CRUISE REPORT
C256

Scientific data collected aboard
SSV Corwith Cramer

Las Palmas, Gran Canaria – Portsmouth, Dominica – Philipsburg, St. Marteen – St John, USVI – St Croix, USVI

14 November – 23 December, 2014

First *Sargassum* sighting on December 1st, 2014 by Emma Hayward and Ger Tysk.

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Table 1. C256 Ship's crew and student participants

Nautical Staff		
	Sean Bercaw	Captain
	Sarah Herard	Chief Mate
	Willy Leathers	2nd Mate
	Kevin Murray	3rd Mate
	Mickey Cavacas	Engineer
	Tanner Tillotson	Assistant Engineer
	Nina Murray	Steward
Scientific Staff		
	Jeff Schell	Chief Scientist
	Matt Hirsch	1st Scientist
	Gabrielle Page	2nd Scientist
	Jessica Donahue	3rd Scientist
Maritime Studies Staff		
	Craig Marin	
Visiting Scientist		
	Clare Morrall	St Georges University, Grenada
Sailing Interns		
	Michele Barutha	
	Farley Miller	
	Caitlin O'Morchoe	
Voyagers		
	Ger Tysk	Author, Historian
	Tyler Putman	Material Culturalist, Historian
	Matt Porter	Actor, Mariner
	Nick Dragone	MBL Research Assistant
	Annie Osborn	WHOI Research Assistant
	Taylor Sehein	WHOI Research Assistant
Students		
	Christopher Bunn	Colorado College
	Sarah Davis	Sewanee: The University of The South
	Heather Gaya	Whitman College
	Zachary Godfrey	Rhodes College
	Rebecca Hadik	Clark University
	Emma Hayward	Eugene Lang College, The New School for Liberal Arts
	Megan Lubetkin	Bates College
	Mary Velez	Colgate University

Data Description C256

The cruise track for C-256 (Figure 1) departed from Las Palmas, Gran Canaria, Canary Islands, and finished in Christiansted, St Croix, USVI. During the nearly six-week voyage we had three port stops; the first in Portsmouth, Dominica, the second in Philipsburg, St Marteen, and the last in St John, USVI.

Our cruise track traversed several major oceanographic provinces (Figure 1): a) the cold, coastally influenced waters of the Canary Current, b) the sub-tropical North Atlantic gyre or Sargasso Sea, c) the North Equatorial Current (NEC) region, and d) the waters of the Eastern Caribbean Sea.

We collected data with 144 individual deployments from 63 discrete geographic stations along our cruise track (Table 2). Comparison of the physical, chemical, biologic and geologic features of these regions represented the major oceanographic theme of this sea semester.

1. Physical oceanographic studies focused on the distribution of surface and sub-surface (to 1200 m) water masses and the delineation of hydrographic boundaries. Specifically, North Atlantic sub-tropical mode water (18°C Water) and Antarctic Intermediate Water (AAIW) were studied in relation to the phase of the North Atlantic Oscillation (NAO). In addition, we conducted a comparison of sea surface temperature using historic (bucket thermometer) and contemporary (electronic thermister from a seawater intake system) instrumentation.
2. Chemical oceanographic studies focused on the geographic and vertical distribution of extracted chlorophyll-*a*. These chemical parameters were related to patterns in physical hydrography at various scales: sub-tropical convergence, ocean fronts and eddies associated with the North Equatorial Current, and water column stratification.
3. Biological studies focused on the geographic distribution of charismatic megafauna (seabirds, sea turtles, flying fish, and marine mammals), several meroplanktonic larvae including spiny lobster (phyllosoma) and eels (leptocephali), the floating macrophyte – *Sargassum* spp., and the density (mL/m2) and diversity (i.e. Shannon-Weiner index) of the aggregate zooplankton community. In addition, patterns of phytoplankton community structure were examined along the cruise track.
4. Geological sampling focused on bathymetric transects across numerous tectonic features (e.g. island hot spots, mid-ocean ridge, abyssal plains, and subduction zone), bathymetric mapping of Researcher Ridge, and sediment collection on Researcher Ridge and continental shelf regions of several Caribbean Islands.

Sea surface temperature, salinity, fluorescence (chlorophyll-*a* and CDOM) and transmissivity levels; along with barometric pressure, winds, bathymetry, and geographic position were recorded continuously along the cruise track. Large-scale hydrography is summarized with surface plots for some parameters (Figure 2a-c) other data is available upon request. Surface samples (96) of chlorophyll-*a* were collected every six hours and in conjunction with all neuston net tows during the cruise track (Table 3).

A comparison of historic and contemporary methods for determination of sea surface temperature was conducted routinely as part of lab Hourly Observations. Historic methods involved collection of surface water using a bucket and temperature measurements made with an alcohol thermometer. Contemporary methods collect water with a thru-hull intake pump that collects water from 1-3m below the sea surface, depending on ship heel, and measured temperature with an in-line electronic thermistor (Table 3). Each technique was cross-calibrated before the cruise began.

Additional Hourly Observations included the enumeration of seabirds, sea turtles, flying fish, marine mammals, *Sargassum* spp clumps, and floating plastic debris. Observations occurred only during daylight hours 0700-1900 for a period of 6 minutes each hour (n=129). Periodically, opportunistic sightings were also recorded when notable megafauna or marine debris were present. Data available upon request.

But for the occasional eddy surface currents along the C256 cruise track were weak (< 500mm/s, or 1.0 knot) and variable in direction. Regional examination of surface currents highlight the presence of eddies and meanders near constricted island passages (Figure 3). Instrument failure during the latter fifth of the cruise accounts for the absence of data in this region.

The density, dissolved oxygen, and chlorophyll-*a* structure of the water column (maximum depth 1200 m) were determined using a Seabird CTD with attached *in situ* chlorophyll-*a* fluorescence and dissolved oxygen sensors (21 stations, Table 4). Sub-surface water masses are revealed with a cross-section plot along the cruise track (Figure 4a-d).

Surface plankton assemblages along with the floating macrophyte *Sargassum* spp., marine debris and tar balls were sampled regularly with a neuston net (47 stations, 335 µm mesh, Table 5). Targeted depths ranged from 5 to 15 m. In combination these myriad net deployments reveal the vertical and horizontal distribution patterns of the marine insect *Halobates*, eel (leptocephali) and spiny lobster (phyllosoma) larvae, pteropods, and general zooplankton diversity and taxonomic composition in relation to numerous environmental parameters. Zooplankton diversity and taxonomic composition in relation to numerous environmental parameters was examined for all nets (Table 6).

Phytoplankton samples were routinely collected with a surface (~1-3m) drifted phytonet (12 stations, 30cm frame, 63 µm mesh, Table 7).

Nine sediment samples were collected using a shipek grab (7 stations, Table 8). Two along the crest of Researcher Ridge, a single sample on the continental shelf of Dominica, Montserrat, and St Martin, and two on Saba Bank. Additional data available upon request.

Marine debris was collected at discrete depths using a $1m^2$-Tucker trawl net (4 stations, 335 µm mesh, Table 9).

Light penetration through the water column was routinely measured with a secchi disc (18 stations, Table 10) to estimate the 1% light level.

Final scientific work conducted aboard ship was the routine collection of *Sargassum* clumps and marine plastic debris with a dip net (17 stations, 335 µm mesh, Table 11). Shrimp, crab, fish specimens and all epibionts (emphasis on attached phytoplankton) were rinsed from collected samples. Abundance and diversity of associated biota were related to mass (g) of *Sargassum* or plastic debris and geographic location.

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 12). Student research efforts culminated in a written report and public presentation to the ship's company. These papers are available on request from SEA.

Jeffrey Schell, Associate Professor – Chief Scientist, C256

F**igure 1. Final cruise track for C256** based on hourly (local time) positions, including ports of call.

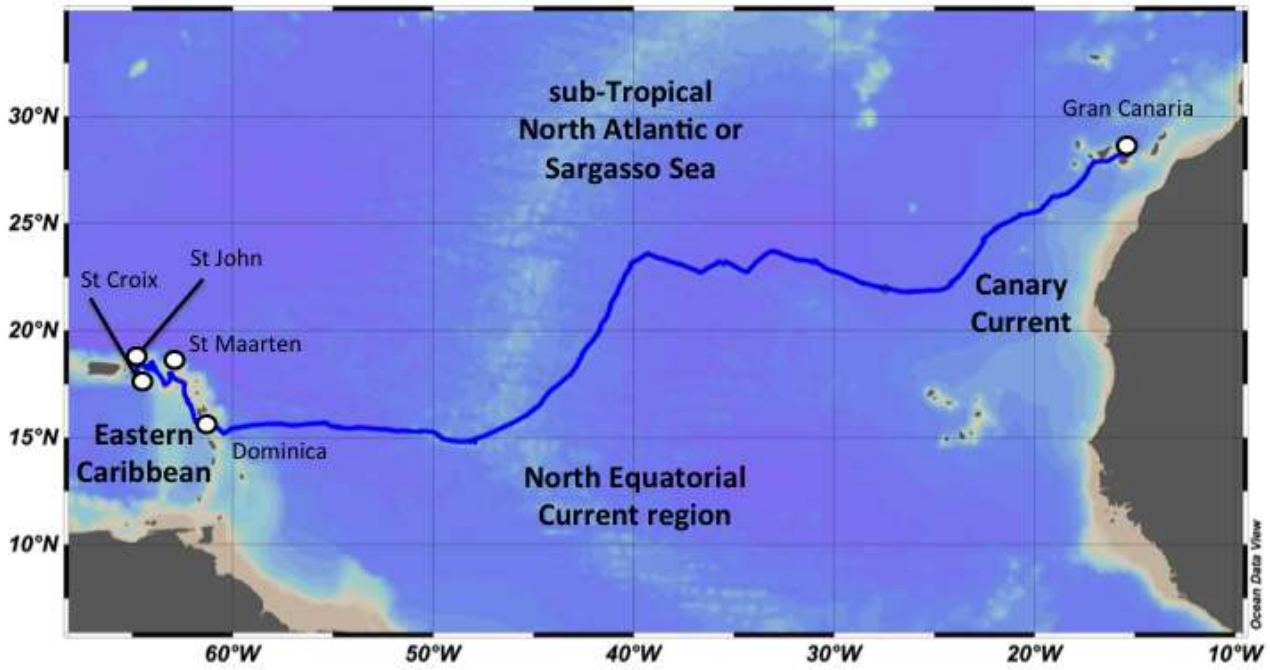


Table 2. Summary of oceanographic sampling stations for C256.

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
001	16-Nov	2312	58.8	27.97	-16.24	Canary Islands	NT
002	17-Nov	0958	121.9	27.63	-17.23	Canary Islands	PN
002	17-Nov	1010	121.9	27.63	-17.23	Canary Current	SD
002	17-Nov	1028	122.2	27.72	-17.23	Canary Current	CTD
002	17-Nov	1116	121.9	27.63	-17.23	Canary Islands	DN-A
002	17-Nov	1147	122.4	27.63	-17.23	Canary Islands	NT
002	17-Nov	1205	122.8	27.63	-17.22	Canary Islands	DN-B
003	17-Nov	2315	192.0	26.81	-17.84	Canary Current	NT
004	18-Nov	0905	254.4	26.31	-18.71	Canary Current	DN-A
005	18-Nov	1016	260.0	26.90	-18.98	Canary Current	CTD
005	18-Nov	1137	260.1	26.27	-18.78	Canary Current	NT
005	18-Nov	1158	260.6	26.29	-18.78	Canary Current	DN-B
006	19-Nov	0011	347.7	25.61	-19.74	Canary Current	NT
007	19-Nov	0942	401.5	25.40	-20.78	Canary Current	PN
007	19-Nov	0950	401.5	25.40	-20.77	Canary Current	SD
007	19-Nov	0956	401.5	25.52	-20.08	Canary Current	CTD
007	19-Nov	1128	401.9	25.38	-20.75	Canary Current	NT
008	20-Nov	0112	475.2	24.76	-21.92	Canary Current	NT
009	20-Nov	0956	529.5	24.25	-22.58	Canary Current	PN
009	20-Nov	1015	529.5	24.25	-22.58	Canary Current	SD
009	20-Nov	1029	529.5	24.24	-22.57	Canary Current	CTD
009	20-Nov	1207	529.5	24.21	-22.53	Canary Current	NT
010	21-Nov	0047	624.1	22.90	-23.49	North Atlantic Gyre	NT
011	21-Nov	0952	683.3	22.23	-24.19	North Atlantic Gyre	PN
011	21-Nov	1011	683.8	22.23	-24.19	North Atlantic Gyre	SD
011	21-Nov	1038	683.8	22.22	-24.18	North Atlantic Gyre	CTD
011	21-Nov	1156	684.4	22.21	-24.16	North Atlantic Gyre	NT
012	22-Nov	0014	760.0	21.88	-25.35	North Atlantic Gyre	NT
013	22-Nov	1001	811.0	21.84	-26.23	North Atlantic Gyre	NT
013	22-Nov	1106	812.2	21.81	-26.22	North Atlantic Gyre	TT
013	22-Nov	1106	812.2	21.81	-26.22	North Atlantic Gyre	RBR-CTD
013	22-Nov	1202	811.0	21.79	-26.22	North Atlantic Gyre	CTD
014	23-Nov	0003	885.4	21.97	-27.43	North Atlantic Gyre	NT
015	23-Nov	0957	950.0	22.24	-28.55	North Atlantic Gyre	PN
015	23-Nov	1000	950.0	22.24	-28.55	North Atlantic Gyre	SD
015	23-Nov	1016	950.0	22.24	-28.56	North Atlantic Gyre	CTD
015	23-Nov	1131	950.1	22.23	-28.57	North Atlantic Gyre	NT

