CRUISE REPORT
C288

Scientific data collected aboard
SSV Corwith Cramer

Woods Hole, MA, USA – Portsmouth, Dominica – Francis Bay, St John, USVIs – Christiansted, St Croix, USVIs

11 October – 18 November 2019

Sea Education Association
Woods Hole, Massachusetts

Citation:
Schell, Jeffrey M. 2019. Final Report for S.E.A. Cruise C288. Sea Education Association, P.O. Box 6, Woods Hole, MA 02543, USA.

To obtain unpublished data, contact the Chief Scientist or the SEA Data Archivist:

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Table of Contents C288

Table 1. C288 Ship's crew and student participants

Nautical Staff		
	Jason Quilter	Captain
	Kevin Murray	Chief Mate
	Colin Graham	2nd Mate
	Megan Frey	3rd Mate
	Henry Cylkowski	Chief Engineer
	Sonia Pollock	Asst. Engineer
	Kim Reed	Steward
	Sarah Whitcher	Asst. Steward
Scientific Staff		
	Jeff Schell	Chief Scientist
	Bonny Clarke	1st Scientist
	Jordan Eckstein	2nd Scientist
	Sophie (Süpi) Vallas	3rd Scientist
Maritime Studies Staff		
	Maria Jose (MJ) Fernandez	Chief Historian
Sailing Interns		
	Riley Palmer	S280 alumnus
	Justin Freck	S278 alumnus
	Lila Glansberg	S278 alumnus
	Veronika Konwent	
	Lydia Wasmer	S271 alumnus
	Paige Dempsey	S269 alumnus
	Giselle Hart	S269 alumnus
	Jenna Lilly	S264 alumnus
	Jen Smola	Mate-in-Training
Students		
A Watch	Ollie Downes	
	Sarah Acker-Krzywicki	
	Izac Raker	
B Watch	Alicia Pane	
	Nick Hoffmann	
	Natalie Summers	
C Watch	Liam Carroll	
	Charlotte Pontifell	
	Fred Hoffmann	

Data Description C288

The cruise track for C288 (Figure 1) departed from Woods Hole, MA, USA and concluded in Christiansted, St Croix, USVI 39 days later. During the nearly six-week voyage we had two port stops; the first in Portsmouth, Dominica and the second in St John, USVIs.

Our cruise track traversed several major oceanographic provinces (Figure 1): a) the seasonally cold, less saline coastal waters of the Vineyard Sound, Rhode Island Sound, Sakonnet River and continental shelf (map inset), b) the transitional waters of the continental slope, c) the comparatively warm waters of the Gulf Stream, d) the seasonally cool waters of the Northern Sargasso Sea, e) the warming, salty waters of the North Atlantic sub-tropical convergence zone, f) the warm, less saline waters of the Southern Sargasso Sea, g) the warn and exceptionally low saline waters of the Tropical Atlantic, and finally the d) the warm, saline waters of the Eastern Caribbean.

We collected data with 123 individual deployments from 53 discrete geographic stations along our cruise track (Table 2). Comparison of the physical, chemical, geological and biological features of these regions represented the major scientific theme of this Sea Semester.

1. Physical oceanographic studies focused on the distribution of surface and sub-surface (to 1900 m) water masses and the delineation of hydrographic boundaries. Specifically, North Atlantic sub-tropical mode water (18°C Water) and Antarctic Intermediate water.
2. Chemical oceanographic studies focused on the geographic and vertical distribution of nutrients (phosphate), extracted chlorophyll-*a* and pH. These chemical parameters were related to patterns in physical hydrography at various scales: nearshore to offshore transitions, ocean fronts and eddies associated with the Gulf Stream and island passages and water column stratification.
3. Biological studies focused on the geographic distribution of charismatic megafauna (seabirds, sea turtles, flying fish, and marine mammals), several nektonic organisms (lantern fish – Family *Myctophidae*, and gelatinous organisms >2cm – i.e salps), meroplanktonic larvae including spiny lobster (phyllosoma) and eels (leptocephali), the floating macrophyte – *Sargassum* spp., the marine insect *Halobates*, and the density (mL/m2) and diversity (i.e. Shannon-Weiner index) of the aggregate zooplankton and phytoplankton communities.

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 hydrology is summarized with surface plots for temperature, salinity, and chlorophyll-*a* are presented (Figure 2a-c); additional data is available upon request.

Continuous recording of ocean current magnitude and direction from near surface to 600m occurred during the cruise using a hull-mounted acoustic doppler current profiler (ADCP). Regional examination of surface vectors indicates weak currents (< 500mm/s, or 1.0 knot) throughout the Caribbean but for the Florida Current and near restricted island passages (Figure 3); additional data available upon request.

Surface samples (n=90) of nutrients (phosphate), chlorophyll-*a*, and pH were collected in conjunction with all noon and midnight neuston net tows, as well as dawn (0600) and dusk (1800) collections (Table 3).

Routinely we visually observed and enumerated marine mammals, seabirds, flying fish, sea turtles, *Sargassum* abundance, and floating plastic debris. These hourly observations occurred only during daylight hours 0700-1900 and lasted only six minutes. Periodically, opportunistic sightings were also recorded when notable megafauna or marine debris were present. These data are available upon request.

The density structure of the water column (maximum depth 1900 m) was determined using a Seabird CTD with attached *in situ* chlorophyll-*a* fluorescence and dissolved oxygen sensors (18 stations, Table 4). On two occasions a carousel equipped with a CTD, PAR sensor, and 12 nisken bottles was deployed allowing the collection of water samples at depth which were analyzed for nutrients (phosphate), chlorophyll-*a*, and pH (Table 5). Regional differences in vertical water column structure was observed based on profiles of temperature, salinity, and chlorophyll-*a* fluorescence (Figure 4a-d).

Surface (43 stations, 335 µm mesh neuston net, Table 6) and sub-surface (10 stations, 335 µm mesh 1-meter diameter net; and 1 station, 500 µm mesh 2-meter diameter net, Table 7) plankton assemblages along with the floating macrophyte *Sargassum* spp., marine debris and tar balls were sampled regularly. These net deployments revealed the biogeographic patterns of the marine insect *Halobates*, eel (leptocephali) and spiny lobster (phyllosoma) larvae, lantern fish (Myctophidae), pteropods, and general zooplankton diversity and taxonomic composition in relation to numerous environmental parameters. Microscopic analysis determined general zooplankton diversity and taxonomic composition of each net tow (Table 8).

Surface phytoplankton (14 stations, 63 µm mesh, Table 9) assemblages were sampled regularly with a small drift net. These net deployments revealed the biogeographic patterns of the diatoms, dinoflagellates, radiolarians, foraminifera and *Trichodesmium*. Data available upon request.

Discrete samples of *Sargassum* clumps (n=9) and marine plastic debris (n=2) were collected with a dip net (335 µm mesh) from 9 locations (Table 10). Shrimp, crab, fish, and snail specimens were rinsed from collected samples. Abundance and diversity of associated biota were related to mass (g) and species form of *Sargassum* and geographic location. Three distinct morphological forms of *Sargassum* were recognized (*S. fluitans III, S. natans I*, and *S. natans VIII*) and clear differences in associated fauna were observed; even when different *Sargassum* forms were collected from the same station location.

Water clarity and light attenuation along our cruise track was also measured. We routinely deployed a secchi disc (22 stations, Table 11) to estimate depth of the 1% light level.

On three occasions we collected seafloor sediment using a shipek grab to determine grain size distribution and examine benthic invertebrate assemblages (Table 12). Data available upon request.

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, biological, and geological 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.

Jeffrey M. Schell, Professor of Oceanography – Chief Scientist, C288

Figure 1. Final cruise track for C288 based on hourly (local time) positions, including ports of call.

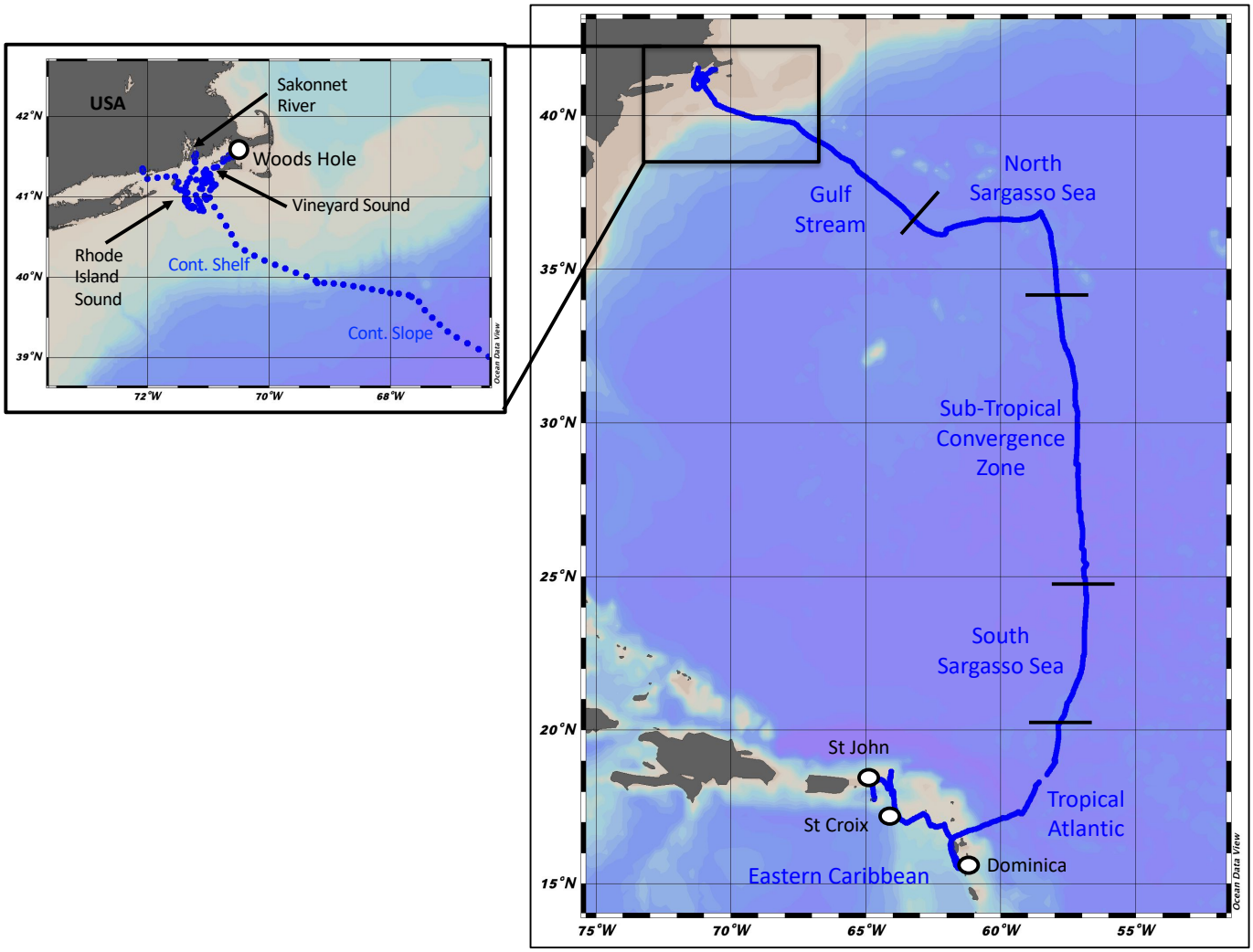


Table 2. Summary of oceanographic sampling stations for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg E & W)	Location	Station Type
001	13-Oct	1804		41.48	-70.76	Tarpaulin Cove	SG
002	14-Oct	1047		41.45	-70.75	Vineyard Sound	PN
002	14-Oct	1100		41.45	-70.75	Vineyard Sound	SD
002	14-Oct	1127		41.45	-70.75	Vineyard Sound	CTD
003	14-Oct	1522		41.47	-70.71	Vineyard Sound	NT
004	14-Oct	2302		41.30	-71.03	Rhode Island Sound	NT
005	15-Oct	0953	77.8	41.19	-70.97	Rhode Island Sound	SG
005	15-Oct	1013	78.1	41.19	-70.97	Rhode Island Sound	SD
005	15-Oct	1032	78.1	41.19	-70.97	Rhode Island Sound	PN
005	15-Oct	1050	78.5	41.18	-70.96	Rhode Island Sound	CTD
005	15-Oct	1149	80.0	41.17	-70.94	Rhode Island Sound	NT
006	15-Oct	2258	108.8	40.86	-71.27	Rhode Island Sound	NT
007	16-Oct	1207	154.6	41.54	-71.21	Rhode Island Sound	PN
007	16-Oct	1222	154.6	41.54	-71.21	Rhode Island Sound	SD
007	16-Oct	1238	154.6	41.54	-71.21	Rhode Island Sound	CTD
008	17-Oct	1625	158.5	41.49	-71.24	Sakonnet River	SG
008	17-Oct	1648	158.5	41.50	-71.24	Sakonnet River	SD
009	18-Oct	2219	307.7	39.94	-69.22	Continental Slope	PN
009	18-Oct	2232	308.0	39.94	-69.22	Continental Slope	CTD
009	18-Oct	2338	105.2	39.93	-69.19	Continental Slope	NT
010	19-Oct	1023	382.2	39.76	-67.68	Gulf Stream	NT
010	19-Oct	1034	382.2	39.76	-67.68	Gulf Stream	DN
011	19-Oct	2305	470.1	38.73	-66.01	Gulf Stream	NT
012	20-Oct	0951	544.9	37.80	-64.68	North Sargasso Sea	PN
012	20-Oct	0956	544.9	37.80	-64.68	North Sargasso Sea	SD
012	20-Oct	1012	544.9	37.79	-64.67	North Sargasso Sea	CTD
012	20-Oct	1115	544.9	37.77	-64.67	North Sargasso Sea	DN
013	20-Oct	2306	622.3	36.73	-63.30	North Sargasso Sea	NT
014	21-Oct	0950	678.1	36.16	-62.05	North Sargasso Sea	SD
014	21-Oct	1010	678.1	36.17	-62.05	North Sargasso Sea	DN-A
014	21-Oct	1015	678.1	36.17	-62.05	North Sargasso Sea	PN
014	21-Oct	1032	678.1	36.18	-62.04	North Sargasso Sea	CTD
014	21-Oct	1054	678.1	36.20	-62.04	North Sargasso Sea	DN-B
014	21-Oct	1202	678.1	36.23	-62.03	North Sargasso Sea	NT
015	22-Oct	0959	777.8	36.61	-60.02	North Sargasso Sea	PN
015	22-Oct	1004	767.8	36.62	-60.03	North Sargasso Sea	SD
015	22-Oct	1020	768.9	36.62	-60.03	North Sargasso Sea	CTD
015	22-Oct	1147	769.6	36.63	-60.06	North Sargasso Sea	NT

