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NOAA Technical Memorandum NMFS



MARCH 1988

**REPORT OF ECOSYSTEM STUDIES
CONDUCTED DURING THE 1986
EASTERN TROPICAL PACIFIC DOLPHIN SURVEY
ON THE RESEARCH VESSEL *McARTHUR***

Victoria G. Thayer
Bruce G. McDonald
Julie M. Ellingson
Charles W. Oliver
David W. Behringer
Stephen B. Reilly

NOAA-TM-NMFS-SWFC-104

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

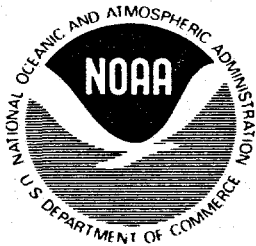
NOAA Technical Memorandum NMFS

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U.S. DEPARTMENT OF COMMERCE

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National Oceanic and Atmospheric Administration

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National Marine Fisheries Service

James E. Douglas, Jr., Acting Assistant Administrator for Fisheries

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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 1986, the Southwest Fisheries Center (SWFC) conducted the first survey of a six-year survey program to monitor population trends in ETP dolphin stocks (Holt et al., 1987). Two ships were used, the *McArthur* and the *David Starr Jordan* (hereafter referred to as *Jordan*). As part of this monitoring program, the Center is studying the physical and biological environment inhabited by the dolphins. This ecosystem approach will not only facilitate the interpretation of dolphin population trends detected by these surveys, but 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). Their participation is through their long term Eastern Pacific Ocean Climate Study (EPOCS) and Tropical Ocean Global Atmosphere (TOGA) programs.

This report describes the sampling techniques used, the types of data collected and the disposition of the data, and summarizes data collected 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 census, by measuring the regional and local changes in such environmental parameters as 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 Niños. 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.

MATERIALS AND METHODS

Oceanography

As the ship was underway, temperature, salinity, and fluorescence of surface water were measured, continuously and recorded on strip charts. A Turner Designs¹ fluorometer was used to measure continuous fluorescence, and a Turner Model 111 was used for discrete samples. An Inter-Ocean Thermosalinograph Model 541 was used to measure continuous temperature and salinity. A Plessey salinometer was used to verify CTD and thermosalinograph salinity data. 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 cast lasted approximately 60 minutes. During this time the CTD was lowered to 1000 meters and sensors connected to shipboard computers measured conductivity, salinity, temperature, pressure, depth, and oxygen.

Eleven Niskin bottles on the CTD rosette collected water from discrete depths (20, 40, 60, 80, 100, 120, 140, 160, 200, 500 and 1000 meters). Samples were collected for chlorophyll, nutrients (nitrate, nitrite, phosphate and silicate), salinity, and phytoplankton in the following quantities: chlorophyll, 9 280 ml bottles/cast; nutrient, 9 5 ml bottles/cast; salinity, 3 150 ml bottles/cast; and phytoplankton, 4 500 ml bottles from 10 selected casts. At each CTD station, surface chlorophyll, nutrient, and salinity samples were collected from the ship's seawater intake located 3 meters below the surface. At the 10 stations where phytoplankton samples were collected from the CTD cast, surface phytoplankton samples were also collected.

Expendable bathythermographs (XBT) drops were made daily at 0300, 0900, 1500, and 2100 hours. On about half of the sea days, when the vessel was in an area of particular interest for dolphin distribution studies, an additional XBT was deployed at 0600 and 1800 hrs. A SEAS XBT system was utilized. Position, time, and data for each drop were recorded on NOAA XBT logs and tapes.

Three drift buoys were deployed at predetermined locations. These buoys transmit signals which are received by NOAA

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

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

Beginning in 1986 seabird censuses were conducted on the *Jordan* and in subsequent years bird censuses will be conducted on both ships.

As part of a study of the distributional ecology of sea turtles in the ETP, all sightings of marine turtles made incidental to the systematic marine mammal surveys were recorded during the cruise.

As part of a study on sea snake (*Pelamis platurus*) distribution and abundance in the tropical Pacific conducted by investigators at Scripps Institution of Oceanography and the Smithsonian Tropical Research Institute (STRI), a Panamanian STRI biologist accompanied the vessel from Panama to Hawaii to conduct a visual survey for snakes. No snakes were sighted.

STUDY AREA AND ITINERARY

The *McArthur* departed San Diego, California, on 29 July 1986 and returned on 6 December 1986. The cruise was conducted in four legs of approximately 30 days each (Figure 1), with scheduled port calls in Hilo, Hawaii; Panama City, Panama; and Callao, Peru. The ship was unable to go to Callao and was diverted to Guayaquil, Ecuador and then made an additional stop at Panama City, Panama to obtain fuel. The cruise tracks 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.

RESULTS

Holt and Jackson (1987) reported on the dolphin assessment methods and data from the 1986 *McArthur* cruise.

Oceanography

Strip-chart records of continuous data from the thermosalinograph and fluorometer are now being digitized at the SWFC.

Figures 2 and 3 show the location of the 195 CTD casts. Chlorophyll data collected at each station are presented in Appendix A. Processing of temperature and salinity data from the Plessey CTD unit is very time consuming and is not yet completed.

Figure 4 shows XBT deployment locations. XBT data were sent by the SEAS system to the National Ocean Service in Rockville, MD. XBT data are being processed further by AOML in Miami, FL.

The disposition of other oceanographic samples and data is as follows. Chlorophyll samples were processed at sea and data were processed at the SWFC in La Jolla. Chlorophyll results are presented in Appendix A. Nutrient samples (frozen) were shipped to Duke University Marine Laboratory, and are now being analyzed. Whole water plankton samples were preserved in formalin and will be analyzed for microplankton floristics at SWFC. Discrete salinity samples were analyzed on the *McArthur*.

Details of the physical oceanographic procedures and practices are documented in an unpublished report by B. McDonald². The report is available through the SWFC.

Table 1 lists the locations and dates of the drifting buoy deployments. Figure 5 shows the tracks of these buoys.

Biological Observations

A total of 204 individual sea turtles were sighted. The sighting locations are plotted in Figure 6. Sightings include one leatherback turtle (*Dermochelys coriacea*), five loggerheads (*Caretta caretta*), and one olive ridley (*Lepidochelys olivacea*). The latter two species were identified from photographs; the remainder could not be identified to species.

Table 2 lists the total numbers of oceanographic and biological samples, by category, collected on the *McArthur*.

An addendum containing temperature and salinity data will follow this report. Persons interested in receiving this addendum should contact the SWFC.

ACKNOWLEDGEMENTS

Many people contributed to the success of this cruise. The authors 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 and W. Parks who provided the necessary logistical support, B. Engstrand and B. Watkins who provided indispensable support in procurement. R. Owen, C. Kimbrell were of great assistance in vessel staging. R. Holland contributed many of the plots and assisted in the computer

²McDonald, B. G. 1986. Unpublished report of physical oceanographic practices and procedures on the NOAA Ship *McArthur*.

logistics. K. Blum was of great assistance in data editing and procurement. R. Holt, D. DeMaster and P. Fiedler contributed valuable critical reviews. Part of the manuscript was typed by L. Prescott and C. Ratcliffe, and H. Orr drafted the figures. Dr. Ken Mooney of the U.S. TOGA office kindly provided XBT probes to supplement the ship's normal supply, allowing us to study dolphin habitats with significantly increased resolution. We are grateful to I. Barrett, J. Carr, D. DeMaster, B. Remington for their support during the cruise preparations and the cruise itself.

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- Holt, R. S., T. Gerrodette and J. B. Cologne. 1987. Research vessel survey design for monitoring dolphin abundance in the eastern tropical Pacific. *Fish. Bull.* 86(3); 435-446.
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- Thayer, V.G., R.L. Pitman, K.A. Rittmaster, G.G. Thomas, D.W. Behringer and S.B. Reilly. 1988. Report of ecosystem studies conducted during the 1986 eastern tropical Pacific dolphin survey on the research vessel *David Starr Jordan*. NOAA-TM-NMFS-SWFC-105, 6 p.

Table 1. Locations of deployment drift buoys, McArthur, July 29 through December 6, 1986.

<u>Date</u>	<u>Latitude</u>	<u>Longitude</u>
7 August	6°58.46N	124°02.2W
9 August	00°47.3S	125°02.0W
8 October	4°29.8N	87°05.4W

Table 2. Oceanographic and Biological data collected on the McArthur July 29 through December 6, 1986.

	Chlorophylla	Nutrients	Phytoplankton	XBT	CTD
Sample quantity	2,124 @280m	1,883 @5ml	50 @500ml	562	195
CTD depths	20,40,60,80,100,120,140,	20,40,60,890,100,120,140,160,200m	40,80,120,160	40,80,120,160	20,40,60,80,100,120,140,160,200m
Surface	Yes	Yes	Yes	-	Yes
Data disposition	SWFC	Duke Univ. Mar. Lab	SWFC	AOML	AOML
Sample disposition	Disposed	Duke Univ. Mar. Lab.	SWFC	Disposed	AMOL
Turtles (sighted)					
Sample quantity	204				
Data disposition	SWFC				
Sample disposition	-				

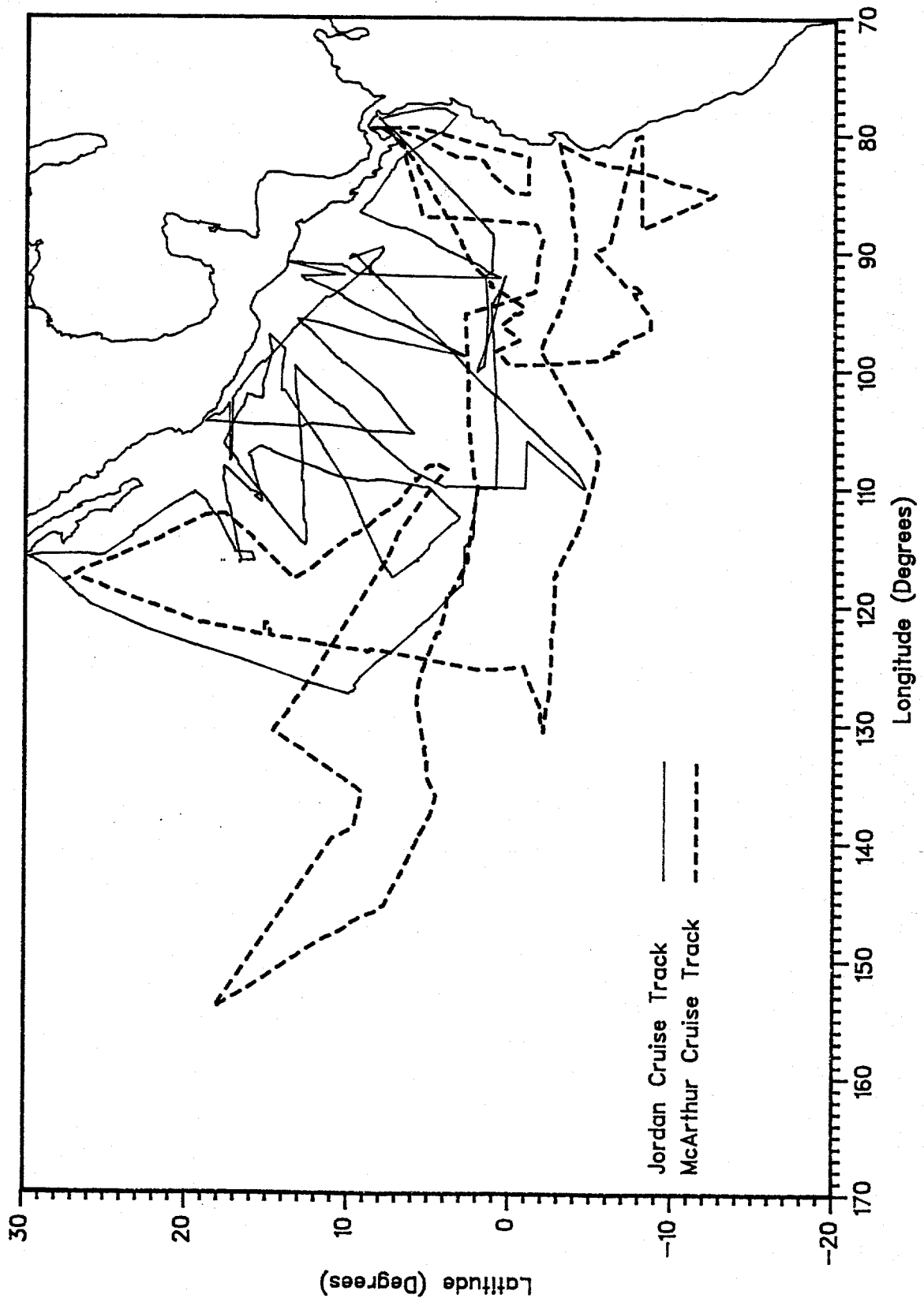


Figure 1. Jordan and McArthur cruise tracks, July 29 through December 6, 1986.

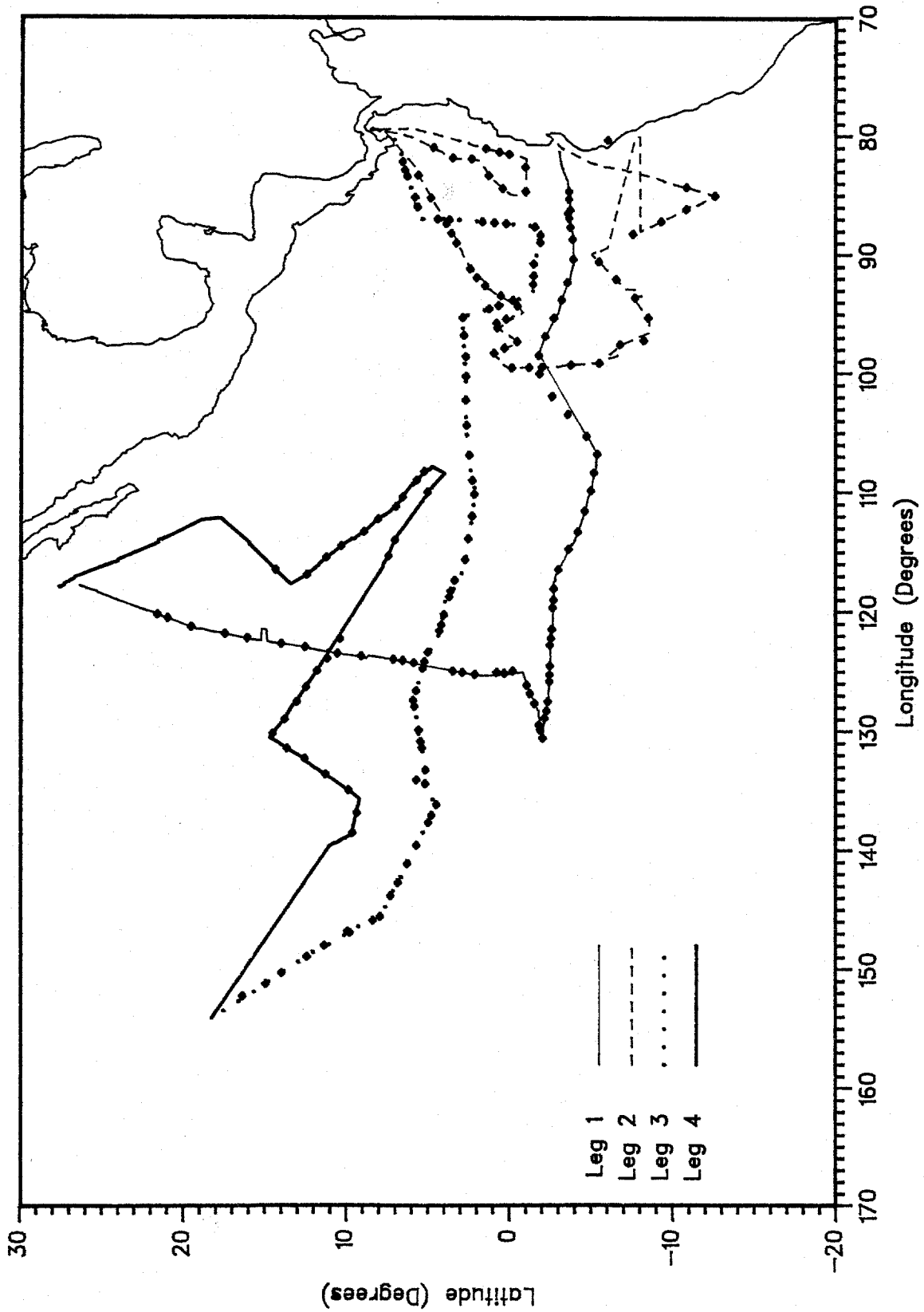


Figure 2. McArthur CTD stations, July 29 through December 6, 1986.

