Cruise Report
C-189

Scientific data collected aboard
SSV *Corwith Cramer*

Woods Hole, MA – Tobago – Dominica – St. Croix

15 October 2003 – 23 November 2003

Sea Education Association
Woods Hole, Massachusetts

To obtain unpublished data, contact the SEA data archivist:

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Amy Smith	University of Connecticut

Data Description

This cruise report provides a record of data collected during C-189 aboard the SSV *Corwith Cramer* (U.S. State Department Cruise 2003-043) on her voyage from Woods Hole, MA, to St. Croix, USVI (Figure 1). We collected samples or data at 103 discrete oceanographic stations (Table 1) in addition to continuously sampling water depth, sub-bottom profiles, Acoustic Doppler Current Profiles (ADCP), and flow-through sea surface

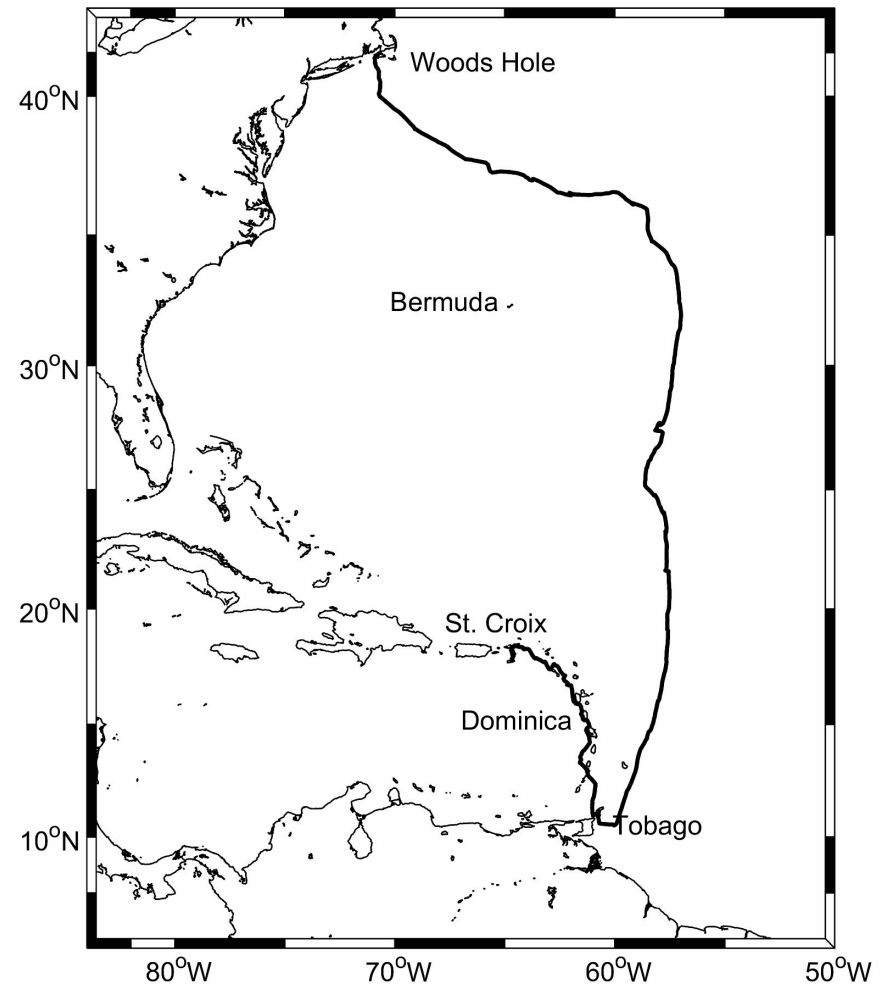

Figure 1: C-189 cruise track.

temperature, salinity and in vivo fluorescence. This report summarizes sea surface chemical and biological characteristics (Tables 2 and 3), subsurface biological samples (Tables 4 and 5), chemical properties with depth (Table 6), and surface sediment characteristics (Table 7). Summary contour plots of temperature and salinity show large-scale hydrography of the western North Atlantic (Figure 2). Lengthy CTD, CHIRP,

ADCP, and flow-through data are not reported here. All unpublished data can be made available by arrangement with the Sea Education Association (SEA) archivist (contact information, p.2).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.

As part of SEA's educational program, undergraduates conduct student-designed oceanographic research during the cruise. Project topics include physical, chemical, biological and geological oceanography (Table 8). Student research efforts culminate in a written paper and oral presentation to the ship's company. These papers are available on request from SEA.