016	22-Oct	2314	808.5	36.61	-59.25	North Sargasso Sea	NT
017	23-Oct	0946	835.8	36.81	-58.52	North Sargasso Sea	SD
017	23-Oct	1001	835.8	36.82	-58.52	North Sargasso Sea	CTD
017	23-Oct	1057	835.8	36.84	-58.52	North Sargasso Sea	MN
017	23-Oct	1202	835.8	36.86	-58.53	North Sargasso Sea	NT
018	23-Oct	2140	890.0	36.03	-58.15	North Sargasso Sea	MN
018	23-Oct	2249	891.0	36.01	-58.16	North Sargasso Sea	NT
019	24-Oct	0956	961.9	34.88	-57.97	North Sargasso Sea	SD
019	24-Oct	1015	962.0	34.89	-57.97	North Sargasso Sea	DN-A
019	24-Oct	1023	962.0	34.89	-57.97	North Sargasso Sea	CTD
019	24-Oct	1036	961.9	34.89	-57.97	North Sargasso Sea	PN
019	24-Oct	1150	962.1	34.90	-57.99	North Sargasso Sea	NT
019	24-Oct	1207	972.6	34.89	-57.98	North Sargasso Sea	DN-B
020	24-Oct	2304	1033.5	33.76	-57.84	North Sargasso Sea	NT
021	25-Oct	0813	1093.7	32.80	-57.73	North Sargasso Sea	DN
022	25-Oct	0936	1103.0	32.66	-57.69	North Sargasso Sea	SD
022	25-Oct	0953	1102.4	32.66	-57.69	North Sargasso Sea	CTD
022	25-Oct	1048	1102.4	32.67	-57.69	North Sargasso Sea	MN
022	25-Oct	1150	1103.5	32.66	-57.68	North Sargasso Sea	NT
023	25-Oct	2145	1158.2	31.82	-57.35	North Sargasso Sea	MN
023	25-Oct	2250	1159.8	31.82	-57.34	North Sargasso Sea	NT
024	26-Oct	0925	1230.5	30.61	-57.24	Sub-Tropical Convergence Zone	PN
024	26-Oct	0933	1130.5	30.61	-57.24	Sub-Tropical Convergence Zone	SD
024	26-Oct	0955	1130.5	30.61	-57.24	Sub-Tropical Convergence Zone	CTD
024	26-Oct	1124	1230.6	30.61	-57.25	Sub-Tropical Convergence Zone	NT
024	26-Oct	1203	1230.9	30.59	-57.25	Sub-Tropical Convergence Zone	DN
025	27-Oct	0931	1343.7	28.66	-57.22	Sub-Tropical Convergence Zone	SD
025	27-Oct	0947	1344.0	28.66	-57.22	Sub-Tropical Convergence Zone	CTD
025	27-Oct	0953	1344.0	28.66	-57.22	Sub-Tropical Convergence Zone	DN
025	27-Oct	1048	1344.3	28.66	-57.20	Sub-Tropical Convergence Zone	MN
025	27-Oct	1148	1344.9	28.67	-57.28	Sub-Tropical Convergence Zone	NT
026	27-Oct	2141	1366.8	28.25	-57.15	Sub-Tropical Convergence Zone	MN
026	27-Oct	2249	1367.8	28.24	-57.15	Sub-Tropical Convergence Zone	NT
027	28-Oct	0949	1434.1	27.13	-57.11	Sub-Tropical Convergence Zone	SD
027	28-Oct	1019	1434.4	27.14	-57.10	Sub-Tropical Convergence Zone	PN

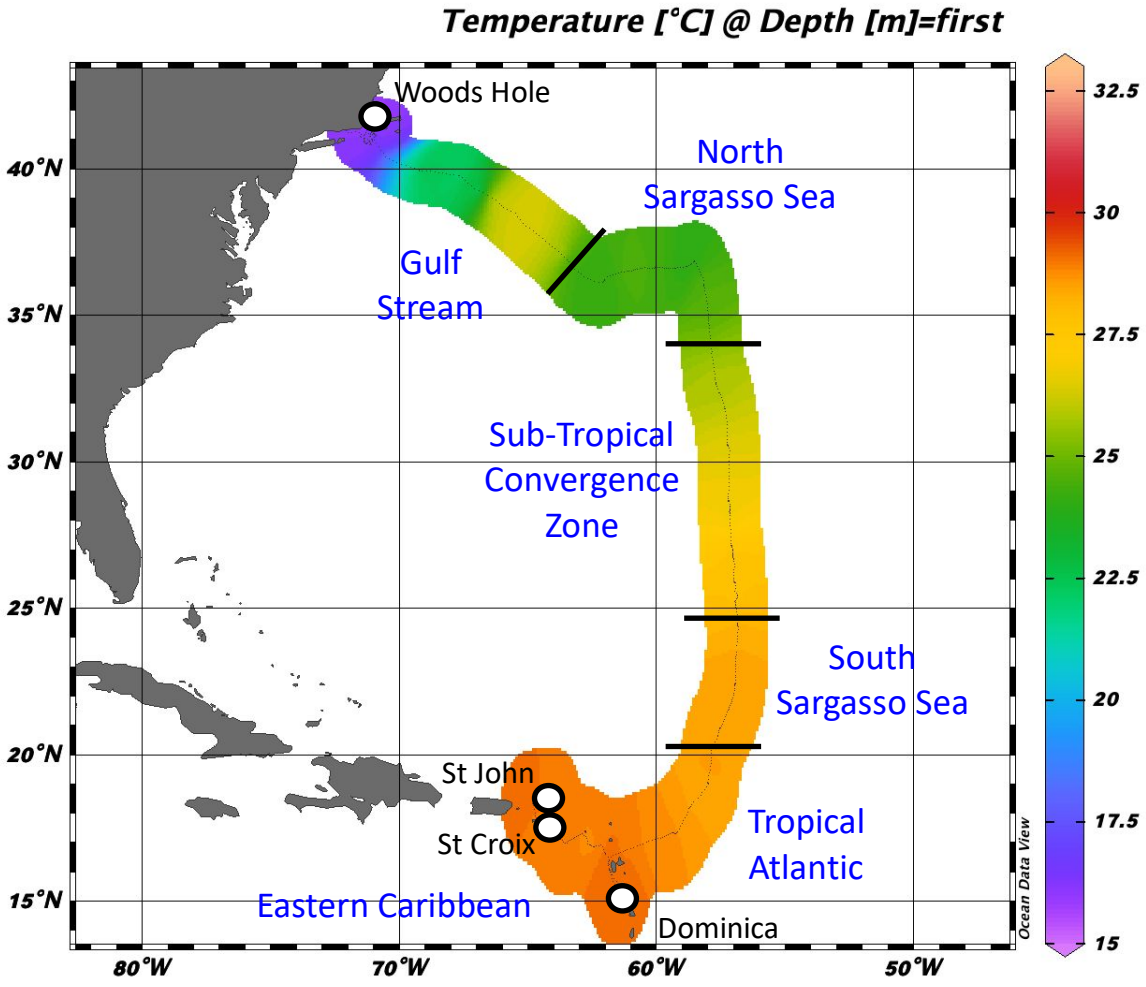
027	28-Oct	1154	1434.4	27.13	-57.09	Sub-Tropical Convergence Zone	NT
028	28-Oct	2326	1462.8	26.71	-57.02	Sub-Tropical Convergence Zone	NT
029	29-Oct	0931	1510.2	25.92	-57.00	South Sargasso Sea	SD
029	29-Oct	1007	1510.4	25.91	-56.99	South Sargasso Sea	HC
029	29-Oct	1100	1510.5	25.89	-56.97	South Sargasso Sea	DN
029	29-Oct	1207	1510.6	25.88	-56.96	South Sargasso Sea	NT
030	29-Oct	2300	1548.0	25.23	-56.94	South Sargasso Sea	NT
031	30-Oct	0943	1591.8	24.46	-56.86	South Sargasso Sea	SD
031	30-Oct	1012	1591.8	24.45	-56.86	South Sargasso Sea	HC
031	30-Oct	1022	1592.0	24.45	-56.86	South Sargasso Sea	PN
031	30-Oct	1207	1592.6	24.41	-56.84	South Sargasso Sea	NT
032	31-Oct	2309	1652.6	23.33	-56.91	South Sargasso Sea	NT
033	31-Oct	0942	1703.0	22.42	-56.94	Antilles Current	SD
033	31-Oct	1002	1703.0	22.42	-56.94	Antilles Current	CTD
033	31-Oct	1024	1705.4	22.41	-56.95	Antilles Current	PN
033	31-Oct	1133	1703.0	22.40	-56.96	Antilles Current	NT
034	31-Oct	2305	1755.0	21.60	-57.18	Antilles Current	NT
035	1-Nov	0915	1799.5	20.91	-57.53	Antilles Current	DN
035	1-Nov	0942	1799.5	20.91	-57.54	Antilles Current	SD
035	1-Nov	1002	1799.8	20.90	-57.55	Antilles Current	CTD
035	1-Nov	1130	1800.1	20.88	-57.56	Antilles Current	MN
036	1-Nov	1300	1801.6	20.83	-57.57	Antilles Current	NT
037	1-Nov	2308	1853.5	20.04	-57.88	Antilles Current	NT
038	1-Nov	0930	1920.2	19.04	-58.03	Antilles Current	SD
038	2-Nov	0944	1920.4	19.04	-58.03	Antilles Current	CTD
038	2-Nov	1104	1920.2	19.04	-58.07	Antilles Current	NT
038	2-Nov	1142	1921.1	19.03	-57.98	Antilles Current	MN
039	2-Nov	2141	1986.8	18.24	-58.68	Tropical Atlantic	MN
039	2-Nov	2302	1989.5	18.21	-58.72	Tropical Atlantic	NT
040	3-Nov	1013	2052.5	17.29	-59.25	Tropical Atlantic	NT
040	3-Nov	1117	2053.4	17.30	-59.29	Tropical Atlantic	SD
040	3-Nov	1142	2053.2	17.30	-59.30	Tropical Atlantic	CTD
041	3-Nov	2258	2093.0	17.15	-59.93	Tropical Atlantic	NT
042	4-Nov	1102	2172.0	16.73	-61.24	Tropical Atlantic	NT
044	9-Nov	1702	2313.8	16.06	-61.80	Caribbean	NT
045	9-Nov	2349	2352.5	16.64	-61.98	Caribbean	NT
046	10-Nov	1007	2397.7	16.92	-62.58	Caribbean	SD
046	10-Nov	1031	2397.7	16.92	-62.58	Caribbean	CTD
046	10-Nov	1139	2398.0	16.92	-62.61	Caribbean	NT
047	11-Nov	2300	2449.0	17.13	-63.23	Caribbean	NT
048	11-Nov	1006	2486.1	17.25	-63.83	Caribbean	SD
048	11-Nov	1027	2486.1	17.25	-63.83	Caribbean	CTD

048	11-Nov	1151	2486.4	17.26	-63.86	Caribbean	NT
049	11-Nov	2200	2537.1	17.99	-64.01	Caribbean	MN
049	11-Nov	2334	2539.2	17.94	-64.04	Caribbean	NT
050	12-Nov	1049	2597.0	18.49	-64.07	Caribbean	SD
050	12-Nov	1109	2597.1	18.49	-64.09	Caribbean	CTD
050	12-Nov	1235	2597.0	18.48	-64.11	Caribbean	NT
051	12-Nov	2156	2621.5	18.16	-64.17	Caribbean	MN
051	12-Nov	2316	2622.2	18.13	-64.19	Caribbean	NT

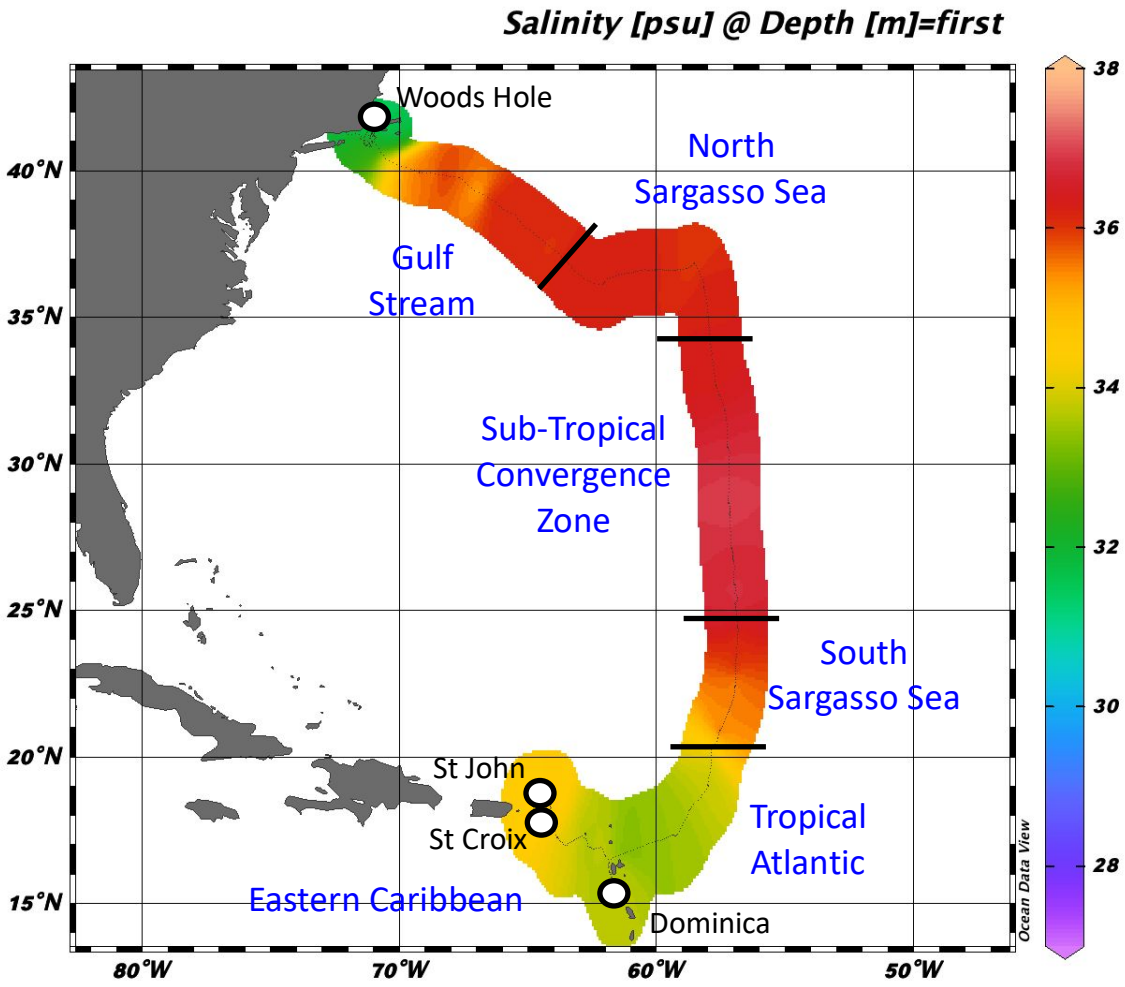
Duplicate station numbers indicate multiple oceanographic deployments that either occurred concurrently in the same location or were deployed sequentially in the same general location after the vessel was hove to. General Locations are categorized by traditional oceanic biomes or significant geologic feature. Abbreviations for oceanographic equipment deployed are: NT – Neuston Tow, MN – Meter Net tow, PN – Phytoplankton Net, DN – Dip Net, CTD – conductivity, temperature, and depth profilers, HC – hydrocast (including niskin bottles), SG – Shipek Grab, and SD – Secchi Disc.