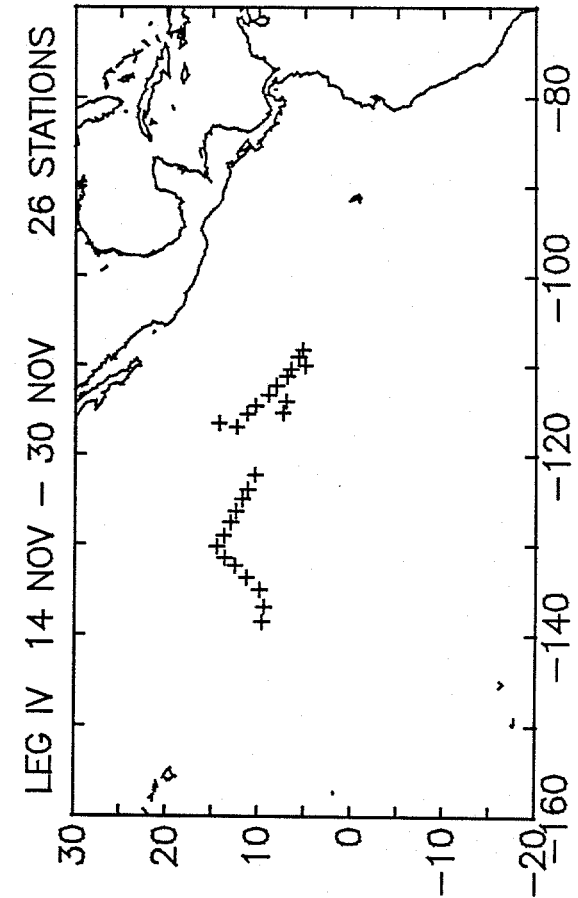
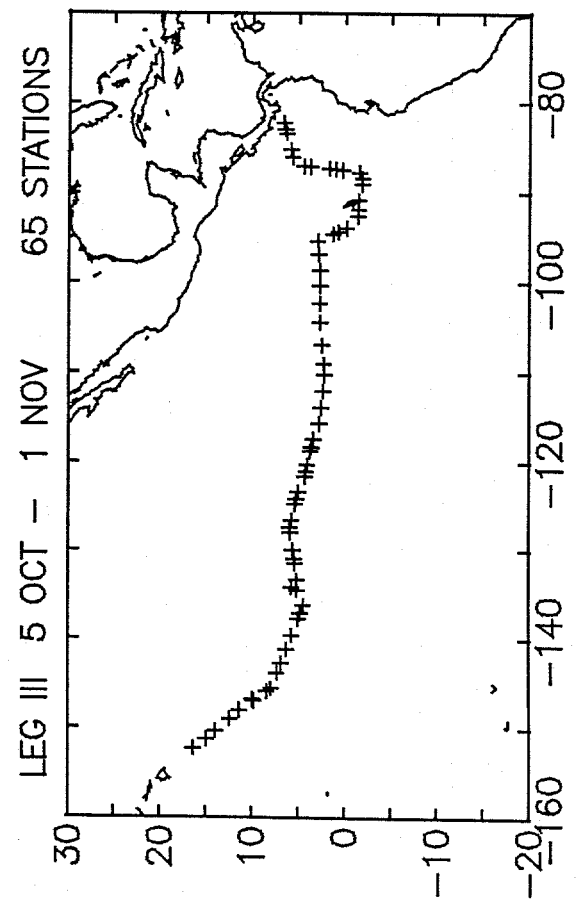
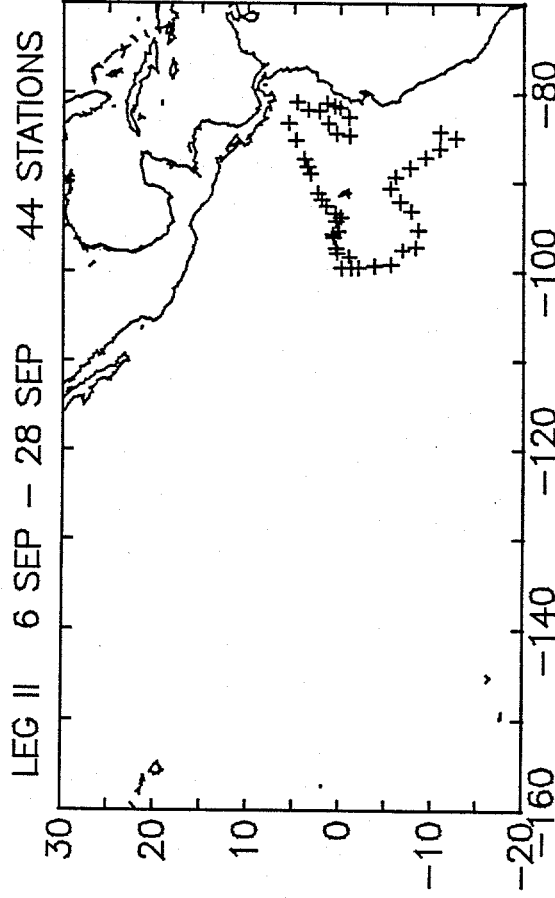
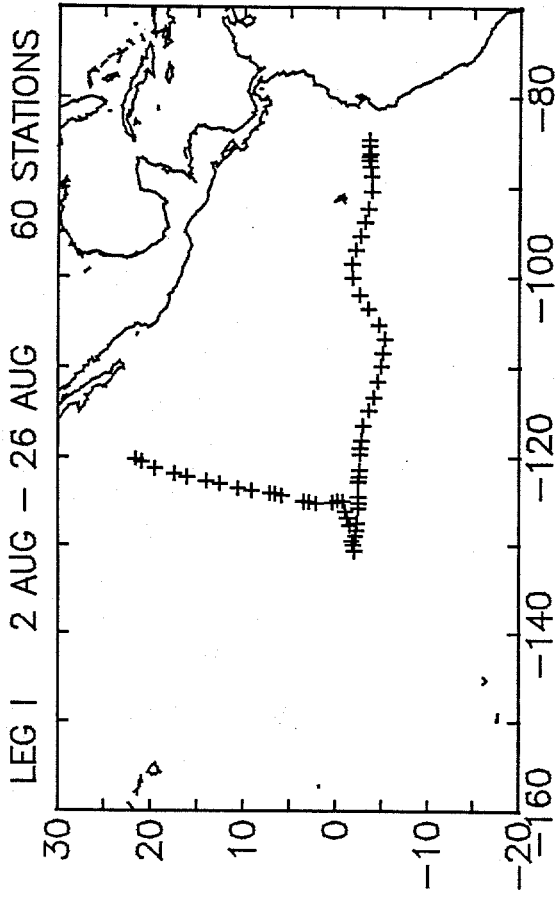


Figure 3. McArthur CTD stations by leg, July 29 through December 6, 1986.

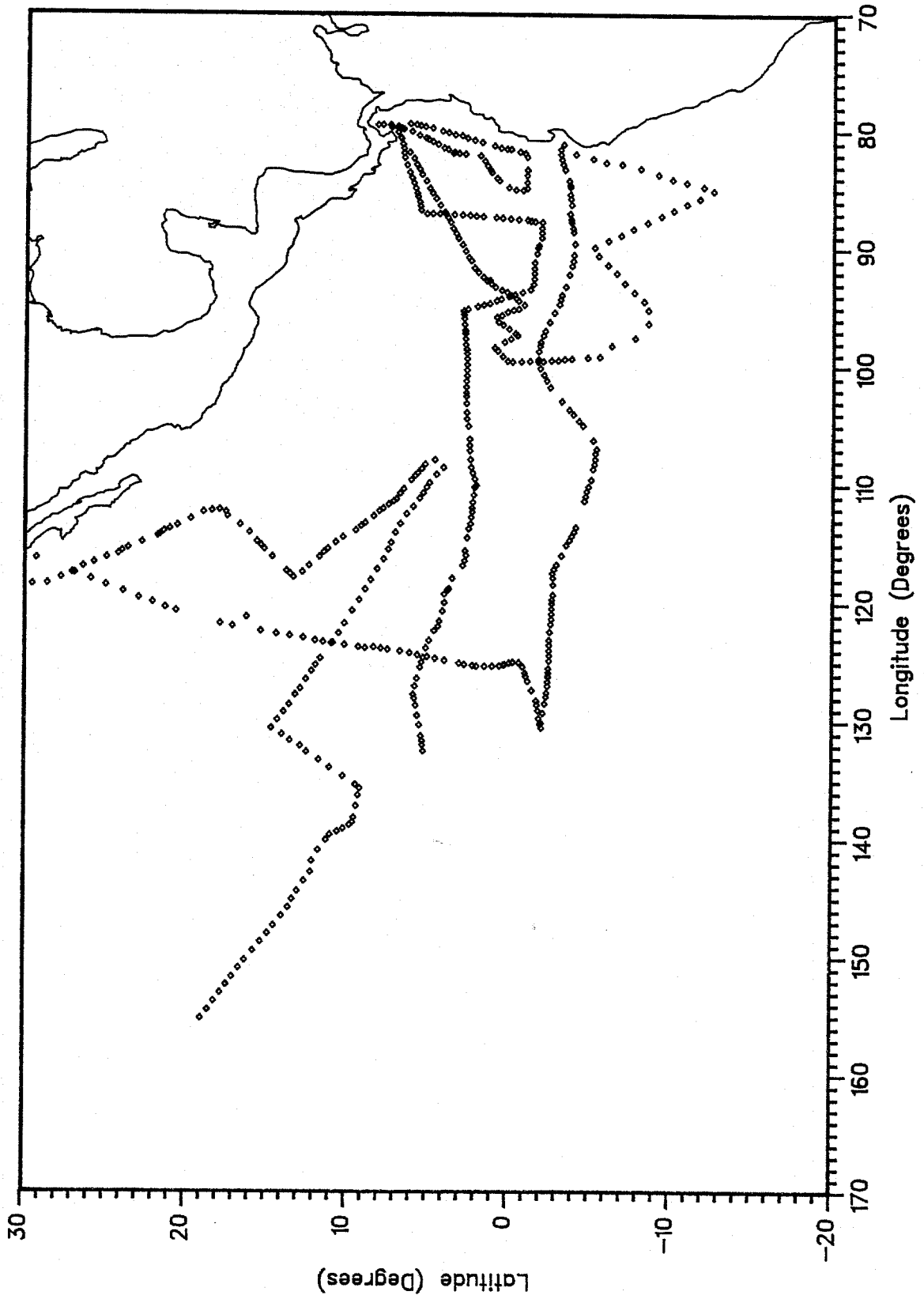


Figure 4. McArthur XBT stations July 29, through December 6, 1986.

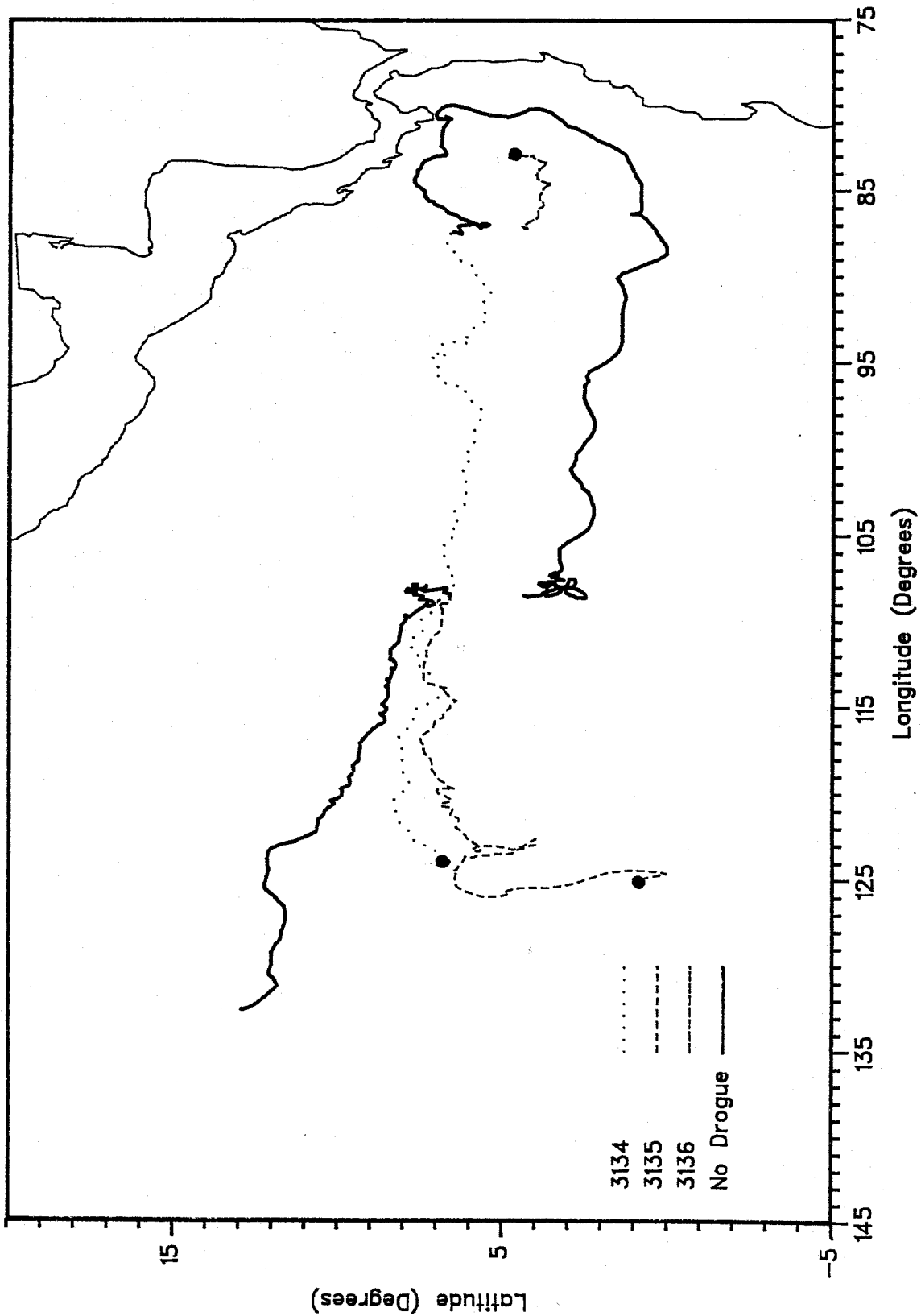


Figure 5. Tracks of three drifting buoys deployed, McArthur, July 29 through December 6, 1986.

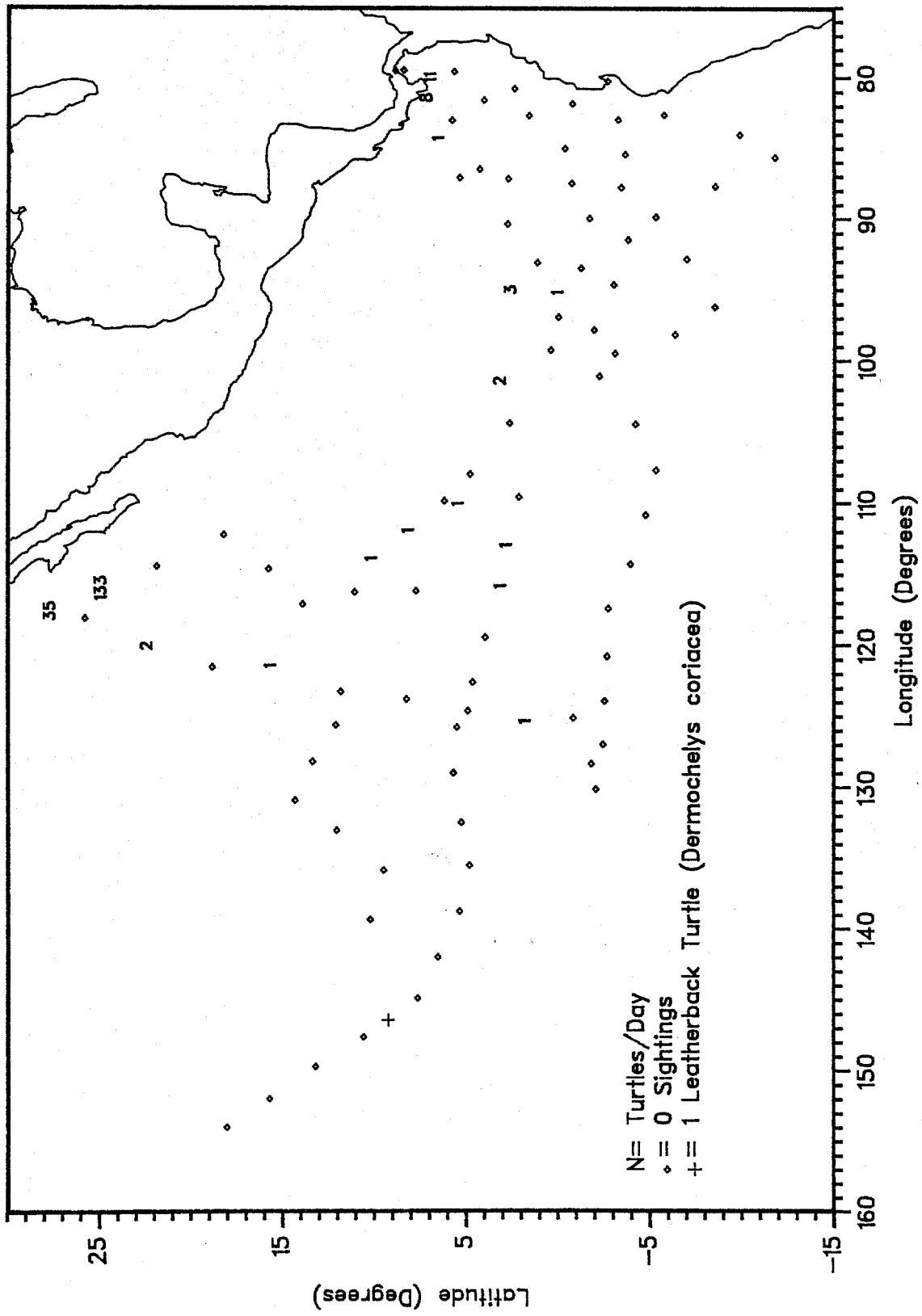


Figure 6. Locations of turtle sightings, McArthur, July 29 through December 6, 1986.

