

Cruise Report C-220

Scientific data collected aboard
SSV Corwith Cramer

Christiansted, St. Croix – Key West, Florida
29 November – 22 December 2008



Sea Education Association
Woods Hole, Massachusetts

Citation:

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To obtain unpublished data, contact the Chief Scientists or the SEA Data Archivist:

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Ship's Company

SSV *Corwith Cramer*, Cruise C-220

Joint program of the Sea Education Association and the Boston University Marine Program

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Data Description

This cruise report provides a record of data collected aboard the SSV *Corwith Cramer* during cruise C-220 (U.S. State Department Cruise 2008-069), which departed from Christiansted, St. Croix on 29 November 2008 and transited through the Caribbean Sea, arriving in Key West, Florida on 22 December 2008 (Figure 1). This cruise was part of a joint program offered by the Sea Education Association (SEA) and the Boston University Marine Program (BUMP).

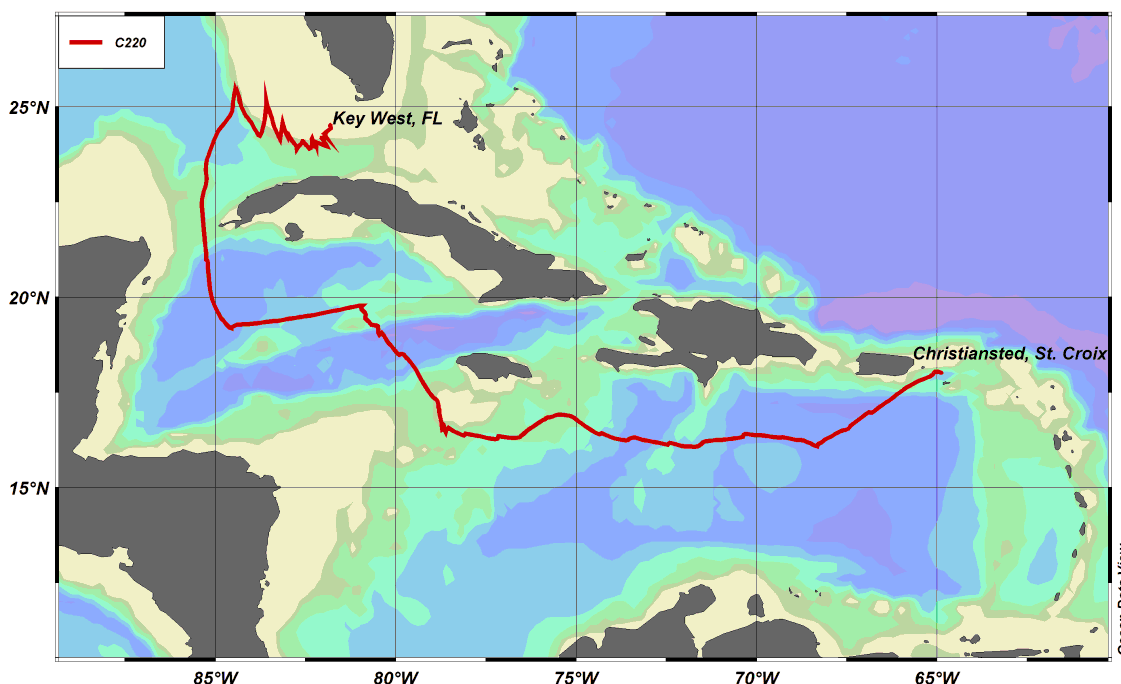


Figure 1: C-220 cruise track plotted from hourly positions.

During the 24-day voyage we collected samples or data at 53 discrete oceanographic stations (Table 1), surface samples at 14 locations (Table 2), and we continuously sampled water depth and sub-bottom profiles (CHIRP system), upper ocean currents (Acoustic Doppler Current Profiler, or ADCP), and sea surface temperature, salinity, *in vivo* fluorescence, CDOM fluorescence and transmittance (seawater flow-through system). This report summarizes sea surface biological and chemical characteristics (Tables 2 and 3), biological and chemical properties with depth (Tables 4 and 5), and surface sediment characteristics (Table 6). Lengthy CTD, CHIRP, ADCP, and flow-through data are not reported here. All unpublished data may be made available by arrangement with the Sea Education Association (SEA) data archivist (contact information, p. 2). The information in this report is not intended to represent final interpretation of the data and should not be excerpted or cited without written permission from SEA and Boston University.