Figure 2a-c. Surface water hydrography for C288.

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



b. Salinity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Woods Hole
North
Sargasso Sea
Gulf
Stream
Sub-Tropical
Convergence
Zone
South
Sargasso Sea
St John
St Croix
Tropical
Atlantic
Eastern Caribbean
Dominica
40°N
35°N
30°N
25°N
20°N
15°N
80°W
70°W
60°W
50°W
38
36
34
32
30
28
Ocean Data View

c. Chlorophyll-*a* fluorescence.

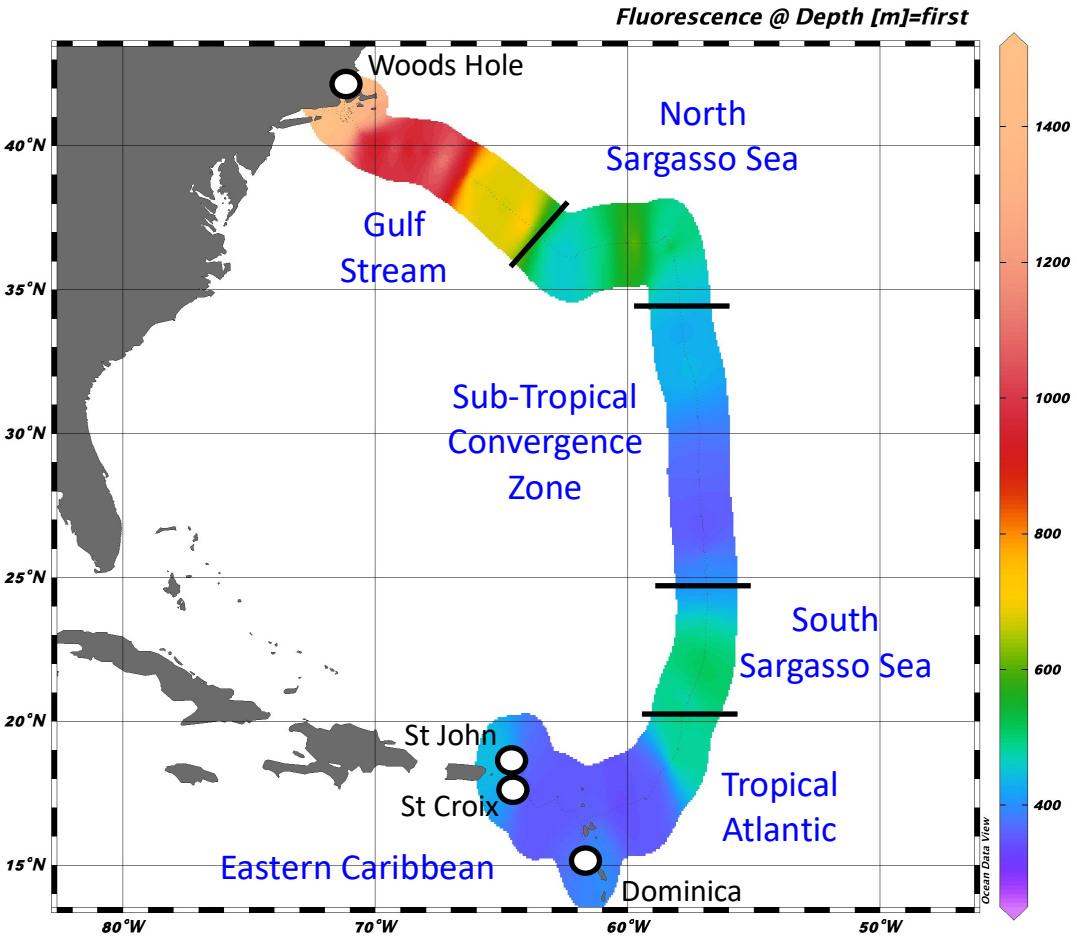

Figure 3. Surface current vectors during C288. Note 500 mm/s is equivalent to 1.0 knots. Currents were weak except for the Gulf Stream and associated mesoscale eddies to the south-east.

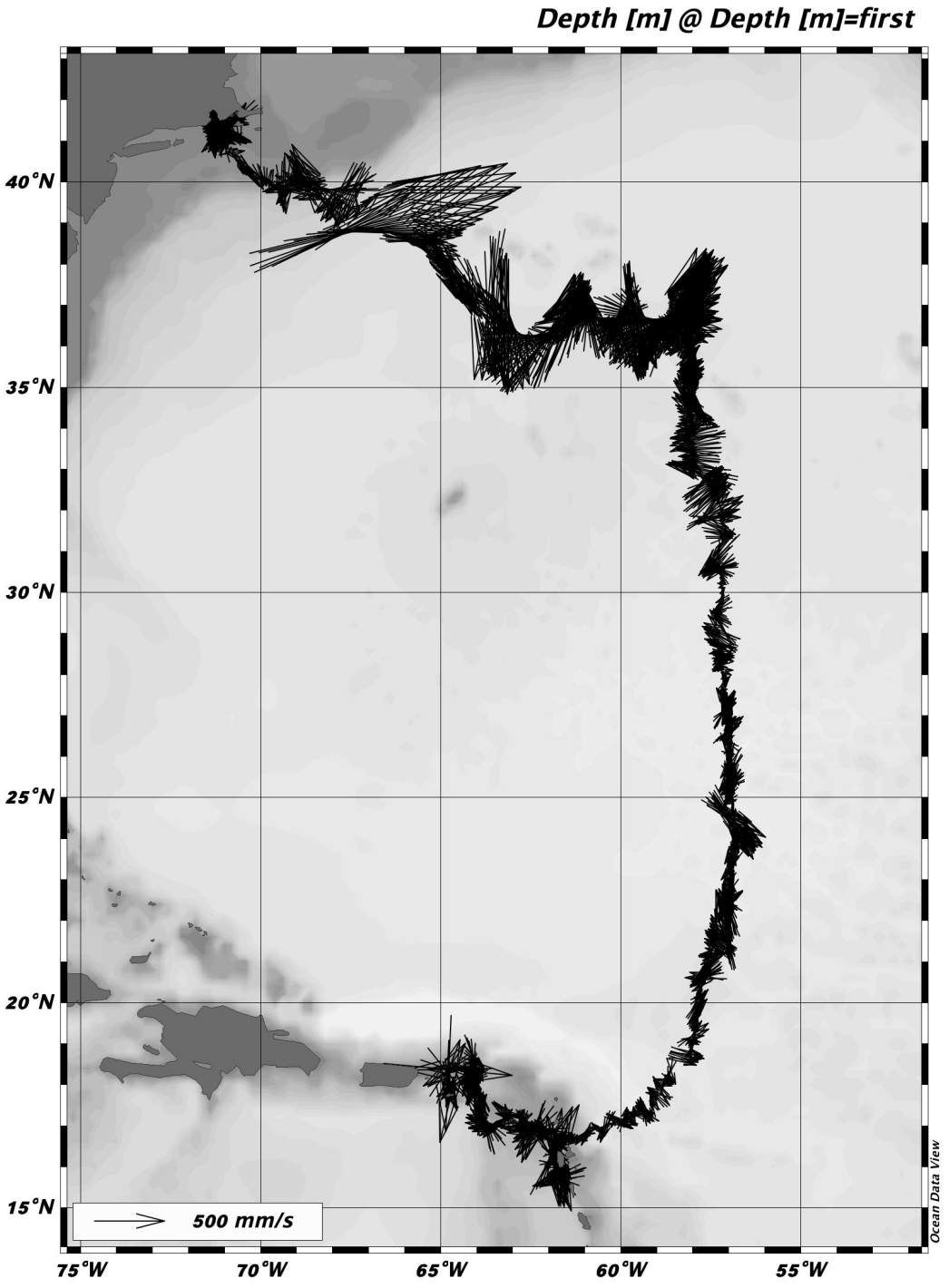

Table 3. Surface station location and surface sensor data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Temp (°C)	Salinity (ppt)	chl-*a* Fluor (volts)
SS-001	14-Oct	0925		40.30	-70.76	16.0	31.39	1141
SS-002	14-Oct	1530		40.29	-70.72	16.2	31.43	1307
SS-003	14-Oct	2310		40.12	-71.03	16.7	32.09	1188
SS-004	15-Oct	0520	66.2	40.00	-71.10	16.6	32.38	1149
SS-005	15-Oct	1149	80.0	39.99	-70.94	16.5	32.26	1215
SS-006	15-Oct	1523		39.95	-70.95	16.6	32.19	1645
SS-007	15-Oct	2310	109.4	39.69	-71.28	16.1	33.13	1870
SS-008	16-Oct	0520	125.6	39.90	-71.39	16.4	32.77	1138
SS-009	16-Oct	0912	141.7	40.16	-71.26	16.5	32.37	1333
SS-010	16-Oct	1005	147.3	40.27	-71.23	16.4	32.07	1364
SS-011	16-Oct	1147	154.6	40.36	-71.21	15.6	31.53	1789
SS-012	17-Oct	1657	158.5	40.33	-71.24	15.3	31.53	2354
SS-013	18-Oct	0507	167.5	40.28	-71.23	15.9	31.90	1511
SS-014	18-Oct	0922	205.5	39.77	-70.95	16.0	32.62	1215
SS-015	18-Oct	1217	226.8	39.44	-70.70	16.6	33.47	2912
SS-016	18-Oct	1406	240.0	39.22	-70.55	19.7	34.88	852
SS-017	18-Oct	1717	267.7	39.04	-70.04	21.5	35.58	884
SS-018	18-Oct	2351	306.9	38.79	-69.19	22.9	35.89	1150
SS-019	19-Oct	0515	344.3	38.74	-68.41	22.9	36.21	1287
SS-020	19-Oct	1044	382.4	38.64	-67.67	22.0	35.73	951
SS-021	19-Oct	1741	432.5	38.09	-66.80	21.7	35.00	991
SS-022	19-Oct	2313	470.4	37.64	-66.00	26.2	36.20	612
SS-023	20-Oct	0502	509.5	37.17	-65.31	26.5	36.23	658
SS-024	20-Oct	1057		36.71	-64.66	26.4	36.20	705
SS-025	20-Oct	1610	580.4	36.27	-64.03	26.1	36.27	746
SS-026	20-Oct	2315	622.5	35.67	-63.31	24.2	36.61	456
SS-027	21-Oct	0504	654.4	35.23	-62.68	24.2	36.19	446
SS-028	21-Oct	1219		35.23	-62.03	24.1	36.25	463
SS-029	21-Oct	2304	724.3	35.52	-60.97	24.7	36.29	485
SS-030	22-Oct	0510	746.8	35.62	-60.43	24.5	36.23	529
SS-031	22-Oct	1155	769.8	35.64	-60.06	24.5	36.24	600
SS-032	22-Oct	1704	790.7	35.63	-59.68	24.3	36.18	624
SS-033	22-Oct	2324	809.5	35.64	-59.25	24.0	36.08	499
SS-034	23-Oct	0510	823.4	35.72	-58.79	23.9	35.98	473
SS-035	23-Oct	1215		35.90	-58.53	24.0	35.92	467
SS-036	23-Oct	1715	861.0	35.50	-58.29	24.4	36.20	773
SS-037	23-Oct	2310	891.2	35.03	-58.16	24.8	36.23	456
SS-038	24-Oct	1152	962.1	33.94	-57.99	24.8	36.31	453
SS-039	24-Oct	2310	1034.0	32.80	-57.84	25.6	36.32	419
SS-040	25-Oct	0500	1075.3	32.14	-57.75	25.9	36.34	428
SS-041	25-Oct	1156	1103.5	31.70	-57.67	26.0	36.40	429
SS-042	25-Oct	2312	1160.3	30.86	-57.35	26.3	36.69	448
SS-043	26-Oct	0509	1199.2	30.17	-57.25	26.5	36.75	413
SS-044	26-Oct	1133	1230.6	29.65	-57.25	26.6	36.76	402

