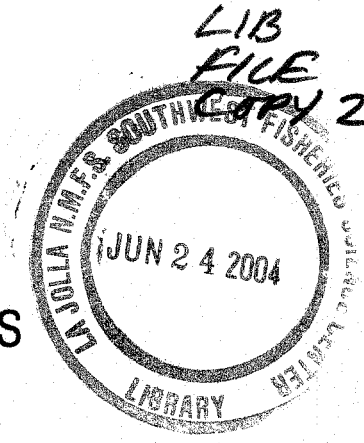

NOAA Technical Memorandum NMFS

JUNE 1988

REPORT OF ECOSYSTEM STUDIES CONDUCTED DURING THE 1987 EASTERN TROPICAL PACIFIC DOLPHIN SURVEY ON THE RESEARCH VESSEL *McARTHUR*

Victoria G. Thayer
Stephen B. Reilly
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NOAA-TM-NMFS-SWFC-114

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Center

NOAA Technical Memorandum NMFS

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INTRODUCTION

The National Marine Fisheries Service (NMFS) has the responsibility of assessing the status of dolphin stocks affected by the tuna purse-seine fishery in the eastern tropical Pacific (ETP). In 1987, the Southwest Fisheries Center (SWFC) conducted the second survey of a six-year survey program to monitor population trends in ETP dolphin stocks (Holt and Jackson, 1987). Two NOAA research vessels were used, the *McArthur* and the *David Starr Jordan* (hereafter referred to as *Jordan*). The vessels operated concurrently in the ETP from July 30 through December 10, 1987. Approximately the same area and time period will be surveyed during subsequent years of the program. As part of this monitoring program, the SWFC is studying the physical and biological environment inhabited by the dolphins. This ecosystem approach will facilitate the interpretation of dolphin population trends detected by these surveys, and will provide information necessary for understanding the biological basis of ETP dolphin distribution and abundance.

The physical oceanographic research of the program is being carried out jointly with NOAA's Atlantic Oceanographic and Meteorological Laboratory (AOML), as part of their long-term Eastern Pacific Ocean Climate Study (EPOCS) and Tropical Ocean Global Atmosphere (TOGA) programs.

This report describes the types of data collected and sampling techniques used, and summarizes data collected (including disposition of the data) for the environmental studies conducted aboard the *McArthur*. Results from the *Jordan* are available in a separate report (Thayer et al., 1988).

OBJECTIVES

The primary objective of the dolphin habitat monitoring portion of the program is to provide information about the effects of large-scale environmental variation on the estimates of trends in dolphin abundance. We are monitoring these environmental effects by examining relationships between dolphin distribution and oceanographic patterns and processes. We sample these phenomena, concurrently with the dolphin sighting survey, by measuring the regional and local changes in chlorophyll, nutrients, temperature, salinity, oxygen and the occurrence of seabirds and other animals. These parameters can fluctuate both seasonally and as result of large scale ocean-atmosphere interactions such as El Niño. Studying oceanographic patterns

and variability in the ETP concurrently with the fauna may reveal regional or local associations.

The studies of surface and subsurface physical properties which are conducted jointly with AOML also contribute to the objectives of the EPOCS and TOGA programs, which include developing the ability to forecast occurrences of El Niño Southern Oscillation phenomena.

STUDY AREA AND ITINERARY

The *McArthur* departed San Diego, California on 30 July 1987 and returned on 10 December 1987. The cruise was conducted in four legs of approximately 30 days each, with port calls in Hilo, Hawaii; and Panama City, Panama. The cruise tracks of both vessels (Figure 1) were chosen to maximize coverage of the known ranges of the two target species, the spotted dolphin (*Stenella attenuata*) and the spinner dolphin, (*Stenella longirostris*) in the ETP (Perrin, 1983).

The itinerary for the *McArthur* was as follows:

	Leg 1	
Departure	30 July 1987	San Diego, California
Arrival	27 August 1987	Hilo, Hawaii
	Leg 2	
Departure	2 September 1987	Hilo, Hawaii
Arrival	1 October 1987	Panama City, Panama
	Leg 3	
Departure	6 October 1987	Panama City, Panama
Arrival	3 November 1987	Panama City, Panama
	Leg 4	
Departure	9 November 1987	Panama City, Panama
Arrival	10 December 1987	San Diego, California

MATERIALS AND METHODS

Oceanography

While the ship was underway, temperature, salinity, and fluorescence of surface water were measured and recorded continuously in digital form and on strip-charts. Sea water was sampled continuously from a bow intake 3 meters below the surface. Temperature and salinity were measured with an Inter-

Ocean Thermosalinograph Model 541.[1] *In vivo* fluorescence was measured with a Turner Designs fluorometer and recorded on a data acquisition system consisting of an AI08 A/D board (Industrial Computer Source) connected to an IBM PC compatible microcomputer. Discrete water samples were collected at regular intervals to verify continuous data.

Conductivity, temperature and depth (CTD) device casts were made approximately two times per night using a Plessey CTD. Each CTD cast lasted approximately 60 minutes. The CTD was lowered to 1000 meters and sensors connected to shipboard computers measured conductivity (salinity), temperature, and pressure (depth).

Eleven Niskin bottles on the CTD rosette collected water from discrete depths (20, 40, 60, 80, 100, 125, 150, 250, 350, 500 and 1,000 meters). At each CTD station, surface chlorophyll and nutrient samples were collected from the ship's seawater intake. Samples were collected at each CTD station for chlorophyll and nutrients (nitrate, nitrite, phosphate and silicate) in the following quantities: chlorophyll, 8 280 ml bottles/cast; and nutrient, 11 50 ml or 125 ml bottles/cast. Extracted chlorophyll and phaeophytin were measured with the Turner 111 fluorometer. Nutrient samples were collected and frozen immediately for later analysis. Three 150 ml salinity samples were collected and analyzed from each cast for the purpose of CTD calibration.

Expendable bathythermograph (XBT) drops were made daily at 0000, 0600, 1200, and 1800 hours (local time). On about half of the sea days, when the vessel was in an area of particular interest for dolphin distribution studies, additional XBTs were deployed at 0900 and 1500 hrs. A SEAS (Shipboard Environmental data Acquisition System) XBT system was utilized. XBT data were transmitted to shore via the SEAS every four hours. Position, time, and date for each drop were recorded on NOAA XBT logs and tapes.

Four satellite-tracked drift buoys were deployed at predetermined locations. These buoys transmit signals which are received by NOAA satellites and transferred to the ARGOS service facility in Toulouse, France. The deployments, arranged by Don Hansen of AOML, were for EPOCS and TOGA investigations of surface currents.

Biological Observations

Two concurrent visual seabird censuses were conducted during the 1987 cruise. As part of a long-term ETP seabird distribution study (R. L. Pitman, SWFC), sightings of all marine birds were recorded by selected marine mammal observers experienced in

---

[1]Reference to trade names does not imply endorsement by NMFS.

seabird censusing, during the third and fourth legs of the cruise. Seabirds were censused during and incidental to the regular dolphin survey, using pedestal-mounted 25X Fujinon binoculars. All birds seen were tallied with this method, regardless of distance from the ship. Additional information was recorded on interspecific associations with other birds and mammals, as well as behavior, plumage, and direction of travel.

A separate seabird abundance census was conducted utilizing standard strip-transect seabird census methodology. Volunteer observers stood non-continuous shifts for a minimum total of 6 hours a day (weather permitting) on the flying bridge. The observers used hand-held 8X Fujinon binoculars and recorded all birds which passed within 300 meters of the ship. Species, number, and behavior of birds were recorded as well as associations of seabirds with marine mammals, fish, or flotsam.

Manta tows were conducted each night immediately following the CTD station, using a 505 μm-mesh manta net with a mouth opening of 15 cm X 86 cm. A General Oceanics digital flowmeter was suspended in the center of the net mouth. The net was towed from the starboard hydrographic wire for 15 minutes. Samples were preserved in formalin, labeled and stored.

One of the marine mammal identification experts surveyed and sampled surface organisms during nightly CTD stations. The primary purpose of this survey was to collect information on the occurrence, relative abundance and distribution of flying fishes in the ETP. Two 500-watt lamps were suspended over the side of the ship to attract animals, and a long-handled dip net was used to collect them. Other information collected during these stations included species observed, relative abundance, and pertinent environmental data (e.g. sea surface temperature and salinity, sea state, and moon phase).

As part of a long-term study of the distribution of sea turtles in the ETP (R. L. Pitman, SWFC), all sightings of marine turtles made incidental to the systematic marine mammal and seabird surveys were recorded during the cruise. Under normal field conditions, specific identification of sea turtles other than leatherbacks (*Dermochelys coriacea*) is difficult. Therefore, in order to obtain a sample of identified individuals, turtles that passed close by the ship (usually within 50 meters) were photographed with a telephoto lens for future identification.

Fish stomach contents were collected opportunistically for a food habits study. Fish were caught by rod and reel or trolling. Fish were identified, sexed, and measured. Associations with flotsam, other fish, bird flocks or mammals were recorded. Identifiable stomach contents were identified and measured. Unidentified stomach contents were preserved in alcohol for later identification.

RESULTS

Holt and Jackson (1987) reported on the dolphin assessment methods and data collected from the 1987 *McArthur* cruise.

Table 1 lists the total numbers of oceanographic and biological samples, by category, collected on the *McArthur*.

Oceanography

Digital and strip-chart records of continuous surface data from the thermosalinograph and fluorometer are now being analyzed at the SWFC.

Figure 2 shows the location of the 161 CTD casts. Analysis of discrete salinity samples for CTD calibration was performed on the *McArthur*. Preliminary uncalibrated CTD temperature and salinity data are included in Appendix A.

Discrete chlorophyll samples were processed at sea and data were processed at the SWFC in La Jolla. Results are presented in Appendix A. Frozen nutrient samples were shipped to Monterey Bay Aquarium Research Institute and are now being analyzed. An addendum containing nutrient and calibrated CTD data will follow this report.[2] A forthcoming data report (Thomas and Thayer, in preparation) will detail the CTD data collected on board both the *Jordan* and the *McArthur* for 1986 and 1987.

XBT data are being processed by AOML. These data were digitally stored on a computer. Figure 3 shows XBT deployment locations. XBT data were sent by the SEAS system to the National Ocean Service, NOAA[3] and are available from them through standard data transfer channels.

Table 2 lists the locations and dates of the drifting buoy deployments. Figure 4 shows the tracks of these buoys.

Biological Observations

From 6 October through 10 December, 11,673 seabirds of 53 species were seen during 155 observation hours of the seabird distribution survey (Table 3). During the seabird abundance survey, conducted from 30 July through 10 December, 17,392

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[2]Persons interested in receiving this addendum should contact the SWFC.

[3]Persons wishing to receive copies of this information should write to: National Ocean Service; SEAS Office, N/OS1, Rm. 103, 6001 Executive Blvd., Rockville, MD 20852.

seabirds of 56 species were sighted during 585 hours of observation (Table 4). The most abundant species of seabirds detected during the seabird abundance survey were wedge-tailed shearwater (*Puffinus*), black tern (*Chlidonias niger*), Juan Fernandez petrel (*Pterodroma externa*), and sooty tern (*Sterna fuscata*), (see Table 5). More extensive analysis of these data will be forthcoming.

Manta tow samples are now being sorted and will subsequently be identified at the SWFC.[4]

Figure 5 shows the location of 134 dip net stations occupied during the cruise. Table 6 summarizes observations and specimens collected during these stations. Approximately 446 flying fish of at least 10 species were collected. These will be analyzed at SWFC and ultimately donated to the Marine Vertebrate Collection of Scripps Institution of Oceanography. Several hundred squids, mostly juvenile and subadults, were also collected. These will be identified at SWFC and eventually stored at the Santa Barbara Natural History Museum.

The locations of 75 individual sea turtle sightings are plotted in Figure 7. Sightings included 1 leatherback turtle (*Dermochelys coriacea*), 9 olive ridleys (*Lepidochelys olivacea*), and 66 unidentified sea turtles.

A total of 69 fish was caught for stomach content analysis. Data are now being analyzed at SWFC.

ACKNOWLEDGEMENTS

Many people contributed to the success of this cruise. We especially wish to thank the following people, whose invaluable efforts made this project possible: the officers and crew of the NOAA Ship *McArthur* for their considerable time and skilled efforts, P. Stangl for providing the necessary logistical support, and B. Engstrand and B. Watkins for their support in procurement. Special thanks are extended to Lt. T. Wright, J. Ellingson, L. Gearin and J. Fleishman of the *McArthur*, for their logistical assistance, data collection, data entry and editing. W. Krug acted as a liason between AOML, Scripps Institution of Oceanography, Pacific Marine Center and Southwest Fisheries Center. L. O'Brien offered exceptional assistance in bird data processing. R. Rasmusson facilitated data entry for many of the data. R. Holland contributed most of the plots and assisted in the computer logistics and data editing. K. Blum was of assistance in vessel staging and data editing. R. Holt and D. DeMaster contributed critical reviews. L. Prescott and C. Ratcliffe helped type this manuscript. C. Ratcliffe also typed

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[4]Questions concerning these samples may be addressed to Dr. H. Geoffrey Moser at the SWFC.

many of the tables. We are grateful to I. Barrett, J. Carr, D. DeMaster and B. Remington for their continued support during the cruise preparations and during the cruise itself.

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Table 1. Oceanographic and biological data collected, *McArthur*, 30 July-10 December, 1987[1].

	XBT	CTD	Chlor a	Nutrients	Manta Tows	Number Flying Fish Collected	Fish Stomachs Sampled	Turtle Sightings	Abundance Survey Seabird Sightings	Distrib. Survey Seabird Sightings
LEG I	165	31	103	196	21	47	-	1	3,127	-
LEG II	163	39	256	364	23	134	-	3	6,673	-
LEG III	146	49	365	509	26	87	34	60	5,468	5,709
LEG IV	150	42	310	433	22	178	35	11	2,114	5,964
TOTALS	624	161	1,034	1,502	92	446	69	75	17,382	11,673

1. Continuous sea surface fluorometry, temperature and salinity measured during all 4 legs

Table 2. Deployment locations of drifting buoys, *McArthur*, 30 July-10 December, 1987.

DATE	Latitude	Longitude
15 October	2° 37.2 N	95° 01.2 W
17 October	0° 06.0 N	97° 30.0 W
28 October	5° 00.0 S	86° 06.0 W
28 November	0° 07.2 S	124° 38.4 W

Table 3. Summary of seabird distribution survey, *McArthur*, 6 October-10 December, 1987.

	Leg III	Leg IV	Total
Obs. hours	74.25	80.75	155.00
# birds	5,709	5,964	11,673
#Spp.	42	43	53

Table 4. Summary of seabird abundance survey, *McArthur*, 30 July-10 December, 1987.

	Leg I	Leg II	Leg III	Leg IV	Total
Obs. hours	132.25	125.62	153.48	173.72	585.07
# birds	3,127	6,673	5,468	2,114	17,382
#Spp.	19	39	39	40	56

Table 5. Summary of seabird species seen during seabird abundance survey, listed in descending order of abundance, McArthur, 30 July-10 December 1987.

Common Name	Scientific Name	Sum of Number Seen
WEDGE-TAILED SHEARWATER	PUFFINUS PACIFICUS	5114
BLACK TERN	CHLIDONIAS NIGER	3650
JUAN FERNANDEZ PETREL	PTERODROMA EXTERNA	2671
SOOTY TERN	STERNA FUSCATA	1623
WHITE-RUMPED STORM PETREL	HYDROBATID SP.	1388
LEACH'S STORM-PETREL	OCEANODROMA LEUCORHOA	562
GALAPAGOS STORM-PETREL	OCEANODROMA TETHYS	380
MASKED BOOBY	SULA DACTYLATRA	208
RED-FOOTED BOOBY	SULA SULA	197
UNID. SHEARWATER	PUFFINUS SP.	150
UNID. FRIGATEBIRD	FREGATA SP.	145
WHITE-WINGED PETREL	PTERODROMA LEUCOPTERA	110
BROWN BOOBY	SULA LEUCOGASTER	101
UNID. NODDY TERN	ANOUS SP.	93
UNID. PTERODROMA	PTERODROMA SP.	92
TAHITI PETREL	PTERODROMA ROSTRATA	64
HARCOURT'S STORM-PETREL	OCEANODROMA CASTRO	59
MARKHAM'S STORM-PETREL	OCEANODROMA MARKHAMI	53
WILSON'S STORM-PETREL	OCEANITES OCEANICUS	52
UNID. PHALAROPE	PHALAROPUS FULICARIUS/LOBATUS	51
ARCTIC TERN	STERNA PARADISAEA	50
RED-BILLED TROPICBIRD	PHAETHON AETHEREUS	47
WHITE TERN	GYGIS ALBA	42
BRIDLED TERN	STERNA ANAETHETUS	41
UNID. JAEGER	STERCORARIUS SP.	40
ARCTIC OR COMMON TERN	STERNA PARADISAEA/HIRUNDO	28
COMMON TERN	STERNA HIRUNDO	21
RED PHALAROPE	PHALAROPUS FULICARIUS	21
WESTERN GULL	LARUS OCCIDENTALIS	21
BLACK-FOOTED ALBATROSS	DIOMEDEA NIGRIPES	20
SOOTY SHEARWATER	PUFFINUS GRISEUS	20
FRANKLIN'S GULL	LARUS PIPIXCAN	19
RED-TAILED TROPICBIRD	PHAETHON RUBRICAUDA	18
BLACK OR MARKHAM'S STORM-PETREL	OCEANODROMA MELANIA/MARKHAMI	16
KERMADEC OR HE RALD PETREL	PTERODROMA NEGLECTA/HERALDICA	14
PARKINSON'S PETREL	PROCELLARIA PARKINSONI	14
LAUGHING GULL	LARUS ATRICILLA	13
BLACK NODDY	ANOUS TENUIROSTRIS	11
BOOBY SP.	SULA SP.	11
UNID. SKUA	CATHARACTA SP.	11
POMARINE JAEGER	STERCORARIUS POMARINUS	9
GREAT FRIGATEBIRD	FREGATA MINOR	8
PARASITIC JAEGER	STERCORARIUS PARASITICUS	8
LEAST STORM-PETREL	HALOCYPTENA MICROSOMA	7
MAGNIFICENT FRIGATEBIRD	FREGATA MAGNIFICENS	7
SABINE'S GULL	XEMA SABINI	7
UNID. GULL	LARUS SP.	7
WAVED ALBATROSS	DIOMEDEA IRRORATA	7
WHITE-THROATED STORM-PETREL	ESOFREGETTA ALBIGULARIS	7
COOK'S PETREL	PTERODROMA COOKII	6
NEW ZEALAND SHEARWATER	PUFFINUS BULLERI	6

Table 5. Summary of seabird species seen during seabird abundance survey, listed in descending order of abundance, McArthur, 30 July-10 December 1987.

Common Name	Scientific Name	Sum of Number Seen
PELAGIC CORMORANT	PHALACROCORAX PELAGICUS	6
WHITE-BELLIED STORM-PETREL	FREGETTA GRALLARIA	6
BULWER'S PETREL	BULWERIA BULWERI	5
UNID. TROPIC BIRD	PHAETHON SP.	5
PINK-FOOTED SHEARWATER	PUFFINUS CREATOPUS	4
TOWNSEND'S SHEARWATER	PUFFINUS AURICULARIS	4
UNID. BIRD (NON-MARINE AND NON-PASSERINE)		4
BLUE-FOOTED BOOBY	SULA NEBOUXII	3
LEACH'S STORM-PETREL (DARK-RUMPED)	OCEANODROMA LEUCORHOA	3
LONG-TAILED JAEGER	STERCORARIUS LONGICAUDUS	3
ROYAL TERN	STERNA MAXIMUS	3
UNID. STORM-PETREL	OCEANODROMA SP.	3
WHITE-TAILED TROPICBIRD	PHAETHON LEPTURUS	3
BLACK-WINGED PETREL	PTERODROMA NIGRIPENNIS	2
AUDUBON'S SHEARWATER	PUFFINUS LHERMINIERI	1
BROWN NODDY	ANOUS STOLIDUS	1
CAPE (PINTADO) PETREL	DAPTION CAPENSE	1
CHRISTMAS ISLAND SHEARWATER	PUFFINUS NATIVITATUS	1
HORNBY'S STORM-PETREL	OCEANODROMA HORNBYI	1
MANX SHEARWATER	PUFFINUS PUFFINUS	1
MANX-TYPE SHEARWATER	PUFFINUS SP.	1
MURPHY'S PETREL	PTERODROMA ULTIMA	1

Table 6. Results of night-light dip-net sampling, McARTHUR, 30 July - 10 December, 1987.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
1	87-08-03	.5	20 04 N	119 16 W	2.0	2	1	24.0	32.76	30	1	1		1	
2	87-08-04	1.6	16 40 N	120 47 W	3.0	2	3	26.5	32.82					1	
3	87-08-05	.9	13 54 N	119 25 W	4.5	3	1	27.8		30	1			1	
3	87-08-05	.9	13 54 N	119 25 W	4.5	3	1	27.8		5	2			1	
3	87-08-05	.9	13 54 N	119 25 W	4.5	3	1	27.8		20	1	1			
4	87-08-06	1.1	13 16 N	117 20 W	2.5	3	1	27.6	33.66	30	1			2	
5	87-08-07	1.1	11 51 N	116 16 W	3.5	4	1	28.7	33.08	30	2	1			

- VESSEL: 01 - David Starr Jordan; 02 - McArthur

- COLLECTOR: 01 - R.L. Pitman; 02 - LeDuc

1 - Records without Station numbers reflect opportunistic, or non-standard specimen collections.

2 - Beaufort Scale

3 - 1 = quarter moon; 2 = half moon; 3 = 3/quarter moon; 4 = full moon; 5 = no moon; 6 = new moon.