Sara Harris
Chief Scientist
C-189

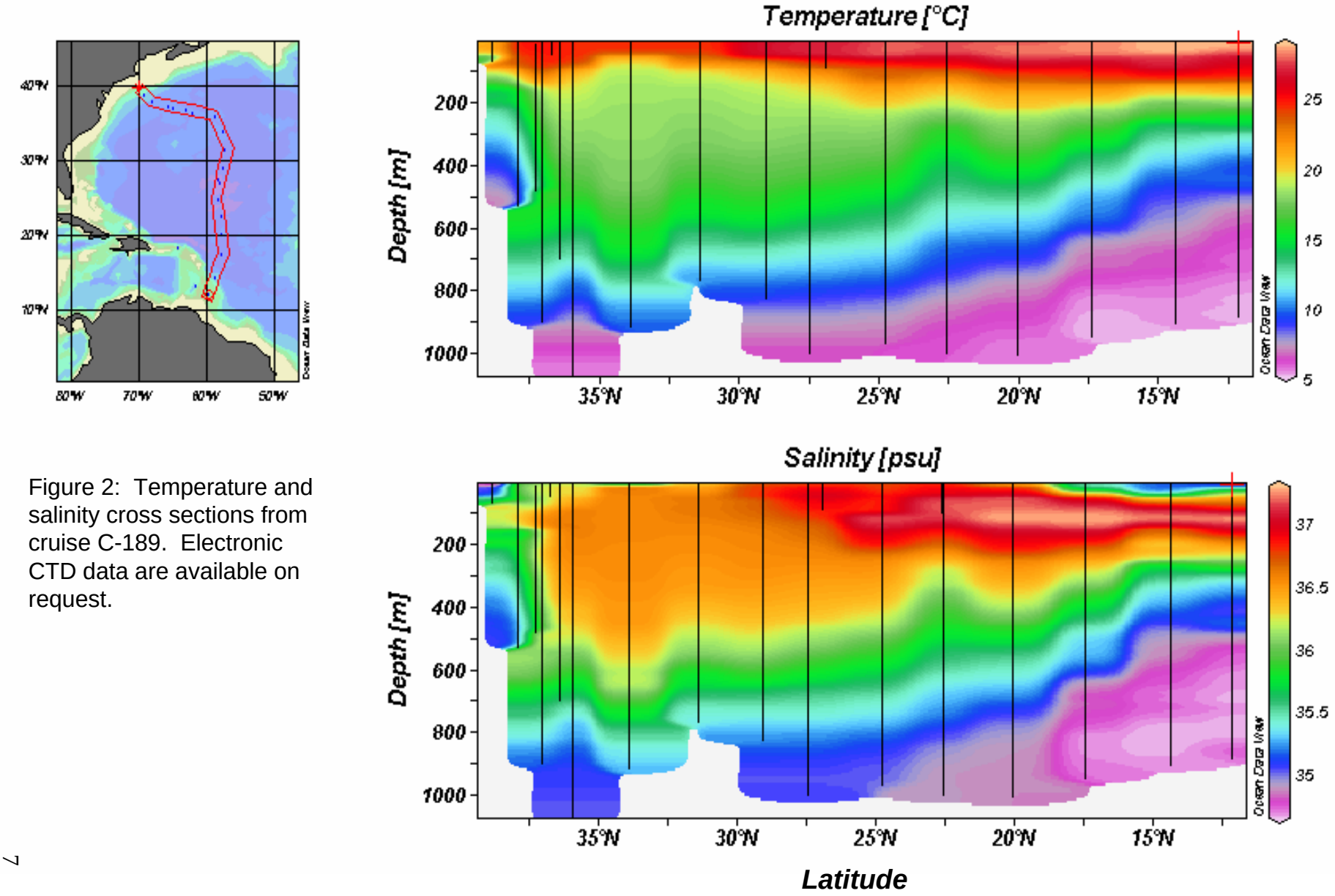

Figure 2: Temperature and salinity cross sections from cruise C-189. Electronic CTD data are available on request.

Table 1: Oceanographic sampling stations.

Station #	Date	Local Time	Log (nm)	Latitude (N)	Longitude (W)	Cast Depth (m)	General Locale
CTD							
C189-014a-CTD	18-Oct-03	2155	180.5	38°50.7'	69°5.2'	58	Continental Slope
C189-014b-CTD	18-Oct-03	2155	180.5	38°50.7'	69°5.2'	60	Continental Slope
C189-019-CTD	19-Oct-03	2027	259.5	37°55.7'	67°6.4'	519	Gulf Stream
C189-021-CTD	20-Oct-03	0954	333.1	37°17.6'	65°34.9'	476	Gulf Stream
C189-024-CTD	21-Oct-03	1035	386.1	37°1.1'	63°44.0'	900	N. Sargasso Sea
C189-027-CTD	21-Oct-03	2131	430.9	36°43.7'	62°52.3'	41	N. Sargasso Sea
C189-029-CTD	22-Oct-03	0855	420.6	36°24.6'	62°0.7'	691	N. Sargasso Sea
C189-031-RCTD	23-Oct-03	1125	575.0	36°28.1'	59°40.8'	585	N. Sargasso Sea
C189-037-CTD	24-Oct-03	0900	643.1	35°56.6'	58°32.3'	761	N. Sargasso Sea
C189-040a-CTD	25-Oct-03	1015	743.8	33°54.1'	57°23.3'	898	N. Sargasso Sea
C189-040b-CTD	25-Oct-03	1015	743.8	33°54.1'	57°23.3'	912	N. Sargasso Sea
C189-044-CTD	26-Oct-03	1015	891.3	31°23.9'	57°3.5'	760	N. Sargasso Sea
C189-047-CTD	27-Oct-03	1010	1026.0	29°3.8'	57°27.1'	819	S. Sargasso Sea
C189-048-CTD	28-Oct-03	1000	1131.5	27°26.7'	58°6.9'	997	S. Sargasso Sea
C189-050a-CTD	28-Oct-03	2206	1178.3	26°54.9'	57°56.0'	52	S. Sargasso Sea
C189-050b-CTD	28-Oct-03	2206	1178.3	26°54.9'	57°56.0'	81	S. Sargasso Sea
C189-054-CTD	30-Oct-03	1030	1319.9	24°44.9'	58°12.2'	962	S. Sargasso Sea
C189-058-CTD	31-Oct-03	2219	1467.5	22°34.3'	57°38.1'	996	Tropics
C189-059-CTD	31-Oct-03	2340	1467.5	22°35.3'	57°38.1'	97	Tropics
C189-062a-CTD	2-Nov-03	0900	1645.0	20°1.9'	57°32.3'	1003	Tropics
C189-062b-CTD	2-Nov-03	0900	1645.0	20°1.9'	57°32.3'	1008	Tropics
C189-062c-RCTD	2-Nov-03	0900	1645.0	20°1.9'	57°32.3'	495	Tropics
C189-065-CTD	3-Nov-03	2233	1790.6	17°24.7'	57°41.2'	942	Tropics
C189-066-CTD	3-Nov-03	2359	1790.6	17°23.5'	57°42.1'	93	Tropics
C189-069-CTD	5-Nov-03	0900	1977.8	14°21.3'	58°33.3'	903	Tropics
C189-070-CTD	6-Nov-03	0900	2111.5	12°6.9'	59°24.0'	876	Tropics
C189-072-RCTD	6-Nov-03	1729	2145.6	11°29.3'	59°37.8'	27	Tropics
C189-081-RCTD	7-Nov-03	1730	2242.8	10°35.5'	60°33.1'	23	Orinoco Plume
C189-093-CTD	12-Nov-03	2224	2450.6	13°16.9'	61°31.6'	1814	E. Caribbean
C189-102-CTD	20-Nov-03	2147	2819.0	18°17.6'	64°4.6'	1196	Anegada Passage
Hydrocast							
C189-014a-HC	18-Oct-03	2155	180.5	38°50.7'	69°5.2'	58	Continental Slope
C189-014b-HC	18-Oct-03	2155	180.5	38°50.7'	69°5.2'	60	Continental Slope
C189-021-HC	20-Oct-03	0954	333.1	37°17.6'	65°34.9'	476	Gulf Stream
C189-027-HC	21-Oct-03	2131	430.9	36°43.7'	62°52.3'	41	N. Sargasso Sea
C189-037-HC	24-Oct-03	0900	643.1	35°56.6'	58°32.3'	761	N. Sargasso Sea
C189-040b-HC	25-Oct-03	1015	743.8	33°54.1'	57°23.3'	898	N. Sargasso Sea
C189-048-HC	28-Oct-03	1000	1131.5	27°26.7'	58°6.9'	997	S. Sargasso Sea
C189-050a-HC	28-Oct-03	2206	1178.3	26°54.9'	57°56.0'	52	S. Sargasso Sea
C189-050b-HC	28-Oct-03	2206	1178.3	26°54.9'	57°56.0'	81	S. Sargasso Sea
C189-054-HC	30-Oct-03	1030	1319.9	24°44.9'	58°12.2'	962	S. Sargasso Sea
C189-058-HC	31-Oct-03	2219	1467.5	22°34.3'	57°38.1'	996	Tropics
C189-059-HC	31-Oct-03	2340	1467.5	22°35.3'	57°38.1'	97	Tropics
C189-065-HC	3-Nov-03	2233	1790.6	17°24.7'	57°41.2'	942	Tropics
C189-066-HC	3-Nov-03	2359	1790.6	17°23.5'	57°42.1'	93	Tropics

