CRUISE REPORT
C240

Scientific data collected aboard
SSV Corwith Cramer

Key West, Florida, USA – St Georges, Bermuda – Portsmouth, Dominica – Christiansted, St. Croix, USVI

31 March 2012 – 08 May, 2012

Extensive windrows of Sargassum greeted us on Earth Day. Photo by Jeff Schell

Sea Education Association
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Table of Contents C240

Table 1. C240 Ship's crew and student participants

Nautical Staff		
	Tom Sullivan	Captain
	Caroline Smith	Chief Mate
	Ryan Shamburger	2nd Mate
	Mackenzie Haberman	3rd Mate
	Pete West	Engineer
	Charlie Seibel	Steward
	Nate DeBrule	Asst Steward
	Laura Hansen	Sailing Intern
	Patsy Detweiler	Sailing Intern
	Jonathan Bickford	Sailing Intern
Scientific Staff		
	Jeff Schell	Chief Scientist
	Mitch Schrimpf	1st Scientist
	Chrissy Dykeman	2nd Scientist
	Carla Scocchi	3rd Scientist
Students		
	Max Abrahamson	College of St. Scholastica
	Kathryn Carria	University Of Rhode Island
	Brian Crowley	St. Michael's College
	Crystal Hartley	Gonzaga University
	Kayla Lubold	Eckerd College
	Terese Mayerle	College of St. Scholastica
	Norris Mears	University of Texas at Austin
	Donald Melvin	Cornell University
	Kimberley Noonan	University of South Carolina, Columbia
	Victoria Pinheiro	Boston University
	Dawn Rivera	Cornell University
	James Rohman	Bowdoin College
	Matthew Scheuer	Mamaroneck Hig School
	Peter Wu	Harvard University
	Anna Yoors	Hampshire College

Cruise Data Description C240

The cruise track for C-240 (Figure 1) departed from Key West, FL, USA and finished in Christiansted, St. Croix, USVI. During the nearly six-week voyage we had two port stops; the first in St. Georges, Bermuda and the second in Portsmouth, Dominica.

Our cruise track traversed several major oceanographic provinces (Figure 1): a) Florida shelf and Gulf Stream waters, b) the Blake Plateau, c) the western North Atlantic Ocean or Sargasso Sea, d) and the territorial waters of the northern Lesser Antilles (Antigua, Guadeloupe, Dominica, Montserrat, Saba, and the British Virgin Islands) including more 'tropical' waters to the east and the Caribbean Sea to the west. Comparison of the physical, chemical, biologic and geologic features of these regions represented the major oceanographic themes of this Sea Semester. A total of 79 scientific stations and 109 individual deployments (Table 2) were completed in pursuit of the following investigations:

1. Physical oceanographic studies focused on identification of surface fronts and associated mesoscale eddy features along the Gulf Stream eastern edge and the sub-tropical convergence zone. Sub-surface features examined were the depth of the surface, mixed layer and geographic extent of North Atlantic sub-tropical mode water (18° mode water).

2. Chemical oceanographic studies focused on surface patterns in nutrient (PO4, SiO2), pH, and chlorophyll-a concentration. Patterns in physio-chemical properties were then correlated with numerous biological components.

3. Biological studies focused on the geographic distribution of zooplankton, *Sargassum* weed and associated fauna, several meroplanktonic larvae including lobster (phyllosoma), eel larvae (leptocephali) and scombrid fish larvae, as well as the lantern fish (Myctophidae), the marine insect *Halobates*, and finally the abundance and taxonomic composition of gelatinous (cnidarian, ctenophore, salp) micronekton (>2cm length).

4. Pollution studies examined the geographic distribution of floating plastics (pellets and pieces) and tar balls. In addition, select pieces of plastic (> 2cm in length) were processed using the EPA Coliquant bacteria culture kit to test for the presence/absence of various coliform bacteria colonies including *Escherichia coli*.

5. Geological samples were collected along the Florida Shelf and Blake Plateau and sieved to isolate pteropod shells from the sediment. Collected pteropod shells were used in an ocean acidification experiment. No further quantitative analysis of sediments was conducted.

Sea surface temperature, salinity, fluorescence (chlorophyll-*a* and CDOM) and tranmissivity levels; along with barometric pressure, winds, bathymetry, currents (to 600m), and geographic position were recorded continuously along the cruise track. Large scale surface hydrography is summarized with surface plots for some parameters (Figure 2 a-c) while other data is available upon request. Surface samples (49) of nutrients (phosphate and silicate), pH, and chlorophyll-*a* were collected routinely along the cruise track (Table 3).

But for the occasional eddy and our crossing of the Gulf Stream, ocean currents throughout the C240 cruise track were weak (< 500mm/s, or 1.0 knot) and variable in direction. Regional views of sub-surface currents highlight the presence of eddies and meanders associated with the Gulf Stream, the sub-tropical convergence zone, the Antilles Current, and near constricted island passages (Figures 4a-d).

The density structure and dissolved oxygen, nutrient (phosphate), chlorophyll-*a* and pH profiles of the water column (maximum depth 600m) were determined using a 12 bottle carousel package with attached CTD sensor (6 stations, Table 4). Additional *in situ* sensors included dissolved oxygen, CDOM, transmissivity and PAR. A single deep CTD cast (1125m) was conducted as part of routine equipment maintenance, no additional sensors participated (Table 5). Sub-surface water masses are revealed with a cross-section plot along the cruise track (Figure 6a-b).

Surface plankton assemblages along with the floating macrophyte *Sargassum* spp., marine debris and tar balls were sampled regularly with a neuston net (32 stations, 335 μm mesh, Table 6). Plankton assemblages at discrete depths were collected using a Tucker Trawl net (8 stations, $1m^2$ frame, 3 nets, 335 μm mesh, Table 7). Tow depths were as follows: Net 1 – 0-300m, Net 2 – 300-100m, and Net 3 – 100-0m. Identification and counts of numerous zooplankton taxa were conducted for all net tows (Table 8).

Discrete samples of *Sargassum* clumps were collected with a dip net (11 stations, 335 μm mesh) and assessed for color, epibiont community structure and abundance and diversity of mobile, macrofauna (Table 9).

Phytoplankton assemblages were collected from the sub-surface using drift nets (30cm diameter frame, 63 um) at three depths (25m, 50m, 1% light level) from six stations; while surface phytoplankton assemblages were collected using a seawater flow thru system and a 63 μm sieve from 19 stations (Table 10).

Six sediment samples (Florida shelf n=2, Blake Plateau n=2, Saba Bank n=2) were collected using a shipek grab. Minimal qualitative descriptions were performed (Table 11). Collected samples were sieved through 1000um mesh to separate larger pteropod shells from the sediment. These shells were used in an ocean acidification experiment conducted in the onboard laboratory. Data available upon request.

Periodically during the cruise, in conjunction with sub-surface phytoplankton collections, 6 secchi disc deployments were conducted to assess water transparency (Table 12).

Additional CTD, CHIRP, ADCP and biological data not reported here are available on request through Sea Education Association (SEA) and the Chief Scientist. 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 conducted independent oceanographic research during the cruise. Projects explored regionally, relevant topics in the disciplines of physical, chemical, and biological oceanography (Table 13). Student research efforts culminated in a written report and public presentation to the ship's company. These papers are available on request from SEA.

Jeff Schell, Chief Scientist, C240

Figure 1. Final cruise track for C240 based on hourly (local time) positions. Regional oceanographic biomes (Gulf Stream, Sargasso Sea, Tropical Waters, and Eastern Caribbean,), interesting bathymetric features (Florida Shelf, Blake Plateau, and Puerto Rico Trench),.

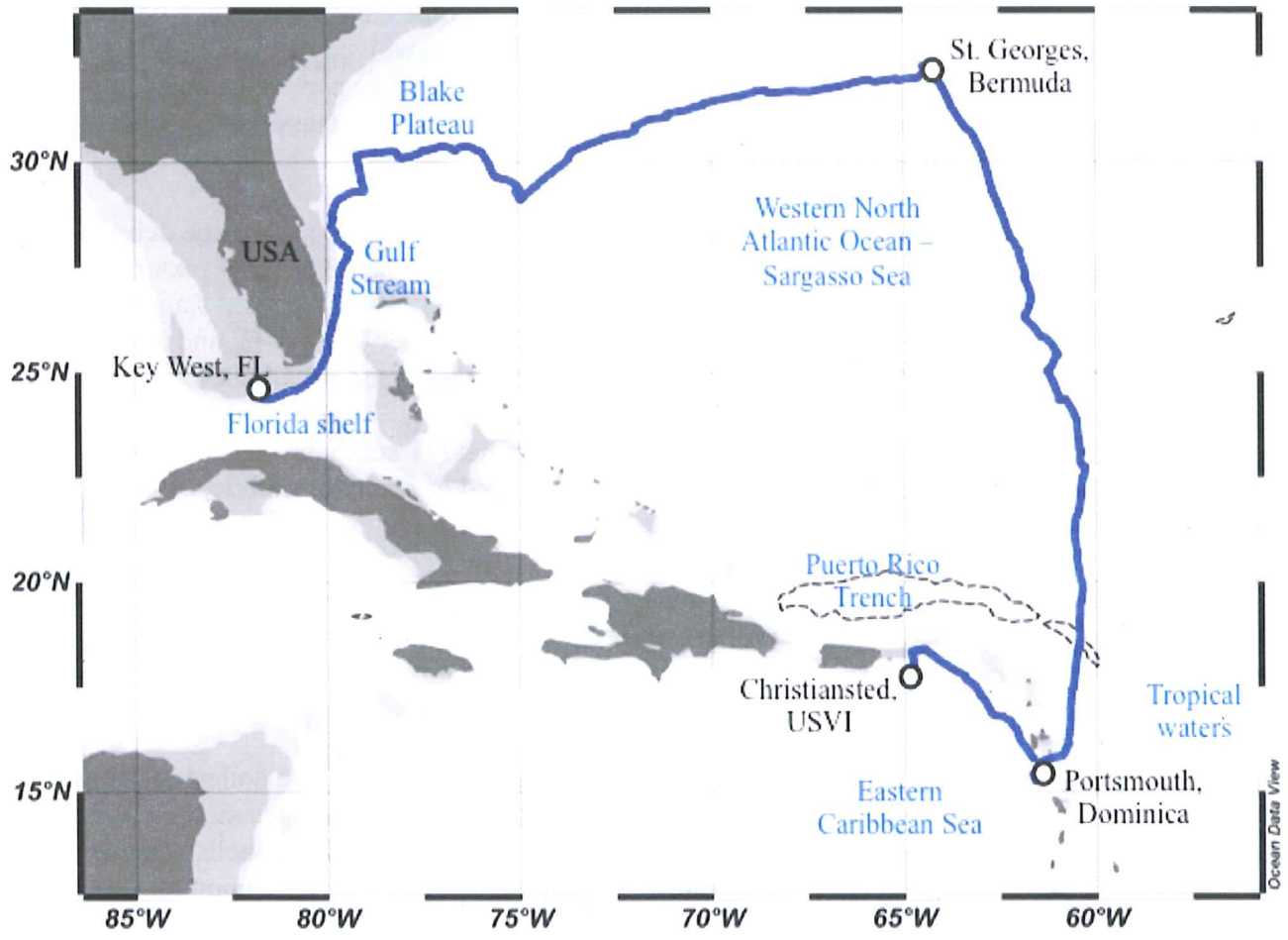


Table 2. Summary of oceanographic sampling stations for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
001	01-Apr	1101	0.0	24.53	-81.81	Florida Shelf	SG
002	01-Apr	1419	0.0	24.53	-81.83	Florida Shelf	NT
003	02-Apr	0347	61.1	24.64	-80.70	Florida Shelf	PN
004	02-Apr	0936	101.3	25.20	-80.12	Florida Shelf	SG
004	02-Apr	1018	101.3	25.22	-80.11	Florida Shelf	NT
004	02-Apr	1020	101.4	25.22	-80.11	Florida Shelf	DN
005	02-Apr	2203	140.0	26.46	-79.74	Florida Shelf	NT
006	03-Apr	0321	169.2	27.19	-79.67	Gulf Stream	PN
007	03-Apr	0922	186.5	27.72	-79.47	Gulf Stream	SD
007	03-Apr	0941	186.5	27.72	-79.46	Gulf Stream	PN
007	03-Apr	0943	186.5	27.72	-79.46	Gulf Stream	PN
007	03-Apr	0945	186.5	27.72	-79.46	Gulf Stream	PN
007	03-Apr	1054	186.5	27.76	-79.46	Gulf Stream	HC
008	03-Apr	1816	220.5	28.36	-79.78	Gulf Stream	DN
009	03-Apr	2159	232.2	28.69	-79.82	Gulf Stream	NT
010	04-Apr	0430	258.3	29.23	-79.46	Gulf Stream	PN
011	04-Apr	0956	280.8	29.33	-79.01	Blake Plateau	SG a-b
011	04-Apr	1051	280.8	29.34	-79.00	Blake Plateau	SG
011	04-Apr	1139	280.8	29.36	-79.00	Blake Plateau	NT
012	04-Apr	2151	323.5	30.10	-79.20	Blake Plateau	NT
013	05-Apr	0426	362.0	30.24	-78.50	Blake Plateau	PN
014	05-Apr	0937	388.0	30.12	-78.07	Blake Plateau	SD
014	05-Apr	0948	388.0	30.13	-78.08	Blake Plateau	PN
014	05-Apr	0951	388.0	30.13	-78.08	Blake Plateau	PN
014	05-Apr	0954	388.0	30.13	-78.08	Blake Plateau	PN
014	05-Apr	1123	388.0	30.12	-78.08	Blake Plateau	HC
016	05-Apr	1842	408.5	30.15	-77.77	Blake Plateau	DN
017	05-Apr	2200	417.0	30.24	-77.53	Blake Plateau	NT
018	06-Apr	0436	431.5	30.37	-77.02	Sargasso Sea	PN
019	06-Apr	0856	447.3	30.28	-76.62	Sargasso Sea	TT
020	07-Apr	0318	498.0	29.72	-75.66	Sargasso Sea	PN
021	07-Apr	2215	508.4	29.41	-75.01	Sargasso Sea	NT
022	08-Apr	0450	514.9	29.25	-75.04	Sargasso Sea	PN
023	08-Apr	0717	516.5	29.17	-75.00	Sargasso Sea	DN
024	08-Apr	1006	523.5	29.13	-74.93	Sargasso Sea	NT
025	08-Apr	2111	563.5	29.59	-74.38	Sargasso Sea	TT
026	09-Apr	0517	593.8	29.99	-73.81	Sargasso Sea	PN
027	09-Apr	1000	610.5	30.24	-73.62	Sargasso Sea	SD
027	09-Apr	1021	610.5	30.25	-73.62	Sargasso Sea	PN
027	09-Apr	1026	610.5	30.25	-73.61	Sargasso Sea	PN
027	09-Apr	1030	610.5	30.25	-73.61	Sargasso Sea	PN
027	09-Apr	1138	610.5	30.27	-73.59	Sargasso Sea	HC
028	09-Apr	1642	622.0	30.41	-73.24	Sargasso Sea	DN
029	09-Apr	2159	636.0	30.56	-72.83	Sargasso Sea	NT
030	10-Apr	0333	656.5	30.64	-72.44	Sargasso Sea	PN
031	10-Apr	1005	681.5	30.79	-71.95	Sargasso Sea	TT
032	10-Apr	1734	713.2	31.04	-71.38	Sargasso Sea	DN
033	10-Apr	2037	720.8	31.09	-71.14	Sargasso Sea	TT
034	11-Apr	0600	763.5	31.28	-70.52	Sargasso Sea	PN