4 - 1 = clear; 2 = partly cloudy; 3 = overcast; 4 = rain; 5 = other or unknown.

5 - 005 = Unidentified flying fish
010 = Oxyporhamphus micropterus
015 = Fodiator spp.
020 = Exocetus spp.
030 = Unidentified 4-wing flying fish
100 = Myctophidae (lanternfish)
200 = Scombridae (tunas)
300 = Gempylidae (snake mackerel)
400 = Coryphaenidae (dolphinfish)
500 = Other

6 - 1 = "a couple" (1-3)
2 = "a few" (4-8); uncommon
3 = "several" (9-15); fairly common
4 = "common" (16-50)
5 = "abundant" (51-150)
6 = "superabundant" (150+)
7 =
8 = "present"
9 = "possibly present"

7 - 1 = Large (mantle length > 8 inches)
2 = Medium (3 inches ≤ mantle length ≤ 8 inches)
3 = Small (mantle length < 3 inches)

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
5	87-08-07	1.1	11 51 N	116 16 W	3.5	4	1	28.7	33.08	5	1				
6	87-08-08	.5	11 30 N	115 32 W	2.5	4	1	28.2	32.77	30	1				
6	87-08-08	.5	11 30 N	115 32 W	2.5	4	1	28.2	32.77	5	1				
6	87-08-08	.5	11 30 N	115 32 W	2.5	4	1	28.2	32.77	100	1				
7	87-08-08	.8	10 35 N	113 56 W	2.5	4	3	28.1	32.74	5	1				
8	87-08-09	.9	8 42 N	111 13 W	2.5	4	3	28.4	32.42	5	1			2	
8	87-08-09	.9	8 42 N	111 13 W	2.5	4	3	28.4	32.42	30	1				
9	87-08-10	1.5	5 32 N	109 09 W	5.0	4	3	27.8	33.48	20	2	1		2	
9	87-08-10	1.5	5 32 N	109 09 W	5.0	4	3	27.8	33.48	30	1				
10	87-08-11	.3	5 24 N	110 57 W	4.0		2	27.8	33.37	10		1			
10	87-08-11	.3	5 24 N	110 57 W	4.0		2	27.8	33.37	20		3			
11	87-08-12	.8	6 12 N	113 42 W	4.8		1	27.9	33.29	30	2	1		1	
11	87-08-12	.8	6 12 N	113 42 W	4.8		1	27.9	33.29	5	2				
11	87-08-12	.8	6 12 N	113 42 W	4.8		1	27.9	33.29	110	2				
12	87-08-12	.4	6 11 N	113 42 W	4.8		1	27.9	33.32	10	1	1		1	
12	87-08-12	.4	6 11 N	113 42 W	4.8		1	27.9	33.32	5	2				
12	87-08-12	.4	6 11 N	113 42 W	4.8		1	27.9	33.32	110	1				
13	87-08-13	.9	7 02 N	115 54 W	4.8		3	27.8		5	2			1	
13	87-08-13	.9	7 02 N	115 54 W	4.8		3	27.8		10	1	3			
13	87-08-13	.9	7 02 N	115 54 W	4.8		3	27.8		110	2				
14	87-08-14	.5	7 39 N	118 34 W	3.0		2	27.8	33.10	30	1	1			
15	87-08-14	.4	7 39 N	118 34 W	3.0		2	27.8	32.90						
16	87-08-15	.8	9 20 N	121 18 W	1.5		2	28.4	33.28	5	2				
16	87-08-15	.8	9 20 N	121 18 W	1.5		2	28.4	33.28	110	3				
16	87-08-15	.8	9 20 N	121 18 W	1.5		2	28.4	33.28		3				
17	87-08-15	.3	9 20 N	121 18 W	1.5		2	28.2	33.28	5	1				
17	87-08-15	.3	9 20 N	121 18 W	1.5		2	28.2	33.28	110	3				
18	87-08-16	.8	10 36 N	124 07 W	3.0		1	28.8	33.14	5	3			2	
18	87-08-16	.8	10 36 N	124 07 W	3.0		1	28.8	33.14	10	1	2			
18	87-08-16	.8	10 36 N	124 07 W	3.0		1	28.8	33.14	110	1				
19	87-08-16	.4	10 36 N	124 07 W	3.0		1	28.4	32.70	5	2			1	
19	87-08-16	.4	10 36 N	124 07 W	3.0		1	28.4	32.70	30	1	1			
20	87-08-17	.7	12 33 N	127 17 W	2.0		1	28.2	33.41	5	1			1	
20	87-08-17	.7	12 33 N	127 17 W	2.0		1	28.2	33.41	10	4	3			
20	87-08-17	.7	12 33 N	127 17 W	2.0		1	28.2	33.41	30	1				
21	87-08-17	.4	12 33 N	127 17 W	2.0		1		33.08	10	4	4		1	
21	87-08-17	.4	12 33 N	127 17 W	2.0		1		33.08	30	1				
22	87-08-18	1.0	13 46 N	131 07 W	3.8		1	26.5	33.25	110	1			1	
22	87-08-18	1.0	13 46 N	131 07 W	3.8		1	26.5	33.25	10	1				
22	87-08-18	1.0	13 46 N	131 07 W	3.8		1	26.5	33.25	20	1	2			
22	87-08-18	1.0	13 46 N	131 07 W	3.8		1	26.5	33.25	30	1	1			
22	87-08-18	1.0	13 46 N	131 07 W	3.8		1	26.5	33.25	5	2				
23	87-08-18	.3	13 49 N	131 13 W	3.8		1	26.6	33.33	10	1				
24	87-08-19	.1	11 32 N	133 46 W	5.0		4	28.4	32.94	5	3				
24	87-08-19	.1	11 32 N	133 46 W	5.0		4	28.4	32.94	20	1	1			
24	87-08-19	.1	11 32 N	133 46 W	5.0		4	28.4	32.94	110	1				
24	87-08-19	.1	11 32 N	133 46 W	5.0		4	28.4	32.94	130	1				

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
25	87-08-20	.9	10 08 N	136 59 W	5.0		4	27.9	33.02	30	1			1	
25	87-08-20	.9	10 08 N	136 59 W	5.0		4	27.9	33.02	5	3				
26	87-08-21	.8	10 41 N	140 17 W	5.0		1	27.9	33.41	5	2			1	
26	87-08-21	.8	10 41 N	140 17 W	5.0		1	27.9	33.41	10	2	1			
26	87-08-21	.8	10 41 N	140 17 W	5.0		1	27.9	33.41	20	4	3			
26	87-08-21	.8	10 41 N	140 17 W	5.0		1	27.9	33.41	110	1				
27	87-08-21	.5	10 41 N	140 17 W	5.0		1	28.0	33.44	5	2				
27	87-08-21	.5	10 41 N	140 17 W	5.0		1	28.0	33.44	10	3	2			
27	87-08-21	.5	10 41 N	140 17 W	5.0		1	28.0	33.44	20	4	4			
27	87-08-21	.5	10 41 N	140 17 W	5.0		1	28.0	33.44	30	1				
28	87-08-22	1.0	11 52 N	142 32 W	5.0		4	28.4	33.92	20	4	4			
28	87-08-22	1.0	11 52 N	142 32 W	5.0		4	28.4	33.92	10	2	1			
28	87-08-22	1.0	11 52 N	142 32 W	5.0		4	28.4	33.92	5	2				
29	87-08-22	.8	11 52 N	142 32 W	5.0		1	28.4	33.90	20	3	4		1	
29	87-08-22	.8	11 52 N	142 32 W	5.0		1	28.4	33.90	10	1				
29	87-08-22	.8	11 52 N	142 32 W	5.0		1	28.4	33.90	5	1				
30	87-08-23	.8	13 09 N	143 52 W	7.0		2	27.0	33.94	5	1				
30	87-08-23	.8	13 09 N	143 52 W	7.0		2	27.0	33.94	10	1				
30	87-08-23	.8	13 09 N	143 52 W	7.0		2	27.0	33.94	20	4				
31	87-08-27	1.0	19 38 N	154 34 W	3.0		1	28.5	34.12	10	1				
31	87-08-27	1.0	19 38 N	154 34 W	3.0		1	28.5	34.12	100	1				
32	87-09-02	1.0	19 41 N	154 43 W	2.5	2	3	27.8	33.55	5	1			1	
	87-09-05		11 29 N	148 02 W				28.0	33.47	20		1			
34	87-09-05	.5	10 00 N	146 52 W	4.0	4	3	27.7	33.35	20	2				
34	87-09-05	.5	10 00 N	146 52 W	4.0	4	3	27.7	33.35	110	1				
35	87-09-05	.5	10 00 N	146 52 W	4.0	4	2	27.7	33.35	20	1				
36	87-09-06	.3	7 50 N	144 53 W	4.0	4	3	28.6	33.20						
37	87-09-06	.4	7 50 N	144 53 W	4.0	4	3	28.6	33.20	20	1	1			
38	87-09-07	.4	6 18 N	142 13 W	3.0	4	3	28.7	33.37	140	1	1			
38	87-09-07	.4	6 18 N	142 13 W	3.0	4	3	28.7	33.37	100	1				
39	87-09-08	.9	5 05 N	139 26 W	2.5	5	3	28.7	33.78	30	2	1		4	
39	87-09-08	.9	5 05 N	139 26 W	2.5	5	3	28.7	33.78	10	2	3			
39	87-09-08	.9	5 05 N	139 26 W	2.5	5	3	28.7	33.78	20	1	2			
39	87-09-08	.9	5 05 N	139 26 W	2.5	5	3	28.7	33.78	5	4				
40	87-09-08	.4	5 05 N	139 26 W	2.5	5	3	28.7	33.78	30	1	2			
40	87-09-08	.4	5 05 N	139 26 W	2.5	5	3	28.7	33.78	20	1	1			
41	87-09-09	.3	5 01 N	135 55 W	3.0	4	2	29.1	33.81	5	1			2	
41	87-09-09	.3	5 01 N	135 55 W	3.0	4	2	29.1	33.81	30	1				
41	87-09-09	.3	5 01 N	135 55 W	3.0	4	2	29.1	33.81	110	1				
42	87-09-09	.8	5 01 N	135 55 W	3.0	4	2	29.1	33.81	10	1				
42	87-09-09	.8	5 01 N	135 55 W	3.0	4	2	29.1	33.81	100	1				
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	110	1			1	
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	30	2				
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	10	2	3			
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	20	1	2			
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	5	2				
43	87-09-10	1.0	5 16 N	132 20 W	2.0	5	4	28.9	32.97	140	1	2			

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
44	87-09-10	.4	5 16 N	132 20 W	2.0	5	4	28.9	32.97	30	2			2	
44	87-09-10	.4	5 16 N	132 20 W	2.0	5	4	28.9	32.97	10	1				
44	87-09-10	.4	5 16 N	132 20 W	2.0	5	4	28.9	32.97	110	2				
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	5	2			2	
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	10	2	1			
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	20	1	2			
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	30	2				
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	110	2				
45	87-09-11	1.3	7 04 N	129 56 W	1.0	5	2	29.1	33.16	140	1				
46	87-09-11	.4	7 04 N	129 56 W	1.0	5	2	29.1	33.16	5	1				
46	87-09-11	.4	7 04 N	129 56 W	1.0	5	2	29.1	33.16	10	1	1			
46	87-09-11	.4	7 04 N	129 56 W	1.0	5	2	29.1	33.16	30	1	1			
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	5	2			1	
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	10	2	1			
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	20	1	1			
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	30	1				
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	110	4				
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	130	1				
47	87-09-12	1.0	6 53 N	127 07 W	3.0	5	2	29.2	33.16	140	1				
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	10	1	2			
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	20	1	2			
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	30	1	1			
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	110	2				
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	140	1				
48	87-09-12	.6	6 53 N	127 07 W	4.0	5	4	29.2	33.16	130	1				
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	5	1				
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	20	5	14		3	
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	20	5	14			
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	30	1				
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	110	3				
49	87-09-14	1.1	2 51 N	122 27 W	5.0	5	1	28.1	33.74	120	1				
50	87-09-14	.4	2 51 N	122 27 W	5.0	5	1	28.1	33.74	5	1				
50	87-09-14	.4	2 51 N	122 27 W	5.0	5	1	28.1	33.74	20	3				
50	87-09-14	.4	2 51 N	122 27 W	5.0	5	1	28.1	33.74	110	1				
51	87-09-15	.9	3 39 N	119 36 W	3.0	5	1	28.0	33.69	5	2			2	1
51	87-09-15	.9	3 39 N	119 36 W	3.0	5	1	28.0	33.69	10	2	1			
51	87-09-15	.9	3 39 N	119 36 W	3.0	5	1	28.0	33.69	30	1				
51	87-09-15	.9	3 39 N	119 36 W	3.0	5	1	28.0	33.69	110	4				
51	87-09-15	.9	3 39 N	119 36 W	3.0	5	1	28.0	33.69	120	1				
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	5	1			1	
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	10	3	2			
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	20	1	1			
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	30	1	1			
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	110	5				
52	87-09-15	.8	3 39 N	119 36 W	3.0	5	4	28.0	33.69	140	1				
53	87-09-16	1.1	3 02 N	117 02 W	5.0	5	1	27.2	33.48	5	3			1	
53	87-09-16	1.1	3 02 N	117 02 W	5.0	5	1	27.2	33.48	10	2				

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
53	87-09-16	1.1	3 02 N	117 02 W	5.0	5	1	27.2	33.48	20	2	6			
53	87-09-16	1.1	3 02 N	117 02 W	5.0	5	1	27.2	33.48	110	5				
53	87-09-16	1.1	3 02 N	117 02 W	5.0	5	1	27.2	33.48	120	1	1			
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	5	1				
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	10	1	1			
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	20	3	6			
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	30	1				
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	110	2				
54	87-09-16	.6	3 02 N	117 02 W	5.0	5	1	27.2	33.48	120	1	1			
55	87-09-17	1.0	2 33 N	114 00 W	4.5	5	2	27.5	33.48	10	2			1	
55	87-09-17	1.0	2 33 N	114 00 W	4.5	5	2	27.5	33.48	20	1	2			
55	87-09-17	1.0	2 33 N	114 00 W	4.5	5	2	27.5	33.48	110	4				
55	87-09-17	1.0	2 33 N	114 00 W	4.5	5	2	27.5	33.48	120	1				
56	87-09-17	.7	2 33 N	114 00 W	4.5	5	2	27.5	33.48	10	3	1		1	1
56	87-09-17	.7	2 33 N	114 00 W	4.5	5	2	27.5	33.48	30	1				
56	87-09-17	.7	2 33 N	114 00 W	4.5	5	2	27.5	33.48	110	4				
57	87-09-18	1.1	2 22 N	111 03 W	3.0	5	2	26.5	33.59	5	2			1	2
57	87-09-18	1.1	2 22 N	111 03 W	3.0	5	2	26.5	33.59	10	3	3		2	1
57	87-09-18	1.1	2 22 N	111 03 W	3.0	5	2	26.5	33.59	20	1	1			
57	87-09-18	1.1	2 22 N	111 03 W	3.0	5	2	26.5	33.59	30	4	4			
57	87-09-18	1.1	2 22 N	111 03 W	3.0	5	2	26.5	33.59	110	4				
58	87-09-18	.3	2 22 N	111 03 W	3.0	5	2	26.5	33.59	5	2			1	
58	87-09-18	.3	2 22 N	111 03 W	3.0	5	2	26.5	33.59	10	1	1			
58	87-09-18	.3	2 22 N	111 03 W	3.0	5	2	26.5	33.59	20	1				
58	87-09-18	.3	2 22 N	111 03 W	3.0	5	2	26.5	33.59	30	2				
58	87-09-18	.3	2 22 N	111 03 W	3.0	5	2	26.5	33.59	110	1				
59	87-09-19	1.0	2 20 N	108 53 W	4.5	5	1	25.8	33.62	5	2			2	
59	87-09-19	1.0	2 20 N	108 53 W	4.5	5	1	25.8	33.62	10	3	2			
59	87-09-19	1.0	2 20 N	108 53 W	4.5	5	1	25.8	33.62	20	2	2			
59	87-09-19	1.0	2 20 N	108 53 W	4.5	5	1	25.8	33.62	30	4	5			
59	87-09-19	1.0	2 20 N	108 53 W	4.5	5	1	25.8	33.62	110	3				
60	87-09-19	.4	2 20 N	108 53 W	4.5	5	1	25.8	33.62	5	3			1	1
60	87-09-19	.4	2 20 N	108 53 W	4.5	5	1	25.8	33.62	10	3	2			
60	87-09-19	.4	2 20 N	108 53 W	4.5	5	1	25.8	33.62	20	2	2			
60	87-09-19	.4	2 20 N	108 53 W	4.5	5	1	25.8	33.62	30	4	3			
60	87-09-19	.4	2 20 N	108 53 W	4.5	5	1	25.8	33.62	110	3				
61	87-09-20	.8	3 24 N	105 20 W	4.8	5	1	26.9	33.28	5	2			2	
61	87-09-20	.8	3 24 N	105 20 W	4.8	5	1	26.9	33.28	10	2	3			
61	87-09-20	.8	3 24 N	105 20 W	4.8	5	1	26.9	33.28	20	1	1			
61	87-09-20	.8	3 24 N	105 20 W	4.8	5	1	26.9	33.28	30	1				
61	87-09-20	.8	3 24 N	105 20 W	4.8	5	1	26.9	33.28	110	4				
62	87-09-20	.3	3 24 N	105 20 W	4.8	5	1	26.9	33.28	5	1				
62	87-09-20	.3	3 24 N	105 20 W	4.8	5	1	26.9	33.28	10	1				
62	87-09-20	.3	3 24 N	105 20 W	4.8	5	1	26.9	33.28	110	3				
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	5	2			3	1
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	10	5	11		1	
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	20	2	2			

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	30	1	2			
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	110	4				
63	87-09-21	1.1	2 45 N	101 38 W	4.5	5	1	26.2	33.29	120	1				
64	87-09-21	.7	2 45 N	101 38 W	4.5	5	1	26.2	33.29	5	1			1	
64	87-09-21	.7	2 45 N	101 38 W	4.5	5	1	26.2	33.29	10	5	6			
64	87-09-21	.7	2 45 N	101 38 W	4.5	5	1	26.2	33.29	30	1				
64	87-09-21	.7	2 45 N	101 38 W	4.5	5	1	26.2	33.29	110	2				
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	5	1			2	
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	10	3	1		1	
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	20	1	1			
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	30	2	1			
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	110	4				
65	87-09-24	1.1	3 24 S	93 32 W	5.0	5	3	23.3	34.10	120	1				
66	87-09-24	.3	3 24 S	93 32 W	5.0	5	3	23.3	34.10	10	3	4		1	
66	87-09-24	.3	3 24 S	93 32 W	5.0	5	3	23.3	34.10	110	3			1	
67	87-09-25	.8	4 56 S	90 18 W	5.5	1	3	22.8	33.91	10	2			3	
67	87-09-25	.8	4 56 S	90 18 W	5.5	1	3	22.8	33.91	20	1	1		1	
67	87-09-25	.8	4 56 S	90 18 W	5.5	1	3	22.8	33.91	110	4				
67	87-09-25	.8	4 56 S	90 18 W	5.5	1	3	22.8	33.91	100	1	1			
68	87-09-25	.4	4 56 S	90 18 W	5.5	1	3	22.8	33.91	10	1	1		1	
68	87-09-25	.4	4 56 S	90 18 W	5.5	1	3	22.8	33.91	110	3				
69	87-09-26	.8	3 36 S	87 10 W	5.0	1	2	22.8	34.27	5	1			3	
69	87-09-26	.8	3 36 S	87 10 W	5.0	1	2	22.8	34.27	10	2				
69	87-09-26	.8	3 36 S	87 10 W	5.0	1	2	22.8	34.27	20	1	1			
69	87-09-26	.8	3 36 S	87 10 W	5.0	1	2	22.8	34.27	110	4				
70	87-09-26	.4	3 36 S	87 10 W	5.0	1	2	22.8	34.27	10	2	1		2	
70	87-09-26	.4	3 36 S	87 10 W	5.0	1	2	22.8	34.27	110	4				
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	5	2			1	1
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	10	4	4		4	2
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	20	1	1		2	
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	30	1	1			
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	110	4				
71	87-09-27	.8	0 45 S	85 03 W	4.0	1	3	24.8	32.30	120	1				
72	87-09-27	.4	0 45 S	85 03 W	4.0	1	3	24.8	32.30	5	1			1	
72	87-09-27	.4	0 45 S	85 03 W	4.0	1	3	24.8	32.30	10	2				
72	87-09-27	.4	0 45 S	85 03 W	4.0	1	3	24.8	32.30	30	1	1			
72	87-09-27	.4	0 45 S	85 03 W	4.0	1	3	24.8	32.30	110	4				
73	87-09-28	.8	2 30 S	83 06 W	4.5	1	2	27.2	32.18	5	1			1	3
73	87-09-28	.8	2 30 S	83 06 W	4.5	1	2	27.2	32.18	10	1	1		2	1
73	87-09-28	.8	2 30 S	83 06 W	4.5	1	2	27.2	32.18	20	1	1		1	
73	87-09-28	.8	2 30 S	83 06 W	4.5	1	2	27.2	32.18	110	4				
73	87-09-28	.8	2 30 S	83 06 W	4.5	1	2	27.2	32.18	30	1				
74	87-09-28	.3	2 30 S	83 06 W	4.5	1	2	27.2	32.18	110	2				
74	87-09-28	.3	2 30 S	83 06 W	4.5	1	2	27.2	32.18	120	1				
74	87-09-28	.3	2 30 S	83 06 W	4.5	1	2	27.2	32.18	10		1			
75	87-10-06	1.0	8 24 N	79 29 W	3.0	4	2	28.5		5	3		3	1	1
75	87-10-06	1.0	8 24 N	79 29 W	3.0	4	2	28.5		15	1	1			

Table 6. Continued.