Table 1 continued

Station #	Date	Local Time	Log* (nm)	Latitude (N)	Longitude (W)	Cast Depth (m)	General Locale
Hydrocast continued							
C189-069-HC	5-Nov-03	0900	1977.8	14°21.3'	58°33.3'	903	Tropics
C189-093-HC	12-Nov-03	2224	2450.6	13°16.9'	61°31.6'	1814	E. Caribbean
C189-102-HC	20-Nov-03	2147	2819.0	18°17.6'	64°4.6'	1196	Anegada Passage
Meter Net							
C189-003-MN	17-Oct-03	0017	10.5	41°8.1'	70°53.8'	80	S of Martha's Vineyard
C189-010-MN	18-Oct-03	0158	69.2	40°5.0'	70°43.5'	0	Continental Shelf
C189-014-MN	18-Oct-03	2155	180.5	38°50.7'	69°5.2'	80	Continental Slope
C189-020-MN	20-Oct-03	0040	269.0	37°46.7'	66°44.4'	0	Gulf Stream
C189-023-MN	21-Oct-03	0022	379.5	37°9.1'	64°4.3'	0	N. Sargasso Sea
C189-027-MN	21-Oct-03	2216	430.9	36°44.2'	62°53.4'	80	N. Sargasso Sea
C189-035-MN	23-Oct-03	2248	603.2	36°7.7'	59°8.6'	80	N. Sargasso Sea
C189-036-MN	24-Oct-03	0018	603.2	36°10.0'	59°10.5'	0	N. Sargasso Sea
C189-039-MN	25-Oct-03	0010	676.8	34°45.0'	58°17.8'	0	N. Sargasso Sea
C189-042-MN	26-Oct-03	0039	830.1	32°24.9'	57°3.2'	80	N. Sargasso Sea
C189-043-MN	26-Oct-03	0147	831.1	32°24.9'	57°3.2'	0	N. Sargasso Sea
C189-046-MN	27-Oct-03	0140	976.5	29°59.9'	57°21.0'	0	S. Sargasso Sea
C189-050-MN	28-Oct-03	2206	1178.3	26°54.9'	57°56.0'	80	S. Sargasso Sea
C189-051-MN	29-Oct-03	0006	1182.7	26°49.6'	57°58.9'	0	S. Sargasso Sea
C189-053-MN	30-Oct-03	0032	1273.3	25°24.0'	58°36.6'	0	S. Sargasso Sea
C189-059-MN	31-Oct-03	2345	1467.5	22°35.3'	57°38.1'	80	Tropics
C189-061-MN	1-Nov-03	2356	1594.0	21°50.9'	57°31.9'	0	Tropics
C189-063-MN	3-Nov-03	0024	1698.0	19°6.3'	56°36.5'	0	Tropics
C189-066-MN	4-Nov-03	0004	1790.6	17°23.5'	57°41.2'	80	Tropics
C189-068-MN	5-Nov-03	0041	1941.5	14°58.6'	58°17.2'	0	Tropics
C189-073-MN #1	6-Nov-03	2122	2169.1	11°6.9'	59°45.2'	400	E of Tobago
C189-073-MN #2	6-Nov-03	2122	2169.1	11°6.9'	59°45.2'	0	E of Tobago
C189-084-MN	7-Nov-03	1951	2250.0	10°36.8'	60°41.5'	0	E of Trinidad
Phytoplankton Net							
C189-001-PN	16-Oct-03	1631		41°27.1'	70°43.9'	0	Vineyard Sound
C189-004-PN	17-Oct-03	0422	19.0	40°59.6'	70°49.4'	0	S of Martha's Vineyard
C189-005-PN	17-Oct-03	0930	26.8	40°50.7'	70°43.0'	0	Continental Shelf
C189-006-PN	17-Oct-03	1800	35.5	40°38.1'	70°43.3'	0	Continental Shelf
C189-007-PN	17-Oct-03	2012	47.2	40°28.5'	70°39.4'	0	Continental Shelf
C189-008-PN	17-Oct-03	2215	57.8	40°18.4'	70°39.9'	0	Continental Shelf
C189-016-PN	19-Oct-03	0922	235.0	38°23.3'	60°1.7'	0	Continental Slope
C189-021-PN	20-Oct-03	0940	333.1	37°17.6'	65°34.9'	0	Gulf Stream
C189-037-PN	24-Oct-03	0900	643.1	35°56.6'	58°32.3'	0	N. Sargasso Sea
C189-044-PN	26-Oct-03	1051	891.3	31°23.9'	57°3.5'	0	N. Sargasso Sea
C189-048-PN	28-Oct-03	0951	1131.5	27°26.7'	58°6.9'	0	S. Sargasso Sea
C189-054-PN	30-Oct-03	1034	1319.9	24°44.9'	58°12.2'	0	S. Sargasso Sea
C189-069-PN	5-Nov-03	0914	1977.8	14°21.3'	58°33.3'	0	Tropics
C189-070-PN	6-Nov-03	0909	2111.0	12°6.9'	59°24.0'	0	Tropics
C189-085-PN	7-Nov-03	2333	2262.8	10°52.7'	60°45.4'	0	E of Trinidad