APPENDIX A

Station No.	1-001	Date - GMT	02 AUG 86
Station Name	MAC861-001	Time - GMT	2200
Latitude	21.35.7 N	Date - LOC	02 AUG 86
Longitude	120.11.8 W	Time - LOC	1500

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.066	0.015
20	--	--	0.072	0.013
40	--	--	0.067	0.018
60	--	--	0.093	0.038
80	--	--	0.205	0.245
100	--	--	0.143	0.221
120	--	--	0.127	0.341
140	--	--	0.090	0.261
160	--	--	0.044	0.121
200	--	--	0.007	0.025

Station No.	1-002	Date - GMT	03 AUG 86
Station Name	MAC861-002	Time - GMT	0320
Latitude	20.57.1 N	Date - LOC	02 AUG 86
Longitude	120.30.8 W	Time - LOC	2020

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.048	0.016
20	--	--	0.058	0.017
40	--	--	0.063	0.026
60	--	--	0.078	0.033
80	--	--	0.115	0.056
100	--	--	0.155	0.133
120	--	--	0.225	0.382
140	--	--	0.196	0.380
160	--	--	0.057	0.204
200	--	--	0.005	0.040

Station No.	1-003	Date - GMT	03 AUG 86
Station Name	MAC861-003	Time - GMT	1231
Latitude	19.30.3 N	Date - LOC	03 AUG 86
Longitude	121.15.2 W	Time - LOC	0531

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.057	0.028
20	--	--	0.070	0.013
40	--	--	0.065	0.018
60	--	--	0.068	0.037
80	--	--	0.139	0.104
100	--	--	0.229	0.329
120	--	--	0.196	0.434
140	--	--	0.106	0.290
160	--	--	0.057	0.132
200	--	--	0.036	0.083

Station No.	1-004	Date - GMT	04 AUG 86
Station Name	MAC861-004	Time - GMT	0317
Latitude	17.26.8 N	Date - LOC	03 AUG 86
Longitude	121.50.6 W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.067	0.018
20	--	--	0.067	0.015
40	--	--	0.085	0.023
60	--	--	0.115	0.038
80	--	--	0.155	0.083
100	--	--	0.213	0.363
120	--	--	0.188	0.433
140	--	--	0.074	0.268
160	--	--	0.040	0.098
200	--	--	0.002	0.032

Station No.	1-005	Date - GMT	04 AUG 86
Station Name	MAC861-005	Time - GMT	1253
Latitude	16.04.0 N	Date - LOC	04 AUG 86
Longitude	122.13.0 W	Time - LOC	0553

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.070	0.030
20	--	--	0.070	0.032
40	--	--	0.085	0.040
60	--	--	0.131	0.058
80	--	--	0.180	0.135
100	--	--	0.259	0.482
120	--	--	0.172	0.341
140	--	--	0.065	0.178
160	--	--	0.023	0.071
200	--	--	0.002	0.041

Station No.	1-006	Date - GMT	05 AUG 86
Station Name	MAC861-006	Time - GMT	0302
Latitude	13.59.2 N	Date - LOC	04 AUG 86
Longitude	122.41.4 W	Time - LOC	2002

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.062	0.020
20	--	--	0.079	0.024
40	--	--	0.139	0.068
60	--	--	0.229	0.221
80	--	--	0.217	0.220
100	--	--	0.181	0.502
120	--	--	0.049	0.194
140	--	--	0.034	0.126
160	--	--	0.016	0.326
200	--	--	0.000	0.097

Station No.	1-007	Date - GMT	05 AUG 86
Station Name	MAC861-007	Time - GMT	1258
Latitude	12.31.2 N	Date - LOC	05 AUG 86
Longitude	122.57.2 W	Time - LOC	0558

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.100	0.051
20	--	--	0.068	0.037
40	--	--	0.104	0.033
60	--	--	0.155	0.097
80	--	--	0.311	0.430
100	--	--	0.129	0.497
120	--	--	0.065	0.259
140	--	--	0.025	0.326
160	--	--	0.010	0.124
200	--	--	0.003	0.054

Station No.	1-008	Date - GMT	06 AUG 86
Station Name	MAC861-008	Time - GMT	0311
Latitude	10.32.5 N	Date - LOC	05 AUG 86
Longitude	123.30.3 W	Time - LOC	2011

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.091	0.046
20	--	--	0.106	0.060
40	--	--	0.270	0.108
60	--	--	0.337	0.361
80	--	--	0.272	0.469
100	--	--	0.110	0.385
120	--	--	0.057	0.231
140	--	--	0.023	0.071
160	--	--	0.004	0.047
200	--	--	0.002	0.057

Station No.	1-009	Date - GMT	06 AUG 86
Station Name	MAC861-009	Time - GMT	1257
Latitude	9.05.9 N	Date - LOC	06 AUG 86
Longitude	123.44.6 W	Time - LOC	0557

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.123	0.066
20	--	--	0.139	0.041
40	--	--	0.164	0.088
60	--	--	0.246	0.395
80	--	--	0.259	0.453
100	--	--	0.098	0.334
120	--	--	0.025	0.218
140	--	--	0.010	0.064
160	--	--	0.002	0.058
200	--	--	0.002	0.047

Station No.	1-010	Date - GMT	07 AUG 86
Station Name	MAC861-010	Time - GMT	0306
Latitude	7.06.0 N	Date - LOC	06 AUG 86
Longitude	124.01.4 W	Time - LOC	2006

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.047
20	--	--	0.110	0.052
40	--	--	0.213	0.111
60	--	--	0.311	0.230
80	--	--	0.285	0.370
100	--	--	0.164	0.412
120	--	--	0.053	0.217
140	--	--	0.021	0.105
160	--	--	0.003	0.054
200	--	--	0.003	0.062

Station No.	1-011	Date - GMT	07 AUG 86
Station Name	MAC861-011	Time - GMT	0754
Latitude	6.32.6 N	Date - LOC	06 AUG 86
Longitude	124.07.8 W	Time - LOC	2354

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.047
20	--	--	0.098	0.046
40	--	--	0.131	0.067
60	--	--	0.229	0.131
80	--	--	0.237	0.231
100	--	--	0.181	0.531
120	--	--	0.098	0.334
140	--	--	0.041	0.211
160	--	--	0.023	0.091
200	--	--	0.002	0.053

Station No.	1-012	Date - GMT	07 AUG 86
Station Name	MAC861-012	Time - GMT	1321
Latitude	5.51.7 N	Date - LOC	07 AUG 86
Longitude	124.18.1 W	Time - LOC	0621

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.172	0.026
20	--	--	0.139	0.086
40	--	--	0.164	0.097
60	--	--	0.285	0.171
80	--	--	0.311	0.259
100	--	--	0.207	0.362
120	--	--	0.129	0.298
140	--	--	0.049	0.167
160	--	--	0.028	0.063
200	--	--	0.003	0.044

Station No.	1-013	Date - GMT	08 AUG 86
Station Name	MAC861-013	Time - GMT	0323
Latitude	3.27.0 N	Date - LOC	07 AUG 86
Longitude	125.00.3 W	Time - LOC	2023

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.262	0.152
20	--	--	0.270	0.135
40	--	--	0.278	0.154
60	--	--	0.362	0.264
80	--	--	0.259	0.425
100	--	--	0.164	0.286
120	--	--	0.106	0.281
140	--	--	0.057	0.177
160	--	--	0.036	0.143
200	--	--	0.006	0.044

Station No.	1-014	Date - GMT	08 AUG 86
Station Name	MAC861-014	Time - GMT	0754
Latitude	2.52.1 N	Date - LOC	08 AUG 86
Longitude	125.06.8 W	Time - LOC	2354

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.254	0.133
20	--	--	0.254	0.142
40	--	--	0.254	0.151
60	--	--	0.285	0.171
80	--	--	0.285	0.456
100	--	--	0.181	0.417
120	--	--	0.090	0.234
140	--	--	0.041	0.129
160	--	--	0.010	0.047
200	--	--	0.018	0.099

Station No.	1-015	Date - GMT	08 AUG 86
Station Name	MAC861-015	Time - GMT	1323
Latitude	2.06.4 N	Date - LOC	08 AUG 86
Longitude	125.16.1 W	Time - LOC	0623

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.245	0.110
20	--	--	0.250	0.115
40	--	--	0.254	0.133
60	--	--	0.270	0.225
80	--	--	0.285	0.513
100	--	--	0.164	0.358
120	--	--	0.044	0.184
140	--	--	0.031	0.117
160	--	--	0.012	0.081
200	--	--	0.003	0.026

Station No.	1-016	Date - GMT	09 AUG 86
Station Name	MAC861-016	Time - GMT	0307
Latitude	0.18.3 N	Date - LOC	08 AUG 86
Longitude	125.10.6 W	Time - LOC	2007

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.335	0.106
20	--	--	0.286	0.110
40	--	--	0.337	0.205
60	--	--	0.350	0.320
80	--	--	0.083	0.082
100	--	--	0.072	0.081
120	--	--	0.016	0.033
140	--	--	0.011	0.030
160	--	--	0.008	0.022
200	--	--	0.005	0.031

Station No.	1-017	Date - GMT	09 AUG 86
Station Name	MAC861-017	Time - GMT	0802
Latitude	0.13.7 S	Date - LOC	09 AUG 86
Longitude	124.58.8 W	Time - LOC	0002

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.466	0.161
20	--	--	0.544	0.197
40	--	--	0.440	0.243
60	--	--	0.131	0.067
80	--	--	0.072	0.067
100	--	--	0.054	0.057
120	--	--	0.047	0.039
140	--	--	0.021	0.031
160	--	--	0.002	0.028
200	--	--	0.010	0.017

Station No.	1-018	Date - GMT	09 AUG 86
Station Name	MAC861-018	Time - GMT	1752
Latitude	0.46.6 N	Date - LOC	09 AUG 86
Longitude	125.02.3 W	Time - LOC	1052

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.362	0.150
20	--	--	0.466	0.217
40	--	--	0.570	0.228
60	--	--	0.453	0.302
80	--	--	0.213	0.381
100	--	--	0.086	0.108
120	--	--	0.062	0.069
140	--	--	0.044	0.063
160	--	--	0.036	0.063
200	--	--	0.004	0.046

Station No.	1-019	Date - GMT	10 AUG 86
Station Name	MAC861-019	Time - GMT	0316
Latitude	1.04.8 S	Date - LOC	09 AUG 86
Longitude	126.10.0 W	Time - LOC	2016

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.327	0.123
20	--	--	0.544	0.225
40	--	--	0.647	0.321
60	--	--	0.518	0.280
80	--	--	0.246	0.480
100	--	--	0.098	0.226
120	--	--	0.090	0.189
140	--	--	0.065	0.133
160	--	--	0.011	0.042
200	--	--	0.003	0.040

Station No.	1-020	Date - GMT	10 AUG 86
Station Name	MAC861-020	Time - GMT	0758
Latitude	1.16.6 S	Date - LOC	10 AUG 86
Longitude	126.51.9 W	Time - LOC	0058

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.295	0.128
20	--	--	0.362	0.179
40	--	--	0.492	0.249
60	--	--	0.492	0.334
80	--	--	0.207	0.476
100	--	--	0.123	0.300
120	--	--	0.062	0.060
140	--	--	0.082	0.206
160	--	--	0.006	0.055
200	--	--	0.003	0.031

Station No.	1-021	Date - GMT	10 AUG 86
Station Name	MAC861-021	Time - GMT	1334
Latitude	1.33.8 S	Date - LOC	10 AUG 86
Longitude	127.41.6 W	Time - LOC	0634

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.337	0.119
20	--	--	0.362	0.093
40	--	--	0.311	0.202
60	--	--	0.388	0.267
80	--	--	0.362	0.264
100	--	--	0.207	0.419
120	--	--	0.115	0.227
140	--	--	0.044	0.121
160	--	--	0.021	0.068
200	--	--	0.004	0.040

Station No.	1-022	Date - GMT	11 AUG 86
Station Name	MAC861-022	Time - GMT	0317
Latitude	1.49.3 S	Date - LOC	10 AUG 86
Longitude	129.30.4 W	Time - LOC	2017

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.229	0.095
20	--	--	0.262	0.125
40	--	--	0.327	0.168
60	--	--	0.303	0.156
80	--	--	0.254	0.151
100	--	--	0.272	0.412
120	--	--	0.172	0.314
140	--	--	0.094	0.239
160	--	--	0.026	0.082
200	--	--	0.070	0.129

Station No.	1-023	Date - GMT	11 AUG 86
Station Name	MAC861-023	Time - GMT	0757
Latitude	1.54.7 S	Date - LOC	11 AUG 86
Longitude	129.55.2 W	Time - LOC	0057

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.196	0.092
20	--	--	0.205	0.092
40	--	--	0.270	0.108
60	--	--	0.229	0.167
80	--	--	0.221	0.175
100	--	--	0.207	0.419
120	--	--	0.196	0.317
140	--	--	0.090	0.171
160	--	--	0.028	0.054
200	--	--	0.008	0.035

Station No.	1-024	Date - GMT	11 AUG 86
Station Name	MAC861-024	Time - GMT	1400
Latitude	2.03.1 S	Date - LOC	11 AUG 86
Longitude	130.35.7 W	Time - LOC	0700

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.270	0.099
20	--	--	0.237	0.123
40	--	--	0.213	0.129
60	--	--	0.245	0.142
80	--	--	0.229	0.158
100	--	--	0.259	0.311
120	--	--	0.181	0.445
140	--	--	0.082	0.188
160	--	--	0.031	0.057
200	--	--	0.008	0.039

Station No.	1-025	Date - GMT	12 AUG 86
Station Name	MAC861-025	Time - GMT	0249
Latitude	2.10.2 S	Date - LOC	11 AUG 86
Longitude	128.54.0 W	Time - LOC	1949

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.090
20	--	--	0.180	0.081
40	--	--	0.237	0.114
60	--	--	0.350	0.234
80	--	--	0.266	0.180
100	--	--	0.221	0.310
120	--	--	0.164	0.304
140	--	--	0.115	0.290
160	--	--	0.031	0.071
200	--	--	0.007	0.034

Station No.	1-026	Date - GMT	12 AUG 86
Station Name	MAC861-026	Time - GMT	0755
Latitude	2.17.1 S	Date - LOC	12 AUG 86
Longitude	128.18.4 W	Time - LOC	0055

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.114
20	--	--	0.237	0.132
40	--	--	0.245	0.115
60	--	--	0.254	0.160
80	--	--	0.229	0.149
100	--	--	0.259	0.396
120	--	--	0.164	0.250
140	--	--	0.115	0.236
160	--	--	0.057	0.186
200	--	--	0.010	0.047

Station No.	1-027	Date - GMT	12 AUG 86
Station Name	MAC861-027	Time - GMT	1351
Latitude	2.22.4 S	Date - LOC	12 AUG 86
Longitude	127.30.9 W	Time - LOC	0651

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.102
20	--	--	0.237	0.150
40	--	--	0.237	0.132
60	--	--	0.254	0.124
80	--	--	0.237	0.132
100	--	--	0.262	0.197
120	--	--	0.164	0.268
140	--	--	0.098	0.235
160	--	--	0.049	0.144
200	--	--	0.039	0.152

Station No.	1-028	Date - GMT	13 AUG 86
Station Name	MAC861-028	Time - GMT	0255
Latitude	2.27.3 S	Date - LOC	12 AUG 86
Longitude	125.49.7 W	Time - LOC	1955

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.087
20	--	--	0.245	0.115
40	--	--	0.262	0.107
60	--	--	0.270	0.144
80	--	--	0.362	0.207
100	--	--	0.192	0.298
120	--	--	0.131	0.229
140	--	--	0.053	0.172
160	--	--	0.036	0.095
200	--	--	0.008	0.042

Station No.	1-029	Date - GMT	13 AUG 86
Station Name	MAC861-029	Time - GMT	0753
Latitude	2.28.0 S	Date - LOC	13 AUG 86
Longitude	125.15.7 W	Time - LOC	0053

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.081
20	--	--	0.164	0.097
40	--	--	0.172	0.080
60	--	--	0.180	0.108
80	--	--	0.262	0.188
100	--	--	0.213	0.309
120	--	--	0.172	0.323
140	--	--	0.131	0.238
160	--	--	0.074	0.187
200	--	--	0.011	0.052

Station No.	1-030	Date - GMT	13 AUG 86
Station Name	MAC861-030	Time - GMT	1353
Latitude	2.29.7 S	Date - LOC	13 AUG 86
Longitude	124.31.0 W	Time - LOC	0653

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.129
20	--	--	0.205	0.110
40	--	--	0.205	0.119
60	--	--	0.221	0.112
80	--	--	0.233	0.422
100	--	--	0.180	0.297
120	--	--	0.131	0.220
140	--	--	0.090	0.225
160	--	--	0.057	0.131
200	--	--	0.008	0.040

Station No.	1-031	Date - GMT	14 AUG 86
Station Name	MAC861-031	Time - GMT	0250
Latitude	2.29.3 S	Date - LOC	13 AUG 86
Longitude	122.46.8 W	Time - LOC	1950

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.168	0.080
20	--	--	0.180	0.081
40	--	--	0.180	0.090
60	--	--	0.237	0.132
80	--	--	0.272	0.383
100	--	--	0.139	0.302
120	--	--	0.065	0.223
140	--	--	0.028	0.080
160	--	--	0.018	0.056
200	--	--	0.004	0.069

Station No.	1-032	Date - GMT	14 AUG 86
Station Name	MAC861-032	Time - GMT	0751
Latitude	2.33.9 S	Date - LOC	14 AUG 86
Longitude	122.12.4 W	Time - LOC	0051

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.164	0.097
20	--	--	0.172	0.098
40	--	--	0.131	0.103
60	--	--	0.285	0.285
80	--	--	0.164	0.268
100	--	--	0.123	0.255
120	--	--	0.057	0.150
140	--	--	0.036	0.066
160	--	--	0.012	0.053
200	--	--	0.005	0.039

Station No.	1-033	Date - GMT	14 AUG 86
Station Name	MAC861-033	Time - GMT	1340
Latitude	2.36.8 S	Date - LOC	14 AUG 86
Longitude	121.27.9 W	Time - LOC	0640

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.096
20	--	--	0.229	0.104
40	--	--	0.221	0.085
60	--	--	0.213	0.111
80	--	--	0.259	0.396
100	--	--	0.139	0.302
120	--	--	0.049	0.185
140	--	--	0.034	0.077
160	--	--	0.018	0.062
200	--	--	0.003	0.047

Station No.	1-034	Date - GMT	15 AUG 86
Station Name	MAC861-034	Time - GMT	0252
Latitude	2.39.6 S	Date - LOC	14 AUG 86
Longitude	119.38.0 W	Time - LOC	1952