Station Number[1]	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea State[2]	Moon Phase[3]	Sky Cond.[4]	SST (C)	SSS (%)	Fish Species[5]	Relative Abundance (Fish)[6]	Number Collected (Fish)	Squid Type[7]	Relative Abundance (Squid)[6]	Number Collected (Squid)
75	87-10-06	1.0	8 24 N	79 29 W	3.0	4	2	28.5		18	1	2			
75	87-10-06	1.0	8 24 N	79 29 W	3.0	4	2	28.5		30	3	6			
75	87-10-06	1.0	8 24 N	79 29 W	3.0	4	2	28.5		500	8	11			
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	5	2		1	4	
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	10	1	1	2	1	1
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	20	1	1			
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	30	1				
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	100	2				
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	400	2	3			
76	87-10-07	1.0	4 42 N	80 08 W	1.0	4	2	28.8	30.01	500	8	5			
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	5	1		1	6	7
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	10	1				
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	20	1				
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	100	5				
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	400	2				
77	87-10-08	1.0	3 45 N	81 58 W	3.0	4	2	28.6	30.68	500	1				
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	5	3		1	2	
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	10	3	3	2	1	
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	20	2	4			
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	30	2	3			
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	100	4				
78	87-10-09	1.0	5 16 N	83 55 W	1.0	5	2	28.8	30.48	300	1				
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	5	1		1	4	
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	10	3	3			
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	30	1	1			
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	100	5				
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	300	1				
79	87-10-10	1.0	2 23 N	85 53 W	1.0	5	1	28.1	32.33	500	1				
80	87-10-11	1.0	5 03 N	85 48 W	3.0	5	3	28.8	31.89	5	1		1	5	
80	87-10-11	1.0	5 03 N	85 48 W	3.0	5	3	28.8	31.89	10	1	1			
80	87-10-11	1.0	5 03 N	85 48 W	3.0	5	3	28.8	31.89	20	1				
80	87-10-11	1.0	5 03 N	85 48 W	3.0	5	3	28.8	31.89	100	4				
81	87-10-12	1.0	5 22 N	87 16 W	3.0	5	2	29.1	32.22	5	2		1	2	
81	87-10-12	1.0	5 22 N	87 16 W	3.0	5	2	29.1	32.22	10	2		2	1	
81	87-10-12	1.0	5 22 N	87 16 W	3.0	5	2	29.1	32.22	20	1				
81	87-10-12	1.0	5 22 N	87 16 W	3.0	5	2	29.1	32.22	30	2	6			
81	87-10-12	1.0	5 22 N	87 16 W	3.0	5	2	29.1	32.22	100	4				
82	87-10-13	1.0	4 22 N	90 20 W	4.0	5	3	28.6	32.02	5	1		1	2	
82	87-10-13	1.0	4 22 N	90 20 W	4.0	5	3	28.6	32.02	10	3	6			
82	87-10-13	1.0	4 22 N	90 20 W	4.0	5	3	28.6	32.02	30	1				
82	87-10-13	1.0	4 22 N	90 20 W	4.0	5	3	28.6	32.02	100	4				
82	87-10-13	1.0	4 22 N	90 20 W	4.0	5	3	28.6	32.02	300	1				
83	87-10-14	1.0	4 11 N	93 26 W	4.0	5	3	28.6	31.89	10	2		1	2	
83	87-10-14	1.0	4 11 N	93 26 W	4.0	5	3	28.6	31.89	20	1		2	1	
83	87-10-14	1.0	4 11 N	93 26 W	4.0	5	3	28.6	31.89	30	2	3			
83	87-10-14	1.0	4 11 N	93 26 W	4.0	5	3	28.6	31.89	100	3				
	87-10-15		4 04 N	93 43 W						20		1			

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	5	2		1	2	
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	10	3		2	1	
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	20	1	1			
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	30	9				
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	100	3				
84	87-10-15	1.0	1 57 N	95 33 W	5.0	5	3	27.9	32.52	300	1				
	87-10-16		1 01 N	92 46 W						30		1			
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	5	1		1	3	
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	10	2		2	4	1
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	20	1	1	3	1	1
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	30	1				
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	100	3				
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	400	1	1			
85	87-10-16	1.0	0 00 N	97 48 W	4.0	5	3	23.4	33.70	500	1	1			
86	87-10-17	1.0	1 19 S	101 07 W	4.0	5	2	24.0	33.79	5	3		1	2	3
86	87-10-17	1.0	1 19 S	101 07 W	4.0	5	2	24.0	33.79	10	3		2	3	1
86	87-10-17	1.0	1 19 S	101 07 W	4.0	5	2	24.0	33.79	20	1	1			
86	87-10-17	1.0	1 19 S	101 07 W	4.0	5	2	24.0	33.79	30	2	1			
86	87-10-17	1.0	1 19 S	101 07 W	4.0	5	2	24.0	33.79	100	4	1			
87	87-10-18	1.0	2 01 S	104 06 W	3.0	5	3	24.6	34.05	5	4		1	6	3
87	87-10-18	1.0	2 01 S	104 06 W	3.0	5	3	24.6	34.05	10	1		2	2	
87	87-10-18	1.0	2 01 S	104 06 W	3.0	5	3	24.6	34.05	20	3	9	3	1	1
87	87-10-18	1.0	2 01 S	104 06 W	3.0	5	3	24.6	34.05	30	2	2			
87	87-10-18	1.0	2 01 S	104 06 W	3.0	5	3	24.6	34.05	100	5				
	87-10-19		2 10 S	104 25 W						20		1			
88	87-10-19	1.0	3 03 S	105 50 W	4.0	5	1	25.3	34.08	5	4		1	5	
88	87-10-19	1.0	3 03 S	105 50 W	4.0	5	1	25.3	34.08	10	2	2	2	4	2
88	87-10-19	1.0	3 03 S	105 50 W	4.0	5	1	25.3	34.08	20	1	1	3	1	1
88	87-10-19	1.0	3 03 S	105 50 W	4.0	5	1	25.3	34.08	30	2				
88	87-10-19	1.0	3 03 S	105 50 W	4.0	5	1	25.3	34.08	100	5				
	87-10-20		3 05 S	105 30 W						20		1			
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	5	2		1	3	
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	10	3	2	2	4	
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	20	1				
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	30	2				
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	100	4				
89	87-10-20	1.0	3 19 S	102 58 W	4.0	5	1	25.2	34.08	400	1				
90	87-10-21	1.0	3 25 S	100 08 W	4.0	5	2	24.4	33.96	5	2		1	5	
90	87-10-21	1.0	3 25 S	100 08 W	4.0	5	2	24.4	33.96	10	2	1			
90	87-10-21	1.0	3 25 S	100 08 W	4.0	5	2	24.4	33.96	20	2	1			
90	87-10-21	1.0	3 25 S	100 08 W	4.0	5	2	24.4	33.96	100	4	1			
91	87-10-22	1.0	4 05 S	97 15 W	4.0	5	1	24.3	34.03	5	2		1	3	
91	87-10-22	1.0	4 05 S	97 15 W	4.0	5	1	24.3	34.03	20	1	2	2	1	
91	87-10-22	1.0	4 05 S	97 15 W	4.0	5	1	24.3	34.03	30	1	1	3	1	1
91	87-10-22	1.0	4 05 S	97 15 W	4.0	5	1	24.3	34.03	100	4				
92	87-10-23	1.0	6 39 S	95 03 W	4.0	5	1	23.9	34.47	5	3		1	4	
92	87-10-23	1.0	6 39 S	95 03 W	4.0	5	1	23.9	34.47	20	2	4	2	2	

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
92	87-10-23	1.0	6 39 S	95 03 W	4.0	5	1	23.9	34.47	30	2	1			
92	87-10-23	1.0	6 39 S	95 03 W	4.0	5	1	23.9	34.47	100	5				
	87-10-23		6 55 S	94 50 W						20		2			
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	5	3		1	3	1
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	10	2		2	1	
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	20	2				
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	30	3	4			
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	100	4				
93	87-10-24	1.0	9 07 S	93 02 W	4.5	5	2	23.7	34.43	300	1				
	87-10-25		9 22 S	92 48 W						20		1			
	87-10-25		9 22 S	92 48 W						30		2			
94	87-10-25	1.0	10 30 S	90 04 W	5.0	5	1	22.2	34.70	10	1		1	4	
94	87-10-25	1.0	10 30 S	90 04 W	5.0	5	1	22.2	34.70	30	1		2	2	
94	87-10-25	1.0	10 30 S	90 04 W	5.0	5	1	22.2	34.70	100	5				
94	87-10-25	1.0	10 30 S	90 04 W	5.0	5	1	22.2	34.70	300	1				
94	87-10-25	1.0	10 30 S	90 04 W	5.0	5	1	22.2	34.70	500	8	3			
	87-10-26		10 36 S	89 44 W						30		2			
95	87-10-26	1.0	10 15 S	87 32 W	5.0	5	3	22.0	34.69	30	2		1	4	
95	87-10-26	1.0	10 15 S	87 32 W	5.0	5	3	22.0	34.69	100	4		2	1	
95	87-10-26	1.0	10 15 S	87 32 W	5.0	5	3	22.0	34.69	500	8	2			
96	87-10-27	1.0	7 12 S	86 32 W	4.0	2	2	22.7	34.29	5	4		1	4	
96	87-10-27	1.0	7 12 S	86 32 W	4.0	2	2	22.7	34.29	10	2	1	2	3	
96	87-10-27	1.0	7 12 S	86 32 W	4.0	2	2	22.7	34.29	20	4	9			
96	87-10-27	1.0	7 12 S	86 32 W	4.0	2	2	22.7	34.29	100	4				
96	87-10-27	1.0	7 12 S	86 32 W	4.0	2	2	22.7	34.29	500	1				
97	87-10-28	1.0	4 08 S	85 59 W	3.0	2	1	23.1	34.08	5	3		1	3	
97	87-10-28	1.0	4 08 S	85 59 W	3.0	2	1	23.1	34.08	10	2	2			
97	87-10-28	1.0	4 08 S	85 59 W	3.0	2	1	23.1	34.08	20	2	1			
97	87-10-28	1.0	4 08 S	85 59 W	3.0	2	1	23.1	34.08	30	2				
97	87-10-28	1.0	4 08 S	85 59 W	3.0	2	1	23.1	34.08	100	4				
	87-10-28		4 09 S	85 58 W						20		1			
	87-10-28		4 09 S	85 58 W						30		1			
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	5	3		1	2	
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	10	2	1	2	2	
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	20	2				
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	30	2	1			
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	100	4				
98	87-10-29	1.0	0 50 S	85 35 W	3.0	2	2	26.9	32.67	400	1				
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	5	2		1	1	
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	10	2	3	2	3	
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	20	1	2			
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	30	9				
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	100	6				
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	300	1				
99	87-10-30	1.0	1 56 N	84 58 W	3.0	2	1	27.5	32.37	500	8	3			
100	87-10-31	1.0	3 32 N	83 07 W	2.0	3	1	28.2	32.13	5	1		1	1	
100	87-10-31	1.0	3 32 N	83 07 W	2.0	3	1	28.2	32.13	10	8		2	2	

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
100	87-10-31	1.0	3 32 N	83 07 W	2.0	3	1	28.2	32.13	20	1	1			
100	87-10-31	1.0	3 32 N	83 07 W	2.0	3	1	28.2	32.13	30	9				
100	87-10-31	1.0	3 32 N	83 07 W	2.0	3	1	28.2	32.13	100	4				
101	87-11-01	1.0	4 39 N	81 50 W	2.0	3	2	28.5	31.46	10	1	2	1	4	
101	87-11-01	1.0	4 39 N	81 50 W	2.0	3	2	28.5	31.46	20	1	2	2	3	
101	87-11-01	1.0	4 39 N	81 50 W	2.0	3	2	28.5	31.46	100	3				
101	87-11-01	1.0	4 39 N	81 50 W	2.0	3	2	28.5	31.46	400	1	1			
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	5	1				
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	10	1	1			
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	20	1				
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	300	1	1			
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	400	2	2			
102	87-11-02	1.0	6 29 N	79 43 W	3.0	3	1	28.5	28.70	500	5	14			
103	87-11-03	1.0	8 28 N	78 47 W	3.0	4	3	26.8	28.15	15	1				
103	87-11-03	1.0	8 28 N	78 47 W	3.0	4	3	26.8	28.15	30	2	1			
103	87-11-03	1.0	8 28 N	78 47 W	3.0	4	3	26.8	28.15	500	8	6			
104	87-11-03	1.0	8 40 N	78 58 W	1.0	4	2	27.6	28.46	15	1				
104	87-11-03	1.0	8 40 N	78 58 W	1.0	4	2	27.6	28.46	500	2				
	87-11-03		8 41 N	78 59 W						30		1			
105	87-11-04	1.0	8 44 N	79 02 W	3.0	4	2	27.4	28.77	15	3	4			
105	87-11-04	1.0	8 44 N	79 02 W	3.0	4	2	27.4	28.77	200	4	1			
106	87-11-04	1.0	8 48 N	79 15 W	1.0	4	2	27.0	28.77	15	1				
106	87-11-04	1.0	8 48 N	79 15 W	1.0	4	2	27.0	28.77	500	1	1			
107	87-11-09	1.0	8 19 N	79 20 W	4.0	3	2	29.0	28.68	18	1	1	2	2	2
107	87-11-09	1.0	8 19 N	79 20 W	4.0	3	2	29.0	28.68	30	1				
107	87-11-09	1.0	8 19 N	79 20 W	4.0	3	2	29.0	28.68	500	1				
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	10	4	5	1	1	
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	20	1	1	2	4	
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	30	1	1	3	4	9
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	100	4				
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	300	1				
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	400	5	10			
108	87-11-10	1.0	4 42 N	79 48 W	3.0	5	2	28.2	29.60	500	6	30			
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	5	2		1	5	
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	10	4	4	2	2	
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	20	1	1	3	4	9
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	30	2				
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	100	5				
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	300	1				
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	400	2	1			
109	87-11-11	1.0	4 44 N	79 49 W	4.0	5	3	28.3	30.47	500	1	1			
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	5	3		1	3	
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	10	4	7	2	3	1
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	20	3	2			
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	30	2	1			
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	100	4				
110	87-11-12	1.0	0 42 N	85 05 W	4.0	5	2	26.3	31.80	300	1				

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
	87-11-13		0 18 S	85 08 W						20		1			
	87-11-13		0 18 S	85 08 W						30		1			
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	5	3		1	1	
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	10	3	4			
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	20	2	1			
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	30	3	1			
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	100	3				
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	400	1	1			
111	87-11-13	1.0	2 36 S	85 04 W	2.0	5	2	22.2	33.52	500	8	3			
	87-11-14		2 54 S	85 08 W						20		1			
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	5	4		1	3	
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	10	4	5	2	2	
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	20	9				
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	30	3	5			
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	100	4				
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	300	1				
112	87-11-14	1.0	5 27 S	86 44 W	3.0	5	2	23.7	33.46	500	1	1			
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	5	3		1	4	
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	10	3	1			
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	20	1	2			
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	30	2	1			
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	100	4				
113	87-11-15	1.0	7 05 S	89 35 W	4.0	5	2	23.9	33.98	300	1	2			
	87-11-16		7 06 S	89 56 W						30		1			
114	87-11-16	1.0	6 46 S	93 32 W	4.0	5	2	24.6	33.84	5	2		1	4	
114	87-11-16	1.0	6 46 S	93 32 W	4.0	5	2	24.6	33.84	10	2	1	2	1	1
114	87-11-16	1.0	6 46 S	93 32 W	4.0	5	2	24.6	33.84	20	1	1			
114	87-11-16	1.0	6 46 S	93 32 W	4.0	5	2	24.6	33.84	30	2				
114	87-11-16	1.0	6 46 S	93 32 W	4.0	5	2	24.6	33.84	100	3				
	87-11-17		6 44 S	93 54 W						20		3			
	87-11-17		6 44 S	93 54 W						30		2			
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	5	2		1	4	
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	10	2	1			
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	20	1	2			
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	30	1	1			
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	100	3				
115	87-11-17	1.0	6 09 S	96 54 W	4.0	5	3	25.1	33.86	500	1	1			
	87-11-18		6 07 S	98 03 W						20		1			
	87-11-18		6 07 S	98 03 W						30		1			
116	87-11-18	1.0	5 32 S	100 32 W	4.0	5	1	25.2	33.69	10	1		1	4	
116	87-11-18	1.0	5 32 S	100 32 W	4.0	5	1	25.2	33.69	20	2	2	2	1	
116	87-11-18	1.0	5 32 S	100 32 W	4.0	5	1	25.2	33.69	30	1				
116	87-11-18	1.0	5 32 S	100 32 W	4.0	5	1	25.2	33.69	100	4				
116	87-11-18	1.0	5 32 S	100 32 W	4.0	5	1	25.2	33.69	300	1				
	87-11-19		5 32 S	100 56 W						20		1			
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	5	2		1	4	
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	10	1				

Table 6. Continued.

Station[1] Number	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea[2] State	Moon[3] Phase	Sky[4] Cond.	SST (C)	SSS (%)	Fish[5] Species	Relative[6] Abundance (Fish)	Number Collected (Fish)	Squid[7] Type	Relative[6] Abundance (Squid)	Number Collected (Squid)
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	20	9				
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	30	1				
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	100	4				
117	87-11-19	1.0	5 13 S	104 30 W	5.0	5	1	25.2	33.67	500	1	1			
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	5	4		1	4	
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	10	3	2	2	3	1
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	20	4	14			
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	30	1				
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	100	5				
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	300	1	1			
118	87-11-20	1.0	4 47 S	108 11 W	5.0	5	3	25.4	33.65	400	2	2			
	87-11-21		4 52 S	108 35 W						20		2			
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	5	4		1	4	
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	10	2	1			
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	20	4	10			
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	30	2	1			
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	100	4	1			
119	87-11-21	1.0	4 12 S	111 21 W	4.0	5	3	25.6	33.67	300	1				
	87-11-22		4 08 S	111 43 W						20		1			
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	5	4		1	2	
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	10	2		2	1	
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	20	4	14			
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	30	2	1			
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	100	4				
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	300	1				
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	400	1				
120	87-11-22	1.0	3 05 S	114 56 W	4.0		2	26.3	33.66	500	1				
121	87-11-23	1.0	2 16 S	118 28 W	4.0	1	1	26.7	33.66	10	2	1	1	1	
121	87-11-23	1.0	2 16 S	118 28 W	4.0	1	1	26.7	33.66	20	4	16	2	3	
121	87-11-23	1.0	2 16 S	118 28 W	4.0	1	1	26.7	33.66	30	1				
121	87-11-23	1.0	2 16 S	118 28 W	4.0	1	1	26.7	33.66	100	4				
121	87-11-23	1.0	2 16 S	118 28 W	4.0	1	1	26.7	33.66	400	1				
	87-11-24		2 16 S	118 55 W						20		1			
122	87-11-24	1.0	2 53 S	122 20 W	4.0	1	2	26.8	33.79	10	2		1	3	
122	87-11-24	1.0	2 53 S	122 20 W	4.0	1	2	26.8	33.79	20	1	2			
122	87-11-24	1.0	2 53 S	122 20 W	4.0	1	2	26.8	33.79	30	2	3			
122	87-11-24	1.0	2 53 S	122 20 W	4.0	1	2	26.8	33.79	100	4				
122	87-11-24	1.0	2 53 S	122 20 W	4.0	1	2	26.8	33.79	300	1				
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	5	4		1	2	
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	10	1				
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	20	4	18			
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	30	1	1			
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	100	4				
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	300	1				
123	87-11-25	1.0	2 18 S	125 44 W	4.0	2	1	27.2	33.81	400	1	1			
124	87-11-26	1.0	1 53 S	128 41 W	4.0	2	1	26.9	33.74	10	1		1	1	
124	87-11-26	1.0	1 53 S	128 41 W	4.0	2	1	26.9	33.74	20	4	6			

Table 6. Continued.