SS-045	26-Oct	2309	1278.0	28.80	-57.17	26.7	36.96	382
SS-046	27-Oct	0507	1322.0	28.24	-57.20	27.0	36.91	366
SS-047	27-Oct	1207	1345.1	27.72	-57.16	26.9	36.95	364
SS-048	27-Oct	1751	1362.3	27.42	-57.15	26.9	36.97	363
SS-049	27-Oct	2304	1369.8	27.28	-57.15	26.8	36.94	359
SS-050	28-Oct	1226	1435.1	26.18	-57.08	27.9	36.82	345
SS-051	28-Oct	1707	1447.2	25.98	-57.04	28.0	36.71	353
SS-052	28-Oct	2330	1462.8	25.77	-57.02	27.9	36.67	349
SS-053	29-Oct	0457	1486.2	25.38	-56.98	28.1	36.84	337
SS-054	29-Oct	1211	1510.6	24.94	-56.96	27.9	36.83	336
SS-055	29-Oct	2309	1548.0	24.29	-56.94	27.8	36.80	386
SS-056	30-Oct	0523	1567.9	23.91	-56.88	27.9	36.79	407
SS-057	30-Oct	1224	1593.0	23.46	-56.84	28.6	36.32	413
SS-058	30-Oct	1720	1619.7	22.97	-56.86	28.6	35.80	484
SS-059	30-Oct	2315	1652.6	22.37	-56.91	28.4	36.25	488
SS-060	31-Oct	0501	1681.0	21.87	-56.91	28.5	36.24	475
SS-061	31-Oct	1142	1703.0	21.46	-56.96	28.4	35.35	519
SS-062	31-Oct	2315	1755.0	20.65	-57.18	28.3	35.42	520
SS-063	1-Nov	0505	1781.2	20.23	-57.37	28.4	35.62	522
SS-064	1-Nov	1312	1801.9	19.87	-57.57	28.7	36.00	441
SS-065	1-Nov	2315	1853.5	19.09	-57.88	28.4	33.66	496
SS-066	2-Nov	0459	1890.5	18.52	-57.92	28.9	33.71	470
SS-067	2-Nov	1111	1920.2	18.08	-58.00	28.3	33.82	502
SS-068	2-Nov	1704	1955.0	17.63	-58.30	28.4	33.78	386
SS-069	2-Nov	2307	1989.6	17.23	-58.72	28.5	33.42	353
SS-070	3-Nov	0500	2026.5	16.67	-59.01	28.6	33.65	347
SS-071	3-Nov	1020	2052.4	16.32	-59.27	28.7	33.51	343
SS-072	3-Nov	1725	2064.4	16.30	-59.51	28.7	33.52	345
SS-073	3-Nov	2304	2093.3	16.07	-59.93	28.9	33.38	346
SS-074	4-Nov	0505	2129.9	15.87	-60.52	28.9	33.34	334
SS-075	4-Nov	1115	2172.6	15.72	-61.24	28.8	33.18	342
SS-076	4-Nov	2311	2237.2	14.94	-61.79	29.1	33.54	348
SS-077	5-Nov	0519	2279.0	14.56	-61.51	29.2	33.73	344
SS-078	9-Nov	1710	2314.0	15.03	-61.80	29.7	33.71	345
SS-079	9-Nov	2355	2352.5	15.61	-61.98	29.0	33.86	354
SS-080	10-Nov	1144	2398.2	15.89	-62.61	28.7	33.56	340
SS-081	10-Nov	1728	2425.7	16.23	-62.86	28.9	33.63	348
SS-082	10-Nov	2318	2449.5	16.08	-63.24	28.9	33.97	359
SS-083	11-Nov	0509	2471.1	15.98	-63.62	28.9	34.04	338
SS-084	11-Nov	1155	2486.4	16.19	-63.86	29.0	34.08	346
SS-085	11-Nov	1554	2502.8	16.46	-63.95	29.3	34.44	374
SS-086	11-Nov	2353	2539.4	16.87	-64.04	29.0	34.50	353
SS-087	12-Nov	0500	2578.8	17.31	-64.11	29.0	34.56	349
SS-088	12-Nov	1239	2597.1	17.43	-64.11	29.0	34.58	354
SS-089	12-Nov	2327	2623.0	17.07	-64.19	29.1	34.51	354
SS-090	13-Nov	0512	2645.0	17.31	-64.41	28.9	34.49	376

Table 3. Surface station location and surface sensor data for C288, continued.

Station # (C288-)	Chl-*a* (ug/l)	PO4 (uM)	pH	Fluoro (CDOM)	Tx	Notes
SS-001	1.312	0.634	7.959	225	3386	Bucket
SS-002	1.668	0.630	7.918	254	3260	Bucket
SS-003	1.023	0.312	7.924	237	3486	Bucket
SS-004	1.002	0.382	7.9591	226	3277	Bucket
SS-005	1.051	0.779	7.9182	223	3296	Bucket
SS-006	1.697	0.723	7.9241	209	3121	Bucket
SS-007	1.821	0.583	7.9746	172	3149	Bucket
SS-008	1.447	0.737	7.9317	203	3209	Bucket
SS-009	1.640	0.863	7.9658	226	3228	Flow through
SS-010	1.800	1.003	7.9793	242	3235	Flow through
SS-011	2.374	1.754	7.9557	335	3120	Flow through
SS-012	4.958	2.445	7.9492	346	450	Bucket
SS-013	2.367	1.493	7.9426	259	1371	Flow through
SS-014	1.091	0.910	7.8886	1033	2622	Flow through
SS-015	0.670	1.488	7.9243	163	2901	Flow through
SS-016	0.355	0.317	7.9946	120	3006	Flow through
SS-017	0.346	0.210	7.9693	112	3274	Flow through
SS-018	0.374	0.224	7.9899	107	3268	Bucket
SS-019	0.688	0.102	8.0963	99	3481	Flow through
SS-020	0.319	0.051	8.1498	103	3648	Bucket
SS-021	0.424	0.149	8.0637	110	3582	Flow through
SS-022	0.1	0.3	8.1802	83	3678	Bucket
SS-023	0.189	0.2	8.069	82	3665	Flow through
SS-024	0.134	0.2	8.0813	90	3643	Flow through
SS-025	0.194	0.0	8.0768	79	3610	Bucket
SS-026	0.070	0.0	8.1035	75	3845	Bucket
SS-027	0.077	0.1	8.0879	74	3843	Bucket
SS-028	0.020	0.0	8.0495	73	3835	Bucket
SS-029	0.040	0.1	8.0414	70	3791	Flow through
SS-030	0.117	0.1	8.079	73	3798	Flow through
SS-031	0.027	0.0	8.039	75	3808	Bucket
SS-032	0.047	0.0	8.088	83	3797	Bucket
SS-033	0.041	0.2	8.039	81	3830	Bucket
SS-034	0.053	0.1	8.047	82	3833	Bucket
SS-035	0.043	0.1	8.045	81	3827	Bucket
SS-036	0.032	0.1	8.001	506	3891	Bucket
SS-037	0.033	0.1	8.067	69	3904	Bucket
SS-038	0.037	0.1	7.993	69	3906	Bucket
SS-039	0.060	0.1	8.074	66	3905	Bucket
SS-040	0.024	0.0	7.990	67	3909	Bucket
SS-041	0.021	0.0	8.046	66	3909	Bucket
SS-042	0.003	0.2	8.072	65	3910	Bucket
SS-043	0.007	0.2	8.091	65	3913	Bucket
SS-044	0.008	0.217	8.007	66	3904	Bucket
SS-045	0.004	0.231	8.089	65	3908	Flow through
SS-046	0.006	0.158	8.074	64	3906	Bucket

SS-047	0.007	0.226	8.083	65	3908	Bucket
SS-048	0.017	0.221	8.086	65	3907	Bucket
SS-049	0.007	0.275	8.087	65	3908	Bucket
SS-050	0.026	0.226	8.029	65	3907	Bucket
SS-051	0.007	0.217	8.059	65	3899	Bucket
SS-052	0.012	0.163	8.091	65	3905	Bucket
SS-053	0.030	0.217	8.006	64	3898	Flow through
SS-054	0.024	0.265	8.021	65	3903	Bucket
SS-055	0.011	0.275	8.042	65	3912	Bucket
SS-056	0.014	0.246	8.027	65	3911	Bucket
SS-057	0.013	0.246	8.058	65	3913	Bucket/ 031-HC #13
SS-058	0.020	0.270	8.073	66	3905	Bucket
SS-059	0.014	0.221	8.090	65	3912	Bucket
SS-060	0.029	0.231	8.064	66	3902	Bucket
SS-061	0.042	0.280	7.970	66	3873	Bucket
SS-062	0.029	0.241	8.061	69	3900	Bucket
SS-063	0.059	0.212	8.056	70	3902	Flow through
SS-064	0.037	0.260	7.981	66	3897	Bucket
SS-065	0.025	2.074	8.071	84	3901	Bucket
SS-066	0.036	0.202	8.059	84	3894	Flow through
SS-067	0.027	0.221	8.081	83	3897	Bucket
SS-068	0.038	0.207		84	3876	Bucket
SS-069	0.027	0.168	8.051	85	3904	Bucket
SS-070	0.028	0.221	8.043	84	3901	Bucket
SS-071	0.028	0.100	8.222	71	3900	Bucket
SS-072	0.032	0.251	8.036	71	3890	Bucket
SS-073	0.053	0.231	8.062	73	3845	Bucket
SS-074	0.051		8.041	74	3887	Bucket
SS-075	0.052		7.976	74	3896	Bucket
SS-076	0.091		7.987	96	3881	Flow through
SS-077	0.131		8.054	89	3883	Bucket
SS-078			8.029	87	317	Bucket
SS-079			8.021	86	1966	Bucket
SS-080			7.992	78	1914	Bucket
SS-081			8.017	91	1979	Bucket
SS-082			8.033	78	1398	Bucket
SS-083			8.017	79	1295	Bucket
SS-084			8.015	78	1145	Bucket
SS-085			8.046	77	2441	Bucket
SS-086			8.031	89	1713	Bucket
SS-087			8.037	77	1712	Flow through
SS-088			8.019	78	2148	Bucket
SS-089			8.044	78	2616	Bucket
SS-090			8.059	80	3110	Bucket

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 or with a surface bucket (< 1m depth). Discrete water samples were collected for phosphate (PO_4) analysis, measured by colorimetric analysis with an Ocean Optics Chem2000 digital spectrophotometer; and 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 or data not recorded.

Table 4. CTD station data for C288. Physical characteristics of the water column were measured with a Seabird SEACAT Conductivity-Temperature-Depth Profiler Model SBE 19plus and two attached sensors: dissolved oxygen (sensor # - 43-3328), chlorophyll-*a* fluorescence (sensor # - SCF-3149). Vertical profile data available upon request.

Stn #	Date (2019)	Time (local -4 GMT)	Water Depth (m)	Cast Depth (m)	Locale	CTD Unit #
002	14-Oct	1127	21	17	Vineyard Sound	4027
005	15-Oct	1050	32	23	Rhode Island Sound	4027
007	16-Oct	1238	10	6	Rhode Island Sound	4027
009	18-Oct	2232	1146	389	Continental Shelf	4027
012	20-Oct	1012	4952	972	North Sargasso Sea	4027
014	21-Oct	1032	4883	862	North Sargasso Sea	4027
015	22-Oct	1020	5082	832	North Sargasso Sea	4027
017	23-Oct	1001	5150	486	North Sargasso Sea	4027
019	24-Oct	1023	4979	982	North Sargasso Sea	4027
022	25-Oct	0953	4775	491	North Sargasso Sea	4027
024	26-Oct	0955	5532	997	Sub-Tropical Convergence Zone	4027
025	27-Oct	0947	5930	486	Sub-Tropical Convergence Zone	4027
033	31-Oct	1002	6030	960	Antilles Current	4027
035	1-Nov	1002	4762	736	Antilles Current	4027
038	2-Nov	0944	5022	792	Antilles Current	4027
040	3-Nov	1142	6630	1188	Tropical Atlantic	4447
046	10-Nov	1031	806	496	Caribbean	4447
048	11-Nov	1027	1143	822	Caribbean	4447
050	12-Nov	1109	2140	967	Caribbean	4447

Table 5. Hydrocast station data for C288. Physical characteristics of the water column were measured with a Seabird SEACAT Conductivity-Temperature-Depth Profiler Model SBE 19plus and two attached sensors: dissolved oxygen (sensor # - 43-3328), chlorophyll-*a* fluorescence (sensor # - SCF-3149). Vertical profile data available upon request.

Station # (C288-) General Locale Date and Time	Bottle	Z Corr (m)	Temp (deg C)	Salinity (psu)	Density (kg/m3)	O_2 Seapoint (mL/L)	PO4 (uM)	Chl a (ug/l)	pH
	1	843	8.0	35.108	1031.19	27.37	0.265		
Station - 029	2	842	8.0	35.105	1031.18	27.36	1.517		7.631
29-Oct-19	3	695	10.2	35.356	1030.33	27.20	1.104		
1007	4	497	14.3	35.899	1029.02	26.82	0.610		7.798
South Sargasso Sea	5	397	16.5	36.279	1028.36	26.62	0.401		
	6	199	19.6	36.721	1027.04	26.17			
Cast Depth	7	198	19.6	36.723	1027.03	26.17	0.231	0.003	7.867
856	8	100	22.8	37.121	1026.02	25.59			
	9	99	22.8	37.131	1026.02	25.60	0.221	0.210	7.980
Water Depth	10	74	23.9	37.157	1025.63	25.32	0.178	0.070	
6000	11	50	25.7	37.174	1024.97	24.76	0.202	0.027	8.047
	12	26	27.7	37.062	1024.14	24.03	0.221	0.000	
CTD Unit # 4447	13	0	27.9	36.830			0.265	0.024	7.904
	1	532	14.5	35.978	1029.18	26.83	0.246		
Station - 031	2	532	14.5	35.970	1029.17	26.82	0.575		7.782
30-Oct-19	3	533	14.5	35.968	1029.17	26.82	0.542		
1012	4	497	15.1	36.062	1028.96	26.77	0.372		7.804
South Sargasso Sea	5	398	16.8	36.336	1028.34	26.60	0.270		
	6	198	19.7	36.733	1027.03	26.17			
Cast Depth	7	198	19.7	36.732	1027.02	26.17	0.188	0.000	7.907
841	8	100	23.6	37.117	1025.79	25.36			
	9	98	23.7	37.165	1025.80	25.38	0.149	0.136	7.996
Water Depth	10	75	25.6	37.095	1025.05	24.73	0.212	0.072	
6305	11	50	27.5	37.031	1024.30	24.09	0.192	0.020	8.028
	12	25	28.5	36.671	1023.58	23.48	0.202	0.000	
CTD Unit # 4447	13	0	28.6	35.800			0.246	0.013	8.058

Figure 4a. CTD station locations for C288. Water column structure of temperature, salinity, dissolved oxygen and chlorophyll-*a* fluorescence was determined along the cruise track. Six geographic regions exhibited distinct water column structure: NE Slope waters (blue), North Sargasso Sea (red and brown), cold-core eddies (teal), Sub-Tropical Convergence Zone (yellow), and South Sargasso Sea/Topical Atlantic/Caribbean (light blue).