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.087
20	--	--	0.254	0.079
40	--	--	0.262	0.116
60	--	--	0.286	0.173
80	--	--	0.245	0.331
100	--	--	0.221	0.328
120	--	--	0.082	0.179
140	--	--	0.049	0.133
160	--	--	0.067	0.115
200	--	--	0.013	0.101

Station No.	1-035	Date - GMT	15 AUG 86
Station Name	MAC861-035	Time - GMT	0749
Latitude	2.42.6 S	Date - LOC	15 AUG 86
Longitude	118.59.2 W	Time - LOC	0049

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.147	0.060
20	--	--	0.180	0.081
40	--	--	0.188	0.073
60	--	--	0.213	0.120
80	--	--	0.245	0.241
100	--	--	0.180	0.288
120	--	--	0.115	0.191
140	--	--	0.044	0.064
160	--	--	0.008	0.066
200	--	--	0.002	0.045

Station No.	1-036	Date - GMT	15 AUG 86
Station Name	MAC861-036	Time - GMT	1321
Latitude	2.43.0 S	Date - LOC	15 AUG 86
Longitude	118.04.8 W	Time - LOC	0621

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.112
20	--	--	0.205	0.128
40	--	--	0.196	0.128
60	--	--	0.205	0.110
80	--	--	0.285	0.285
100	--	--	0.164	0.241
120	--	--	0.098	0.280
140	--	--	0.049	0.125
160	--	--	0.021	0.062
200	--	--	0.002	0.040

Station No.	1-037	Date - GMT	16 AUG 86
Station Name	MAC861-037	Time - GMT	0208
Latitude	3.00.4 S	Date - LOC	15 AUG 86
Longitude	116.27.9 W	Time - LOC	1908

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.254	0.088
20	--	--	0.270	0.117
40	--	--	0.319	0.131
60	--	--	0.388	0.210
80	--	--	0.259	0.396
100	--	--	0.106	0.308
120	--	--	0.057	0.168
140	--	--	0.018	0.053
160	--	--	0.008	0.047
200	--	--	0.002	0.034

Station No.	1-038	Date - GMT	16 AUG 86
Station Name	MAC861-038	Time - GMT	1320
Latitude	3.37.8 S	Date - LOC	16 AUG 86
Longitude	114.45.8 W	Time - LOC	0620

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.229	0.131
20	--	--	0.245	0.133
40	--	--	0.278	0.172
60	--	--	0.259	0.311
80	--	--	0.245	0.259
100	--	--	0.147	0.267
120	--	--	0.047	0.144
140	--	--	0.021	0.116
160	--	--	0.018	0.093
200	--	--	0.003	0.036

Station No.	1-039	Date - GMT	17 AUG 86
Station Name	MAC861-039	Time - GMT	0218
Latitude	4.11.2 S	Date - LOC	16 AUG 86
Longitude	113.18.2 W	Time - LOC	1918

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.172	0.044
20	--	--	0.164	0.070
40	--	--	0.213	0.093
60	--	--	0.245	0.133
80	--	--	0.259	0.425
100	--	--	0.155	0.340
120	--	--	0.090	0.252
140	--	--	0.021	0.105
160	--	--	0.002	0.049
200	--	--	0.003	0.029

Station No.	1-040	Date - GMT	17 AUG 86
Station Name	MAC861-040	Time - GMT	1252
Latitude	4.36.0 S	Date - LOC	17 AUG 86
Longitude	111.33.9 W	Time - LOC	0552

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.114
20	--	--	0.286	0.137
40	--	--	0.237	0.114
60	--	--	0.254	0.151
80	--	--	0.221	0.292
100	--	--	0.054	0.114
120	--	--	0.049	0.119
140	--	--	0.026	0.071
160	--	--	0.011	0.042
200	--	--	0.002	0.052

Station No.	1-041	Date - GMT	18 AUG 86
Station Name	MAC861-041	Time - GMT	0257
Latitude	4.59.1 S	Date - LOC	17 AUG 86
Longitude	109.52.9 W	Time - LOC	1957

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.085
20	--	--	0.229	0.113
40	--	--	0.262	0.143
60	--	--	0.286	0.272
80	--	--	0.272	0.469
100	--	--	0.151	0.303
120	--	--	0.090	0.216
140	--	--	0.054	0.134
160	--	--	0.016	0.043
200	--	--	0.006	0.031

Station No.	1-042	Date - GMT	18 AUG 86
Station Name	MAC861-042	Time - GMT	1252
Latitude	5.10.8 S	Date - LOC	18 AUG 86
Longitude	108.22.3 W	Time - LOC	0552

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.123
20	--	--	0.229	0.104
40	--	--	0.196	0.128
60	--	--	0.285	0.313
80	--	--	0.207	0.419
100	--	--	0.147	0.267
120	--	--	0.074	0.151
140	--	--	0.041	0.095
160	--	--	0.008	0.039
200	--	--	0.002	0.027

Station No.	1-043	Date - GMT	19 AUG 86
Station Name	MAC861-043	Time - GMT	0133
Latitude	5.22.7 S	Date - LOC	18 AUG 86
Longitude	106.48.0 W	Time - LOC	1833

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.299	0.052
20	--	--	0.282	0.114
40	--	--	0.327	0.168
60	--	--	0.414	0.212
80	--	--	0.388	0.409
100	--	--	0.207	0.419
120	--	--	0.090	0.252
140	--	--	0.052	0.153
160	--	--	0.028	0.063
200	--	--	0.006	0.028

Station No.	1-044	Date - GMT	19 AUG 86
Station Name	MAC861-044	Time - GMT	1220
Latitude	4.42.3 S	Date - LOC	19 AUG 86
Longitude	105.17.7 W	Time - LOC	0520

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.112
20	--	--	0.196	0.110
40	--	--	0.229	0.113
60	--	--	0.285	0.228
80	--	--	0.259	0.254
100	--	--	0.196	0.272
120	--	--	0.139	0.221
140	--	--	0.098	0.172
160	--	--	0.062	0.109
200	--	--	0.002	0.046

Station No.	1-045	Date - GMT	20 AUG 86
Station Name	MAC861-045	Time - GMT	0137
Latitude	3.34.4 S	Date - LOC	19 AUG 86
Longitude	103.28.8 W	Time - LOC	1837

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.233	0.086
20	--	--	0.229	0.086
40	--	--	0.278	0.154
60	--	--	0.388	0.324
80	--	--	0.233	0.365
100	--	--	0.106	0.254
120	--	--	0.074	0.205
140	--	--	0.044	0.104
160	--	--	0.009	0.054
200	--	--	0.004	0.042

Station No.	1-046	Date - GMT	20 AUG 86
Station Name	MAC861-046	Time - GMT	1219
Latitude	2.36.9 S	Date - LOC	20 AUG 86
Longitude	101.58.0 W	Time - LOC	0519

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.090
20	--	--	0.196	0.083
40	--	--	0.180	0.108
60	--	--	0.337	0.404
80	--	--	0.115	0.209
100	--	--	0.259	0.425
120	--	--	0.065	0.142
140	--	--	0.005	0.042
160	--	--	0.005	0.044
200	--	--	0.002	0.026

Station No.	1-047	Date - GMT	21 AUG 86
Station Name	MAC861-047	Time - GMT	0107
Latitude	1.50.2 S	Date - LOC	20 AUG 86
Longitude	100.03.9 W	Time - LOC	1807

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.076
20	--	--	0.229	0.086
40	--	--	0.337	0.262
60	--	--	0.311	0.316
80	--	--	0.196	0.308
100	--	--	0.106	0.245
120	--	--	0.041	0.072
140	--	--	0.013	0.055
160	--	--	0.008	0.069
200	--	--	0.006	0.066

Station No.	1-048	Date - GMT	21 AUG 86
Station Name	MAC861-048	Time - GMT	1155
Latitude	1.47.4 S	Date - LOC	21 AUG 86
Longitude	98.31.7 W	Time - LOC	0555

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.311	0.145
20	--	--	0.254	0.133
40	--	--	0.259	0.368
60	--	--	0.196	0.299
80	--	--	0.147	0.141
100	--	--	0.098	0.100
120	--	--	0.031	0.054
140	--	--	0.016	0.059
160	--	--	0.018	0.056
200	--	--	0.002	0.044

Station No.	1-049	Date - GMT	22 AUG 86
Station Name	MAC861-049	Time - GMT	0052
Latitude	2.11.4 S	Date - LOC	22 AUG 86
Longitude	96.55.1 W	Time - LOC	1852

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.311	0.130
20	--	--	0.311	0.148
40	--	--	0.388	0.238
60	--	--	0.647	0.549
80	--	--	0.337	0.575
100	--	--	0.188	0.325
120	--	--	0.052	0.091
140	--	--	0.028	0.071
160	--	--	0.007	0.056
200	--	--	0.009	0.054

Station No.	1-050	Date - GMT	22 AUG 86
Station Name	MAC861-050	Time - GMT	1155
Latitude	2.43.1 S	Date - LOC	22 AUG 86
Longitude	95.22.7 W	Time - LOC	0555

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.303	0.147
20	--	--	0.078	0.720
40	--	--	0.466	0.217
60	--	--	0.106	0.164
80	--	--	0.311	0.430
100	--	--	0.062	0.100
120	--	--	0.031	0.089
140	--	--	0.016	0.073
160	--	--	--	--
200	--	--	0.004	0.032

Station No.	1-051	Date - GMT	23 AUG 86
Station Name	MAC861-051	Time - GMT	0053
Latitude	3.11.4 S	Date - LOC	22 AUG 86
Longitude	93.50.4 W	Time - LOC	1853

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.262	0.089
20	--	--	0.262	0.134
40	--	--	0.440	0.386
60	--	--	0.518	0.337
80	--	--	0.180	0.216
100	--	--	0.147	0.195
120	--	--	0.065	0.133
140	--	--	0.013	0.158
160	--	--	0.021	0.065
200	--	--	0.023	0.105

Station No.	1-052	Date - GMT	23 AUG 86
Station Name	MAC861-052	Time - GMT	1135
Latitude	3.32.5 S	Date - LOC	23 AUG 86
Longitude	92.23.0 W	Time - LOC	0535

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.303	0.111
20	--	--	0.362	0.150
40	--	--	0.311	0.202
60	--	--	0.123	0.138
80	--	--	0.106	0.155
100	--	--	0.026	0.094
120	--	--	0.065	0.115
140	--	--	0.005	0.049
160	--	--	0.005	0.047
200	--	--	0.002	0.035

Station No.	1-053	Date - GMT	24 AUG 86
Station Name	MAC861-053	Time - GMT	0050
Latitude	3.54.2 S	Date - LOC	23 AUG 86
Longitude	90.25.6 W	Time - LOC	1850

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.327	0.132
20	--	--	0.388	0.181
40	--	--	0.362	0.350
60	--	--	0.180	0.342
80	--	--	0.155	0.322
100	--	--	0.065	0.187
120	--	--	0.026	0.097
140	--	--	0.023	0.074
160	--	--	0.008	0.064
200	--	--	0.008	0.048

Station No.	1-054	Date - GMT	24 AUG 86
Station Name	MAC861-054	Time - GMT	1122
Latitude	3.51.7 S	Date - LOC	24 AUG 86
Longitude	88.44.1 W	Time - LOC	0522

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.621	0.262
20	--	--	0.518	0.223
40	--	--	0.440	0.557
60	--	--	0.164	0.322
80	--	--	0.054	0.117
100	--	--	0.031	0.060
120	--	--	0.009	0.050
140	--	--	0.004	0.046
160	--	--	0.003	0.040
200	--	--	0.001	0.043

Station No.	1-055	Date - GMT	24 AUG 86
Station Name	MAC861-055	Time - GMT	1853
Latitude	3.43.6 S	Date - LOC	24 AUG 86
Longitude	87.43.6 W	Time - LOC	1253

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.570	0.114
20	--	--	0.570	0.285
40	--	--	0.621	0.347
60	--	--	0.388	0.466
80	--	--	0.131	0.247
100	--	--	0.074	0.187
120	--	--	0.013	0.055
140	--	--	0.004	0.045
160	--	--	0.005	0.063
200	--	--	0.005	0.044

Station No.	1-056	Date - GMT	25 AUG 86
Station Name	MAC861-056	Time - GMT	0036
Latitude	3.37.3 S	Date - LOC	24 AUG 86
Longitude	86.58.6 W	Time - LOC	1936

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.155
20	--	--	0.440	0.186
40	--	--	0.492	0.220
60	--	--	0.596	0.387
80	--	--	0.172	0.368
100	--	--	0.098	0.226
120	--	--	0.026	0.077
140	--	--	0.008	0.058
160	--	--	0.006	0.055
200	--	--	0.005	0.042

Station No.	1-057	Date - GMT	25 AUG 86
Station Name	MAC861-057	Time - GMT	0552
Latitude	3.34.5 S	Date - LOC	24 AUG 86
Longitude	86.32.9 W	Time - LOC	0052

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.492	0.192
20	--	--	0.414	0.269
40	--	--	0.596	0.287
60	--	--	0.414	0.611
80	--	--	0.115	0.281
100	--	--	0.049	0.150
120	--	--	0.013	0.067
140	--	--	0.008	0.061
160	--	--	0.004	0.049
200	--	--	0.004	0.036

Station No.	1-058	Date - GMT	25 AUG 86
Station Name	MAC861-058	Time - GMT	1049
Latitude	3.43.1 S	Date - LOC	25 AUG 86
Longitude	86.17.0 W	Time - LOC	0549

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.388	0.181
20	--	--	0.362	0.179
40	--	--	0.388	0.238
60	--	--	0.388	0.637
80	--	--	0.139	0.293
100	--	--	0.074	0.178
120	--	--	0.026	0.074
140	--	--	0.006	0.068
160	--	--	0.003	0.073
200	--	--	0.003	0.038

Station No.	1-059	Date - GMT	25 AUG 86
Station Name	MAC861-059	Time - GMT	1752
Latitude	3.37.0 S	Date - LOC	25 AUG 86
Longitude	85.22.7 W	Time - LOC	1252

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.699	0.184
20	--	--	0.829	0.311
40	--	--	0.751	0.360
60	--	--	0.414	0.469
80	--	--	0.147	0.303
100	--	--	0.106	0.200
120	--	--	0.054	0.105
140	--	--	0.013	0.058
160	--	--	0.011	0.051
200	--	--	0.034	0.072

Station No.	1-060	Date - GMT	26 AUG 86
Station Name	MAC861-060	Time - GMT	0022
Latitude	3.38.0 S	Date - LOC	25 AUG 86
Longitude	84.45.6 W	Time - LOC	1922

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.544	0.254
20	--	--	0.518	0.280
40	--	--	0.673	0.409
60	--	--	0.375	0.522
80	--	--	0.082	0.170
100	--	--	0.054	0.122
120	--	--	0.008	0.069
140	--	--	0.008	0.059
160	--	--	0.011	0.054
200	--	--	0.002	0.061

Station No.	2-061	Date - GMT	06 SEP 86
Station Name	MAC862-061	Time - GMT	2353
Latitude	10.50.8 S	Date - LOC	05 SEP 86
Longitude	84.21.7 W	Time - LOC	1853

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.311	0.145
20	--	--	0.350	0.106
40	--	--	0.337	0.148
60	--	--	0.362	0.150
80	--	--	0.164	0.106
100	--	--	0.049	0.221
120	--	--	0.025	0.434
140	--	--	0.004	0.060
160	--	--	0.004	0.055
200	--	--	0.002	0.043

Station No.	2-062	Date - GMT	07 SEP 86
Station Name	MAC862-062	Time - GMT	1051
Latitude	12.35.2 S	Date - LOC	07 SEP 86
Longitude	85.03.6 W	Time - LOC	0551

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.148
20	--	--	0.229	0.149
40	--	--	0.221	0.148
60	--	--	0.229	0.149
80	--	--	0.229	0.149
100	--	--	0.090	0.117
120	--	--	0.047	0.053
140	--	--	0.023	0.027
160	--	--	0.014	0.018
200	--	--	0.013	0.087

Station No.	2-063	Date - GMT	07 SEP 86
Station Name	MAC862-063	Time - GMT	0007
Latitude	10.49.9 S	Date - LOC	06 SEP 86
Longitude	86.12.6 W	Time - LOC	1907

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.270	0.090
20	--	--	0.337	0.148
40	--	--	0.237	0.123
60	--	--	0.229	0.077
80	--	--	0.090	0.108
100	--	--	0.044	0.096
120	--	--	0.041	0.090
140	--	--	0.018	0.038
160	--	--	0.007	0.024
200	--	--	0.003	0.022

Station No.	2-064	Date - GMT	08 SEP 86
Station Name	MAC862-064	Time - GMT	1111
Latitude	9.16.0 S	Date - LOC	08 SEP 86
Longitude	87.14.2 W	Time - LOC	0611

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.114
20	--	--	0.245	0.097
40	--	--	0.221	0.139
60	--	--	0.237	0.168
80	--	--	0.196	0.254
100	--	--	0.065	0.196
120	--	--	0.041	0.247
140	--	--	0.028	0.083
160	--	--	0.013	0.072
200	--	--	0.011	0.052

Station No.	2-065	Date - GMT	09 SEP 86
Station Name	MAC862-065	Time - GMT	0011
Latitude	7.32.7 S	Date - LOC	08 SEP 86
Longitude	88.19.8 W	Time - LOC	1911

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.278	0.127
20	--	--	0.052	0.746
40	--	--	0.311	0.259
60	--	--	0.337	0.148
80	--	--	--	--
100	--	--	0.082	0.170
120	--	--	0.016	0.053
140	--	--	0.007	0.043
160	--	--	0.007	0.038
200	--	--	0.005	0.036

Station No.	2-066	Date - GMT	09 SEP 86
Station Name	MAC862-066	Time - GMT	1109
Latitude	6.00.0 S	Date - LOC	09 SEP 86
Longitude	89.23.0 W	Time - LOC	0509