As part of the SEA-BUMP educational program, students conduct oceanographic research at sea for studies they have designed prior to the cruise. Student projects span the four major disciplines of oceanography – physical, chemical, biological, and geological oceanography (Table 7). Student research efforts culminate in a written research paper and an oral presentation to the ship's company. The student research papers from cruise C-220 are available upon request from SEA.

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Table 1: Oceanographic sampling stations.

Station Number	Date	Local Time [#]	Latitude (N)	Longitude (W)	Cast Depth (m)*	General Locale
Bathypotometer						
C220-001-BP	30-Nov-08	2232	17°56.3'	65°10.2'	100	N Caribbean Sea
C220-008-BP	2-Dec-08	2200	16°08.7'	68°17.2'	100	N Caribbean Sea
C220-016-BP	4-Dec-08	2136	16°09.9'	72°25.0'	100	N Caribbean Sea
C220-025-BP	6-Dec-08	2144	16°50.5'	75°48.5'	100	N Caribbean Sea
C220-033-BP	8-Dec-08	2117	16°32.2'	78°34.6'	100	N Caribbean Sea
C220-042-BP	10-Dec-08	2146	19°02.6'	80°24.1'	100	NW Caribbean Sea
C220-046-BP	11-Dec-08	2059	19°37.3'	80°52.3'	100	NW Caribbean Sea
CTD						
C220-001-CTD	30-Nov-08	2144	17°57.1'	65°09.8'	190	N Caribbean Sea
C220-002-CTD	1-Dec-08	1030	17°28.2'	66°05.5'	571	N Caribbean Sea
C220-004-HC	1-Dec-08	1610	17°15.1'	66°24.1'	135	N Caribbean Sea
C220-005-HC	1-Dec-08	2145	16°58.8'	66°49.9'	470	N Caribbean Sea
C220-007-CTD	2-Dec-08	0921	16°30.5'	67°35.4'	242	N Caribbean Sea
C220-007A-HC	2-Dec-08	1041	16°30.0'	67°36.8'		N Caribbean Sea
C220-007B-HC	2-Dec-08	1214	16°29.4'	67°38.7'	544	N Caribbean Sea
C220-008-CTD	2-Dec-08	2122	16°09.0'	68°16.7'	247	N Caribbean Sea
C220-010-CTD	3-Dec-08	1003	16°19.7'	69°17.4'	483	N Caribbean Sea
C220-012-HC	3-Dec-08	2123	16°24.3'	70°19.4'	604	N Caribbean Sea
C220-015-CTD	4-Dec-08	0954	16°10.3'	71°29.9'	414	N Caribbean Sea
C220-015-HC	4-Dec-08	1141	16°07.9'	71°33.1'	498	N Caribbean Sea
C220-016-CTD	4-Dec-08	2106	16°10.5'	72°24.2'	206	N Caribbean Sea
C220-018-CTD	5-Dec-08	0853	16°19.1'	73°24.9'	210	N Caribbean Sea
C220-018-HC	5-Dec-08	0951	16°18.4'	73°27.0'	503	N Caribbean Sea
C220-021-HC	5-Dec-08	2105	16°25.3'	74°15.9'	506	N Caribbean Sea
C220-024-CTD	6-Dec-08	1127	16°52.7'	75°08.8'	227	N Caribbean Sea
C220-024-HC	6-Dec-08	1212	16°53.0'	75°09.7'	521	N Caribbean Sea
C220-025-CTD	6-Dec-08	2116	16°50.7'	75°48.0'	205	N Caribbean Sea
C220-027-CTD	7-Dec-08	0910	16°23.4'	76°29.3'	222	N Caribbean Sea
C220-027-HC	7-Dec-08	1000	16°22.8'	76°30.1'	526	N Caribbean Sea
C220-029-HC	7-Dec-08	2042	16°20.9'	77°09.4'	505	N Caribbean Sea
C220-032-CTD	8-Dec-08	0927	16°24.9'	78°04.3'	205	N Caribbean Sea
C220-032-HC	8-Dec-08	1012	16°24.0'	78°05.0'	480	N Caribbean Sea
C220-033-CTD	8-Dec-08	2040	16°32.6'	78°34.0'	215	N Caribbean Sea
C220-040-CTD	10-Dec-08	0850	18°30.5'	79°48.4'	239	NW Caribbean Sea
C220-040-HC	10-Dec-08	0946	18°30.5'	79°49.4'	520	NW Caribbean Sea
C220-042-CTD	10-Dec-08	2114	19°03.2'	80°23.4'	210	NW Caribbean Sea
C220-044-CTD	11-Dec-08	0748	19°16.1'	80°35.9'	212	NW Caribbean Sea
C220-044-HC	11-Dec-08	0840	19°16.2'	80°36.7'	515	NW Caribbean Sea
C220-046-CTD	11-Dec-08	2027	19°36.5'	80°51.7'	200	NW Caribbean Sea
C220-047-CTD	13-Dec-08	1416	19°16.7'	84°24.4'		NW Caribbean Sea
C220-048-CTD	13-Dec-08	1922	19°13.6'	84°31.0'	100	NW Caribbean Sea
C220-048-HC	13-Dec-08	1958	19°13.3'	84°31.9'	495	NW Caribbean Sea
C220-054-CTD	20-Dec-08	0953	24°01.5'	82°12.6'	806	Florida Straits