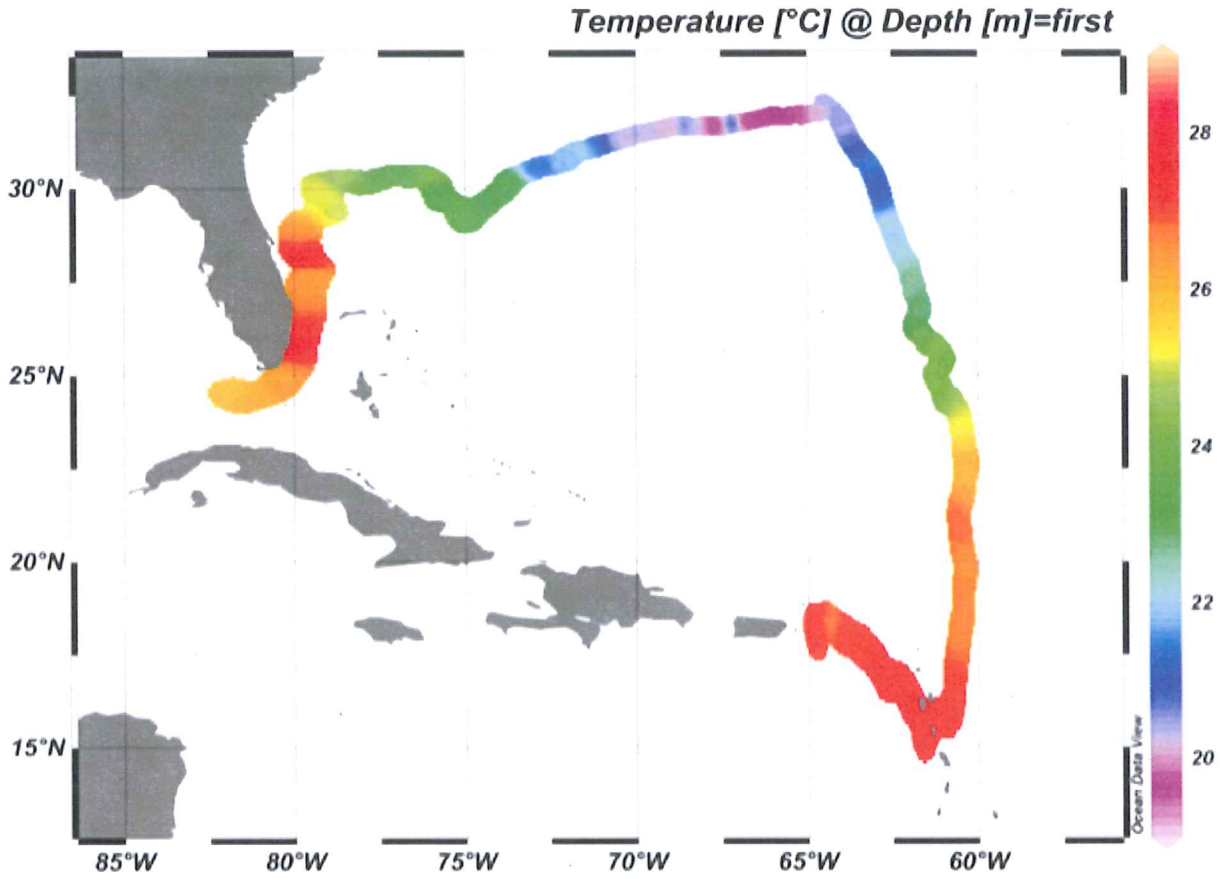
Station # (C240-)	Date (2012)	Time (local +4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
035	11-Apr	0930	783.6	31.36	-70.19	Sargasso Sea	NT
036	11-Apr	2155	843.0	31.58	-69.17	Sargasso Sea	NT
037	12-Apr	0450	863.4	31.68	-68.84	Sargasso Sea	PN
038	12-Apr	0947	878.3	31.67	-68.54	Sargasso Sea	PN
038	12-Apr	0951	878.3	31.67	-68.54	Sargasso Sea	PN
038	12-Apr	0957	878.3	31.67	-68.53	Sargasso Sea	PN
038	12-Apr	1029	878.3	31.68	-68.54	Sargasso Sea	SD
038	12-Apr	1110	878.3	31.65	-68.52	Sargasso Sea	HC
039	12-Apr	2218	924.3	31.67	-67.69	Sargasso Sea	NT
040	13-Apr	0411	945.5	31.69	-67.29	Sargasso Sea	PN
041	13-Apr	0930	964.6	31.75	-66.90	Sargasso Sea	NT
042	14-Apr	0420	1042.6	31.94	-65.39	Sargasso Sea	PN
043	14-Apr	0939	1058.8	31.88	-65.19	Plantagenet Bank	SG a-c
043	14-Apr	1120	1058.8	31.94	-65.15	Plantagenet Bank	NT
044	14-Apr	2158	1096.1	32.10	-64.47	Sargasso Sea (Offshore Bermuda)	NT
045	18-Apr	2149	1180.2	31.61	-63.90	Sargasso Sea	NT
046	19-Apr	0408	1212.0	31.13	-63.62	Sargasso Sea	PN
047	19-Apr	0932	1237.5	30.80	-63.37	Sargasso Sea	SD
047	19-Apr	0952	1237.5	30.80	-63.36	Sargasso Sea	PN
047	19-Apr	0955	1237.5	30.80	-63.36	Sargasso Sea	PN
047	19-Apr	0959	1237.5	30.80	-63.36	Sargasso Sea	PN
047	19-Apr	1105	1237.5	30.78	-63.34	Sargasso Sea	HC
048	19-Apr	2205	1285.1	30.01	-62.89	Sargasso Sea	NT
049	20-Apr	0307	1305.5	29.68	-62.79	Sargasso Sea	PN
050	20-Apr	0750	1324.3	29.40	-62.71	Sargasso Sea	DN
051	20-Apr	0939	1328.5	29.33	-62.70	Sargasso Sea	TT
052	20-Apr	2100	1361.7	28.81	-62.46	Sargasso Sea	TT
053	21-Apr	0543	1389.9	28.30	-62.26	Sargasso Sea	DN
054	21-Apr	0932	1406.8	28.03	-62.07	Sargasso Sea	NT
055	21-Apr	1730	1437.6	27.57	-61.91	Sargasso Sea	DN
056	21-Apr	2225	1454.6	27.31	-61.84	Sargasso Sea	NT
057	22-Apr	0436	1472.3	27.00	-61.74	Sargasso Sea	PN
058	22-Apr	0621	1479.2	26.89	-61.71	Sargasso Sea	DN
059	22-Apr	0953	1490.5	26.69	-61.70	Sargasso Sea	NT
060	22-Apr	2201	1537.3	25.94	-61.51	Sargasso Sea	NT
061	23-Apr	0306	1558.2	25.73	-61.22	Sargasso Sea	PN
062	23-Apr	0942	1579.6	25.41	-60.99	Sargasso Sea	SD
062	23-Apr	1000	1579.6	25.42	-61.00	Sargasso Sea	PN
062	23-Apr	1004	1579.6	25.42	-61.00	Sargasso Sea	PN
062	23-Apr	1008	1579.6	25.42	-61.00	Sargasso Sea	PN
062	23-Apr	1111	1579.6	25.42	-61.02	Sargasso Sea	HC
063	23-Apr	2157	1604.2	25.06	-61.26	Sargasso Sea	NT
064	24-Apr	0316	1621.0	24.81	-61.14	Sargasso Sea	PN
065	24-Apr	0605	1630.5	24.62	-61.06	Sargasso Sea	DN
065	24-Apr	0930	1642.2	24.37	-60.96	Sargasso Sea	NT
066	24-Apr	2207	1681.8	23.91	-60.53	Sargasso Sea	NT
067	25-Apr	0450	1705.8	23.33	-60.46	Sargasso Sea	PN
068	25-Apr	0937	1725.0	23.05	-60.41	Tropical Waters	TT
069	25-Apr	2100	1766.7	22.48	-60.36	Sargasso Sea	TT
070	26-Apr	0950	1831.5	21.57	-60.52	Tropical Waters	NT
071	26-Apr	2155	1896.9	20.62	-60.52	Tropical Waters	NT

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
072	27-Apr	0931	1967.8	19.52	-60.43	Tropical Waters	NT
073	27-Apr	2243	2047.5	18.35	-60.52	Tropical Waters	NT
074	28-Apr	0932	2100.0	17.47	-60.64	Tropical Waters	NT
075	29-Apr	0148	2190.2	16.01	-60.83	Tropical Waters	NT
076	29-Apr	1143	2229.0	15.73	-61.44	Tropical Waters	NT
077	05-May	0818	2367.7	16.69	-62.26	Eastern Caribbean Sea	SG
078	05-May	1444	2392.1	16.83	-62.69	Eastern Caribbean Sea	CTD
079	06-May	0756	2450.2	17.66	-63.36	Saba Bank	SD
079	06-May	0812	2450.2	17.66	-63.36	Saba Bank	SG

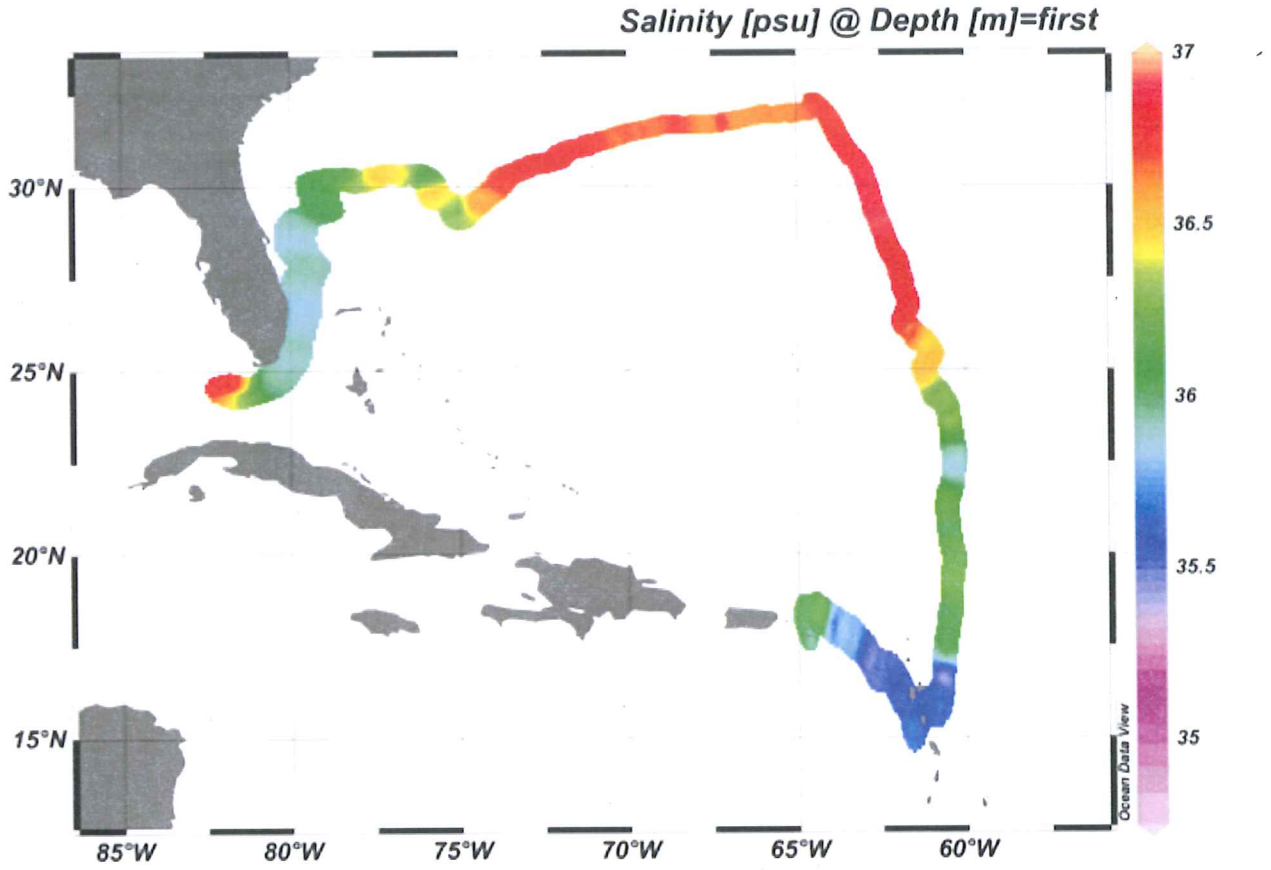
Duplicate station numbers indicate multiple oceanographic deployments that either occurred concurrently in the same location or were deployed sequentially (lettered) in the same general location after the vessel was hove to. General Locations are categorized by traditional oceanic biomes or significant geologic feature. Abbreviations for oceanographic equipment deployed are: NT – neuston tow, DN – dip net, MN – meter net, TT – tucker trawl Net, PN – phytoplankton net, CTD – conductivity, temperature and depth profiler, HC – hydrocast with 12 Niskin bottles and CTD, SG – shipek grab, and SD – secchi disc. Blanks spaces indicate when no data is available.