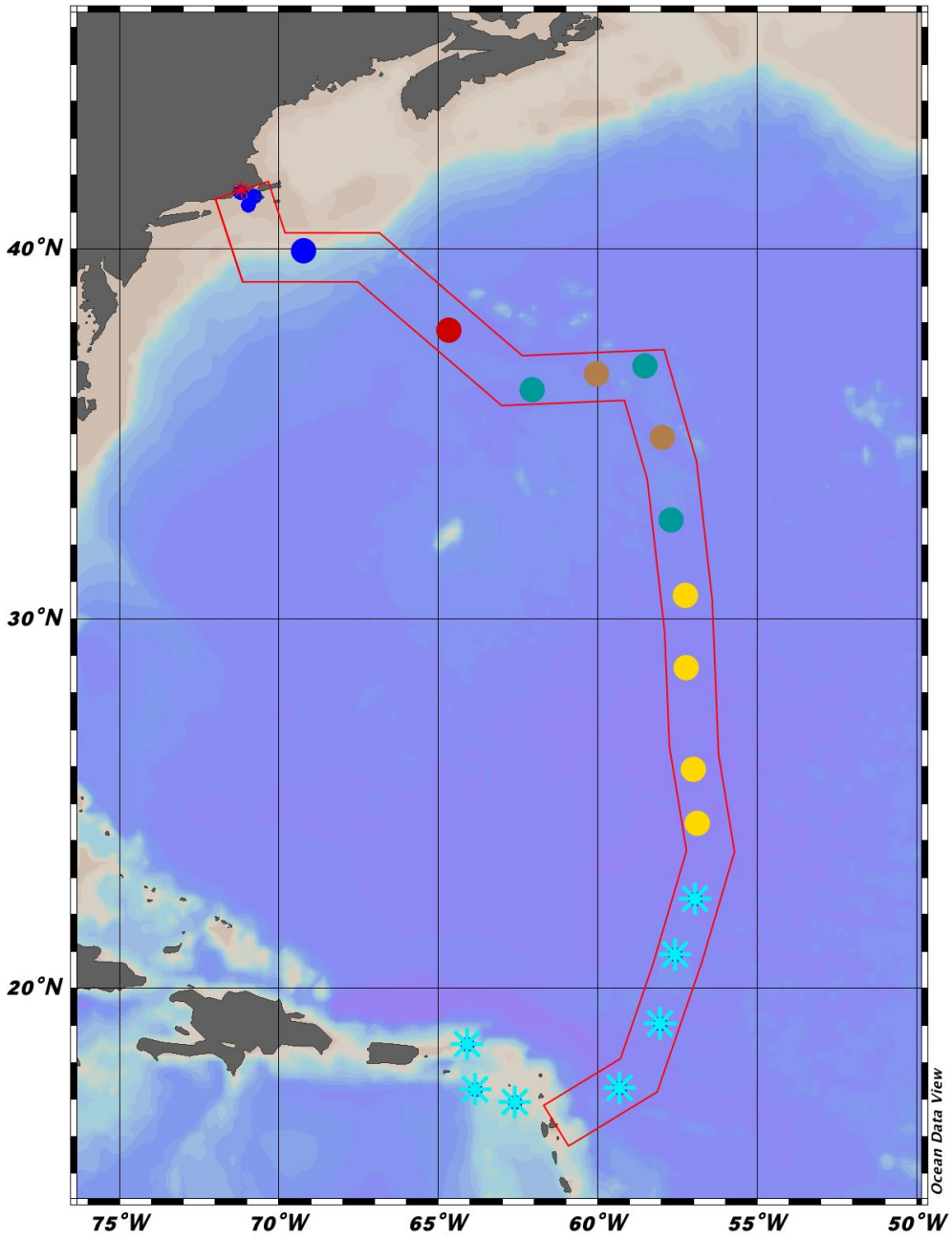

Figure 4b. Temperature profiles for C288. Six geographic regions exhibited distinct water column structure: NE Slope waters (blue), North Sargasso Sea (red and brown), cold-core eddies (teal), Sub-Tropical Convergence Zone (yellow), and South Sargasso Sea/Topical Atlantic/Caribbean (light blue).

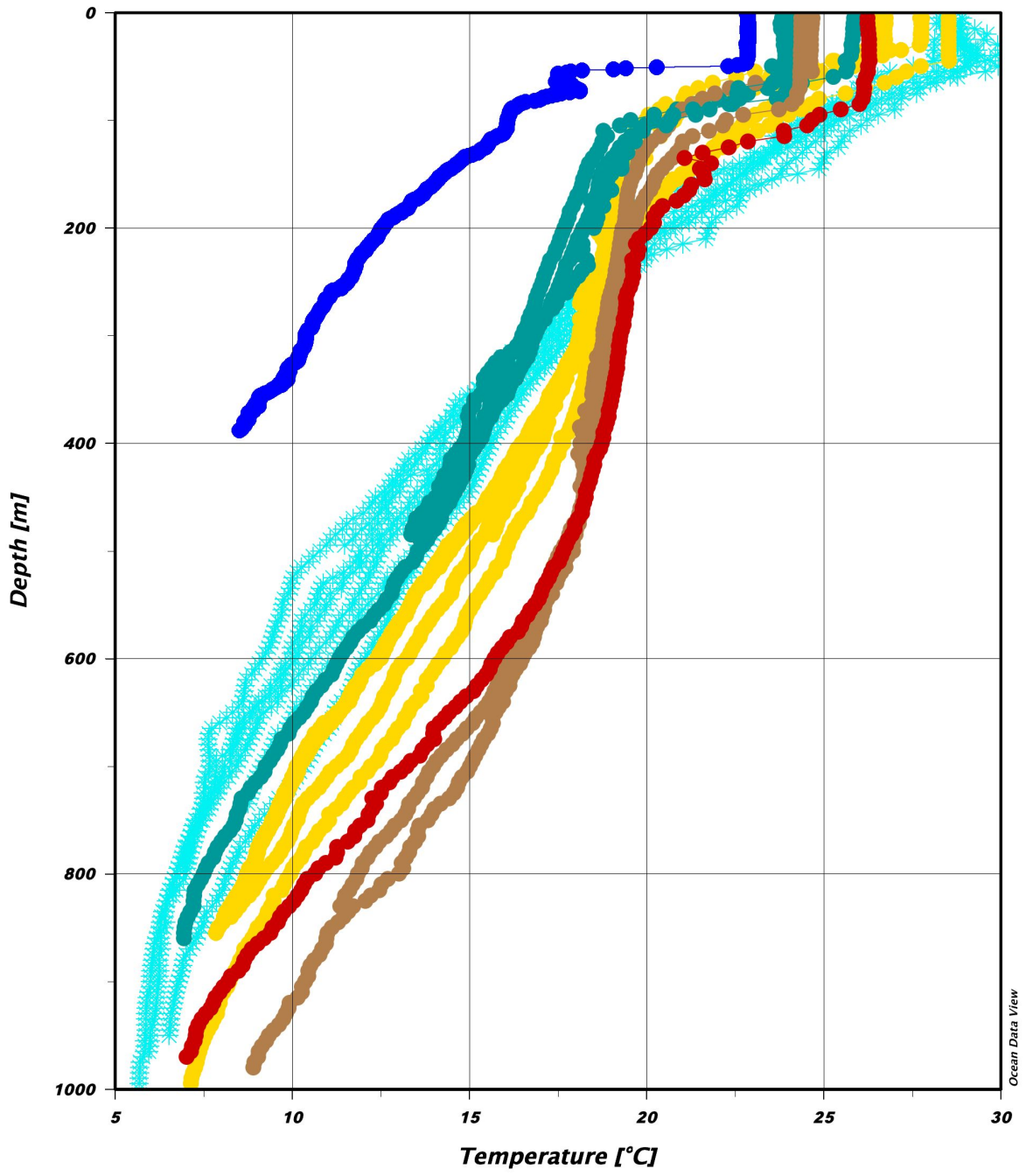

Figure 4c. Salinity profiles for C288. Six geographic regions exhibited distinct water column structure: NE Slope waters (blue), North Sargasso Sea (red and brown), cold-core eddies (teal), Sub-Tropical Convergence Zone (yellow), and South Sargasso Sea/Topical Atlantic/Caribbean (light blue).

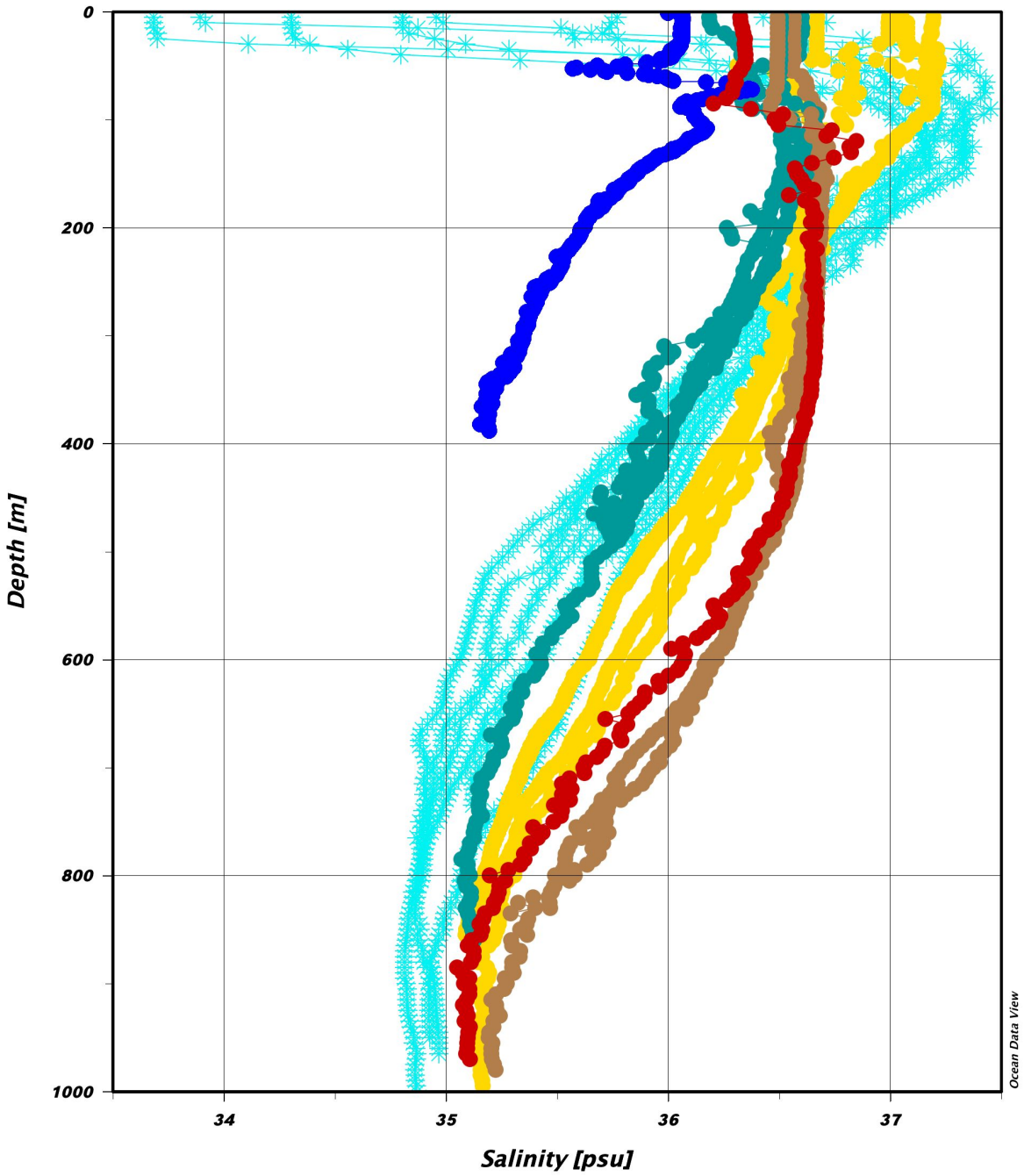

Figure 4d Chlorophyll-*a* fluorescence profiles for C288. Six geographic regions exhibited distinct water column structure: NE Slope waters (blue), North Sargasso Sea (red and brown), cold-core eddies (teal), Sub-Tropical Convergence Zone (yellow), and South Sargasso Sea/Topical Atlantic/Caribbean (light blue).