Station Number[1]	Date Y/M/D	Hours of Effort	Location Latitude	Location Longitude	Sea State[2]	Moon Phase[3]	Sky Cond.[4]	SST (C)	SSS (%)	Fish Species[5]	Relative Abundance (Fish)[6]	Number Collected (Fish)	Squid Type[7]	Relative Abundance (Squid)[6]	Number Collected (Squid)
124	87-11-26	1.0	1 53 S	128 41 W	4.0	2	1	26.9	33.74	30	1				
124	87-11-26	1.0	1 53 S	128 41 W	4.0	2	1	26.9	33.74	100	4				
124	87-11-26	1.0	1 53 S	128 41 W	4.0	2	1	26.9	33.74	300	1				
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	5	3				
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	10	3	4			
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	20	2	3			
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	30	3	6			
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	100	3				
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	300	1				
125	87-11-27	1.0	1 08 S	126 12 W	4.0	2	2	26.5	33.71	500	1	1			
126	87-11-28	1.0	0 45 N	124 46 W	3.0	2	2	26.1	33.47	5	1		2	1	
126	87-11-28	1.0	0 45 N	124 46 W	3.0	2	2	26.1	33.47	100	4		3	1	1
127	87-11-29	1.0	4 15 N	125 26 W	4.0	3	2	26.7	33.08	5	1		2	1	
127	87-11-29	1.0	4 15 N	125 26 W	4.0	3	2	26.7	33.08	30	1	1			
127	87-11-29	1.0	4 15 N	125 26 W	4.0	3	2	26.7	33.08	100	2				
127	87-11-29	1.0	4 15 N	125 26 W	4.0	3	2	26.7	33.08	400	1				
128	87-11-30	1.0	7 20 N	124 08 W	4.0	5	3	29.1	32.21	5	1				
128	87-11-30	1.0	7 20 N	124 08 W	4.0	5	3	29.1	32.21	10	1				
128	87-11-30	1.0	7 20 N	124 08 W	4.0	5	3	29.1	32.21	20	1	1			
128	87-11-30	1.0	7 20 N	124 08 W	4.0	5	3	29.1	32.21	30	1				
128	87-11-30	1.0	7 20 N	124 08 W	4.0	5	3	29.1	32.21	100	4				
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	5	2		2	1	
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	10	2	1			
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	20	1	1			
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	30	1	1			
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	100	2				
129	87-12-02	1.0	12 09 N	119 26 W	2.0	5	3	29.1	31.26	500	1	1			
130	87-12-03	1.0	12 18 N	121 12 W	2.0	4	3	28.9	31.96	5	2				
130	87-12-03	1.0	12 18 N	121 12 W	2.0	4	3	28.9	31.96	10	2	1			
130	87-12-03	1.0	12 18 N	121 12 W	2.0	4	3	28.9	31.96	20	1	1			
130	87-12-03	1.0	12 18 N	121 12 W	2.0	4	3	28.9	31.96	30	1				
130	87-12-03	1.0	12 18 N	121 12 W	2.0	4	3	28.9	31.96	300	1				
131	87-12-04	1.0	14 05 N	122 10 W	3.0	4	3	27.9	31.90	5	1				
131	87-12-04	1.0	14 05 N	122 10 W	3.0	4	3	27.9	31.90	10	1				
131	87-12-04	1.0	14 05 N	122 10 W	3.0	4	3	27.9	31.90	30	1	1			
	87-12-05		14 29 N	121 53 W						20		1			
132	87-12-05	1.0	17 45 N	120 25 W	4.0	5	2	26.2	33.05	5	5		2	1	
132	87-12-05	1.0	17 45 N	120 25 W	4.0	5	2	26.2	33.05	20	5	26			
132	87-12-05	1.0	17 45 N	120 25 W	4.0	5	2	26.2	33.05	30	1	2			
132	87-12-05	1.0	17 45 N	120 25 W	4.0	5	2	26.2	33.05	300	1				
132	87-12-05	1.0	17 45 N	120 25 W	4.0	5	2	26.2	33.05	400	1				
133	87-12-06	1.0	21 28 N	118 56 W	5.0	4	2	24.2	33.06	5	1				
133	87-12-06	1.0	21 28 N	118 56 W	5.0	4	2	24.2	33.06	30	1	1			
133	87-12-06	1.0	21 28 N	118 56 W	5.0	4	2	24.2	33.06	300	1				
	87-12-07		24 42 N	117 38 W						30		1			
	87-12-08		28 12 N	117 02 W						30		4			

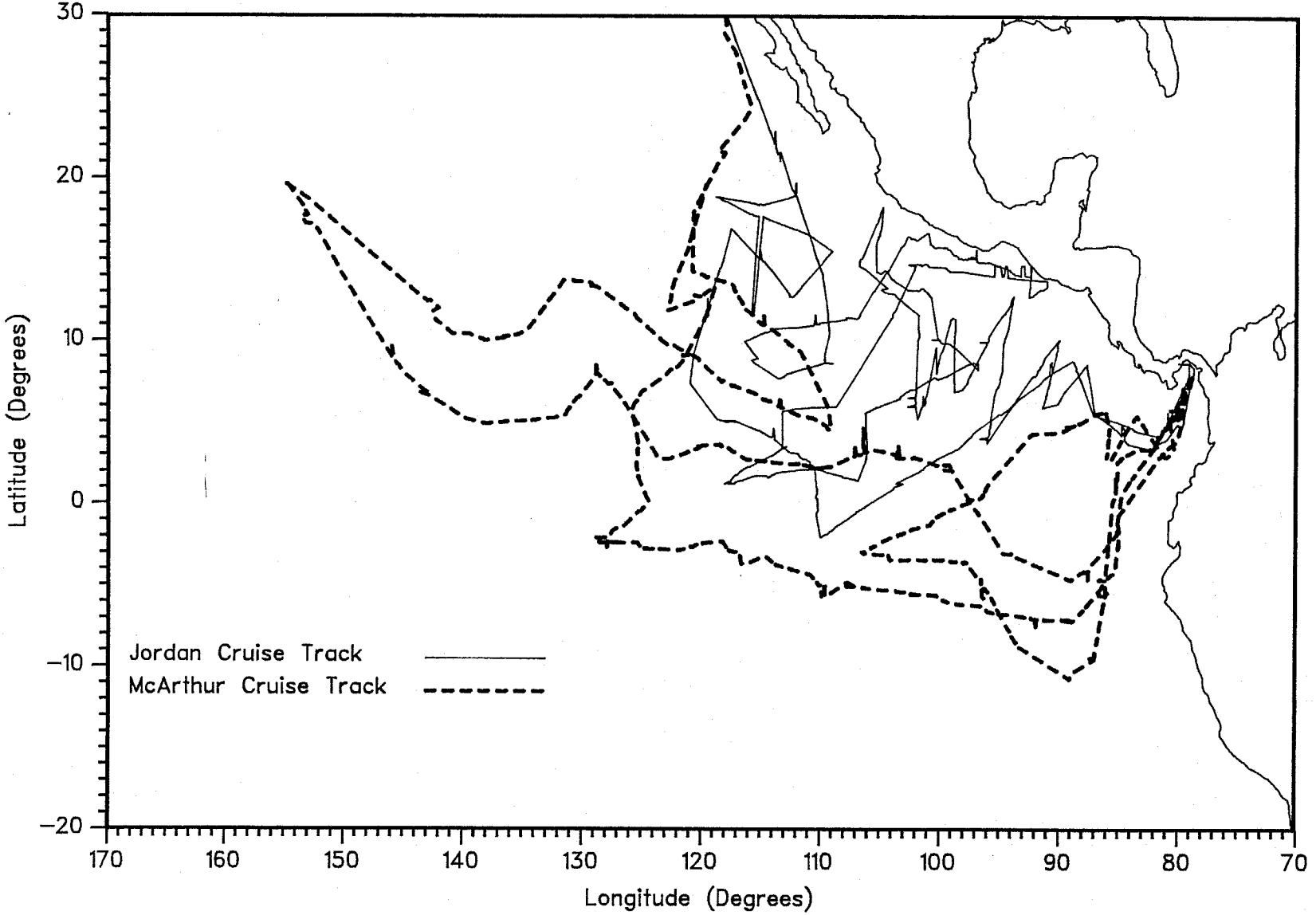

Figure 1. Cruise tracks, *Jordan* and *McArthur*, 30 July-10 December, 1987.

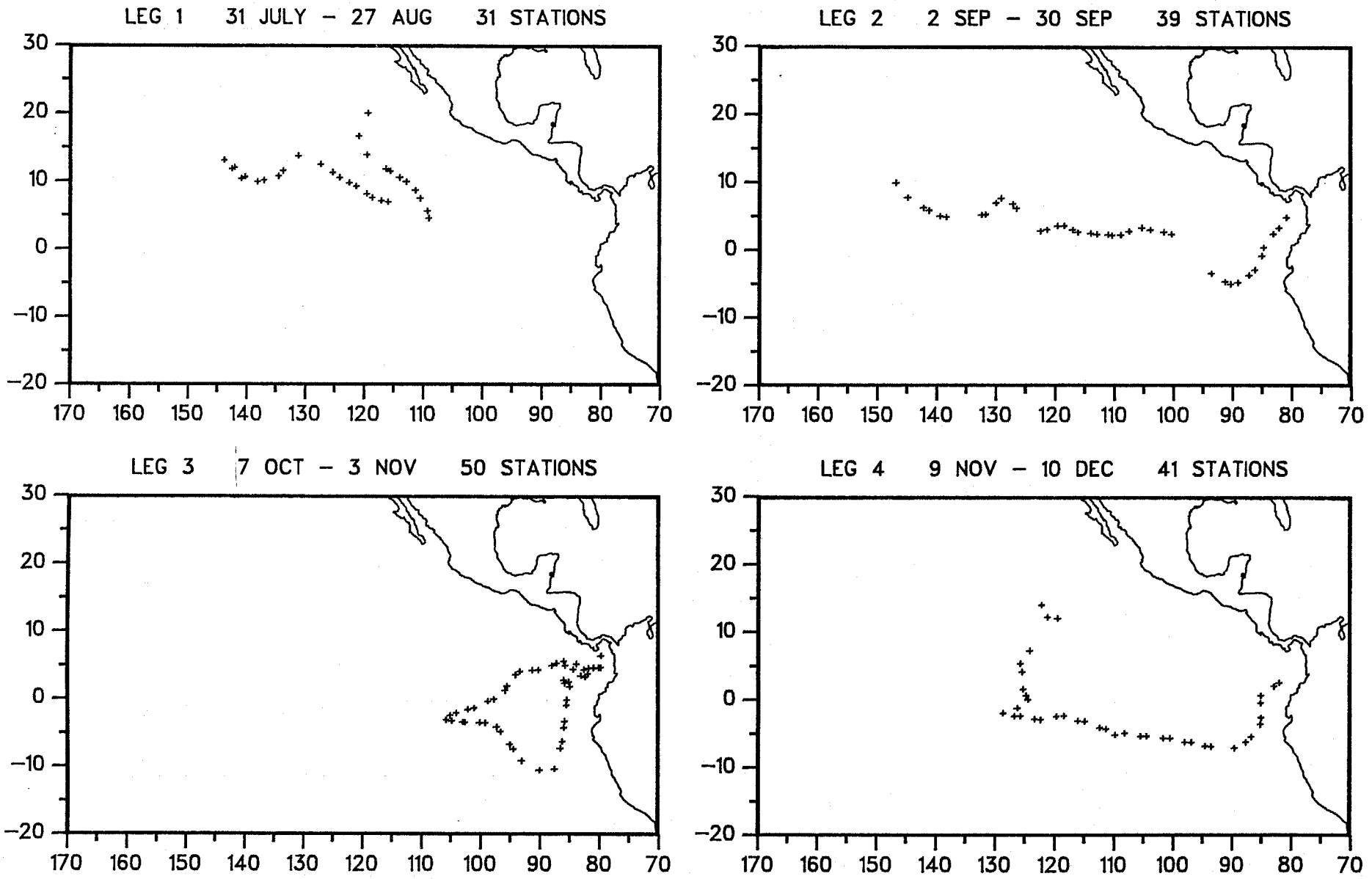

Figure 2. CTD stations by leg, *McArthur*, 30 July-10 December, 1987.

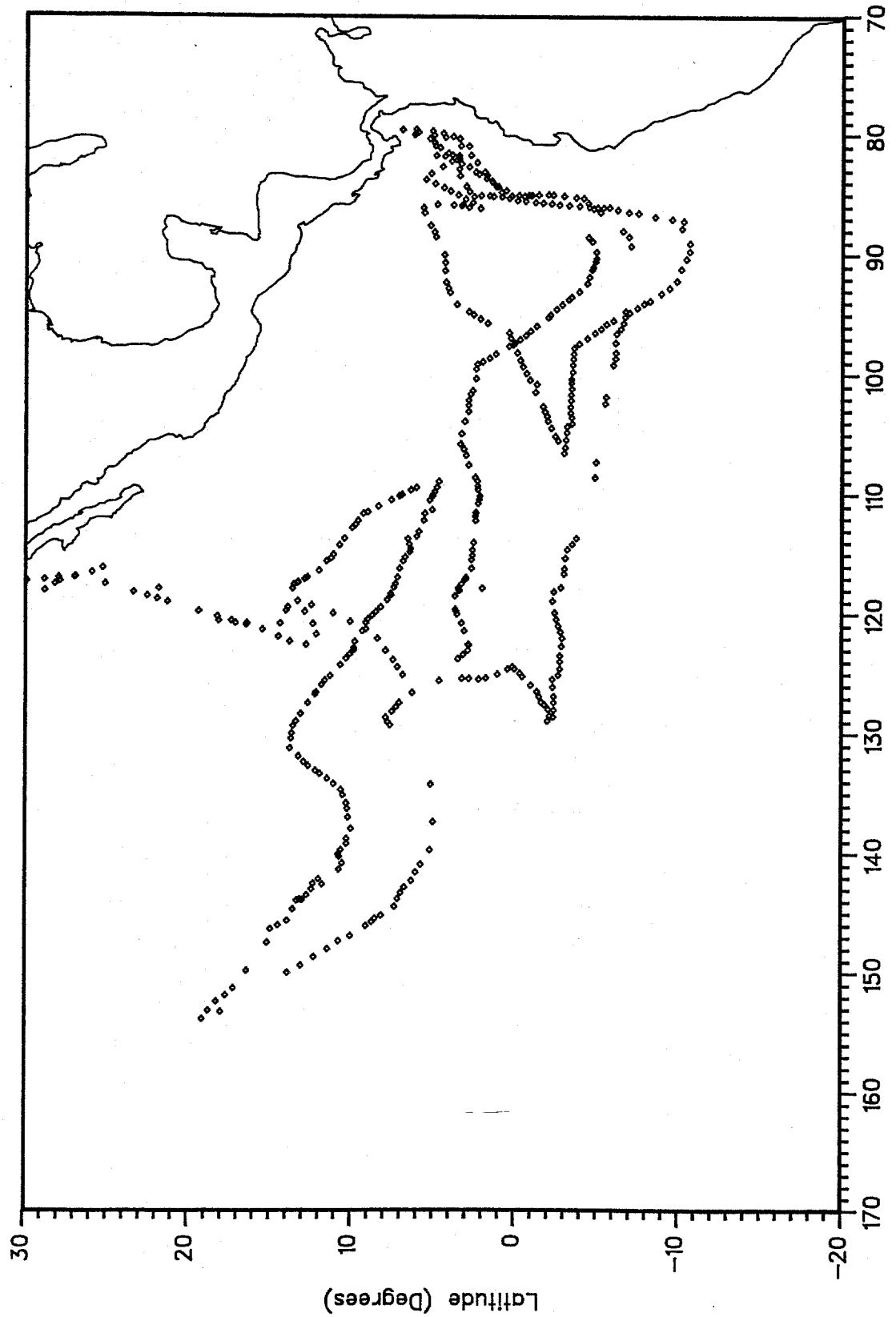

Figure 3. XBT stations, *McArthur*, 30 July-10 December, 1987.

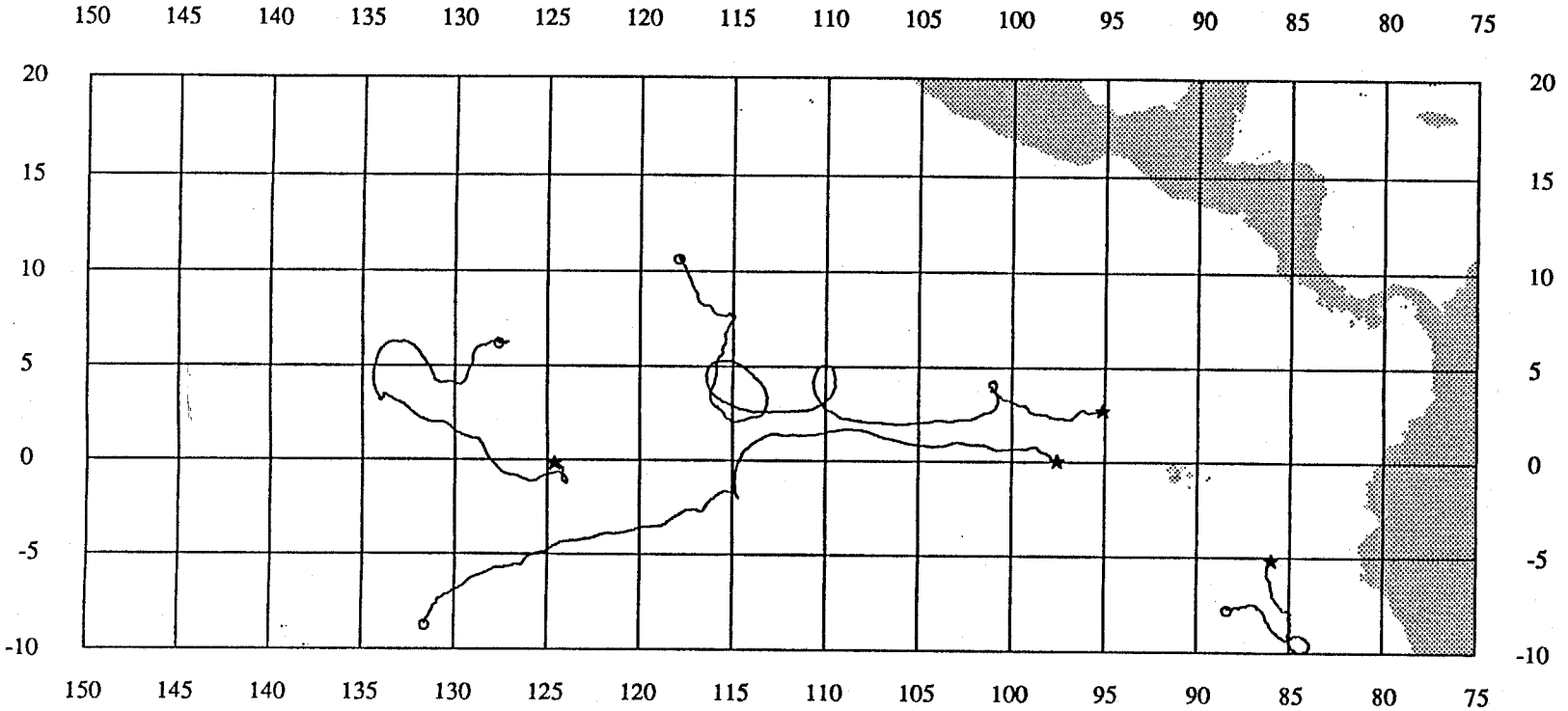

Figure 4. Tracks of four drifting buoys, *McArthur*, 30 July-10 December, 1987.

*-Location of buoy deployment

o-Location of last signal from byoy

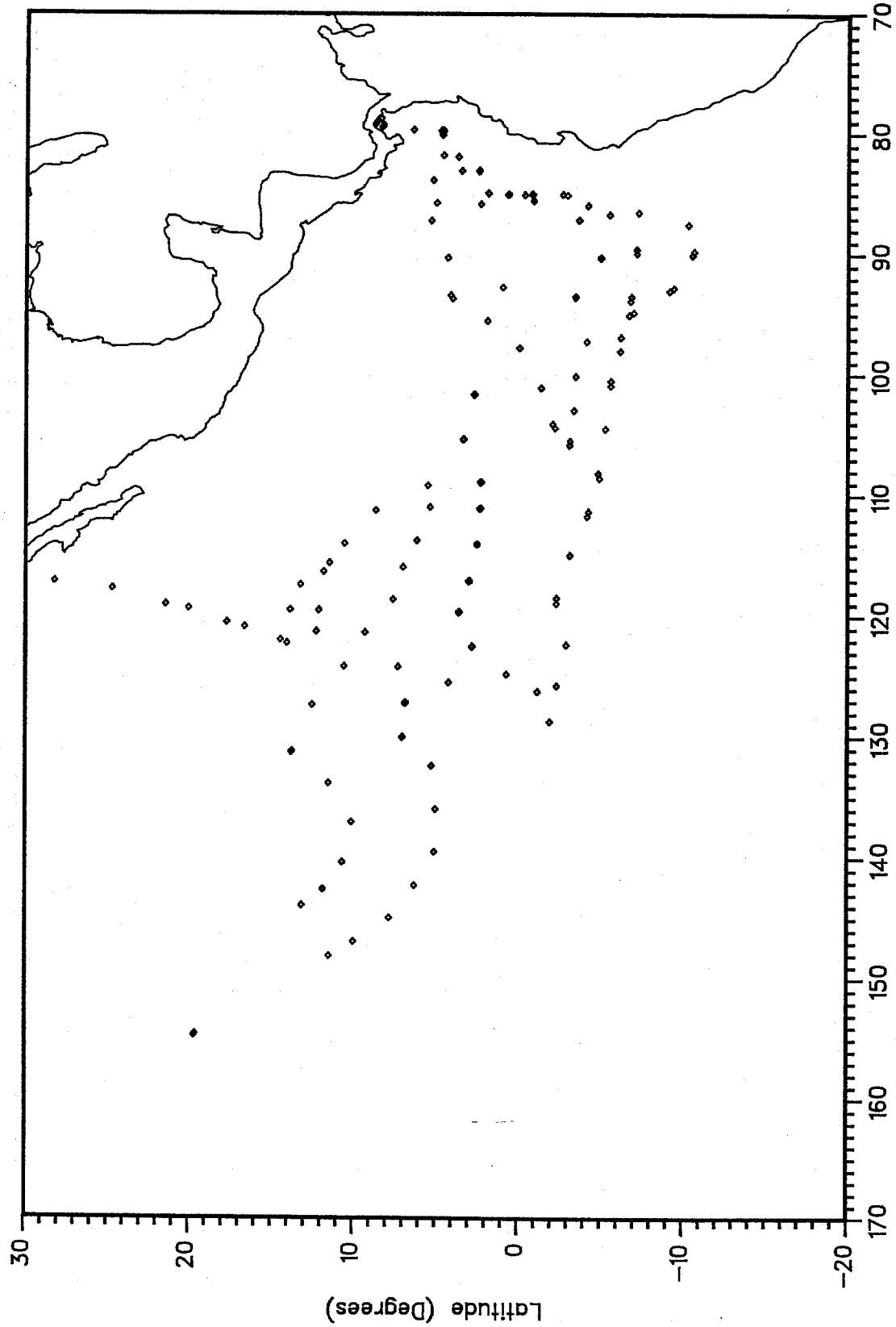

Figure 5. Locations of dip-net stations, *McArthur*, 30 July-10 December, 1987.

