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Research Cruise Report

78033

Ship: R/V ORION

Operating Institution: University of Maryland
Chesapeake Biological Laboratory

Area of Operation: Potomac River from Chesapeake Bay to Washington, D.C., Wicomico River and Port Tobacco River

Dates of Operation: 10/17/78 to 10/20/78
Port Calls were made overnight
10/17/78 - Lexington Park, Maryland
10/18/78 - Cobb Island, Maryland
10/19/78 - Quantico Marine Base, Virginia
10/20/78 - Final Docking, Alexandria, Virginia

Personnel: U.S.G.
Jerry Glenn - W.R.D., Geologist, Co-Chief Scientist
Ann Martin - G.D., Chemist, Co-Chief Scientist
Ronald Miller - G.D., Oceanographer, Master Diver
Cyndi Rice - G.D., Marine Biologist, Diver
Neal Lillard - G.D., Marine Biologist, Diver
10/20/78 only Grace Brush - W.R.D.
Ted Callender - W.R.D.

Ship Crew
Bill Keefe - Chesapeake Biological Laboratory, Captain
Johnny Crane - Chesapeake Biological Laboratory, Mate

Purpose: The major objective of this cruise was to collect approximately 10 to 20 diver cores to be analyzed for stratigraphic distributions of ^{210}Pb and selected trace metals.

Major Equipment: Diving Gear
Diver-Operated Coring Device
Benthos Gravity Corer
Salinity/Conductivity/Temp. Meter
Depth Recorder

Navigation: Radar

Work Completed: Seventeen sites were occupied and the following were obtained at each site:
1. A cross section depth profile was run before the site was re-occupied for sampling and data collecting (salinity, conductivity and temp. readings).
2. A diver core was taken (approximately one meter in length and 12 cm in diameter), split and subsampled on board. Half of each core was carefully wrapped and placed in a D-tube for transport to Corpus Christi for X-radiography.

3. A Benthos gravity core was taken, extruded, described and sampled on board.
4. Salinity, conductivity and temperature measurements were made in the lower portions of the River.

Site Locations

Site	Lat.	Long.	Water Depth (Meters)
I	38° 00' 15"	76° 21' 03"	13
II	38° 06' 56"	76° 32' 07"	23
III	38° 10' 51"	76° 47' 44"	7
IV	38° 12' 45"	76° 47' 13"	10.8
V	38° 16' 45"	76° 48' 57"	~4.0
VI	38° 21' 00"	76° 51' 05"	~5.0
VII	38° 16' 00"	76° 55' 45"	11
VIII	38° 24' 48"	77° 02' 00"	30
IX	38° 29' 08"	77° 01' 36"	1.5
X	38° 26' 24"	77° 01' 36"	3
XI	38° 32' 52"	77° 16' 04"	8.2
XII	38° 37' 08"	77° 08' 50"	1.8
XIII	38° 41' 55"	77° 04' 00"	8.6
XIV	38° 42' 43"	77° 02' 35"	1.8
XV	38° 42' 02"	77° 02' 07"	1.6
XVI	38° 49' 21"	77° 01' 55"	8
XVII	38° 52' 16"	77° 01' 16"	6.5

Salinity/Conductivity/Temperature

Site	Depth (Meters)	Salinity (0/100)	Conductivity (Millimhos/CM)	T (°C)	Date/Time
I	Near Surface	17.29	23.40	17.28	18/0830
	11.0	18.54	25.52	18.23	
	6.0	16.68	23.13	17.85	
	Near Surface	16.34	22.26	17.24	
II	Near Surface	16.26	22.50	17.80	18/1154
	20.0	18.35	26.02	19.62	
	10.0	18.96	25.33	19.19	
	Near Surface	16.35	22.60	16.88	
II	Near Surface	15.38	22.98	17.36	18/1208
CBL Probe	11.0	17.80	24.78	18.74	
	Near Bottom (~23.0)	18.13	25.45	19.17	
III	Near Surface	10.96	14.86	16.21	18/1427
	3.05	10.85	14.74	15.81	
	6.08	13.76	18.97	17.13	
IV	1.0	11.42	15.90	16.47	18/1549
	5.2	13.92	19.25	17.15	
	10.5	15.35	21.24	17.71	
V	1.0	12.20	16.92	16.93	18/1715
	4.5	12.52	17.10	16.29	
VI	1.0	10.72	14.43	15.25	18/1814
	3.0	10.71	14.52	15.27	
VII	1.0	9.74	13.03	15.80	19/0811
	6.0	13.30	15.62	16.23	
	12.0	13.12	18.03	16.65	
VIII	1.0	8.24	11.35	16.11	19/~1121
	15.0	8.81	12.31	16.35	
	Near Bottom	9.00	12.55	16.75	
IX	1.0	6.42	8.5	13.50	19/~1235
X	1.0	7.05	9.45	14.61	19/~1300
	2.5	7.03	9.49	14.59	
XI	1.0	0.25	0.28	15.42	19/1551
	8.0	0.25	0.32	15.44	
XII	~1.0	0.27	0.33	14.67	20/0805

Comments:

The diver corer with a split core barrel worked extremely well and the cores obtained showed only minimal disturbance. The cruise was very successful and the divers did an excellent job in all respects.

Respectfully submitted,

Ann Martin

E. Ann Martin
10/27/78