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
016	24-Nov	0014	1038.6	22.78	-30.08	North Atlantic Gyre	NT
017	24-Nov	0935	1099.6	23.26	-31.02	North Atlantic Gyre	TT-A
017	24-Nov	1027	1101.5	23.23	-31.03	North Atlantic Gyre	TT-B
017	24-Nov	1104	1102.5	23.21	-31.03	North Atlantic Gyre	TT-C
017	24-Nov	1159	1104.0	23.18	-31.02	North Atlantic Gyre	NT
018	25-Nov	0007	1170.8	23.42	-32.19	North Atlantic Gyre	NT
019	24-Nov	1006	1220.8	23.71	-33.02	North Atlantic Gyre	SD
019	25-Nov	1022	1220.9	23.71	-33.02	North Atlantic Gyre	PN
019	25-Nov	1025	1020.9	23.71	-33.02	North Atlantic Gyre	CTD
019	25-Nov	1140	1221.0	23.69	-33.03	North Atlantic Gyre	NT
020	26-Nov	0015	1313.3	22.76	-34.32	North Atlantic Gyre	NT
021	26-Nov	0953	1381.5	23.23	-35.40	North Atlantic Gyre	PN
021	26-Nov	1002	1381.5	23.23	-35.40	North Atlantic Gyre	SD
021	26-Nov	1045	1381.5	23.19	-35.43	North Atlantic Gyre	CTD
021	26-Nov	1202	1383.5	23.17	-35.46	North Atlantic Gyre	NT
022	27-Nov	0025	1465.5	22.74	-36.65	North Atlantic Gyre	NT
023	27-Nov	1000	1532.5	23.14	-37.76	North Atlantic Gyre	SD
023	27-Nov	1020	1532.5	23.13	-37.78	North Atlantic Gyre	CTD
023	27-Nov	1137	1531.5	23.12	-37.78	North Atlantic Gyre	NT
024	28-Nov	0015	1621.4	23.59	-39.32	North Atlantic Gyre	NT
025	28-Nov	0958	1671.1	23.18	-40.07	North Atlantic Gyre	SD
025	28-Nov	1014	1671.1	23.18	-40.08	North Atlantic Gyre	CTD
025	28-Nov	1126	1671.1	23.17	-40.09	North Atlantic Gyre	NT
026	29-Nov	0008	1743.4	22.12	-40.68	North Atlantic Gyre	NT
027	29-Nov	0948	1790.1	21.44	-41.04	North Atlantic Gyre	TT-A
027	29-Nov	1035	1792.0	21.41	-41.05	North Atlantic Gyre	TT-B
027	29-Nov	1123	1793.7	21.37	-41.06	North Atlantic Gyre	TT-C
027	29-Nov	1209	1794.7	21.35	-41.06	North Atlantic Gyre	NT
027	29-Nov	0948	1790.1	21.44	-41.04	North Atlantic Gyre	RBR-CTD
028	29-Nov	2353	1835.7	20.66	-41.33	NEC Transition Zone	NT
029	30-Nov	1019	1887.4	19.91	-41.75	NEC Transition Zone	SD
029	30-Nov	1039	1887.4	19.91	-41.76	NEC Transition Zone	CTD
029	30-Nov	1151	1887.4	19.89	-41.78	NEC Transition Zone	NT
030	30-Nov	2356	1958.4	18.97	-42.53	NEC Transition Zone	NT
031	1-Dec	0953	2018.9	18.12	-43.02	NEC Transition Zone	PN
031	1-Dec	1000	2018.9	18.11	-43.03	NEC Transition Zone	SD
031	1-Dec	1018	2018.9	18.11	-43.03	NEC Transition Zone	CTD
031	1-Dec	1141	2019.5	18.08	-43.05	NEC Transition Zone	NT
032	2-Dec	0008	2111.5	17.09	-44.25	NEC Transition Zone	NT

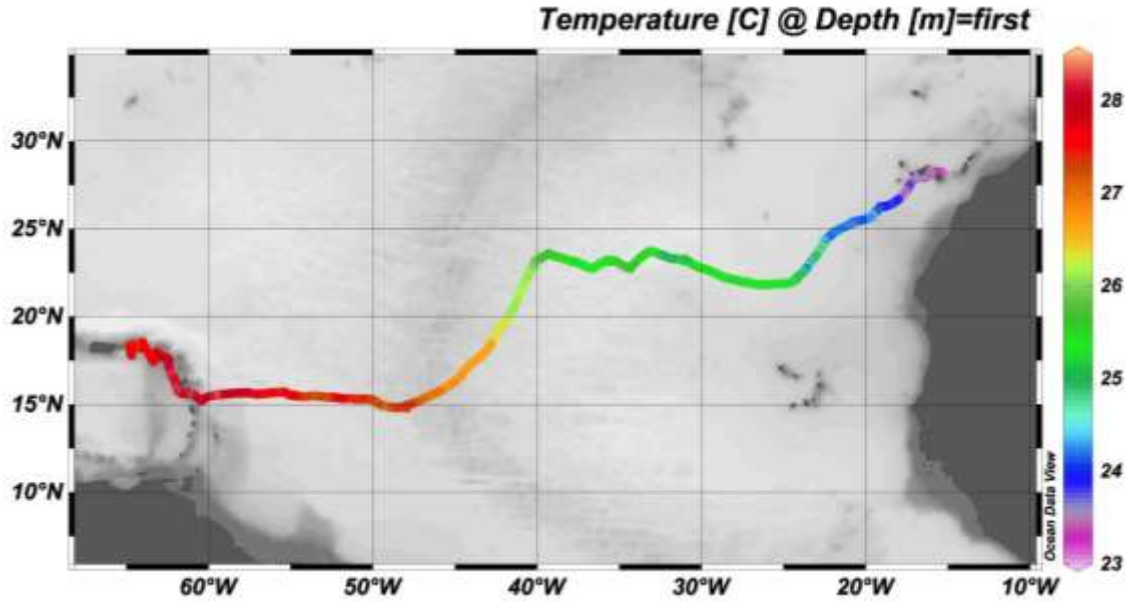
Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
033	2-Dec	0925	2170.5	16.36	-44.93	NEC Transition Zone	PN
033	2-Dec	0932	2170.5	16.36	-44.93	NEC Transition Zone	SD
033	2-Dec	0948	2170.5	16.35	-44.94	NEC Transition Zone	CTD
033	2-Dec	1052	2170.7	16.34	-44.96	NEC Transition Zone	NT
033	2-Dec	1119	2170.8	16.33	-44.95	NEC Transition Zone	DN
034	2-Dec	1415	2185.1	16.20	-45.18	NEC Transition Zone	DN
035	3-Dec	1015	2330.5	15.10	-47.43	NEC Transition Zone	-DN
035	3-Dec	2040	2398.0	14.86	-48.13	Researcher Ridge	SG
036	3-Dec	2136	2398.0	14.87	-48.12	Researcher Ridge	SG
037	3-Dec	2228	2398.4	14.86	-48.14	NEC Transition Zone	NT
038	4-Dec	0728	2463.9	14.90	-49.26	NEC Transition Zone	DN
039	4-Dec	0924	2477.7	14.95	-49.48	NEC Transition Zone	PN
039	4-Dec	0928	2477.7	14.95	-49.48	NEC Transition Zone	SD
039	4-Dec	0948	2477.7	14.95	-49.48	NEC Transition Zone	CTD
039	4-Dec	1110	2478.1	14.95	-49.48	NEC Transition Zone	NT
040	5-Dec	0008	2545.9	15.31	-50.60	NEC Transition Zone	NT
041	5-Dec	0924	2615.2	15.34	-51.75	NEC Transition Zone	NT
041	5-Dec	1019	2627.4	15.32	-51.78	NEC Transition Zone	PN
041	5-Dec	1025	2627.4	15.32	-51.79	NEC Transition Zone	SD
041	5-Dec	1040	2617.4	15.32	-51.79	NEC Transition Zone	CTD
042	5-Dec	2355	2705.0	15.46	-53.29	NEC Transition Zone	NT
043	6-Dec	1121	2790.0	15.49	-54.75	NEC Transition Zone	NT
043	6-Dec	1123	2790.0	15.49	-54.75	NEC Transition Zone	DN
044	6-Dec	1650	2810.0	15.64	-55.29	NEC Transition Zone	CTD
045	7-Dec	0943	2931.6	15.59	-56.94	NEC Transition Zone	PN
045	7-Dec	0945	2931.6	15.59	-56.94	NEC Transition Zone	SD
045	7-Dec	1002	2931.6	15.59	-56.94	NEC Transition Zone	CTD
045	7-Dec	1012	2931.6	15.59	-56.94	NEC Transition Zone	DN-A
045	7-Dec	1012	2931.6	15.59	-56.94	NEC Transition Zone	DN-B
045	7-Dec	1012	2931.6	15.59	-56.94	NEC Transition Zone	DN-C
045	7-Dec	1012	2931.6	15.59	-56.94	NEC Transition Zone	DN-D
045	7-Dec	1128	2932.0	15.59	-56.97	NEC Transition Zone	NT
046	8-Dec	1005	3070.1	15.54	-59.38	NEC Transition Zone	CTD
047	8-Dec	1300	3076.2	15.51	-59.54	NEC Transition Zone	DN-A
047	8-Dec	1300	3076.2	15.51	-59.54	NEC Transition Zone	DN-B
048	9-Dec	0006	3124.0	15.21	-60.40	NEC Transition Zone	NT
049	9-Dec	1014	3183.4	15.71	-61.31	Dominica	DN-A
049	9-Dec	1014	3183.4	15.71	-61.31	Dominica	DN-B
050	9-Dec	1033	3185.1	15.71	-61.32	Dominica	NT

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
051	12-Dec	1300	3131.8	15.58	-61.47	Dominica	SD
051	12-Dec	1322	3131.8	15.58	-61.46	Dominica	SG-A
051	12-Dec	1322	3131.8	15.58	-61.46	Dominica	SG-B
051	12-Dec	1337	3131.8	15.58	-61.47	Dominica	CTD
052	13-Dec	1314	3227.1	15.81	-61.80	Eastern Caribbean	NT
052	13-Dec	1330	3227.5	15.80	-61.81	Eastern Caribbean	DN-A
052	13-Dec	1330	3227.5	15.80	-61.81	Eastern Caribbean	DN-B
053	14-Dec	0024	3275.0	16.55	-62.12	Eastern Caribbean	NT
054	14-Dec	0630	3294.7	16.77	-62.24	Monserrat	SG-A
054	14-Dec	0716	3294.7	16.76	-62.25	Monserrat	SG-B
055	14-Dec	1001	3313.8	17.04	-62.38	Eastern Caribbean	NT
055	14-Dec	1014	3314.3	17.04	-62.39	Redonda/Nevis	DN
056	14-Dec	1600	3334.0	17.46	-62.41	Eastern Caribbean	DN
057	15-Dec	0016	3358.5	17.74	-62.85	Eastern Caribbean	NT
058	15-Dec	0808	3376.9	17.97	-63.14	Eastern Caribbean/St. Martin	NT
058	15-Dec	0818	3377.8	17.98	-63.14	Eastern Caribbean	DNA
058	15-Dec	0933	3378.3	18.00	-63.14	Eastern Caribbean	TT
058	15-Dec	1015	3378.5	18.01	-63.13	Eastern Caribbean	DNB
058	15-Dec	0933	3378.3	18.00	-63.14	Eastern Caribbean	RBR-CTD
059	18-Dec	1446	3380.0	18.02	-63.05	St Maarten	SD
059	18-Dec	1500	3380.0	18.02	-63.05	St Maarten	SG
060	18-Dec	2232	3402.0	17.49	-63.33	Saba Bank	SG
061	19-Dec	0005	3426.1	17.50	-63.39	Saba Bank	SG
061	19-Dec	0039	3426.9	17.49	-63.39	Saba Bank	NT
062	19-Dec	1003	3486.8	18.30	-63.88	Eastern Caribbean	SD
062	19-Dec	1040	3480.8	18.29	-63.89	Eastern Caribbean	CTD
062	19-Dec	1051	3486.8	18.29	-63.90	Eastern Caribbean	DN-A+B
062	19-Dec	1051	3486.8	18.29	-63.90	Eastern Caribbean	DN-C+D
063	20-Dec	0828	3616.4	18.37	-64.66	Sir Francis Drake Channel	DN