Figure 2a-c. Surface water hydrography for C240.

a. Temperature (seawater flow thru system with in-line thermistor)



b. Salinity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20°N
15°N
85°W
80°W
75°W
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65°W
60°W
37
36.5
36
35.5
35
Ocean Data View

c. **Chlorophyll-a fluorescence**

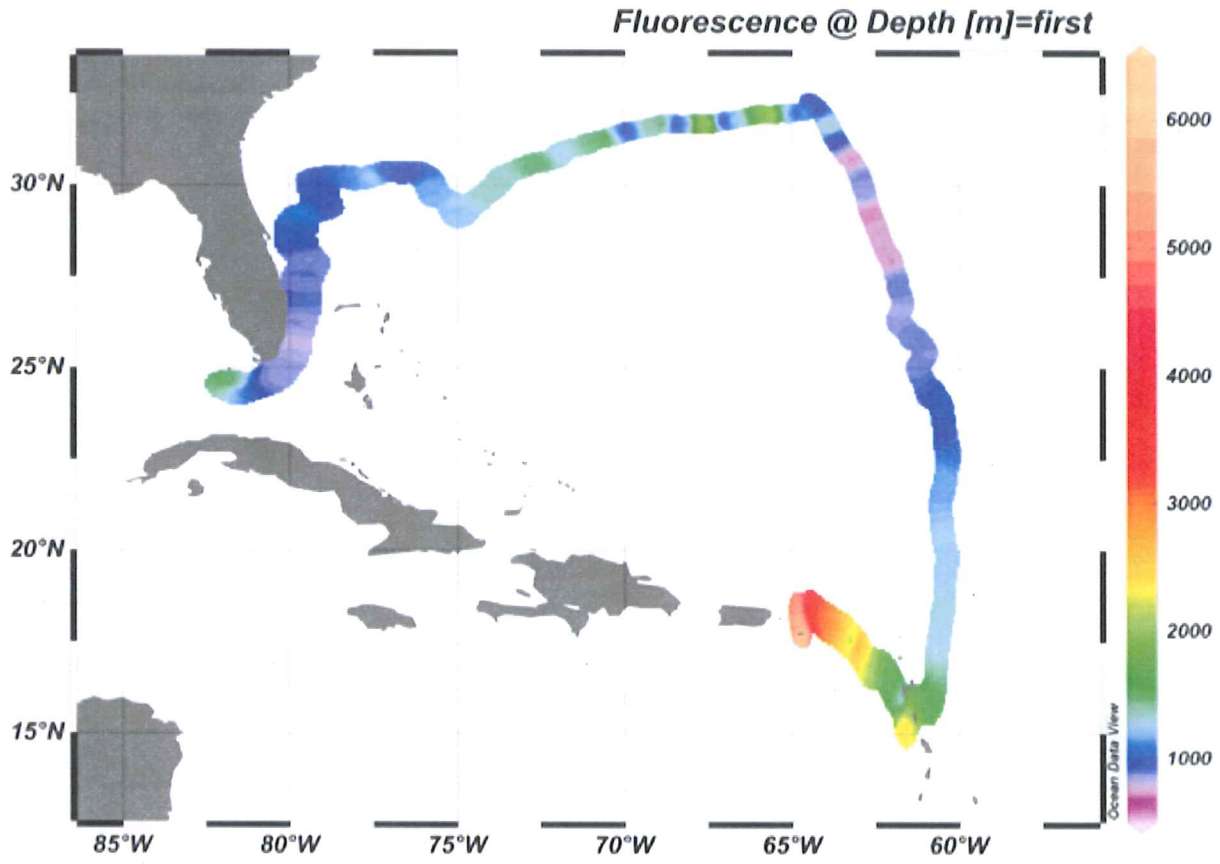


Table 3. Surface station location and surface sensor data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Water Source	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts)	CDOM Fluor (volts)	Xmiss (volts)
001	31-Mar	1500	Trumbo Point beach - Key West, FL								
002	01-Apr	1504	0.0	24.51	-81.83	flow-thru	26.5	36.497	1286.6	120.3	3307.5
003	01-Apr	2035	12.5	24.36	-81.57	flow-thru	26.2	36.020	892.9	89.2	3737.4
004	02-Apr	0140	45.6	24.56	-80.98	flow-thru	25.7	36.049	872.9	89.3	3748.7
005	02-Apr	0405	62.3	24.66	-80.66	flow-thru	26.4	35.971	847.7	88.5	3754.6
006	02-Apr	1040	101.4	25.25	-80.09	flow-thru	26.6	35.896	823.6	88.3	3755.4
007	02-Apr	2237	141.0	26.48	-79.76	flow-thru	27.6	35.842	848.9	86.6	3719.7
008	03-Apr	0338	170.2	27.23	-79.66	flow-thru	26.6	35.901	879.1	88.8	3712.4
009	03-Apr	2214	232.5	28.70	-79.83	flow-thru	26.7	35.858	1005.5	85.3	3657.2
010	04-Apr	0454	262.5	29.25	-79.42	flow-thru	25.5	36.080	1109.2	81.8	3593.1
011	04-Apr	1200	282.1	29.38	-79.01	flow-thru	24.8	36.078	922.2	84.0	3597.7
012	04-Apr	2208	323.8	30.11	-79.20	flow-thru	25.1	36.200	996.5	89.5	3507.8
013	05-Apr	0426	362.0	30.24	-78.50	flow-thru	24.4	36.180	1128.9	85.0	3468.4
014	05-Apr	2220	417.5	30.25	-77.53	flow-thru	23.5	36.550	1284.4	85.1	3417.2
015	06-Apr	0431	431.5	30.39	-77.03	flow-thru	23.8	36.410	970.0	82.7	3641.5
016	07-Apr	0402	498.0	29.71	-75.65	flow-thru	23.6	36.457	1165.8	84.9	3512.4
017	07-Apr	2235	509.9	29.39	-75.00	flow-thru	23.8	36.250	1158.7	89.4	3691.8
018	08-Apr	0500	515.0	29.27	-76.12	flow-thru	23.8	36.250	1197.8	86.5	3711.7
019	08-Apr	1022	524.4	29.14	-74.92	flow-thru	23.6	36.400	1213.8	86.2	3710.0
020	09-Apr	0512	593.7	29.99	-75.77	flow-thru	23.2	36.703	1356.6	84.0	3713.0
021	09-Apr	2219	636.9	30.57	-72.83	flow-thru	21.7	36.796	1469.6	85.5	3692.7
022	10-Apr	0342	657.5	30.64	-72.43	flow-thru	21.9	36.847	1465.3	81.1	3707.4
023	11-Apr	0600	763.5	31.28	-70.52	flow-thru	20.4	36.680	1586.9	85.4	3772.2
024	11-Apr	0953	784.4	31.38	-70.20	flow-thru	20.3	36.662	1056.8	85.1	3767.5
025	11-Apr	2212	843.3	31.59	-69.18	flow-thru	20.2	36.647	1327.1	85.3	3763.3
026	12-Apr	0625	868.9	31.69	-68.74	flow-thru	20.1	36.659	1501.4	85.4	3758.8
027	12-Apr	2238	925.0	31.67	-67.68	flow-thru	19.6	36.595	1937.9	84.9	3711.1
028	13-Apr	0911	945.3	31.69	-67.29	flow-thru	20.8	36.680	1019.5	84.2	3783.9
029	13-Apr	0944	964.6	31.75	-66.90	flow-thru	19.6	36.591	1193.8	85.7	3733.4
030	14-Apr	0445	1044.0	31.95	-65.37	flow-thru	19.6	36.599	1662.2	85.5	3766.5
031	14-Apr	1100	1057.6	31.95	-65.16	flow-thru	19.8	36.625	1088.4	87.9	3799.8
032	14-Apr	2225	1097.0	32.09	-67.45	flow-thru	20.3	36.708	1067.1	83.1	3787.7
033	18-Apr	2206	1180.6	31.60	-63.89	flow-thru	20.4	36.698	1284.5	85.4	3755.1

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Water Source	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts)	CDOM Fluor (volts)	Xmiss (volts)
034	19-Apr	0419	1212.0	31.12	-63.61	flow-thru	20.6	36.751	932.4	85.4	3773.1
035	19-Apr	2216	1285.3	30.00	-62.88	flow-thru	21.2	36.856	827.3	84.4	3797.1
036	20-Apr	0322	1306.8	29.66	-62.78	flow-thru	21.1	36.846	864.5	83.7	3797.4
037	21-Apr	1023	1407.3	28.02	-62.09	flow-thru	22.3	36.844	727.1	84.5	3802.5
038	21-Apr	2241	1454.6	27.31	-61.85	flow-thru	22.7	36.860	882.4	84.6	3796.1
039	22-Apr	0452	1473.5	26.99	-61.73	flow-thru	23.1	36.817	851.4	80.4	3798.3
040	22-Apr	1005	1491.0	26.68	-61.70	flow-thru	22.7	36.862	805.3	80.5	3808.0
041	22-Apr	2209	1537.5	25.94	-61.51	flow-thru	23.5	36.753	862.5	79.7	3805.2
042	23-Apr	0341	1560.5	25.70	-61.19	flow-thru	24.4	36.428	885.0	79.1	3805.4
043	23-Apr	2217	1605.0	25.06	-61.27	flow-thru	24.3	36.505	882.8	78.7	3811.5
044	24-Apr	0350	1623.1	24.78	-61.13	flow-thru	24.3	36.455	884.4	78.3	3810.7
045	24-Apr	0952	1642.5	24.36	-60.97	flow-thru	24.1	36.244	959.1	79.0	3809.7
046	24-Apr	2218	1681.8	23.90	-60.53	flow-thru	25.1	36.316	1015.4	78.8	3805.3
047	25-Apr	0459	1706.7	23.32	-60.45	flow-thru	25.2	36.210	1025.2	84.7	3164.8
048	26-Apr	1012	1832.0	21.57	-60.54	flow-thru	26.7	36.160	1135.6		3808.2
049	26-Apr	2207	1897.5	20.62	-60.52	flow-thru	26.9	36.046	1246.6	80.7	3804.8

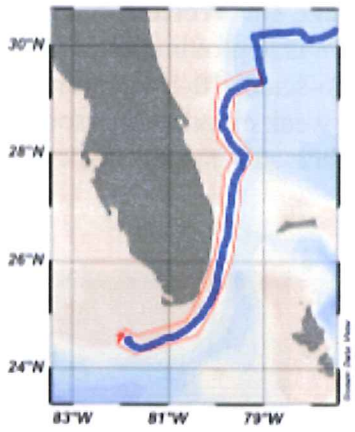
Table 3 continued. Surface station water chemistry and surface sensor data for C240.

Station # (C240-)	Water Source	Chl-*a* (µg/l)	PO_4 (µM)	SiO_2 (µM)	pH	Notes
001	bucket		0.019			Trumbo Point Beach
002	bucket	0.542	0.078			
003	flow-thru	0.130	0.078	8.942		
004	flow-thru	0.180	0.316	8.049	7.990	
005	flow-thru	0.140	0.078	8.793		
006	bucket	0.301	0.032		8.210	pH from probe; temp 26.2
007	bucket	0.107	0.151		8.190	pH from probe; temp 26.0
008	flow-thru	0.132	0.051	15.788	8.004	
009	bucket	0.093	0.398		8.004	
010	flow-thru	0.090	0.169	12.225	8.011	
011	bucket	0.116	0.380		7.980	
012	bucket	0.105	0.014		8.029	
013	flow-thru	0.096	0.041	6.788	8.005	
014	bucket	0.084	0.046		8.013	
015	flow-thru	0.081	0.142	7.217		
016	flow-thru	0.072	0.000	10.273		
017	bucket	0.141	0.019		8.100	
018	flow-thru	0.120	0.009	3.882		
019	bucket	0.170	0.032			
020	flow-thru	0.117	0.009	3.645		
021	bucket	0.071	0.156		8.052	
022	flow-thru	0.058	0.119	7.357		
023	flow-thru	0.058	0.041	7.244		
024	bucket	0.322	0.005		7.964	
025	bucket	0.307	0.211		8.048	
026	flow-thru	0.273	0.115	8.084		
027	bucket	0.408	0.014		8.066	
028	flow-thru	0.134	0.110	7.804		
029	bucket	0.503	0.110	7.655	8.053	
030	flow-thru	0.342	0.023	7.769		
031	bucket	0.278	0.037		8.014	
032	bucket	0.145	0.128	8.084	7.997	
033	bucket	0.190	0.049			
034	flow-thru	0.062	0.000	30.204		

Station # (C240-)	Water Source	Chl-*a* (µg/l)	PO_4 (µM)	SiO_2 (µM)	pH	Notes
035	bucket	0.097	0.030		8.070	
036	flow-thru	0.083	0.002	18.820		
037	bucket	0.032	0.035	29.473	8.060	
038	bucket	0.045	0.002		8.060	
039	flow-thru	0.050	0.000	26.548		
040	bucket	0.040	0.002		8.050	
041	bucket	0.049	0.072	35.739	8.020	
042	flow-thru	0.048	0.000	36.470		
043	bucket	0.045	0.000		8.030	
044	flow-thru	0.048	0.044	37.410		
045	bucket	0.087	0.000		8.040	
046	bucket	0.188	0.021		8.030	
047	flow-thru	0.086	0.077	29.995		
048	bucket	0.106	0.091			
049	bucket	0.144	0.021		8.030	

Sea surface temperature, salinity, *in vivo* chlorophyll-*a* fluorescence, and transmissivity were measured from a seawater flow-thru system (intake ~ 1-3m depth) using in-line sensors. Discrete surface water samples were collected two different ways either from the surface using a standard rubber bucket, or from the seawater flow-thru system. Discrete water samples were collected for phosphate (PO_4), silicate (SiO2), pH and extracted chlorophyll-*a*. Phosphate and silicate was measured by colorimetric analysis with an Ocean Optics Chem2000 digital spectrophotometer. Extracted chlorophyll-*a* (Chl-*a*) concentration was measured with a Turner Designs Model 10-AU Fluorometer following methods outlined in Parsons, Maita and Lalli, *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press 1984. Chlorophyll-*a* samples were filtered through 0.45 µm filters. Seawater pH was determined using the indicator dye *m*-cresol purple and spectrophotometric measurement. A blank space indicates that no sample was collected for that analysis.

Figure 4a. Gulf Stream sub-surface current cross-section during C240. Note 2000 mm/s is approximately 4.0 knots.



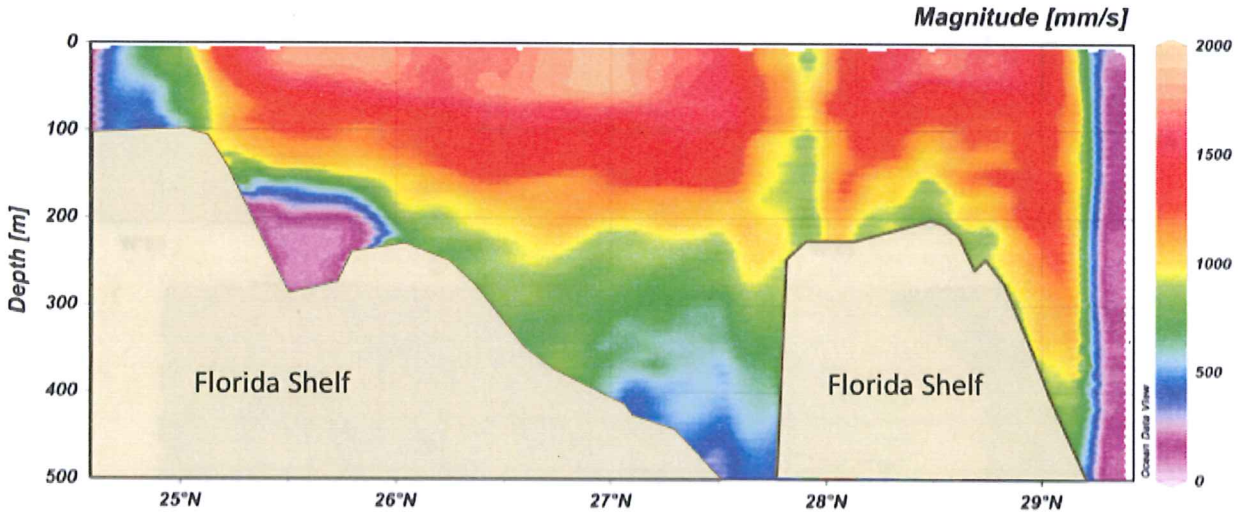


Figure 4b. Western Sargasso Sea sub-surface current cross-section during C240. Note 500 mm/s is approximately 1.0 knot. Variability in near-surface current direction is suggestive of meso-scale (10-100s nm radii) eddies and meanders associated with remnant Gulf Stream eddies and weak circulation associated with the sub-tropical convergent zone frontal boundary. Sub-surface currents are weak to negligible throughout these regions.