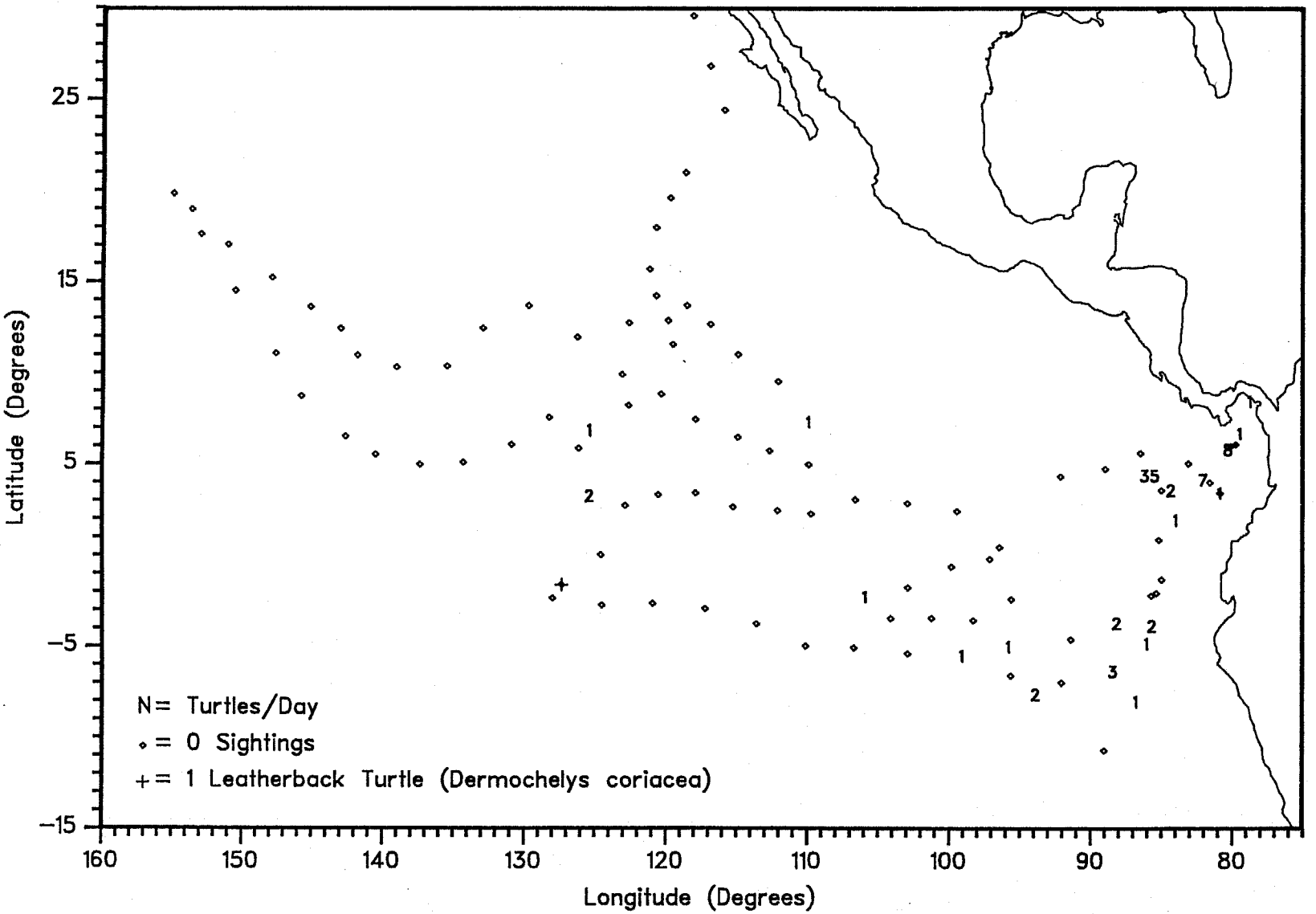

Figure 6. Locations of turtle sightings, *McArthur*, 30 July-10 December, 1987.

APPENDIX A

Station No.	1-001	Date - GMT	04 AUG 87
Station Name	MAC871-001	Time - GMT	0300
Latitude	20 04.07N	Date - LOC	03 AUG 87
Longitude	119 15.59W	Time - LOC	2000

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.77	34.540	0.050	0.016
20	23.27	34.480	--	--
40	23.09	34.640	0.091	0.000
60	20.52	34.310	0.045	0.008
80	19.43	34.210	0.089	0.020
100	18.08	34.020	0.090	0.049
125	15.25	33.870	0.120	0.104
150	13.72	34.220	0.087	0.066

Station No.	1-002	Date - GMT	05 AUG 87
Station Name	MAC871-002	Time - GMT	0322
Latitude	16 40.81N	Date - LOC	04 AUG 87
Longitude	120 47.83W	Time - LOC	2022

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.59	34.290	0.045	0.012
20	26.19	34.310	0.055	0.016
40	24.99	34.320	0.086	0.029
60	22.77	34.450	0.232	0.096
80	20.74	34.410	0.122	0.121
100	19.34	34.400	0.146	0.140
125	16.54	34.090	0.094	0.099
150	13.69	34.170	0.027	0.089

Station No.	1-003	Date - GMT	06 AUG 87
Station Name	MAC871-003	Time - GMT	0310
Latitude	13 54.92N	Date - LOC	05 AUG 87
Longitude	119 25.46W	Time - LOC	2010

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.90	33.960	0.094	0.000
20	27.41	33.970	0.068	0.000
40	26.14	34.300	0.078	0.004
60	23.74	34.300	0.193	0.088
80	20.88	34.340	0.260	0.153
100	16.32	34.390	0.165	0.146
125	14.46	34.660	0.060	0.213
150	13.56	34.800	0.011	0.194

Station No.	1-004	Date - GMT	07 AUG 87
Station Name	MAC871-004	Time - GMT	0321
Latitude	10 34.60N	Date - LOC	06 AUG 87
Longitude	113 55.72W	Time - LOC	2021

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.65	34.200	0.063	0.001
20	27.29	34.200	0.062	0.008
40	25.66	34.330	0.092	0.013
60	23.61	34.360	0.117	0.037
80	21.76	34.330	--	--
100	17.49	34.210	0.213	0.218
125	14.64	34.510	0.044	0.154
150	13.38	34.670	0.010	0.357

Station No.	1-005	Date - GMT	08 AUG 87
Station Name	MAC871-005	Time - GMT	0320
Latitude	11 51.17N	Date - LOC	07 AUG 87
Longitude	116 15.67W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.69	33.620	0.070	0.011
20	28.62	33.610	0.049	0.020
40	28.54	33.680	0.115	0.016
60	22.43	34.360	0.468	0.234
80	16.95	34.500	0.173	0.341
100	14.08	34.750	0.012	0.263
125	13.00	34.700	0.011	0.063
150	12.19	34.710	0.003	0.050

Station No.	1-006	Date - GMT	08 AUG 87
Station Name	MAC871-006	Time - GMT	1248
Latitude	11 31.05N	Date - LOC	08 AUG 87
Longitude	115 32.26W	Time - LOC	0548

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.35	33.340	0.059	0.012
20	28.35	33.330	--	--
40	27.14	34.220	0.088	0.011
60	21.56	34.410	0.229	0.049
80	16.84	34.430	0.124	0.282
100	14.13	34.540	0.091	0.097
125	12.50	34.570	0.013	0.065
150	11.86	34.650	0.001	0.029

Station No.	1-007	Date - GMT	09 AUG 87
Station Name	MAC871-007	Time - GMT	0319
Latitude	10 34.60N	Date - LOC	08 AUG 87
Longitude	113 55.72W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.33	33.210	0.109	0.007
20	28.38	33.290	0.100	0.018
40	28.40	33.450	0.191	0.027
60	25.40	34.160	0.448	0.118
80	18.60	34.600	0.265	0.202
100	14.91	34.680	0.027	0.230
125	13.17	34.670	0.019	0.145
150	12.50	34.730	0.003	0.034

Station No.	1-008	Date - GMT	09 AUG 87
Station Name	MAC871-008	Time - GMT	1230
Latitude	9 57.08N	Date - LOC	09 AUG 87
Longitude	112 46.90W	Time - LOC	0530

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.31	33.320	0.096	0.043
20	28.35	33.340	--	--
40	28.44	33.520	0.137	0.038
60	24.69	34.190	0.109	0.041
80	16.81	34.680	0.451	0.274
100	14.46	34.860	0.137	0.271
125	13.18	34.730	0.083	0.137
150	12.30	34.730	0.046	0.109

Station No.	1-009	Date - GMT	10 AUG 87
Station Name	MAC871-009	Time - GMT	0316
Latitude	8 42.60N	Date - LOC	09 AUG 87
Longitude	111 14.30W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.44	33.020	0.078	0.000
20	28.31	33.190	0.104	0.000
40	28.26	33.200	0.096	0.042
60	26.48	34.190	0.292	0.222
80	18.42	34.700	--	--
100	14.65	34.740	0.113	0.129
125	13.15	34.720	0.051	0.114
150	12.41	34.760	0.007	0.049

Station No.	1-010	Date - GMT	10 AUG 87
Station Name	MAC871-010	Time - GMT	1235
Latitude	7 31.65N	Date - LOC	10 AUG 87
Longitude	110 24.82W	Time - LOC	0535

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.22	33.250	0.067	0.002
20	28.28	33.280	0.055	0.006
40	28.19	33.300	0.068	0.012
60	28.42	34.230	--	--
80	27.52	34.700	0.186	0.107
100	20.76	34.750	0.143	0.180
125	14.40	34.640	0.051	0.085
150	12.63	34.740	0.043	0.082

Station No.	1-011	Date - GMT	11 AUG 87
Station Name	MAC871-011	Time - GMT	0319
Latitude	5 39.68N	Date - LOC	10 AUG 87
Longitude	109 10.46W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.99	33.990	0.117	0.046
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-012	Date - GMT	11 AUG 87
Station Name	MAC871-012	Time - GMT	1223
Latitude	4 36.87N	Date - LOC	11 AUG 87
Longitude	108 56.56W	Time - LOC	0523

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.74	34.250	0.214	0.013
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-013	Date - GMT	14 AUG 87
Station Name	MAC871-013	Time - GMT	0316
Latitude	7 02.42N	Date - LOC	13 AUG 87
Longitude	115 53.93W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.11	33.960	0.103	0.027
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-014	Date - GMT	14 AUG 87
Station Name	MAC871-014	Time - GMT	1245
Latitude	7 13.30N	Date - LOC	14 AUG 87
Longitude	117 02.82W	Time - LOC	0545

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.11	33.640	0.105	0.019
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-015	Date - GMT	15 AUG 87
Station Name	MAC871-015	Time - GMT	0312
Latitude	7 39.36N	Date - LOC	14 AUG 87
Longitude	118 34.41W	Time - LOC	2012

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.17	33.270	0.108	0.004
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-016	Date - GMT	15 AUG 87
Station Name	MAC871-016	Time - GMT	1305
Latitude	8 13.57N	Date - LOC	15 AUG 87
Longitude	119 29.97W	Time - LOC	0505

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.11	33.500	0.098	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-017	Date - GMT	16 AUG 87
Station Name	MAC871-017	Time - GMT	0419
Latitude	9 19.53N	Date - LOC	15 AUG 87
Longitude	121 18.31W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.56	33.820	0.093	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-018	Date - GMT	16 AUG 87
Station Name	MAC871-018	Time - GMT	1321
Latitude	9 49.32N	Date - LOC	16 AUG 87
Longitude	122 29.38W	Time - LOC	0521

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.69	33.440	0.060	0.006
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-019	Date - GMT	17 AUG 87
Station Name	MAC871-019	Time - GMT	0415
Latitude	10 35.74N	Date - LOC	16 AUG 87
Longitude	124 06.87W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.76	33.280	0.096	0.004
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-020	Date - GMT	17 AUG 87
Station Name	MAC871-020	Time - GMT	1326
Latitude	11 21.55N	Date - LOC	17 AUG 87
Longitude	125 17.75W	Time - LOC	0526

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.97	33.720	0.089	0.012
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-021	Date - GMT	18 AUG 87
Station Name	MAC871-021	Time - GMT	0419
Latitude	12 33.20N	Date - LOC	17 AUG 87
Longitude	127 17.08W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.56	33.820	0.095	0.010
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-022	Date - GMT	19 AUG 87
Station Name	MAC871-022	Time - GMT	0400
Latitude	13 46.37N	Date - LOC	18 AUG 87
Longitude	131 07.00W	Time - LOC	2000

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.57	34.180	0.108	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-023	Date - GMT	20 AUG 87
Station Name	MAC871-023	Time - GMT	0419
Latitude	11 31.67N	Date - LOC	19 AUG 87
Longitude	133 45.68W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.49	33.610	0.082	0.009
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-024	Date - GMT	20 AUG 87
Station Name	MAC871-024	Time - GMT	1310
Latitude	10 45.14N	Date - LOC	20 AUG 87
Longitude	134 31.15W	Time - LOC	0610

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.44	33.900	0.009	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-025	Date - GMT	21 AUG 87
Station Name	MAC871-025	Time - GMT	0505
Latitude	10 08.08N	Date - LOC	20 AUG 87
Longitude	136 59.29W	Time - LOC	2105

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.32	33.830	0.179	0.009
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-026	Date - GMT	21 AUG 87
Station Name	MAC871-026	Time - GMT	1436
Latitude	9 58.91N	Date - LOC	21 AUG 87
Longitude	138 08.50W	Time - LOC	0536

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.29	33.880	0.115	0.046
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-027	Date - GMT	22 AUG 87
Station Name	MAC871-027	Time - GMT	2027
Latitude	10 41.32N	Date - LOC	21 AUG 87
Longitude	140 16.88W	Time - LOC	0527

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.36	33.980	0.100	0.017
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-028	Date - GMT	22 AUG 87
Station Name	MAC871-028	Time - GMT	1453
Latitude	10 25.53N	Date - LOC	22 AUG 87
Longitude	140 55.88W	Time - LOC	0553

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.20	34.000	0.091	0.006
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-029	Date - GMT	23 AUG 87
Station Name	MAC871-029	Time - GMT	0458
Latitude	11 52.31N	Date - LOC	22 AUG 87
Longitude	142 32.28W	Time - LOC	1958

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.18	34.460	0.074	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-030	Date - GMT	23 AUG 87
Station Name	MAC871-030	Time - GMT	1413
Latitude	12 02.41N	Date - LOC	23 AUG 87
Longitude	142 03.76W	Time - LOC	0513

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.96	34.220	0.053	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	1-031	Date - GMT	24 AUG 87
Station Name	MAC871-031	Time - GMT	0527
Latitude	13 08.78N	Date - LOC	23 AUG 87
Longitude	143 51.85W	Time - LOC	2027

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.23	34.480	0.052	0.000
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	2-032	Date - GMT	06 SEP 87
Station Name	MAC872-032	Time - GMT	0614
Latitude	10 00.05N	Date - LOC	05 SEP 87
Longitude	146 51.80W	Time - LOC	2014

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.06	--	--	--
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	2-033	Date - GMT	07 SEP 87
Station Name	MAC872-033	Time - GMT	0601
Latitude	7 47.91N	Date - LOC	06 SEP 87
Longitude	144 52.23W	Time - LOC	2001

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.90	--	--	--
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	2-034	Date - GMT	08 SEP 87
Station Name	MAC872-034	Time - GMT	0626
Latitude	6 18.06N	Date - LOC	07 SEP 87
Longitude	142 12.98W	Time - LOC	2026

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	29.15	34.150	0.050	0.009
20	29.19	34.320	0.050	0.013
40	29.19	34.320	0.063	0.010
60	28.53	34.760	0.100	0.019
80	27.39	34.710	0.153	0.072
100	20.17	34.330	0.058	0.012
125	15.44	34.320	0.105	0.110
150	12.29	34.670	--	--

Station No.	2-035	Date - GMT	08 SEP 87
Station Name	MAC872-035	Time - GMT	1431
Latitude	5 54.44N	Date - LOC	08 SEP 87
Longitude	141 16.73W	Time - LOC	0531

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	29.28	33.940	--	--
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	2-036	Date - GMT	09 SEP 87
Station Name	MAC872-036	Time - GMT	0525
Latitude	5 04.05N	Date - LOC	08 SEP 87
Longitude	139 25.57W	Time - LOC	2025

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.99	34.160	0.073	0.015
20	28.96	34.740	0.083	0.022
40	28.78	34.980	0.148	0.045
60	28.71	34.990	0.143	0.049
80	28.69	35.000	--	--
100	28.65	35.020	0.079	0.052
125	22.38	34.630	0.119	0.119
150	15.01	34.550	--	--

Station No.	2-037	Date - GMT	09 SEP 87
Station Name	MAC872-037	Time - GMT	1322
Latitude	4 57.40N	Date - LOC	09 SEP 87
Longitude	138 22.00W	Time - LOC	0422

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.81	33.720	0.325	0.028
20	28.81	34.770	0.237	0.035
40	28.83	34.790	0.148	0.031
60	28.81	34.790	0.139	0.045
80	28.78	34.870	0.165	0.036
100	28.48	34.900	0.143	0.049
125	25.15	34.710	0.129	0.096
150	16.53	34.750	0.131	0.000

Station No.	2-038	Date - GMT	11 SEP 87
Station Name	MAC872-038	Time - GMT	0519
Latitude	5 16.20N	Date - LOC	10 SEP 87
Longitude	132 23.23W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.96	34.250	0.053	0.013
20	28.99	34.540	0.063	0.013
40	28.94	34.550	0.073	0.024
60	28.90	34.590	0.089	0.026
80	28.83	34.700	0.066	0.018
100	23.12	34.810	0.086	0.075
125	17.42	34.710	--	--
150	13.26	34.670	--	--

Station No.	2-039	Date - GMT	11 SEP 87
Station Name	MAC872-039	Time - GMT	1356
Latitude	5 21.63N	Date - LOC	11 SEP 87
Longitude	131 43.95W	Time - LOC	0556

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.95	--	--	--
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	2-040	Date - GMT	12 SEP 87
Station Name	MAC872-040	Time - GMT	0541
Latitude	7 03.53N	Date - LOC	11 SEP 87
Longitude	129 56.30W	Time - LOC	2041

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.95	34.680	0.031	0.010
20	--	34.140	0.031	0.010
40	--	34.230	0.050	0.018
60	--	34.650	0.119	0.055
80	--	34.820	0.177	0.213
100	--	34.770	0.129	0.142
125	--	34.630	0.110	0.119
150	--	--	--	--

Station No.	2-041	Date - GMT	12 SEP 87
Station Name	MAC872-041	Time - GMT	1359
Latitude	7 43.94N	Date - LOC	12 SEP 87
Longitude	129 05.67W	Time - LOC	0459

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	33.500	0.042	0.012
20	--	34.090	0.038	0.013
40	--	34.260	0.063	0.021
60	--	34.710	0.088	0.033
80	--	34.770	0.188	0.107
100	--	--	--	--
125	--	34.520	0.127	0.212
150	--	34.750	0.042	0.114

Station No.	2-042	Date - GMT	13 SEP 87
Station Name	MAC872-042	Time - GMT	0529
Latitude	6 52.74N	Date - LOC	12 SEP 87
Longitude	127 07.17W	Time - LOC	2029

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.080	0.051	0.006
20	--	34.070	0.041	0.014
40	--	--	0.044	0.016
60	--	34.280	0.080	0.030
80	--	34.580	0.167	0.067
100	--	34.790	0.181	0.181
125	--	34.590	0.047	0.101
150	--	34.850	0.025	0.045

Station No.	2-043	Date - GMT	13 SEP 87
Station Name	MAC872-043	Time - GMT	1339
Latitude	6 13.86N	Date - LOC	13 SEP 87
Longitude	126 29.77W	Time - LOC	0539

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.220	0.012	0.069
20	--	34.190	0.039	0.024
40	--	34.220	0.043	0.018
60	--	34.290	0.038	0.020
80	--	34.340	0.056	0.017
100	--	34.670	0.184	0.088
125	--	34.800	0.158	0.214
150	--	34.650	0.177	0.080

Station No.	2-044	Date - GMT	15 SEP 87
Station Name	MAC872-044	Time - GMT	0432
Latitude	2 51.20N	Date - LOC	14 SEP 87
Longitude	122 27.44W	Time - LOC	2032

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.630	0.115	0.023
20	--	34.550	0.099	0.028
40	--	34.540	0.105	0.042
60	--	34.570	0.158	0.040
80	--	34.460	0.143	0.072
100	--	34.770	0.110	0.092
125	--	34.730	0.058	0.078
150	--	34.840	0.039	0.091

Station No.	2-045	Date - GMT	15 SEP 87
Station Name	MAC872-045	Time - GMT	1334
Latitude	3 06.90N	Date - LOC	15 SEP 87
Longitude	121 22.70W	Time - LOC	0534

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.610	0.107	0.054
20	--	--	--	--
40	--	34.580	0.120	0.056
60	--	34.580	0.100	0.045
80	--	34.760	0.205	0.281
100	--	34.920	0.079	0.114
125	--	34.900	0.036	0.060
150	--	34.910	0.006	0.017

Station No.	2-046	Date - GMT	16 SEP 87
Station Name	MAC872-046	Time - GMT	0425
Latitude	3 39.48N	Date - LOC	15 SEP 87
Longitude	119 35.96W	Time - LOC	2025

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.470	0.129	0.036
20	--	--	--	--
40	--	0.000	--	--
60	--	34.580	0.218	0.036
80	--	34.610	0.115	0.092
100	--	34.780	0.280	0.188
125	--	34.910	0.134	0.233
150	--	34.910	0.056	0.051

Station No.	2-047	Date - GMT	16 SEP 87
Station Name	MAC872-047	Time - GMT	1316
Latitude	3 40.70N	Date - LOC	16 SEP 87
Longitude	118 29.70W	Time - LOC	0516