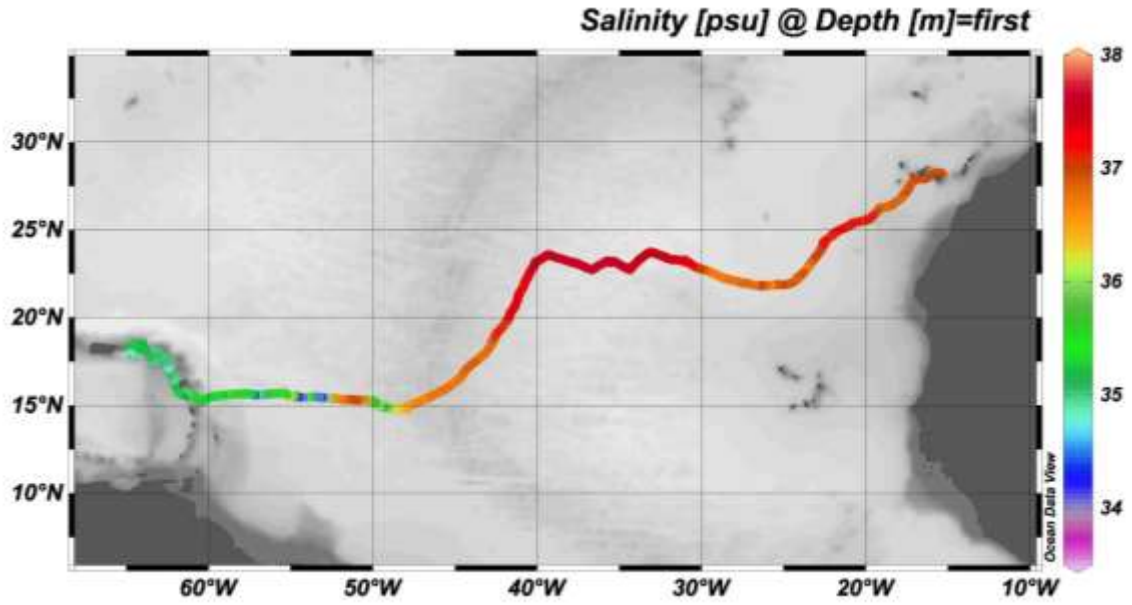
Duplicate station numbers indicate multiple oceanographic deployments that either occurred concurrently in the same location or were deployed sequentially in the same general location after the vessel was hove to. General Locations are categorized by traditional oceanic biomes or significant geologic feature. Abbreviations for oceanographic equipment deployed are: NT – Neuston Tow, DN – Dip Net, PN – Phytoplankton Net, TT – Tucker Trawl net, CTD – conductivity, temperature, and depth profilers, RBR – a small CTD towed with the Tucker Trawl, SG – Shipek Grab, and SD – Secchi Disc

Figure 2a-c. Surface water hydrography for C256.

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



b. Salinity



c. Chlorophyll-*a* fluorescence. For the first half of the cruise the chlorophyll-*a* fluorescence sensor was non-operational.

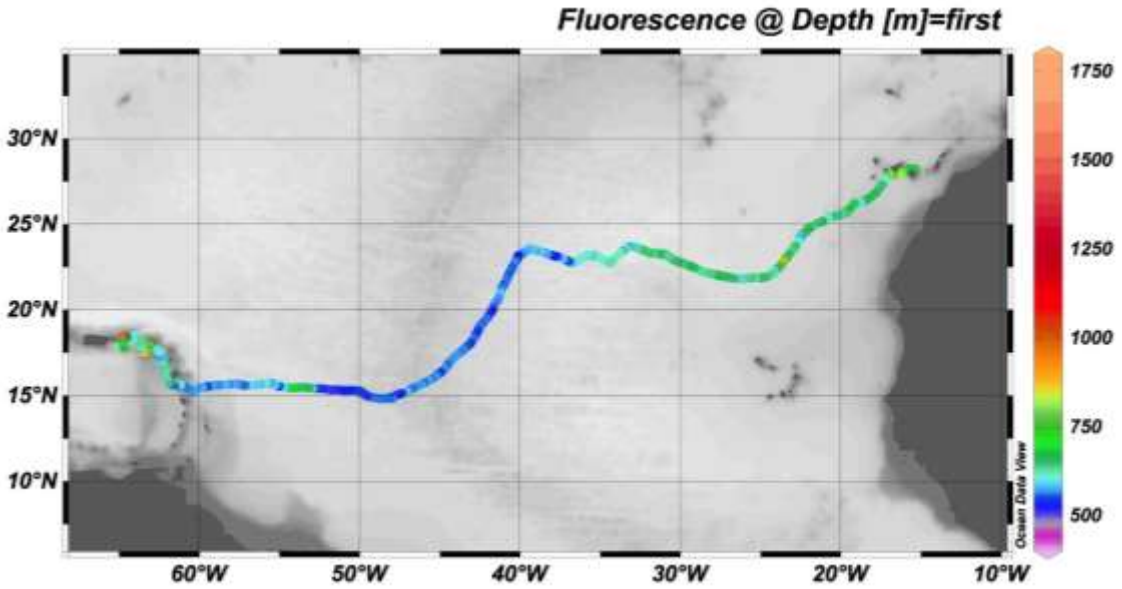


Table 3. Surface station location and surface sensor data for C256.

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Temp (°C)	Bucket Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Chl-*a* (µg/l)
SS-001	16-Nov	1810	22.9	28.3	-15.6	23.3	22.9	36.90	664.1	0.114
SS-002	16-Nov	2320	59.0	28.0	-16.2	23.4		36.95	801.3	0.122
SS-003	17-Nov	0601	103.8	27.9	-17.1	23.6	24.0	36.94	782.6	0.154
SS-004	17-Nov	1148	122.9	27.6	-17.2	23.6		36.98	609.1	0.083
SS-005	17-Nov	1602	163.6	27.1	-17.6	23.4	23.2	36.91	638.0	0.066
SS-006	17-Nov	2318	192.0	26.8	-17.8	23.5		36.83	644.6	0.091
SS-007	18-Nov	0600	236.2	26.4	-18.4	23.8	23.2	36.82	665.3	0.114
SS-008	18-Nov	1140	259.0	26.3	-18.8	23.9	25.0	36.78	576.7	0.078
SS-009	18-Nov	1815	298.0	26.1	-19.3	24.1	24.0	36.89	650.5	0.068
SS-010	19-Nov	0030	336.8	25.6	-19.7	24.3	24.5	37.11	647.9	0.047
SS-011	19-Nov	0600	376.4	25.5	-20.3	24.1	23.8	37.10	625.1	0.065
SS-012	19-Nov	1146	401.9	25.4	-20.7	24.0		37.12	595.1	0.042
SS-013	19-Nov	1813	440.9	25.1	-21.4	24.1	23.7	37.13	634.5	0.075
SS-014	19-Nov	0124	475.2	24.8	-21.9	24.2	24.2	37.12	653.0	0.071
SS-015	20-Nov	0557		24.7	-22.2	24.2	24.0	37.11	647.2	0.065
SS-016	20-Nov	1211	529.5	24.2	-22.5	24.4		37.24	567.0	0.073
SS-017	20-Nov	1813		23.6	-23.0	24.8	24.8	36.92	635.5	0.109
SS-018	21-Nov	0051	624.1	22.9	-23.4	24.6		36.70	691.3	0.112
SS-019	21-Nov	0605	655.3	22.5	-23.8	24.8	24.7	36.87	648.0	0.114
SS-020	21-Nov	1210	684.4	22.2	-24.1	25.2	25.0	36.95	598.1	0.091
SS-021	21-Nov	1703	715.0	21.9	-24.6	25.2	25.2	36.87	627.5	0.096
SS-022	22-Nov	0020	760.0	21.9	-25.3	25.3	25.0	36.93	621.7	0.042
SS-023	22-Nov	0500	783.4	21.8	-25.7	25.3	25.2	36.74	621.1	0.059
SS-024	22-Nov	1022	811.4	21.8	-26.2	25.4	25.2	36.86	611.0	0.085
SS-025	22-Nov	1702	837.0	21.8	-26.6	25.4	25.2	36.96	642.3	0.058
SS-026	23-Nov	0023	886.0	22.0	-27.4	25.4	25.2	36.84	647.5	0.081
SS-027	23-Nov	0508	916.6	22.1	-28.0	25.4	25.0	30.75	636.2	0.092
SS-028	23-Nov	1148	950.5	22.2	-28.6	25.3	25.2	36.72	636.7	0.092
SS-029	23-Nov	1706	987.5	22.5	-29.2	25.4	25.6	36.60	672.0	0.074
SS-030	24-Nov	0020	1039.0	22.8	-30.1	25.0	25.0	36.90	653.4	0.054
SS-031	24-Nov	0457	1071.4	23.0	-30.6	25.3	25.2	37.19	626.0	0.060
SS-032	24-Nov	1220		23.2	-31.0	25.1	24.5	37.34	625.0	0.083
SS-033	24-Nov	1723	1141.7	23.3	-31.7	25.1	24.9	37.39	619.8	0.112
SS-034	25-Nov	0025	1171.5	23.4	-32.2	24.9	25.0	37.46	651.2	0.102
SS-035	25-Nov	0515	1197.3	23.6	-32.6	24.9	24.7	37.43	617.4	0.108
SS-036	25-Nov	1146	1221.1	23.7	-33.0	25.3	25.2	37.46	587.0	0.169
SS-037	25-Nov	1702	1257.3	23.4	-33.6	25.5	25.5	37.48	644.5	0.049
SS-038	26-Nov	0020	1313.3	22.8	-34.3	25.5		37.37	616.9	0.083
SS-039	26-Nov	0500	1345.8	22.9	-34.8	25.7	25.5	37.57	607.1	0.059
SS-040	26-Nov	1206	1383.5	23.2	-35.5	25.4	25.4	37.58	592.0	0.098
SS-041	26-Nov	1700	1414.5	23.1	-35.9	25.4	25.1	37.63	612.0	0.065
SS-042	27-Nov	0033	1465.8	22.7	-36.7	25.3	25.3	37.62	586.5	0.033
SS-043	27-Nov	0501	1494.5	22.9	-37.1	25.3	24.8	37.57	544.1	0.067
SS-044	27-Nov	1150	1533.3	23.1	-37.8	25.3	25.2	37.57	532.6	0.071
SS-045	27-Nov	1658	1567.1	23.3	-38.4	25.3	25.4	37.57	579.5	0.052

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Temp (°C)	Bucket Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Chl-*a* (µg/l)
SS-046	28-Nov	0033	1621.6	23.6	-39.3	25.7	25.4	37.55	591.5	0.102
SS-047	28-Nov	0504	1644.7	23.4	-39.7	25.5	25.5	37.55	576.6	0.081
SS-048	28-Nov	1132	1671.5	23.2	-40.1	25.8	25.8	37.54	547.0	0.336
SS-049	28-Nov	1710	1699.9	22.7	-40.3	25.9	25.8	37.46	572.0	0.055
SS-050	29-Nov	0013	1744.7	22.1	-40.7	26.1	25.8	37.33	558.1	0.060
SS-051	29-Nov	0502	1763.0	21.8	-40.8	26.0	26.5	37.18	558.8	0.163
SS-052	29-Nov	1217	1799.9	21.3	-41.1	26.1	25.9	37.17	533.5	0.286
SS-053	29-Nov	1703	1811.2	21.1	-41.2	26.2	26.2	37.38	572.7	0.139
SS-054	30-Nov	0007	1835.8	20.7	-41.3	25.9	25.9	37.35	567.2	0.154
SS-055	30-Nov	0459	1861.3	20.3	-41.6	26.1	26.0	37.34	558.2	0.163
SS-056	30-Nov	1204	1887.4	19.9	-41.8	26.1	26.2	36.20	520.3	0.086
SS-057	30-Nov	1703	1915.3	19.5	-42.1	26.3	26.3	36.94	552.4	0.113
SS-058	1-Dec	0010	1958.6	19.0	-42.5	26.2	26.1	37.10	549.3	0.228
SS-059	1-Dec	0501	1986.2	18.6	-42.7	26.4	26.2	36.91	530.8	0.113
SS-060	1-Dec	1141	2019.5	18.1	-43.0	26.6	26.9	36.80	551.2	0.313
SS-061	1-Dec	1700	2060.3	17.6	-43.6	26.6	26.5	36.73	566.4	0.113
SS-062	2-Dec	0012	2111.6	17.1	-44.3	26.6	26.8	36.89	565.1	0.096
SS-063	2-Dec	0500	2141.1	16.7	-44.6	26.7	26.3	36.79	566.6	0.270
SS-064	2-Dec	1106	2171.0	16.3	-45.0	26.7		36.74	546.1	0.193
SS-065	2-Dec	1719	2200.5	16.0	-45.4	26.8	26.8	36.72	552.9	0.155
SS-066	3-Dec	0004	2249.5	15.7	-46.1	26.9	26.9	36.17	563.4	0.165
SS-067	3-Dec	0505	2288.1	15.4	-46.8	26.9		36.75	559.8	0.120
SS-068	3-Dec	1200	2343.2	15.0	-47.6	27.2	27.8	36.63	520.6	0.191
SS-069	3-Dec	1700	2372.9	14.8	-47.9	27.3	27.3	36.58	558.3	0.161
SS-070	3-Dec	2231	2398.6	14.9	-48.1	27.3	27.4	36.46	548.2	0.176
SS-071	4-Dec	0502	2444.8	14.8	-48.9	27.2	27.0	35.96	558.9	0.136
SS-072	4-Dec	1113	2478.3	15.0	-49.5	27.1		35.68	505.3	0.078
SS-073	4-Dec	1710	2501.5	15.2	-49.8	27.1		35.56	546.4	0.097
SS-074	5-Dec	0017	2545.8	15.3	-50.6	27.5		36.83	533.4	0.076
SS-075										0.115
SS-076	5-Dec	0930	2615.2	15.3	-51.7	27.4		36.81	524.1	0.145
SS-077	5-Dec	1700	2655.0	15.4	-52.5	27.7		36.59	537.9	0.102
SS-078	6-Dec	0005	2705.3	15.5	-53.3	27.3		33.97	644.5	
SS-079	6-Dec	0500	2741.3	15.5	-54.9	27.2		35.40	647.9	
SS-080	6-Dec	1127	2790.0	15.5	-54.7	27.6		35.44	590.0	
SS-081	6-Dec	2349	2859.6	15.7	-55.8	27.4		35.37	591.5	
SS-082	7-Dec	0500		15.6	-56.4	27.7		35.74	593.5	
SS-083	7-Dec	1133	2932.0	15.5	-57.0	27.6		34.88	582.0	
SS-084	7-Dec	1703	2965.0	15.6	-57.5	28.0		35.13	566.0	
SS-085	8-Dec	0010	3003.9	15.7	-58.2	28.0		35.66	563.0	
SS-086	8-Dec	0455	3044.1	15.6	-59.4	27.9		35.40	563.1	
SS-087	8-Dec	1705	3089.1	15.5	-59.8	28.1		35.26	588.3	
SS-088	9-Dec	0009	3124.0	15.2	-60.4	28.0		35.23	573.8	
SS-089	9-Dec	0505	3151.0	15.5	-60.8	28.1		35.25	560.8	
SS-090	9-Dec	1037	3185.1	15.7	-61.3	27.9		37.17	617.4	
SS-091	13-Dec	1315	3227.2	15.8	-61.8	28.0		35.27	590.9	
SS-092	14-Dec	0041	3275.2	16.5	-62.1	28.0		34.88	623.3	
SS-093	14-Dec	1006	3313.7	17.0	-62.4	28.1		34.99	589.3	