*Blank spaces mean no data collected

Table 1 continued

Station #	Date	Local Time	Log (nm)	Latitude (N)	Longitude (W)	Cast Depth (m)	General Locale
Neuston Net							
C189-010-NT	18-Oct-03	0158	69.2	40°5.0'	70°43.5'	0	Continental Shelf
C189-012-NT	18-Oct-03	1223	121.6	39°31.1'	69°58.4'	0	Continental Shelf
C189-015-NT	18-Oct-03	2358	180.9	38°50.6'	69°3.1'	0	Continental Slope
C189-017-NT	19-Oct-03	1151	235.9	38°20.9'	67°54.9'	0	N. wall of Gulf Stream
C189-020-NT	20-Oct-03	0040	268.0	37°46.7'	66°44.4'	0	Gulf Stream
C189-022-NT	20-Oct-03	1132	333.2	37°18.2'	65°23.2'	0	Gulf Stream
C189-023-NT	21-Oct-03	0019	379.5	37°9.1'	64°4.3'	0	N. Sargasso Sea
C189-025-NT	21-Oct-03	1141	386.3	37°2.7'	63°43.8'	0	N. Sargasso Sea
C189-036-NT	23-Oct-03	0011	603.2	36°10.0'	59°10.5'	0	N. Sargasso Sea
C189-038-NT	24-Oct-03	1200	646.4	35°53.0'	58°31.5'	0	N. Sargasso Sea
C189-039-NT	25-Oct-03	0010	676.8	34°45.0'	58°17.8'	0	N. Sargasso Sea
C189-041-NT	25-Oct-03	1130	744.1	33°52.8'	57°21.3'	0	N. Sargasso Sea
C189-043-NT	26-Oct-03	0140	831.0	32°24.9'	57°3.2'	0	N. Sargasso Sea
C189-045-NT	26-Oct-03	1143	891.5	31°22.5'	57°4.4'	0	N. Sargasso Sea
C189-046-NT	27-Oct-03	0134	976.8	29°59.9'	57°21.0'	0	S. Sargasso Sea
C189-049-NT	28-Oct-03	1127	1131.5	27°26.9'	58°7.9'	0	S. Sargasso Sea
C189-051-NT	29-Oct-03	0003	1182.6	26°49.6'	57°58.9'	0	S. Sargasso Sea
C189-052-NT	29-Oct-03	1051	1223.2	26°12.6'	58°24.1'	0	S. Sargasso Sea
C189-053-NT	30-Oct-03	0031	1273.3	25°24.0'	58°36.6'	0	S. Sargasso Sea
C189-055-NT	30-Oct-03	1154	1319.9	24°45.7'	58°11.3'	0	S. Sargasso Sea
C189-056-NT	31-Oct-03	0045	1370.1	24°2.0'	57°45.6'	0	S. Sargasso Sea
C189-057-NT	31-Oct-03	1015	1423.5	23°14.2'	57°40.2'	0	S. Sargasso Sea
C189-060-NT	1-Nov-03	1035	1531.3	21°36.8'	57°39.7'	0	Tropics
C189-061-NT	1-Nov-03	2356	1594.0	21°50.9'	57°31.9'	0	Tropics
C189-063-NT	3-Nov-03	0024	1698.0	19°6.3'	57°36.5'	0	Tropics
C189-064-NT	3-Nov-03	1148	1747.5	18°12.9'	57°38.0'	0	Tropics
C189-067-NT	4-Nov-03	1045	1867.5	16°9.5'	57°58.2'	0	Tropics
C189-068-NT	5-Nov-03	0041	1941.5	14°58.6'	58°17.2'	0	Tropics
C189-071-NT	6-Nov-03	1141	2116.0	12°1.4'	59°27.3'	0	Tropics
C189-073-NT	6-Nov-03	2122	2164.5	11°6.2'	59°45.7'	0	E of Tobago
C189-101-NT	20-Nov-03	2039	2819.5	18°17.6'	64°3.6'	0	Anegada Passage
Tucker Trawl							
C189-052-TT	29-Oct-03	1051	1223.2	26°12.6'	58°24.1'	0-200	S. Sargasso Sea
C189-052-TT	29-Oct-03	1051	1223.2	26°12.6'	58°24.1'	200	S. Sargasso Sea
C189-052-TT	29-Oct-03	1051	1223.2	26°12.6'	58°24.1'	Net ripped	S. Sargasso Sea
C189-056-TT	31-Oct-03	0024	1370.1	24°1.4'	57°45.7'	0-200	S. Sargasso Sea
C189-056-TT	31-Oct-03	0024	1370.1	24°1.4'	57°45.7'	200	S. Sargasso Sea
C189-056-TT	31-Oct-03	0024	1370.1	24°1.4'	57°45.7'	30	S. Sargasso Sea
C189-057-TT	31-Oct-03	1015	1423.5	23°14.2'	57°40.2'	0-200	S. Sargasso Sea
C189-057-TT	31-Oct-03	1015	1423.5	23°14.2'	57°40.2'	200	S. Sargasso Sea
C189-057-TT	31-Oct-03	1015	1423.5	23°14.2'	57°40.2'	30	S. Sargasso Sea
C189-060-TT	1-Nov-03	1035	1531.0	21°36.8'	57°39.7'	0-200	Tropics
C189-060-TT	1-Nov-03	1035	1531.0	21°36.8'	57°39.7'	200-0	Tropics
C189-060-TT	1-Nov-03	1035	1531.0	21°36.8'	57°39.7'	Did not fire	Tropics

