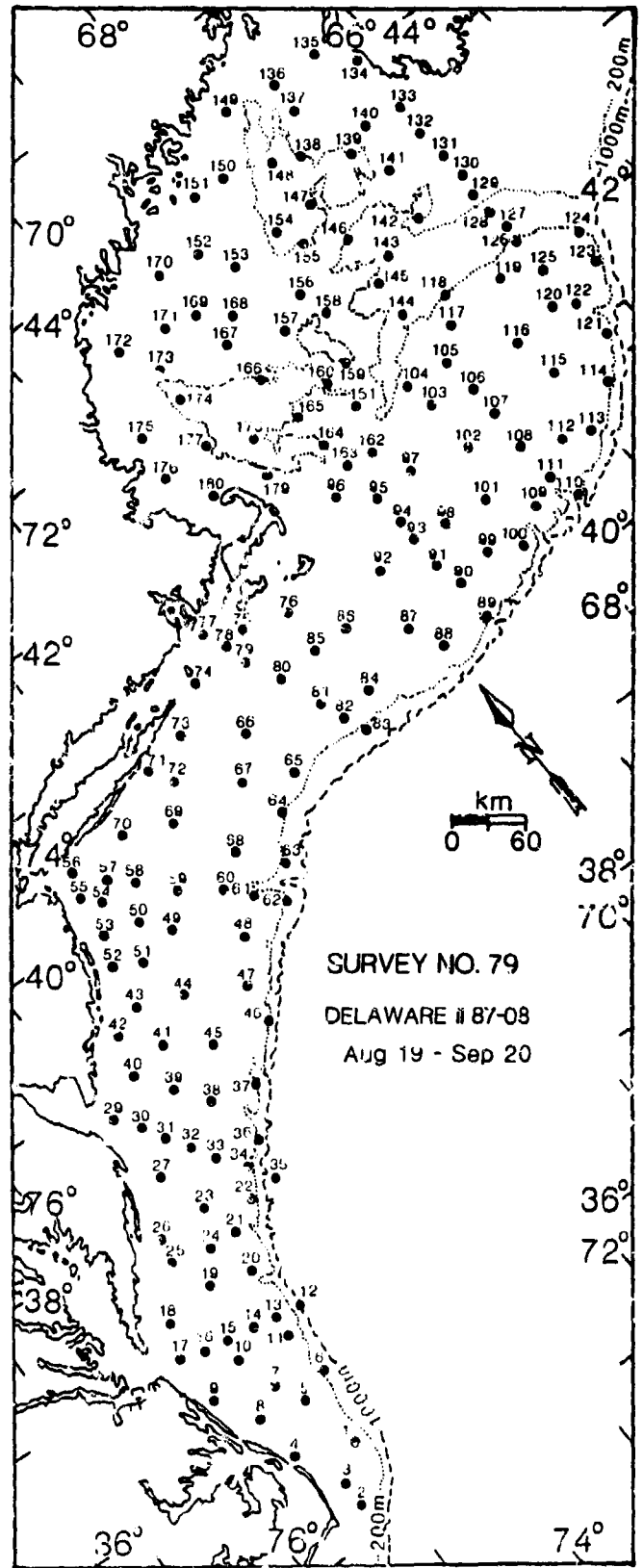
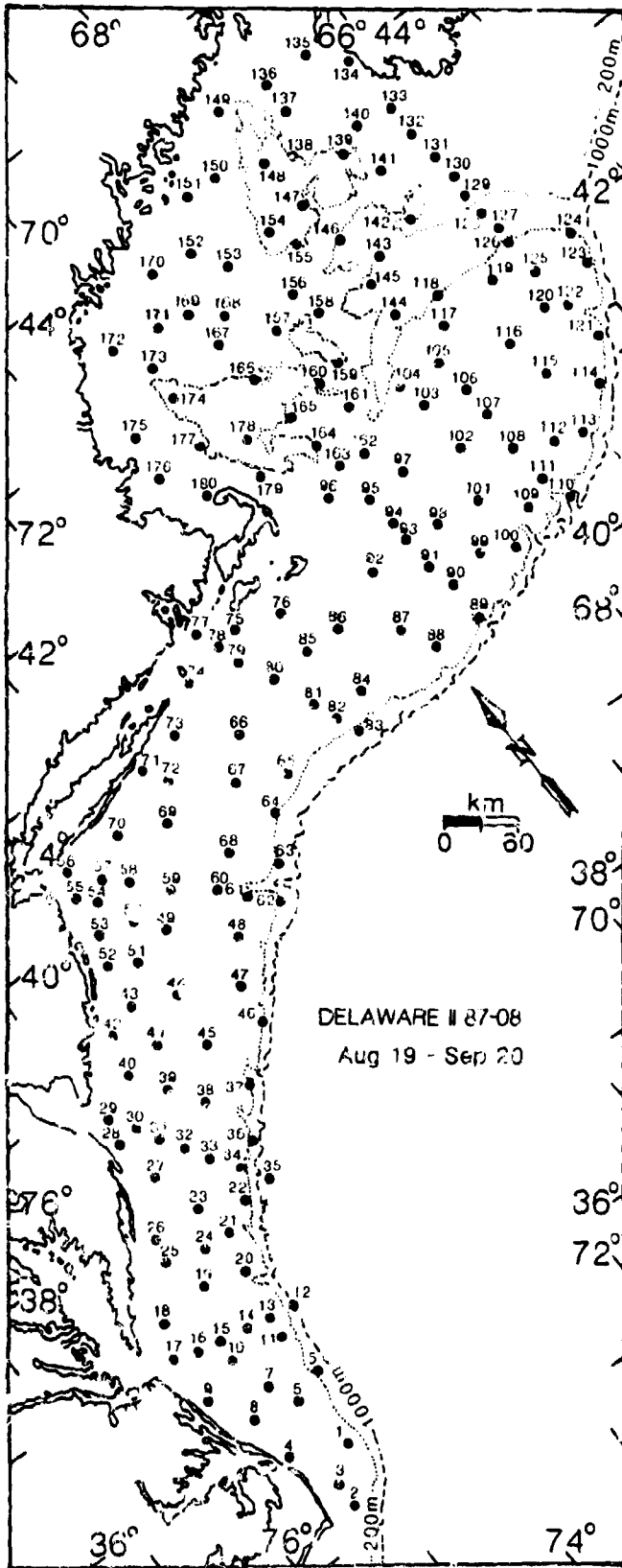