Station # (C256-)	Date (2014)	Local Time	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Temp (°C)	Bucket Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Chl-*a* (µg/l)
SS-094	15-Dec	0020	3358.5	17.7	-62.9	27.9		35.00	587.3	
SS-095	15-Dec	0813	3377.4	18.0	-63.1	27.8		34.93	639.7	
SS-096	19-Dec	0043	3426.9	17.5	-63.4	27.5		34.93	658.1	

Surface water samples were collected using a clean, seawater flow-thru system (intake ~ 1-3m depth) with in-line temperature, salinity and *in vivo* chlorophyll-*a*, fluorescence sensors. Discrete water samples were collected for nd extracted chlorophyll-*a* (Chl-*a*) concentrations, 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. A blank space indicates that no sample was collected for that analysis. Sea surface temperature was measured with an inline electronic thermistor as part of a seawater flow-thru system (intake at 1-3m below surface) as well as with a surface bucket and alcohol thermometer.

Figure 3. Surface current magnitude during C256. Note, 500 mm/s is approximately 1.0 knot.

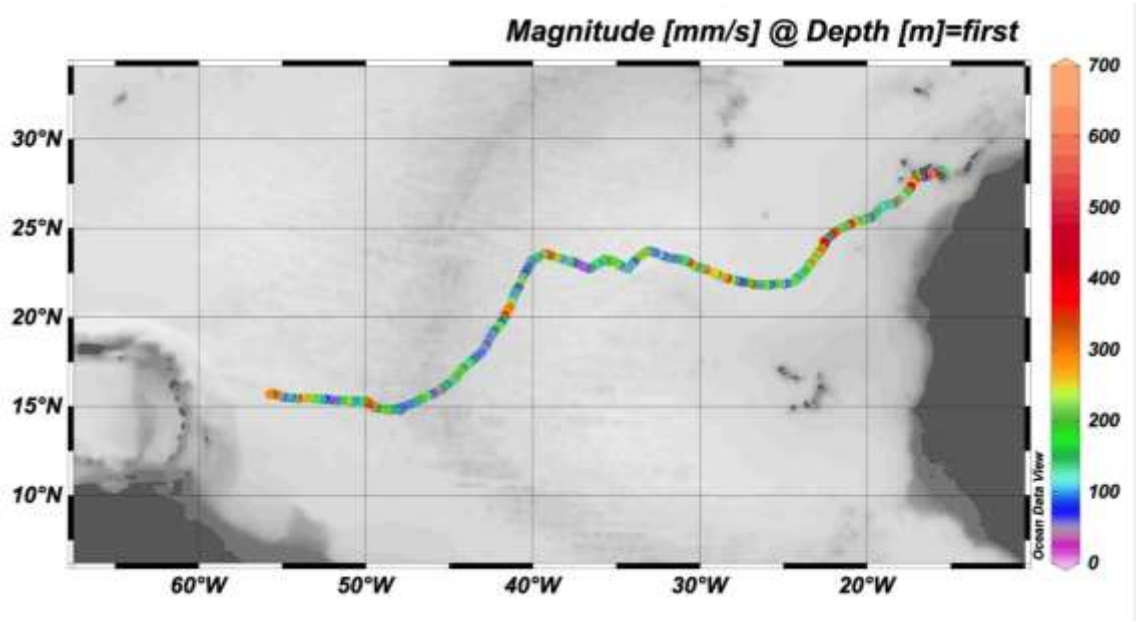
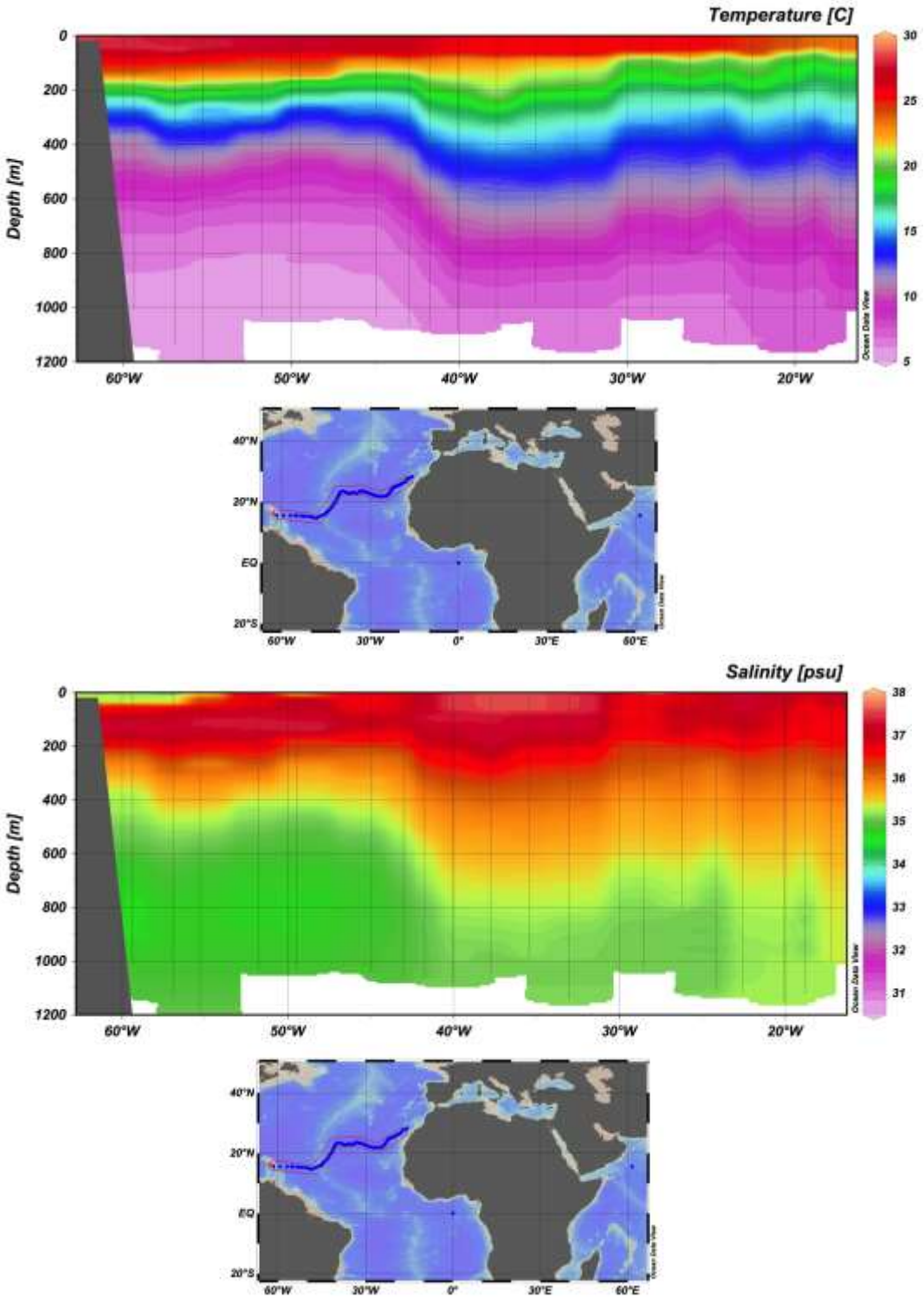
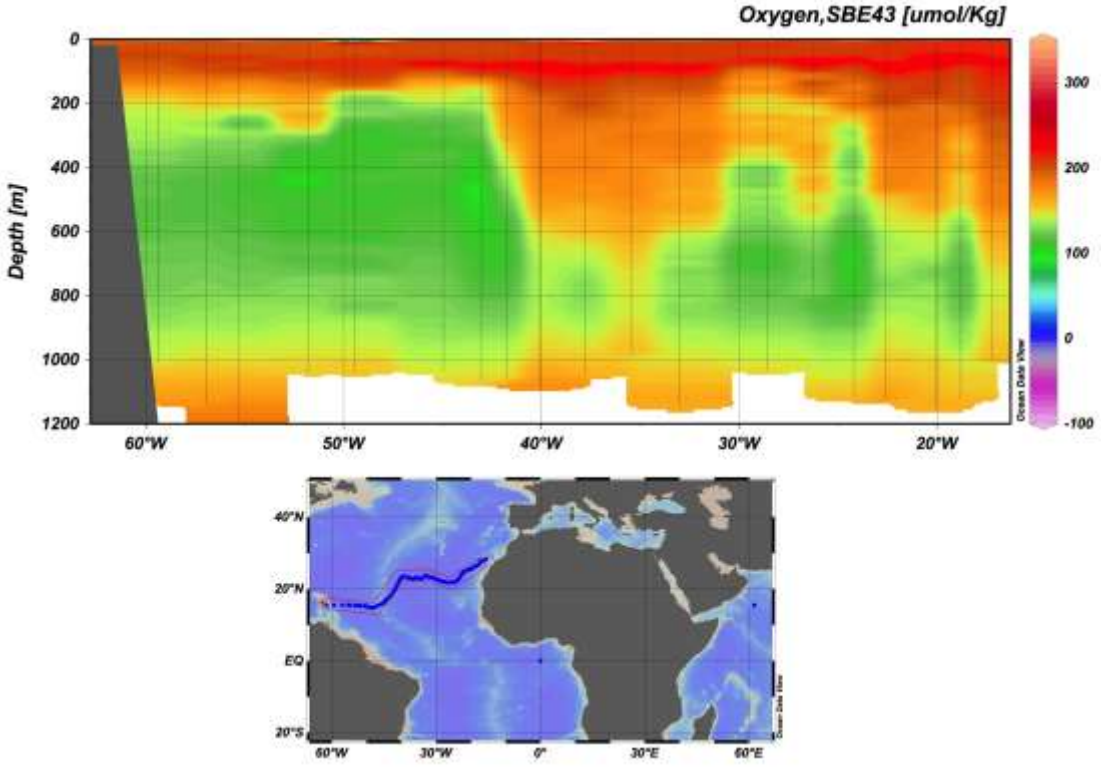


Table 4. CTD station data for C256. Physical characteristics of the water column were measured with a Seabird SEACAT Profiler Model SBE 19plus Conductivity-Temperature-Depth profiler. Vertical profile data available upon request.