Table 1 continued

Station #	Date	Local Time	Log* (nm)	Latitude (N)	Longitude (W)	Cast Depth (m)	General Locale
Tucker Trawl continued							
C189-061-TT	1-Nov-03	2356	1594.0	21°50.9'	57°31.9'	0-200	Tropics
C189-061-TT	1-Nov-03	2356	1594.0	21°50.9'	57°31.9'	200	Tropics
C189-061-TT	1-Nov-03	2356	1594.0	21°50.9'	57°31.9'	30	Tropics
C189-063-TT	3-Nov-03	0008	1697.5	19°6.3'	57°36.5'	0-200	Tropics
C189-063-TT	3-Nov-03	0008	1697.5	19°6.3'	57°36.5'	200	Tropics
C189-063-TT	3-Nov-03	0008	1697.5	19°6.3'	57°36.5'	30	Tropics
Secchi Disk							
C189-094-SD	13-Nov-03	1530	2458	13°40.1'	61°31.1'	20	E. Caribbean
Shipek Grab							
C189-001-SG	16-Oct-03	1635		41°27.1'	70°43.9'	13	Vineyard Sound
C189-002-SG	16-Oct-03	1855		41°22.7'	70°51.8'	24	Vineyard Sound
C189-003-SG	17-Oct-03	0019	10.5	41°8.1'	70°53.8'	32	S of Martha's Vineyard
C189-004-SG	17-Oct-03	0422	19.0	40°59.6'	70°49.4'	48	S of Martha's Vineyard
C189-005-SG	17-Oct-03	0956	27.8	40°50.7'	70°43.0'	50	S of Martha's Vineyard
C189-006-SG	17-Oct-03	1805	35.5	40°38.14'	70°43.3'	61	S of Martha's Vineyard
C189-007-SG	17-Oct-03	2012	47.2	40°28.5'	70°39.4'	73	Continental shelf
C189-008-SG	17-Oct-03	2215	57.8	40°18.4'	70°39.9'	104	Continental shelf
C189-009-SG	18-Oct-03	0047	69.0	40°7.5'	70°42.7'	128	Continental shelf
C189-011-SG	18-Oct-03	0440	75.0	39°59.8'	70°41.1'	265	Continental slope
C189-074-SG	7-Nov-03	0910	2221.9	10°34.1'	60°9.6'	655	E of Trinidad
C189-075-SG	7-Nov-03	1059	2225.0	10°33.6'	60°12.7'	410	E of Trinidad
C189-076-SG	7-Nov-03	1225	2229.0	10°33.9'	60°16.8'	201	E of Trinidad
C189-077-SG	7-Nov-03	1342	2232.5	10°34.3'	60°20.8'	123	E of Trinidad
C189-078-SG	7-Nov-03	1432	2234.2	10°34.6'	60°23.6'	104	E of Trinidad
C189-079-SG	7-Nov-03	1540	2238.0	10°35.0'	60°27.3'	80	E of Trinidad
C189-080-SG	7-Nov-03	1653	2241.0	10°35.5'	60°31.0'	64	E of Trinidad
C189-082-SG	7-Nov-03	1810	2245.0	10°35.7'	60°35.2'	54	E of Trinidad
C189-083-SG	7-Nov-03	1943	2250.0	10°36.5'	60°41.5'	48	E of Trinidad
C189-085-SG	7-Nov-03	2333	2262.8	10°52.7'	60°45.4'	45	E of Trinidad
C189-086-SG	8-Nov-03	0725	2290.0	11°8.6'	60°41.9'	65	S of Tobago
C189-087-SG	11-Nov-03	1210	2310.2	10°58.3'	60°60.0'	78	W of Tobago
C189-088-SG	11-Nov-03	1350	2319.0	11°5.7'	61°1.6'	79	W of Tobago
C189-089-SG	11-Nov-03	1649	2327.8	11°18.2'	61°1.4'	127	W of Tobago
C189-090-SG	11-Nov-03	1855	2331.1	11°25.0'	61°1.4'	222	W of Tobago
C189-091-SG	11-Nov-03	2054	2333.5	11°30.7'	61°0.7'	470	W of Tobago
C189-092-SG	11-Nov-03	2224	2334.5	11°32.9'	61°0.9'	617	W of Tobago
C189-095-SG	14-Nov-03	0937	2536.5	14°53.5'	61°8.3'	32	Dominica Channel
C189-096-SG	14-Nov-03	1023	2537.8	14°55.7'	61°8.6'	120	Dominica Channel
C189-097-SG	14-Nov-03	1043	2538.1	14°55.7'	61°9.0'	240	Dominica Channel
C189-098-SG	14-Nov-03	1129	2539.4	14°57.0'	61°9.3'	437	Dominica Channel
C189-099-SG	14-Nov-03	1722	2555.5	15°12.6'	61°18.3'	413	Dominica Channel
C189-100-SG	14-Nov-03	1800	2555.5	15°12.3'	61°18.3'	205	Dominica Channel
C189-103-SG	21-Nov-03	0542	2822.7	18°20.9'	64°10.3'	48	Barraccuda Bank

*Blank spaces mean no data collected

Table 2: Surface station data.

Station #	Date	Local Time	Log* (nm)	Latitude (N)	Longitude (W)	PO_4* (mM)	NO_3* (mM)	SiO_2* (mM)	Chl *a** (mg/l)
SS-001	15-Oct-03	1548		41°31.4'	70°40.3'		13.825		
SS-002	15-Oct-03	1552		41°31.4'	70°40.3'	1.412	7.73		
SS-003	16-Oct-03	1417		41°31.2'	70°40.3'	1.196	0.089		
SS-004	16-Oct-03	1422		41°30.5'	70°40.1'	0.907	1.059		
SS-005	16-Oct-03	1500		41°29.0'	70°41.3'	0.801	10.459		
SS-006	16-Oct-03	1645		41°27.2'	70°43.9'	8.007	3.849	6.655	3.828
SS-007	16-Oct-03	1735		41°25.0'	70°47.4'	1.001	5.729		
SS-008	17-Oct-03	0105	11.2	41°8.7'	70°56.2'	0.724	10.216	12.751	
SS-009	17-Oct-03	0453	19.0	40°59.5'	70°48.9'	0.618	11.732	19.420	2.412
SS-010	17-Oct-03	0820	25.7	40°51.8'	70°43.3'				
SS-011	17-Oct-03	0946	26.8	40°50.6'	70°43.1'	0.584	11.581	9.969	
SS-012	17-Oct-03	1344	29.8	40°46.5'	70°43.7'				
SS-013	17-Oct-03	1800	35.5	40°38.1'	70°43.3'	0.445	7.518	7.795	
SS-014	17-Oct-03	1908	42.2	40°32.6'	70°40.8'	0.629	11.581		
SS-015	17-Oct-03	2012	47.2	40°28.5'	70°39.4'	0.584	8.215	11.442	
SS-016	17-Oct-03	2215	57.8	40°18.4'	70°39.9'	0.573	16.584	10.642	
SS-017	17-Oct-03	2348	64.9	40°11.0'	70°40.8'	0.077	14.613		
SS-018	18-Oct-03	0210	64.9	40°5.0'	70°43.5'	0.074	7.427	7.924	
SS-019	18-Oct-03	0330	75.0	40°2.7'	70°42.8'				0.403
SS-020	18-Oct-03	0515	75.5	39°59.3'	70°40.8'	0.134	1.362	10.869	
SS-021	18-Oct-03	0900	102.3	39°42.3'	70°14.2'	0.307	6.790		
SS-022	18-Oct-03	1115	116.2	39°33.4'	70°2.1'				
SS-023	18-Oct-03	1238	122.1	39°31.0'	69°57.5'	0.495	5.243		
SS-024	19-Oct-03	0152	191.2	38°46.5'	68°55.6'	0.384	1.938		
SS-025	19-Oct-03	0930	235.0	38°23.3'	68°1.7'	0.173	5.668	8.292	
SS-026	20-Oct-03	0030	268.0	37°46.8'	66°45.5'	0.190	0.301		0.425
SS-027	20-Oct-03	1140	333.1	37°17.6'	65°34.9'	0.084	2.939	9.478	0.348
SS-028	21-Oct-03	0031	379.6	37°8.9'	64°4.1'	0.095	0.301		0.237
SS-029	23-Oct-03	1140	575.0	36°28.2'	59°41.0'		1.817		
SS-030	24-Oct-03	0035	603.1	36°10.2'	59°10.8'	0.034	1.817		0.072
SS-031	24-Oct-03	1200	646.4	35°53.3'	58°31.6'				0.072
SS-032	25-Oct-03	0010	676.8	34°45.0'	58°17.8'	0.073	1.271		0.054
SS-033	26-Oct-03	1100	743.8	33°53.3'	57°22.3'				0.038
SS-034	26-Oct-03	0200	831.3	32°24.6'	57°3.4'	0.429	1.908		0.049
SS-035	26-Oct-03	1156	891.5	31°21.7'	57°4.4'	0.051	4.789	4.200	0.160
SS-036	27-Oct-03	0145	976.5	29°59.6'	57°21.0'	0.029	1.029		0.045
SS-037	27-Oct-03	1135	1029.8	29°1.4'	57°28.7'	0.145	1.544		0.037
SS-038	28-Oct-03	1020	1131.5	27°26.7'	58°7.1'	0.073	1.635	10.256	
SS-039	29-Oct-03	0008	1182.6	26°49.7'	57°58.8'	0.129	1.18		0.031
SS-040	29-Oct-03	1051	1223.2	26°12.6'	58°24.1'	0.057	0.816		0.045
SS-041	30-Oct-03	0205	1277.3	25°18.4'	58°37.3'	0.079	1.484		0.022
SS-042	30-Oct-03	1045	1319.9	24°45.2'	58°11.8'				0.024
SS-043	31-Oct-03	0045	1370.1	24°2.0'	57°45.6'	0.040	1.756		0.026
SS-044	31-Oct-03	1055	1425.5	23°15.1'	57°41.3'	0.062	4.485		0.023