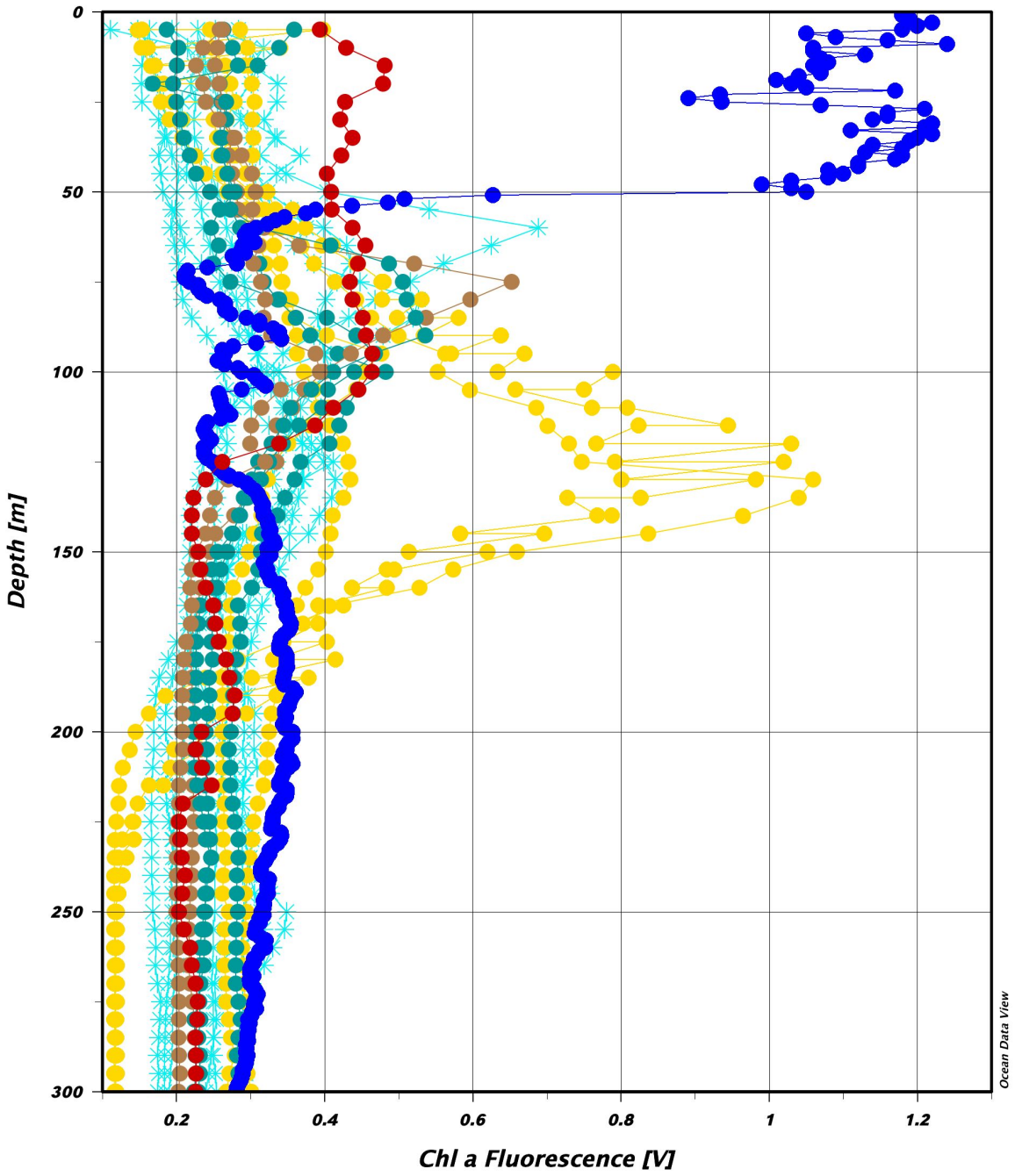

Table 6. Neuston station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Moon Phase %	risen or set	Temp (°C)	Salinity (ppt)	Chl-*a* Fluor (volts)	Tow Area (m^2)	Zoop Biomass (ml)	Zoop Den (ml/m^2)	Locale
003	14-Oct	1522	99%	set	16.0	31.43	1209.9	1965.8	14.0	0.0071	Vineyard Sound
004	14-Oct	2302	99%	risen	16.7	32.10	1198.3	1465.0	96.0	0.0655	Rhode Island Sound
005	15-Oct	1149	97%	set	16.5	32.26	1215.0	2019.8	6.0	0.0030	Rhode Island Sound
006	15-Oct	2258	97%	risen	16.1	33.16	1948.2	2269.5	149.0	0.0657	Rhode Island Sound
009	18-Oct	2338	80%	risen	22.9	35.88	1205.0	1563.8	19.0	0.0121	Continental Slope
010	19-Oct	1023	71%	risen	22.0	35.74	941.2	2283.9	7.0	0.0031	Gulf Stream
011	19-Oct	2305	71%	risen	26.3	36.21	629.5	1852.0	12.0	0.0065	Gulf Stream
013	20-Oct	2306	61%	risen	24.2	36.34	466.2	1852.0	15.0	0.0081	North Sargasso Sea
014	21-Oct	1202	50%	risen	24.2	36.25	453.4	1852.0	8.0	0.0043	North Sargasso Sea
015	22-Oct	1147	39%	risen	24.5	36.24	599.5	2455.4	1.8	0.0007	North Sargasso Sea
016	22-Oct	2314	39%	risen	24.0	36.08	485.1	1852.0	4.0	0.0022	North Sargasso Sea
017	23-Oct	1202	28%	risen	24.0	35.93	465.1	1852.0	1.6	0.0009	North Sargasso Sea
018	23-Oct	2249	28%	set	24.8	36.23	464.8	1852.0	8.0	0.0043	North Sargasso Sea
019	24-Oct	1150	19%	set	24.8	36.32	454.0	1486.0	9.0	0.0061	North Sargasso Sea
020	24-Oct	2304	19%	set	25.6	36.31	425.0	1852.0	9.0	0.0049	North Sargasso Sea
022	25-Oct	1150	10%	risen	26.0	36.40	428.5	1852.0	7.0	0.0038	North Sargasso Sea
023	25-Oct	2250	10%	set	26.3	36.67	437.5	1540.3	2.5	0.0016	North Sargasso Sea
024	26-Oct	1124	4%	risen	26.6	36.75	395.5	1250.1	3.0	0.0024	Sub-Tropical convergence zone
025	27-Oct	1148	1%	set	26.9	36.95	369.6	2281.6	1.5	0.0007	Sub-Tropical convergence zone
026	27-Oct	2249	1%	set	26.8	36.92	362.4	1101.6	2.5	0.0023	Sub-Tropical convergence zone
027	28-Oct	1154	0%	risen	27.7	36.83	347.6	1482.5	0.5	0.0003	Sub-Tropical convergence zone
028	28-Oct	2326	0%	set	27.9	36.67	350.8	1691.6	2.7	0.0016	Sub-Tropical convergence zone
029	29-Oct	1207	3%	set	27.9	36.80	338.7	1806.0	3.0	0.0017	South Sargasso Sea
030	29-Oct	2300	3%	set	27.8	36.80	390.8	1330.0	1.8	0.0014	South Sargasso Sea
031	30-Oct	1207	7%	risen	28.6	36.33	419.6	1852.0	1.0	0.0005	South Sargasso Sea
032	31-Oct	2309	7%	set	28.4	36.23	487.2	2801.4	1.5	0.0005	South Sargasso Sea
033	31-Oct	1133	14%	risen	28.4	35.34	552.2	859.9	0.6	0.0007	Antilles Current
034	31-Oct	2305	14%	set	28.3	35.41	515.0	2131.6	3.5	0.0016	Antilles Current

036	1-Nov	1300	22%	risen	28.9	36.12	445.7	2174.2	1.6	0.0007	Antilles Current
037	1-Nov	2308	22%	set	28.4	33.65	499.5	1228.1	5.0	0.0041	Antilles Current
038	2-Nov	1104	31%	Risen	28.3	33.80	489.3	1425.2	0.5	0.0004	Antilles Current
039	2-Nov	2302	31%	Set	28.5	33.40	354.3	1976.6	4.0	0.0020	Tropical Atlantic
040	3-Nov	1013	41%	Risen	28.6	33.50	386.4	2265.7	1.0	0.0004	Tropical Atlantic
041	3-Nov	2258	41%	risen	28.9	33.38	334.4	1544.9	5.6	0.0036	Tropical Atlantic
042	4-Nov	1102	51%	risen	28.8	33.20	341.2	1852.0	0.4	0.0002	Tropical Atlantic
044	9-Nov	1702	91%	risen	29.2	33.70	354.1	2176.2	6.0	0.0028	Caribbean
045	9-Nov	2349	91%	risen	29.0	33.86	347.9	2065.8	5.0	0.0024	Caribbean
046	10-Nov	1139	96%	set	28.8	33.54	345.1	2477.3	0.7	0.0003	Caribbean
047	11-Nov	2300	96%	risen	28.9	33.95	349.2	2153.5	2.0	0.0009	Caribbean
048	11-Nov	1151	99%	set	29.0	34.08	343.4	1671.9	0.7	0.0004	Caribbean
049	11-Nov	2334	99%	risen	29.0	34.50	351.8	1771.7	3.5	0.0020	Caribbean
050	12-Nov	1235	100%	set	29.0	34.58	357.4	1258.9	1.5	0.0012	Caribbean
051	12-Nov	2316	100%	risen	29.0	34.51	355.1	2556.8	4.9	0.0019	Caribbean

Table 6 continued. Neuston station data for C288.

Stn #	Surface station #	Halo (#)	Lepto (#)	Phyllo (#)	Mycto (#)	Ceph (#)	Plastic Pellets (#)	Plastic Pieces (#)	Tar (#)	S. natans I (g)	S. natans II (g)	S. natans VIII (g)	S. fluitans III (g)	Other Sarg. (g)
003	SS-002	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
004	SS-003	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	36.0
005	SS-005	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
006	SS-007	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
009	SS-018	0	0	0	1	0	0	2	0	0.0	0.0	0.0	0.0	0.0
010	SS-020	0	0	0	0	0	0	0	0	30.0	0.0	0.0	2.1	0.0
011	SS-022	0	0	0	13	0	0	0	0	18.0	0.0	0.0	0.0	125.0
013	SS-026	0	9	1	13	0	0	99	0	335.0	0.0	0.0	0.0	0.0
014	SS-028	0	0	0	0	0	0	26	0	365.0	0.0	0.0	0.0	0.0
015	SS-031	0	0	0	0	0	0	12	0	0.0	0.0	0.0	0.0	0.0
016	SS-033	0	0	0	10	0	0	0	0	27.0	0.0	0.0	0.0	0.0
017	SS-035	0	0	0	0	0	0	22	0	69.0	0.0	0.0	1.0	0.0
018	SS-037	0	30	4	8	0	0	14	0	0.0	0.0	0.0	0.0	0.0
019	SS-038	0	0	0	0	0	0	52	0	144.0	0.0	0.0	0.0	0.0
020	SS-039	1	26	1	11	0	0	24	0	49.0	0.0	0.0	0.0	0.0
022	SS-041	0	0	0	0	0	1	317	0	127.0	0.0	0.0	1.3	0.0
023	SS-042	14	5	0	1	0	0	0	0	1.0	0.0	0.0	0.5	0.0
024	SS-044	0	0	0	0	0	0	387	0	67.0	0.0	0.0	17.0	0.0
025	SS-047	2	0	0	0	0	0	149	0	33.0	0.0	0.0	9.0	0.0
026	SS-049	1	0	0	0	0	0	54	0	1.8	0.0	0.0	3.3	0.0
027	SS-050	1	0	0	0	0	0	11	0	0.0	0.0	0.0	0.0	0.0
028	SS-052	8	0	5	6	0	0	0	0	0.5	3.0	0.0	0.0	0.0
029	SS-054	2	0	0	0	0	0	5	0	15.0	0.0	0.0	0.0	0.0
030	SS-055	3	0	0	2	0	0	13	0	0.0	13.0	1.5	0.0	0.0
031	SS-057	2	0	0	0	0	0	10	0	3.0	3.0	0.0	0.0	0.0
032	SS-059	5	0	0	5	0	0	5	0	1.4	0.0	0.0	0.9	0.0

033	SS-061	0	0	0	0	0	0	2	0	0.1	0.0	1.9	0.0	0.0
034	SS-062	0	0	0	1	0	0	1	0	0.0	0.0	0.0	0.0	0.0
036	SS-064	3	0	0	0	0	0	17	0	0.0	0.0	17.0	0.0	0.0
037	SS-065	22	0	0	1	0	0	0	0	0.0	0.0	0.0	0.0	0.0
038	SS-067	10	0	0	0	0	0	2	0	5.0	0.0	0.0	0.0	0.0
039	SS-069	9	0	1	1	0	0	0	0	0.0	0.0	0.0	0.0	0.0
040	SS-071	9	0	0	0	0	0	0	0	0.0	0.0	6.7	0.0	0.0
041	ss-073	26	0	0	3	0	0	1	0	0.0	0.0	3.0	0.0	0.0
042	SS-075	5	0	0	0	0	0	0	0	0.0	0.0	3.0	0.0	0.0
044	SS-078	0	0	0	0	0	0	10	0	2.0	0.0	78.0	13.0	12.0
045	SS-079	5	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
046	SS-080	0	0	0	0	0	0	1	0	0.0	0.0	1.3	0.0	0.0
047	SS-082	14	0	0	5	0	0	2	0	0.0	0.0	0.0	0.0	0.0
048	SS-084	0	0	0	1	0	0	2	0	5.0	0.0	0.0	0.0	0.0
049	SS-086	6	0	0	0	0	0	0	0	0.0	0.0	7.0	0.0	0.0
050	SS-088	2	0	0	0	0	0	2	0	0.5	0.0	0.0	0.0	0.0
051	SS-089	13	0	0	3	0	0	4	0	0.0	0.0	0.0	0.0	0.0

Table 6 continued. Neuston station data for C288.

Station # (C288-)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes
003	64	~60 ctenophores (250 ml), 3 medusas (320 ml)	2	unidentified fish, 2 cm each	Mainly gelatinous, lots of greenish brown materials. Pulled net early due to excessive jellies.
004	6	6 ctenophores	1	1 unidentified fish, 1 ml	Writhing mass of shrimp babies with some jelly things and baby crabs and a couple benthic sargassum clumps and some cockroach-esque things we could not identify. And a feather!
005	101	1 moon jelly (100 ml), ~100 ctenophores and salps (103 ml)	10	10 silversides (5 ml)	Full of clear gelatinous gooey creatures, a few small fish, a hard moon jelly. Some small sargassum floats and a piece of other plant matter.
006	18	6 ctenophores, 12 siphonophores	1	1 isopod	Contents collected, mainly gelatinous with fragments of *Ascophyllum* along with pink squishy matter.
009	0	none	2	1 juvenile flying fish, 1 unidentified juvenile fish	Iridescent piles of clear, pink, blue, and orange critters which flop and squirm to the touch. Some benthic sargassum.
010	0	1 sm *Velella velella* (<2cm)	3	1 trigger fish, 2 juvenile puffer fish	Some small Sargassum clumps, pinkish brown color, small shrimps and siphonophores (clear) with one trigger fish and two juvenile pufferfish.
011	0	none	2	1 pipefish (5 ml), 1 juvenile halfbeak (.25 ml)	Sample containing lots of vegetation, mostly benthic sargassum, as well as a wide variety or larger visible creatures including a pipefish, several myctophids, a stomatopod, and many other mostly clear organisms. A few small vellela-vellela and sargassum crabs.
013	0	none	4	Large shrimp, 2 orange striped fish, Stomatapod.	Brown. Shiny, with colorful bits of plastic, phyllosoma, several leptocephali, and many shrimps. Large clumps of sargassum.

014	0	none	0	none	We found 3 nudibranchs (*Scyllaea pelagica*) and lots of the little shrimps and one small white fish with blue eyes. The biomass was brownish orange, not much biomass. Flatworms (*Gnesciocerос*)
015	0	1 sm *Velella velella* (<2cm)	0	none	pretty sparse - some floaters + microplastics visible, *Velella velella* in rinse.
016	1	1 Salp	0	0	mostly clean and pink, with various jellies, myctophids, and sargassum crabs. Approximately a teaspoon of biomass. There are lots of sargassum floats, but no discernable clumps. Mass of sargassum fragments not noted.
017	0	3 vellela-vellela	5	3 shrimp, 1 crab, 2 juvenile trigger fish	Small volume of biomass, lots of small plastic. Several fish and crabs and several vellela-vellela.
018	2	2 salps	9	7 stomatopods, 2 shrimp	Lots of crabs found in sargassum, stomatopods and lobster larvae and lots of leptocephali. <2 *Velella velella* in rinse.
019	0	1 sm *Velella velella* (<2cm)	1	1 file fish	clear and greenish biomass, as well as numerous fragments and floats of sargassum (identified as S natans I). Not many discernable organisms except for some crabs and a file fish.
020	0	none	1	1 bristle mouth	Some blue copepods, small squids, phyllosoma and a very large copepod. Colored plastic. Black specs and clear biomass. Some sargassum.
022	0	none	0	none	Dark green-gray-brown biomass with a majority pieces of sargassum floats 0.5-3mm diameter.
023	0	none	0	none	Not much sargassum, but a nice variety of critters including 5 leptocephali, a myctophid, and a bunch of *Halobates*. Overall biomass was fairly small and had lots of black specs.
024	0	none	0	none	Sargassum filled with crabs, flying fish eggs, copepods, and some little shrimps.
025	0	none	2	1 trigger fish, 1 flying fish	Mostly blue copepods with some orange shrimps and two small fish.