Station # (C256-)	Date (2014)	Local Time	Cast Depth (m)	Water Depth (m)	Locale	CTD Unit #	Volt. 0 sensor/SN	Volt. 1 sensor/SN	Volt. 2 sensor/ SN	Volt.3 sensor/ SN	Volt. 4 sensor/ SN	Volt. 5 sensor/ SN
002	17-Nov	1028	1002	3589	Canary Current	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
005	18-Nov	1016	1122	3401	Canary Current	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
007	19-Nov	0956	1148	4355	Canary Current	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
009	20-Nov	1029	1122	4775	Canary Current	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
011	21-Nov	1038	1117	5005	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
013	22-Nov	1106	10	5157	North Atlantic Gyre	RBR	n/a	n/a	n/a	n/a	n/a	n/a
013	22-Nov	1202	802	5155	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
015	23-Nov	1016	1032	5472	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
019	25-Nov	1025	1143	5759	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
021	26-Nov	1045	982		North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
023	27-Nov	1020	1047	5843	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
025	28-Nov	1014	1082	5217	North Atlantic Gyre	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
027	29-Nov	0948	10		North Atlantic Gyre	RBR	n/a	n/a	n/a	n/a	n/a	n/a
029	30-Nov	1039	1062		NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
031	1-Dec	1018	1067	4092	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
033	2-Dec	0948	1037	3804	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
039	4-Dec	0948	1037	2970	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
041	5-Dec	1040	1037	5296	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
044	6-Dec	1650	1203	5485	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
045	7-Dec	1002	1138	5327	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
046	8-Dec	1005	1007	3762	NEC Transition Zone	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
051	12-Dec	1337	10	19	Dominica	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a
058	15-Dec	0933	10		Eastern Caribbean	RBR	n/a	n/a	n/a	n/a	n/a	n/a
062	19-Dec	1040	No data	1118	Eastern Caribbean	2737	DO/1120	chl-a/2105	n/a	n/a	n/a	n/a

Figure 4a-d. CTD cross-section plots for C256. Water column structure of temperature, salinity, chlorophyll-*a* fluorescence and dissolved oxygen. VG gridding: X-axis 30, Y-axis 15.




Oxygen,SBE43 [umol/Kg]
Depth [m]
0
200
400
600
800
1000
1200
60°W
50°W
40°W
30°W
20°W
300
200
100
0
-100
Ocean Data View
40°N
20°N
EQ
20°S
60°W
30°W
0°
30°E
60°E

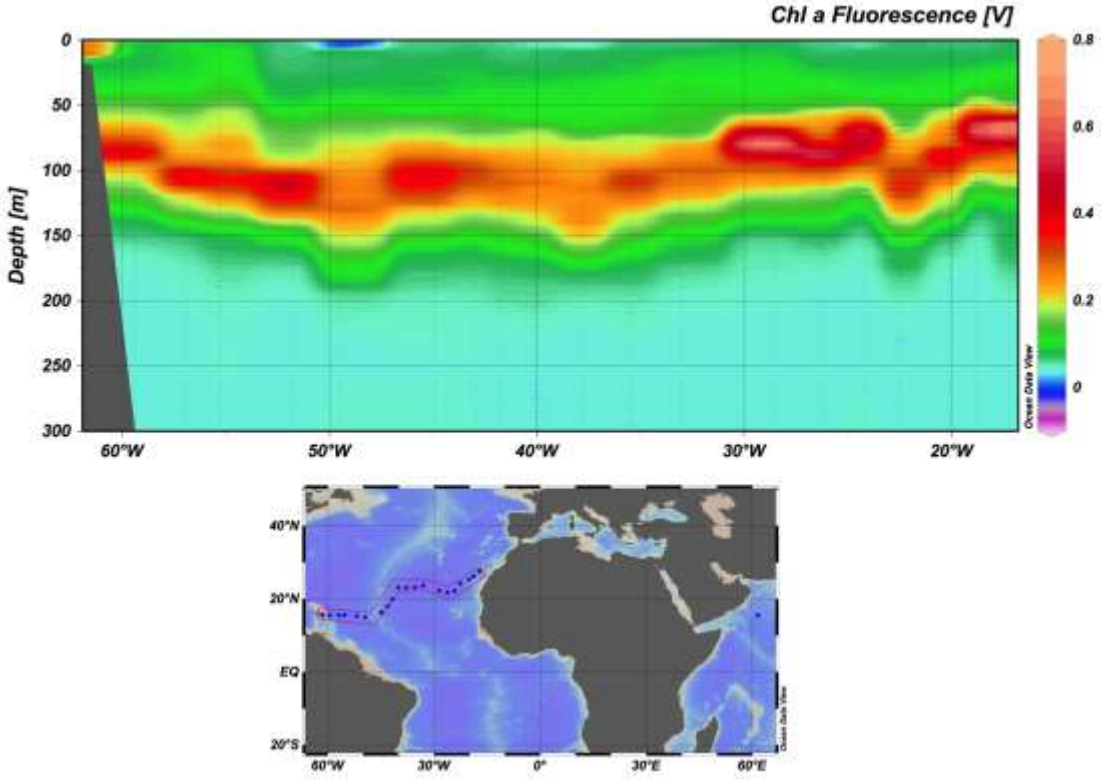

Chl a Fluorescence [V]
Depth [m]
0
50
100
150
200
250
300
60°W
50°W
40°W
30°W
20°W
0.8
0.6
0.4
0.2
0
Ocean Data View
40°N
20°N
EQ
20°S
60°W
30°W
0°
30°E
60°E

Table 5. Neuston station data for C256.

Station # (C256-)	Date (2014)	Local Time	GMT	Moon Phase %	risen or set	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Tow Area (m^2)	Zoop Biomass (ml)	Zoop Den (ml/m^2)	Locale
001	16-Nov	2312	0	33%	set	23.4	36.95	795	2847	10.5	0.0037	Canary Islands
002	17-Nov	1147	0	24%	risen	23.6	36.98	613	2416	2.5	0.0010	Canary Islands
003	17-Nov	2315	+1	24%	set	23.6	36.90	641	2166	17.8	0.0082	Canary Current
005	18-Nov	1137	+1	16%	risen	23.9	36.80	604	2186	9.0	0.0041	Canary Current
006	19-Nov	0011	+1	16%	set	23.4	37.12	642	1746	16.0	0.0092	Canary Current
007	19-Nov	1128	+1	10%	risen	24.1	37.13	602	1684	2.2	0.0013	Canary Current
008	20-Nov	0112	+1	5%	set	24.2	37.12	657	862	7.5	0.0087	Canary Current
009	20-Nov	1207	+1	5%	risen	23.5	37.23	560	2572	1.1	0.0004	Canary Current
010	21-Nov	0047	+1	1%	set	24.5	36.75	744	1688	12.9	0.0076	North Atlantic Gyre
011	21-Nov	1156	+1	1%	risen	25.2	37.00	581	2435	1.4	0.0006	North Atlantic Gyre
012	22-Nov	0014	+1	0%	set	25.3	36.92	622	2012	369.0	0.1834	North Atlantic Gyre
013	22-Nov	1001	+1	0%	risen	25.4	36.86	610	1421	2.0	0.0014	North Atlantic Gyre
014	23-Nov	0003	+1	1%	set	25.4	36.80	648	2310	28.0	0.0121	North Atlantic Gyre
015	23-Nov	1131	+1	1%	risen	25.4	36.70	639	1771	1.3	0.0007	North Atlantic Gyre
016	24-Nov	0014	+1	5%	set	25.4	36.91	648	1642	13.0	0.0079	North Atlantic Gyre
017	24-Nov	1159	+1	5%	risen	25.1	37.33	618	1705	1.4	0.0008	North Atlantic Gyre
018	25-Nov	0007	+2	11%	set	24.9	37.47	638	2218	8.5	0.0038	North Atlantic Gyre

Station # (C256-)	Date (2014)	Local Time	GMT	Moon Phase %	risen or set	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Tow Area (m^2)	Zoop Biomass (ml)	Zoop Den (ml/m^2)	Locale
019	25-Nov	1140	+2	11%	risen	25.3	37.46	579	1709	5.0	0.0029	North Atlantic Gyre
020	26-Nov	0015	+2	19%	set	25.5	37.37	619	2003	7.4	0.0037	North Atlantic Gyre
021	26-Nov	1202	+2	19%	risen	25.4	37.59	591	2135	2.0	0.0009	North Atlantic Gyre
022	27-Nov	0025	+2	29%	set	25.3	37.62	598	1885	5.9	0.0031	North Atlantic Gyre
023	27-Nov	1137	+2	29%	risen	25.3	37.56	534	1781	2.0	0.0011	North Atlantic Gyre
024	28-Nov	0015	+2	40%	set	25.8	37.56	586	1314	10.1	0.0077	North Atlantic Gyre
025	28-Nov	1126	+2	40%	risen	25.8	37.53	516	2326	7.0	0.0030	North Atlantic Gyre
026	29-Nov	0008	+2	51%	set	26.1	37.33	542	1994	7.0	0.0035	North Atlantic Gyre
027	29-Nov	1209	+2	51%	risen	26.2	37.12	530	2158	2.0	0.0009	North Atlantic Gyre
028	29-Nov	2353	+2	51%	risen	26.0	37.35	563	2200	5.7	0.0026	NEC Transition Zone
029	30-Nov	1151	+2	62%	set	26.1	37.20	517	1805	3.2	0.0018	NEC Transition Zone
030	30-Nov	2356	+2	62%	risen	26.2	37.11	555	1402	6.6	0.0047	NEC Transition Zone
031	1-Dec	1141	+2	73%	set	26.6	36.80	552	2438	3.9	0.0016	NEC Transition Zone
032	2-Dec	0008	+3	82%	risen	26.6	36.89	565	2481	6.9	0.0028	NEC Transition Zone
033	2-Dec	1052	+3	82%	set	26.7	36.74	528	1961	2.5	0.0013	NEC Transition Zone
037	3-Dec	2228	+3	90%	risen	27.3	36.46	550	2533	10.0	0.0039	NEC Transition Zone
039	4-Dec	1110	+3	95%	set	27.1	35.69	507	1799	7.6	0.0042	NEC Transition Zone
040	5-Dec	0008	+3	99%	risen	27.5	36.80	534	1496	10.0	0.0067	NEC Transition Zone
041	5-Dec	0924	+3	99%	set	27.4	36.81	524	2632	0.8	0.0003	NEC Transition Zone

Station # (C256-)	Date (2014)	Local Time	GMT	Moon Phase %	risen or set	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Tow Area (m^2)	Zoop Biomass (ml)	Zoop Den (ml/m^2)	Locale
042	5-Dec	2355	+3	99%	risen	27.3	33.98	645	2536	17.0	0.0067	NEC Transition Zone
043	6-Dec	1121	+3	100%	risen	27.5	35.45	616	2468	20.0	0.0081	NEC Transition Zone
045	7-Dec	1128	+3	99%	set	27.5	34.86	589	928	4.0	0.0043	NEC Transition Zone
048	9-Dec	0006	+3	91%	risen	28.0	35.23	574	1850	7.3	0.0039	NEC Transition Zone
050	9-Dec	1033	+3	91%	set	27.9	35.17	604	560	2.6	0.0046	Dominica
052	13-Dec	1314	+4	60%	set	28.0	35.28	567	1968	3.0	0.0015	Eastern Caribbean
053	14-Dec	0024	+4	50%	risen	28.0	34.90	624	1758	7.3	0.0042	Eastern Caribbean
055	14-Dec	1001	+4	60%	set	28.1	34.93	596	1622	8.5	0.0052	Eastern Caribbean
057	15-Dec	0016	+4	41%	risen	27.9	35.00	587	1711	10.0	0.0058	Eastern Caribbean
058	15-Dec	0808	+4	41%	risen	27.8	34.93	637	2562	22.3	0.0087	Eastern Caribbean/St. Martin
061	19-Dec	0039	+4	8%	set	27.5	34.90	655	2035	22.3	0.0110	Saba Bank

Table 5 continued. Neuston station data for C256.