*Blank spaces mean no data collected

Table 2 continued

Station #	Date	Local Time	Log* (nm)	Latitude (N)	Longitude (W)	PO_4* (mM)	NO_3* (mM)	SiO_2* (mM)	Chl *a** (mg/l)
SS-045	1-Nov-03	1103	1531.5	21°37.1'	57°40.4'	0.045	10.125		0.012
SS-046	2-Nov-03	0018	1594.0	20°51.1'	57°31.9'	0.045	1.393		0.021
SS-047	3-Nov-03	0016	1697.5	19°6.3'	57°36.5'	0.095	-0.396		
SS-048	3-Nov-03	1200	1747.8	18°12.7'	57°38.0'	0.040	1.271		0.028
SS-049	4-Nov-03	1049	1867.5	16°9.3'	57°58.2'	-0.005	0.604		0.049
SS-050	5-Nov-03	0045	1941.5	14°58.6'	58°17.2'	0.007	-0.336		0.000
SS-051	5-Nov-03	0930	1977.8	14°21.3'	58°33.3'				
SS-052	6-Nov-03	0907	2111.0	12°6.9'	59°24.0'	0.018	1.696	10.460	
SS-053	6-Nov-03	2210	2169.6	11°5.9'	59°45.8'	0.063	1.029		0.159
SS-054	7-Nov-03	1945	2250.0	10°36.5'	60°41.4'	0.031	-0.487		0.141
SS-055	7-Nov-03	2348	2262.8	10°52.7'	60°45.4'	0.334	0.331	25.721	0.258
SS-056	8-Nov-03	0500	2282.0	11°1.8'	60°44.2'	0.223	16.038		
SS-057	8-Nov-03	0511	2283.0	11°2.8'	60°44.5'	0.184	0.21		0.258
SS-058	8-Nov-03	0522	2284.0	11°3.9'	60°44.8'	0.195	0.271		
SS-059	8-Nov-03	0534	2285.0	11°5.1'	60°45.2'	0.129	0.427		0.190
SS-060	8-Nov-03	0639	2288.0	11°7.1'	60°44.1'	0.129	0.725		
SS-061	8-Nov-03	0705	2290.0	11°8.5'	60°42.8'	0.157	1.211		0.206
SS-062	8-Nov-03	0751		11°8.9'	60°42.9'	0.245	-0.245		
SS-063	8-Nov-03	0821		11°10.2'	60°44.0'	0.162	1.665		0.370
SS-064	8-Nov-03	0910		11°10.9'	60°44.2'	0.223	3.242		
SS-065	8-Nov-03	1330		11°10.9'	60°44.2'	15.858	211.011		

*Blank spaces mean no data collected

Table 3: Neuston tow data. Locations are in Table 1.

Station #	Tow Length (m)	Temp (°C)	Salinity (PSU)	Zoop.* Biomass (ml)	Zoop.* Density (ml/m^2)	Plastic Pieces (#)	Plastic Pellets (#)	Tar (mg)
C189-010-NT	1852	19.6	35.1	31.0	0.01674	0	0	0
C189-012-NT	1852	21.2	35.2	12.0	0.00648	0	0	150
C189-015-NT	1852	21.4	35.1	6.2	0.00335	2	0	180
C189-017-NT	1111	21.3	35.0	11.0	0.00990	0	0	460
C189-020-NT	1852	21.7	35.1	14.0	0.00756	0	0	0
C189-022-NT	1482	25.4	36.0	6.0	0.00405	0	0	250
C189-023-NT	2091	25.9	36.2	15.0	0.00717	0	0	0
C189-025-NT	2037	25.6	36.4	4.0	0.00196	11	0	560
C189-036-NT	1852	25.4	36.3	3.0	0.00162	5	1	0
C189-038-NT	2222	24.7	36.2	2.0	0.00090	4	0	0
C189-039-NT	3368	24.7	36.5	7.0	0.00208	6	1	170
C189-041-NT	1852	24.9	36.6	5.0	0.00270	3	0	310
C189-043-NT	1667	24.9	36.5	6.0	0.00360	1	1	300
C189-045-NT	1852	25.6	36.6	2.0	0.00108	10	0	600
C189-046-NT	1019	26.4	36.6	8.0	0.00785	10	2	430
C189-049-NT	741	27.6	36.7	2.0	0.00270	38	0	320
C189-051-NT	1296	27.8	37.1	4.0	0.00309	33	0	0
C189-052-NT	1667	27.7	36.6	1.0	0.00060	3	0	0
C189-053-NT	1498	27.9	36.8	2.0	0.00134	16	0	280
C189-055-NT	1480	28.4	36.8	2.0	0.00135	6	0	250
C189-056-NT	1852	28.4	36.8	7.0	0.00378	6	0	0
C189-057-NT	1852	28.6	36.8	1.8	0.00094	12	0	330
C189-060-NT	1852	28.5	36.9	1.0	0.00054	5	0	290
C189-061-NT	1482	28.5	36.4	2.0	0.00135	13	0	160
C189-063-NT	1482	28.7	35.4	9.0	0.00610	7	0	180
C189-064-NT	1852	28.5	35.5	1.5	0.00081	1	0	0
C189-067-NT	2222	29.3	35.2	0.8	0.00034	0	0	0
C189-068-NT	2099	29.3	35.2	5.0	0.00240	0	0	0
C189-071-NT	1389	29.2	35.4	0.5	0.00036	4	1	310
C189-073-NT	1976	29.2	35.9	12.0	0.00061	0	0	0
C189-101-NT	1852	28.4	34.4			2	0	0

* Blank spaces mean no data collected

Table 4: Meter net data. Locations are in Table 1.

