LDGO CRUISE - Chief Sci. - Michael Rawson

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CRUISE REPORT

Cruise BLM - M-1 - R/V EASTWARD
6 July - 23 July 1981

Objective: The objective of Cruise BLM M-1 was to collect infauna and benthic sediment samples to be used as base line analyses for the Georges Bank Lease Sale No. 42 environmental monitoring Program. The major emphasis of the program will determine the extent of deposition and accumulation of toxic materials as a result of oil drilling activities and the resultant effects on the benthic biota.

Sampling Program: The sampling plan is based on guidelines proposed by the Biological Task Force, the U.S. Geological Survey, and the Bureau of Land Management. 18 regional sampling sites include Cross-shelf transects to the east or "upstream" of the lease sale tracts that will be considered as control sites. Actual impact on the benthic infauna communities will be studied at transects through the lease tracts and "downstream" from the drilling sites. Additional regional sites were selected at the head of Lydonia Canyon, in the depositionsl "mudpatch" area and at Block 410 where drilling was to commence immediately following the completion of this cruise.

A site-specific array of 28 stations in Block 312 will determine the spatial variability of the sediments and benthos in an area where actual drilling will commence during Summer 1981.

Sampling Procedures Samples collected for analysis include:

154	.1 m^2 Van Veen Grab Biological replicates to determine sediment texture and benthic infauna community structure.
139	.1 m^2 Van Veen Grab Chemical replicates to determine trace metals and petroleum hydrocarbons in epibenthic organisms and PHC's in sediment samples.
177	.04 m^2 Van Veen Grab Biological replicates to determine sediment texture and benthic infauna community structure.
18	Dissolved Oxygen analyses at each of the regional sites.
35	Bottom camera stations to determine sediment types, current effects and benthic fauna at selected regional and site-specific sites.
5	Epibenthic sled tows to collect benthic fauna for tissue analysis were made at regional and site-specific sites.
14	XBT casts were made to determine water structure and position of the shelf/slope front.

Comments: Sample locations are based on Loran C fixes using both program-computed Latitude and Longitude (Northstar 6000) and measured Time Delay readings. With the exception of usual pre-dawn perturbations, signal strength was of high quality throughout the sampling program. Dense sample concentration at each site was achieved by repositioning the vessel for each sample relative either to a temporary moored marker buoy or time delays recorded at the first sample position.

Particular care was taken to assure sample integrity in each cast for both biological and chemical analysis grab samples. Samples were processed and immediately frozen or refrigerated following each recovery.

The sample archives for Cruise BLM M-1 are located at the U.S. Geological Survey, Woods Hole, Ma. (M. Bothner) and Woods Hole Oceanographic Institute, Woods Hole, Ma (R. Petrecca).

Submitted by

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Table 1

CRUISE BLM M-1

LIST OF SAMPLES

REGIONAL SITES

Station Nos. M-1	Regional	Latitude	Longitude	Sample Types and I.D. .1 Bio	.1 Chem	.04 Bio	H_2O	Sled	Camera	XBT
1	13	40 29.5'N	70 12.6'W	A-F	G-I	J-O	J	yes	yes	no
2	14	41 34.1'N	68 59.0'W	G-K	L-N	A-F	E	no	yes	yes
3	15	41 27.2'N	68 00.7'W	A-F	G-I	J-O	M	no	yes	yes
4	1	41 13.0'N	67 15.3'W	J-O	G-I	A-F	E	no	yes	yes
5	2	41 00.0'N	66 57.4'W	D-I	A-C	J-O	O	yes	yes	no
6	3	40 55.0'N	66 48.1'W	J-O	G-I	A-F	E	no	yes	no
7	16	40 34.2'N	67 12.3'W	D-I	A-C	J-O	N	no	yes	yes
8	17	40 35.0'N	67 11.7'W	J-O	G-I	A-F	E	no	yes	no
9	18	40 33.5'N	67 13.7'W	D-I	A-C	J-O	O	no	yes	no
10	8	40 27.0'N	67 37.0'W	G-L	M-O	A-F	E	no	yes	no
10	XBT 1	Lydonia Canyon		XBT	Transects	1-8				
11	7	40 28.8'N	67 43.2'W	A-F	G-I	J-O	M	no	yes	no
12	6	40 34.1'N	67 45.0'W	D-I	A-C	J-N	M	no	no	no
13	4	40 50.2'N	68 05.0'W	H-L	M	A-F	E	no	yes	no
14	10	40 42.0'N	68 36.0'W	A-F	G-I	J-O	O	no	yes	yes
15	11	40 30.8'N	68 33.7'W	G-L	M-O	A-F	E	no	no	no
16	12	40 22.2'N	68 30.2'W	A-F	G-I	J-O	J	no	yes	yes
17	9	40 26.7'N	68 09.8'W	G-L	L-O	A-F	E	no	yes	no
18	5	40 39.4'N	67 46.4'W	A-F	G-I	J-O	M	no	yes	no