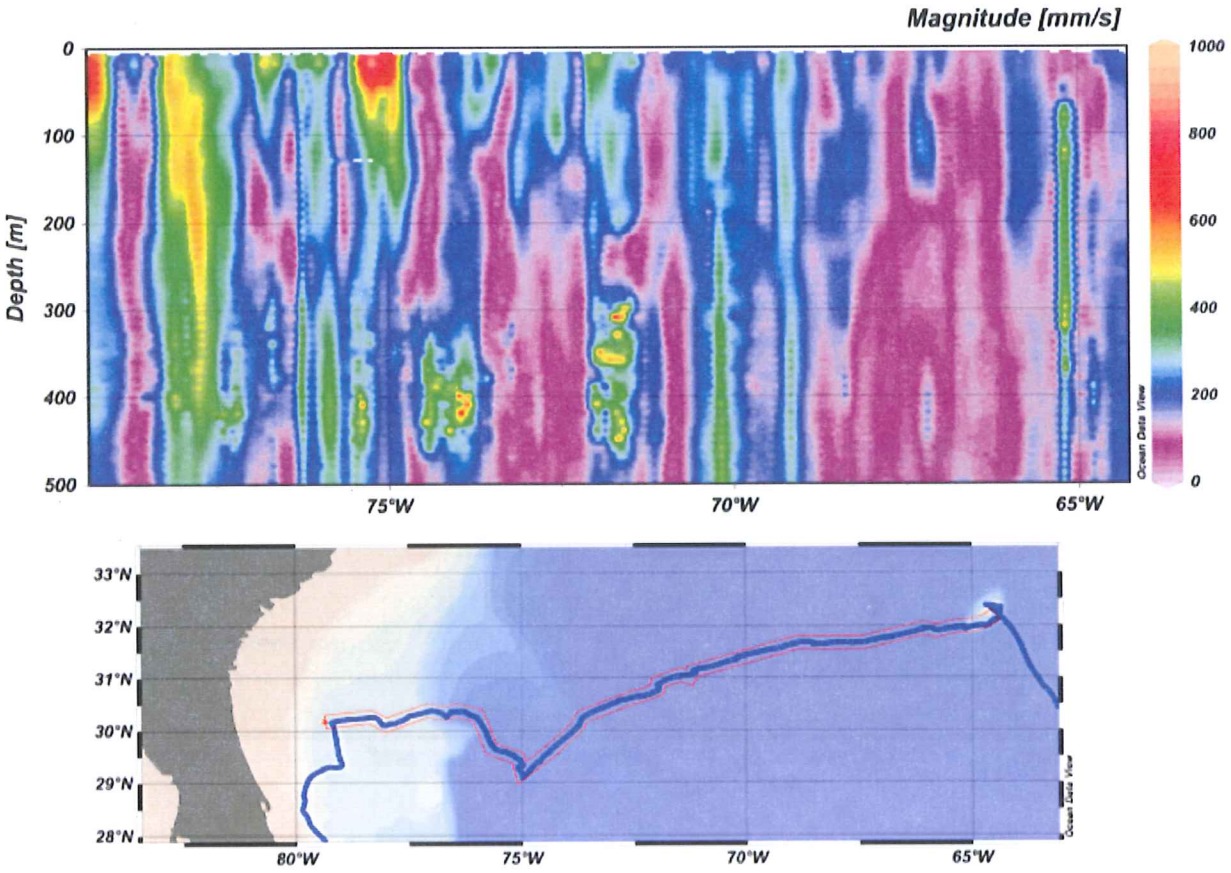
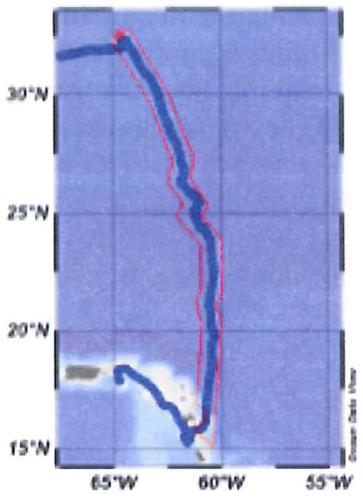


Figure 4c. Western Sargasso Sea sub-surface current cross-section during C240. Note 500 mm/s is approximately 1.0 knot. Variability in near-surface current direction is suggestive of meso-scale (10-100s nm radii) eddies associated with the Antilles Current extension of the North Equatorial Current. Sub-surface currents were surprisingly vigorous and suggest confluence of flow nearing the Lesser Antilles Islands.



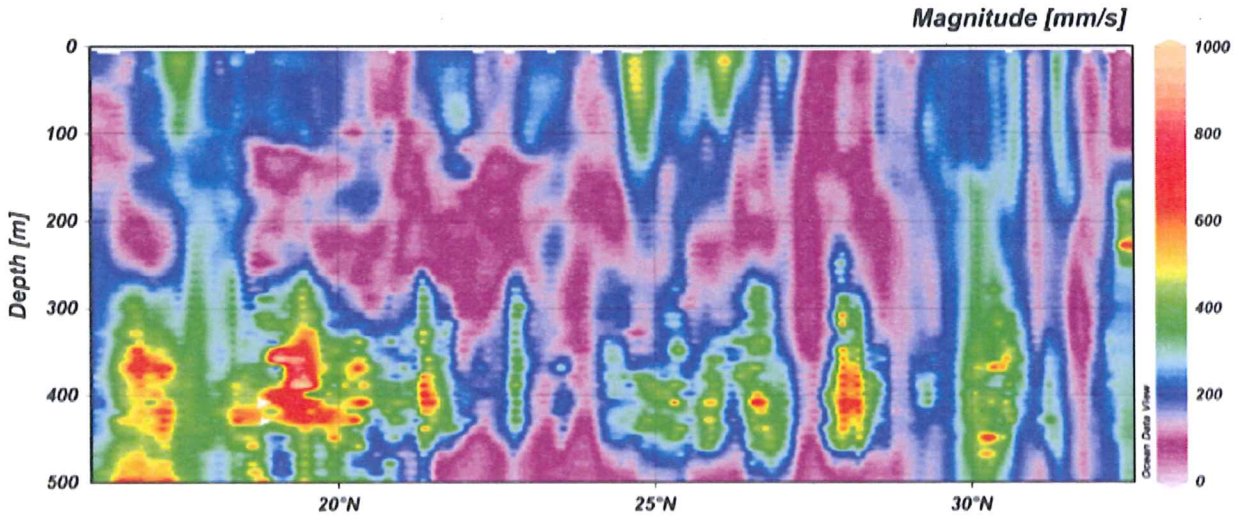
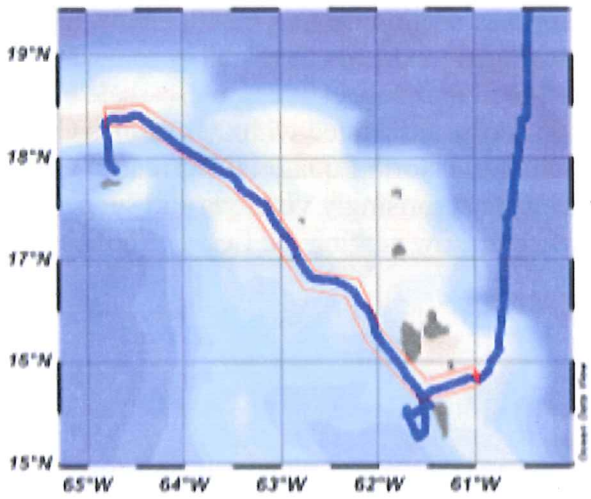


Figure 4d. Surface current vector plot for the Florida Straits during C240. Note 500 mm/s is approximately 1.0 knot. Current magnitudes greater than 1 knot were consistently associated with some bathymetric constriction such as an island passage, shelf or shallow bank suggestive of either wind-driven circulation dominating the event or tidal flow.



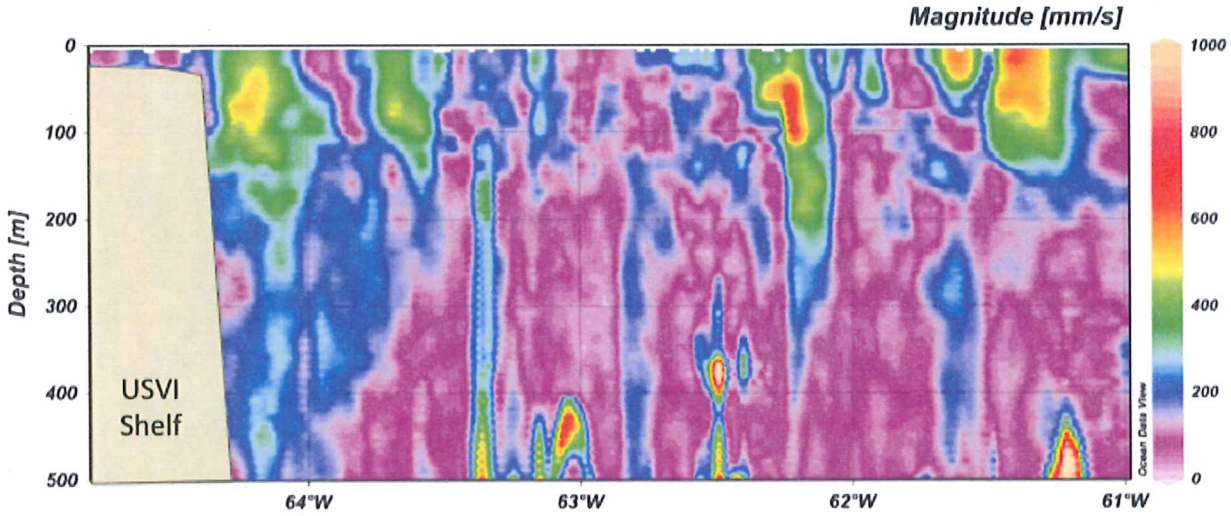


Table 4. Hydrocast station data for C240. Physical characteristics of the water column were measured with a Seabird SEACAT Profiler Model SBE 19plus Conductivity-Temperature-Depth unit and four attached sensors: transmissivity (SN- CST-143PR), chlorophyll-*a* fluorescence (SN-2105), dissolved oxygen (SN-1120) and PAR (SN-70187). Water samples were collected from indicated depths.

Station # (C240-) General Locale Date Time	Bottle #	Depth (m)	O_2 SBE-43 (umol/Kg)	O_2 Winkle (mL/L)	PO_4 (µM)	SiO_2 (µM)	Chl-*a* (µg/l)	pH
007	1	589	114.73	3.31	1.770	18.563		
Gulf Stream	2	300	149.93		0.558	9.327		
3-Apr-12	3	150	148.48					
1054	4	149	149.67				0.053	
	5	99	157.92				0.368	
	6	98	159.44					
Cast Depth	7	97	161.94					
709m	8	50	193.71		0.055	8.644	0.200	
	9	50	194.37					
CTD Unit #	10	26	195.67		0.046	8.207	0.104	
4447	11	25	195.73					
	12	11	195.86		0.023		0.072	
	13	0			0.000	9.388	0.092	
014	1	593	144.05		0.124	10.387		
Blake Plateau	2	297	190.76		0.526	6.613		
5-Apr-12	3	149	200.10		0.192	3.558		
1123	4	147	202.53				0.135	
	5	93	205.51		0.046	9.476	0.368	
	6	92	205.06					
Cast Depth	7	91	206.16					
596m	8	50	206.70		0.096	10.474	0.093	
	9	49	206.35					
CTD Unit #	10	24	203.68		0.060	5.563	0.003	
4447	11	23	204.71					
	12	10	200.25		0.019	7.375	0.075	
	13	0			0.055	6.228	0.088	
027	1	553	170.23	4.99	0.513	8.592		7.886
Sargasso Sea	2	298	194.91		0.169	6.736		
9-Apr-12	3	150	180.29		0.307	7.900		
1138	4	148	180.09				0.063	
	5	99	203.05		0.051	5.396	0.572	
	6	98	202.74	5.76				8.044
Cast Depth	7	98	202.49					
560m	8	50	206.23		0.041	6.972	0.077	
	9	49	206.79					
CTD Unit #	10	25	205.51		0.041	7.655	0.068	
4447	11	24	205.97					
	12	10	204.91	5.53	0.051	6.499	0.057	
	13	0			0.028	6.298	0.051	8.052
038	1	545	179.71	5.58	0.320	10.649		
Sargasso Sea	2	299	191.96		0.179	3.243		
12-Apr-12	3	149	211.75		0.069	4.608		
1110	4	148	211.93				0.267	
	5	79	214.03		0.046	8.067	0.326	

Station # (C240-) General Locale Date Time	Bottle #	Depth (m)	O_2 SBE-43 (umol/Kg)	O_2 Winkle (mL/L)	PO_4 (µM)	SiO_2 (µM)	Chl-*a* (µg/l)	pH
	6	77	214.05	6.25				
Cast Depth	7	76	214.60					
551m	8	49	213.11		0.051	6.499	0.258	
	9	49	213.32					
CTD Unit #	10	25	213.48		0.055	6.640	0.266	
4447	11	23	212.91					
	12	11	212.93	6.07	0.115	6.009	0.250	
	13	0			0.000	11.516	0.199	
047	1	566	177.71	5.75	0.288	37.828		7.995
Sargasso Sea	2	298	194.09		0.199	29.786		
19-Apr-12	3	149	189.81		0.000	26.235		
1105	4	147	189.80				0.392	
	5	91	210.45		0.000	18.193	0.174	
	6	90	211.45	6.09				8.107
Cast Depth	7	89	211.12					
571m	8	50	211.84		0.000	23.311	0.088	
	9	50	211.79					
CTD Unit #	10	25	212.17		0.016	13.285	0.090	
4447	11	25	212.12					
	12	11	212.56	6.13	0.007	11.718	0.072	
	13	0			0.000	22.684	0.064	8.073
062	1	534	157.78		0.710	58.089		
Sargasso Sea	2	298	192.44		0.232	19.029		
23-Apr-12	3	150	205.65		0.152	21.535		
1111	4	150	206.12				0.252	
	5	78	203.98		0.086	19.551	0.130	
	6	77	204.52					
Cast Depth	7	76	204.39					
541m	8	50	202.39		0.133	28.219	0.080	
	9	50	202.61					
CTD Unit #	10	25	202.45		0.166	22.997	0.067	
4447	11	25	203.15					
	12	10	203.12		0.077	24.355	0.052	
	13	0			0.058	30.413	0.059	

Discrete water samples were collected for dissolved oxygen, phosphate (PO_4), silicate (SiO2), pH and extracted chlorophyll-*a*. Dissolved oxygen was measured using the Winkler titration method. Phosphate and silicate was measured by colorimetric analysis with an Ocean Optics Chem2000 digital spectrophotometer. Extracted chlorophyll-*a* (Chl-*a*) concentration was measured with a Turner Designs Model 10-AU Fluorometer following methods outlined in Parsons, Maita and Lalli, *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press 1984. Chlorophyll-*a* samples were filtered through 0.45 µm filters. Seawater pH was determined using the indicator dye *m*-cresol purple and spectrophotometric measurement. A blank space indicates that no sample was collected for that analysis.