Station #	Tow Length* (m)	Net Diameter (m)	Cast Depth (m)	Zoop. Biomass* (ml)	Zoop. Density* (ml/m^3)	Comments
C189-003-MN		1	20			Trophic cascades study
C189-010-MN	1852	1	0	59.9	0.04120	
C189-014-MN		1	50			Trophic cascades study
C189-020-MN	1852	1	0	52	0.03577	
C189-023-MN	1852	1	0	39.5	0.02717	
C189-027-MN	259	1	80			Trophic cascades study
C189-035-MN		1	80			Trophic cascades study
C189-036-MN	556	1	0			
C189-039-MN	1852	1	0			
C189-042-MN		1	80			Trophic cascades study
C189-043-MN	1482	1	0			
C189-046-MN	1852	1	0	7	0.00481	
C189-050-MN	235	1	80			Trophic cascades study
C189-051-MN	1111	1	0	5	0.00573	
C189-053-MN	1498	1	0	4	0.00340	
C189-059-MN	134	1	80			Trophic cascades study
C189-061-MN	1914	1	0	7.75	0.00410	
C189-063-MN	2037	1	0	83	0.05190	
C189-066-MN	189	1	80			Trophic cascades study
C189-068-MN	1790	1	0	6	0.00427	
C189-073-MN #1	6976	1.78	400	10.5	0.00060	
C189-073-MN #2	1938	1	0			
C189-084-MN	478	1	0			Trophic cascades study

Table 5: Tucker Trawl data. Locations are in Table 1.

Station #	Tow Length* (m)	Net Area (m^2)	Cast Depth* (m)	Zoop. Biomass* (ml)	Zoop. Density* (ml/m^3)	Comments
C189-052-TT	1111	1	0-200			
C189-052-TT	1667	1	200	5.0	0.00300	
C189-052-TT		1				Net ripped
C189-056-TT	2037	1	0-200	1.0	0.00049	
C189-056-TT	1852	1	200	15.0	0.00810	
C189-056-TT	1667	1	30	10.0	0.00600	
C189-057-TT	988	1	0-200	2.6	0.00263	
C189-057-TT	3148	1	200	9.8	0.00311	
C189-057-TT	1235	1	30	9.0	0.00729	
C189-060-TT	1296	1	0-200	2.0	0.00154	
C189-060-TT	4260	1	200-0	3.0	0.00070	
C189-060-TT		1				Did not open
C189-061-TT	1111	1	0-200	5.5	0.00495	
C189-061-TT	3087	1	200	16.5	0.00530	
C189-061-TT	2655	1	30	7.5	0.00280	
C189-063-TT	988	1	0-200	8.0	0.00810	
C189-063-TT	926	1	200	21.0	0.02300	
C189-063-TT	2408	1	30	27.0	0.01100	

* Blank spaces mean no data collected

Table 6: Hydrocast station data. Locations are in Table 1.

Station #	Bottle #	Depth (m)	O_2* (ml/l)	PO_4* (mM)	SiO_2* (mM)	NO_3* (mM)
C189-014a-HC	1-12	3.6-9.7		Trophic cascades study		
C189-014b-HC	1-12	10.7-11.6		Trophic cascades study		
C189-021-HC	1	11.0	4.64			
	2	9.6	4.83			
	3	8.1	4.81			
	5	7.4	4.87			
	6	7.0	5.46			
	7	5.6	4.64			
	8	4.6	4.80			
	9	4.6	5.00			
	11	3.8	4.46	0.095		1.362
	12	2.5	4.93			
	13	1.6	4.87	0.073		9.064
C189-027-HC	1-12	4.8-10.3		Trophic cascades study		
C189-037-HC	1	450.0	4.48			
	2	399.0	4.53			
	3	350.0	4.77			
	5	300.0	4.93			
	6	275.0	4.93			
	7	250.0	5.22			
	8	226.0	5.18			
	9	200.0	4.83			
	10	151.0	5.00			
	11	99.0	5.41	0.157		1.302
	12	49.0	5.01			
	13	0.0		0.084	6.123	1.423
C189-040b-HC	1	446.0	5.00			
	2	398.0	5.26			
	3	372.0	4.94			
	4	347.0	4.96			
	5	323.0	4.99			
	6	297.0	5.37			
	7	273.0	4.80			
	8	247.0	4.85			
	9	199.0	5.29			
	11	99.0	4.91	0.084		0.180
	12	48.0	4.99			
	13	0.0	5.26	0.084	7.024	0.392
C189-048-HC	2	396.0	4.71			
	3	371.0	4.49			
	4	346.0	4.63			
	5	323.0	4.59			
	6	299.0	4.70			
	7	273.0	4.59			

* Blank spaces mean no data collected

Table 6 continued

Station #	Bottle #	Depth (m)	O_2* (ml/l)	PO_4* (mM)	SiO_2* (mM)	NO_3* (mM)
C189-048-HC	8	249.0	4.77			
	9	199.0				
	10	150.0	5.21			
	11	99.0	5.15	0.000		1.701
	12	49.0	4.88			
	13	0.0	4.43	0.073	10.256	1.635
C189-050a-HC	1-12	3.0-11.0		Trophic cascades study		
C189-050b-HC	1-12	8.4-11.0		Trophic cascades study		
C189-054-HC	1	446.8	4.24			
	3	347.6	4.66			
	4	322.8	4.67			
	5	298.0	4.56			
	6	273.6				
	7	248.5	4.73			
	8	224.2	4.56			
	9	199.3	4.35			
	11	99.4	5.14	0.012		1.307
	12	49.6	4.85			
	13	0.0	4.62	0.062	4.541	0.695
C189-058-HC	1-12	5.6-10.8		Trophic cascades study		
C189-059-HC	1-12	10.1-11.7		Trophic cascades study		
C189-065-HC	1-12	4.3-10.5		Trophic cascades study		
C189-066-HC	1-12	10.2-10.7		Trophic cascades study		
C189-069-HC	2	397.0	3.30			
	3	348.0	3.59			
	5	298.0	3.56			
	6	274.0	3.49			
	8	224.0	4.22			
	9	199.0	3.82			
	10	149.0	3.92	0.234		33.746
	12	49.0	5.12			
	13	0.0	4.81	0.000	6.301	14.249
C189-093-HC	2	447.5	3.09			
	3	397.2	3.33			
	4	348.2	3.27			
	5	322.8	2.81			
	7	273.7	3.52			
	8	248.1	3.04			
	9	224.0	3.79			
	10	199.0	3.86			
	11	148.7	4.00			
	12	99.8	4.58			
	13	0.0	4.77			
C189-102-HC	1	0-1184		Ship's Mission		

Table 7: Sediment grain size data*. Locations are in Table 1.