Station # (C256-)	Halo (#)	Lepto (#)	Phyllo (#)	Mycto (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Snatans I (g)	Snatans VIII (g)	Sfluitans III (g)	Clump/ fragments (#)
001	20	0	0	1	0	1	0	0	0	0	0
002	7	0	0	0	2	45	0	0	0	0	0

Station # (C256-)	Halo (#)	Lepto (#)	Phyllo (#)	Mycto (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Snatans I (g)	Snatans VIII (g)	Sfluitans III (g)	Clump/ fragments (#)
003	41	0	0	8	0	2	0	0	0	0	0
005	50	0	0	0	0	24	0	0	0	0	0
006	123	0	0	7	0	7	0	0	0	0	0
007	20	0	0	0	0	6	0	0	0	0	0
008	3	0	0	3	0	0	0	0	0	0	0
009	4	0	0	0	0	7	0	0	0	0	0
010	6	0	0	8	0	1	0	0	0	0	0
011	4	0	0	0	0	2	0	0	0	0	0
012	6	0	0	1	0	0	0	0	0	0	0
013	3	0	0	0	0	2	0	0	0	0	0
014	20	0	0	8	0	11	0	0	0	0	0
015	3	0	0	0	0	7	0	0	0	0	0
016	1	0	0	1	0	2	0	0	0	0	0
017	4	0	0	0	0	6	0	0	0	0	0
018	19	0	0	5	0	7	0	0	0	0	0
019	2	0	0	0	0	12	0	0	0	0	0
020	22	0	0	8	0	2	0	0	0	0	0
021	1	1	0	0	0	0	0	0	0	0	0
022	12	0	0	3	0	0	0	0	0	0	0

Station # (C256-)	Halo (#)	Lepto (#)	Phyllo (#)	Mycto (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Snatans I (g)	Snatans VIII (g)	Sfluitans III (g)	Clump/ fragments (#)
023	4	0	0	0	0	1	0	0	0	0	0
024	9	0	0	2	0	0	0	0	0	0	0
025	3	0	0	0	0	238	0	0	0	0	0
026	23	0	1	11	0	5	0	0	0	0	0
027	11	0	0	0	0	2	0	0	0	0	0
028	21	0	0	9	0	0	0	0	0	0	0
029	11	0	0	0	0	8	0	0	0	0	0
030	11	0	0	2	0	1	0	0	0	0	0
031	7	0	0	0	0	3	0	0	0	0	0
032	45	0	0	4	0	0	0	0	0	0	0
033	1	0	0	0	0	0	0	0	0	0	0
037	33	0	0	14	0	0	0	0	80	0	SnVIII,4 clumps
039	2	0	0	0	0	0	0	20	1133	615	SnI,4,Sf,6,SnVIII,134 clumps and fragments
040	6	0	0	0	0	5	0	84	31500	5250	SnI,9,Sf,59,SnVIII,1 bucket of clumps and fragments
041	2	0	0	0	0	0	0	0	0	0	0
042	75	0	0	1	0	1	0	0	350	0	SnVIII,15 fragments,4 clumps

Station # (C256-)	Halo (#)	Lepto (#)	Phyllo (#)	Mycto (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	Snatans I (g)	Snatans VIII (g)	Sfluitans III (g)	Clump/ fragments (#)
043	0	0	0	0	0	1	0	0	1630	0	SnVIII,151 clumps and fragments
045	2	0	0	0	0	2	0	0	626	0	SnVIII,50 fragments
048	3	0	0	0	0	1	0	1	1260	0	SnI,1,Sf,0,SnVIII,54 clumps and fragments
050	0	0	0	0	0	3	0	0	540	0	SnVIII,171 clumps and fragments
052	0	0	0	0	0	3	0	0	555	0	SnVIII,67 clumps and fragments
053	0	0	0	0	0	0	0	0	58	0	SnVIII,19 clumps and fragments
055	0	0	0	0	0	1	0	0	1100	0	SnVIII,303 clumps and fragments
057	29	0	0	0	0	2	0	0	450	0	SnVIII,90 clumps and fragments
058	6	0	0	0	0	3	0	3	3650	0	no counts made
061	2	0	0	0	0	4	0	167	2445	14	no counts made

Table 5 continued. Neuston station data for C256.

Station # (C256-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes	Surface station #
001	0	0	1	0	Amphipods and shrimp. Shrimp-like zooplankton, 1 large pteropod, many small pteropods, lots of bioluminescence.	SS-002
002	0	0	0	0	Most common organisms were copepods. Small amounts of shrimp and small fish. Copepods lived the longest, Many gelatinous organisms, most of which had debris trapped within their bodies.	SS-004
003	1	1 salp (0.1mL)	10	1 silver elongated (0.2mL), 1 lobster larvae (1mL)	Numerous bioluminescent organisms and blue copepods and *Halobates*. Several bits of plant material. Color blue and pink.	SS-006
005	0	0	0	0	Numerous *Halobates*, styrofoam, plastics, some organic material (brown), plant matter, blue copepods.	SS-008
006	1	1 medusa (1.9 ml)	13	4 phronemid amphipods (0.6ml), 1 mesopelagic fish (1ml), 1 megalopae /crab (0.25ml)	This was a very interesting tow: lots of *Halobates*., some myctophids, megalopae, phronemid amphipods. One mesopelagic fish and numerous gelatinous organisms. Tow color was mostly transparent and pink with a little bit of green.	SS-010
007	0	0	0	0	We found 6 plastic pieces, 20 *Halobates*., some copepods and some gelatinous organisms, adding up to about 2.2 ml of biomass	SS-012
008	0	0	3	0	Bioluminescence, copepods and smaller gelatinous organisms. Light winds and squall activity so net tow was abbreviated.	SS-014
009	0	0	0	0	Tow was generally clear in color with some clumped zooplankton in bottom. Petri dish containing floaters was knocked to sole, 1 *Halobates*. + 2 pieces of plastic were recovered.	SS-016
010	0	0	8	0	Tow returned many small black Hyperiid amphipods, fewer pink euphausids, few smaller salps added gelatinous texture. Recovered one pelagic nudibranch *Glaucus* spp.	SS-018
011	0	0	0	0	The tow contained only a few *Halobates*., a fish larva, no plastic, and some gelatinous organisms. Tow color was brown / pinkish.	SS-020
012	10	9 salps and 1 siphonophore (8mL)	1	0	In the two we collected a large number of euphausids, with some shrimp and copepods.	SS-022

Station # (C256-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes	Surface station #
013	0	0	0	0	The neuston contained a small amount of biomass and was primarily made up of euphausids and copepods.	SS-024
014	0	0	14	4 shrimp (0.5ml), 1 chaetognath (0.1ml)	Pink biomass, one small squid, some siphonophore, a piece of plastic tangled with hair, tons of euphausids, some gelatinous organisms <2cm, looks like euphausids are dominant	SS-026
015	0	0	0	0	The tow contents contained no organisms over 2 cm other than the *Halobates*. and overall had a very low biomass.	SS-028
016	6	4 siphonophore (0.9 mL), 2 salps (1.0mL)	4	2 chaetognath (0.3 mL), 1 shrimp (0.3 mL)	The tow was fairly diverse, with mixed colors and numerous black specks. Fair amount of gelatinous organisms (siphonophore), some fish larvae, cephalopods, shrimp, chaetognath.	SS-030
017	0	0	0	0	Little biomass, contained 2 small cephalopods and 9 *Porpita porpita*.	SS-032
018	0	0	5	0	Relatively small amount of biomass for night time, mostly euphausids and copepods.	SS-034
019	0	0	0	0	Not much biomass. There were a few plastic pieces, many dinoflagellates and gelatinous material. Clear presence of copepods.	SS-036
020	1	1 siphonophore (1.2ml)	18	1 mesopelagic fish (1.8ml), 9 shrimp (1.2ml)	The tow contained a few examples of larger nekton including shrimp and one mesopelagic fish, one larger siphonophore and a diverse sample of zooplankton (7.4 ml) with many different species represented.	SS-038
021	0	0	1	0	No floaters in pristine bucket, leptocephali and *Halobates*. visible in rinse bucket. Siphonophore visible in biovolume from rinse. One *Porpita porpita*.	SS-040
022	1	1 unidentified gelatinous organism (0.25mL)	7	4 shrimp (0.5mL)	Small amount for a night-time tow, likely caused by the net tucking under the ship. Notes: Net was sucked towards boat and briefly under boat near end of tow.	SS-042
023	0	0	0	0	Relatively low biomass, many siphonophore. Color was light pink-brown, found interesting blue-brown benthic copepod.	SS-044
024	0	0	2	0	Fairly low biomass for a night-time tow. Lots of copepods, some euphausids and mysids, as well as siphonophore.	SS-046
025	0	0	0	0	There was a very small flying fish, it's wings were small and almost transparent. *Trichodesmium* were present, as well as blue copepods, a *Porpita porpita* and small orange eggs.	SS-048
026	0	0	15	3 shrimp (0.8ml)	In comparison to recent tows, abundant biomass, red, pink, and gray in color, with many nekton and some plastic.	SS-050

Station # (C256-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes	Surface station #
027	0	0	0	0	Mostly gray in color with occasional blue spots. Several *Halobates*. and a good bit of gelatinous substance. Few items big enough to identify without the microscope. Appears to be several large copepods.	SS-052
028	0	0	10	1 fish (Kevin) unknown species, has large blue face barbles about 1/8th his body length. Striped (vertical), forked lunate tail, patterned pectoral and anal fins, clear caudal fin (0.7mL)	Numerous *Halobates.* and copepods, several myctophids. Relatively low biomass for night tow.	SS-054
029	1	1 *Physalia physalia* (0.3mL)	1	1 flying fish, juvenile (0.2mL)	Sandy color, somewhat gelatinous with spattering of blue *Porpita porpita* and black *Halobates*., with a dramatic P. *physalia.*	SS-056
030	0	0	2	0	Some Halobates and plastic pieces, 2 myctophids and 1 megalopae, 1 paint chip. Net was poorly rinsed, 2 *Halobates*. found the next day.	SS-058
031	0	0	0	0	The tow contained many different morphological variations of copepods, lots of filamentous algae, and several prosobranch species (*Janthina* snails).	SS-060
032	0	0	5	0	The tow contained myctophids, many *Halobates*. 2 cephalopods and a big clump of benthic Sargassum caught on the bridle. An overall diverse tow, that also included what may be puffer fish larvae and a Janthina snail. Benthic *Sargassum* 1 clump 400g	SS-062
033	0	0	0	0	Several fish larvae including one flying fish, mostly beige with some small blue and orange flecks. Sargassum floats present.	SS-064
037	0	0	17	0	Very diverse tow with Hyperiid amphipods, *Sargassum* shrimp, a Sargassum crab, some small salps, and lots of myctophids and *Halobates*.	SS-070
039	0	0	5	2 green fish (2mL), 2 blue fish (1.2mL), 1 shrimp (1.8mL).	A lot of Sargassum, a few varieties of fish, including small triggerfish. Lots of plant material and Sargassum tube worms. In addition to the *S. fluitans* and *S. natans* found, there were 1133g of an unknown *Sargassum* species collected as well.	SS-072

Station # (C256-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes	Surface station #
040	0	0	0	0	Holy Sargassum. Sargassum filled net up to 66 inches from the cod end (diameter of 16 inches). It took 4 people to haul it onboard. Total buckets of Sargassum thrown back overboard: 14. Buckets kept for processing: 2. In addition to the *S. fluitans* and *S. natans*, 4500g (1 bucket full) of S. unknown were found out of the two total buckets	SS-074
041	0	0	0	0	Very scant biomass because *Sargassum* blocked cod end jar, pristine and rinse samples were combined to form the 0.8mL for the 100 ct.	SS-075
042	0	0	3	2 Sargassum crabs (0.75mL)	Diverse and plentiful tow, several Sargassum fragments bringing many shrimp, *Halobates*., and few Sargassum crabs. Color blue-brown. 350g of unknown *Sargassum*, 15 fragments and 4 clumps.	SS-078
043	0	0	2	2 Sargassum crabs (1.5mL)	Starboard Neuston tow, went through a large (2m) windrow. Lots of Sargassum caught on frame/bridle and not quantified. 1630g of Unknown Sargassum. Lots of shrimp and Sargassum crabs. Most of the Sargassum was the "other" species.	SS-080
045	0	0	5	4 crabs (2.0ml), 1 shrimp (0.5ml)	Lots of Sargassum (unknown benthic type - 626g collected), a few crabs and some shrimp. Some larval shrimp and small Sargassum shrimp.	SS-083
048	0	0	3	3 Sargassum crabs (1.5mL)	Lots of copepods in the tow and the majority of tow consisted of Sargassum other (1260g / 54 clumps and fragments)	SS-088
050	0	0	2	1 small striped fish (2.0ml), 1 small Sargassum swimming crab (0.25ml)	Many shrimp and Sargassum floats, brown and icky, one unusual gelatinous orb with green sediment inside. Net was pulled out early due to very abundant *Sargassum*. 171 pieces (540g) of Sargassum other were collected.	SS-090
052	0	0	7	3 shrimp (0.1ml), 2 elongate silver fish (0.3ml), 2 yellow ovoid fish [*Sargassum* associates?](0.4ml)	The two had a fair amount of Sargassum other. Most of it was covered in tube-worms. Along with it came two different types of fish, a handful of shrimp and a crab. We also had many, many Sargassum floaters in the tow.	SS-091

Station # (C256-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes	Surface station #
053	1	1 unidentified gelatinous organism (0.2mL)	4	1 shrimp (0.1mL), 1fish: long (about 6cm). Vertical yellow stripes, long bill, some red and black on tail (0.4mL), 1 slightly elongated silver fish with dark blue dorsal area (0.2mL), 1 large megalopae (0.2mL)	A bird feather, about 17cm long, black with brown patch in center and tips. Bountiful biomass with amounts of leaf detritus. Found 1 larger fish and 3 fish less than 2cm. High biodiversity.	SS-092
055	0	0	1	1 Sargassum swimming crab (0.4mL)	One triggerfish and a large crab, some eel grass, and lots of Sargassum. 1100g of Sargassum other were collected.	SS-093
057	0	0	4	3 shrimp (2ml), 1 crab (2ml)	A plentiful midnight catch containing 3 crabs (2 smaller than 2cm), Sargassum, enough zooplankton to awe even the most jaded of scientists. 450g of Sargassum other/	SS-094
058	0	0	0	0	Large amount of *Sargassum*, some Sargassum shrimp and very much broken down organic Sargassum material.3650g of Sargassum other were collected.	SS-095
061	0	0	14	1 Sargassum crab (1ml), 8 shrimp (2ml), 2 fish - brown vertical stripes, juvenile flying fish? (0.5ml), 1 silver fish (missing head) (0.5ml), 1 clear fish with large dark eyes, very long and narrow (0.25ml),1 long narrow fish with long beak, dark eyes, about 3cm long (0.25ml).	1/2 a Gabo of Sargassum. Many species present: Sarg. Other (2445g), S. fluitans (13.8g), S. natans (167.2g),and clearly benthic species of Sargassum. Manatee and turtle grass present in comparatively smaller quantities. Biomass mainly shrimps and crab juveniles of Portunid family. *Mass of each Sargassum species ID based on percentages of a subsample applied to the total Sargassum mass. Note: for the 100ct sample, Jeff notes that Gammarid amphipods, Hyperiid amphipods, hermit crab larvae, megalopae, zoea, and ostracods were also present.	SS-096

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). 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, gelatinous micronekton, and plant 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 (none collected entire cruise) or pieces and recorded as numbers collected per tow. Floating tar was sorted from the nets contents and recorded present or absent (none collected entire cruise). Floating *Sargassum* weed was removed, identified to species and measured in grams using a spring scale. Qualitative description of micronekton removed from the zooplankton biomass is provided, and when available biomass (ml) and length (cm) of specimens are recorded.