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	34.270	0.180	0.024
20	--	34.280	0.170	0.027
40	--	34.280	0.224	0.049
60	--	34.430	0.365	0.018
80	--	34.620	0.205	0.097
100	--	34.790	0.173	0.250
125	--	34.870	0.136	0.194
150	--	34.930	0.064	0.061

Station No.	2-048	Date - GMT	17 SEP 87
Station Name	MAC872-048	Time - GMT	0426
Latitude	3 02.24N	Date - LOC	16 SEP 87
Longitude	117 01.78W	Time - LOC	2026

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.06	34.310	0.218	0.064
20	27.06	34.290	0.234	0.004
40	27.05	34.280	0.237	0.045
60	26.99	34.310	0.231	0.047
80	25.24	34.320	0.227	0.050
100	17.42	34.900	0.175	0.201
125	14.99	34.910	0.096	0.152
150	14.62	34.930	0.059	0.045

Station No.	2-049	Date - GMT	17 SEP 87
Station Name	MAC872-049	Time - GMT	1302
Latitude	2 41.72N	Date - LOC	17 SEP 87
Longitude	116 10.23W	Time - LOC	0502

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.19	34.330	0.246	0.038
20	27.15	34.340	0.235	0.040
40	27.10	34.350	0.236	0.039
60	26.83	34.350	0.254	0.081
80	22.92	34.590	0.117	0.148
100	15.19	34.960	0.102	0.177
125	14.63	34.950	0.054	0.113
150	14.26	34.940	0.037	0.052

Station No.	2-050	Date - GMT	18 SEP 87
Station Name	MAC872-050	Time - GMT	0448
Latitude	2 33.14N	Date - LOC	17 SEP 87
Longitude	113 59.73W	Time - LOC	2048

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.33	34.310	0.244	0.036
20	27.33	34.330	0.175	0.164
40	27.15	34.440	0.262	0.089
60	26.83	34.540	0.304	0.210
80	25.35	34.860	0.304	0.257
100	15.74	34.950	0.223	0.233
125	14.24	34.910	0.056	0.126
150	13.51	34.840	0.029	0.043

Station No.	2-051	Date - GMT	18 SEP 87
Station Name	MAC872-051	Time - GMT	1240
Latitude	2 24.00N	Date - LOC	18 SEP 87
Longitude	112 56.10W	Time - LOC	0540

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.06	34.500	0.229	0.064
20	27.06	--	--	--
40	27.06	34.470	0.225	0.049
60	25.62	34.540	0.277	0.181
80	20.90	34.700	0.287	0.192
100	15.38	34.870	0.183	0.292
125	14.13	34.920	0.078	0.116
150	13.67	34.910	0.035	0.090

Station No.	2-052	Date - GMT	19 SEP 87
Station Name	MAC872-052	Time - GMT	0320
Latitude	2 21.85N	Date - LOC	18 SEP 87
Longitude	111 03.21W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.62	34.520	0.277	0.026
20	26.60	34.420	0.210	0.019
40	26.49	34.430	0.239	0.048
60	24.05	34.650	0.312	0.172
80	17.28	34.850	0.244	0.259
100	15.17	34.910	0.179	0.234
125	14.17	34.930	0.096	0.180
150	13.90	34.940	0.035	0.066

Station No.	2-053	Date - GMT	19 SEP 87
Station Name	MAC872-053	Time - GMT	1222
Latitude	2 13.61N	Date - LOC	19 SEP 87
Longitude	110 23.38W	Time - LOC	0522

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.14	34.480	0.176	0.028
20	26.12	34.450	0.188	0.026
40	24.96	34.490	0.212	0.063
60	24.24	34.590	0.218	0.252
80	21.62	34.740	0.247	0.185
100	15.92	34.910	0.173	0.193
125	14.45	34.950	0.112	0.019
150	14.13	34.960	0.048	0.067

Station No.	2-054	Date - GMT	20 SEP 87
Station Name	MAC872-054	Time - GMT	0326
Latitude	2 19.61N	Date - LOC	19 SEP 87
Longitude	108 53.29W	Time - LOC	2026

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.65	34.470	0.309	0.000
20	25.44	34.510	0.289	0.022
40	24.90	34.590	0.224	0.051
60	23.71	34.740	0.263	0.077
80	21.40	34.860	--	--
100	16.45	34.900	0.180	0.194
125	14.42	34.900	0.083	0.128
150	13.99	34.950	0.021	0.043

Station No.	2-055	Date - GMT	20 SEP 87
Station Name	MAC872-055	Time - GMT	1225
Latitude	2 51.57N	Date - LOC	20 SEP 87
Longitude	107 30.31W	Time - LOC	0525

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.26	34.260	0.298	0.056
20	26.19	34.220	0.315	0.024
40	24.55	34.500	0.273	0.062
60	23.46	34.620	0.290	0.135
80	22.28	34.980	0.277	0.145
100	19.69	34.890	0.160	0.178
125	14.22	34.910	0.064	0.131
150	13.42	34.870	0.023	0.067

Station No.	2-056	Date - GMT	21 SEP 87
Station Name	MAC872-056	Time - GMT	0319
Latitude	3 23.65N	Date - LOC	20 SEP 87
Longitude	105 19.63W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.78	34.140	0.210	0.019
20	26.58	34.140	0.237	0.015
40	26.26	34.220	0.309	0.040
60	23.65	34.710	0.296	0.075
80	21.62	34.880	0.218	0.128
100	13.92	34.850	0.117	0.134
125	13.65	34.930	0.053	0.046
150	13.54	34.920	0.050	0.046

Station No.	2-057	Date - GMT	21 SEP 87
Station Name	MAC872-057	Time - GMT	1215
Latitude	3 05.76N	Date - LOC	21 SEP 87
Longitude	103 53.60W	Time - LOC	0515

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.69	34.070	0.234	0.050
20	26.64	33.850	0.258	0.054
40	25.76	34.320	0.317	0.128
60	23.69	34.480	0.263	0.104
80	15.29	34.920	0.274	0.129
100	13.92	34.880	0.223	0.208
125	13.60	34.940	0.011	0.030
150	13.35	34.920	0.001	0.020

Station No.	2-058	Date - GMT	22 SEP 87
Station Name	MAC872-058	Time - GMT	0323
Latitude	2 44.89N	Date - LOC	21 SEP 87
Longitude	101 37.67W	Time - LOC	2023

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.19	34.240	0.371	0.000
20	23.64	34.670	0.266	0.071
40	23.24	34.720	0.346	0.129
60	17.94	34.980	0.458	0.162
80	15.72	34.970	0.334	0.157
100	14.88	34.970	0.136	0.115
125	14.54	34.950	0.051	0.058
150	13.95	34.960	0.017	0.026

Station No.	2-059	Date - GMT	22 SEP 87
Station Name	MAC872-059	Time - GMT	1145
Latitude	2 25.11N	Date - LOC	22 SEP 87
Longitude	100 19.43W	Time - LOC	0445

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.21	34.220	0.319	0.032
20	24.33	34.430	0.315	0.038
40	23.47	34.780	0.358	0.073
60	16.20	35.030	0.402	0.183
80	15.67	35.020	0.226	0.095
100	14.90	35.020	0.054	0.055
125	14.65	35.030	0.036	0.037
150	14.31	35.010	0.019	0.030

Station No.	2-060	Date - GMT	25 SEP 87
Station Name	MAC872-060	Time - GMT	0224
Latitude	3 23.61S	Date - LOC	24 SEP 87
Longitude	93 32.17W	Time - LOC	2024

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.15	35.060	0.158	0.030
20	23.10	34.980	0.241	0.007
40	22.99	--	--	--
60	21.63	35.100	0.270	0.151
80	14.87	35.070	0.282	0.163
100	13.99	35.050	0.248	0.114
125	13.31	35.000	0.056	0.029
150	13.26	34.980	0.022	0.033

Station No.	2-061	Date - GMT	25 SEP 87
Station Name	MAC872-061	Time - GMT	1923
Latitude	4 39.62S	Date - LOC	25 SEP 87
Longitude	91 13.68W	Time - LOC	1323

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.06	34.760	0.364	0.000
20	23.17	34.950	0.335	0.013
40	22.53	34.940	0.304	0.151
60	22.30	35.020	0.368	0.186
80	18.67	35.160	0.168	0.328
100	16.87	35.120	0.168	0.358
125	14.10	34.990	0.047	0.087
150	13.58	34.940	0.003	0.030

Station No.	2-062	Date - GMT	26 SEP 87
Station Name	MAC872-062	Time - GMT	0215
Latitude	4 56.05S	Date - LOC	25 SEP 87
Longitude	90 17.91W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.62	34.860	0.353	0.079
20	22.60	34.820	0.353	0.068
40	21.78	34.910	0.455	0.106
60	20.10	34.940	0.358	0.210
80	17.54	35.170	0.100	0.092
100	15.33	35.070	0.055	0.074
125	14.22	34.990	0.025	0.052
150	13.88	34.920	0.013	0.040

Station No.	2-063	Date - GMT	26 SEP 87
Station Name	MAC872-063	Time - GMT	1047
Latitude	4 42.85S	Date - LOC	26 SEP 87
Longitude	89 03.67W	Time - LOC	0447

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.65	35.250	0.269	0.018
20	22.63	35.230	0.221	0.027
40	22.58	35.240	0.270	0.041
60	20.85	35.090	0.226	0.190
80	17.62	35.040	0.149	0.228
100	16.53	35.060	0.124	0.205
125	15.76	35.080	0.063	0.111
150	14.94	--	--	--

Station No.	2-064	Date - GMT	27 SEP 87
Station Name	MAC872-064	Time - GMT	0214
Latitude	3 36.47S	Date - LOC	26 SEP 87
Longitude	87 10.22W	Time - LOC	2014

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.56	35.170	0.320	0.028
20	22.55	--	--	--
40	21.92	35.170	0.365	0.126
60	18.04	35.110	0.166	0.739
80	16.24	35.150	0.253	0.091
100	14.95	35.040	0.073	0.084
125	14.45	34.970	0.049	0.083
150	14.31	34.940	0.041	0.050

Station No.	2-065	Date - GMT	27 SEP 87
Station Name	MAC872-065	Time - GMT	1027
Latitude	2 48.85S	Date - LOC	27 SEP 87
Longitude	86 11.42W	Time - LOC	0427

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.06	35.230	0.290	0.047
20	21.58	35.150	0.252	0.070
40	19.85	35.010	0.304	0.250
60	19.15	35.040	0.229	0.166
80	16.12	35.110	0.166	0.175
100	15.54	35.060	0.094	0.018
125	14.87	35.040	0.015	0.046
150	14.60	34.930	0.020	0.020

Station No.	2-066	Date - GMT	28 SEP 87
Station Name	MAC872-066	Time - GMT	0219
Latitude	0 44.94S	Date - LOC	27 SEP 87
Longitude	85 02.98W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.99	33.200	0.265	0.022
20	21.13	34.100	0.313	0.122
40	19.69	34.830	0.377	0.207
60	17.19	35.030	0.163	0.107
80	16.49	35.060	0.098	0.128
100	15.69	35.050	0.048	0.053
125	15.26	35.020	0.016	0.057
150	14.97	34.990	0.007	0.035

Station No.	2-067	Date - GMT	28 SEP 87
Station Name	MAC872-067	Time - GMT	1037
Latitude	0 29.84N	Date - LOC	28 SEP 87
Longitude	84 45.75W	Time - LOC	0437

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.56	33.160	0.218	0.032
20	20.47	34.460	0.293	0.160
40	17.97	34.990	0.307	0.259
60	16.81	35.060	0.144	0.256
80	15.92	35.040	0.073	0.102
100	15.63	35.030	0.049	0.044
125	15.49	35.010	0.034	0.034
150	15.13	34.980	0.011	0.040

Station No.	2-068	Date - GMT	29 SEP 87
Station Name	MAC872-068	Time - GMT	0216
Latitude	2 30.21N	Date - LOC	28 SEP 87
Longitude	83 06.01W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.28	33.060	0.136	0.025
20	27.26	32.960	--	--
40	23.69	33.800	0.480	0.065
60	18.92	34.730	0.748	0.265
80	17.01	34.950	0.195	0.203
100	16.06	34.990	0.268	0.223
125	15.08	34.940	0.070	0.064
150	14.51	34.940	0.004	0.017

Station No.	2-069	Date - GMT	29 SEP 87
Station Name	MAC872-069	Time - GMT	1028
Latitude	3 23.44N	Date - LOC	29 SEP 87
Longitude	82 08.49W	Time - LOC	0528

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.67	32.560	0.119	0.036
20	27.55	32.670	0.105	0.032
40	20.47	34.760	0.597	0.362
60	18.46	34.920	0.317	0.209
80	17.12	34.940	0.196	0.125
100	16.56	34.980	0.108	0.121
125	15.58	35.000	0.051	0.046
150	14.97	34.980	--	--

Station No.	2-070	Date - GMT	30 SEP 87
Station Name	MAC872-070	Time - GMT	0126
Latitude	4 56.86N	Date - LOC	29 SEP 87
Longitude	80 53.53W	Time - LOC	2026

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.12	--	0.267	0.053
20	27.28	32.930	0.306	0.038
40	22.12	34.490	0.365	0.207
60	17.99	34.590	0.268	0.188
80	16.38	34.960	0.067	0.044
100	15.22	34.940	0.012	0.015
125	14.76	34.960	0.003	0.013
150	14.35	34.920	--	--

Station No.	3-071	Date - GMT	08 OCT 87
Station Name	MAC873-071	Time - GMT	0119
Latitude	4 41.59N	Date - LOC	07 OCT 87
Longitude	80 07.09W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.85	31.070	0.298	0.055
20	27.85	31.140	0.272	0.012
40	26.71	34.030	0.329	0.151
60	20.40	35.950	0.244	0.271
80	17.72	35.870	0.128	0.141
100	16.45	35.930	0.080	0.060
125	15.47	36.000	0.036	0.000
150	14.68	35.950	0.000	0.018

Station No.	3-072	Date - GMT	09 OCT 87
Station Name	MAC873-072	Time - GMT	0118
Latitude	3 45.30N	Date - LOC	08 OCT 87
Longitude	81 58.57W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.59	31.750	0.145	0.041
20	27.80	32.670	0.169	0.045
40	22.03	35.510	--	--
60	17.81	35.990	0.109	0.028
80	17.17	36.050	0.113	0.240
100	16.22	36.030	0.086	0.054
125	15.61	36.040	0.041	0.043
150	14.95	36.030	0.036	0.042

Station No.	3-073	Date - GMT	09 OCT 87
Station Name	MAC873-073	Time - GMT	1036
Latitude	4 25.31N	Date - LOC	09 OCT 87
Longitude	82 38.20W	Time - LOC	0536

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.68	31.730	0.110	0.055
20	27.57	32.430	0.091	0.083
40	22.01	35.580	0.516	0.650
60	18.72	35.770	0.377	0.287
80	17.19	35.990	0.153	0.132
100	15.85	35.970	0.041	0.042
125	14.93	35.980	0.011	0.017
150	14.36	35.980	0.007	0.014

Station No.	3-074	Date - GMT	10 OCT 87
Station Name	MAC873-074	Time - GMT	0118
Latitude	5 16.74N	Date - LOC	09 OCT 87
Longitude	83 54.64W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.93	31.520	0.126	0.016
20	25.37	34.650	0.328	0.069
40	21.01	35.580	--	--
60	17.67	35.880	0.244	0.236
80	15.99	35.780	0.110	0.092
100	15.36	35.980	0.003	0.034
125	14.81	35.900	0.006	0.009
150	14.08	35.920	0.002	0.015

Station No.	3-075	Date - GMT	10 OCT 87
Station Name	MAC873-075	Time - GMT	1030
Latitude	4 26.28N	Date - LOC	10 OCT 87
Longitude	84 26.26W	Time - LOC	0530

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.87	32.910	0.115	0.053
20	27.81	33.440	0.145	0.036
40	20.33	35.670	0.424	0.219
60	18.45	35.890	0.287	0.213
80	17.19	35.870	0.230	0.182
100	16.13	35.900	0.085	0.090
125	15.08	35.920	0.026	0.031
150	14.52	35.920	0.017	0.080

Station No.	3-076	Date - GMT	11 OCT 87
Station Name	MAC873-076	Time - GMT	0119
Latitude	2 23.37N	Date - LOC	10 OCT 87
Longitude	85.53.37W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.19	33.210	0.096	0.003
20	27.07	33.870	0.134	0.036
40	21.44	35.390	0.402	0.113
60	18.03	35.890	0.463	0.302
80	16.38	36.020	0.119	0.101
100	15.86	36.000	0.239	0.220
125	15.04	35.940	0.035	0.035
150	14.23	35.970	0.004	0.012

Station No.	3-077	Date - GMT	11 OCT 87
Station Name	MAC873-077	Time - GMT	1028
Latitude	2 54.20N	Date - LOC	11 OCT 87
Longitude	86 03.90W	Time - LOC	0528

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.28	33.780	0.128	0.055
20	27.23	33.660	--	--
40	19.72	35.510	0.645	0.185
60	18.92	34.380	0.289	0.180
80	16.38	35.990	--	--
100	16.04	36.000	0.082	0.070
125	14.38	36.610	0.017	0.046
150	14.56	35.980	0.005	0.014

Station No.	3-078	Date - GMT	12 OCT 87
Station Name	MAC873-078	Time - GMT	0116
Latitude	5 03.15N	Date - LOC	11 OCT 87
Longitude	85 47.88W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.82	32.730	0.110	0.037
20	27.66	33.090	0.158	0.030
40	22.73	35.520	0.365	0.172
60	19.56	35.930	0.287	0.239
80	17.31	35.890	0.226	0.171
100	15.91	35.940	0.224	0.133
125	15.08	35.910	--	--
150	14.27	35.930	--	--

Station No.	3-079	Date - GMT	12 OCT 87
Station Name	MAC873-079	Time - GMT	1033
Latitude	5 41.00N	Date - LOC	12 OCT 87
Longitude	86 03.70W	Time - LOC	0533

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.93	33.930	0.105	0.045
20	27.91	33.530	0.123	0.026
40	19.92	35.800	0.273	0.246
60	16.92	35.930	0.184	0.241
80	16.40	35.940	0.116	0.104
100	15.92	35.940	0.094	0.103
125	15.04	35.930	0.044	0.040
150	14.11	36.740	--	--

Station No.	3-080	Date - GMT	13 OCT 87
Station Name	MAC873-080	Time - GMT	0119
Latitude	5 21.93N	Date - LOC	12 OCT 87
Longitude	87 16.53W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.19	33.090	0.113	0.017
20	27.94	33.710	0.126	0.053
40	24.23	35.170	0.414	0.182
60	18.71	35.600	0.353	0.348
80	16.74	35.660	0.261	0.216
100	14.70	35.750	0.076	0.078
125	13.95	35.800	0.032	0.112
150	13.76	35.760	0.012	0.042

Station No.	3-081	Date - GMT	13 OCT 87
Station Name	MAC873-081	Time - GMT	1040
Latitude	5 00.10N	Date - LOC	13 OCT 87
Longitude	88 04.40W	Time - LOC	0540

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.85	33.960	0.267	0.036
20	27.78	33.810	0.353	0.055
40	23.39	35.420	0.349	0.087
60	18.17	35.800	0.279	0.224
80	17.36	35.680	0.205	0.175
100	16.49	35.700	0.164	0.147
125	14.76	35.720	0.095	0.075
150	13.88	35.720	0.013	0.040

Station No.	3-082	Date - GMT	14 OCT 87
Station Name	MAC873-082	Time - GMT	0119
Latitude	4 21.58N	Date - LOC	13 OCT 87
Longitude	90 19.84W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.80	33.400	0.099	0.015
20	27.64	33.700	0.115	0.032
40	22.99	35.250	0.390	0.195
60	17.28	35.660	0.329	0.279
80	15.54	35.690	0.177	0.268
100	14.67	35.750	0.117	0.126
125	14.08	35.760	0.061	0.015
150	13.70	35.760	0.018	0.039

Station No.	3-083	Date - GMT	14 OCT 87
Station Name	MAC873-083	Time - GMT	1049
Latitude	4 20.20N	Date - LOC	14 OCT 87
Longitude	91 20.90W	Time - LOC	0549

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.98	33.950	0.089	0.027
20	27.91	33.490	0.139	0.043
40	24.96	35.080	0.371	0.104
60	17.76	35.520	0.188	0.241
80	15.20	35.610	0.171	0.124
100	14.51	35.630	0.114	0.108
125	14.13	35.680	0.076	0.083
150	13.86	35.660	0.020	0.041

Station No.	3-084	Date - GMT	15 OCT 87
Station Name	MAC873-084	Time - GMT	0128
Latitude	4 10.74N	Date - LOC	14 OCT 87
Longitude	93 25.90W	Time - LOC	2028

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.76	33.170	0.106	0.006
20	27.71	33.080	0.082	0.015
40	27.68	29.380	0.148	0.040
60	20.56	35.480	0.306	0.153
80	16.90	35.550	0.258	0.205
100	16.02	35.520	0.191	0.121
125	14.36	35.530	0.076	0.116
150	13.63	35.540	0.038	0.049

Station No.	3-085	Date - GMT	15 OCT 87
Station Name	MAC873-085	Time - GMT	1118
Latitude	3 38.30N	Date - LOC	15 OCT 87
Longitude	94 08.50W	Time - LOC	0518

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.69	33.800	0.265	0.079
20	27.62	33.290	0.251	0.044
40	27.60	33.490	0.233	0.043
60	20.40	35.320	0.311	0.155
80	17.04	35.440	0.194	0.234
100	15.65	35.510	0.139	0.100
125	14.88	35.410	0.097	0.064
150	14.22	35.380	0.058	0.076