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.205	0.110
20	--	--	0.196	0.092
40	--	--	0.196	0.092
60	--	--	0.311	0.430
80	--	--	0.205	0.362
100	--	--	0.090	0.297
120	--	--	0.062	0.123
140	--	--	0.016	0.061
160	--	--	0.007	0.046
200	--	--	0.004	0.044

Station No.	2-067	Date - GMT	10 SEP 86
Station Name	MAC862-067	Time - GMT	0016
Latitude	5.27.3 S	Date - LOC	09 SEP 86
Longitude	90.39.3 W	Time - LOC	1916

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.075
20	--	--	0.213	0.093
40	--	--	--	--
60	--	--	0.196	0.263
80	--	--	0.131	0.247
100	--	--	0.034	0.040
120	--	--	0.028	0.137
140	--	--	0.009	0.027
160	--	--	0.008	0.021
200	--	--	0.005	0.015

Station No.	2-068	Date - GMT	10 SEP 86
Station Name	MAC862-068	Time - GMT	1124
Latitude	6.31.0 S	Date - LOC	10 SEP 86
Longitude	92.08.5 W	Time - LOC	0624

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.254	0.133
20	--	--	0.254	0.115
40	--	--	0.319	0.149
60	--	--	0.245	0.187
80	--	--	0.298	0.329
100	--	--	0.115	0.218
120	--	--	0.047	0.141
140	--	--	0.007	0.057
160	--	--	0.003	0.043
200	--	--	0.002	0.026

Station No.	2-069	Date - GMT	11 SEP 86
Station Name	MAC862-069	Time - GMT	0027
Latitude	7.40.9 S	Date - LOC	10 SEP 86
Longitude	93.41.6 W	Time - LOC	1927

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.155	0.070
20	--	--	0.188	0.082
40	--	--	0.180	0.090
60	--	--	0.196	0.137
80	--	--	0.213	0.318
100	--	--	0.049	0.203
120	--	--	0.021	0.167
140	--	--	0.023	0.079
160	--	--	0.002	0.061
200	--	--	0.000	0.034

Station No.	2-070	Date - GMT	11 SEP 86
Station Name	MAC862-070	Time - GMT	1128
Latitude	8.29.8 S	Date - LOC	11 SEP 86
Longitude	95.21.8 W	Time - LOC	0628

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.196	0.110
20	--	--	0.188	0.154
40	--	--	0.188	0.181
60	--	--	0.147	0.105
80	--	--	0.285	0.342
100	--	--	0.233	0.365
120	--	--	0.106	0.254
140	--	--	0.026	0.128
160	--	--	0.034	0.060
200	--	--	0.098	0.127

Station No.	2-071	Date - GMT	11 SEP 86
Station Name	MAC862-071	Time - GMT	2343
Latitude	8.12.3 S	Date - LOC	11 SEP 86
Longitude	97.16.1 W	Time - LOC	1843

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.102
20	--	--	0.205	0.101
40	--	--	0.221	0.148
60	--	--	0.286	0.155
80	--	--	0.259	0.368
100	--	--	0.139	0.293
120	--	--	0.049	0.149
140	--	--	0.021	0.068
160	--	--	0.007	0.047
200	--	--	0.002	0.041

Station No.	2-072	Date - GMT	12 SEP 86
Station Name	MAC862-072	Time - GMT	1156
Latitude	6.45.2 S	Date - LOC	12 SEP 86
Longitude	97.37.5 W	Time - LOC	0656

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.123
20	--	--	0.237	0.141
40	--	--	0.221	0.139
60	--	--	0.229	0.158
80	--	--	0.254	0.286
100	--	--	0.164	0.331
120	--	--	0.090	0.216
140	--	--	0.028	0.103
160	--	--	0.052	0.065
200	--	--	0.003	0.028

Station No.	2-073	Date - GMT	13 SEP 86
Station Name	MAC862-073	Time - GMT	0056
Latitude	5.29.5 S	Date - LOC	12 SEP 86
Longitude	99.11.1 W	Time - LOC	1956

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.254	0.106
20	--	--	0.229	0.095
40	--	--	0.237	0.132
60	--	--	0.270	0.135
80	--	--	0.270	0.135
100	--	--	0.026	0.031
120	--	--	0.115	0.272
140	--	--	0.057	0.177
160	--	--	0.034	0.080
200	--	--	0.009	0.032

Station No.	2-074	Date - GMT	13 SEP 86
Station Name	MAC862-074	Time - GMT	1146
Latitude	3.45.2 S	Date - LOC	13 SEP 86
Longitude	99.20.7 W	Time - LOC	0646

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.188	0.118
20	--	--	0.196	0.110
40	--	--	0.229	0.158
60	--	--	0.285	0.456
80	--	--	0.164	0.358
100	--	--	0.010	0.064
120	--	--	0.098	0.172
140	--	--	0.008	0.051
160	--	--	0.003	0.055
200	--	--	0.003	0.037

Station No.	2-075	Date - GMT	14 SEP 86
Station Name	MAC862-075	Time - GMT	0059
Latitude	1.58.5 S	Date - LOC	13 SEP 86
Longitude	99.32.9 W	Time - LOC	1959

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.060
20	--	--	0.254	0.079
40	--	--	0.245	0.151
60	--	--	0.259	0.311
80	--	--	0.147	0.240
100	--	--	0.155	0.286
120	--	--	0.106	0.218
140	--	--	0.047	0.076
160	--	--	0.018	0.053
200	--	--	0.004	0.041

Station No.	2-076	Date - GMT	14 SEP 86
Station Name	MAC862-076	Time - GMT	0555
Latitude	1.11.0 S	Date - LOC	14 SEP 86
Longitude	99.33.1 W	Time - LOC	0055

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.096
20	--	--	0.237	0.105
40	--	--	0.278	0.190
60	--	--	0.337	0.347
80	--	--	0.259	0.353
100	--	--	0.188	0.325
120	--	--	0.098	0.154
140	--	--	0.082	0.116
160	--	--	0.067	0.112
200	--	--	0.039	0.081

Station No.	2-077	Date - GMT	14 SEP 86
Station Name	MAC862-077	Time - GMT	1145
Latitude	0.07.6 S	Date - LOC	14 SEP 86
Longitude	99.35.4 W	Time - LOC	0645

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.388	0.124
20	--	--	0.388	0.124
40	--	--	0.388	0.181
60	--	--	0.414	0.241
80	--	--	0.414	0.241
100	--	--	0.172	0.251
120	--	--	0.094	0.113
140	--	--	0.074	0.106
160	--	--	0.057	0.091
200	--	--	0.039	0.055

Station No.	2-078	Date - GMT	15 SEP 86
Station Name	MAC862-078	Time - GMT	0055
Latitude	0.57.9 N	Date - LOC	14 SEP 86
Longitude	98.20.5 W	Time - LOC	1955

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.270	0.081
20	--	--	0.362	0.150
40	--	--	0.414	0.212
60	--	--	0.388	0.267
80	--	--	0.388	0.381
100	--	--	0.311	0.430
120	--	--	0.207	0.419
140	--	--	0.139	0.320
160	--	--	0.123	0.291
200	--	--	0.021	0.070

Station No.	2-079	Date - GMT	15 SEP 86
Station Name	MAC862-079	Time - GMT	0548
Latitude	0.19.8 N	Date - LOC	15 SEP 86
Longitude	97.55.1 W	Time - LOC	0048

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.311	0.130
20	--	--	0.311	0.148
40	--	--	0.324	0.246
60	--	--	0.414	0.383
80	--	--	0.388	0.438
100	--	--	0.207	0.391
120	--	--	0.207	0.362
140	--	--	0.115	0.299
160	--	--	0.082	0.179
200	--	--	0.016	0.056

Station No.	2-080	Date - GMT	15 SEP 86
Station Name	MAC862-080	Time - GMT	1142
Latitude	0.27.9 S	Date - LOC	15 SEP 86
Longitude	97.22.4 W	Time - LOC	0642

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.241
20	--	--	0.414	0.212
40	--	--	0.388	0.324
60	--	--	0.337	0.461
80	--	--	0.123	0.165
100	--	--	0.090	0.108
120	--	--	0.090	0.126
140	--	--	0.082	0.107
160	--	--	0.082	0.098
200	--	--	0.054	0.062

Station No.	2-081	Date - GMT	16 SEP 86
Station Name	MAC862-081	Time - GMT	2359
Latitude	0.45.0 N	Date - LOC	16 SEP 86
Longitude	96.12.7 W	Time - LOC	1859

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.440	0.186
20	--	--	0.466	0.161
40	--	--	0.544	0.225
60	--	--	0.362	0.378
80	--	--	0.337	0.432
100	--	--	0.205	0.335
120	--	--	0.147	0.303
140	--	--	0.106	0.173
160	--	--	0.074	0.133
200	--	--	0.016	0.039

Station No.	2-082	Date - GMT	16 SEP 86
Station Name	MAC862-082	Time - GMT	0558
Latitude	0.48.7 N	Date - LOC	16 SEP 86
Longitude	95.48.0 W	Time - LOC	0058

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.155
20	--	--	0.440	0.186
40	--	--	0.466	0.303
60	--	--	0.388	0.409
80	--	--	0.259	0.482
100	--	--	0.207	0.362
120	--	--	0.123	0.237
140	--	--	0.098	0.235
160	--	--	0.082	0.125
200	--	--	0.028	0.048

Station No.	2-083	Date - GMT	16 SEP 86
Station Name	MAC862-083	Time - GMT	1124
Latitude	0.13.8 N	Date - LOC	16 SEP 86
Longitude	95.28.6 W	Time - LOC	0624

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.184
20	--	--	0.414	0.269
40	--	--	0.414	0.326
60	--	--	0.311	0.430
80	--	--	0.233	0.337
100	--	--	0.147	0.276
120	--	--	0.106	0.182
140	--	--	0.074	0.097
160	--	--	0.041	0.127
200	--	--	0.007	0.044

Station No.	2-084	Date - GMT	17 SEP 86
Station Name	MAC862-084	Time - GMT	0043
Latitude	0.29.9 S	Date - LOC	16 SEP 86
Longitude	94.21.4 W	Time - LOC	1943

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.440	0.072
20	--	--	0.414	0.155
40	--	--	0.492	0.249
60	--	--	0.311	0.259
80	--	--	0.123	0.129
100	--	--	0.090	0.099
120	--	--	0.082	0.098
140	--	--	0.072	0.096
160	--	--	0.072	0.070
200	--	--	0.205	0.128

Station No.	2-085	Date - GMT	17 SEP 86
Station Name	MAC862-085	Time - GMT	0557
Latitude	0.00.0	Date - LOC	17 SEP 86
Longitude	93.59.2 W	Time - LOC	0057

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.388	0.181
20	--	--	0.388	0.210
40	--	--	0.699	0.440
60	--	--	0.388	0.438
80	--	--	0.233	0.365
100	--	--	0.098	0.154
120	--	--	0.090	0.099
140	--	--	0.065	0.133
160	--	--	0.082	0.125
200	--	--	0.074	0.088

Station No.	2-086	Date - GMT	17 SEP 86
Station Name	MAC862-086	Time - GMT	1125
Latitude	0.32.4 N	Date - LOC	17 SEP 86
Longitude	93.31.5 W	Time - LOC	0625

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.155
20	--	--	0.414	0.155
40	--	--	0.518	0.507
60	--	--	0.414	0.469
80	--	--	0.259	0.425
100	--	--	0.155	0.331
120	--	--	0.131	0.229
140	--	--	0.082	0.116
160	--	--	0.057	0.085
200	--	--	0.023	0.056

Station No.	2-087	Date - GMT	18 SEP 86
Station Name	MAC862-087	Time - GMT	0027
Latitude	1.30.5 N	Date - LOC	17 SEP 86
Longitude	92.39.3 W	Time - LOC	1927

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.155
20	--	--	0.492	0.220
40	--	--	0.414	0.583
60	--	--	0.259	0.453
80	--	--	0.205	0.335
100	--	--	0.115	0.209
120	--	--	0.090	0.189
140	--	--	0.034	0.080
160	--	--	0.011	0.052
200	--	--	0.013	0.055

Station No.	2-088	Date - GMT	18 SEP 86
Station Name	MAC862-088	Time - GMT	0607
Latitude	2.01.4 N	Date - LOC	18 SEP 86
Longitude	91.58.3 W	Time - LOC	0107

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.362	0.150
20	--	--	0.337	0.176
40	--	--	0.466	0.303
60	--	--	0.337	0.546
80	--	--	0.233	0.422
100	--	--	0.115	0.155
120	--	--	0.090	0.189
140	--	--	0.094	0.113
160	--	--	0.041	0.061
200	--	--	0.006	0.063

Station No.	2-089	Date - GMT	18 SEP 86
Station Name	MAC862-089	Time - GMT	1114
Latitude	2.25.8 N	Date - LOC	18 SEP 86
Longitude	91.14.5 W	Time - LOC	0614

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.362	0.150
20	--	--	0.337	0.148
40	--	--	0.388	0.352
60	--	--	0.388	0.466
80	--	--	0.337	0.518
100	--	--	0.259	0.368
120	--	--	0.082	0.224
140	--	--	0.044	0.081
160	--	--	0.007	0.045
200	--	--	0.362	0.264

Station No.	2-090	Date - GMT	19 SEP 86
Station Name	MAC862-090	Time - GMT	0018
Latitude	3.16.0 N	Date - LOC	18 SEP 86
Longitude	89.04.3 W	Time - LOC	1918

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.093
20	--	--	0.254	0.097
40	--	--	0.278	0.064
60	--	--	0.414	0.269
80	--	--	0.440	0.785
100	--	--	0.180	0.351
120	--	--	0.090	0.162
140	--	--	0.057	0.108
160	--	--	0.010	0.058
200	--	--	0.002	0.034

Station No.	2-091	Date - GMT	19 SEP 86
Station Name	MAC862-091	Time - GMT	0549
Latitude	3.35.8 N	Date - LOC	19 SEP 86
Longitude	88.14.9 W	Time - LOC	0049

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.262	0.152
20	--	--	0.254	0.151
40	--	--	0.414	0.355
60	--	--	0.311	0.743
80	--	--	0.362	0.634
100	--	--	0.098	0.253
120	--	--	0.052	0.125
140	--	--	0.034	0.086
160	--	--	0.006	0.028
200	--	--	0.006	0.028

Station No.	2-092	Date - GMT	19 SEP 86
Station Name	MAC862-092	Time - GMT	1104
Latitude	3.54.3 N	Date - LOC	19 SEP 86
Longitude	87.26.0 W	Time - LOC	0604

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.245	0.142
20	--	--	0.245	0.142
40	--	--	0.337	0.290
60	--	--	0.362	0.606
80	--	--	0.207	0.533
100	--	--	0.131	0.292
120	--	--	0.074	0.178
140	--	--	0.031	0.083
160	--	--	0.006	0.028
200	--	--	0.003	0.031

Station No.	2-093	Date - GMT	20 SEP 86
Station Name	MAC862-093	Time - GMT	2356
Latitude	4.51.1 N	Date - LOC	20 SEP 86
Longitude	85.18.1 W	Time - LOC	1856

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.278	0.118
20	--	--	0.245	0.133
40	--	--	0.388	0.580
60	--	--	0.414	0.554
80	--	--	0.259	0.482
100	--	--	0.065	0.178
120	--	--	0.052	0.108
140	--	--	0.018	0.056
160	--	--	0.002	0.051
200	--	--	0.006	0.064

Station No.	2-094	Date - GMT	20 SEP 86
Station Name	MAC862-094	Time - GMT	1052
Latitude	5.37.8 N	Date - LOC	20 SEP 86
Longitude	83.23.4 W	Time - LOC	0552

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.311	0.202
20	--	--	0.362	0.207
40	--	--	0.900	0.900
60	--	--	0.414	0.668
80	--	--	0.115	0.191
100	--	--	0.057	0.141
120	--	--	0.016	0.084
140	--	--	0.013	0.078
160	--	--	--	--
200	--	--	0.008	0.072

Station No.	2-095	Date - GMT	24 SEP 86
Station Name	MAC862-095	Time - GMT	2350
Latitude	1.27.0 N	Date - LOC	24 SEP 86
Longitude	81.08.1 W	Time - LOC	1850

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.057
20	--	--	0.205	0.065
40	--	--	0.621	0.176
60	--	--	0.254	0.259
80	--	--	0.172	0.152
100	--	--	0.041	0.078
120	--	--	0.052	0.056
140	--	--	0.010	0.042
160	--	--	0.004	0.041
200	--	--	0.003	0.047

Station No.	2-096	Date - GMT	25 SEP 86
Station Name	MAC862-096	Time - GMT	0553
Latitude	0.38.0 N	Date - LOC	25 SEP 86
Longitude	81.26.4 W	Time - LOC	0053

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.362	0.150
20	--	--	0.362	0.122
40	--	--	0.859	0.851
60	--	--	0.818	0.802
80	--	--	0.172	0.098
100	--	--	0.034	0.066
120	--	--	0.030	0.125
140	--	--	0.016	0.059
160	--	--	0.008	0.050
200	--	--	0.007	0.051

Station No.	2-097	Date - GMT	25 SEP 86
Station Name	MAC862-097	Time - GMT	1038
Latitude	0.02.9 N	Date - LOC	25 SEP 86
Longitude	81.37.2 W	Time - LOC	0538

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.440	0.158
20	--	--	0.440	0.215
40	--	--	0.699	0.867
60	--	--	0.337	0.432
80	--	--	0.065	0.092
100	--	--	0.049	0.073
120	--	--	0.031	0.066
140	--	--	0.010	0.058
160	--	--	0.010	0.058
200	--	--	0.005	0.050

Station No.	2-098	Date - GMT	25 SEP 86
Station Name	MAC862-098	Time - GMT	2346
Latitude	0.57.1 S	Date - LOC	25 SEP 86
Longitude	82.41.3 W	Time - LOC	1846