Table 2

CRUISE BLM M-1
LIST OF SAMPLES
SITE SPECIFIC SITES

M-1	S/S#	Latitudes	Longitudes	.1 Bio	.1 Chem	.04 Bio	H_2O	Sled	Camera	XBT
18	1	40 39.4'N	67 46.4'W	A-F	G-I	J-O	M	yes	yes	no
19	28	40 39.5'N	67 41.9'W	G-L	M-O	A-F	no	yes	yes	no
20	22	40 39.5'N	67 43.3'W		A-C	D-I	no	no	yes	no
21	2	40 39.6'N	67 45.8'W		G-I	A-F	no	no	yes	no
22	3	40 39.8'N	67 46.1'W		A-C	D-I	no	no	yes	no
23	4	40 39.5'N	67 46.5'W		G-I	A-F	no	no	yes	no
24	5	40 39.3'N	67 46.2'W		A-C	D-I	no	no	yes	no
25	6	40 39.5'N	67 45.4'W		G-I	A-F	no	no	no	no
26	7	40 39.9'N	67 45.7'W	A-F	G-I	J-O	no	no	yes	no
27	8	40 40.1'N	67 46.1'W		G-H	A-F	no	no	yes	no
28	9	40 39.9'N	67 46.7'W		A-C	D-I	no	no	yes	no
29	10	40 39.4'N	67 46.9'W	G-L	M-O	A-F	no	no	yes	no
30	11	40 39.5'N	67 46.6'W		A-C	D-I	no	no	yes	no
31	12	40 39.0'N	67 46.1'W	G-L	M-O	A-F	no	no	yes	no
32	13	40 39.2'N	67 45.6'W		A-C	D-I	no	no	no	no
33	14	40 39.5'N	67 44.7'W		G-I	A-F	no	no	no	no
34	15	40 40.3'N	67 45.2'W		A-C	D-I	no	no	no	no
35	21	40 38.8'N	67 45.1'W		G-I	A-F	no	no	no	no
36	27	40 37.4'N	67 46.1'W		A-C	D-I	no	no	no	no
37	26	40 38.0'N	67 48.1'W		A-C	D-I	no	no	no	no
38	19	40 38.8'N	67 47.2'W	J-O	P-R	A-I	no	no	yes	no
39	18	40 39.4'N	67 47.6'W	D-I	A-C	J-O	no	yes	yes	no
40	20	40 38.5'N	67 46.1'W		G-I	A-F	no	no	yes	no
41	25	40 39.5'N	67 49.0'W		A-C	D-I	no	no	yes	no
42	16	40 40.6'N	67 46.1'W		G-I	A-F	no	no	yes	no
43	29	40 39.5'N	67 50.4'W	A-F	G-I	J-O	no	no	yes	no
44	23	40 41.7'N	67 46.1'W		G-I	A-F	no	no	no	no
45	24	40 41.1'N	67 48.1'W		A-C	D-I	no	no	no	no
46	17	40 40.3'W	67 47.1'W		A-C	D-I	no	no	no	no

Table 3

CRUISE REPORT

CRUISE BLM M-1

SCHEDULE: R/V EASTWARD

TIME	DATE	EVENT
1630	06 July 81	R/V EASTWARD departs Norfolk
0900	08 July 81	R/V EASTWARD arrives Woods Hole. Ma.
		Mobilization of Scientific Gear
1100	09 July 81	Underway from Woods Hole
2000	19 July 81	R/V EASTWARD arrives Woods Hole
0800-1530	20 July 81	Demobilization of Scientific Gear
0800	23 July 81	R/V EASTWARD arrives Norfolk, Va.

Table 4

CRUISE REPORT
CRUISE BLM M-1
R/V EASTWARD

List Of Participants:

Lamont Doherty Geological Observatory, Palisades, N.Y.

Michael Rawson (Chief Scientist)
Daniel Chayes
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Michael Bothner
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