C-1-81-MD

METHODS

Field Operations

During 1981 and 1982 the R/V Cayuse occupied 10 sites in the study area at water depths between 279 and 1400 m. Box core and gravity core samples and bottom photographs were recovered at approximately 100-m depth intervals along the transect (Figure 4; Table 1) northwest of Point Sur where the oxygen minimum zone impinges on the bottom.

A Benthos box corer equipped with a stainless steel box (20 x 30 x 60 cm) was used to recover an undisturbed portion of the sea floor and a 9-cm diameter gravity corer was used to retrieve the upper 1-2.2 m of sediment. Approximately 10 bottom photographs were taken at each station from 2 m above the sediment with a Benthos deep-sea camera system.

Each recovered box core was carefully removed from the box and an 18 x 2 cm longitudinal slab was taken for X-radiography and subsamples were taken at 5-cm intervals with a 100 cm^3 syringe. The 8-cm liner containing the gravity core was removed from the barrel, sealed, and returned to the laboratory.

During the study, ship location was determined by a LORAN-C coastal navigation system supplemented by radar triangulation and satellite navigation fixes. Station positions were recorded at the time of bottom impact of the corer or camera, indicated by the winch tensiometer or sonic alarm, respectively. Water depth was determined with a 12 kHz precision depth recorder.

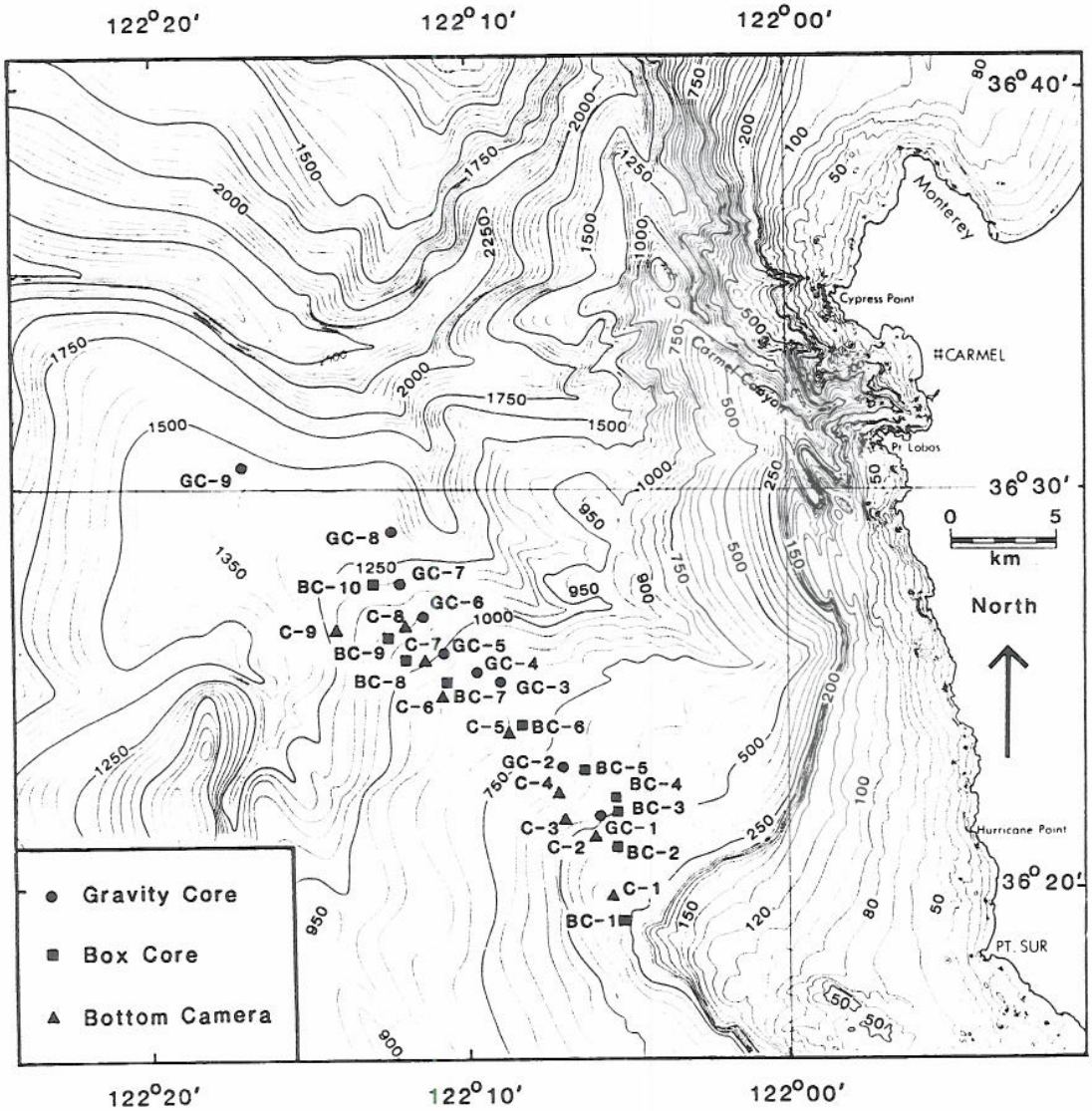

Figure 4. Bathymetric map of study area showing bottom sample locations. From NOAA bathymetry map NOS 1307-11B, (contours in meters).

C-1-81-MB
Samp 1

Table 1.--Station locations, water depths, and penetration of box cores and gravity cores, and camera station locations

Sample Number	Water Depth (meters)	Subsurface Penetration (centimeters)	Latitude	Longitude
Box Cores				
BC-1	279	<10	122° 05.1' W	36° 19.3' N
BC-2	390	35	122° 05.4' W	36° 21.0' N
BC-3	510	10	122° 05.4' W	36° 21.9' N
BC-4	593	23	122° 05.5' W	36° 22.3' N
BC-5	690	36	122° 06.3' W	36° 23.0' N
BC-6	785	44	122° 08.3' W	36° 24.1' N
BC-7	905	42	122° 10.7' W	36° 25.1' N
BC-8	1020	43	122° 12.0' W	36° 25.7' N
BC-9	1085	43	122° 12.5' W	36° 26.3' N
BC-10	1200	42	122° 13.0' W	36° 27.6' N
Gravity Cores				
GC-1	505	91	122° 05.1' W	36° 21.8' N
GC-2	717	130	122° 07.0' W	36° 23.0' N
GC-3	832	230	122° 08.9' W	36° 25.1' N
GC-4	862	225	122° 09.6' W	36° 25.4' N
GC-5	983	200	122° 10.8' W	36° 25.9' N
GC-6	1072	176	122° 11.4' W	36° 26.8' N
GC-7	1183	180	122° 12.1' W	36° 27.6' N
GC-8	1277	198	122° 12.4' W	36° 29.0' N
GC-9	1420	215	122° 17.0' W	36° 30.6' N
Camera Stations				
C-1	300	--	122° 05.5' W	36° 19.8' N
C-2	452	--	122° 06.0' W	36° 21.3' N
C-3	570	--	122° 07.0' W	36° 21.7' N
C-4	688	--	122° 07.1' W	36° 22.3' N
C-5	801	--	122° 08.6' W	36° 23.9' N
C-6	903	--	122° 10.8' W	36° 24.7' N
C-7	1005	--	122° 11.4' W	36° 25.7' N
C-8	1100	--	122° 12.0' W	36° 26.5' N
C-9	1210	--	122° 14.1' W	36° 26.5' N

LIBRARY, SAN JOSE STATE