Figure 34. Station locations for Delaware II 1987-08 and Delaware II 1987-08 survey No. 79.

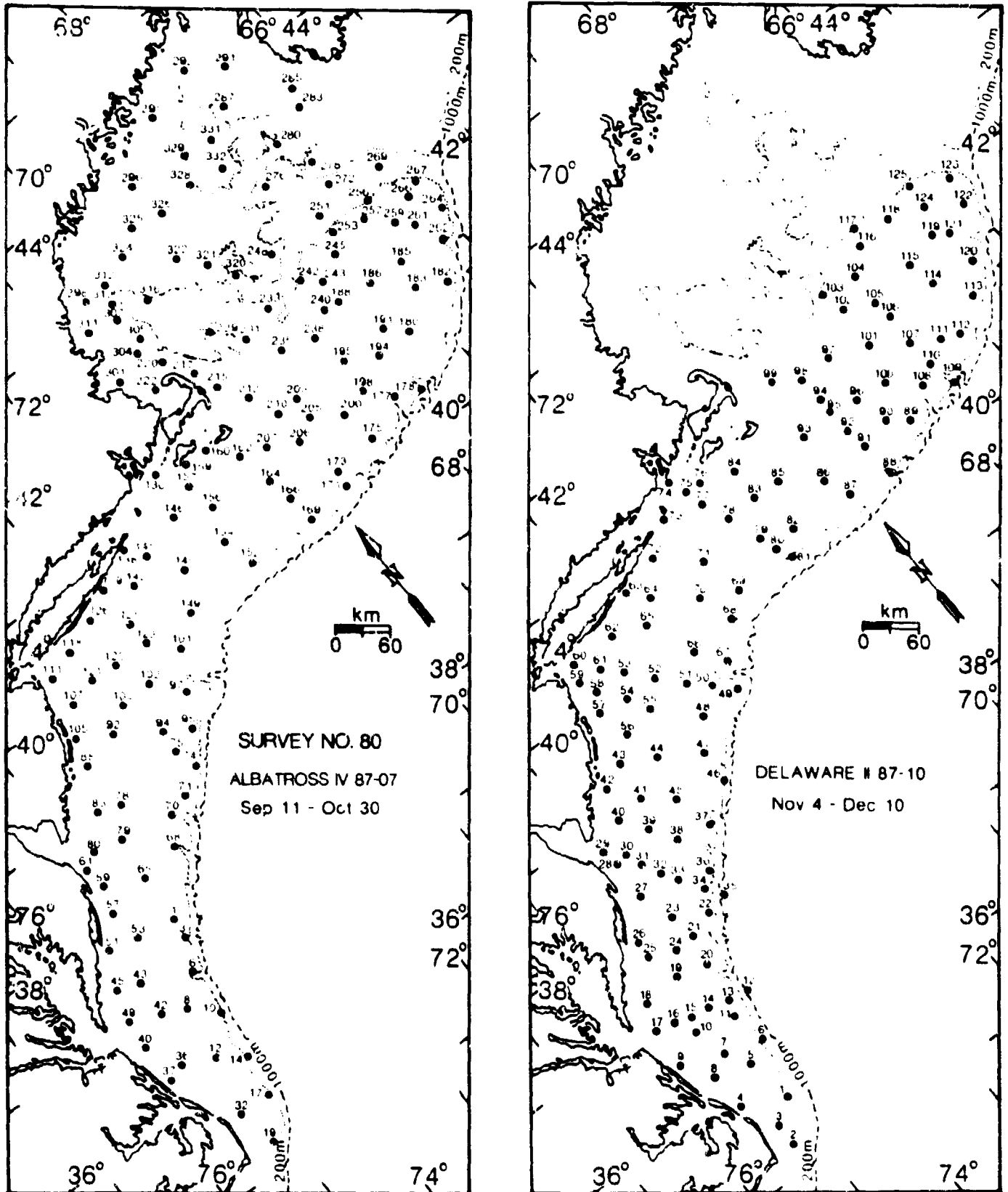


Figure 35. Station locations for *Albatross IV* 1987-07 survey No. 80 and *Delaware II* 1987-10.