Table 6. Zooplankton 100 count station data for C256.

Station # (C256-)	Net Type	Time	Cnidarian medusa	Siphonphores	Ctenophores	Salp/Doliolids	Pteropods	Nudibranch	Heteropods	Other snails	Squid larvae	Polychaete	Chaetognaths	Copepods	Gammerids Amphipods	Hyperiid Amphipod	Megalopae	Zoea
001	NT	2312	0	1	0	0	5	0	0	0	0	0	4	70	0	3	0	2
002	NT	1147	0	0	0	0	0	0	0	0	0	0	0	78	0	0	0	1
003	NT	2315	0	0	0	1	1	0	0	2	0	0	5	69	0	3	2	0
005	NT	1137	0	1	0	0	0	0	0	0	0	0	0	57	0	2	0	4
006	NT	0011	0	1	0	1	6	0	0	1	0	0	0	62	0	4	0	0
007	NT	1128	0	14	0	5	1	0	1	4	0	0	0	64	0	3	0	0
008	NT	0112	0	4	0	3	2	0	0	0	0	0	4	64	0	3	0	0
009	NT	1207	0	3	0	1	0	0	0	6	0	10	2	68	0	0	0	4
010	NT	0047	0	1	0	1	2	0	0	0	0	1	3	70	0	1	0	0
011	NT	1156	0	9	0	0	5	0	0	0	0	0	2	73	0	4	0	0
012	NT	0014	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
013	NT	1001	4	0	0	0	0	0	0	0	0	0	0	56	0	0	0	0
014	NT	0003	0	0	0	0	0	0	0	0	0	0	0	24	0	1	0	0
015	NT	1131	0	7	0	0	1	0	3	5	0	0	0	63	0	0	0	1
016	NT	0014	0	2	0	0	6	0	0	1	2	0	2	57	0	10	0	0
017	NT	1159	2	12	0	0	4	0	0	2	5	0	2	55	0	3	1	0
018	NT	0007	1	0	0	2	10	0	0	2	0	0	0	50	0	15	0	0
019	NT	1140	0	12	0	0	6	0	0	7	0	1	5	44	0	1	0	0
020	NT	0015	3	6	0	6	4	0	0	3	0	0	3	49	0	5	0	0
021	NT	1202	0	26	0	2	9	0	0	0	0	0	3	52	0	1	0	0
022	NT	0025	0	8	0	3	1	0	0	4	0	3	1	51	0	3	1	0
023	NT	1137	0	40	0	2	0	0	3	5	0	0	1	25	0	2	0	0
024	NT	0015	0	13	0	0	1	0	0	1	0	0	0	68	0	4	0	0
025	NT	1126	0	29	0	0	10	0	0	4	0	0	0	50	0	0	0	0
026	NT	0008	0	3	0	3	0	0	0	4	0	0	1	54	0	0	0	0
027	NT	1209	2	34	0	1	1	0	0	3	0	0	2	44	0	0	2	0
028	NT	2353	0	22	0	0	1	0	0	2	0	0	1	45	0	5	0	0

Station # (C256-)	Net Type	Time	Cnidarian medusa	Siphonphores	Ctenophores	Salp/Doliolids	Pteropods	Nudibranch	Heteropods	Other snails	Squid larvae	Polychaete	Chaetognaths	Copepods	Gammerids Amphipods	Hyperiid Amphipod	Megalopae	Zoea
029	NT	1151	0	57	0	0	0	0	0	5	0	0	0	25	0	0	0	0
030	NT	2356	0	6	0	0	2	0	0	0	0	0	1	74	0	2	0	0
031	NT	1141	0	17	0	3	0	0	0	10	0	0	3	46	0	0	0	0
032	NT	0008	0	1	0	0	0	0	1	16	0	0	0	57	0	13	0	0
033	NT	1052	0	17	0	0	12	0	0	0	0	0	5	57	0	0	0	0
037	NT	2228	0	7	0	0	1	0	0	0	0	0	0	46	0	43	0	0
039	NT	1110	0	7	0	0	2	0	0	4	0	0	0	9	0	0	1	0
040	NT	0008	0	0	0	2	1	0	0	10	0	0	0	4	0	0	0	0
041	NT	0924	2	19	0	6	5	0	0	4	0	1	2	47	0	1	0	0
042	NT	2355	0	0	0	0	0	0	1	1	0	0	0	61	0	1	0	0
043	NT	1121	0	4	0	0	2	0	0	4	0	0	0	12	0	0	0	0
045	NT	1128	0	8	0	0	1	0	0	22	0	0	0	12	0	0	0	0
048	NT	0006	0	5	0	0	0	0	0	1	0	0	4	68	0	1	0	0
050	NT	1033																
052	NT	1314	0	1	0	0	2	0	0	8	0	0	0	72	0	0	0	0
053	NT	0024	0	11	0	0	11	0	0	1	0	0	4	35	1	21	0	0
055	NT	1001	0	6	0	3	6	0	0	11	0	2	1	50	0	10	1	0
057	NT	0016	0	1	0	1	1	0	0	1	0	0	1	74	0	12	0	0
058	NT	0808	0	2	0	3	1	0	1	5	0	0	0	61	0	4	0	0
061	NT	0039	0	0	0	0	1	0	0	3	0	0	0	10	0	0	0	0

Table 6 continued. Zooplankton 100 count station data for C256.

Station # (C256-)	Net Type	Time	Shrimp (larvae)	Lobster (larvae)	Mysids	Euphausids	Stomatopod (larvae)	Ostracods	Cladocera	Isopods	Fish Larvae	Fish Eggs	Other	Other	Other	Total # of organisms	Shannon-Weiner Diversity Index
001	NT	2312	6	0	1	2	0	7	1	0	0	1	0	0	0	103	0.57
002	NT	1147	0	0	1	1	0	1	0	0	8	0	0	0	0	90	0.23
003	NT	2315	0	0	6	6	1	4	0	0	0	0	1	0	0	101	0.57
005	NT	1137	0	0	0	0	0	0	10	0	0	6	2	0	0	82	0.47
006	NT	0011	0	0	9	7	1	3	1	0	0	0	3	1	0	100	0.64
007	NT	1128	0	1	2	1	0	1	1	0	2	0	0	0	0	100	0.60
008	NT	0112	0	0	4	10	0	6	0	0	0	0	0	0	0	100	0.59
009	NT	1207	0	0	1	0	0	1	1	0	3	3	0	0	0	103	0.59
010	NT	0047	0	0	4	6	0	10	0	0	0	0	0	0	0	99	0.50
011	NT	1156	0	0	0	0	0	0	0	0	4	0	2	1	0	100	0.46
012	NT	0014	0	0	0	91	0	2	1	0	0	0	1	2	0	100	0.19
013	NT	1001	0	0	0	37	0	0	0	0	3	0	0	0	0	100	0.40
014	NT	0003	0	0	2	72	0	0	0	1	0	0	0	0	0	100	0.33
015	NT	1131	0	0	0	0	0	0	0	0	0	0	3	2	0	85	0.44
016	NT	0014	2	0	7	1	0	8	0	0	1	1	0	0	0	100	0.70
017	NT	1159	0	0	0	6	0	0	0	0	1	3	4	0	0	100	0.74
018	NT	0007	0	0	13	4	0	0	0	0	1	0	2	0	0	100	0.69
019	NT	1140	1	0	2	9	3	0	0	0	9	0	0	0	0	100	0.81
020	NT	0015	3	0	5	9	0	0	0	0	0	2	2	0	0	100	0.83
021	NT	1202	2	0	0	0	0	2	0	0	1	0	2	0	0	100	0.62
022	NT	0025	1	0	9	10	0	4	0	0	0	0	1	0	0	100	0.78
023	NT	1137	1	0	4	5	0	0	0	1	4	6	1	0	0	100	0.82
024	NT	0015	1	0	6	4	1	0	0	0	0	1	0	0	0	100	0.51
025	NT	1126	0	0	0	2	0	1	0	0	1	2	1	0	0	100	0.59
026	NT	0008	0	0	31	3	0	0	0	0	0	0	1	0	0	100	0.54
027	NT	1209	0	0	1	0	0	1	0	0	1	5	3	0	0	100	0.67

Station # (C256-)	Net Type	Time	Shrimp (larvae)	Lobster (larvae)	Mysids	Euphausids	Stomatopod (larvae)	Ostracods	Cladocera	Isopods	Fish Larvae	Fish Eggs	Other	Other	Other	Total # of organisms	Shannon-Weiner Diversity Index
028	NT	2353	4	0	3	15	0	0	0	0	0	1	0	0	0	99	0.69
029	NT	1151	4	0	0	0	0	2	0	0	1	2	2	2	0	100	0.57
030	NT	2356	0	0	7	7	1	0	0	0	0	0	0	0	0	100	0.44
031	NT	1141	2	0	0	0	0	0	0	0	4	14	1	0	0	100	0.71
032	NT	0008	0	0	8	1	0	0	0	1	2	0	0	0	0	100	0.58
033	NT	1052	2	0	1	0	1	0	0	0	1	4	0	0	0	100	0.60
037	NT	2228	1	0	1	0	0	0	0	0	1	0	0	0	0	100	0.47
039	NT	1110	13	0	11	0	0	0	0	0	2	0	1	50	0	100	0.71
040	NT	0008	83	0	0	0	0	0	0	0	0	0	0	0	0	100	0.28
041	NT	0924	5	0	0	0	0	0	0	0	1	5	3	0	0	101	0.79
042	NT	2355	22	0	2	0	1	0	0	0	0	0	1	0	0	90	0.41
043	NT	1121	77	0	0	0	0	0	0	0	0	0	1	0	0	100	0.36
045	NT	1128	55	0	0	0	0	0	0	0	0	2	0	0	0	100	0.54
048	NT	0006	1	0	11	1	0	0	0	0	0	0	9	0	0	101	0.51
050	NT	1033															
052	NT	1314	4	0	0	0	0	1	1	0	0	1	10	0	0	100	0.46
053	NT	0024	0	0	15	0	0	0	0	0	0	0	1	0	0	100	0.75
055	NT	1001	4	0	0	1	0	3	0	0	1	1	0	0	0	100	0.78
057	NT	0016	2	0	5	1	0	0	0	0	0	0	1	0	0	100	0.45
058	NT	0808	0	0	1	0	0	1	0	1	2	18	0	0	0	100	0.60
061	NT	0039	53	0	0	0	0	0	0	0	0	0	18	14	1	100	0.59

Table 7. Phytoplankton net station data for C256. Drift depth 1-3m

Station # (C256-)	Date (2014)	Local Time	General Locale	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Drift Depth (m)	NOTES
002	17-Nov	0958	Canary Islands	23.5	36.90	665.9	surface (1-3m)	Sample archived for later analysis onshore.
007	19-Nov	0942	Canary Current	24.1	37.14	624.1	surface (1-3m)	Sample archived for later analysis onshore.
009	20-Nov	0956	Canary Current	24.7	37.27	616.6	surface (1-3m)	Sample archived for later analysis onshore.
011	21-Nov	0952	North Atlantic Gyre	25.2	36.95	597.6	surface (1-3m)	Sample archived for later analysis onshore.
015	23-Nov	0957	North Atlantic Gyre	25.3	36.75	615.2	surface (1-3m)	Sample archived for later analysis onshore.
019	25-Nov	1022	North Atlantic Gyre	25.3	37.47	590.1	surface (1-3m)	Sample archived for later analysis onshore.
021	26-Nov	0953	North Atlantic Gyre	25.4	37.61	600.7	surface (1-3m)	Sample archived for later analysis onshore.
031	1-Dec	0953	NEC Transition Zone	26.7	36.80	543.3	surface (1-3m)	Sample archived for later analysis onshore.
033	2-Dec	0925	NEC Transition Zone	26.7	36.74	547.0	surface (1-3m)	Sample archived for later analysis onshore.
039	4-Dec	0924	NEC Transition Zone	26.9	35.68	514.0	surface (1-3m)	Sample archived for later analysis onshore.
041	5-Dec	1019	NEC Transition Zone	27.5	36.80	558.5	surface (1-3m)	Sample archived for later analysis onshore.
045	7-Dec	0943	NEC Transition Zone	27.5	35.00	616.4	surface (1-3m)	Sample archived for later analysis onshore.