[#] Local time is +4 GMT until 1430 7-Dec-08, and +5 GMT afterwards.

* Blank values indicate no data collected.

Table 1 continued

Station Number	Date	Local Time[#]	Latitude (N)	Longitude (W)	Cast Depth (m)[*]	General Locale
Hydrocast						
C220-004-HC	1-Dec-08	1610	17°15.1'	66°24.1'	135	N Caribbean Sea
C220-005-HC	1-Dec-08	2145	16°58.8'	66°49.9'	470	N Caribbean Sea
C220-007A-HC	2-Dec-08	1041	16°30.0'	67°36.8'		N Caribbean Sea
C220-007B-HC	2-Dec-08	1214	16°29.4'	67°38.7'	544	N Caribbean Sea
C220-012-HC	3-Dec-08	2123	16°24.3'	70°19.4'	604	N Caribbean Sea
C220-015-HC	4-Dec-08	1141	16°07.9'	71°33.1'	498	N Caribbean Sea
C220-018-HC	5-Dec-08	0951	16°18.4'	73°27.0'	503	N Caribbean Sea
C220-021-HC	5-Dec-08	2105	16°25.3'	74°15.9'	506	N Caribbean Sea
C220-024-HC	6-Dec-08	1212	16°53.0'	75°09.7'	521	N Caribbean Sea
C220-027-HC	7-Dec-08	1000	16°22.8'	76°30.1'	526	N Caribbean Sea
C220-029-HC	7-Dec-08	2042	16°20.9'	77°09.4'	505	N Caribbean Sea
C220-032-HC	8-Dec-08	1012	16°24.0'	78°05.0'	480	N Caribbean Sea
C220-040-HC	10-Dec-08	0946	18°30.5'	79°49.4'	520	NW Caribbean Sea
C220-044-HC	11-Dec-08	0840	19°16.2'	80°36.7'	515	NW Caribbean Sea
C220-048-HC	13-Dec-08	1958	19°13.3'	84°31.9'	495	NW Caribbean Sea
McLane Pump						
C220-015-MP	4-Dec-08	1345	16°06.7'	71°34.9'	86	N Caribbean Sea
C220-018-MP	5-Dec-08	1106	16°17.5'	73°29.7'	61	N Caribbean Sea
C220-024A-MP	6-Dec-08	0855	16°51.4'	75°05.6'	7	N Caribbean Sea
C220-024B-MP	6-Dec-08	1013	16°52.1'	75°07.3'	6	N Caribbean Sea
C220-027-MP	7-Dec-08	1109	16°21.9'	76°31.2'	86	N Caribbean Sea
C220-032-MP	8-Dec-08	1116	16°22.8'	78°06.1'	101	N Caribbean Sea
C220-040-MP	10-Dec-08	1053	18°30.4'	79°50.8'	68	NW Caribbean Sea
C220-044A-MP	11-Dec-08	0947	19°16.5'	80°37.9'	79	NW Caribbean Sea
C220-044B-MP	11-Dec-08	1054	19°16.8'	80°39.3'	6	NW Caribbean Sea
Meter Net						
C220-006-MN	2-Dec-08	0004	16°57.7'	66°55.2'	90	N Caribbean Sea
C220-013-MN	3-Dec-08	2240	16°22.1'	70°21.4'	155	N Caribbean Sea
C220-022-MN	5-Dec-08	2224	16°25.6'	74°18.0'	97	N Caribbean Sea
C220-030-MN	7-Dec-08	2156	16°19.3'	77°10.4'	101	N Caribbean Sea
C220-034-MN	8-Dec-08	2221	16°31.4'	78°35.7'	83	N Caribbean Sea
C220-049-MN	13-Dec-08	2112	19°12.4'	84°33.2'	112	NW Caribbean Sea
Neuston Net						
C220-003-NT	1-Dec-08	1153	17°26.7'	66°07.2'	0	N Caribbean Sea
C220-009-NT	2-Dec-08	2320	16°06.5'	68°18.5'	0	N Caribbean Sea
C220-011-NT	3-Dec-08	1059	16°19.2'	69°18.8'	0	N Caribbean Sea
C220-014-NT	3-Dec-08	2346	16°20.9'	70°22.2'	0	N Caribbean Sea
C220-017-NT	4-Dec-08	2218	16°08.9'	72°26.2'	0	N Caribbean Sea
C220-019-NT	5-Dec-08	1232	16°16.2'	73°32.7'	0	N Caribbean Sea
C220-023-NT	5-Dec-08	2313	16°24.8'	74°19.6'	0	N Caribbean Sea