Table 5. Free - CTD station data for C240. Physical characteristics of the water column were measured with a Seabird SEACAT Profiler Model SBE 19plus Conductivity-Temperature-Depth unit.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Cast Depth (m)	Locale	Notes
078	05-May	1444	1118.0	Eastern Caribbean Sea	Styrocast

Figure 6a-b. CTD cross-section plots for C240. Water column structure of temperature and salinity. VG gridding: X-axis 100, Y-axis 20. Location of North Atlantic Mode water (18°C) is indicated as well as summer formation of salinity maximum water.

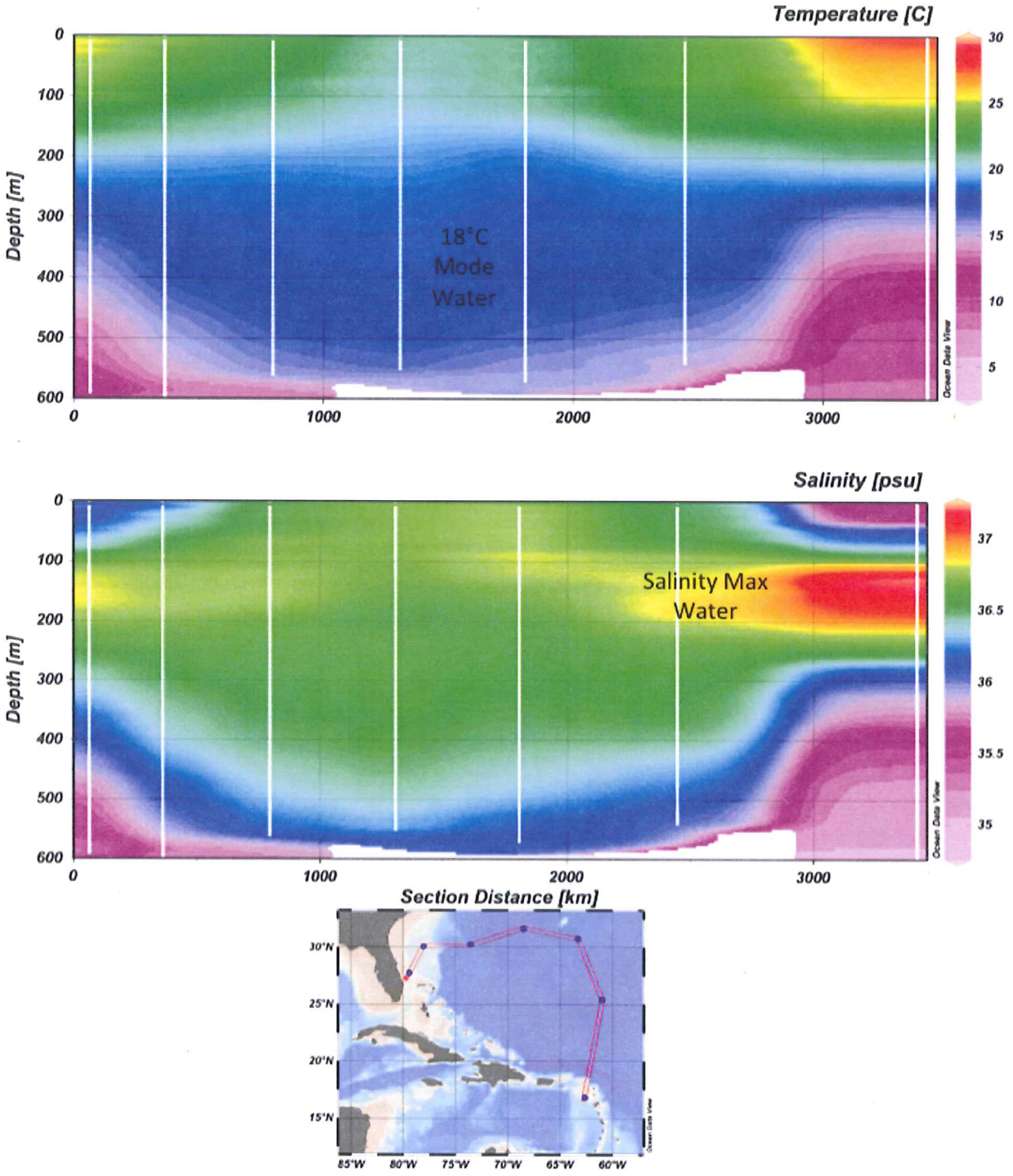


Table 6. Neuston station data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Moon Phase (%)	Moon (Risen or Set)	Cloud Cover (%)	Wind Speed (knots)	Wind Dir (deg)	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts)	Tow Area (m^2)	Locale
002	01-Apr	1419	67%	risen	80%	3	328	26.3	36.63	1417	2173	Florida Shelf
004	02-Apr	1018	76%	set	2%	3	337	26.4	35.80	850	3158	Florida Shelf
005	02-Apr	2203	76%	risen	15%	4	160	27.2	35.85	843	2172	Florida Shelf
009	03-Apr	2159	85%	risen	2%	5	202	26.7	35.90	991	3630	Gulf Stream
011	04-Apr	1139	92%	set	20%	12	302	24.9	36.08	925	2368	Blake Plateau
012	04-Apr	2151	92%	risen	0%	11	275	25.1	36.10	1020	3559	Blake Plateau
017	05-Apr	2200	97%	risen	1%	12	340	23.5	36.50	1294	1871	Blake Plateau
021	07-Apr	2215	99%	risen	50%	8	30	23.7	36.26	1196	3296	Sargasso Sea
024	08-Apr	1006	96%	set	30%	9	10	23.5	36.41	1234	1744	Sargasso Sea
029	09-Apr	2159	89%	set	0%	5	202	21.6	36.80	1528	1653	Sargasso Sea
035	11-Apr	0930	71%	risen	1%	20	247	20.2	36.66	1145	1852	Sargasso Sea
036	11-Apr	2155	71%	set	30%	21	225	20.2	36.65	1319	1657	Sargasso Sea
039	12-Apr	2218	60%	set	50%	18	10	19.7	36.60	2012	1650	Sargasso Sea
041	13-Apr	0930	50%	set	45%	18	340	19.6	36.59	1143	1876	Sargasso Sea
043	14-Apr	1120	60%	risen	90%	17	350	19.8	36.62	1103	1975	Plantagenet Bank
044	14-Apr	2158	39%	set	25%	8	35	20.1	36.66	1112	2448	Sargasso Sea
045	18-Apr	2149	7%	risen	10%	18	55	20.4	36.70	1270	2387	Sargasso Sea
048	19-Apr	2205	3%	set	20%	10	70	21.2	36.86	848	2226	Sargasso Sea
054	21-Apr	0932	0%	risen	80%	2	154	22.2	36.85	740	2285	Sargasso Sea
056	21-Apr	2225	0%	set	2%	9	101	22.7	36.86	882	1609	Sargasso Sea
059	22-Apr	0953	1%	risen	13%	11	90	22.7	36.86	811	2455	Sargasso Sea
060	22-Apr	2201	1%	set	90%	15	65	23.5	36.76	873	1889	Sargasso Sea
063	23-Apr	2157	4%	set	90%	14	160	24.3	36.50	884	2161	Sargasso Sea
065	24-Apr	0930	9%	risen	100%	10	130	24.1	36.14	954	2498	Sargasso Sea
066	24-Apr	2207	9%	set	18%	10	160	25.1	36.32	1025	1959	Sargasso Sea
070	26-Apr	0950	23%	risen	75%	11	130	26.7	36.19	1174	1840	Tropical Waters
071	26-Apr	2155	23%	risen	10%	15	101	26.9	36.05	1231	1634	Tropical Waters
072	27-Apr	0931	31%	set	10%	18	90	26.6	36.21	1207	1078	Tropical Waters
073	27-Apr	2243	41%	risen	20%	18	95	26.6	36.07	1293	1110	Tropical Waters
074	28-Apr	0932	41%	set	30%	18	80	26.8	36.07	1255	3552	Tropical Waters
075	29-Apr	0148	41%	risen	80%	16	75	27.5	35.69	1579	876	Tropical Waters
076	29-Apr	1143	41%	set	88%	13	95	27.5	35.53	1760	1544	Tropical Waters

Table 6 continued. Neuston station data for C240.

Station # (C240-)	Zoop Biomass (ml)	Zoop Den (ml/m²)	Phyllo (#)	Lepto (#)	Mycto (#)	Ceph (#)	Other Nekton (#)	S natans (g)	S fluitans (g)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Halo (#)	Gelatinous >2cm (#)
002	39.0	0.018	0	0	0	0	6	0	285	0	5	0	0	0
004	52.0	0.016	0	0	0	0	0	<1	29	0	12	0	1	0
005	34.0	0.016	0	0	1	0	1	0	16	0	2	1	2	38
009	176.0	0.048	0	0	0	0	25	320	2920	0	40	0	0	0
011	19.0	0.008	0	0	0	0	6	121	332	0	8	0	0	0
012	24.0	0:007	0	0	4	0	12	1785	380	0	4	0	0	0
017	13.0	0.007	0	0	2	0	15	1790	265	3	40	0	0	0
021	6.0	0.002	0	0	2	0	4	290	46	0	34	0	0	1
024	9.0	0.005	0	0	0	0	0	45	0	0	4	0	0	0
029	24.0	0.015	1	1	13	0	6	65	21	1	35	0	0	1
035	1.5	0.001	0	0	0	0	0	0	0	0	9	0	0	0
036	34.0	0.021	0	1	8	1	5	0	0	0	24	0	0	8
039	49.0	0.030	1	2	9	0	94	<1	<1	0	5	0	0	11
041	37.0	0.020	0	0	0	0	2	0	0	0	11	0	0	0
043	49.0	0.025	0	0	0	0	0	0	0	0	9	0	0	0
044	21.0	0.009	0	5	14	0	7	0	0	0	16	0	0	3
045	30.0	0.013	0	3	2	0	19	0	0	0	19	0	0	1
048	19.0	0.009	5	8	2	0	4	0	705	0	53	0	0	4
054	22.0	0.010	0	0	0	2	0	47	0	0	311	21	0	0
056	22.0	0.014	14	19	17	0	9	2	5	0	73	1	0	1
059	8.0	0.003	0	0	0	0	3	20	75	0	56	0	0	0
060	5.0	0.003	0	0	2	0	3	185	0	3	166	1	1	0
063	22.0	0.010	0	0	3	0	3	37	25	0	1	0	34	0
065	8.0	0.003	0	0	0	0	0	20	24	0	104	0	3	0
066	101.0	0.052	3	32	11	0	11	228	1034	0	91	0	11	1
070	5.0	0.003	0	0	0	0	4	0	280	0	15	1	6	0
071	237.0	0.145	0	0	5	0	5	0	75	0	8	0	3	2
072	5.0	0.005	0	0	0	0	0	0	53	0	5	0	2	0
073	7.0	0.006	1	0	10	1	3	0	10	0	2	0	7	2
074	32.0	0.009	0	0	0	0	5	0	954	0	1	0	5	0
075	25.0	0.029	0	11	1	0	1	0	225	0	0	0	6	1
076	232.0	0.150	0	0	0	0	9	0	4541	0	0	0	1	0

Table 6 continued. Neuston station data for C240.

Station # (C240-)	Nekton >2cm Description	Gelatinous >2cm Description	Tow Description and Notes
002	4 crabs, 1 sargassum fish, 1 needle fish; 3 small juvenile fish larvae <2 cm saved for project	None	A lot of detritus (likely the majority of the "biomass"), mostly T. testurlinum (Turtle grass) and S. filifermae (manatee grass). Only S. fluitans found of sargassum spp.
004	None	None	Plant material, mostly Sargassum with a few other types (16 g manatee grass, <1 g eel grass). Many individual sargassum floats. Zooplankton included several large copepods, a few shrimp, several siphonophores, and one man o war.
005	1 file fish	17 linuche, 21 cnidarians, 2 siphonophore, 3 cnidarian	dominated by gelatinous organisms and macroalgae
009	13 shrimp, 6 fish larvae, 1 barnacle, 5 sargassum crabs	none	6 buckets of sargassum, mostly fluitans, with a lot of shrimp and crabs. A few fish, a puffer fish, linuche, gooseneck barnacle on a piece of plastic. Other plant material as well, only a few pieces.
011	2 sargassum fish (< 2 cm), 6 various shrimp	None	Many clumps of S. natans, some clumps of S fluitans. Many different types of shrimp of various colors and sizes. Various fish larvae, saved for project work.
012	1 flying fish, 1 juvenile orange spotted filefish, 1 stomatopod, 6 shrimp, 2 juvenile sargassum fish, 1 sargassum crab	None	Mostly S. natans fauna consisting of many shrimp, some crabs, and several fish larvae with manatee grass present as well. Varied micronekton with a few small pieces of plastic; small amount of biovolume.
017	5 sargassum fish (4ml), 1 mahi mahi (2mL), 3 unidentified fish (1ml), 2 sargassum shrimp (1ml), 2 sargassum nudibranch (<1ml), 1 sargassum crab (<1ml)	None	4 buckets of sargassum collected - a few fish, some seagrass pieces and some shrimp, lots of tiny sargassum crabs
021	2 shrimp (0.ml), 1 juvenile mahi (.5 ml), 1 unknown degraded fish (.5ml), 2 fish larvae (<1ml)	1 salp (0.2ml)	several sargassum clumps with plenty of shrimp and some small fish/larval fish. A few very small gelatinous organisms, and one slightly larger salp. Lots of small plastic pieces with one large plastic bag
024	None	None	Dominated by gelatinous organisms, many blue copepods, 1 larval fish less than 2cm, 12 sargassum shrimp, gooseneck barnacles
029	1 viper fish (2 ml), 5 shrimp (<1 ml)	1 medusa (10 ml), 1 velella velella saved for Celia C	Sargassum (mostly natans), lots of myctophids, shrimp, and copepods. High # plastics.
035	none	None	Net bobbed up and down in the waves. Plastics, blue copepods, jellyfish larvae >2cm, a shrimp, siphonophores