Station No.	3-086	Date - GMT	16 OCT 87
Station Name	MAC873-086	Time - GMT	0218
Latitude	1 57.63N	Date - LOC	15 OCT 87
Longitude	95 33.30W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.23	34.260	0.167	0.035
20	27.16	33.450	0.076	0.130
40	26.42	34.030	0.215	0.033
60	17.56	35.410	--	--
80	15.79	35.390	0.148	0.072
100	15.36	35.410	0.215	0.106
125	15.15	35.450	0.051	0.010
150	14.65	35.440	0.042	0.039

Station No.	3-087	Date - GMT	16 OCT 87
Station Name	MAC873-087	Time - GMT	1110
Latitude	1 20.40N	Date - LOC	16 OCT 87
Longitude	95 53.50W	Time - LOC	0510

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.03	35.160	0.159	0.060
20	25.98	34.030	0.185	0.016
40	25.91	34.220	--	--
60	18.51	35.330	0.497	0.205
80	15.79	35.390	0.387	0.165
100	15.65	35.400	0.283	0.097
125	15.10	35.420	0.085	0.066
150	14.74	35.410	0.015	0.024

Station No.	3-088	Date - GMT	17 OCT 87
Station Name	MAC873-088	Time - GMT	0218
Latitude	0 00.09S	Date - LOC	16 OCT 87
Longitude	97 47.73W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.73	35.920	0.306	0.006
20	22.56	34.690	0.291	0.011
40	20.31	35.090	0.310	0.093
60	18.81	35.150	0.341	0.115
80	16.67	35.280	0.268	0.141
100	14.88	35.360	0.148	0.145
125	14.11	35.390	0.070	0.024
150	13.90	35.420	0.034	0.020

Station No.	3-089	Date - GMT	17 OCT 87
Station Name	MAC873-089	Time - GMT	1128
Latitude	0 16.70S	Date - LOC	17 OCT 87
Longitude	98 46.50W	Time - LOC	0528

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.26	36.560	0.266	0.052
20	23.08	35.000	0.305	0.039
40	20.65	35.260	0.446	0.176
60	18.29	35.430	0.270	0.172
80	15.70	35.340	0.133	0.119
100	14.65	35.380	0.094	0.066
125	13.95	35.440	0.032	0.019
150	13.91	35.450	0.034	0.024

Station No.	3-090	Date - GMT	18 OCT 87
Station Name	MAC873-090	Time - GMT	0220
Latitude	1 18.98S	Date - LOC	17 OCT 87
Longitude	101 07.43W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.15	34.920	0.277	0.000
20	22.58	35.110	0.244	0.004
40	21.26	35.150	0.317	0.069
60	17.56	35.470	0.263	0.118
80	16.78	35.390	0.220	0.092
100	15.27	35.400	0.100	0.060
125	14.67	35.340	0.085	0.026
150	13.81	35.340	0.057	0.030

Station No.	3-091	Date - GMT	18 OCT 87
Station Name	MAC873-091	Time - GMT	1143
Latitude	1 29.00S	Date - LOC	18 OCT 87
Longitude	102 09.10W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.83	36.240	0.254	0.000
20	22.44	34.880	0.232	0.008
40	21.37	34.850	0.331	0.120
60	19.56	35.270	0.319	0.126
80	16.19	35.200	0.191	0.111
100	14.74	35.260	0.117	0.077
125	14.29	35.260	0.068	0.025
150	13.61	35.180	0.035	0.021

Station No.	3-092	Date - GMT	19 OCT 87
Station Name	MAC873-092	Time - GMT	0214
Latitude	2 01.35S	Date - LOC	18 OCT 87
Longitude	104 06.04W	Time - LOC	2014

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.83	35.800	0.244	0.000
20	23.64	35.160	0.272	0.000
40	23.49	35.140	0.296	0.011
60	20.74	35.480	0.292	0.117
80	18.13	35.490	--	--
100	15.36	35.450	0.210	0.097
125	14.18	35.370	0.139	0.059
150	13.81	35.390	0.083	0.036

Station No.	3-093	Date - GMT	19 OCT 87
Station Name	MAC873-093	Time - GMT	1159
Latitude	2 24.30S	Date - LOC	19 OCT 87
Longitude	105 08.00W	Time - LOC	0559

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.12	36.730	0.189	0.000
20	24.07	35.300	0.155	0.000
40	23.98	35.200	0.174	0.005
60	19.76	35.650	0.238	0.069
80	15.90	35.320	0.187	0.092
100	14.06	35.260	0.123	0.025
125	13.70	35.350	0.018	0.021
150	13.43	35.380	0.008	0.011

Station No.	3-094	Date - GMT	20 OCT 87
Station Name	MAC873-094	Time - GMT	0215
Latitude	3 02.88S	Date - LOC	19 OCT 87
Longitude	105 49.68W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.57	34.910	0.129	0.000
20	24.48	35.300	0.139	0.000
40	24.32	35.240	0.172	0.002
60	17.47	35.430	0.253	0.086
80	15.47	35.380	--	--
100	14.34	35.300	0.172	0.071
125	13.90	35.280	0.091	0.015
150	13.63	35.260	0.050	0.039

Station No.	3-095	Date - GMT	20 OCT 87
Station Name	MAC873-095	Time - GMT	1143
Latitude	3 08.70S	Date - LOC	20 OCT 87
Longitude	104 50.80W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.33	36.400	0.125	0.000
20	24.26	35.300	--	--
40	24.26	35.140	0.134	0.000
60	19.78	35.410	0.203	0.018
80	17.10	35.350	0.193	0.035
100	14.95	35.300	0.202	0.102
125	14.33	35.370	0.150	0.066
150	13.81	35.320	0.060	0.016

Station No.	3-096	Date - GMT	21 OCT 87
Station Name	MAC873-096	Time - GMT	0219
Latitude	3 19.49S	Date - LOC	20 OCT 87
Longitude	102 58.50W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.42	34.990	0.158	0.072
20	24.33	35.350	0.153	0.000
40	24.23	35.350	0.186	0.006
60	23.30	35.280	0.277	0.058
80	15.88	35.490	--	--
100	15.42	35.450	0.210	0.042
125	14.36	35.410	0.091	0.033
150	13.99	35.400	0.057	0.031

Station No.	3-097	Date - GMT	21 OCT 87
Station Name	MAC873-097	Time - GMT	1145
Latitude	3 23.30S	Date - LOC	21 OCT 87
Longitude	102 39.70W	Time - LOC	0545

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.42	36.400	0.158	0.000
20	24.37	35.300	0.148	0.000
40	24.37	35.260	0.194	0.000
60	22.60	35.550	0.253	0.044
80	16.08	35.560	0.199	0.140
100	14.90	35.380	0.143	0.086
125	14.47	35.330	0.081	0.067
150	13.99	35.300	0.027	0.022

Station No.	3-098	Date - GMT	22 OCT 87
Station Name	MAC873-098	Time - GMT	0216
Latitude	3 24.98S	Date - LOC	21 OCT 87
Longitude	100 07.93W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.64	36.070	0.252	0.000
20	23.55	35.090	0.233	0.000
40	23.46	34.960	0.237	0.000
60	21.65	35.270	0.268	0.000
80	14.99	35.270	0.187	0.092
100	14.38	35.200	0.155	0.121
125	13.77	35.270	0.049	0.043
150	13.58	35.280	0.024	0.025

Station No.	3-099	Date - GMT	22 OCT 87
Station Name	MAC873-099	Time - GMT	1128
Latitude	3 28.90S	Date - LOC	22 OCT 87
Longitude	99 11.90W	Time - LOC	0528

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.83	37.010	0.295	0.011
20	23.80	35.360	0.244	0.000
40	23.78	35.190	--	--
60	18.37	35.390	0.224	0.106
80	15.01	35.270	0.186	0.106
100	14.51	35.310	0.187	0.059
125	14.01	35.300	0.101	0.022
150	13.63	35.280	0.013	0.008

Station No.	3-100	Date - GMT	23 OCT 87
Station Name	MAC873-100	Time - GMT	0214
Latitude	4 05.30S	Date - LOC	22 OCT 87
Longitude	97 15.13W	Time - LOC	2014

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.58	35.210	0.363	0.031
20	23.49	35.220	0.301	0.070
40	23.39	35.090	0.373	0.088
60	23.26	35.160	0.426	0.041
80	16.97	35.620	0.382	0.162
100	14.83	35.380	0.207	0.208
125	13.81	35.300	0.224	0.138
150	13.27	35.340	0.020	0.035

Station No.	3-101	Date - GMT	23 OCT 87
Station Name	MAC873-101	Time - GMT	1114
Latitude	4 46.90S	Date - LOC	23 OCT 87
Longitude	96 36.50W	Time - LOC	0514

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.53	36.500	0.181	0.277
20	23.46	35.440	0.253	0.000
40	23.46	35.350	0.210	0.042
60	23.39	35.270	0.206	0.043
80	18.58	35.670	0.176	0.144
100	16.11	35.670	0.110	0.091
125	13.92	35.520	0.054	0.048
150	13.29	35.480	0.007	0.032

Station No.	3-102	Date - GMT	24 OCT 87
Station Name	MAC873-102	Time - GMT	0220
Latitude	6 38.82S	Date - LOC	23 OCT 87
Longitude	95 02.65W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.37	35.370	0.191	0.020
20	23.32	35.490	0.244	0.041
40	23.24	35.470	0.320	0.019
60	23.23	35.560	0.296	0.057
80	18.85	35.570	0.390	0.265
100	16.36	35.430	0.268	0.270
125	14.49	35.360	0.131	0.135
150	13.22	35.320	0.032	0.031

Station No.	3-103	Date - GMT	24 OCT 87
Station Name	MAC873-103	Time - GMT	1113
Latitude	7 23.50S	Date - LOC	24 OCT 87
Longitude	94 28.40W	Time - LOC	0513

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.26	35.680	0.240	0.062
20	23.24	35.600	0.203	0.031
40	23.05	35.840	0.221	0.057
60	22.99	35.750	0.202	0.073
80	17.53	35.550	0.217	0.113
100	15.17	35.410	0.117	0.089
125	14.15	35.390	0.070	0.054
150	13.24	35.370	0.027	0.042

Station No.	3-104	Date - GMT	25 OCT 87
Station Name	MAC873-104	Time - GMT	0216
Latitude	9 06.83S	Date - LOC	24 OCT 87
Longitude	93 02.03W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.19	36.210	0.217	0.052
20	23.12	35.550	0.229	0.046
40	23.03	35.630	0.346	0.000
60	22.23	35.780	0.091	0.093
80	20.05	36.400	0.292	0.222
100	17.81	35.850	0.258	0.228
125	14.65	35.520	0.086	0.097
150	13.67	35.420	0.049	0.052

Station No.	3-105	Date - GMT	26 OCT 87
Station Name	MAC873-105	Time - GMT	0212
Latitude	10 30.50S	Date - LOC	25 OCT 87
Longitude	90 03.70W	Time - LOC	2012

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	21.65	36.570	0.175	0.043
20	21.56	36.040	0.196	0.020
40	21.12	35.970	0.296	0.052
60	21.03	35.960	0.310	0.047
80	20.05	36.170	0.310	0.121
100	16.76	35.490	0.318	0.138
125	14.24	35.340	0.057	0.030
150	13.22	35.390	0.038	0.196

Station No.	3-106	Date - GMT	27 OCT 87
Station Name	MAC873-106	Time - GMT	0219
Latitude	10 15.47S	Date - LOC	26 OCT 87
Longitude	87 31.62W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	21.38	35.630	0.339	0.000
20	21.37	35.630	0.220	0.028
40	19.82	35.580	0.330	0.124
60	18.16	35.260	0.463	0.262
80	14.63	35.030	0.037	1.144
100	14.05	35.020	0.029	0.246
125	13.68	35.090	0.023	0.165
150	13.39	35.020	0.005	0.103

Station No.	3-107	Date - GMT	28 OCT 87
Station Name	MAC873-107	Time - GMT	0116
Latitude	7 12.25S	Date - LOC	27 OCT 87
Longitude	86 31.69W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.07	35.220	0.313	0.000
20	21.83	35.310	0.426	0.065
40	21.60	35.440	0.434	0.116
60	17.85	35.320	0.346	0.321
80	15.65	35.040	0.205	0.166
100	14.72	35.070	0.105	0.124
125	14.04	34.960	0.019	0.046
150	13.57	35.000	0.008	0.038

Station No.	3-108	Date - GMT	28 OCT 87
Station Name	MAC873-108	Time - GMT	1032
Latitude	6 11.90S	Date - LOC	28 OCT 87
Longitude	86 15.70W	Time - LOC	0532

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	21.78	35.210	0.364	0.036
20	21.62	35.230	0.292	0.089
40	18.43	35.400	0.441	0.219
60	15.74	35.090	0.209	0.225
80	15.18	35.080	--	--
100	14.50	35.010	0.059	0.086
125	13.93	35.010	0.011	0.041
150	13.64	34.980	0.002	0.029

Station No.	3-109	Date - GMT	29 OCT 87
Station Name	MAC873-109	Time - GMT	0129
Latitude	4 08.01S	Date - LOC	28 OCT 87
Longitude	85 59.12W	Time - LOC	2029

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.58	35.060	0.231	0.002
20	22.93	35.280	--	--
40	21.96	35.220	0.231	0.019
60	17.75	35.140	0.291	0.130
80	16.28	35.160	0.226	0.237
100	15.27	35.100	0.209	0.174
125	14.52	35.030	0.099	0.090
150	14.09	35.010	0.036	0.052

Station No.	3-110	Date - GMT	29 OCT 87
Station Name	MAC873-110	Time - GMT	1031
Latitude	3 13.60S	Date - LOC	29 OCT 87
Longitude	85 52.60W	Time - LOC	0531

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.62	33.790	0.575	0.017
20	22.91	34.140	--	--
40	21.56	34.830	0.226	0.103
60	20.09	35.020	0.205	0.097
80	16.56	35.180	0.138	0.083
100	15.06	35.060	0.096	0.081
125	14.68	35.050	0.064	0.040
150	13.98	35.000	0.012	0.030

Station No.	3-111	Date - GMT	30 OCT 87
Station Name	MAC873-111	Time - GMT	0114
Latitude	0 50.19S	Date - LOC	29 OCT 87
Longitude	85 35.06W	Time - LOC	2014

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.31	33.580	0.181	0.002
20	20.92	34.710	0.337	0.018
40	17.87	35.100	0.438	0.099
60	16.58	35.160	0.511	0.120
80	16.22	35.130	0.341	0.173
100	15.97	35.130	0.270	0.140
125	15.59	35.070	0.296	0.121
150	15.38	35.070	0.080	0.066

Station No.	3-112	Date - GMT	30 OCT 87
Station Name	MAC873-112	Time - GMT	1029
Latitude	0 04.50S	Date - LOC	30 OCT 87
Longitude	85 29.60W	Time - LOC	0529

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.40	33.510	0.312	0.081
20	26.37	33.520	0.256	0.000
40	17.26	35.160	--	--
60	16.60	35.130	0.100	0.175
80	16.28	35.110	0.077	0.160
100	16.02	35.110	0.125	0.085
125	15.29	35.080	0.020	0.033
150	14.79	35.030	0.012	0.026

Station No.	3-113	Date - GMT	31 OCT 87
Station Name	MAC873-113	Time - GMT	0120
Latitude	1 56.46N	Date - LOC	30 OCT 87
Longitude	84 58.14W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.92	33.290	0.112	0.035
20	26.87	33.300	0.153	0.049
40	18.73	34.880	0.229	0.046
60	16.80	35.030	0.402	0.148
80	16.01	35.060	0.304	0.222
100	16.01	34.900	0.273	0.225
125	15.20	35.060	0.245	0.124
150	14.47	35.040	0.000	0.023

Station No.	3-114	Date - GMT	31 OCT 87
Station Name	MAC873-114	Time - GMT	1028
Latitude	2 37.00N	Date - LOC	31 OCT 87
Longitude	85 10.10W	Time - LOC	0528

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.92	33.120	0.240	0.016
20	26.90	33.120	--	--
40	19.88	34.830	0.326	0.190
60	16.83	35.030	0.292	0.194
80	15.92	35.030	0.192	0.123
100	15.40	34.990	0.175	0.124
125	14.54	35.010	0.018	0.034
150	14.25	34.980	0.009	0.019

Station No.	3-115	Date - GMT	01 NOV 87
Station Name	MAC873-115	Time - GMT	0119
Latitude	3 31.86N	Date - LOC	31 OCT 87
Longitude	83 06.80W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.60	33.050	0.100	0.031
20	27.35	33.050	0.102	0.018
40	21.19	34.520	0.228	0.039
60	17.58	35.020	0.314	0.196
80	16.96	34.940	0.139	0.109
100	16.31	35.040	0.064	0.075
125	15.63	35.020	0.024	0.036
150	15.22	34.940	0.012	0.024

Station No.	3-116	Date - GMT	01 NOV 87
Station Name	MAC873-116	Time - GMT	1036
Latitude	3 21.10N	Date - LOC	01 NOV 87
Longitude	82 25.80W	Time - LOC	0536

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.44	32.510	0.109	0.019
20	27.46	32.540	0.092	0.000
40	24.99	33.860	0.380	0.095
60	17.05	35.010	0.173	0.110
80	16.56	35.030	0.086	0.069
100	15.81	35.010	0.035	0.029
125	15.09	34.910	0.010	0.016
150	14.34	34.960	0.004	0.014

Station No.	3-117	Date - GMT	02 NOV 87
Station Name	MAC873-117	Time - GMT	0123
Latitude	4 39.47N	Date - LOC	01 NOV 87
Longitude	81 50.59W	Time - LOC	2023

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.00	32.390	0.078	0.006
20	27.60	32.340	0.096	0.014
40	24.25	34.530	0.567	0.291
60	19.36	34.950	0.441	0.296
80	18.23	34.960	0.244	0.266
100	16.29	35.010	0.058	0.081
125	15.81	35.000	0.025	0.030
150	14.98	35.040	0.004	0.014

Station No.	3-118	Date - GMT	02 NOV 87
Station Name	MAC873-118	Time - GMT	1013
Latitude	4 41.90N	Date - LOC	02 NOV 87
Longitude	81 01.10W	Time - LOC	0513

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.71	31.510	0.102	0.034
20	27.64	31.850	0.117	0.021
40	22.60	34.470	0.577	0.393
60	19.39	34.910	0.326	0.253
80	18.34	34.950	0.256	0.189
100	16.80	34.970	0.134	0.095
125	15.65	35.020	0.234	0.125
150	14.59	34.990	0.006	0.011

Station No.	3-119	Date - GMT	03 NOV 87
Station Name	MAC873-119	Time - GMT	0116
Latitude	6 29.30N	Date - LOC	02 NOV 87
Longitude	79 43.20W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.89	29.670	--	--
20	27.64	32.470	0.087	0.140
40	23.43	34.370	0.558	0.146
60	20.38	34.810	0.380	0.186
80	17.21	34.930	0.112	0.106
100	16.04	35.010	0.038	0.046
125	15.61	34.870	0.128	0.132
150	14.48	34.960	0.005	0.021

Station No.	4-120	Date - GMT	11 NOV 87
Station Name	MAC874-120	Time - GMT	0118
Latitude	4 43.90N	Date - LOC	10 NOV 87
Longitude	79 48.80W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.60	30.830	0.280	0.000
20	27.69	30.920	0.275	0.041
40	27.37	32.950	0.516	0.080
60	19.02	34.850	0.280	0.293
80	17.49	35.000	0.158	0.131
100	16.58	35.010	0.070	0.102
125	14.93	34.990	0.003	0.017
150	14.34	34.980	0.006	0.014

Station No.	4-121	Date - GMT	12 NOV 87
Station Name	MAC874-121	Time - GMT	0115
Latitude	2 37.30N	Date - LOC	11 NOV 87
Longitude	81 59.60W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.67	31.710	0.117	0.020
20	27.66	31.720	0.101	0.016
40	14.02	45.330	0.284	0.046
60	16.40	35.060	0.443	0.340
80	16.20	35.060	0.191	0.185
100	15.52	35.080	0.067	0.094
125	15.02	35.040	0.024	0.039
150	14.41	35.050	0.011	0.035

Station No.	4-122	Date - GMT	12 NOV 87
Station Name	MAC874-122	Time - GMT	1034
Latitude	2 04.61N	Date - LOC	12 NOV 87
Longitude	82 54.38W	Time - LOC	0534

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.28	31.920	0.195	0.028
20	27.19	32.240	0.212	0.026
40	18.28	34.880	0.628	0.396
60	16.33	34.980	0.209	0.303
80	15.58	34.990	0.093	0.089
100	15.16	35.030	0.041	0.083
125	14.68	35.030	0.015	0.047
150	14.00	35.000	0.007	0.023

Station No.	4-123	Date - GMT	13 NOV 87
Station Name	MAC874-123	Time - GMT	0122
Latitude	0 42.50N	Date - LOC	12 NOV 87
Longitude	85 05.30W	Time - LOC	2022

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.88	33.190	0.322	0.021
20	25.83	33.180	0.267	0.008
40	20.86	34.990	0.308	0.103
60	16.69	35.140	0.141	0.080
80	16.02	35.030	0.102	0.092
100	15.81	35.100	0.068	0.080
125	15.43	35.090	0.048	0.039
150	14.77	35.030	0.013	0.039

Station No.	4-124	Date - GMT	13 NOV 87
Station Name	MAC874-124	Time - GMT	1034
Latitude	0 26.41S	Date - LOC	13 NOV 87
Longitude	85 09.26W	Time - LOC	0534

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.88	33.300	0.209	0.132
20	22.08	34.430	--	--
40	19.70	35.010	0.208	0.187
60	16.26	35.110	0.100	0.175
80	15.67	35.090	0.033	0.041
100	15.38	35.070	--	--
125	15.02	35.050	0.011	0.029
150	14.72	35.050	0.022	0.006