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.673	0.267
20	--	--	1.636	0.434
40	--	--	1.636	0.524
60	--	--	0.188	0.145
80	--	--	0.075	0.093
100	--	--	0.034	0.060
120	--	--	0.023	0.065
140	--	--	0.115	0.119
160	--	--	0.018	0.076
200	--	--	0.016	0.087

Station No.	2-099	Date - GMT	26 SEP 86
Station Name	MAC862-099	Time - GMT	1050
Latitude	0.58.3 S	Date - LOC	26 SEP 86
Longitude	84.45.4 W	Time - LOC	0550

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.673	0.438
20	--	--	0.570	0.513
40	--	--	0.570	0.712
60	--	--	0.196	0.164
80	--	--	0.098	0.136
100	--	--	0.074	0.178
120	--	--	0.028	0.108
140	--	--	0.023	0.074
160	--	--	0.016	0.138
200	--	--	0.007	0.053

Station No.	2-100	Date - GMT	26 SEP 86
Station Name	MAC862-100	Time - GMT	2348
Latitude	0.26.3 N	Date - LOC	26 SEP 86
Longitude	84.31.1 W	Time - LOC	1848

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.245	0.070
20	--	--	0.278	0.082
40	--	--	2.127	0.753
60	--	--	0.188	0.199
80	--	--	0.070	0.053
100	--	--	0.016	0.041
120	--	--	0.012	0.038
140	--	--	0.013	0.038
160	--	--	0.007	0.030
200	--	--	0.006	0.039

Station No.	2-101	Date - GMT	27 SEP 86
Station Name	MAC862-101	Time - GMT	1104
Latitude	1.17.6 N	Date - LOC	27 SEP 86
Longitude	83.25.9 W	Time - LOC	0604

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.270	0.099
20	--	--	0.270	0.135
40	--	--	0.673	0.751
60	--	--	0.440	0.500
80	--	--	0.337	0.318
100	--	--	0.057	0.103
120	--	--	0.028	0.094
140	--	--	0.008	0.050
160	--	--	0.010	0.035
200	--	--	0.009	0.026

Station No.	2-102	Date - GMT	27 SEP 86
Station Name	MAC862-102	Time - GMT	2341
Latitude	2.20.5 N	Date - LOC	27 SEP 86
Longitude	82.00.6 W	Time - LOC	1841

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.237	0.078
20	--	--	0.229	0.077
40	--	--	0.803	0.308
60	--	--	0.440	0.471
80	--	--	0.259	0.311
100	--	--	0.147	0.168
120	--	--	0.031	0.091
140	--	--	0.021	0.065
160	--	--	0.013	0.064
200	--	--	0.003	0.039

Station No.	2-103	Date - GMT	28 SEP 86
Station Name	MAC862-103	Time - GMT	1051
Latitude	3.30.3 N	Date - LOC	28 SEP 86
Longitude	81.55.9 W	Time - LOC	0551

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.278	0.118
20	--	--	0.278	0.082
40	--	--	0.647	0.891
60	--	--	0.207	0.448
80	--	--	0.139	0.338
100	--	--	0.078	0.192
120	--	--	0.061	0.146
140	--	--	0.057	0.150
160	--	--	0.026	0.105
200	--	--	0.007	0.038

Station No.	2-104	Date - GMT	28 SEP 86
Station Name	MAC862-104	Time - GMT	2340
Latitude	4.41.8 N	Date - LOC	28 SEP 86
Longitude	81.02.1 W	Time - LOC	1840

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.115	0.047
20	--	--	0.139	0.068
40	--	--	0.518	0.451
60	--	--	0.414	0.867
80	--	--	0.180	0.351
100	--	--	0.074	0.178
120	--	--	0.036	0.063
140	--	--	0.009	0.041
160	--	--	0.003	0.034
200	--	--	0.005	0.024

Station No.	3-105	Date - GMT	05 OCT 86
Station Name	MAC863-105	Time - GMT	2344
Latitude	6.35.6 N	Date - LOC	05 OCT 86
Longitude	82.14.4 W	Time - LOC	1844

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.151	0.029
20	--	--	0.205	0.074
40	--	--	0.596	0.629
60	--	--	0.440	0.471
80	--	--	0.115	0.218
100	--	--	0.078	0.143
120	--	--	0.031	0.046
140	--	--	0.007	0.029
160	--	--	0.004	0.027
200	--	--	0.005	0.029

Station No.	3-106	Date - GMT	06 OCT 86
Station Name	MAC863-106	Time - GMT	0550
Latitude	6.27.2 N	Date - LOC	06 OCT 86
Longitude	82.57.3 W	Time - LOC	0050

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.056
20	--	--	0.155	0.088
40	--	--	0.570	0.456
60	--	--	0.207	0.306
80	--	--	0.082	0.188
100	--	--	0.023	0.102
120	--	--	0.010	0.081
140	--	--	0.005	0.060
160	--	--	0.005	0.069
200	--	--	0.005	0.047

Station No.	3-107	Date - GMT	06 OCT 86
Station Name	MAC863-107	Time - GMT	1043
Latitude	6.17.8 N	Date - LOC	06 OCT 86
Longitude	83.29.6 W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.164	0.034
20	--	--	0.295	0.155
40	--	--	0.414	0.497
60	--	--	0.207	0.362
80	--	--	0.090	0.171
100	--	--	0.036	0.078
120	--	--	0.026	0.077
140	--	--	0.011	0.043
160	--	--	0.003	0.044
200	--	--	0.005	0.047

Station No.	3-108	Date - GMT	06 OCT 86
Station Name	MAC863-108	Time - GMT	2352
Latitude	5.49.1 N	Date - LOC	06 OCT 86
Longitude	85.16.2 W	Time - LOC	1852

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.440	0.158
20	--	--	0.440	0.186
40	--	--	0.803	0.678
60	--	--	0.259	0.539
80	--	--	0.123	0.300
100	--	--	0.047	0.104
120	--	--	0.009	0.065
140	--	--	0.010	0.064
160	--	--	0.006	0.058
200	--	--	0.005	0.058

Station No.	3-109	Date - GMT	07 OCT 86
Station Name	MAC863-109	Time - GMT	0547
Latitude	5.39.5 N	Date - LOC	07 OCT 86
Longitude	86.05.1 W	Time - LOC	0047

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.245	0.115
20	--	--	0.262	0.098
40	--	--	0.337	0.262
60	--	--	0.207	0.505
80	--	--	0.106	0.299
100	--	--	0.057	0.213
120	--	--	0.041	0.141
140	--	--	0.013	0.070
160	--	--	0.002	0.039
200	--	--	0.002	0.051

Station No.	3-110	Date - GMT	08 OCT 86
Station Name	MAC863-110	Time - GMT	0549
Latitude	4.25.2 N	Date - LOC	08 OCT 86
Longitude	87.05.1 W	Time - LOC	0049

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.068
20	--	--	0.155	0.061
40	--	--	0.285	0.256
60	--	--	0.362	0.549
80	--	--	0.233	0.422
100	--	--	0.123	0.237
120	--	--	0.060	0.117
140	--	--	0.013	0.061
160	--	--	0.005	0.038
200	--	--	0.002	0.026

Station No.	3-111	Date - GMT	08 OCT 86
Station Name	MAC863-111	Time - GMT	1051
Latitude	3.42.5 N	Date - LOC	08 OCT 86
Longitude	87.08.7 W	Time - LOC	0551

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.164	0.070
20	--	--	0.172	0.053
40	--	--	0.414	0.383
60	--	--	0.362	0.549
80	--	--	0.311	0.458
100	--	--	0.139	0.284
120	--	--	0.098	0.244
140	--	--	0.052	0.119
160	--	--	0.031	0.063
200	--	--	0.005	0.028

Station No.	3-112	Date - GMT	08 OCT 86
Station Name	MAC863-112	Time - GMT	0015
Latitude	1.40.3 N	Date - LOC	07 OCT 86
Longitude	87.19.2 W	Time - LOC	1915

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.063
20	--	--	0.180	0.054
40	--	--	0.362	0.378
60	--	--	0.596	0.772
80	--	--	0.337	0.575
100	--	--	0.147	0.357
120	--	--	0.074	0.169
140	--	--	0.060	0.117
160	--	--	0.054	0.117
200	--	--	0.011	0.037

Station No.	3-113	Date - GMT	09 OCT 86
Station Name	MAC863-113	Time - GMT	0547
Latitude	0.56.4 N	Date - LOC	09 OCT 86
Longitude	87.23.7 W	Time - LOC	0047

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.164	0.061
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	0.036	0.058

Station No.	3-114	Date - GMT	09 OCT 86
Station Name	MAC863-114	Time - GMT	1052
Latitude	0.13.7 N	Date - LOC	09 OCT 86
Longitude	87.28.4 W	Time - LOC	0552

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.335	0.088
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-115	Date - GMT	10 OCT 86
Station Name	MAC863-115	Time - GMT	0006
Latitude	1.33.1 S	Date - LOC	09 OCT 86
Longitude	87.44.6 W	Time - LOC	1906

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.335	0.088
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-116	Date - GMT	10 OCT 86
Station Name	MAC863-116	Time - GMT	0649
Latitude	1.53.4 S	Date - LOC	10 OCT 86
Longitude	88.25.4 W	Time - LOC	0049

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.388	0.124
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-117	Date - GMT	10 OCT 86
Station Name	MAC863-117	Time - GMT	1103
Latitude	1.53.3 S	Date - LOC	10 OCT 86
Longitude	89.02.0 W	Time - LOC	0503

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.262	0.080
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-118	Date - GMT	11 OCT 86
Station Name	MAC863-118	Time - GMT	0015
Latitude	1.28.3 S	Date - LOC	10 OCT 86
Longitude	90.50.2 W	Time - LOC	1815

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.414	0.041
20	--	--	0.427	0.142
40	--	--	0.751	0.360
60	--	--	0.647	0.463
80	--	--	0.518	0.337
100	--	--	0.217	0.229
120	--	--	0.098	0.163
140	--	--	0.049	0.099
160	--	--	0.034	0.080
200	--	--	0.013	0.061

Station No.	3-119	Date - GMT	11 OCT 86
Station Name	MAC863-119	Time - GMT	0643
Latitude	1.27.5 S	Date - LOC	11 OCT 86
Longitude	91.51.0 W	Time - LOC	0043

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.466	0.161
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-120	Date - GMT	11 OCT 86
Station Name	MAC863-120	Time - GMT	1123
Latitude	1.26.3 S	Date - LOC	11 OCT 86
Longitude	92.33.6 W	Time - LOC	0523

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.205	0.074
20	--	--	--	--
40	--	--	--	--
60	--	--	--	--
80	--	--	--	--
100	--	--	--	--
120	--	--	--	--
140	--	--	--	--
160	--	--	--	--
200	--	--	--	--

Station No.	3-121	Date - GMT	12 OCT 86
Station Name	MAC863-121	Time - GMT	0029
Latitude	0.12.0 S	Date - LOC	11 OCT 86
Longitude	93.54.5 W	Time - LOC	1829

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.324	0.132
20	--	--	0.414	0.184
40	--	--	0.362	0.378
60	--	--	0.298	0.286
80	--	--	0.220	0.335
100	--	--	0.131	0.202
120	--	--	0.074	0.106
140	--	--	0.049	0.090
160	--	--	0.034	0.072
200	--	--	0.018	0.059

Station No.	3-122	Date - GMT	12 OCT 86
Station Name	MAC863-122	Time - GMT	0652
Latitude	0.41.9 N	Date - LOC	12 OCT 86
Longitude	94.20.2 W	Time - LOC	0052

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.205	0.074
20	--	--	0.262	0.116
40	--	--	0.337	0.375
60	--	--	0.259	0.425
80	--	--	0.147	0.285
100	--	--	0.044	0.084
120	--	--	0.031	0.060
140	--	--	0.016	0.056
160	--	--	0.012	0.046
200	--	--	0.006	0.038

Station No.	3-123	Date - GMT	12 OCT 86
Station Name	MAC863-123	Time - GMT	1123
Latitude	1.15.9 N	Date - LOC	12 OCT 86
Longitude	94.36.8 W	Time - LOC	0523

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.254	0.115
20	--	--	0.237	0.096
40	--	--	0.285	0.228
60	--	--	0.311	0.287
80	--	--	0.362	0.378
100	--	--	0.131	0.274
120	--	--	0.041	0.101
140	--	--	0.031	0.071
160	--	--	0.026	0.065
200	--	--	0.003	0.038

Station No.	3-124	Date - GMT	13 OCT 86
Station Name	MAC863-124	Time - GMT	0036
Latitude	2.53.9 N	Date - LOC	12 OCT 86
Longitude	95.21.8 W	Time - LOC	1836

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.093
20	--	--	0.213	0.093
40	--	--	0.262	0.098
60	--	--	0.388	0.409
80	--	--	0.311	0.487
100	--	--	0.207	0.391
120	--	--	0.139	0.293
140	--	--	0.131	0.265
160	--	--	0.090	0.180
200	--	--	0.015	0.048

Station No.	3-125	Date - GMT	13 OCT 86
Station Name	MAC863-125	Time - GMT	1139
Latitude	2.48.8 N	Date - LOC	13 OCT 86
Longitude	96.51.1 W	Time - LOC	0539

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.075
20	--	--	0.221	0.067
40	--	--	0.213	0.093
60	--	--	0.362	0.179
80	--	--	0.285	0.456
100	--	--	0.155	0.349
120	--	--	0.090	0.234
140	--	--	0.049	0.167
160	--	--	--	--
200	--	--	0.003	0.033

Station No.	3-126	Date - GMT	14 OCT 86
Station Name	MAC863-126	Time - GMT	0034
Latitude	2.41.0 N	Date - LOC	13 OCT 86
Longitude	98.39.1 W	Time - LOC	1834

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.270	0.108
20	--	--	0.262	0.116
40	--	--	0.262	0.116
60	--	--	0.295	0.137
80	--	--	0.388	0.438
100	--	--	0.207	0.362
120	--	--	0.098	0.208
140	--	--	0.052	0.091
160	--	--	0.036	0.063
200	--	--	0.009	0.049

Station No.	3-127	Date - GMT	14 OCT 86
Station Name	MAC863-127	Time - GMT	1152
Latitude	2.40.1 N	Date - LOC	14 OCT 86
Longitude	100.18.9 W	Time - LOC	0552

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.112
20	--	--	0.196	0.128
40	--	--	0.221	0.112
60	--	--	0.205	0.155
80	--	--	0.285	0.342
100	--	--	0.180	0.378
120	--	--	0.065	0.187
140	--	--	0.023	0.082
160	--	--	0.013	0.081
200	--	--	0.003	0.026

Station No.	3-128	Date - GMT	15 OCT 86
Station Name	MAC863-128	Time - GMT	0056
Latitude	2.41.5 N	Date - LOC	14 OCT 86
Longitude	102.18.6 W	Time - LOC	1856

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.213	0.075
20	--	--	0.262	0.107
40	--	--	0.262	0.134
60	--	--	0.254	0.160
80	--	--	0.259	0.482
100	--	--	0.207	0.476
120	--	--	0.115	0.281
140	--	--	0.090	0.216
160	--	--	0.034	0.109
200	--	--	0.002	0.040

Station No.	3-129	Date - GMT	15 OCT 86
Station Name	MAC863-129	Time - GMT	1209
Latitude	2.38.2 N	Date - LOC	15 OCT 86
Longitude	104.24.0 W	Time - LOC	0509

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.337	0.233
20	--	--	0.311	0.202
40	--	--	0.311	0.173
60	--	--	0.337	0.148
80	--	--	0.233	0.337
100	--	--	0.106	0.164
120	--	--	0.018	0.042
140	--	--	0.013	0.038
160	--	--	0.018	0.047
200	--	--	0.004	0.030

Station No.	3-130	Date - GMT	16 OCT 86
Station Name	MAC863-130	Time - GMT	0110
Latitude	2.27.4 N	Date - LOC	15 OCT 86
Longitude	106.55.3 W	Time - LOC	1810

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.245	0.079
20	--	--	0.254	0.079
40	--	--	0.295	0.173
60	--	--	0.254	0.241
80	--	--	0.285	0.399
100	--	--	0.155	0.340
120	--	--	0.074	0.133
140	--	--	0.023	0.059
160	--	--	0.007	0.038
200	--	--	0.007	0.037

Station No.	3-131	Date - GMT	16 OCT 86
Station Name	MAC863-103	Time - GMT	1220
Latitude	2.16.2 N	Date - LOC	16 OCT 86
Longitude	109.02.6 W	Time - LOC	0520

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.205	0.065
20	--	--	0.180	0.054
40	--	--	0.311	0.202
60	--	--	0.388	0.352
80	--	--	0.311	0.401
100	--	--	0.139	0.221
120	--	--	0.074	0.151
140	--	--	0.057	0.159
160	--	--	0.034	0.083
200	--	--	0.003	0.040

Station No.	3-132	Date - GMT	17 OCT 86
Station Name	MAC863-132	Time - GMT	0124
Latitude	2.09.3 N	Date - LOC	16 OCT 86
Longitude	110.11.5 W	Time - LOC	1824

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.229	0.077
20	--	--	0.229	0.068
40	--	--	0.362	0.264
60	--	--	0.362	0.321
80	--	--	0.311	0.373
100	--	--	0.164	0.295
120	--	--	0.057	0.168
140	--	--	0.049	0.079
160	--	--	0.007	0.037
200	--	--	0.004	0.034

Station No.	3-133	Date - GMT	17 OCT 86
Station Name	MAC863-133	Time - GMT	1241
Latitude	2.17.8 N	Date - LOC	17 OCT 86
Longitude	112.01.0 W	Time - LOC	0541

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.229	0.077
20	--	--	0.172	0.071
40	--	--	0.285	0.228
60	--	--	0.311	0.373
80	--	--	0.311	0.430
100	--	--	0.172	0.287
120	--	--	0.115	0.137
140	--	--	0.057	0.122
160	--	--	0.026	0.071
200	--	--	0.003	0.022