Table 8. Shipek Station data for C256.

Station # (C256-)	Date (2014)	Location	Water Depth (m)	Color Description (# / words)	General size	Sediment Shape	Organics	Comments
035	3-Dec	Researcher Ridge	660					The sample contained no sediment but had an abundance of delicate glass sponges, brittle stars, a mollusc, crab, shrimp, limpet, and bryozoan. Drawings included with hard copy datasheet.
036	3-Dec	Researcher Ridge	480	Hue 54 5 6 - light olive brown	sandy		no	The sample only contained a small amount of sandy sediment. Although not exact, this sample is closest in color to HUE 54, light olive brown.
051A	12-Dec	Dominica	18		fine sand, approx. 2g sediment		1 sponge, 1 crab, 1 small shrimp	The sediment is very irregular. With parts of many different material mixed together. Fine sand with visible shell pieces, and lava rocks as well.
051B	12-Dec	Dominica	19		fine sand, approx. 2g sediment		1 sponge, 1 crab, 1 small shrimp	The sediment is very irregular. With parts of many different material mixed together. Fine sand with visible shell pieces, and lava rocks as well.
054A	14-Dec	Monserrat	57	SG2/1 - greenish black	silty clay matrix with sand you can feel but not see.	fine with small grains, a few tiny pebbles	slight organic odor but no visible organics	
054B	14-Dec	Monserrat	57	SG2/1 - greenish black	Silty and granular	sticks together/packed in	1 sea biscuit, small multicolored shell fragments	
059	18-Dec	Sint Maarten	5	cloudy, light gray and white	fine to medium sand with larger angular shell fragments	very angular (primarily shell fragments, CaCO3)	shell fragments, coral fragments, calcarrous algae, light scent of low tide	Poorly sorted. Large volume of sediment, mostly fine-medium sand, gray to white in color, with larger (2-6mm) shells and shell fragments. Primarily made up of shell fragments. Phillipsburg Bay, Sint Maarten
060	18-Dec	Saba Bank	17	5Y 8/4 Grayish-yellow	sandy, pale with black specs	rounded, fine sand	1 Porifera, 2 Rhodophyta, 2 gastropods	Little sediment in sample

Station # (C256-)	Date (2014)	Location	Water Depth (m)	Color Description (# / words)	General size	Sediment Shape	Organics	Comments
061	19-Dec	Saba Bank	21	5YR 8/1 Pinkish gray	Sand with many larger granules and broken shells	angular, sharp broken shells, poorly sorted	no	

Table 9. Tucker Trawl station data for C256.

Station # (C256-)	Date (2014)	Local Time	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Water depth	Time Open	Tow depth target (m)	Tow Volume (m3)	General Locale	Notes
013	22-Nov	1106	25.4	36.88	602.3	5157	1108	5.0	867.1	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
017	24-Nov	0935	25.0	37.40	622.3	5300	0940	5.0	1072.8	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
017	24-Nov	1027	25.0	37.40	651.6	5300	1032	5.0	933.5	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
017	24-Nov	1104	25.1	37.40	629.0	5300	1107	10.0	801.4	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
027	29-Nov	0948	26.1	37.16	540.2	4258	0951	20.0	1018.8	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
027	29-Nov	1035	26.1	37.16	540.8	4250	1042	10.0	1080.9	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
027	29-Nov	1123	26.1	37.16	535.6	4315	1126	5.0	1039.0	North Atlantic Gyre	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.
058	15-Dec	0933	27.8	34.93	640.0	402	0939	5.0	1090.6	St. Martin	Conducted for marine debris analysis. Jess Donahue & Kara Lavender-Law. No sample processing on the ship.

Table 10. Secchi disc station data for C256.

Station # (C256-)	Date (2014)	Local Time	General Locale	chl-a Fluor (volts x30)	CDOM Fluor (volts)	Xmiss (volts)	Water Depth (m)	Cloud Cover (%)	Wave ht (ft)	Wind Sp (BF)	Secchi Depth (m)	Calculated 1% Depth (m)
002	17-Nov	1010	Canary Current	655.6	85.3	1523	3586	10%	2	2.0	36.0	96.7
007	19-Nov	0950	Canary Current	648.2	81.4	15222	4349	40%	12.0	5.0	25.5	68.5
009	20-Nov	1015	Canary Current	608.6	80.9	15238	4775	30%	15.0	6.0	36.5	98.0
011	21-Nov	1011	North Atlantic Gyre	600.9	84.9	15256	5010	10%	8.0	4.0	41.0	110.1
015	23-Nov	1000	North Atlantic Gyre	612.2	85.6	15225	5473	75%	6.0	4.0	26.5	71.2
019	24-Nov	1006	North Atlantic Gyre	601.3	82.1	15217	5684	75%	3.0	3.0	30.0	80.6
021	26-Nov	1002	North Atlantic Gyre	603.4	78.2	15212	5096	85%	10.0	5.0	29.0	77.9
023	27-Nov	1000	North Atlantic Gyre	543.1	79.4	15221	5630	50%	12.0	5.0	26.5	71.2
025	28-Nov	0958	North Atlantic Gyre	541.4	77.3	15240	5228	40%	2.0	2.0	31.0	83.2
029	30-Nov	1019	NEC Transition Zone	538.9	77.5	15244		25%	3.0	3.0	32.5	87.3
031	1-Dec	1000	NEC Transition Zone	538.2	79.3	15251	4109	80%	3.0	5.0	29.5	79.2
033	2-Dec	0932	NEC Transition Zone	547.1	78.3	15265	3790	90%	3.0	5.0	33.0	88.6
039	4-Dec	0928	NEC Transition Zone	519.8	83.5	15221	2968	10%	1.0	2.0	31.0	83.2
041	5-Dec	1025	NEC Transition Zone	523.5	77.6	15223	5284	45%	4.0	4.0	29.5	79.2
045	7-Dec	0945	NEC Transition Zone	633.7	83.7	15191	5332	90%	1.0	1.0	32.5	87.3
051	12-Dec	1300	Dominica	-	-	-	20	95%	1.0	2.0	14.5	38.9
059	18-Dec	1446	St Maarten	-	-	-	5	50%	1.0	5.0	bottom	NA
062	19-Dec	1003	Eastern Caribbean	597.1	89.0	15128	1102	25%	4.0	4.0	27.5	73.8

Table 11. Dip Net station data for C256.

Station # (C256-)	Date (2014)	Local Time	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Locale	Notes
002 A	17-Nov	1116	23.6	36.98	626.1	Canary Islands	1 Large piece of plastic during CTD deployment. Blue, thin plastic that's been wrapped around itself over and over. Ends are browned with unknown algae and/or other decay.
002 B	17-Nov	1205	23.6	36.99	597.8	Canary Islands	During 002-NT. Styrofoam packing, greenish/yellow algae only on waterline areas, hydroids growing out from center of styrofoam.
004	18-Nov	0905	24.0	36.87	628.7	Canary Current	Pink/blue boat fender with clumps of growth on one side. Green/brown algae along center area with barnacle shell. Clumps of barnacles or worms on top - whitish brown. 2 Fiona pinnata nudibranchs, 1 barnacle
005	18-Nov	1158	23.9	36.76		Canary Current	Polypropylene line, maybe old fishing line or netting. Green with brown growth.
033	2-Dec	1119	26.7	36.74	522.0	NEC Transition Zone	Sargassum clump, varied color from light green to dark brown. Consistent hydroids and wormtubes throughout. Subsampled for MBL.
034	2-Dec	1415	26.8	36.73	506.7	NEC Transition Zone	Sampled from rescue boat. Clump A ranges from healthy vibrant green with little to no organisms occupying the leaves to areas of decomposition. Areas of dark brown had more organisms than decomposing areas. Clump B very covered in hydroids, little new growth. Dead, dark brown areas smaller in color (?) than clump A. Sample C appears to be an old Pringles lid. Small amount of hydrozoan growth, a few anemones, and some other unidentified life forms.
035	3-Dec	1015	27.1	36.68	528.5	NEC Transition Zone	4 clumps of Sargassum
038	4-Dec	0728	27.1	35.69	569.8	NEC Transition Zone	4 clumps of Sargassum collected. B and C processed for SEA: B was a relatively small clump with very little new growth. C had lots of hydroid and bryozoan growth.Clump D (28g) was processed for Nick Dragone.
043	6-Dec	1123	27.5	35.45	616.0	NEC Transition Zone	5 clumps collected on science deck during starboard NT.
045 A	7-Dec	1012	27.5	34.92	624.4	NEC Transition Zone	4g collected. Drift, during hove to, across a small (1m wide) windrow. Samples were collected as hydrowire was being deployed. The wire had just received a coat of fish oil lubricant which may affect samples.

Station # (C256-)	Date (2014)	Local Time	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Locale	Notes
045 B	7-Dec	1012	27.5	34.92	624.4	NEC Transition Zone	10g collected. Drift, during hove to, across a small (1m wide) windrow. Samples were collected as hydrowire was being deployed. The wire had just received a coat of fish oil lubricant which may affect samples.
045 C	7-Dec	1012	27.5	34.92	624.4	NEC Transition Zone	70g collected. Drift, during hove to, across a small (1m wide) windrow. Samples were collected as hydrowire was being deployed. The wire had just received a coat of fish oil lubricant which may affect samples.
045 D	7-Dec	1012	27.5	34.92	624.4	NEC Transition Zone	45g collected. Drift, during hove to, across a small (1m wide) windrow. Samples were collected as hydrowire was being deployed. The wire had just received a coat of fish oil lubricant which may affect samples.
047 A	8-Dec	1300	28.2	35.38	543.8	NEC Transition Zone	27g collected. Collected by rescue boat from >3m windrow and rafts
047 B	8-Dec	1300	28.2	35.38	543.8	NEC Transition Zone	25g collected. Collected by rescue boat from >3m windrow and rafts
049 A	9-Dec	1014	28.1	35.26	616.0	Dominica	25g of Sargassum and a white piece of plastic (possibly part of a water jug - 23g) were collected. Sargassum and plastic came up together in the dip net but were processed separately. Massive mat port of windrow associated with frontal boundary currents, not wind.
049 B	9-Dec	1014	28.1	35.26	616.0	Dominica	27g of Sargassum and a plastic Christmas ornament (35g) were collected. Sargassum and plastic came up together in the dip net but were processed separately. Massive mat port of windrow associated with frontal boundary currents, not wind.
052 A	13-Dec	1330	28.0	35.30	555.3	Eastern Caribbean	21g of Sargassum other collected. Processed by HAB project
052 B	13-Dec	1330	28.0	35.30	555.3	Eastern Caribbean	17g of Sargassum other collected. Processed by HAB project
055	14-Dec	1014	28.2	34.95	596.8	Redonda/Nevis	Sargassum samples for Nick and Taylor. A. Nick took 3g other, B. Nick took 1g other.
056	14-Dec	1600				Eastern Caribbean	1 piece of Sargassum for Nick and Taylor
058	15-Dec	0818	27.8	34.93	637.8	Eastern Caribbean	Processed for Nick Dragone and Taylor Sehein's projects only.
058	15-Dec	1015	27.8	34.93	643.1	Eastern Caribbean	BF1 motorsailing across thin windrows. Archived for SEA.

Station # (C256-)	Date (2014)	Local Time	Temp (°C)	Salinity (ppt)	chl-a Fluor (volts x30)	Locale	Notes
062 A,B	19-Dec	1051	27.5	35.18	598.4	Eastern Caribbean	Mixed fragments from small windrows. Processed for Nick Dragone and Taylor Sehein.
062 C,D	19-Dec	1051	27.5	35.18	598.4	Eastern Caribbean	Mixed Fragments from small windrows. Processed for SEA, sorted and preserved in formalin. Sargassum natans, at least one float with apical process, and Sargassum other, our common species, no apical process on floats or thorns along stem.
063	20-Dec	0828	27.4	35.20	1171.8	Sir Francis Drake Channel	

Table 12. Student research topics for C256.

Title	Author
Zooplankton Density and Effects on Megafauna Abundance	Rebecca Hadik
Distribution and Type of Marine Debris	Christopher Bunn
Distribution and Size of Marine Debris	Heather Gaya
Trans-Atlantic Seafloor Mapping	Megan Lubetkin
Comparative Study of Atlantic Sea Surface Temperature	Missy Velez
Surface Chlorophyll-*a* Concentration as an Indicator of Zooplankton Biomass Along C256 Transatlantic Cruise Track	Winnie Davis
Distribution of the Marine Insect *Halobates*	Emma Hayward