Station # (C240-)	Nekton >2cm Description	Gelatinous >2cm Description	Tow Description and Notes
036	3 flying fish (1.5 ml), 1 octopus (<1ml)	3 siphonophores (3.5 ml), 5 salps (2ml)	Very diverse, lots of fish, cephalopods, salps, siphonophores, a very large lepto, and a few megalopa.
039	92 stomatopods (6 ml), 1 unkown elongated fish (0.5 ml), 1 shrimp (0.2 ml)	2 heteropods (0.5ml), 7 salps (3.2 ml), 2 siphonophores (0.5 ml)	Pinkish color, stompatopods abundant. 2 fish larvae saved for project. 9 very old sargassum floats with epibiont coverage found
041	1 stomatopod (0.1ml), 1 chaetognath (0.1 ml)	None	1 very large plastic piece with gooseneck barnacles growing on it. Found small pelagic crab and many gelatinous organisms- mostly small siphonophores.
043	None	None	Cod end lost on first attempt upon net retrieval (collar fell off). Significant amount of gelatinous and blue copepods in 2nd attempt, lots of tube worms and bottom paitn because net went under the hull. Piece of terrestrial plant matter as well.
044	5 stomatopods (< 1 ml, 3 lost during biovolume), 1 elongated orange fish (<1 ml), 1 silvery fish (0.2 ml, possibly juvenile barracuda)	1 siphonophore and 2 salps	Lots of myctophids, small gelatinous material. Orange biomass, one long orange fish, several floating leptocephali. Many stomatopods also present
045	11 chaetognaths (1 ml), 1 flying fish (1ml), 3 stomatopods (1 ml), 2 viper fish (2 ml), 1 pelagic fish (0.5 ml), 1 polychaete (0.6ml)	1 salp (0.1 ml)	Very bioluminescent, black small copepods, small shrimp. Cool blue shrimp. Few gelatinous creatures, and a few fish
048	1 flying fish, 1 shrimp, 1 stomatopod, 1 nudibranch	4 siphonophores	Clump of S. fluitans. Large variety of organisms; 1 large flying fish and several leptos and phyllosoma, few myctophids and fish larvae. Many small plastic pieces
054	None	None	Lots of plastic and monofilament as well as gelatinous organisms. Some S. natans. 2 squid found less than 2 cm. Tar present- shiny and very sticky, seems very fresh. 11 fish larvae less than 2 cm
056	1 chaetognath (<1 ml), 5 stomatopods (1 ml), 3 shrimp (<1 ml)	1 salp (<1ml)	Bioluminescent. Lots of phyllosoma and leptocephali
059	1 shrimp (0.5 ml), 1 flying fish (0.5ml), 1 crab (1 ml)	None	Tow containing both S fluitans and S natans with many blue organisms. Many fish larvae, few crabs, and many small shrimp. Several plastics also present
060	2 shrimp, 1 crab	None	Bioluminescent tow, juvenile crabs, lots of plastic pieces
063	1 flying fish (11 cm, 4 ml), 2 shrimp (0.4 ml)	None	Lots of sargassum, lots of fish including one large flying fish. Sargassum crab larvae, many halobates, hyperiid amphipods. 2 hundred count scoops taken due to sargassum floats
065	None	None	Lots of blue copepods and Porpita porpita present with a large number of plastic pieces too. 5 fish larvae less than 2 cm

Station # (C240-)	Nekton >2cm Description	Gelatinous >2cm Description	Tow Description and Notes
066	2 sargassum crabs (3 ml), 5 shrimp (2.5ml), 2 fish (0.5ml), 1 heteropod (0.5ml), 1 polychaete (<1 cm)	1 salp (1ml)	Lots of sargassum, leptos, myctophids, copepods, shrimp. Light gray/yellow biomass. Many small gelatinous organisms, Fish larvae (3) saved for project
070	1 tiger crab (1.5 ml), 3 shrimp (0.5 ml)	None	Lots of S. fluitans, some plastic and tar, halobates, a large tiger crab. Copepods, some shrimp, weathered tar visible. Also saved 9 fish larvae
071	1 un-Ided fish, 1 cowfish, 1 sargassum shrimp, 1 red shrimp, 1 sargssum crab	2 cnidarians	Dominated by sargassum floats. Also had many larval fish (<2 cm) saved for project.
072	None	None	Plenty of sargassum, Porpita porpita, halobates, shrimp.
073	3 shrimp	2 ctenophora	Light in color, lots of gelatinous and many myctophids
074	4 shrimp (1 ml), 1 sargassum crab (2 ml)	None	Big swells during tow, net skipped out a few times. Many clumps and fragments of S. fluitans. Small yellowish biomass with several (14) larval fish. 2 scoops taken for 100 count due to Sargassum leaves
075	1 flying fish (3cm), 4 mL	1 siphonophore, 1ml	Towed for only 9 min due to weather/squalls, Bioluminescent, epiphyletic algae growing on sargassum, pteropods, shrimp
076	4 sargassum fish (4ml); 5 shrimp (2ml)	none	Hauled back early to prevent damage to the net from Sargassum, lots of shrimp, several fish larvae

Tow area was calculated using distance in meters between successive (every minute) GPS positions. Net opening was 1.0 m wide by 0.5 m tall with a net mesh of 335 μm. Zooplankton density is recorded as wet volume displacement per tow area (ml/m^2). *Halobates* sp., eel larvae (leptocephali), spiny lobster larvae (phyllosoma), and Lantern fish (Family Myctophidae), were sorted from net contents and recorded as numbers caught per tow.

Micronekton and gelatinous organisms >2cm in length, and plant and algae material was removed using a 1 cm mesh sieve and biomass (ml) or length (cm) was recorded. Floating plastic was also removed from net contents, sorted as pellets or pieces and recorded as numbers collected per tow. Floating tar was sorted from the nets contents and recorded as numbers collected per tow. Floating *Sargassum* weed was removed, identified to species and measured in grams using a spring scale. Qualitative description of micronekton and gelatinous organisms removed from the zooplankton biomass is available upon request.

Table 7. Tucker Trawl station data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Net # (1,2,3)	Tow Type (Oblique / Discrete)	Tow Depth (m)	Tow Volume (m3)	Locale
019	06-Apr	0856	1	Oblique	0 - 167	2503	Sargasso Sea
019	06-Apr	0924	2	Oblique	167 - 48	2684	
019	06-Apr	0956	3	Oblique	48 - 0	1822	
025	08-Apr	2111	1	Oblique	0 - 211	1777	Sargasso Sea
025	08-Apr	2140	2	Oblique	211 - 105	1651	
025	08-Apr	2212	3	Oblique	105 - 0	1239	
031	10-Apr	1005	1	Oblique	0 - 229	3416	Sargasso Sea
031	10-Apr	1105	2	Oblique	229 - 99	1948	
031	10-Apr	1205	3	Oblique	99 - 0	2010	
033	10-Apr	2037	1	Oblique	0 - 301 - 200	2092	Sargasso Sea
033	10-Apr	2115	2	Oblique	200 - 85	1635	
033	10-Apr	2147	3	Oblique	85 - 0	1702	
051	20-Apr	0939	1	Oblique	0 - 136	2554	Sargasso Sea
051	20-Apr	1018	2	Oblique	136 - 0	1835	
051	20-Apr	1040	3	Oblique	Net 3 never opened.		
052	20-Apr	2100	1	Oblique	0 - 354 - 279	2328	Sargasso Sea
052	20-Apr	2150	2	Oblique	279 - 129	1102	
052	20-Apr	2211	3	Oblique	129 - 0	1067	
068	25-Apr	0937	1	Oblique	0 - 272	2969	Tropical Waters
068	25-Apr	1022	2	Oblique	272-115	831	
068	25-Apr	1041	3	Oblique	115-0	1287	
069	25-Apr	2100	1	Oblique	0 - 250 - 126	3851	Sargasso Sea
069	25-Apr		2	Oblique	Net 2 never opened.		
069	25-Apr	2212	3	Oblique	126 - 0	1431	

Table 7. Tucker Trawl station data for C240 continued.

Station # (C240-)	Net # (1,2,3)	Zoop Biomass (ml)	Zoop Den (ml/m²)	Phyllo (#)	Lepto (#)	Mycto (#)	Ceph (#)	Other Nekton (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Halo (#)	Gelatinous >2cm (#)
019	1	52	0.021	0	2	0	0	1	0.0	4.0	0.0	0.0	0.0
019	2	11	0.004	0	6	0	1	0	0.0	21.0	0.0	0.0	0.0
019	3	22	0.012	0	0	0	0	0	0.0	0.0	0.0	0.0	2.0
025	1	18	0.010	0	2	0	0	9	0.0	0.0	0.0	0.0	1.0
025	2	10	0.006	0	5	2	0	5	0.0	0.0	0.0	0.0	1.0
025	3	27	0.022	0	2	0	1	5	0.0	0.0	0.0	0.0	7.0
031	1	17	0.005	0	0	0	0	4	0.0	2.0	0.0	0.0	0.0
031	2	19	0.010	0	1	0	0	0	0.0	5.0	0.0	0.0	0.0
031	3	23	0.011	0	0	0	0	2	0.0	0.0	0.0	0.0	3.0
033	1	14	0.007	0	1	1	0	8	0.0	0.0	0.0	0.0	11.0
033	2	27	0.017	0	0	3	0	11	0.0	0.0	0.0	0.0	11.0
033	3	46	0.027	0	1	1	1	10	0.0	0.0	0.0	0.0	4.0
051	1	29	0.011	0	1	0	1	0	0.0	0.0	0.0	0.0	0.0
051	2	37	0.020	0	0	0	0	2	0.0	0.0	0.0	0.0	0.0
051	Net 3 never opened.												
052	1	8.5	0.004	1	3	0	0	0	0.0	0.0	0.0	0.0	0.0
052	2	11	0.010	0	0	0	0	8	0.0	0.0	0.0	0.0	3.0
052	3	18	0.017	0	2	0	0	6	0.0	0.0	0.0	0.0	1.0
068	1	11.5	0.004	0	0	0	0	2	0.0	0.0	0.0	0.0	0.0
068	2	7	0.008	0	0	0	1	0	0.0	0.0	0.0	0.0	0.0
068	3	17	0.013	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
069	1	22	0.006	1	0	1	0	10	0.0	0.0	0.0	0.0	0.0
069	Net 2 never opened.												
069	3	36	0.025	0	0	1	0	7	0.0	0.0	0.0	1.0	1.0

Table 7. Tucker Trawl station data for C240 continued.

Station # (C240-)	Net # (1,2,3)	Nekton >2cm Description	Gelatinous >2cm Description	Tow Description and Notes
019	1	1 fish larvae, 1 leptocephali		gelatinous matter, tan biomass, several crab larvae and fish larvae
019	2	6 fish larvae, 6 leptocephali, 1 cephalopod		Gelatinous, less biomass than Net 1. Copepods visibly swimming, fish larvae present
019	3	none	2 siphonophores	lots of paint fragments, tube worms from hull. Intermediate biomass level, less fish larvae present
025	1	7 shrimp (3.3ml), 2 unknown deep water fish (0.5 ml)	1 siphonophore (<1ml)	Mix of zooplankton, many shrimp including 1 very large one, siphonophore, larval fish
025	2	5 shrimp	1 siphonophore (<1ml)	Less biovolume, few gelatinous organisms, some myctophids
025	3	5 shrimp (1 ml)	5 siphonophores, 2 medusa	Two clumps of sargassum with shrimp, gelatinous organisms, some fish larvae
031	1	4 shrimp (0.1 ml), 4 fish larvae	None	Pink biomass, mostly small organisms and gelatinous. Few organisms >2cm.
031	2	6 fish larvae (< 1 ml)	None	Pink biomass, small organisms . Sargassum clump found.
031	3	5 fish larvae (<1ml), 2 heteropods, 1 gooseneck barnacle from hull	3 siphonophores (0.4 ml)	Pink/light brown biomass, mostly small gelatinous organisms. Paint chips and barnacle from hull in tow contents.
033	1	3 shrimp (2.5 ml), 5 fish larvae (0.2 ml)	None	Tow contained a few large shrimp, several gelatinous organisms with a single leptocephali
033	2	5 shrimp (2 ml), 6 fish larvae (1.5 ml)	None	tow contained several varieties of larval fish. Fair amount of gelatinous organisms presetn
033	3	9 shrimp (2ml), 1 cephalopod (< 1 ml)	1 salp and 3 unidentified (2.5 ml total)	Pink biomass, a few large shrimp. Lots of small shrimp and gelatinous. Many fish larvae (124 less than 2 cm; not biovolumed to preserve integrity for project) and 1 myctophid
051	1	1 lepto (0.5ml), 1 cephalopod (0.5ml)	None	Net 1 had a lepto, squid and two large amphipods
051	2	1 Phronemid amphipod (0.25ml), 1 heteropod (0.25ml)	None	Net 2 had some sargassum floats present. Combined with Net 3 because of a failure of the release mechanism.

Station # (C240-)	Net # (1,2,3)	Nekton >2cm Description	Gelatinous >2cm Description	Tow Description and Notes
051	Net 3 never opened.			
052	1	1 phylosoma (0.5ml), and 3 lepto (1ml)	None	Net 1 had three leptos, one lobster larvae, gelatinous organisms (siphonophores and ctinophores) and shrimp
052	2	5 shrimp (1.25ml), 1 phronemid amphipod (.2ml), 2 fish larvae (.1ml)	1 ctenophore (0.4ml), 1 salp (0.4ml), 1 heteropod (6.5ml)	Net 2 had pinkish biomass, many gelatinious organisms, shrimp, larval fish
052	3	1 shrimp (0.5ml), 1 heteropod (2ml), 4 fish larvae (1ml)	1 salp (1.5ml)	Net 3 had a pink shrimp, pteropods, leptos, small plankton
068	1	2 chaetognath	None	Many iridescent copepods, many pteropods and gelatinous critters <2 cm
068	2	none	None	Squid < 2 cm saved. Light colored biomass, not many critteres
068	3	none	None	Many pteropods and critters <2cm
069	1	1 fish larvae and 1 fish (1ml), 3 heteropods (<.1 ml), 5 shrimp (2 ml)	None	Contained 1 myctophid and 10 other nekton
069	Net 2 never opened.			
069	3	3 shrimp (0.2ml), 3 fish (0.3 ml), 1 euphausid (0.2 ml)	1 unidentified jelly (0.4ml)	Contained 1 myctophid, 1 jelly, and 6 other nekton

Tucker Trawl nets (1m^2 frame, 335µm mesh net) were towed obliquely through targeted depth ranges for ~ 30' at 2 knots. Tow volume was calculated using tow distance calculated using distance (meters) between successive (every minute) GPS positions and net area based on net frame dimensions. Zooplankton density is recorded as wet volume displacement per tow volume (ml/m^3). *Halobates* sp., eel larvae (leptocephali), spiny lobster larvae (phyllosoma), and Lantern fish (Family Myctophidae), were sorted from net contents and recorded as numbers caught per tow. Blank spaces represents stations were no data was collected for that parameter. Qualitative description of micronekton and gelatinous organisms removed from the zooplankton biomass is available upon request.