[#] Local time is +4 GMT until 1430 7-Dec-08, and +5 GMT afterwards.

^{*} Blank values indicate no data collected.

Table 1 continued

Station Number	Date	Local Time[#]	Latitude (N)	Longitude (W)	Cast Depth (m)[*]	General Locale
Neuston Net continued						
C220-026-NT	6-Dec-08	2226	16°49.7'	75°49.5'	0	N Caribbean Sea
C220-028-NT	7-Dec-08	1220	16°20.5'	76°32.6'	0	N Caribbean Sea
C220-031-NT	7-Dec-08	2246	16°17.7'	77°10.5'	0	N Caribbean Sea
C220-035-NT	8-Dec-08	2319	16°28.9'	78°36.2'	0	N Caribbean Sea
C220-041-NT	10-Dec-08	1213	18°30.2'	79°52.7'	0	NW Caribbean Sea
C220-043-NT	10-Dec-08	2223	19°01.6'	80°25.2'	0	NW Caribbean Sea
C220-045-NT	11-Dec-08	1300	19°17.8'	80°41.7'	0	NW Caribbean Sea
C220-050-NT	13-Dec-08	2154	19°11.3'	84°33.3'	0	NW Caribbean Sea
C220-052-NT	20-Dec-08	0727	24°00.4'	82°12.2'	0	Florida Straits
C220-053-NT	20-Dec-08	0847	24°03.1'	82°13.1'	0	Florida Straits
Phytoplankton Net						
C220-007-PN	2-Dec-08	0925	16°30.5'	67°35.5'	0	N Caribbean Sea
C220-015-PN	4-Dec-08	0834	16°12.7'	71°27.1'	0	N Caribbean Sea
C220-018-PN	5-Dec-08	0900	16°19.1'	73°24.9'	0	N Caribbean Sea
C220-020-PN	5-Dec-08	1340	16°14.8'	73°34.7'	61	N Caribbean Sea
C220-024-PN	6-Dec-08	0855	16°51.4'	75°05.6'	0	N Caribbean Sea
C220-027-PN	7-Dec-08	0844	16°23.8'	76°29.0'	0	N Caribbean Sea
C220-032-PN	8-Dec-08	0933	16°24.8'	78°04.4'	0	N Caribbean Sea
C220-036-PN	9-Dec-08	1151	17°06.2'	78°48.4'	20	Pedro Bank
C220-037-PN	9-Dec-08	1448	17°18.1'	78°50.9'	20	Pedro Bank
C220-039-PN	9-Dec-08	1831	17°25.6'	79°00.8'	100	Pedro Bank
C220-040-PN	10-Dec-08	0832	18°30.5'	79°48.1'	0	NW Caribbean Sea
C220-044-PN	11-Dec-08	0727	19°16.0'	80°35.6'	0	NW Caribbean Sea
Secchi Disk						
C220-007-SD	2-Dec-08	1041	16°30.0'	67°36.8'	22	N Caribbean Sea
C220-015-SD	4-Dec-08	1141	16°07.9'	71°33.1'	24	N Caribbean Sea
C220-018-SD	5-Dec-08	0951	16°18.4'	73°27.0'	26	N Caribbean Sea
C220-024-SD	6-Dec-08	1212	16°53.0'	75°09.7'	32	N Caribbean Sea
C220-027-SD	7-Dec-08	1000	16°22.8'	76°30.1'	28	N Caribbean Sea
C220-032-SD	8-Dec-08	1012	16°24.0'	78°05.0'	29	N Caribbean Sea
C220-040-SD	10-Dec-08	0946	18°30.5'	79°49.4'	24	NW Caribbean Sea
C220-044-SD	11-Dec-08	0840	19°16.2'	80°36.7'	25	NW Caribbean Sea
Shipek Grab						
C220-037-SG	9-Dec-08	1522	17°18.1'	78°51.7'	29	Pedro Bank
C220-038-SG	9-Dec-08	1641	17°22.0'	78°56.4'	36	Pedro Bank
C220-039A-SG	9-Dec-08	1747	17°25.4'	78°59.9'	58	Pedro Bank
C220-039B-SG	9-Dec-08	1800	17°25.5'	79°00.3'	355	Pedro Bank