026	0	none	4	1 stomatopod, 1 shrimp, 1 bristle mouth, 1 chaetognath	Lots of sargassum, plastic, copepods, some nekton.
027	0	none	0	none	Plastics present in sieve along with very small biovolume, blue copepods majority and no measurable biomass from rinse.
028	1	1 salp (0.25 ml)	0	none	Sparse with many fish, blue copepods, and *Halobates*
029	0	none	0	none	Tiny ice cubes with a smattering of blue sprinkles.
030	3	1 jellyfish (6.0 ml) 2 siphonophores (0.8 ml)	6	6 stomatopods (.3 ml)	We found a true jelly that had eaten some form of shrimp, along with stomatopods and siphonophores and blue copepods. Small amount of biomass mostly clear and blue.
031	0	None	0	None	Many large blue copepods, some plastic and a megalopae present.
032	0	none	24	23 stomatopods, 1 bristle mouth fish	lots of actively moving stomatopods, blue colored dots from copepods, and some myctophids.
033	0	none	0	none	very small amount of biomass, including crab larvae and a *Janthinid* snail. Largely translucent.
034	0	none	2	1 myctophid, 1 shrimp, 1 chaetognath	Sparse sample with clear gelatinous bits, shrimp, and *Halobates*. Blue and wiggly.
036	0	none	4	4 skinny silver fish	Lots of vibrant fish, along with nonchalant blue copepods.
037	0	none	0	none	We caught lots of *Halobates* and that myctophid was exciting and the biomass was a toned-down cotton candy color of very small, indiscernible critters.
038	0	none	0	none	Sparse with many blue copepods, *Halobates*, and one blue button
039	0	none	2	Stomatopod, shrimp	Ocean of Buggars :)
040	0	None	1	1 stomatopod	WE got a sargassum crab and lots of copepods along with some sargassum natans VIII and a huge stomatopod.
041	1	1 salp	2	2 shrimps	One sargassum fragment with many shrimp like zooplankton, *Halobates*, pteropods and some myctophids.

042	0	none	0	none	Very little amount with a few *Halobates*.
044	0	None	3	2 sargassum crabs (1ml), 1 file fish (.3 ml)	Sargassum clumps and fragments, floating insects and crabs. Biomass made up of pinkish tan small creatures, some shiny larval fish.
045	0	None	2	2 stomatopods	In this tow the contents was made up of *Halobates* and a couple siphonophores. Contents was very clumped together and speckled.
046	0	None	1	blue/yellow baby fish (.5 ml)	Small amount with large blue copepods and 2 small fish
047	0	None	0	None	A relatively small amount of biomass, mostly translucent or colorless, lots of myctophids and *Halobates*, some gelatinous organisms
048	0	none	0	none	Not a lot of contents. 2 pieces of Sargassum and a myctophid. Not enough contents to save for biomass sample.
049	0	None	0	None	Small amount of biovolume. Sandy/pinkish appearance with 2 small silver fish (don't think they are myctophids).
050	1	1 jelly	2	2 unidentified fish	Blue sprinkled with clear and black jelly, not much of it.
051	0	none	1	1 juvenile flying fish	Orange-brown biomass, larger shrimp can be seen as well as a number of interesting fish larvae and a crab.

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). Qualitative description of micronekton removed from the zooplankton biomass is provided, and when available biomass (ml) and length (cm) of specimens are recorded.

Table 7. Meter net station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Water depth (m)	Tow depth (m)	Temp (°C)	Salinity (ppt)	Chl-*a* Fluor (volts)	Tow Length (m)	Net Volume (m3)	Locale
017	23-Oct	1057	5150	88.5	24.0	35.93	464.0	16672	1843	N Sargasso Sea
018	23-Oct	2140	5157	114.5	24.7	36.23	482.4	17478	1459	N Sargasso Sea
022	25-Oct	1048	4750	92.0	26.0	36.38	437.8	15927	1608	N Sargasso Sea
023	25-Oct	2145	5511	93.6	26.4	36.36	440.0	15998	1485	N Sargasso Sea
025	27-Oct	1048		69.1	26.8	36.95	373.8	13811	1291	Sub-Tropical Convergence Zone
026	27-Oct	2141	6000	79.8	26.8	36.94	356.3	13160	1421	Sub-Tropical Convergence Zone
035	1-Nov	1130	4762	111.0	28.7	36.05	446.5	16097	1819	Antilles current
038	2-Nov	1142		104.0	28.3	33.82	486.3	16447	1858	Antilles current
039	2-Nov	2141	6000	108.0	28.4	33.43	357.2	11940	2406	Tropical Atlantic
049	11-Nov	2200	2550	183.0	29.1	34.59	355.3	12290	2786	Caribbean
051	12-Nov	2156	2400	190.0	29.1	34.50	353.2	12185	6319	Caribbean

Table 7. Meter net station data for C288 continued.

Stn #	Zoop Biomass (ml)	Zoop Den (ml/m3)	Lepto (#)	Phyllo (#)	Mycto (#)	Ceph (#)	Gelatinous >2cm (#)	Types of Gelatinous	Other Nekton >2cm (#)	Types of Nekton	Tow Description and other notes
017	23.5	0.0128	0	5	0	3	0	None over 2 cm	29	18 chaetognaths (0.1 ml), 2 stomatopods (0.1 ml), 2 juvenile fish (0.1 ml)	pink to white in color, lots of *Sapphrinidae* copepods and several cephalopods swimming.
018	26.0	0.0178	0	0	6	0	0	None	15	7 shrimp and 2 unknown fish	6 large shrimp and 5 myctophids in a pile of applesauce looking biomass.
022	33.0	0.0205	0	0	0	0	0	None	2	2 Pteropods	An apple sauce made with red apples and some pepper. Gelatinous blobs, light pink/tan color overall.
023	26.0	0.0175	1	0	0	0	3	1 large (~10cm) jelly (3 ml), 2 ~5cm jelly	5	1 chaetognath, 3 bristle mouths	Pinkish goo with black fish larvae and some hard jelly like structures
025	28.0	0.0217	0	0	0	0	0	None	0	None	Brownish pink biomass with a few gelatinous organisms. Some small fish larvae. Lots of volume.
026	47.0	0.0331	1	0	3	0	2	siphonophores	7	3 shrimp	Lots of shrimp, copepods and gelatinous organisms including salps, siphonophores and megalopae. Large amount of biomass, resembling applesauce.
035	31.0	0.0170	0	2	0	0	0	none	2.0	none	Large phyllosoma amongst some pteropods, lots of copepods and general goop.
038	29.5	0.0159	0	4	0	0	0	none	6	2 Juvenile Fish	Chunky and full of zooplankton with many large pteropods and chaetognaths, some phyllosoma, siphonophores, fiesty stomatopods, and fish larvae.

039	55.0	0.0229	2	2	0	0	0	none	26	Shrimp, Stomatopod, Needle nose fish	Cotton Candy fluff swirling in a bucket speckled with strange fish.
049	39.0	0.0140	2	1	12	0	3	2 salps, 1 jelly-like thing	15	1 phyllosoma, 2 leptocephali, 12 myctophids, 1 hermit crab larva <2 cm	Large volume of organisms. Lavender/sandy appearance. Many shrimp and small fish. Pink and red hues. Big ol' salp.
051	54.9	0.0087	3	0	12	0	0	none	18	1 shrimp, 1 stomatopod, 1 flatfish	Very large biomass of orange colored organisms including lots of shrimp, a larger stomatopod, shrimp larvae and some leptos.

Table 8. Zooplankton 100 count station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Net Type	Cnidarian medusa	Siphonophores	Ctenophores	Salp/Doliolids	Pteropods	Nudibranch	Heteropods	Other snails	Squid larvae	Polychaete	Chaetognaths	Copepods	Gammarid Amphipods	Hyperiid Amphipod	Megalopae	Zoea
003	14-Oct	1522	NT	0	0	0	0	0	0	0	0	0	0	0	70	0	0	0	30
004	14-Oct	2302	NT	0	0	0	0	0	0	0	0	0	0	0	36	0	3	2	40
005	15-Oct	1149	NT	0	1	0	4	0	0	0	0	0	0	0	87	0	0	0	3
006	15-Oct	2258	NT	0	2	0	0	0	0	0	2	0	0	2	84	0	0	0	0
009	18-Oct	2338	NT	0	2	0	0	3	0	0	2	0	0	6	72	1	3	2	0
010	19-Oct	1023	NT	0	6	0	0	1	0	0	0	0	0	4	81	0	1	0	0
011	19-Oct	2305	NT	0	3	0	0	3	0	0	0	0	0	1	79	0	1	0	0
013	20-Oct	2306	NT	0	2	0	0	0	0	0	1	0	0	0	73	1	0	0	0
014	21-Oct	1202	NT	0	0	0	0	0	1	0	0	0	0	0	31	0	0	0	0
015	22-Oct	1147	NT	0	13	0	0	0	0	0	4	0	0	1	49	3	0	0	0
016	22-Oct	2314	NT	1	5	0	0	21	0	0	0	0	0	0	51	0	1	0	0
017	23-Oct	1202	NT	2	0	0	0	0	0	3	0	0	0	0	19	0	1	0	0
018	23-Oct	2249	NT	0	5	0	1	1	1	0	1	0	0	1	78	0	4	0	0
019	24-Oct	1150	NT	0	8	0	0	0	0	0	1	0	0	1	35	0	1	0	0
020	24-Oct	2304	NT	0	2	0	0	13	0	0	1	0	0	2	67	1	3	0	0
022	25-Oct	1150	NT	0	2	0	0	7	0	0	2	0	0	0	87	0	0	0	0
023	25-Oct	2250	NT	0	10	0	0	0	0	0	1	0	0	1	90	0	0	0	0
024	26-Oct	1124	NT	1	25	0	0	0	0	0	9	0	0	0	55	1	0	0	0
025	27-Oct	1148	NT	0	8	0	0	0	0	0	0	0	0	0	79	1	1	0	0

026	27-Oct	2249	NT	0	9	0	0	0	0	0	0	0	0	0	75	0	0	0	0
027	28-Oct	1154	NT	0	9	0	0	8	0	0	0	0	0	0	76	0	1	0	0
028	28-Oct	2326	NT	0	6	0	0	6	0	0	1	0	0	1	75	1	2	0	0
029	29-Oct	1207	NT	0	24	0	0	2	0	0	2	0	0	1	69	0	1	0	0
030	29-Oct	2300	NT	0	9	0	0	1	0	1	1	0	1	0	79	0	2	0	0
031	30-Oct	1207	NT	3	3	0	0	0	0	0	4	0	0	0	86	0	1	1	0
032	31-Oct	2309	NT	0	8	0	0	1	0	0	0	0	0	0	84	0	0	1	0
033	31-Oct	1133	NT	0	0	0	0	2	0	0	0	0	0	0	81	0	0	0	0
034	31-Oct	2305	NT	0	3	0	0	0	0	0	2	1	0	1	81	7	1	0	0
036	1-Nov	1300	NT	0	7	0	0	6	0	0	0	0	0	0	79	0	1	0	0
037	1-Nov	2308	NT	0	9	0	1	1	0	0	2	0	0	0	85	0	0	0	0
038	2-Nov	1104	NT	0	10	0	0	2	0	0	1	0	0	2	85	0	0	0	0
039	2-Nov	2302	NT	0	8	0	0	1	0	0	0	0	0	6	76	0	0	1	0
040	3-Nov	1013	NT	0	5	0	0	0	0	1	0	0	0	0	91	0	0	0	0
041	3-Nov	2258	NT	0	0	0	1	8	0	2	1	0	0	5	77	0	0	0	0
042	4-Nov	1102	NT	0	0	0	1	0	0	0	13	0	0	0	81	0	1	0	0
044	9-Nov	1702	NT	1	1	0	0	1	0	0	19	0	0	0	55	0	0	0	0
045	9-Nov	2349	NT	0	0	0	0	0	0	0	0	0	0	12	80	0	2	0	0
046	10-Nov	1139	NT	0	1	0	0	4	0	0	12	0	0	2	74	0	0	0	0
047	11-Nov	2300	NT	0	8	0	3	9	0	0	1	0	0	4	65	0	4	0	0
048	11-Nov	1151	NT	0	0	0	0	3	0	0	5	0	0	2	79	0	0	0	0
049	11-Nov	2334	NT	0	7	0	0	3	0	1	4	0	0	8	65	0	6	1	0
050	12-Nov	1235	NT	0	0	0	0	2	3	1	9	0	0	1	66	0	1	0	0
051	12-Nov	2316	NT	0	17	0	0	0	0	0	2	0	0	31	39	0	5	1	0
017	23-Oct	1057	MN	0	1	0	0	1	0	0	0	0	2	6	57	0	7	1	0
018	23-Oct	2140	MN	0	2	0	0	3	0	0	0	0	0	0	69	1	3	0	0

022	25-Oct	1048	MN	0	1	0	0	0	0	0	0	0	0	3	80	1	1	0	0
023	25-Oct	2145	MN	0	1	0	0	1	0	0	2	0	0	2	85	0	0	0	0
025	27-Oct	1048	MN	0	2	0	0	2	0	0	0	0	2	1	74	0	0	0	0
026	27-Oct	2141	MN	0	3	0	0	2	0	0	0	0	0	3	81	0	0	0	0
035	1-Nov	1130	MN	0	4	0	0	0	0	0	2	0	0	4	82	0	0	0	0
038	2-Nov	1142	MN	0	3	0	0	1	0	1	1	0	0	6	70	0	2	0	0
039	2-Nov	2141	MN	0	4	0	0	0	0	0	0	0	0	3	85	0	2	0	0
049	11-Nov	2200	MN	0	3	0	0	8	0	0	1	0	0	0	71	0	1	0	1
051	12-Nov	2156	MN	0	20	0	0	0	0	0	0	0	0	4	54	0	0	0	0

Table 8 continued. Zooplankton 100 count station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Net Type	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
003	14-Oct	1522	NT	0	0	0	0	0	0	0	0	0	0	0	0	0		100	0.27
004	14-Oct	2302	NT	2	0	0	0	0	0	0	0	0	0	17	0	0		100	0.56
005	15-Oct	1149	NT	0	0	1	0	0	0	0	1	0	0	3	0	0		100	0.26
006	15-Oct	2258	NT	0	0	0	0	0	0	0	0	0	10	0	0	0		100	0.27
009	18-Oct	2338	NT	0	0	4	0	0	3	0	0	0	0	2	0	0		100	0.52
010	19-Oct	1023	NT	0	0	0	0	0	3	0	0	0	0	1	2	1		100	0.36
011	19-Oct	2305	NT	0	0	0	1	0	8	0	0	0	0	1	3	0		100	0.39
013	20-Oct	2306	NT	14	0	6	1	0	0	0	0	0	0	2	0	0		100	0.42
014	21-Oct	1202	NT	42	0	0	0	0	26	0	0	0	0	0	0	0		100	0.49
015	22-Oct	1147	NT	0	0	0	0	0	30	0	0	0	0	0	0	0		100	0.55
016	22-Oct	2314	NT	1	0	0	3	0	12	1	0	0	0	3	1	0		100	0.66
017	23-Oct	1202	NT	34	0	3	1	0	35	0	0	0	1	1	0	0		100	0.66
018	23-Oct	2249	NT	0	0	4	0	0	0	0	0	1	0	3	0	0		100	0.43
019	24-Oct	1150	NT	0	0	0	0	0	0	0	0	0	0	54	0	0		100	0.45
020	24-Oct	2304	NT	3	0	2	0	0	0	0	0	0	0	2	4	0		100	0.55
022	25-Oct	1150	NT	2	0	0	0	0	0	0	0	0	0	0	0	0		100	0.24
023	25-Oct	2250	NT	0	2	1	0	0	0	0	0	0	0	2	0	0		107	0.28
024	26-Oct	1124	NT	10	0	0	0	0	0	0	0	0	1	0	0	0		102	0.55
025	27-Oct	1148	NT	10	0	0	0	0	1	0	0	0	0	0	0	0		100	0.33