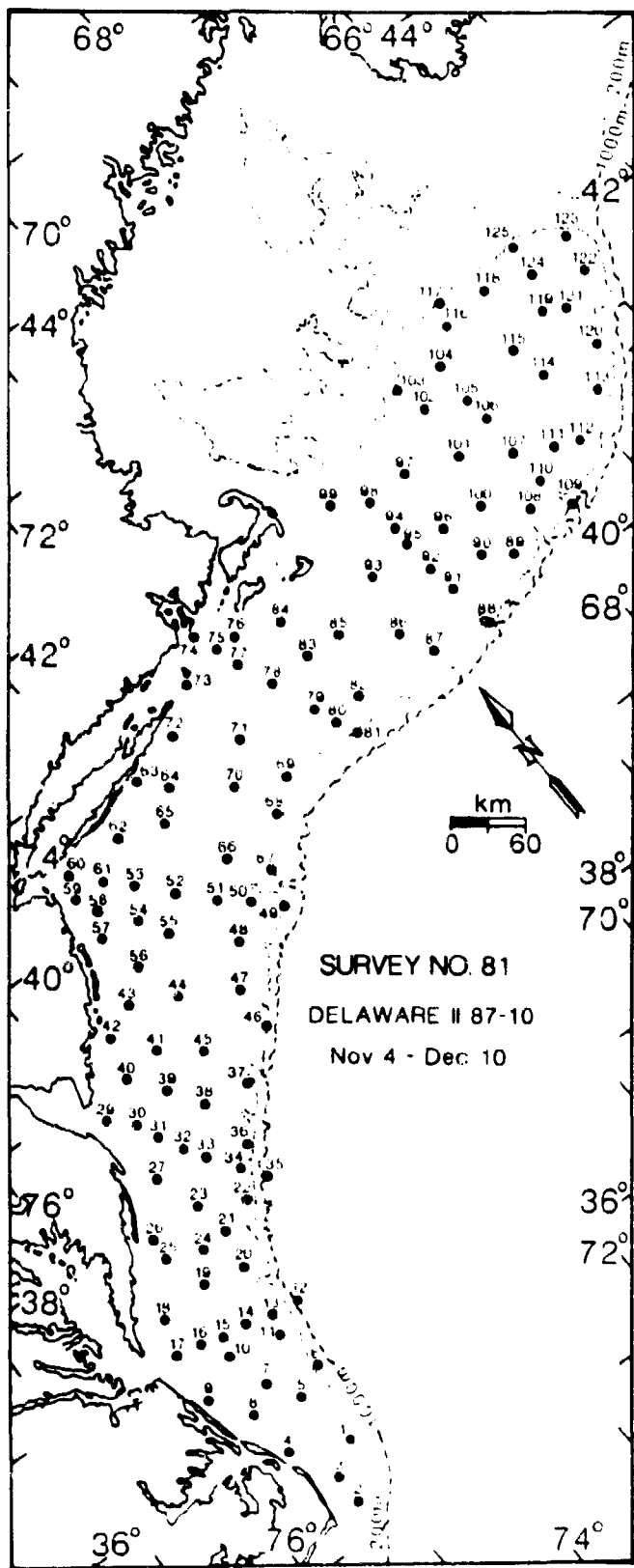


Figure 36. Station locations for *Delaware II* 1987-10 survey No. 81.

(continued from inside front cover)

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