Station No.	4-125	Date - GMT	14 NOV 87
Station Name	MAC874-125	Time - GMT	0119
Latitude	2 35.50S	Date - LOC	13 NOV 87
Longitude	85 04.30W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	21.63	34.970	0.003	0.623
20	21.06	34.970	0.210	0.250
40	18.01	35.230	0.166	0.266
60	16.28	35.210	0.127	0.128
80	16.02	35.140	0.101	0.100
100	15.22	35.090	0.067	0.072
125	14.81	35.070	0.060	0.085
150	14.30	35.060	0.093	0.104

Station No.	4-126	Date - GMT	14 NOV 87
Station Name	MAC874-126	Time - GMT	1029
Latitude	3 34.92S	Date - LOC	14 NOV 87
Longitude	85 13.95W	Time - LOC	0529

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	21.74	34.960	0.198	0.254
20	21.67	34.950	0.182	0.253
40	19.77	35.100	0.160	0.293
60	16.94	35.130	0.139	0.171
80	15.33	35.110	0.081	0.120
100	14.75	35.080	0.037	0.067
125	14.64	35.060	0.031	0.034
150	14.29	35.060	0.009	0.029

Station No.	4-127	Date - GMT	15 NOV 87
Station Name	MAC874-127	Time - GMT	0117
Latitude	5 25.20S	Date - LOC	14 NOV 87
Longitude	86 43.60W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.19	34.920	0.237	0.017
20	23.09	34.940	0.277	0.030
40	22.57	35.340	0.287	0.099
60	20.36	35.330	0.275	0.209
80	15.81	35.050	0.121	0.129
100	15.07	35.080	0.062	0.098
125	14.39	35.050	0.012	0.042
150	13.89	35.030	0.010	0.023

Station No.	4-128	Date - GMT	15 NOV 87
Station Name	MAC874-128	Time - GMT	1046
Latitude	6 11.60S	Date - LOC	15 NOV 87
Longitude	87 38.65W	Time - LOC	0546

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.68	34.560	0.179	0.017
20	23.00	35.350	0.135	0.048
40	21.85	34.910	--	--
60	16.35	35.030	0.236	0.306
80	15.54	35.030	0.139	0.297
100	14.34	35.040	0.060	0.114
125	13.91	35.010	0.016	0.048
150	13.64	35.000	0.007	0.034

Station No.	4-129	Date - GMT	16 NOV 87
Station Name	MAC874-129	Time - GMT	0128
Latitude	7 04.70S	Date - LOC	15 NOV 87
Longitude	89 35.90W	Time - LOC	2028

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	22.89	36.790	0.273	0.094
20	22.67	35.420	0.308	0.045
40	22.44	35.400	0.264	0.078
60	16.51	35.160	0.230	0.159
80	14.97	35.120	0.126	0.090
100	14.25	35.050	0.087	0.022
125	13.96	35.010	0.023	0.028
150	13.68	35.020	0.012	0.030

Station No.	4-130	Date - GMT	17 NOV 87
Station Name	MAC874-130	Time - GMT	0215
Latitude	6 46.00S	Date - LOC	16 NOV 87
Longitude	93 32.90W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.80	35.240	0.234	0.046
20	23.64	35.220	0.205	0.043
40	23.62	35.240	0.224	0.055
60	23.59	35.260	0.232	0.062
80	23.37	35.450	--	--
100	17.40	35.220	0.153	0.122
125	14.23	35.040	0.052	0.063
150	12.91	34.980	0.017	0.028

Station No.	4-131	Date - GMT	17 NOV 87
Station Name	MAC874-131	Time - GMT	1109
Latitude	6 41.32S	Date - LOC	17 NOV 87
Longitude	94 33.30W	Time - LOC	0509

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.64	35.210	0.225	0.070
20	23.64	35.210	0.181	0.036
40	23.62	35.210	0.197	0.085
60	23.61	35.240	0.200	0.268
80	22.53	35.200	0.197	0.259
100	19.02	35.370	0.168	0.194
125	15.70	35.190	0.074	0.112
150	13.93	35.030	0.045	0.086

Station No.	4-132	Date - GMT	18 NOV 87
Station Name	MAC874-132	Time - GMT	0217
Latitude	6 08.90S	Date - LOC	17 NOV 87
Longitude	96 54.20W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.29	35.300	0.118	0.038
20	24.05	35.290	0.120	0.044
40	23.70	35.440	0.181	0.047
60	20.79	35.370	0.257	0.118
80	16.76	35.210	0.191	0.151
100	14.48	35.060	0.098	0.102
125	13.73	35.010	0.037	0.033
150	13.39	34.990	0.011	0.033

Station No.	4-133	Date - GMT	18 NOV 87
Station Name	MAC874-133	Time - GMT	1114
Latitude	6 06.70S	Date - LOC	18 NOV 87
Longitude	98 02.69W	Time - LOC	0514

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	23.75	35.140	0.203	0.028
20	23.71	35.120	0.181	0.027
40	23.71	35.230	0.157	0.044
60	22.05	35.040	0.247	0.188
80	17.58	35.190	0.169	0.276
100	15.90	35.180	0.142	0.182
125	14.16	35.040	0.053	0.117
150	13.53	35.050	0.064	0.064

Station No.	4-134	Date - GMT	19 NOV 87
Station Name	MAC874-134	Time - GMT	0238
Latitude	5 31.90S	Date - LOC	18 NOV 87
Longitude	100 32.70W	Time - LOC	2038

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.50	35.130	0.109	0.033
20	24.43	35.130	0.101	0.054
40	24.36	35.120	0.117	0.038
60	24.13	35.300	0.173	0.047
80	21.08	35.490	0.193	0.091
100	17.76	35.350	0.178	0.107
125	14.32	35.190	0.065	0.100
150	13.23	34.990	0.043	0.038

Station No.	4-135	Date - GMT	19 NOV 87
Station Name	MAC874-135	Time - GMT	1139
Latitude	5 31.06S	Date - LOC	19 NOV 87
Longitude	101 40.50W	Time - LOC	0439

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.41	35.130	0.150	0.041
20	24.41	35.130	0.154	0.038
40	24.39	35.150	0.164	0.033
60	24.25	35.270	0.237	0.073
80	22.24	35.470	0.272	0.098
100	19.14	35.560	0.195	0.235
125	14.72	35.010	0.075	0.075
150	13.64	35.050	0.042	0.029

Station No.	4-136	Date - GMT	20 NOV 87
Station Name	MAC874-136	Time - GMT	0330
Latitude	5 12.90S	Date - LOC	19 NOV 87
Longitude	104 29.10W	Time - LOC	2030

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.65	35.140	0.113	0.085
20	24.65	35.120	0.117	0.037
40	24.65	35.290	0.134	0.041
60	24.40	35.360	0.273	0.176
80	19.65	35.160	0.280	0.288
100	16.42	35.220	0.170	0.199
125	14.45	35.080	0.092	0.084
150	13.41	34.970	0.054	0.038

Station No.	4-137	Date - GMT	20 NOV 87
Station Name	MAC874-137	Time - GMT	1148
Latitude	5 13.37S	Date - LOC	20 NOV 87
Longitude	105 30.89W	Time - LOC	0448

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.91	35.280	0.158	0.042
20	24.91	35.300	0.165	0.036
40	24.91	35.290	0.168	0.036
60	24.91	35.300	0.146	0.046
80	22.12	35.560	0.224	0.185
100	19.11	35.560	0.160	0.148
125	15.95	35.260	0.087	0.093
150	13.64	35.030	0.032	0.029

Station No.	4-138	Date - GMT	21 NOV 87
Station Name	MAC874-138	Time - GMT	0320
Latitude	4 46.30S	Date - LOC	20 NOV 87
Longitude	108 11.50W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.86	35.120	0.147	0.039
20	24.84	35.110	0.102	0.022
40	24.79	35.120	0.128	0.032
60	24.70	35.350	0.148	0.103
80	23.01	35.390	0.245	0.140
100	18.34	35.090	0.186	0.089
125	14.95	35.090	0.130	0.071
150	13.69	35.030	0.055	0.078

Station No.	4-139	Date - GMT	21 NOV 87
Station Name	MAC874-139	Time - GMT	1536
Latitude	5 02.13S	Date - LOC	21 NOV 87
Longitude	109 49.13W	Time - LOC	0836

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.60	34.990	0.219	0.002
20	24.57	35.000	0.122	0.031
40	24.57	34.990	0.123	0.028
60	24.52	35.000	0.133	0.045
80	24.47	35.090	0.180	0.046
100	16.97	35.350	0.181	0.154
125	13.55	35.010	0.081	0.087
150	13.08	34.980	0.033	0.025

Station No.	4-140	Date - GMT	22 NOV 87
Station Name	MAC874-140	Time - GMT	0318
Latitude	4 10.80S	Date - LOC	21 NOV 87
Longitude	111 20.10W	Time - LOC	2018

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.84	35.120	0.101	0.032
20	24.81	35.130	0.105	0.041
40	24.72	35.140	0.121	0.044
60	24.56	35.160	0.137	0.045
80	19.82	35.630	0.221	0.080
100	15.09	35.140	0.172	0.062
125	13.53	35.000	0.083	0.087
150	13.14	34.980	0.104	0.097

Station No.	4-141	Date - GMT	22 NOV 87
Station Name	MAC874-141	Time - GMT	1220
Latitude	3 59.33S	Date - LOC	22 NOV 87
Longitude	112 25.49W	Time - LOC	0520

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.04	35.120	0.084	0.069
20	25.04	35.110	0.106	0.053
40	25.04	35.130	0.114	0.051
60	24.93	35.170	0.139	0.050
80	21.01	35.620	0.195	0.082
100	14.34	35.110	0.173	0.095
125	13.35	35.000	0.072	0.107
150	13.10	34.970	0.026	0.031

Station No.	4-142	Date - GMT	23 NOV 87
Station Name	MAC874-142	Time - GMT	0316
Latitude	3 04.40S	Date - LOC	22 NOV 87
Longitude	114 56.40W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.40	35.130	0.083	0.019
20	25.36	35.140	0.091	0.015
40	25.31	35.130	0.084	0.014
60	25.27	35.150	0.097	0.031
80	18.61	35.380	0.138	0.072
100	14.23	35.060	0.182	0.079
125	13.50	35.030	0.075	0.091
150	13.28	35.010	0.049	0.043

Station No.	4-143	Date - GMT	23 NOV 87
Station Name	MAC874-143	Time - GMT	1242
Latitude	3 00.00S	Date - LOC	23 NOV 87
Longitude	116 06.82W	Time - LOC	0542

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.63	35.240	0.099	0.044
20	25.67	35.240	0.100	0.037
40	25.67	35.240	0.104	0.027
60	25.65	35.250	0.108	0.034
80	24.41	35.690	0.191	0.062
100	17.42	35.280	0.190	0.226
125	13.93	35.040	0.108	0.151
150	13.23	35.990	0.032	0.051

Station No.	4-144	Date - GMT	24 NOV 87
Station Name	MAC874-144	Time - GMT	0300
Latitude	2 16.10S	Date - LOC	23 NOV 87
Longitude	118 27.10W	Time - LOC	2100

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.81	35.220	0.100	0.033
20	25.72	35.220	0.098	0.036
40	24.68	35.320	0.152	0.048
60	20.79	35.660	0.278	0.185
80	15.76	35.160	0.200	0.142
100	14.54	35.070	0.203	0.096
125	14.02	36.650	0.079	0.077
150	13.71	35.020	0.043	0.027

Station No.	4-145	Date - GMT	24 NOV 87
Station Name	MAC874-145	Time - GMT	1256
Latitude	2 21.88S	Date - LOC	24 NOV 87
Longitude	119 42.63W	Time - LOC	0456

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.31	35.200	0.111	0.056
20	25.27	35.220	0.151	0.034
40	25.11	35.220	0.186	0.026
60	25.02	35.220	0.267	0.067
80	19.91	35.310	0.273	0.202
100	15.33	35.090	0.148	0.197
125	13.59	35.010	0.052	0.064
150	13.08	34.980	0.015	0.023

Station No.	4-146	Date - GMT	25 NOV 87
Station Name	MAC874-146	Time - GMT	0417
Latitude	2 52.90S	Date - LOC	24 NOV 87
Longitude	122 21.50W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.97	35.250	0.208	0.025
20	25.74	35.260	0.158	0.031
40	25.67	35.220	0.152	0.040
60	23.41	34.030	0.230	0.091
80	19.16	35.600	0.185	0.097
100	14.73	35.150	0.215	0.000
125	13.62	35.010	0.073	0.082
150	13.23	34.990	0.015	0.033

Station No.	4-147	Date - GMT	25 NOV 87
Station Name	MAC874-147	Time - GMT	1318
Latitude	2 43.66S	Date - LOC	25 NOV 87
Longitude	123 23.45W	Time - LOC	0518

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.12	35.250	0.089	0.018
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	15.54	35.170	0.206	0.179
125	13.84	35.030	0.104	0.182
150	13.41	34.990	0.047	0.044

Station No.	4-148	Date - GMT	26 NOV 87
Station Name	MAC874-148	Time - GMT	0413
Latitude	2 17.40S	Date - LOC	25 NOV 87
Longitude	125 44.30W	Time - LOC	2013

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.33	35.260	0.108	0.016
20	26.26	35.290	0.105	0.022
40	26.19	35.240	0.095	0.039
60	26.13	35.240	0.109	0.039
80	24.13	35.440	0.159	0.066
100	17.69	35.280	0.175	0.098
125	13.84	35.030	0.087	0.082
150	13.48	35.000	0.069	0.021

Station No.	4-149	Date - GMT	26 NOV 87
Station Name	MAC874-149	Time - GMT	1317
Latitude	2 19.98S	Date - LOC	26 NOV 87
Longitude	126 46.35W	Time - LOC	0517

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.13	35.160	0.130	0.053
20	26.15	35.160	0.139	0.032
40	26.17	35.170	0.151	0.025
60	26.20	35.250	0.172	0.047
80	24.43	35.330	0.283	0.166
100	16.24	35.230	0.246	0.196
125	13.60	35.020	0.094	0.088
150	13.19	34.990	0.023	0.032

Station No.	4-150	Date - GMT	26 NOV 87
Station Name	MAC874-150	Time - GMT	0419
Latitude	1 52.80S	Date - LOC	25 NOV 87
Longitude	128 40.80W	Time - LOC	2019

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	26.35	35.170	0.094	0.017
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	23.91	35.410	0.193	0.067
100	21.19	35.320	0.203	0.108
125	14.88	34.690	0.117	0.095
150	13.68	35.020	0.073	0.064

Station No.	4-151	Date - GMT	28 NOV 87
Station Name	MAC874-151	Time - GMT	0421
Latitude	1 08.20S	Date - LOC	27 NOV 87
Longitude	126 13.20W	Time - LOC	2021

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.95	35.160	0.124	0.031
20	25.77	35.150	--	--
40	25.74	35.150	0.203	0.089
60	25.67	35.160	0.249	0.051
80	23.09	35.540	0.231	0.175
100	19.45	35.690	0.148	0.095
125	16.04	35.130	0.058	0.065
150	13.55	34.890	0.047	0.037

Station No.	4-152	Date - GMT	28 NOV 87
Station Name	MAC874-152	Time - GMT	2203
Latitude	0 08.41N	Date - LOC	28 NOV 87
Longitude	124 25.39W	Time - LOC	1403

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	24.88	34.940	0.242	0.000
20	24.50	34.950	--	--
40	24.22	35.040	0.360	0.088
60	22.35	34.990	0.360	0.140
80	20.38	34.990	0.205	0.088
100	18.59	35.150	0.109	0.052
125	15.93	34.970	0.060	0.029
150	13.93	34.870	0.013	0.017

Station No.	4-153	Date - GMT	29 NOV 87
Station Name	MAC874-153	Time - GMT	0420
Latitude	0 45.50N	Date - LOC	28 NOV 87
Longitude	124 46.40W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.31	34.960	0.127	0.015
20	25.08	34.890	0.142	0.023
40	24.59	34.840	0.262	0.039
60	22.57	34.830	0.278	0.173
80	19.48	34.780	0.244	0.142
100	16.36	34.970	0.134	0.082
125	15.49	34.920	0.076	0.069
150	14.72	34.940	0.061	0.075

Station No.	4-154	Date - GMT	29 NOV 87
Station Name	MAC874-154	Time - GMT	1319
Latitude	1 40.05N	Date - LOC	29 NOV 87
Longitude	125 17.24W	Time - LOC	0519

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.88	34.710	0.117	0.039
20	25.08	34.750	--	--
40	24.72	34.650	0.209	0.021
60	23.23	35.040	0.260	0.122
80	17.49	34.730	0.204	0.255
100	15.45	34.970	0.151	0.156
125	14.20	35.020	0.053	0.114
150	13.86	35.000	0.037	0.032

Station No.	4-155	Date - GMT	30 NOV 87
Station Name	MAC874-155	Time - GMT	0417
Latitude	4 15.80N	Date - LOC	29 NOV 87
Longitude	125 27.30W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	25.97	34.570	0.179	0.017
20	25.77	34.600	0.209	0.037
40	25.45	34.620	0.224	0.055
60	25.13	34.640	0.217	0.079
80	24.93	34.650	0.181	0.084
100	24.20	34.790	0.153	0.085
125	22.64	34.900	0.161	0.103
150	14.54	34.440	0.106	0.095

Station No.	4-156	Date - GMT	30 NOV 87
Station Name	MAC874-156	Time - GMT	1343
Latitude	5 27.27N	Date - LOC	30 NOV 87
Longitude	125 44.20W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.34	34.280	0.052	0.014
20	28.34	34.280	0.040	0.015
40	28.34	34.290	0.041	0.017
60	27.08	34.550	0.120	0.090
80	25.18	34.460	0.091	0.083
100	24.88	34.510	0.082	0.087
125	22.12	36.180	0.099	0.129
150	13.73	34.810	0.040	0.059

Station No.	4-157	Date - GMT	01 DEC 87
Station Name	MAC874-157	Time - GMT	0425
Latitude	7 20.90N	Date - LOC	30 NOV 87
Longitude	124 08.20W	Time - LOC	2025

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.34	33.680	0.045	0.018
20	28.34	33.670	0.033	0.017
40	28.39	33.770	0.033	0.020
60	28.64	34.540	0.067	0.060
80	22.26	34.310	0.068	0.103
100	17.23	34.190	0.133	0.119
125	13.10	34.710	0.058	0.088
150	12.17	34.800	0.024	0.032

Station No.	4-158	Date - GMT	03 DEC 87
Station Name	MAC874-158	Time - GMT	0420
Latitude	12 07.10N	Date - LOC	02 DEC 87
Longitude	119 26.30W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.41	33.250	0.049	0.014
20	28.14	33.250	0.060	0.025
40	28.00	33.130	0.049	0.027
60	21.42	34.580	0.151	0.154
80	16.19	34.140	0.117	0.125
100	13.95	34.760	0.032	0.058
125	13.16	34.800	0.005	0.023
150	12.78	34.760	0.000	0.020

Station No.	4-159	Date - GMT	04 DEC 87
Station Name	MAC874-159	Time - GMT	0429
Latitude	12 17.60N	Date - LOC	03 DEC 87
Longitude	121 11.20W	Time - LOC	2029

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	28.19	33.330	0.000	0.045
20	28.14	33.470	0.064	0.024
40	24.75	34.370	0.159	0.174
60	16.80	34.460	0.131	0.174
80	13.93	34.630	0.038	0.126
100	13.10	34.780	0.009	0.106
125	12.57	34.820	0.004	0.073
150	12.24	34.830	0.005	0.046

Station No.	4-160	Date - GMT	
Station Name		Time - GMT	
Latitude		Date - LOC	
Longitude		Time - LOC	

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	--	--
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
125	--	--	--	--
150	--	--	--	--

Station No.	4-161	Date - GMT	05 DEC 87
Station Name	MAC874-161	Time - GMT	0415
Latitude	14 06.80N	Date - LOC	4 DEC 87
Longitude	122 11.00W	Time - LOC	2015

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	27.08	33.270	0.047	0.035
20	26.53	33.670	0.037	0.027
40	24.88	34.660	0.050	0.036
60	21.24	34.480	0.139	0.118
80	19.20	34.390	0.129	0.114
100	15.97	34.520	0.035	0.086
125	13.89	34.700	0.013	0.043
150	13.01	34.730	0.008	0.046

APPENDIX B

SCIENTIFIC PERSONNEL

Cruise Leaders	Leg
Marc Webber, SWFC	1-2
Alan Jackson, SWFC	3-4
Environmental Data Collection	
Julie Ellingson, NOAA Ship *McArthur*	1-2
Linda Gearin, NOAA Ship *McArthur*	1-4
Jim Fleishman, NOAA Ship *McArthur*	1-4
Victoria Thayer, SWFC	3-4
Seabird Observers	
James Carretta, Long Island U. Southampton	1-4
Cynthia Moore, U. of California Santa Barbara	1
James Gilardi, U. Of California Santa Cruz	2-3
Robert Pitman, SWFC	3-4
Victoria Thayer, SWFC	3-4
Marine Mammal Identification Experts	
Marc Webber, SWFC	1-2
Rick LeDuc, SWFC	1-2
Robert Pitman, SWFC	3-4
Scott Sinclair, SWFC	3-4
Marine Mammal Observers	
Scott Benson, SWFC	1-2
Carla Bisbee, SWFC	1-2
Joe Raffetto, SWFC	1-2
Dave Skordal, SWFC	1-2
Sallie Beavers, SWFC	3-4
Carrie Fried, SWFC	3-4
William Irwin, SWFC	3-4
Keith Rittmaster, SWFC	3-4

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