[#] Local time is +4 GMT until 1430 7-Dec-08, and +5 GMT afterwards.

^{*} Blank values indicate no data collected.

Table 2: Surface station data.

Station Number	Date	Local Time[#]	Latitude (N)	Longitude (W)	Chl a (µg/l)
SS-001	1-Dec-08	1153	17°26.7'	66°07.2'	0.084
SS-002	3-Dec-08	0017	16°05.5'	68°20.2'	0.127
SS-003	3-Dec-08	1120	16°18.8'	69°19.1'	0.133
SS-004	4-Dec-08	0007	16°20.0'	70°22.3'	0.110
SS-005	4-Dec-08	2223	16°08.9'	72°26.2'	0.085
SS-006	5-Dec-08	1232	16°16.2'	73°32.7'	0.169
SS-007	5-Dec-08	2313	16°24.8'	74°19.6'	0.041
SS-008	6-Dec-08	2226	16°49.7'	75°49.5'	0.070
SS-009	7-Dec-08	1239	16°20.2'	76°33.1'	0.067
SS-010	7-Dec-08	2248	16°17.6'	77°10.6'	0.058
SS-011	8-Dec-08	2325	16°28.7'	78°36.2'	0.035
SS-012	10-Dec-08	1213	18°30.2'	79°52.7'	0.077
SS-013	10-Dec-08	2234	19°01.8'	80°25.7'	0.086
SS-014	11-Dec-08	1303	19°17.9'	80°41.7'	0.175

[#] Local time is +4 GMT until 1430 7-Dec-08, and +5 GMT afterwards.

Table 3: Neuston net (1-m width, 335 μm mesh) tow data. See Table 1 for station information.

Station Number	Tow Length (m)	Temp. ($^{\circ}\text{C}$)	Salinity (psu)	Zoop. Biomass (ml)	Zoop. Density (ml/m^2)	Plastic Pieces (#)	Plastic Pellets (#)	Tar Pieces (#)
C220-003-NT	1852	27.8	34.35	1.5	0.001	0	0	0
C220-009-NT	2138	27.9	33.66	16.0	0.007	0	0	0
C220-011-NT	1591	27.9	34.51	7.0	0.004	1	0	0
C220-014-NT	2744	27.8	35.31	21.0	0.008	0	0	0
C220-017-NT	2382	27.6	34.71	9.0	0.004	3	0	0
C220-019-NT	1963	28.0	35.27	3.0	0.002	0	0	0
C220-023-NT	1876	27.9	34.99	7.0	0.004	1	0	0
C220-026-NT	3302	28.1	35.70	4.9	0.001	0	0	0
C220-028-NT	2364	28.3	35.66	3.5	0.001	0	0	0
C220-031-NT	2172	28.1	35.60	6.5	0.003	0	1	0
C220-035-NT	2174	28.0	35.62	2.5	0.001	0	0	0
C220-041-NT	2017	27.6	35.81	1.8	0.001	1	0	0
C220-043-NT	2747	27.2	36.03	5.5	0.002	1	0	0
C220-045-NT	2507	27.5	35.88	18.0	0.007	1	0	0
C220-050-NT	1399	26.9	35.96	13.0	0.009	3	0	0
C220-052-NT	2244	24.0	36.33	1810.0	0.807	4	0	4
C220-053-NT	2164	23.8	36.36	2936.0	1.357	0	0	0

Table 4: Meter net (1-m diameter, 200 μm mesh) oblique tow data. See Table 1 for station information.