Station No.	3-134	Date - GMT	18 OCT 86
Station Name	MAC863-134	Time - GMT	0140
Latitude	2.31.7 N	Date - LOC	17 OCT 86
Longitude	113.54.0 W	Time - LOC	1840

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.192	0.069
20	--	--	0.196	0.074
40	--	--	0.254	0.097
60	--	--	0.286	0.182
80	--	--	0.388	0.352
100	--	--	0.285	0.399
120	--	--	0.233	0.451
140	--	--	0.123	0.201
160	--	--	0.074	0.142
200	--	--	0.010	0.035

Station No.	3-135	Date - GMT	18 OCT 86
Station Name	MAC863-135	Time - GMT	1223
Latitude	2.43.3 N	Date - LOC	18 OCT 86
Longitude	115.40.2 W	Time - LOC	0523

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.085
20	--	--	0.188	0.109
40	--	--	0.213	0.093
60	--	--	0.337	0.290
80	--	--	0.285	0.399
100	--	--	0.180	0.288
120	--	--	0.123	0.165
140	--	--	0.057	0.132
160	--	--	0.016	0.053
200	--	--	0.003	0.024

Station No.	3-136	Date - GMT	19 OCT 86
Station Name	MAC863-136	Time - GMT	0204
Latitude	3.21.3 N	Date - LOC	18 OCT 86
Longitude	117.24.9 W	Time - LOC	1904

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.196	0.101
20	--	--	0.196	0.110
40	--	--	0.221	0.112
60	--	--	0.254	0.151
80	--	--	0.245	0.142
100	--	--	0.196	0.173
120	--	--	0.123	0.192
140	--	--	0.082	0.161
160	--	--	0.041	0.104
200	--	--	0.013	0.032

Station No.	3-137	Date - GMT	19 OCT 86
Station Name	MAC863-137	Time - GMT	0849
Latitude	3.36.1 N	Date - LOC	19 OCT 86
Longitude	118.17.5 W	Time - LOC	0049

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.164	0.088
20	--	--	0.180	0.090
40	--	--	0.205	0.110
60	--	--	0.221	0.130
80	--	--	0.285	0.256
100	--	--	0.196	0.245
120	--	--	0.131	0.247
140	--	--	0.074	0.151
160	--	--	0.052	0.119
200	--	--	0.009	0.031

Station No.	3-138	Date - GMT	19 OCT 86
Station Name	MAC863-138	Time - GMT	1312
Latitude	3.41.1 N	Date - LOC	19 OCT 86
Longitude	118.46.8 W	Time - LOC	0512

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.090
20	--	--	0.172	0.089
40	--	--	0.188	0.100
60	--	--	0.245	0.124
80	--	--	0.262	0.224
100	--	--	0.172	0.269
120	--	--	0.172	0.296
140	--	--	0.106	0.182
160	--	--	0.057	0.132
200	--	--	0.034	0.026

Station No.	3-139	Date - GMT	20 OCT 86
Station Name	MAC863-139	Time - GMT	0209
Latitude	4.01.8 N	Date - LOC	19 OCT 86
Longitude	120.16.0 W	Time - LOC	1809

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.085
20	--	--	0.213	0.089
40	--	--	0.237	0.096
60	--	--	0.362	0.321
80	--	--	0.272	0.241
100	--	--	0.207	0.377
120	--	--	0.196	0.362
140	--	--	0.098	0.262
160	--	--	0.078	0.174
200	--	--	0.031	0.080

Station No.	3-140	Date - GMT	20 OCT 86
Station Name	MAC863-140	Time - GMT	0850
Latitude	4.10.9 N	Date - LOC	20 OCT 86
Longitude	121.06.7 W	Time - LOC	0050

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.072
20	--	--	0.188	0.073
40	--	--	0.180	0.090
60	--	--	0.172	0.098
80	--	--	0.196	0.110
100	--	--	0.196	0.119
120	--	--	0.172	0.278
140	--	--	0.106	0.236
160	--	--	0.082	0.179
200	--	--	0.022	0.025

Station No.	3-141	Date - GMT	20 OCT 86
Station Name	MAC863-141	Time - GMT	1308
Latitude	4.17.5 N	Date - LOC	20 OCT 86
Longitude	121.37.1 W	Time - LOC	0508

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.196	0.092
20	--	--	0.180	0.090
40	--	--	0.188	0.091
60	--	--	0.205	0.110
80	--	--	0.518	0.337
100	--	--	0.155	0.115
120	--	--	0.164	0.232
140	--	--	0.147	0.267
160	--	--	0.098	0.190
200	--	--	0.011	0.044

Station No.	3-142	Date - GMT	21 OCT 86
Station Name	MAC863-142	Time - GMT	0226
Latitude	5.00.8 N	Date - LOC	20 OCT 86
Longitude	123.25.4 W	Time - LOC	1826

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.176	0.076
20	--	--	0.188	0.073
40	--	--	0.147	0.078
60	--	--	0.229	0.104
80	--	--	0.311	0.316
100	--	--	0.259	0.396
120	--	--	0.259	0.368
140	--	--	0.098	0.253
160	--	--	0.044	0.118
200	--	--	0.003	0.048

Station No.	3-143	Date - GMT	21 OCT 86
Station Name	MAC863-143	Time - GMT	0841
Latitude	5.12.1 N	Date - LOC	21 OCT 86
Longitude	124.13.7 W	Time - LOC	0041

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.131	0.049
20	--	--	0.123	0.057
40	--	--	0.131	0.049
60	--	--	0.278	0.163
80	--	--	0.278	0.190
100	--	--	0.229	0.257
120	--	--	0.205	0.326
140	--	--	0.074	0.169
160	--	--	0.021	0.053
200	--	--	0.002	0.033

Station No.	3-144	Date - GMT	21 OCT 86
Station Name	MAC863-144	Time - GMT	1325
Latitude	5.19.0 N	Date - LOC	21 OCT 86
Longitude	124.47.7 W	Time - LOC	0525

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.147	0.069
20	--	--	0.164	0.052
40	--	--	0.164	0.052
60	--	--	0.180	0.054
80	--	--	0.229	0.167
100	--	--	0.245	0.232
120	--	--	0.205	0.335
140	--	--	0.106	0.254
160	--	--	0.098	0.217
200	--	--	0.041	0.418

Station No.	3-145	Date - GMT	22 OCT 86
Station Name	MAC863-145	Time - GMT	0231
Latitude	5.43.4 N	Date - LOC	21 OCT 86
Longitude	126.39.7 W	Time - LOC	1831

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.172	0.062
20	--	--	0.164	0.070
40	--	--	0.164	0.070
60	--	--	0.311	0.148
80	--	--	0.278	0.217
100	--	--	0.213	0.165
120	--	--	0.155	0.268
140	--	--	0.065	0.205
160	--	--	0.028	0.077
200	--	--	0.003	0.039

Station No.	3-146	Date - GMT	22 OCT 86
Station Name	MAC863-146	Time - GMT	0850
Latitude	5.54.5 N	Date - LOC	22 OCT 86
Longitude	127.27.0 W	Time - LOC	0050

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.086
20	--	--	0.131	0.040
40	--	--	0.155	0.034
60	--	--	0.213	0.111
80	--	--	0.262	0.197
100	--	--	0.245	0.277
120	--	--	0.164	0.286
140	--	--	0.098	0.190
160	--	--	0.031	0.083
200	--	--	0.006	0.021

Station No.	3-147	Date - GMT	22 OCT 86
Station Name	MAC863-147	Time - GMT	1332
Latitude	5.49.3 N	Date - LOC	22 OCT 86
Longitude	127.58.9 W	Time - LOC	0532

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.068
20	--	--	0.123	0.066
40	--	--	0.139	0.068
60	--	--	0.337	0.176
80	--	--	0.311	0.316
100	--	--	0.196	0.308
120	--	--	0.155	0.313
140	--	--	0.090	0.216
160	--	--	0.044	0.121
200	--	--	0.008	0.037

Station No.	3-148	Date - GMT	23 OCT 86
Station Name	MAC863-148	Time - GMT	0250
Latitude	5.33.4 N	Date - LOC	22 OCT 86
Longitude	129.57.4 W	Time - LOC	1850

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.072
20	--	--	0.164	0.088
40	--	--	0.180	0.090
60	--	--	0.229	0.113
80	--	--	0.237	0.168
100	--	--	0.205	0.209
120	--	--	0.123	0.237
140	--	--	0.106	0.218
160	--	--	0.052	0.091
200	--	--	0.011	0.033

Station No.	3-149	Date - GMT	23 OCT 86
Station Name	MAC863-149	Time - GMT	0943
Latitude	5.26.2 N	Date - LOC	23 OCT 86
Longitude	130.55.5 W	Time - LOC	0043

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.131	0.040
20	--	--	0.139	0.041
40	--	--	0.188	0.091
60	--	--	0.213	0.138
80	--	--	0.229	0.140
100	--	--	0.196	0.155
120	--	--	0.172	0.314
140	--	--	0.115	0.200
160	--	--	0.041	0.064
200	--	--	0.005	0.017

Station No.	3-150	Date - GMT	23 OCT 86
Station Name	MAC863-150	Time - GMT	1355
Latitude	5.21.2 N	Date - LOC	23 OCT 86
Longitude	131.26.5 W	Time - LOC	0455

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.059
20	--	--	0.155	0.070
40	--	--	0.172	0.062
60	--	--	0.205	0.083
80	--	--	0.229	0.140
100	--	--	0.221	0.319
120	--	--	0.155	0.295
140	--	--	0.082	0.188
160	--	--	0.026	0.031
200	--	--	0.005	0.022

Station No.	3-151	Date - GMT	24 OCT 86
Station Name	MAC863-151	Time - GMT	0256
Latitude	5.08.2 N	Date - LOC	23 OCT 86
Longitude	133.18.6 W	Time - LOC	1756

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.110	0.038
20	--	--	0.115	0.038
40	--	--	0.139	0.041
60	--	--	0.188	0.055
80	--	--	0.298	0.243
100	--	--	0.246	0.295
120	--	--	0.139	0.257
140	--	--	0.119	0.268
160	--	--	0.074	0.160
200	--	--	0.008	0.026

Station No.	3-152	Date - GMT	24 OCT 86
Station Name	MAC863-152	Time - GMT	0954
Latitude	5.41.5 N	Date - LOC	23 OCT 86
Longitude	134.08.4 W	Time - LOC	0054

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.038
20	--	--	0.115	0.047
40	--	--	0.164	0.070
60	--	--	0.205	0.083
80	--	--	0.196	0.092
100	--	--	0.213	0.273
120	--	--	0.155	0.268
140	--	--	0.147	0.114
160	--	--	0.049	0.149
200	--	--	0.003	0.040

Station No.	3-153	Date - GMT	24 OCT 86
Station Name	MAC863-153	Time - GMT	1404
Latitude	5.09.1 N	Date - LOC	24 OCT 86
Longitude	134.27.3 W	Time - LOC	0504

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.147	0.069
20	--	--	0.172	0.080
40	--	--	0.188	0.127
60	--	--	0.213	0.129
80	--	--	0.188	0.127
100	--	--	0.188	0.127
120	--	--	0.172	0.152
140	--	--	0.106	0.290
160	--	--	0.065	0.160
200	--	--	0.008	0.032

Station No.	3-154	Date - GMT	25 OCT 86
Station Name	MAC863-154	Time - GMT	0317
Latitude	4.27.5 N	Date - LOC	24 OCT 86
Longitude	136.12.7 W	Time - LOC	1817

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.059
20	--	--	0.164	0.052
40	--	--	0.303	0.156
60	--	--	0.278	0.181
80	--	--	0.286	0.191
100	--	--	0.221	0.202
120	--	--	0.131	0.193
140	--	--	0.115	0.200
160	--	--	0.028	0.040
200	--	--	0.002	0.025

Station No.	3-155	Date - GMT	25 OCT 86
Station Name	MAC863-155	Time - GMT	0943
Latitude	4.46.0 N	Date - LOC	25 OCT 86
Longitude	137.05.3 W	Time - LOC	0043

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.075	0.022
20	--	--	0.083	0.037
40	--	--	0.172	0.071
60	--	--	0.221	0.103
80	--	--	0.270	0.198
100	--	--	0.207	0.419
120	--	--	0.090	0.198
140	--	--	0.026	0.045
160	--	--	0.008	0.023
200	--	--	0.005	0.015

Station No.	3-156	Date - GMT	25 OCT 86
Station Name	MAC863-156	Time - GMT	1425
Latitude	4.58.6 N	Date - LOC	25 OCT 86
Longitude	137.42.7 W	Time - LOC	0525

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.115	0.047
20	--	--	0.000	0.103
40	--	--	0.098	0.028
60	--	--	0.229	0.077
80	--	--	0.337	0.233
100	--	--	0.285	0.313
120	--	--	0.131	0.283
140	--	--	0.052	0.133
160	--	--	0.016	0.029
200	--	--	0.005	0.019

Station No.	3-157	Date - GMT	26 OCT 86
Station Name	MAC863-157	Time - GMT	0321
Latitude	5.41.6 N	Date - LOC	25 OCT 86
Longitude	139.36.4 W	Time - LOC	1821

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.098	0.033
20	--	--	0.088	0.026
40	--	--	0.115	0.038
60	--	--	0.192	0.064
80	--	--	0.414	0.212
100	--	--	0.388	0.409
120	--	--	0.259	0.368
140	--	--	0.127	0.242
160	--	--	0.065	0.151
200	--	--	0.008	0.037

Station No.	3-158	Date - GMT	26 OCT 86
Station Name	MAC863-158	Time - GMT	1407
Latitude	6.15.7 N	Date - LOC	26 OCT 86
Longitude	141.09.4 W	Time - LOC	0507

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.093	0.024
20	--	--	0.093	0.021
40	--	--	0.104	0.019
60	--	--	0.093	0.021
80	--	--	0.155	0.079
100	--	--	0.285	0.256
120	--	--	0.259	0.339
140	--	--	0.172	0.242
160	--	--	0.098	0.181
200	--	--	0.018	0.050

Station No.	3-159	Date - GMT	27 OCT 86
Station Name	MAC863-159	Time - GMT	0338
Latitude	6.49.3 N	Date - LOC	26 OCT 86
Longitude	142.45.4 W	Time - LOC	1838

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.085	0.023
20	--	--	0.093	0.026
40	--	--	0.110	0.047
60	--	--	0.180	0.054
80	--	--	0.388	0.181
100	--	--	0.337	0.347
120	--	--	0.207	0.419
140	--	--	0.127	0.256
160	--	--	0.065	0.142
200	--	--	0.010	0.044

Station No.	3-160	Date - GMT	27 OCT 86
Station Name	MAC863-160	Time - GMT	1443
Latitude	7.16.5 N	Date - LOC	27 OCT 86
Longitude	143.50.1 W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.070	0.021
20	--	--	0.067	0.018
40	--	--	0.083	0.025
60	--	--	0.115	0.038
80	--	--	0.303	0.138
100	--	--	0.337	0.262
120	--	--	0.221	0.274
140	--	--	0.131	0.247
160	--	--	0.060	0.123
200	--	--	0.016	0.047

Station No.	3-161	Date - GMT	28 OCT 86
Station Name	MAC863-161	Time - GMT	0349
Latitude	7.55.5 N	Date - LOC	27 OCT 86
Longitude	145.35.7 W	Time - LOC	1849

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.067	0.018
20	--	--	0.065	0.018
40	--	--	0.080	0.019
60	--	--	0.115	0.029
80	--	--	0.414	0.269
100	--	--	0.285	0.456
120	--	--	0.155	0.322
140	--	--	0.067	0.104
160	--	--	0.025	0.051
200	--	--	0.007	0.034

Station No.	3-162	Date - GMT	28 OCT 86
Station Name	MAC863-162	Time - GMT	1447
Latitude	8.21.2 N	Date - LOC	28 OCT 86
Longitude	145.55.0 W	Time - LOC	0447

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.070	0.021
20	--	--	0.072	0.016
40	--	--	0.091	0.029
60	--	--	0.205	0.110
80	--	--	0.337	0.290
100	--	--	0.259	0.425
120	--	--	0.155	0.304
140	--	--	0.057	0.132
160	--	--	0.023	0.054
200	--	--	0.002	0.031

Station No.	3-163	Date - GMT	29 OCT 86
Station Name	MAC863-163	Time - GMT	0354
Latitude	9.55.3 N	Date - LOC	28 OCT 86
Longitude	146.50.8 W	Time - LOC	1754

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.065	0.018
20	--	--	0.075	0.022
40	--	--	0.131	0.049
60	--	--	0.180	0.117
80	--	--	0.337	0.489
100	--	--	0.181	0.388
120	--	--	0.078	0.174
140	--	--	0.036	0.043
160	--	--	0.013	0.036
200	--	--	0.005	0.036

Station No.	3-164	Date - GMT	29 OCT 86
Station Name	MAC863-164	Time - GMT	1508
Latitude	9.46.9 N	Date - LOC	29 OCT 86
Longitude	146.57.7 W	Time - LOC	0508

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.075	0.033
20	--	--	0.070	0.018
40	--	--	0.098	0.046
60	--	--	0.155	0.115
80	--	--	0.311	0.430
100	--	--	0.188	0.280
120	--	--	0.057	0.186
140	--	--	0.028	0.085
160	--	--	0.011	0.027
200	--	--	0.005	0.022

Station No.	3-165	Date - GMT	30 OCT 86
Station Name	MAC863-165	Time - GMT	0356
Latitude	11.20.4 N	Date - LOC	29 OCT 86
Longitude	148.02.4 W	Time - LOC	1756

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.080	0.025
20	--	--	0.080	0.025
40	--	--	0.147	0.069
60	--	--	0.375	0.237
80	--	--	0.350	0.348
100	--	--	0.259	0.425
120	--	--	0.098	0.226
140	--	--	0.049	0.149
160	--	--	0.031	0.077
200	--	--	0.016	0.127

