

Oceanography Branch CTD Data Report
CTD_REPORT_2018003HB

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DATE: October 16, 2018

Oceanography Branch CTD Data Report

CTD_REPORT_2018003HB

NOAA Fisheries Service
Northeast Fisheries Science Center
Woods Hole, MA 02543

HB 1803
ECOMON Survey
Data Coverage: May 23 – June 4, 2018
Mid Atlantic Bight, Georges Bank, Gulf of Maine

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's HB1803 ECOMON Survey aboard the NOAA FSV *Henry B Bigelow*. All data was obtained with a Seabird Electronics SBE Model 9/11+ CTD (s/n 0420) and a NMFS SBE19+V2 Seacat profiling CTD (s/n 4758). Salt water samples were collected for the purpose of calibrating the conductivity cell.

A SBE43 Dissolved Oxygen sensor was attached to the SBE 9/11+. The SBE 9/11+ also accommodates a Biospherical Instruments Inc. QSP2300 PAR (Photosynthetically Active Radiation) Sensor. A QSR2200 Surface PAR sensor was located on the flying bridge and relayed data in realtime to the 9/11+ deck unit. The PAR data obtained during the vertical profiling casts is included in the archived CTD data; the surface PAR data will be made available on request.

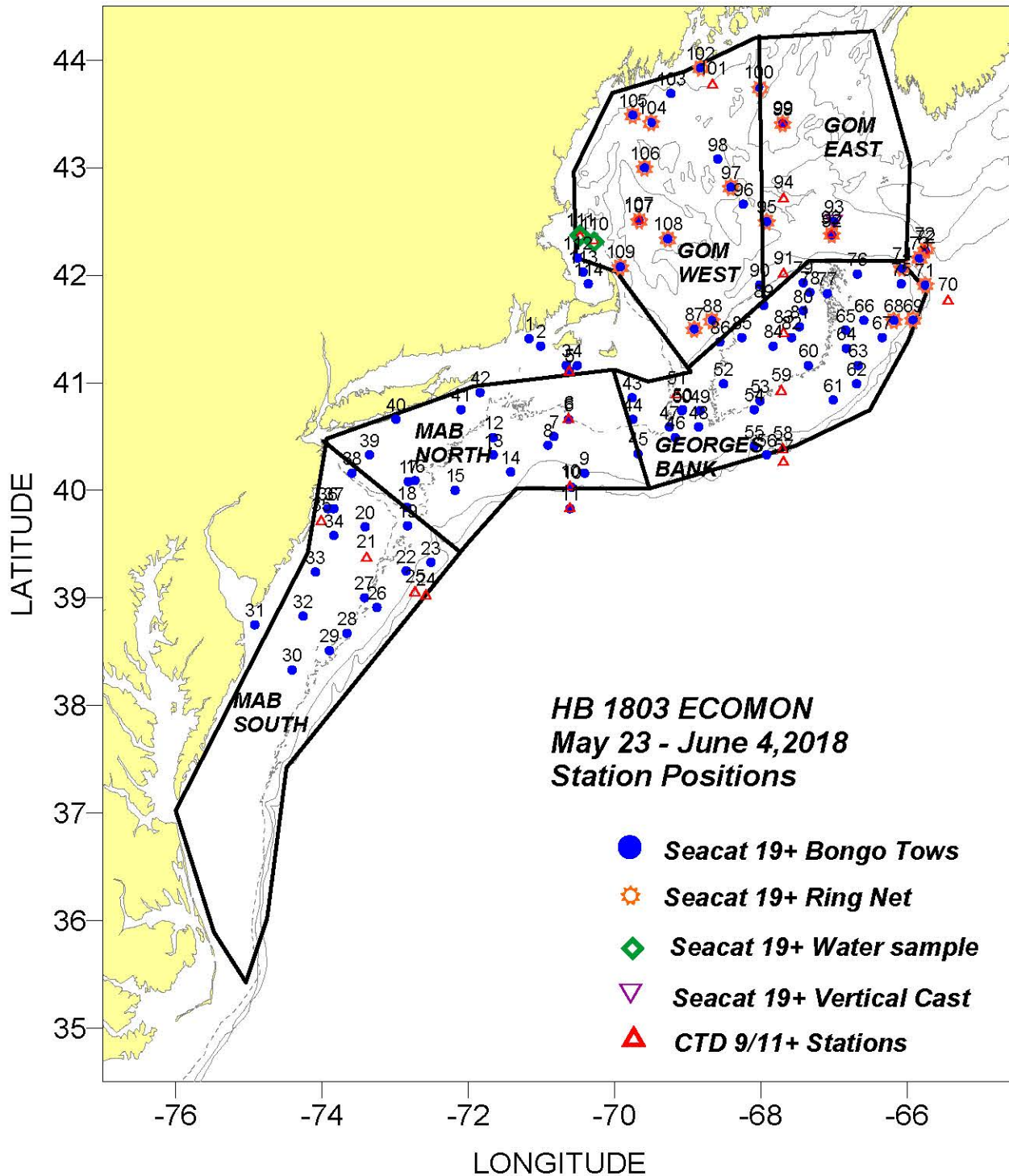
The SBE19+ was deployed on 101 double oblique bongo casts, 20 vertical ring net casts and 3 vertical/water sampling casts. The SBE9/11+ was used successfully on 23 stations. Data presented here have been audited, however, corrections and/or updates may be applied at a later time.