Table 8. Zooplankton 100 count station data for C240.

Station # (240-)	Date (2012)	Time (local +4 GMT)	Cnid	Siph	Cten	Salp	Pter	Nud	Hete	Snai	Squi	Poly	Chae	Cop	Gam	Ham	Cmeg	Czoe
Neuston Tows																		
002	01-Apr	1419	0	0	0	0	0	0	0	0	0	1	0	4	2	0	0	36
004	02-Apr	1018	0	1	0	1	0	0	0	1	0	0	1	33	1	1	0	1
005	02-Apr	2203	3	2	0	2	4	0	1	0	0	1	4	46	0	10	0	0
009	03-Apr	2159	0	0	0	0	1	0	0	0	0	0	0	35	0	8	0	0
011	03-Apr	1139	0	0	0	5	0	0	0	0	0	0	2	17	0	0	0	0
012	04-Apr	2151	0	2	0	0	1	0	0	0	0	0	0	11	1	35	0	1
017	05-Apr	2200	10	2	0	1	0	0	2	3	0	0	2	55	0	4	0	0
021	07-Apr	2215	2	1	0	2	1	0	0	2	0	0	4	61	8	2	0	0
024	08-Apr	1006	0	11	0	0	2	0	0	1	0	0	0	22	1	0	0	0
029	09-Apr	2159	0	2	0	0	0	0	0	0	0	0	0	45	10	1	0	0
035	11-Apr	0930	0	42	0	0	0	0	1	0	0	0	8	39	0	0	0	0
036	11-Apr	2150	0	7	0	0	0	0	0	0	0	0	3	57	0	3	2	1
039	12-Apr	2218	0	5	0	0	0	0	0	0	0	0	2	70	0	2	1	0
041	13-Apr	0930	0	11	0	1	3	0	0	0	0	0	6	76	0	0	0	0
043	14-Apr	1120	0	7	0	1	2	0	1	0	0	1	7	81	0	0	0	0
044	14-Apr	2158	0	0	0	0	0	0	2	3	0	0	3	76	2	1	1	0
045	18-Apr	2149	0	5	0	0	4	0	0	0	0	0	2	51	0	16	0	0
048	19-Apr	2205	0	0	0	0	1	0	2	0	0	0	2	65	0	21	0	0
054	21-Apr	0932	0	0	0	0	0	0	0	0	0	20	4	46	0	0	0	0
056	21-Apr	2225	0	0	1	0	1	0	0	1	0	0	1	21	0	1	1	0
059	22-Apr	0953	0	3	0	0	1	0	0	0	0	0	0	63	7	1	0	1
060	22-Apr	2201	0	6	0	5	0	0	0	0	0	0	0	48	1	14	1	0
063	23-Apr	2157	0	1	0	0	2	0	1	0	0	0	0	62	7	6	0	0

Station # (240-)	Date (2012)	Time (local +4 GMT)	Cnid	Siph	Cten	Salp	Pter	Nud	Hete	Snai	Squi	Poly	Chae	Cop	Gam	Ham	Cmeg	Czoe
065	24-Apr	0930	1	14	0	3	0	0	0	3	0	4	2	72	0	0	0	0
066	24-Apr	2207	0	0	0	0	0	0	0	0	0	0	0	70	7	13	0	0
070	26-Apr	0950	0	1	0	0	1	0	0	1	0	0	0	55	0	0	0	0
071	26-Apr	2155	0	3	0	0	3	0	0	1	0	0	9	67	0	1	0	0
072	27-Apr	0931	2	2	0	0	1	0	0	3	0	0	1	60	0	0	0	0
073	27-Apr	2243	0	4	0	0	5	0	2	0	0	0	4	65	0	5	0	0
074	28-Apr	0932	0	0	0	0	1	0	0	8	0	0	0	25	0	0	0	0
075	29-Apr	0148	0	0	0	0	5	0	0	0	0	0	0	77	0	6	0	0
076	29-Apr	1143	14	0	0	0	0	0	0	0	0	0	0	11	6	0	0	0
Tucker Trawl Tows																		
019 net-1	06-Apr	0856	0	0	0	0	2	0	0	0	0	0	10	69	0	3	0	0
019 net-2	06-Apr	0924	0	2	0	0	3	0	2	1	0	0	2	82	0	1	0	0
019 net-3	06-Apr	0956	0	3	0	0	6	0	0	0	0	0	1	55	7	0	0	0
025 net-1	08-Apr	2111	0	1	0	2	0	0	0	1	0	3	3	75	0	1	0	0
025 net-2	08-Apr	2140	0	0	0	1	2	0	0	0	0	0	9	80	0	0	0	0
025 net-3	08-Apr	2212	0	0	0	0	0	0	1	4	0	0	0	68	0	1	0	0
031 net-1	10-Apr	1005	0	2	0	0	0	0	0	0	0	2	18	50	0	1	0	0
031 net-2	10-Apr	1105	0	0	0	0	0	0	1	0	0	0	5	69	0	7	0	0
031 net-3	10-Apr	1205	0	12	0	0	0	0	0	1	0	0	8	38	0	0	0	0
033 net-1	10-Apr	2037	0	1	0	2	0	0	0	1	0	0	10	51	0	16	0	0
033 net-2	10-Apr	2115	0	0	0	0	0	0	1	0	0	0	9	42	0	6	0	1
033 net-3	10-Apr	2147	0	2	0	0	1	0	5	1	1	0	2	67	0	7	0	1
051 net-1	20-Apr	0939	0	1	0	0	1	0	0	1	0	1	10	67	0	4	0	0
051 net-2	20-Apr	1018	0	6	0	0	1	0	0	1	0	0	5	68	0	0	0	0
051 net-3	20-Apr	Net not open																
052 net-1	20-Apr	2100	0	2	0	1	1	0	1	2	0	0	6	61	0	4	0	0
052 net-2	20-Apr	2150	0	4	0	0	7	0	0	0	0	0	3	56	0	6	0	0
052 net-3	20-Apr	2211	0	3	0	0	5	0	1	1	0	0	1	53	2	3	0	1

Station # (240-)	Date (2012)	Time (local +4 GMT)	Cnid	Siph	Cten	Salp	Pter	Nud	Hete	Snai	Squi	Poly	Chae	Cop	Gam	Ham	Cmeg	Czoe
068 net-1	25-Apr	0937	0	0	0	1	1	0	0	0	0	0	2	85	0	3	0	0
068 net-2	25-Apr	1022	0	0	0	0	2	0	0	0	0	0	3	87	0	1	0	0
068 net-3	25-Apr	1041	0	3	0	1	0	0	0	0	0	0	6	88	0	0	0	0
069 net-1	25-Apr	2100	0	0	0	0	1	0	0	0	0	0	5	78	0	1	0	0
069 net-2	25-Apr	Net not open																
069 net-3	25-Apr	2212	1	1	0	0	0	0	0	0	0	0	5	76	0	2	0	0

Table 8 continued. Zooplankton 100 count station data for C240.

Station # (240-)	Date (2012)	Time (local +4 GMT)	Shrm	Lobs	Mysi	Euph	Stom	Ostr	Clad	Iso	Flar	Fegg	Other	Total #	Shannon-Weiner Diversity Index
Neuston Tows															
002	01-Apr	1419	11	0	1	0	28	1	0	0	3	2	0	89	0.68
004	02-Apr	1018	22	0	0	7	1	1	2	0	0	27	0	100	0.75
005	02-Apr	2203	20	0	0	5	0	1	1	0	0	0	0	100	0.77
009	03-Apr	2159	55	0	0	1	0	0	0	0	0	0	0	100	0.43
011	03-Apr	1139	17	0	0	0	0	3	0	0	1	55	0	100	0.57
012	04-Apr	2151	7	0	8	29	2	1	0	1	0	1	0	100	0.78
017	05-Apr	2200	35	0	0	0	0	0	0	0	0	0	0	114	0.61
021	07-Apr	2215	5	0	1	1	0	4	0	0	1	5	0	100	0.70
024	08-Apr	1006	8	0	0	2	0	1	0	0	0	26	1	75	0.73
029	09-Apr	2159	2	0	12	15	0	0	0	0	0	13	0	100	0.69
035	11-Apr	0930	10	0	0	0	0	0	0	0	0	0	0	100	0.53
036	11-Apr	2150	0	0	1	15	1	0	0	0	0	10	0	100	0.63
039	12-Apr	2218	0	0	1	2	0	7	0	0	0	5	1	96	0.48
041	13-Apr	0930	1	0	0	0	0	5	0	0	0	0	0	103	0.42

Station # (240-)	Date (2012)	Time (local +4 GMT)	Shrm	Lobs	Mysi	Euph	Stom	Ostr	Clad	Iso	Flar	Fegg	Other	Total #	Shannon-Weiner Diversity Index
043	14-Apr	1120	0	0	0	0	0	0	0	0	0	0	0	100	0.33
044	14-Apr	2158	3	0	0	3	0	2	0	1	0	0	0	97	0.44
045	18-Apr	2149	4	0	4	10	0	3	0	0	0	2	0	101	0.72
048	19-Apr	2205	4	0	0	5	0	0	0	0	0	0	0	100	0.47
054	21-Apr	0932	1	0	5	10	0	6	1	6	0	1	0	100	0.72
056	21-Apr	2225	28	1	14	1	0	0	0	1	0	0	0	72	0.69
059	22-Apr	0953	14	0	6	0	0	4	0	0	1	1	0	102	0.60
060	22-Apr	2201	11	0	3	5	0	0	0	6	0	0	0	100	0.74
063	23-Apr	2157	3	0	16	1	0	1	0	0	0	0	0	100	0.57
065	24-Apr	0930	1	0	3	1	0	0	0	0	1	1	0	106	0.54
066	24-Apr	2207	10	0	0	0	0	0	0	0	0	0	0	100	0.40
070	26-Apr	0950	25	0	0	0	0	3	0	0	0	14	0	100	0.52
071	26-Apr	2155	12	0	1	1	0	2	0	0	0	0	0	100	0.53
072	27-Apr	0931	31	0	0	0	0	3	0	0	0	1	0	104	0.51
073	27-Apr	2243	0	0	15	0	0	0	0	0	0	0	0	100	0.52
074	28-Apr	0932	42	0	0	0	0	1	0	0	1	0	0	78	0.48
075	29-Apr	0148	9	0	1	0	0	10	0	0	0	0	0	108	0.44
076	29-Apr	1143	33	0	0	0	0	1	1	2	0	1	45	114	0.68
Tucker Trawl Tows															
019 net-1	06-Apr	0856	6	0	1	1	0	5	0	0	1	2	0	100	0.52
019 net-2	06-Apr	0924	1	0	0	0	1	2	0	1	0	2	0	100	0.39
019 net-3	06-Apr	0956	0	0	2	1	10	0	0	2	0	14	0	101	0.67
025 net-1	08-Apr	2111	8	0	2	4	2	1	0	0	0	0	0	103	0.51
025 net-2	08-Apr	2140	2	0	0	0	0	9	1	0	0	1	0	105	0.40
025 net-3	08-Apr	2212	3	0	9	0	0	11	0	0	2	0	1	100	0.51
031 net-1	10-Apr	1005	0	0	2	1	3	12	0	0	0	5	0	96	0.66
031 net-2	10-Apr	1105	0	0	0	0	1	7	0	0	0	11	0	101	0.48

Station # (240-)	Date (2012)	Time (local +4 GMT)	Shrm	Lobs	Mysi	Euph	Stom	Ostr	Clad	Iso	Flar	Fegg	Other	Total #	Shannon-Weiner Diversity Index
031 net-3	10-Apr	1205	0	0	2	0	0	6	2	10	1	20	0	100	0.78
033 net-1	10-Apr	2037	0	0	3	8	1	0	0	3	0	4	0	100	0.71
033 net-2	10-Apr	2115	1	0	6	3	0	4	0	0	4	23	0	100	0.76
033 net-3	10-Apr	2147	0	0	0	0	0	11	0	0	0	2	0	100	0.55
051 net-1	20-Apr	0939	0	3	2	0	0	6	0	2	0	2	0	100	0.65
051 net-2	20-Apr	1018	0	0	1	2	2	2	0	7	0	0	0	95	0.74
051 net-3	20-Apr	Net not open													
052 net-1	20-Apr	2100	4	1	2	3	1	10	0	0	0	0	0	99	0.34
052 net-2	20-Apr	2150	6	0	1	1	0	6	0	6	2	0	2	100	0.31
052 net-3	20-Apr	2211	8	0	0	0	2	14	0	2	5	0	0	101	0.33
068 net-1	25-Apr	0937	4	0	0	1	0	3	0	0	0	0	0	100	0.40
068 net-2	25-Apr	1022	3	0	0	0	0	4	0	0	0	0	0	100	0.25
068 net-3	25-Apr	1041	4	0	1	0	0	2	1	0	0	0	0	106	0.33
069 net-1	25-Apr	2100	4	0	0	1	0	8	0	2	1	0	0	101	0.41
069 net-2	25-Apr	Net not open													
069 net-3	25-Apr	2212	8	0	0	0	0	5	0	0	3	0	1	102	0.45

Abbreviations for zooplankton categories:
Cnid med – cnidarian medusa, Siph – siphonophore bracts and floats, Cten – ctenophores, Salp – salps and doliolids, Pter – pteropods, Nudi – nudibranch, Het – heteropods, OSna – pelagic snails, Ceph – cephalopods, Poly – polychaetes, Chae – chaetognaths Cop – copepods, Gam – gammarid amphipods, Hyp – hyperiid amphipods, Mega – Crab megalopae, Zoea – Crab zoea, Shri – Shrimp larval stage, Lobs – lobster larval stage, Mys – mysids, Euph – euphausiids, Stom – Stomatopod larval stage, Ost – ostracods, Clad – cladocerans, Iso – isopods, larval fish and fish eggs, Oth – unidentified plankton categories, SWDI – Shannon-Weiner Diversity Index

Table 9. Dip net station data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Temp (deg C)	Salinity (psu)	chl-a Fluor (volts x30)	Wind Sea Conditions
004	02-Apr	1020	26.4	35.80	850.4	NNW force 2 on port tack for NT
008	03-Apr	1816	27.9	35.87	972.3	SxE wind F2; seas <1 ft
016	05-Apr	1842	23.8	36.44	1232.7	Heading 090, winds SxW F3
023	08-Apr	0717	23.7	36.26	1233.6	Winds F2, 085 deg; Seas 4.5 ft
028	09-Apr	1642	21.8	36.80	1419.8	Wind F3 SW; seas 2-3 ft, SW
032	10-Apr	1734	22.0	36.85	1354.3	Wind F3 240; seas 5 ft
050	20-Apr	0750	21.5	36.88	753.2	Wind F3 NE; seas 4 ft
053	21-Apr	0543	22.2	36.80	750.7	Wind F2, E; seas 2-3 ft, E
055	21-Apr	1730	22.5	36.78	877.2	
058	22-Apr	0621	23.0	36.83	855.1	Wind F4 113; Seas 4-5ft, 118
065	24-Apr	0605	24.3	36.46	889.9	Wind SExE F4, Seas SExE 4 ft

Table 9 continued. Dip net station data for C240.