Station No.	3-166	Date - GMT	30 OCT 86
Station Name	MAC863-166	Time - GMT	1525
Latitude	12.24.2 N	Date - LOC	30 OCT 86
Longitude	148.59.1 W	Time - LOC	0525

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.093	0.029
20	--	--	0.085	0.023
40	--	--	0.104	0.027
60	--	--	0.139	0.068
80	--	--	0.362	0.321
100	--	--	0.233	0.308
120	--	--	0.123	0.192
140	--	--	0.041	0.050
160	--	--	0.018	0.045
200	--	--	0.005	0.032

Station No.	3-167	Date - GMT	31 OCT 86
Station Name	MAC863-167	Time - GMT	0357
Latitude	13.57.4 N	Date - LOC	30 OCT 86
Longitude	150.21.0 W	Time - LOC	1757

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.091	0.029
20	--	--	0.078	0.025
40	--	--	0.106	0.038
60	--	--	0.180	0.108
80	--	--	0.337	0.404
100	--	--	0.259	0.311
120	--	--	0.115	0.209
140	--	--	0.018	0.121
160	--	--	0.007	0.028
200	--	--	0.002	0.024

Station No.	3-168	Date - GMT	31 OCT 86
Station Name	MAC863-168	Time - GMT	1525
Latitude	14.56.4 N	Date - LOC	31 OCT 86
Longitude	151.17.3 W	Time - LOC	0525

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.093	0.032
20	--	--	0.098	0.018
40	--	--	0.098	0.030
60	--	--	0.164	0.061
80	--	--	0.245	0.133
100	--	--	0.311	0.430
120	--	--	0.155	0.286
140	--	--	0.065	0.169
160	--	--	0.034	0.043
200	--	--	0.003	0.046

Station No.	3-169	Date - GMT	01 NOV 86
Station Name	MAC863-169	Time - GMT	0410
Latitude	16.21.6 N	Date - LOC	31 OCT 86
Longitude	152.19.4 W	Time - LOC	1810

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.093	0.032
20	--	--	0.104	0.033
40	--	--	0.123	0.030
60	--	--	0.139	0.041
80	--	--	0.221	0.076
100	--	--	0.290	0.137
120	--	--	0.233	0.365
140	--	--	0.207	0.320
160	--	--	0.082	0.152
200	--	--	0.006	0.014

Station No.	4-170	Date - GMT	14 NOV 86
Station Name	MAC864-170	Time - GMT	0344
Latitude	9.36.0 N	Date - LOC	13 NOV 86
Longitude	138.32.8 W	Time - LOC	1844

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.093	0.021
20	--	--	0.080	0.017
40	--	--	0.155	0.061
60	--	--	0.337	0.205
80	--	--	0.337	0.262
100	--	--	0.106	0.488
120	--	--	0.049	0.149
140	--	--	0.041	0.115
160	--	--	0.018	0.047
200	--	--	0.003	0.035

Station No.	4-171	Date - GMT	14 NOV 86
Station Name	MAC864-171	Time - GMT	1422
Latitude	9.20.7 N	Date - LOC	14 NOV 86
Longitude	136.52.0 W	Time - LOC	0522

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.098	0.041
20	--	--	0.100	0.038
40	--	--	0.147	0.060
60	--	--	0.270	0.157
80	--	--	0.311	0.316
100	--	--	0.414	0.981
120	--	--	0.057	0.117
140	--	--	0.036	0.049
160	--	--	0.014	0.036
200	--	--	0.006	0.027

Station No.	4-172	Date - GMT	15 NOV 86
Station Name	MAC864-172	Time - GMT	0319
Latitude	9.51.9 N	Date - LOC	14 NOV 86
Longitude	134.58.3 W	Time - LOC	1819

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.028
20	--	--	0.101	0.039
40	--	--	0.270	0.135
60	--	--	0.311	0.287
80	--	--	0.147	0.249
100	--	--	0.049	0.239
120	--	--	0.031	0.126
140	--	--	0.016	0.070
160	--	--	0.005	0.059
200	--	--	0.003	0.049

Station No.	4-173	Date - GMT	15 NOV 86
Station Name	MAC864-173	Time - GMT	1430
Latitude	11.16.1 N	Date - LOC	15 NOV 86
Longitude	133.39.4 W	Time - LOC	0530

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.131	0.049
20	--	--	0.143	0.068
40	--	--	0.164	0.070
60	--	--	0.466	0.303
80	--	--	0.233	0.365
100	--	--	0.082	0.152
120	--	--	0.026	0.088
140	--	--	0.007	0.057
160	--	--	0.005	0.048
200	--	--	0.004	0.044

Station No.	4-174	Date - GMT	16 NOV 86
Station Name	MAC864-174	Time - GMT	0240
Latitude	12.33.4 N	Date - LOC	15 NOV 86
Longitude	132.18.3 W	Time - LOC	1740

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.131	0.031
20	--	--	0.155	0.052
40	--	--	0.492	0.220
60	--	--	0.337	0.347
80	--	--	0.311	0.316
100	--	--	0.065	0.178
120	--	--	0.036	0.137
140	--	--	0.026	0.077
160	--	--	0.004	0.061
200	--	--	0.005	0.060

Station No.	4-175	Date - GMT	16 NOV 86
Station Name	MAC864-175	Time - GMT	1409
Latitude	13.38.7 N	Date - LOC	16 NOV 86
Longitude	131.28.3 W	Time - LOC	0509

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.160	0.065
20	--	--	0.176	0.063
40	--	--	0.205	0.119
60	--	--	0.350	0.249
80	--	--	0.440	0.528
100	--	--	0.164	0.304
120	--	--	0.049	0.127
140	--	--	0.043	0.050
160	--	--	0.003	0.033
200	--	--	0.002	0.026

Station No.	4-176	Date - GMT	17 NOV 86
Station Name	MAC864-176	Time - GMT	0231
Latitude	14.30.2 N	Date - LOC	16 NOV 86
Longitude	130.12.3 W	Time - LOC	1731

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.123	0.048
20	--	--	0.147	0.042
40	--	--	0.254	0.097
60	--	--	0.278	0.145
80	--	--	0.311	0.316
100	--	--	0.259	0.368
120	--	--	0.123	0.237
140	--	--	0.054	0.108
160	--	--	0.015	0.045
200	--	--	0.002	0.025

Station No.	4-177	Date - GMT	17 NOV 86
Station Name	MAC864-177	Time - GMT	1404
Latitude	13.46.8 N	Date - LOC	17 NOV 86
Longitude	129.01.4 W	Time - LOC	0504

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.147	0.069
20	--	--	0.135	0.063
40	--	--	0.362	0.321
60	--	--	0.362	0.520
80	--	--	0.139	0.293
100	--	--	0.026	0.108
120	--	--	0.016	0.059
140	--	--	0.003	0.033
160	--	--	0.004	0.038
200	--	--	0.001	0.030

Station No.	4-178	Date - GMT	18 NOV 86
Station Name	MAC864-178	Time - GMT	0223
Latitude	13.01.4 N	Date - LOC	17 NOV 86
Longitude	127.32.3 W	Time - LOC	1723

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.147	0.033
20	--	--	0.164	0.043
40	--	--	0.362	0.207
60	--	--	0.388	0.466
80	--	--	0.207	0.419
100	--	--	0.082	0.314
120	--	--	0.039	0.152
140	--	--	0.008	0.126
160	--	--	0.010	0.121
200	--	--	0.005	0.075

Station No.	4-179	Date - GMT	18 NOV 86
Station Name	MAC864-179	Time - GMT	1356
Latitude	12.27.3 N	Date - LOC	18 NOV 86
Longitude	126.19.5 W	Time - LOC	0556

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.180	0.054
20	--	--	0.479	0.262
40	--	--	0.388	0.210
60	--	--	0.259	1.194
80	--	--	0.285	0.399
100	--	--	0.033	0.453
120	--	--	0.016	0.227
140	--	--	0.025	0.272
160	--	--	0.016	0.290
200	--	--	0.008	0.244

Station No.	4-180	Date - GMT	19 NOV 86
Station Name	MAC864-180	Time - GMT	0205
Latitude	11.47.2 N	Date - LOC	18 NOV 86
Longitude	124.57.6 W	Time - LOC	1805

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.098	0.046
20	--	--	0.115	0.029
40	--	--	0.362	0.264
60	--	--	0.259	0.709
80	--	--	0.090	0.342
100	--	--	0.049	0.257
120	--	--	0.021	0.179
140	--	--	0.003	0.044
160	--	--	0.002	0.049
200	--	--	--	--

Station No.	4-181	Date - GMT	19 NOV 86
Station Name	MAC864-181	Time - GMT	1343
Latitude	11.10.6 N	Date - LOC	19 NOV 86
Longitude	123.55.5 W	Time - LOC	0543

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.115	0.065
20	--	--	0.123	0.057
40	--	--	0.311	0.316
60	--	--	0.074	0.511
80	--	--	0.033	0.579
100	--	--	0.033	0.318
120	--	--	0.013	0.149
140	--	--	0.003	0.077
160	--	--	0.003	0.074
200	--	--	0.003	0.054

Station No.	4-182	Date - GMT	20 NOV 86
Station Name	MAC864-182	Time - GMT	0200
Latitude	10.23.9 N	Date - LOC	19 NOV 86
Longitude	122.15.9 W	Time - LOC	1800

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.078	0.025
20	--	--	0.115	0.029
40	--	--	0.205	0.074
60	--	--	0.031	0.040
80	--	--	0.196	0.326
100	--	--	0.065	0.313
120	--	--	0.044	0.164
140	--	--	0.016	0.076
160	--	--	0.010	0.035
200	--	--	0.007	0.043

Station No.	4-183	Date - GMT	22 NOV 86
Station Name	MAC864-183	Time - GMT	0146
Latitude	7.25.1 N	Date - LOC	21 NOV 86
Longitude	115.19.8 W	Time - LOC	1746

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.080	0.019
20	--	--	0.085	0.023
40	--	--	0.115	0.047
60	--	--	0.362	0.321
80	--	--	0.414	0.668
100	--	--	0.025	0.686
120	--	--	0.041	0.220
140	--	--	0.031	0.100
160	--	--	0.006	0.056
200	--	--	0.005	0.040

Station No.	4-184	Date - GMT	22 NOV 86
Station Name	MAC864-184	Time - GMT	1259
Latitude	7.01.6 N	Date - LOC	22 NOV 86
Longitude	114.00.5 W	Time - LOC	0459

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.115	0.034
20	--	--	0.106	0.038
40	--	--	0.155	0.043
60	--	--	0.270	0.180
80	--	--	0.337	0.375
100	--	--	0.233	0.507
120	--	--	0.057	0.094
140	--	--	0.018	0.040
160	--	--	0.008	0.031
200	--	--	0.004	0.028

Station No.	4-185	Date - GMT	23 NOV 86
Station Name	MAC864-185	Time - GMT	2157
Latitude	5.01.4 N	Date - LOC	23 NOV 86
Longitude	110.00.7 W	Time - LOC	1357

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.196	0.092
20	--	--	0.180	0.072
40	--	--	0.213	0.084
60	--	--	0.229	0.077
80	--	--	0.229	0.104
100	--	--	0.259	0.425
120	--	--	0.123	0.273
140	--	--	0.052	0.091
160	--	--	0.031	0.066
200	--	--	0.004	0.024

Station No.	4-186	Date - GMT	25 NOV 86
Station Name	MAC864-186	Time - GMT	0117
Latitude	5.14.2 N	Date - LOC	24 NOV 86
Longitude	108.16.5 W	Time - LOC	1717

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.029
20	--	--	0.106	0.029
40	--	--	0.205	0.065
60	--	--	0.362	0.122
80	--	--	0.414	0.355
100	--	--	0.337	0.489
120	--	--	0.115	0.191
140	--	--	0.052	0.085
160	--	--	0.013	0.030
200	--	--	0.003	0.022

Station No.	4-187	Date - GMT	25 NOV 86
Station Name	MAC864-187	Time - GMT	1236
Latitude	5.41.2 N	Date - LOC	25 NOV 86
Longitude	109.00.8 W	Time - LOC	0436

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.110	0.047
20	--	--	0.123	0.039
40	--	--	0.131	0.040
60	--	--	0.115	0.056
80	--	--	0.324	0.303
100	--	--	0.337	0.432
120	--	--	0.106	0.209
140	--	--	0.039	0.069
160	--	--	0.012	0.037
200	--	--	0.005	0.035

Station No.	4-188	Date - GMT	26 NOV 86
Station Name	MAC864-188	Time - GMT	0122
Latitude	6.33.6 N	Date - LOC	25 NOV 86
Longitude	110.24.8 W	Time - LOC	1722

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.098	0.038
20	--	--	0.096	0.035
40	--	--	0.106	0.038
60	--	--	0.123	0.048
80	--	--	0.388	0.438
100	--	--	0.123	0.282
120	--	--	0.074	0.160
140	--	--	0.041	0.061
160	--	--	0.006	0.046
200	--	--	0.005	0.034

Station No.	4-189	Date - GMT	26 NOV 86
Station Name	MAC864-189	Time - GMT	1242
Latitude	6.57.9 N	Date - LOC	26 NOV 86
Longitude	111.12.8 W	Time - LOC	0442

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.139	0.059
20	--	--	0.147	0.051
40	--	--	0.139	0.059
60	--	--	0.388	0.210
80	--	--	0.337	0.461
100	--	--	0.205	0.335
120	--	--	0.106	0.173
140	--	--	0.044	0.059
160	--	--	0.013	0.043
200	--	--	0.007	0.046

Station No.	4-190	Date - GMT	27 NOV 86
Station Name	MAC864-190	Time - GMT	0133
Latitude	8.04.5 N	Date - LOC	26 NOV 86
Longitude	112.15.2 W	Time - LOC	1733

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.123	0.039
20	--	--	0.123	0.039
40	--	--	0.131	0.031
60	--	--	0.570	0.456
80	--	--	0.129	0.554
100	--	--	0.172	0.134
120	--	--	0.018	0.050
140	--	--	0.008	0.037
160	--	--	0.005	0.038
200	--	--	0.003	0.040

Station No.	4-191	Date - GMT	27 NOV 86
Station Name	MAC864-191	Time - GMT	1257
Latitude	8.55.3 N	Date - LOC	27 NOV 86
Longitude	113.18.1 W	Time - LOC	0457

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.119	0.057
20	--	--	0.131	0.049
40	--	--	0.362	0.207
60	--	--	0.362	0.492
80	--	--	0.070	0.367
100	--	--	0.036	0.106
120	--	--	0.018	0.073
140	--	--	0.010	0.081
160	--	--	0.004	0.063
200	--	--	0.004	0.051

Station No.	4-192	Date - GMT	28 NOV 86
Station Name	MAC864-192	Time - GMT	0141
Latitude	10.19.4 N	Date - LOC	27 NOV 86
Longitude	114.30.0 W	Time - LOC	1741

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.038
20	--	--	0.164	0.070
40	--	--	0.362	0.378
60	--	--	0.233	0.906
80	--	--	0.074	0.277
100	--	--	0.049	0.212
120	--	--	0.021	0.088
140	--	--	0.008	0.089
160	--	--	0.007	0.042
200	--	--	0.007	0.048

Station No.	4-193	Date - GMT	28 NOV 86
Station Name	MAC864-193	Time - GMT	1310
Latitude	11.14.3 N	Date - LOC	28 NOV 86
Longitude	115.27.8 W	Time - LOC	0510

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.221	0.085
20	--	--	0.213	0.093
40	--	--	0.362	0.207
60	--	--	0.207	0.476
80	--	--	0.065	0.259
100	--	--	0.041	0.110
120	--	--	0.009	0.069
140	--	--	0.005	0.045
160	--	--	0.074	0.106
200	--	--	0.006	0.044

Station No.	4-194	Date - GMT	29 NOV 86
Station Name	MAC864-194	Time - GMT	0142
Latitude	12.25.9 N	Date - LOC	28 NOV 86
Longitude	116.55.2 W	Time - LOC	1742

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.131	0.049
20	--	--	0.164	0.052
40	--	--	0.311	0.157
60	--	--	0.440	0.357
80	--	--	0.131	0.445
100	--	--	0.025	0.416
120	--	--	0.016	0.227
140	--	--	0.013	0.067
160	--	--	0.006	0.050
200	--	--	0.004	0.036

Station No.	4-195	Date - GMT	30 NOV 86
Station Name	MAC864-195	Time - GMT	0137
Latitude	14.20.2 N	Date - LOC	29 NOV 86
Longitude	116.29.6 W	Time - LOC	1737

Depth (m)	Temp (deg C)	Salinity (ppt)	Chloro (mg/m3)	Phaeo (mg/m3)
0	--	--	0.106	0.029
20	--	--	0.104	0.027
40	--	--	0.101	0.030
60	--	--	0.205	0.092
80	--	--	0.388	0.381
100	--	--	0.155	0.358
120	--	--	0.044	0.113
140	--	--	0.008	0.046
160	--	--	0.003	0.032
200	--	--	0.005	0.132

APPENDIX B

SCIENTIFIC PERSONNEL

<u>Cruise Leaders</u>	<u>Leg</u>
Steve Reilly, SWFC	1
Rennie Holt, SWFC	2
Alan Jackson, SWFC	3-4
<u>Environmental Data Collection</u>	
Bruce McDonald, NOAA Ship <i>McArthur</i>	1-4
Julie Ellingson, NOAA Ship <i>McArthur</i>	1-4
<u>Marine Mammal Identification Experts</u>	
Mike Newcomer, SWFC	1-4
Scott Sinclair, SWFC	1-4
<u>Marine Mammal Observers</u>	
Scott Benson, SWFC	1-4
Carla Bisbee, SWFC	1-4
Larry Robertson, SWFC	1-4
Dave Skordal, SWFC	1-4
<u>Other Scientists</u>	
Alan Jackson, SWFC	2
Oscar Vallarino, STRI	3

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