The most recent and complete station data can be found in an [NODCformatted ASCII file](#) and in a [comma delimited file](#).

This report may be viewed on the [Oceans and Climate Branch website](#)

choose: **2018 Cruises**
MAY_ECOMON_HB1803
CTD_REPORT_2018003HB.pdf

Revised: October 16, 2018



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the
HB1803 ECOMON Survey
May 23 - June 4, 2018**

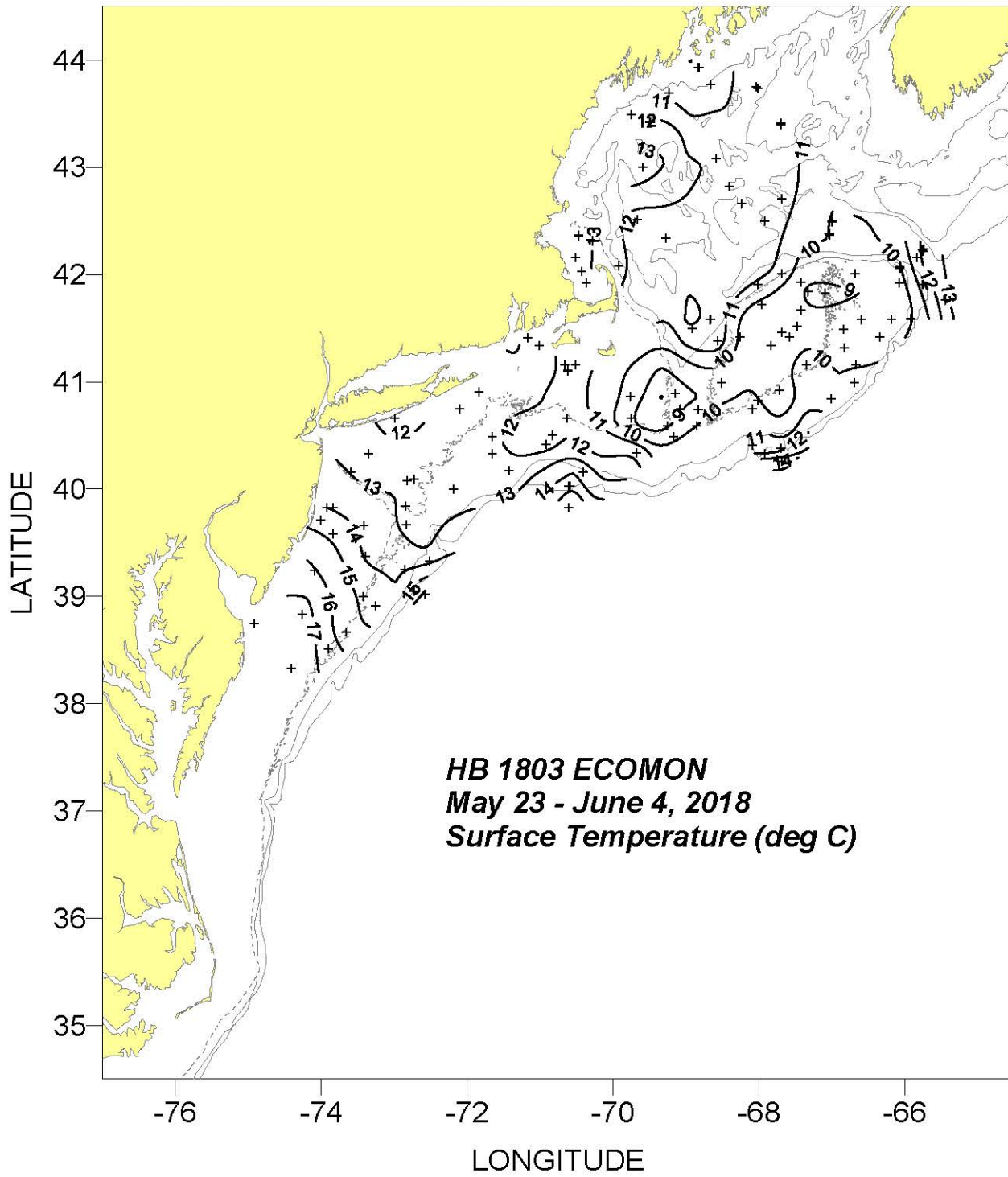
CRUISE	CD	SURFACE						BOTTOM						Purpose
		#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag	
Western Gulf of Maine														
hb1803	154	30	11.93	1.66	0.19	0.88	0	27	6.51	1.14	0.15	0.55	0	22
hb1803	154	30	31.74	-0.38	0.08	0.38	0	27	33.33	0.02	0.05	0.23	0	22
Eastern Gulf of Maine														
hb1803	153	11	10.70	1.53	0.30	0.47	0	8	9.02	0.99	0.47	0.68	0	22
hb1803	153	11	32.05	-0.38	0.15	0.31	0	8	34.63	0.05	0.12	0.20	0	22
Georges Bank														
hb1803	151	40	9.56	0.37	0.23	1.00	0	39	8.77	0.95	0.19	0.63	0	22
hb1803	151	40	32.64	-0.23	0.07	0.42	0	39	33.19	0.09	0.07	0.37	0	22
MAB North														
hb1803	146	20	12.12	0.80	0.37	1.29	0	20	8.19	0.33	0.42	1.56	0	22
hb1803	146	20	32.48	-0.04	0.16	0.56	0	20	33.13	-0.26	0.14	0.53	0	22
MAB South														
hb1803	147	20	14.72	0.75	1.59	1.29	1	19	8.29	0.20	1.71	1.19	1	22
hb1803	147	20	31.64	-0.54	0.86	0.81	1	19	33.02	-0.27	0.62	0.53	1	22