Station Number	Tow Depth (m)	Tow Volume (m^3)	Zooplankton Biomass (ml)	Zooplankton Biomass Density (ml/m^3)
C220-006-MN	90	970	47	0.048
C220-013-MN	155	796	51	0.064
C220-022-MN	97	758	28	0.037
C220-030-MN	101	573	16	0.028
C220-034-MN	83	834	35	0.042
C220-049-MN	112	608	54	0.089

Table 5: Hydrocast bottle data. See Table 1 for station information.

Station Number	Bottle Depth (m)	O ₂ * (mL/L)	PO ₄ * (μM)	SiO ₂ * (μM)	Chl a* (μg/L)	pH*	Total Alk* (Meq/L)
C220-005-HC	3.0					7.984	2.477
C220-005-HC	24.8					7.992	
C220-005-HC	48.9	1.12				8.022	2.773
C220-005-HC	74.7					8.007	
C220-005-HC	98.1					7.996	2.724
C220-005-HC	150.0					7.874	
C220-005-HC	199.0	0.62				7.803	2.646
C220-005-HC	248.7					7.786	
C220-005-HC	298.7					7.777	
C220-005-HC	398.3					7.653	
C220-005-HC	459.8	0.49				7.620	3.193
C220-007B-HC	3.0		0.228	5.562	0.147		
C220-007B-HC	11.0				0.111		
C220-007B-HC	29.2	4.67	0.205	3.178	0.159		
C220-007B-HC	49.0		0.265	2.091	0.302		
C220-007B-HC	81.1				0.227		
C220-007B-HC	80.2		0.484	1.826			
C220-007B-HC	100.1		1.475	1.800	0.147		
C220-007B-HC	119.7		0.456	8.079			
C220-007B-HC	148.0	1.77	0.886	1.623	0.118		
C220-007B-HC	198.3		0.625	3.284			
C220-007B-HC	248.3				0.004		
C220-007B-HC	298.0	2.07	0.685	3.999			
C220-007B-HC	495.4		1.703	11.727			
C220-012-HC	3.0					8.021	2.546
C220-012-HC	25.3					8.020	
C220-012-HC	47.0	4.45				8.022	2.719
C220-012-HC	74.5					8.008	
C220-012-HC	98.1					7.922	2.706
C220-012-HC	148.3					7.845	
C220-012-HC	199.3	3.42				7.822	2.951
C220-012-HC	248.1					7.721	
C220-012-HC	298.2					7.719	
C220-012-HC	397.9					7.635	
C220-012-HC	496.1	3.05				7.575	2.454
C220-015-HC	3.0		0.205	7.488	0.084		
C220-015-HC	10.2		0.073	8.300	0.066		
C220-015-HC	39.1	4.52	0.155	8.980	0.090		
C220-015-HC	60.5		0.091	5.871	0.249		
C220-015-HC	78.6		0.466	3.443	0.041		
C220-015-HC	89.1		0.397	1.932	0.034		
C220-015-HC	98.3		0.146	2.030	0.033		
C220-015-HC	123.6				0.010		
C220-015-HC	148.4	3.93	0.150	1.703	0.006		
C220-015-HC	198.6		0.192	2.568			