026	27-Oct	2249	NT	7	0	7	0	0	0	0	0	0	0	1	1	0	100	0.39
027	28-Oct	1154	NT	0	0	0	0	0	0	0	0	0	2	4	0	0	100	0.38
028	28-Oct	2326	NT	1	0	6	0	0	0	0	0	0	0	1	0	0	100	0.45
029	29-Oct	1207	NT	1	0	0	0	0	0	0	0	0	0	0	0	0	100	0.39
030	29-Oct	2300	NT	6	0	0	0	0	0	0	0	0	0	0	0	0	100	0.36
031	30-Oct	1207	NT	2	0	0	0	0	0	0	0	0	0	0	0	0	100	0.28
032	31-Oct	2309	NT	4	0	0	2	0	0	0	0	0	0	0	0	0	100	0.28
033	31-Oct	1133	NT	2	0	0	0	0	0	14	0	1	0	0	0	0	100	0.28
034	31-Oct	2305	NT	0	0	2	0	0	2	0	0	0	0	2	1	0	103	0.42
036	1-Nov	1300	NT	0	0	0	0	0	0	7	0	0	0	0	0	0	100	0.34
037	1-Nov	2308	NT	2	0	0	0	0	0	0	0	0	0	0	0	0	100	0.26
038	2-Nov	1104	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.25
039	2-Nov	2302	NT	0	0	8	0	0	0	0	0	0	0	0	0	0	100	0.38
040	3-Nov	1013	NT	1	0	0	0	0	0	0	0	2	0	0	0	0	100	0.18
041	3-Nov	2258	NT	0	0	2	2	0	1	0	0	0	0	1	0	0	100	0.42
042	4-Nov	1102	NT	0	0	0	0	0	0	4	0	0	0	0	0	0	100	0.29
044	9-Nov	1702	NT	17	0	0	0	0	2	1	0	3	0	0	0	0	100	0.57
045	9-Nov	2349	NT	1	0	0	0	0	0	0	0	0	0	1	4	0	100	0.32
046	10-Nov	1139	NT	0	0	0	0	0	0	2	0	2	0	2	1	0	100	0.44
047	11-Nov	2300	NT	0	1	1	0	1	1	0	0	0	0	2	0	0	100	0.59
048	11-Nov	1151	NT	10	0	0	0	0	1	0	0	0	0	0	0	0	100	0.35
049	11-Nov	2334	NT	4	0	0	0	0	0	0	0	1	0	0	0	0	100	0.58
050	12-Nov	1235	NT	0	0	0	0	0	0	14	0	2	0	1	0	0	100	0.53
051	12-Nov	2316	NT	3	0	0	0	0	1	0	0	1	0	0	0	0	100	0.65
017	23-Oct	1057	MN	3	0	0	0	0	9	8	0	0	0	1	2	2	100	0.70
018	23-Oct	2140	MN	0	0	1	0	0	18	0	0	0	0	2	0	0	99	0.44
022	25-Oct	1048	MN	0	0	0	0	0	13	0	0	0	0	1	0	0	100	0.32
023	25-Oct	2145	MN	0	1	1	0	0	6	0	0	1	0	0	0	0	100	0.30
025	27-Oct	1048	MN	3	0	1	2	0	12	1	0	0	0	0	0	0	100	0.45
026	27-Oct	2141	MN	0	0	0	0	0	4	0	0	0	0	7	0	0	100	0.34
035	1-Nov	1130	MN	0	0	0	0	0	7	1	0	0	0	0	0	0	100	0.32
038	2-Nov	1142	MN	0	0	2	0	0	8	5	0	0	0	1	0	0	100	0.27
039	2-Nov	2141	MN	0	0	6	0	0	0	0	0	0	0	0	0	0	100	0.48
049	11-Nov	2200	MN	6	0	0	0	0	8	0	0	1	0	0	0	0	100	0.48
051	12-Nov	2156	MN	7	2	0	7	1	2	0	0	1	0	2	0	0	100	0.64

Table 9. Phytoplankton net station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	General Locale	Temp (°C)	Salinity (ppt)	Chl-*a* Fluor (volts)	Tow depth (m)
002	14-Oct	1047	Vineyard Sound	16.4	16.42	1286	1-3 m
005	15-Oct	1032	Rhode Island Sound	16.6	32.24	1179	1-3 m
007	16-Oct	1207	Rhode Island Sound	19.0	31.49	1181	1-3 m
009	18-Oct	2219	Continental Slope	22.9	35.90	1200	1-3 m
012	20-Oct	0951	North Sargasso Sea	26.5	36.20	696	1-3 m
014	21-Oct	1015	North Sargasso Sea	24.1	36.24	457	1-3 m
015	22-Oct	0959	North Sargasso Sea	24.5	36.19	504	1-3 m
019	24-Oct	1036	North Sargasso Sea	24.8	36.30	463	1-3 m
024	26-Oct	0925	Sub-Tropical Convergence Zone	26.5	36.75	417	1-3 m
027	28-Oct	1019	Sub-Tropical Convergence Zone	27.5	36.84	359	1-3 m
031	30-Oct	1022	South Sargasso Sea	28.6	36.32	407	1-3 m
033	31-Oct	1024	Antilles Current	28.5	35.42	504	1-3 m

Table 10. Dip net station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Location	Temp (°C)	Salinity (ppt)	Chl-*a* Fluor (volts)	Wind Dir deg true	Beaufort Force	Sea Height (ft)
010	19-Oct	1034	Gulf Stream	22.0	35.74	1015	330	4	
012	20-Oct	1115	North Sargasso Sea	26.5	36.20	666	64	2	
014	21-Oct	1010	North Sargasso Sea	24.2	36.24	464			
014	21-Oct	1054	North Sargasso Sea	24.2	36.25	454			
019	24-Oct	1015	North Sargasso Sea	24.7	36.30	468			
019	24-Oct	1207	North Sargasso Sea	24.8	36.27	454	158	3	
021	25-Oct	0813	North Sargasso Sea	25.9	36.35	443			
024	26-Oct	1203	Sub-Tropical Convergence Zone	26.6	36.76	403	240	1	<1
025	27-Oct	0953	Sub-Tropical Convergence Zone	26.8	36.94	365	302	3	
029	29-Oct	1100	South Sargasso Sea	27.5	36.82	336	315	5	10
035	1-Nov	0915	Antilles Current	28.6	36.27	471	94	3	

Table 10 continued. Dip net station data for C288.

Stn #	Replicate	Isolated /part of windrow?	Total Mass (g)	Species Largest clump / fragment	Growth Region %	Growth Color Code	Succession Region %	Succession Color Code	Decline Region %	Decline Color Code
010	A	Isolated	11.5	*S. natans I*	5	2.5Y 6/6	45	5Y 8/10	50	5Y 5/4
012	A	Isolated	23.5	Benthic	10	5Y 6/6	10	2.5Y 6/6	80	2.5YR 4/4
014	A	Windrow	33.5	*S. natans I*	65	5Y 6/8	15	7.5YR 5/8	20	2.5YR 4/4
014	B	Isolated	28	*S. natans I*	15	5Y 7/4	50	2.5Y 5/6	35	10R 3/2
019	A	Isolated	38	*S. natans I*	40	2.5Y 5/4	40	2.5Y 5/6	20	5YR 3/4
019	B	Isolated	16	*S. natans I*	10	2.5 Y 7/6	60	7.5YR 5/6	30	7.5 YR 4/2
021	A	Isolated		Plastic sample	NA	NA	NA	NA	NA	NA
024	A	Isolated		Plastic sample	NA	NA	NA	NA	NA	NA
025	A	Isolated	9	*S. natans VIII*	50	5Y 7/6	30	7.5 YR 6/4	20	5R 3/2
029	A	Isolated		NA	15	5Y6/7	60	2.5Y6/8	25	7.5YR4/4
035	A	Isolated	21	*S. natans VIII*	35	2.5Y6/4	50	7.5YR5/8	15	5YR3/4

Table 10 continued. Dip net station data for C288.

		Largest clump						Entire dip net												
Stn #	**Replicate**	**% Hydroids**	**% Bryozoan**	**Worm Tubes #**	**Barnacles #**	**Anemones #**	**Other Epibiont?**	**Fish #**	**Crab #**	**Shrimp #**	**Snail #**	**Nudibranch #**	**Flatworms #**	**Polychaetes #**	**Isopods #**	**Amphipods #**	**HYD sample?**	**Fauna Saved in EtOH?**	**Frond dry pressed?**	**Photo?**
010	A	25	70	10	0	0	0	0	1	31	1	0	1	0	0	0	N	Y	Y	Y
012	A	0	0	0	0	0	0	0	6	113	0	0	0	0	0	0	N	Y	Y	Y
014	A	85	12	30	0	0	0	0	0	105	0	0	3	2	0	0	N	Y	Y	Y
014	B	35	85	35	0	0	0	0	0	28	0	0	3	0	0	0	N	Y	Y	Y
019	A	90	25	48	1120	0	0	0	4	46+	0	0	2	1	0	0	N	Y	Y	Y
019	B	65	45	8	400	9	0	0	8	34	7	4	3	16	1	0	N	Y	N	Y
021	A	NA	NA	NA	NA	NA	NA	NA	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
024	A	NA	NA	NA	NA	NA	NA	NA	n	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
025	A	70	0	40	0	0	0	0	0	11	0	0	0	0	0	0	N	Y	Y	Y
029	A	40	5	2	0	0	0	0	1	21	0	0	4	0	0	1	N	Y	N	N
035	A	80	0	123	0	0	0	1	0	15	0	0	0	0	0	0	N	Y	Y	Y

Table 11. Secchi disc station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	General Locale	Temp (°C)	Salinity (ppt)	chl-*a* Fluor (volts)	CDOM Fluor (volts)	Xmiss (volts)	Water Depth (m)	Cloud Cover (%)	Wave ht (ft)	Wind Sp (BF)	Secchi Depth (m)	Calculated 1% Depth (m)	Winner
002	14-Oct	1100	Vineyard Sound	16.4	31.70	1262	248	3201	25	100%	1%	2	4.5	12.1	Jordan
005	15-Oct	1013	Rhode Island Sound	16.6	32.24	1160	226	5322	28	20%	3%	4	7.0	18.8	Giselle
007	16-Oct	1222	Rhode Island Sound	15.6	32.49	1768	338	3070	29	90%	1%	4	4.5	12.1	Izak
008	17-Oct	1648	Sakonnet River	15.3	31.34	2440	346	420	11	70%	2%	4	1.0	2.7	Ocean
012	20-Oct	0956	North Sargasso Sea	26.5	36.20	668	81	3648	4956	80%	2%	1	24.5	65.8	Colin
014	21-Oct	0950	North Sargasso Sea	24.2	36.20	432	72	3839	4072	60%	2%	4	29.5	79.2	Jeff
015	22-Oct	1004	North Sargasso Sea	24.4	36.19	520	73	3814	5082	15%	7%	6	27.5	73.8	Giselle
017	23-Oct	0946	North Sargasso Sea	24.0	36.02	463	80	3083	4549	20%	1%	3	29.5	79.2	Jason
019	24-Oct	0956	North Sargasso Sea	24.7	36.30	473	70	3907	4987	60%	2%	4	35.5	95.3	Nick
022	25-Oct	0936	North Sargasso Sea	26.0	36.40	446	67	3910	4812	100%	2%	3	29.0	77.9	Bonny
024	26-Oct	0933	Sub-Tropical Convergence Zone	26.5	36.75	408	64	3909	5656	60%	1%	1	37.5	100.7	Jen
025	27-Oct	0931	Sub-Tropical Convergence Zone	26.8	36.94	363	65	3912	5595	50%	3%	4	34.5	92.6	Liam
027	28-Oct	0949	Convergence Zone	27.4	36.85	359	65	3910	6016	6%	5%	4	39.5	106.1	Switcher
029	29-Oct	0931	South Sargasso Sea	27.9	36.85	334	64	3907	6006	10%	5%	5	42.0	112.8	Lydia
031	30-Oct	0943	South Sargasso Sea	28.6	36.35	395	66	3910	6305	85%	8%	5	33.0	89	Switcher
033	31-Oct	0942	Antilles Current	28.4	35.40	498	67	3903		5%	8%	6	34.5	93	Alicia
035	1-Nov	0942	Antilles Current	28.6	36.20	968	81	3902		7%	4%	3	33.5	90	Jordan
038	1-Nov	0930	Antilles Current	28.2	33.80	459	83	3896		70%	4%	3	34.5	93	Bonny
040	3-Nov	1117	Tropical Atlantic	28.9	33.54	350	72	389	6630	60%	5%	3	32.0	86	Lila
046	10-Nov	1007	Caribbean	28.6	33.46	355	78	1997	688	2%	3%	4	27.5	74	Switcher
048	11-Nov	1006	Caribbean	29.0	34.05	340	79	1209	1053	20%	5%	4	30.5	82	Chip
050	12-Nov	1049	Caribbean	28.9	34.50	357	78	2270	2175	50%	5%	4	30.5	82	Henry

Table 12. Shipek grab station data for C288.

Stn #	Date (2019)	Time (local -4 GMT)	Location	Water Depth (m)	Color Description	General size	Sediment Shape	Sediment Sorting
001	13-Oct	1804	Tarpaulin Cove	7		silty	well rounded	worm tubes, bivalves, various shells, one barnacle shell, black mud smelled like earth/marsh
005	15-Oct	0953	Rhode Island Sound	28		sandy		Some worm trails
008	17-Oct	1625	Sakonnet River	10	dark gray-black color, specks of white	sandy and silty combo		shrimp, worm, 4 hermit crabs, some gooey organic matter, snail, rich smell kind of like organic matter and clay

Table 13. Student research topics for C288.

	Author	Title
A Watch	Ollie Downes	*Plankton Sensitivity to Light*
	Sarah Acker-Krzywicki	*Myctophid Feeding Habits*
	Izac Raker	*Copepods: Color vs Depth and Time*
B Watch	Alicia Pane	*Life on Marine Debris*
	Nick Hoffmann	*Creature Adaptations*
	Natalie Summers	*Where does* Sargassum *Live?*
C Watch	Liam Carroll	*Ocean Plastic Abundance Within the North Atlantic Gyre*
	Charlotte Pontifell	*Shifts in the Antarctic Intermediate Water and 18-degree Water Masses Over Time*
	Fred Hoffmann	*How Oceanic Factors Affect CaCO3 Dependent Organisms*