Station # (C240-)	Replicate	Collection Conditions	Species: *Sargassum....*	Mass (g)	Growth region (%)	Munsell Color Code	Succession Region (%)	Munsell Color Code	Decline Region (%)	Munsell Color Code
004	A	Isolated clump	S.fluitans	88.0	20%	2.5y 7 6	70%	2.5y 8 8	10%	5yr 4 8
	B	Isolated Clump	S.fluitans	30.0	10%	2.5gy 8 8	75%	2.5gy 8 10	15%	5y 5 6
008	A	Isolated clump	S.fluitans	41.0	10%	2.5gy 8 6	80%	7.5gy 8 8	10%	2.5g 3 4
	B	Isolated Clump	S.fluitans	19.0	10%	2.5gy 8.4	85%	2.5gy 7 6	5%	5g 4 8
016	A	Isolated clump	S.natans	not recorded	5%	5y 8 4	75%	5y 7 10	20%	10r 3 2
	B	Windrow clump	S.natans	not recorded	10%	2.5y 8 6	40%	2.5y 6 8	50%	2.5yr 3 4
023	A	Isolated clump	S.natans	79.0	20%	not recorded	30%	not recorded	50%	not recorded
	B	Isolated clump	S.natans	95.0	15%	not recorded	55%	not recorded	30%	not recorded
028	A	Windrow clump	S.natans	19.0	10%	5y 8 4	50%	5y 7 4	40%	2.5y 5 6
	B	Windrow clump	S.fluitans	20.0	20%	5y 8 4	20%	5y 8 4	60%	5yr 4 8
032	A	Isolated fragments	Mixed, S.fluitans dominant	15.0	15%	2.5y 6 6	35%	7.5yr 5 8	50%	10r 3 2
	B	Isolated fragments	Mixed, S.fluitans dominant	20.0	10%	7.5yr 7 8	40%	7.5yr 5 8	50%	5yr 3 2
050	A	Isolated clump and fragments	S.natans	33.0	40%	5y 8 4	30%	7.5yr 6 8	30%	2.5yr 3 6
	B	Windrow clump and fragments	Mixed, S.fluitans dominant	70.0	10%	5y 8 4	60%	2.5y 7 8	30%	2.5yr 3 4

Station # (C240-)	Replicate	Collection Conditions	Species: *Sargassum....*	Mass (g)	Growth region (%)	Munsell Color Code	Succession Region (%)	Munsell Color Code	Decline Region (%)	Munsell Color Code
053	A	Isolated clump	S.natans	65.0	20%	5y 8 6	30%	5y 7 8	50%	7.5yr 4 4
	B	Isolated clump	S.natans	50.0	50%	5y 8 6	30%	2.5y 6 6	20%	5yr 4 6
055	A	Isolated fragments	Mixed	85.0	10%	2.5y 8 6	30%	5yr 6 8	60%	10r 3 2
	B	Isolated clump	S.natans	105.0	20%	2.5y 7 6	60%	5yr 5 8	10%	10r 3 6
058	A	Isolated clump	S.natans	65.0	20%	2.5y 8 8	50%	2.5gy 7 8	30%	5y 5 6
	B	Isolated clump	S.natans	55.0	30%	2.5y 8 6	50%	5yr 5 8	20%	5yr 3 2
065	A	Isolated fragments	S.fluitans	30.0	35%	2.5y 7 6	25%	5yr 5 4	40%	5yr 3 2
	B	Isolated fragments	S.fluitans	60.0	10%	2.5y 6 6	70%	7.5yr 6 6	20%	5yr 3 2

Table 9 continued. Dip net station data for C240.

Station # (C240-)	Rep-licate	Fish #	Fish (mL)	Crab #	Crab (mL)	Shrimp #	Shrimp (mL)	Snail #	Snail (mL)	Nudi-branch #	Nudi-branch (mL)
004	A	0	0.0	2	0.2	147	1.7	2	bd	0	0
	B	0	0.0	1	0.2	44	0.8	0	0	0	0
008	A	0	0.0	3	0.2	73	0.9	0	0	0	0
	B	0	0.0	1	0.1	17	0.2	0	0	0	0
016	A	0	0.0	1	bd	31	bd	0	0	1	2
	B	1	1.0	0	0.0	7	bd	0	0	0	0
023	A	0	0.0	0	0.0	14	bd	0	0	0	0
	B	0	0.0	0	0.0	5	bd	0	0	0	0
028	A	0	0.0	1	bd	24	bd	0	0	0	0
	B	0	0.0	0	0.0	11	bd	0	0	0	0
032	A	0	0.0	0	0.0	0	0.0	0	0	0	0
	B	0	0.0	2	bd	0	0.0	0	0	0	0
050	A	0	0.0	0	0.0	29	1.5	0	0	0	0
	B	1	0.2	4	0.4	34	0.5	0	0	0	0
053	A	0	0.0	3	0.5	25	1.5	0	0	0	0
	B	0	0.0	0	0.0	2	0.5	0	0	0	0
055	A	0	0.0	0	0.0	38	1.0	0	0	0	0
	B	0	0.0	0	0.0	84	2.0	0	0	0	0
058	A	0	0.0	0	0.0	30	1.1	0	0	0	0
	B	0	0.0	0	0.0	19	1.0	0	0	0	0
065	A	0	0.0	2	1.0	5	1.0	0	0	0	0
	B	0	0.0	2	0.2	2	bd	0	0	0	0

Table 9 continued. Dip net station data for C240.

Station # (C240-)	Replicate	Hydroid % coverage	Bryozoan % coverage	Worm Tube #	Barnacle #	Anemone #	Notes
004	A	20%	25%	0	0	0	
	B	80%	15%	0	0	0	
008	A	85%	10%	2	0	0	
	B	90%	10%	0	0	0	
016	A	20%	15%	0	0	3	
	B	60%	20%	6	8	0	
023	A	35%	40%	44	0	29	
	B	60%	15%	52	0	15	
028	A	20%	5%	50	0	0	
	B	40%	5%	25	0	0	
032	A	50%	20%	40	0	0	
	B	80%	15%	20	0	0	
050	A	40%	40%	75	0	9	
	B	60%	20%	110	0	2	
053	A	30%	40%	65	0	5	
	B	40%	30%	100	0	0	
055	A	50%	40%	17	0	12	
	B	50%	50%	110	0	4	
058	A	40%	30%	240	0	8	
	B	30%	55%	245	0	1	
065	A	85%	10%	18	0	0	
	B	90%	0%	0	0	0	14 amphipods collected

Table 10. Phytoplankton Net station data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Collection Method (Flow-Thru or Drift Net)	Net # (a, b, c)	Tow Depth (m)	Locale	Diatoms (%)	Dinoflagellates (%)
003	02-Apr	0347	Flow thru (63um mesh sieve)		1-3m	Florida Shelf	100.0%	0.0%
006	03-Apr	0321	Flow thru (63um mesh sieve)		1-3m	Gulf Stream		
007	03-Apr	0941	Drift Net (30cm diameter - 63um mesh net)	a	99m - 1% light level	Gulf Stream	94.0%	6.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Gulf Stream	81.0%	19.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Gulf Stream	74.0%	26.0%
010	04-Apr	0430	Flow thru (63um mesh sieve)		1-3m	Gulf Stream	64.0%	36.0%
013	05-Apr	0426	Flow thru (63um mesh sieve)		1-3m	Blake Plateau	100.0%	0.0%
014	05-Apr	0948	Drift Net (30cm diameter - 63um mesh net)	a	93m - 1% light level	Blake Plateau	75.0%	25.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Blake Plateau	30.0%	70.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Blake Plateau	65.0%	35.0%
018	06-Apr	0436	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea		
020	07-Apr	0318	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	100.0%	0.0%
022	08-Apr	0450	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	45.0%	55.0%
026	09-Apr	0517	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea		
027	09-Apr	1021	Drift Net (30cm diameter - 63um mesh net)	a	99m - 1% light level	Sargasso Sea	78.0%	22.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Sargasso Sea	47.0%	53.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Sargasso Sea	29.0%	71.0%
030	10-Apr	0333	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	38.0%	62.0%
034	11-Apr	0600	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	60.0%	40.0%
037	12-Apr	0450	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea		
038	12-Apr	0947	Drift Net (30cm diameter - 63um mesh net)	a	79m - 1% light level	Sargasso Sea	30.0%	70.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Sargasso Sea	59.0%	41.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Sargasso Sea	56.0%	44.0%
040	13-Apr	0411	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	60.0%	40.0%
042	14-Apr	0420	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	56.0%	44.0%
046	19-Apr	0408	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	42.0%	58.0%
047	19-Apr	0952	Drift Net (30cm diameter - 63um mesh net)	a	92m - 1% light level	Sargasso Sea	65.0%	35.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Sargasso Sea	53.0%	47.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Sargasso Sea		

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Collection Method (Flow-Thru or Drift Net)	Net # (a, b, c)	Tow Depth (m)	Locale	Diatoms (%)	Dinoflagellates (%)
049	20-Apr	0307	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	50.0%	50.0%
057	22-Apr	0436	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	53.0%	47.0%
061	23-Apr	0306	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	26.0%	74.0%
062	23-Apr	1000	Drift Net (30cm diameter - 63um mesh net)	a	78m - 1% light level	Sargasso Sea	55.0%	45.0%
			Drift Net (30cm diameter - 63um mesh net)	b	50m	Sargasso Sea	78.0%	22.0%
			Drift Net (30cm diameter - 63um mesh net)	c	25m	Sargasso Sea	76.0%	24.0%
064	24-Apr	0316	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea		
067	25-Apr	0450	Flow thru (63um mesh sieve)		1-3m	Sargasso Sea	26.0%	74.0%

Flow-thru phytoplankton samples were collected using the seawater intake (~1-3m) and collected on a 63µm sieve resting in the lab sink for 30' during station. Phytoplankton samples were preserved in dilute Lugols solution prior to microscope identification. Drift net samples were collected using a standard phytoplankton net attached to the hydrographic wire with a wire clamp and deployed to each target depth and allowed to drift while hove-to for 30'. Net contents were sieved through a 335µm sieve to separate larger zooplankton from the sample and remaining contents collected on the same 63um sieve used for flow-thru samples. Phytoplankton samples were then preserved in dilute Lugols solution prior to microscope identification.

Table 11. Qualitative description of sediment samples from C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Location	Sample Depth (m)	Color Description	General size	Sediment Shape	Organics	Comments
001	01-Apr	1101	Florida Shelf	20	N5/Medium Gray	Mixed- silty, granular, and pebbly	Mostly angular	No	Sieved through 1000 micron sieve for pteropod shell project
004	02-Apr	0936	Florida Shelf	155	10YR/Pale Yellowish; 6/2 Brown	Small, pebbly	curvy, pointy	No	Sieved through 1000 micron sieve for pteropod shell project
011	04-Apr	0956	Blake Plateau	789	10YR 8/2 Very Pale Orange	Sandy	Angular	No	Sieved through 1000 micron sieve for pteropod shell project
011	04-Apr	1051	Blake Plateau	788	5YR 6/4 Light Brown	sandy, silty	Angular	No	Sieved through 1000 micron sieve for pteropod shell project
043	14-Apr	0939	Plantagenet Bank	57	10YR 8/2 Very Pale Orange	12 large coral/rock rubble with sandy; largest chunk 6x4x7 cm to smallest 1x1x0.5 cm	well rounded	Red coral present, algae; 1 crab larvae	1st two shipeks (A&B) yielded no sediment, third (C) did.
077	05-May	0818	Eastern Caribbean Sea	606	5Y 4/1, Olive Grey	Sandy, silty, some rocky pebbles	angular	No, but smells burnt	Off Montserrat
079	06-May	0812	Saba Bank	72	5Y 6/4, Dusky Yellow	Sandy	angular	calcareous red algae (Hallimeda discordea), 1 brittle star	First attempt unsuccessful, second attempt small amount of sediment

Table 12. Secchi disc station data for C240.

Station # (C240-)	Date (2012)	Time (local +4 GMT)	Water Depth (m)	Chl-a Fluor (volts)	CDOM (volts)	Xmiss (volts)	Cloud Cover (%)	Wave Ht (ft)	Wind Sp (BF)	Secchi Depth (m)	Calculated 1% (m)
007	03-Apr	0922	727	881	89	3704	0%	1.0	3	37	99
014	05-Apr	0937	799	1095	87	3404	20%	3.0	4	35	93
027	09-Apr	1000	4137	1315	85	3713	10%	2.0	3	37	99
038	12-Apr	1029	5195	1017	85	3782	70%	4.0	3	30	79
047	19-Apr	0932	4928	732	84	3793	20%	5.0	3	35	94
062	23-Apr	0942	5843	852	79	3802	95%	6.5	4	29	78
079	06-May	0756	72	2078	83	2197	100%	0.5	0	30	79

Table 13. Student research topics for C240.

Title	Author(s)
Analysis Of Sargassum *Abundance And Macrofauna Distribution In The North Atlantic Gyre And Gulf Stream*	Max Abrahamson
Effect Of Spiny Lobster Fishing Efforts Reflected Through Larval Populations	Katie Carria
Adaptations Of Marine Organisms	Crystal Hartley
The Distribution Of Plastic And Plankton In The Water Column Compared With Myctophid Gut Content	Brian Crowley and Kayla Lubold
Physical And Physiological Factors That Affect Diel Vertical Migration In Copepods In The Sargasso Sea And Zooplankton Diversity	Patrick Mears
Investigation Of Plastic Transporting Escherichia coli *In The Western North Atlantic Ocean*	William Melvin
The Role Of Sargassum fluitans *And* S. natans *In The Ontogeny Of Anguillid Leptocephali In The Sargasso Sea*	Victoria Pinheiro
The Effect Of Lunar Phase And Cloud Cover On Diel Vertical Migration Of Myctophids In The North Atlantic	Dawn Rivera
Effects Of Ocean Acidification On Pteropod Shell Strength	James Rohman and Terese Mayerle
The Distribution And Speciation Of Early-Stage Fish In The Sargasso Sea And Adjacent Waters	Matthew Scheuer
Geographic And Vertical Distribution Of Diatom And Dinoflagellate Phytoplankton Based On Light And Nutrient Levels In The Gulf Stream, Blake Plateau, And Sargasso Sea	Peter Wu
The Spatial and Temporal Distributions of Plastics in the Sargasso Sea and Surrounding Regions	Anna Yoors