* Blank spaces indicate no data collected

Table 5 continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	SiO ₂ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
C220-015-HC	248.1				0.002		
C220-015-HC	298.7	3.72	0.767	4.538			
C220-015-HC	486.2		1.525	11.135			
C220-018-HC	3.0		0.201	2.833	0.147		
C220-018-HC	10.0	4.46			0.163		
C220-018-HC	25.0		0.205	15.189	0.168		
C220-018-HC	40.0		0.210	1.853	0.156		
C220-018-HC	54.0		0.082	2.577	0.152		
C220-018-HC	74.0		0.173	2.674	0.115		
C220-018-HC	100.0		0.214	2.268	0.106		
C220-018-HC	124.0	4.54	0.383	2.489	0.067		
C220-018-HC	149.0		0.160	3.805	0.039		
C220-018-HC	199.0		0.420	4.034			
C220-018-HC	248.0		0.561	6.295	0.004		
C220-018-HC	491.0	3.26	1.621	11.497			
C220-021-HC	3.0					8.036	2.228
C220-021-HC	24.9					8.058	
C220-021-HC	49.4					8.035	2.649
C220-021-HC	74.0					8.044	
C220-021-HC	98.7					7.979	2.706
C220-021-HC	149.5					7.994	
C220-021-HC	198.6					7.856	2.612
C220-021-HC	247.9					7.820	
C220-021-HC	298.6					7.809	
C220-021-HC	396.6					7.710	
C220-021-HC	494.9					7.632	
C220-024-HC	3.0		0.260	2.886	0.087		
C220-024-HC	25.0	4.28	0.196	4.741	0.084		
C220-024-HC	74.6		0.205	3.293	0.363		
C220-024-HC	98.7				0.272		
C220-024-HC	99.6		0.187	1.791	0.182		
C220-024-HC	119.5		0.429	0.917	0.134		
C220-024-HC	138.9	3.58	0.283	6.640	0.031		
C220-024-HC	148.8		0.233	2.533	0.023		
C220-024-HC	247.9		0.543	3.720	0.002		
C220-024-HC	297.2	3.39	0.867	11.660			
C220-024-HC	496.3		1.548	12.995			
C220-027-HC	3.0		0.013	9.712	0.119		
C220-027-HC	10.2	0.63	0.475	2.736	0.094		
C220-027-HC	40.1		0.109	2.917	0.101		
C220-027-HC	74.6		0.164	5.286	0.336		
C220-027-HC	82.1		0.128	4.473	0.327		
C220-027-HC	86.9		0.255	4.463	0.206		
C220-027-HC	99.6	1.46	0.155	1.933	0.108		
C220-027-HC	123.9		0.319	10.435	0.023		

* Blank spaces indicate no data collected

Table 5 continued

Station Number	Bottle Depth (m)	O₂* (ml/l)	PO₄* (µM)	SiO₂* (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
C220-027-HC	148.9		0.475	2.947	0.014		
C220-027-HC	198.3		0.479	6.802			
C220-027-HC	249.4				0.000		
C220-027-HC	298.2		1.041	11.620			
C220-027-HC	496.3	0.78	1.922	15.685			
C220-029-HC	3.0					8.145	2.753
C220-029-HC	25.1					8.198	
C220-029-HC	48.7	2.06				8.212	3.135
C220-029-HC	74.5					8.358	
C220-029-HC	98.4					8.188	2.683
C220-029-HC	150.5					7.990	
C220-029-HC	199.5	1.23				7.963	1.612
C220-029-HC	250.5					7.853	
C220-029-HC	300.4					7.794	
C220-029-HC	399.7					7.700	
C220-029-HC	499.2	1.51				7.621	2.583
C220-032-HC	3.0		0.274	12.663	0.059		
C220-032-HC	16.6				0.081		
C220-032-HC	35.0		0.205	3.840	0.105		
C220-032-HC	70.4	4.48	0.150	2.325	0.278		
C220-032-HC	85.1		0.214	2.365	0.320		
C220-032-HC	99.6		0.283	2.355	0.313		
C220-032-HC	119.6		0.105	7.123	0.095		
C220-032-HC	133.9	4.64	0.319	2.014	0.034		
C220-032-HC	148.5		0.443	2.345	0.022		
C220-032-HC	199.5		0.835	7.223	0.006		
C220-032-HC	248.6		0.776	3.198			
C220-032-HC	469.9	2.99	1.630	7.083			
C220-040-HC	3.0		0.383	1.732	0.077		
C220-040-HC	15.8				0.074		
C220-040-HC	25.5		0.000	2.736	0.062		
C220-040-HC	49.3	1.37	0.324	2.004	0.182		
C220-040-HC	57.6		0.146	2.074	0.369		
C220-040-HC	64.9		0.255	2.275	0.459		
C220-040-HC	78.7		0.434	4.011	0.279		
C220-040-HC	114.1	1.41	0.456	3.579	0.078		
C220-040-HC	150.0		0.516	3.068	0.017		
C220-040-HC	197.9		0.685	5.075	0.004		
C220-040-HC	348.8		0.904	6.139			
C220-040-HC	496.1	1.73	1.438	10.505			
C220-044-HC	3.0		0.073	6.651	0.109		
C220-044-HC	19.7		0.379	6.049	0.089		
C220-044-HC	33.9		0.000	5.035	0.099		
C220-044-HC	54.6	4.47	0.219	4.001	0.217		
C220-044-HC	64.5		0.027	7.123	0.359		