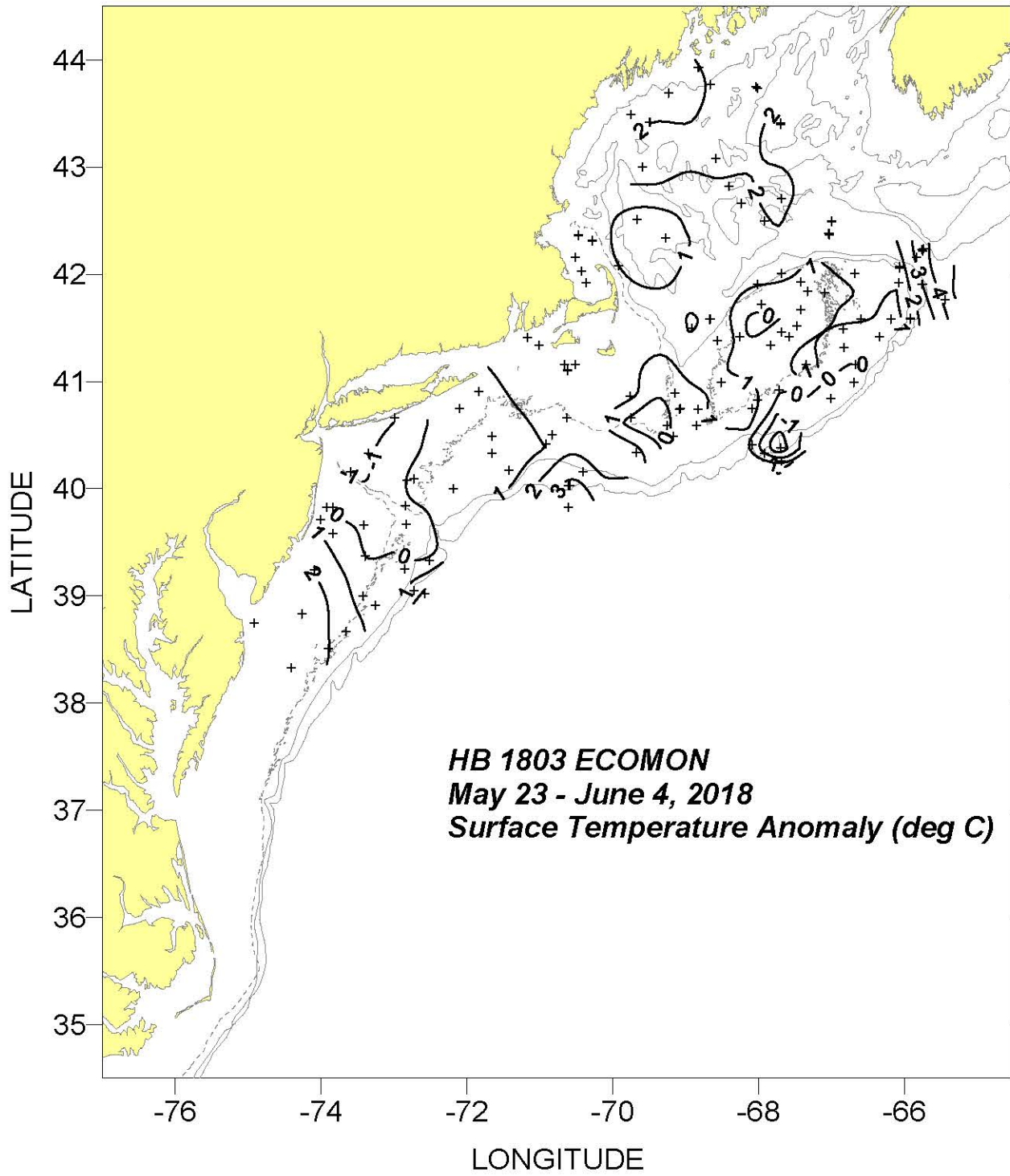
"CRUISE", the code name for a cruise: "CD", the calendar mid-date of all the stations within a region for a cruise:

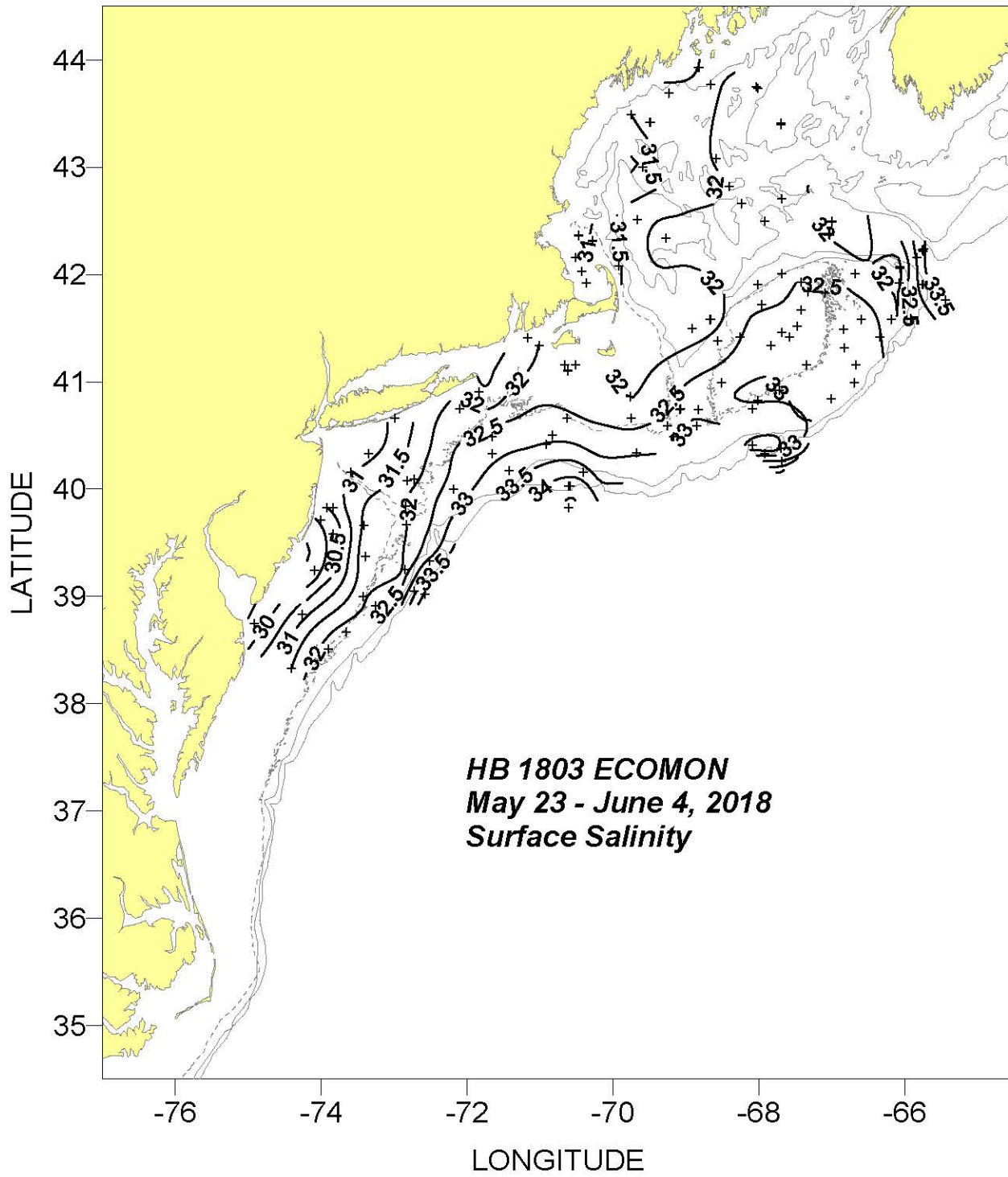
"#obs", the number of observations include in each average: "T/S", the areal average temp/salt: "Anomaly", the areal average temp/salt anomaly:

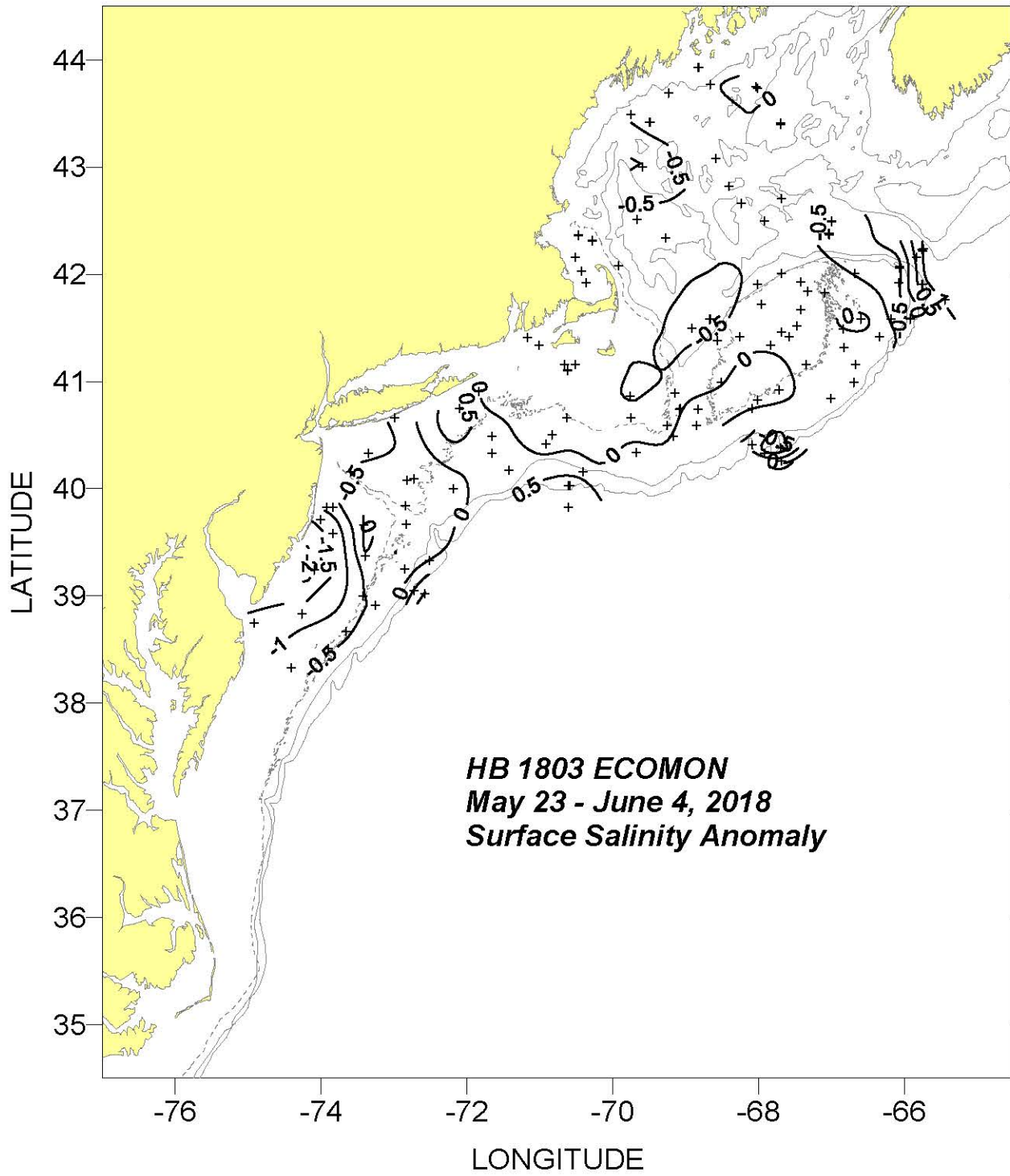
"SDV1", the standard deviation associated with the average temp/salt anomaly: "SDV2", the standard deviation of the individual anomalies from which the average anomaly was derived
"Flag", a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