Station #	Depth (m)	2000-4000 mm (%)	1000-2000 mm (%)	500-1000 mm (%)	250-500 mm (%)	125-250 mm (%)	63-125 mm (%)	<63 mm (%)	2-63 mm (%)	<2 mm (%)	Qualitative description
C189-001-SG	13	9	51	35	1.5	0.5	1	2			Dark yellowish brown (10 YR 4/2), pebbly, angular
C189-002-SG	24	11	7	57	14	5	1	5			Moderate yellowish brown (10YR 5/4), light olive gray (5Y 5/2), granular verging on pebbly, rounded with some larger fragments, organics
C189-003-SG	32	48	21	20	6	1	2	2			Dark yellowish brown (10YR 4/2), pebbly at top, granular at bottom, rounded/angular
C189-004-SG	48	1	17	71	7	3	0.3	0.7	0.7	0	Gray olive (5Y 3/2), mostly sandy, bordering on silty, well rounded, presence of organics
C189-005-SG	50	1	4	67	3	6	2	0.7	0.7	0	Dark olive green, medium sandy to coarse, slightly angular, organics
C189-006-SG	61	0	1	19	10	24	3	42.9	38.6	4.3	Grayish olive (10Y 4/2), silty/sandy, well rounded, slightly organic
C189-007-SG	73	0.2	0.5	1	0.2	7	7	84	42	42	Grayish olive (10Y 4/2), silty/sandy, well rounded, slightly organic
C189-008-SG	104	1	1	1	2	16	20	59.2	41.4	17.8	Grayish olive (10Y 4/2), olive gray (5Y 3/2), silty/sandy, well rounded
C189-009-SG	128	6	4	13	5	7	2	62.8	31.4	31.4	Grayish olive green (%GY 3/2), grayish olive (10Y 4/2), silty/sandy, well rounded, slightly organic
C189-011-SG	265										Grayish olive (10Y 4/2), grayish olive green (5GY 3/2), silty, well rounded, slightly organic
C189-074-SG	655										Reflectance spectrum measured
C189-075-SG	410										Reflectance spectrum measured
C189-076-SG	201										Sandy, silty, granular, not well-sorted, shells, worm casings, pteropods, forams. Reflectance spectrum measured

*Blank spaces mean no data collected

Table 7 continued*

Station #	Depth (m)	2000-4000 mm (%)	1000-2000 mm (%)	500-1000 mm (%)	250-500 mm (%)	125-250 mm (%)	63-125 mm (%)	<63 mm (%)	2-63 mm (%)	<2 mm (%)	Qualitative description
C189-077-SG	123										Silty, clayey, fine-grained with large shells. Reflectance spectrum measured
C189-078-SG	104										Reflectance spectrum measured
C189-079-SG	80										Reflectance spectrum measured
C189-080-SG	64	8	12	23	12	11	13	21			Sandy with little clay, carbonate shells, reddish material on surface, greenish-gray subsurface. Reflectance spectrum measured
C189-082-SG	54										Sandy with shells, greenish-gray. Reflectance spectrum measured
C189-083-SG	48	1	3	11	11	9	3	12			Carbonate present. Reflectance spectrum measured
C189-085-SG	45	14	9	21	16	12	8	20			Carbonate present. Reflectance spectrum measured
C189-086-SG	65	0.5	2	5	3	4.5	9	26			Carbonate present. Reflectance spectrum measured
C189-087-SG	78										Reflectance spectrum measured
C189-088-SG	79										Reflectance spectrum measured
C189-089-SG	127										Reflectance spectrum measured
C189-090-SG	222										Reflectance spectrum measured
C189-091-SG	470										Reflectance spectrum measured
C189-092-SG	617										Reflectance spectrum measured
C189-095-SG	32										Foram project, Dave Lund, WHOI
C189-096-SG	120										Foram project, Dave Lund, WHOI
C189-097-SG	240										Foram project, Dave Lund, WHOI
C189-098-SG	437										Foram project, Dave Lund, WHOI
C189-099-SG	413										Foram project, Dave Lund, WHOI
C189-100-SG	205										Foram project, Dave Lund, WHOI
C189-103-SG	48										Carbonate sand and pebbles, coral fragments, Halimeda.

*Blank spaces mean no data collected

Table 8: Student research projects, C-189

Title	Student Researchers
The effects of sea surface temperature and latitude on the diversity and distribution of surface zooplankton in the Sargasso Sea	Hande Barutçuoglu
Effect of body coloration on the surface expression of diel vertical migration in marine copepods of the Atlantic Ocean: A comparison of the predator avoidance and UV protection hypotheses	Derek Burkholder
Horizontal distribution of myctophid species *Gonichthys cocco* and *Centrobranchus nigroocellatus* in the Northern and Southern Sargasso Sea in the fall of 2003	Lila Carey
Diatom percentages and dissolved silicate concentrations in the Atlantic	Stephanie Conrad
Freakin' flotsam: the effects of wind and current on Langmuir cells and the subsequent formation and dispersion of windrows	Flynn Corson
Species distribution and diversity of pteropods in the Northern Atlantic	Claire Dawson
Nitrogen and phosphorus concentrations in the Sargasso Sea and coastal areas of Woods Hole and Tobago	McKenzie Egender Amanda Hill
Present distribution of pelagic micro and macro plastic pollution in the North Atlantic	Susan Forsythe
Mapping Salinity Maximum Water in the Gulf Stream, South Sargasso Sea and Caribbean Sea	Darcy Fox
Sedimentation of the North and South American continental shelves- One of these things is not like the other	Anna Henry Meredith Helfrich
A study of copepod diel vertical migration in the South Sargasso Sea and tropical North Atlantic Ocean in relationship to pigmentation	Scott Hiller
Pelagic tar in the west Atlantic: concentrations, trends and distribution	Parker Kraus
Identifying and mapping sediments in the Orinoco plume	James Maritz Britten Chase
Variations in phytoplankton size from Woods Hole, MA to the Sargasso Sea	Amber Martin

Table 8 continued

Title	Student Researchers
Halobates micans in the Atlantic Ocean: distributions in accordance with sea surface temperatures, natural light levels, and sea state	Avery Miller
The sedimentation of the Mud Patch: grain size and depth of the mud lens	Caitlin Miller
Formation, aging, and circulation of 18°C water in the western Sargasso Sea	David Mortimer
Sea state and underwater ambient noise	Eli Moyer
Measuring the surface and subsurface current velocity (0 and 20 m) to determine if the real time subsurface data can be used for navigational purposes	Julie Rice Kate Holland