* Blank spaces indicate no data collected

Table 5 continued

Station Number	Bottle Depth (m)	O ₂ * (ml/l)	PO ₄ * (µM)	SiO ₂ * (µM)	Chl a* (µg/l)	pH*	Total Alk* (Meq/L)
C220-044-HC	75.6		0.507	4.955	0.435		
C220-044-HC	84.9		0.045	4.694	0.275		
C220-044-HC	103.9	4.46	0.214	3.829	0.093		
C220-044-HC	148.9		0.246	2.498	0.012		
C220-044-HC	198.4		0.283	4.582	0.005		
C220-044-HC	347.8		0.493	4.326			
C220-044-HC	497.1	3.54	0.854	7.850			
C220-048-HC	3.0					7.728	2.840
C220-048-HC	25.3					8.004	
C220-048-HC	49.7	4.43				8.031	2.552
C220-048-HC	74.1					8.024	
C220-048-HC	96.5					7.959	2.698
C220-048-HC	148.9					7.879	
C220-048-HC	199.3	3.46				7.823	2.799
C220-048-HC	248.7					7.787	
C220-048-HC	297.8					7.743	
C220-048-HC	397.7					7.691	
C220-048-HC	484.7	3.20				7.593	2.783

* Blank spaces indicate no data collected

Table 6a: Surface sediment size distribution data. See Table 1 for station information.

Station Number	% >4000 µm	% 3000-4000 µm	% 2000-3000 µm	% 1000-2000 µm	% 500-1000 µm	% 250-500 µm	% 125-250 µm	% 63-125 µm	% < 63 µm
C220-037-SG	2.9	0.0	9.0	26.6	23.4	18.7	12.5	4.0	2.9
C220-038-SG	10.0	0.0	11.5	32.0	27.0	4.0	2.5	1.5	11.5
C220-039A-SG	22.0	0.0	11.0	15.0	19.0	13.0	13.0	5.0	2.0
C220-039B-SG	No sample								

Table 6b: Surface sediment qualitative description data. See Table 1 for station information.

Station Number	Sediment Characteristics
C220-037-SG	Grayish yellow (5y 8/4)/pale greenish yellow (10y 8/2); mostly fine silt with coarser shell fragments; angular; carbonate-dominated
C220-038-SG	Very pale orange (10yr 8/2); very fine silt mixed with shell fragments; angular with very angular fragments; large sponge pieces and coral pieces present
C220-039A-SG	Very pale orange (10yr 8/2)/pale greenish yellow (10y 8/2); very fine silt mixed with shell fragments; angular with very angular fragments; corals and crab claws present
C220-039B-SG	No sample

Table 7: Student research projects, Cruise C-220.

Title	Student Investigators
The Relationship between the Bioluminescence Potential, Zooplankton Biomass, and Chlorophyll-a Fluorescence in the Caribbean Sea	Catherine Achorn Allison Finnell Stephanie Tougas
Foraminifera Species Distribution near Pedro Bank and Preservation in the Sedimentary Record	Claire Archer Susan Green Adam Shifrin
Colored Dissolved Organic Matter: Spectral Absorbance and Fluorescence Patterns of Waters in the Caribbean Sea	Lijo Chacko Rachel Scudder Aurora Tsai
Vertical Distribution of DIC along with Salinity and Apparent Oxygen Utilization in the Caribbean Sea	Haidi Chen
Modeling Zooplankton Density Distribution with Physical and Biological Parameters in the Caribbean Basin	William R. DeCarvalho
Spatial Variation of pH and Alkalinity across the Caribbean Sea and its Relationship to Pteropods and Gelatinous Organisms	Michael Dombek Laura Le Jessica Seigle Sarah Stark
Relative Abundance of Diatoms and Dinoflagellates in the Surface Water and the Deep Chlorophyll Maximum of the Caribbean Sea	Raphael Fennimore Erin McDougal Adyan Rios Thomas Ryan
The Effect of Sea Surface Properties on <i>Halobates micans</i> Population Composition and Distribution in the Caribbean Sea	Amanda Iveson Nicholas Keeney
Oceanic Mixed Layer Depth in the Caribbean Sea: Measurement and Comparison with an Analytical Model	Giulio Mariotti