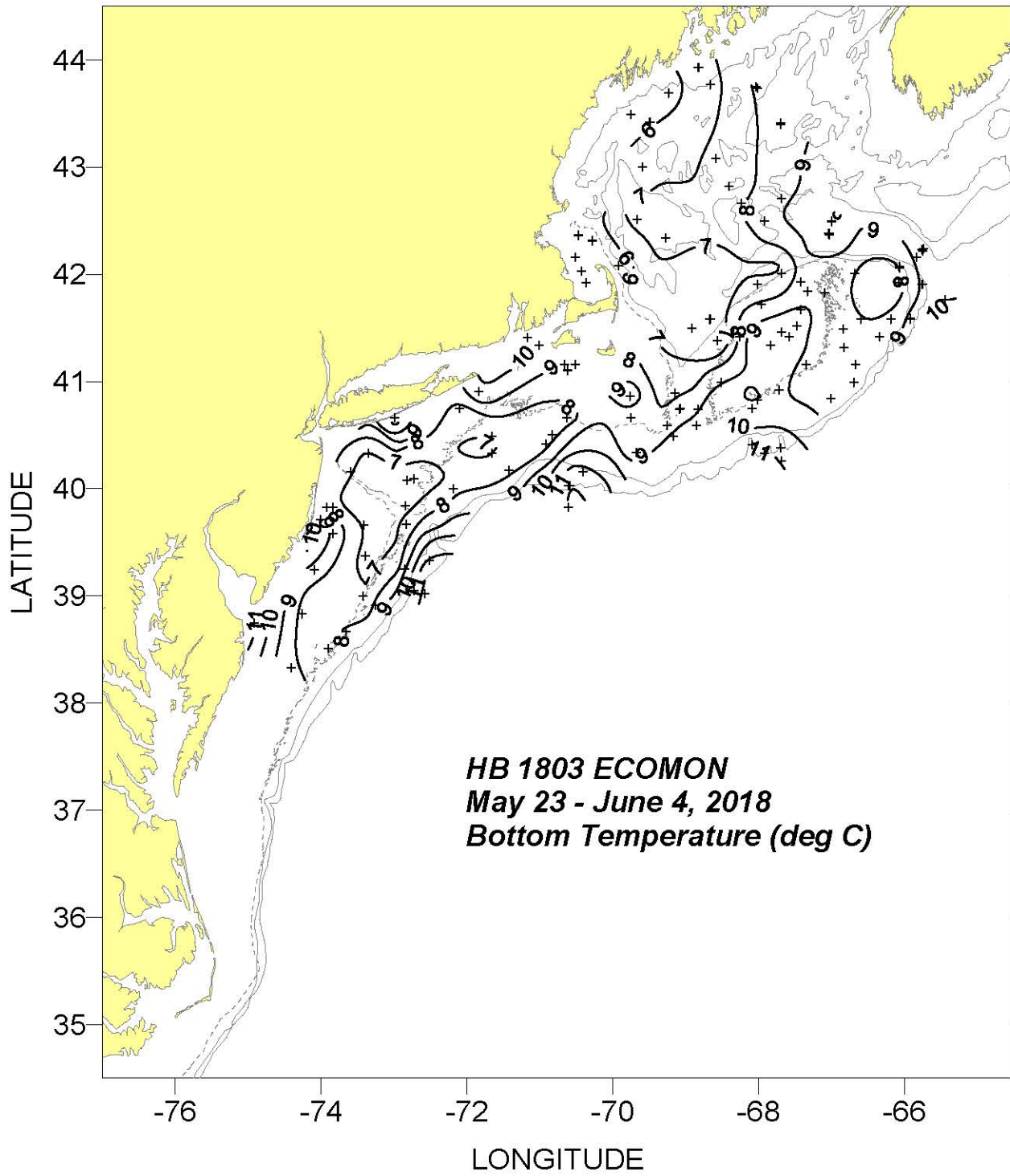
"Purpose", 2 digit code assigned by DMS to identify a unique NEFSC program survey.

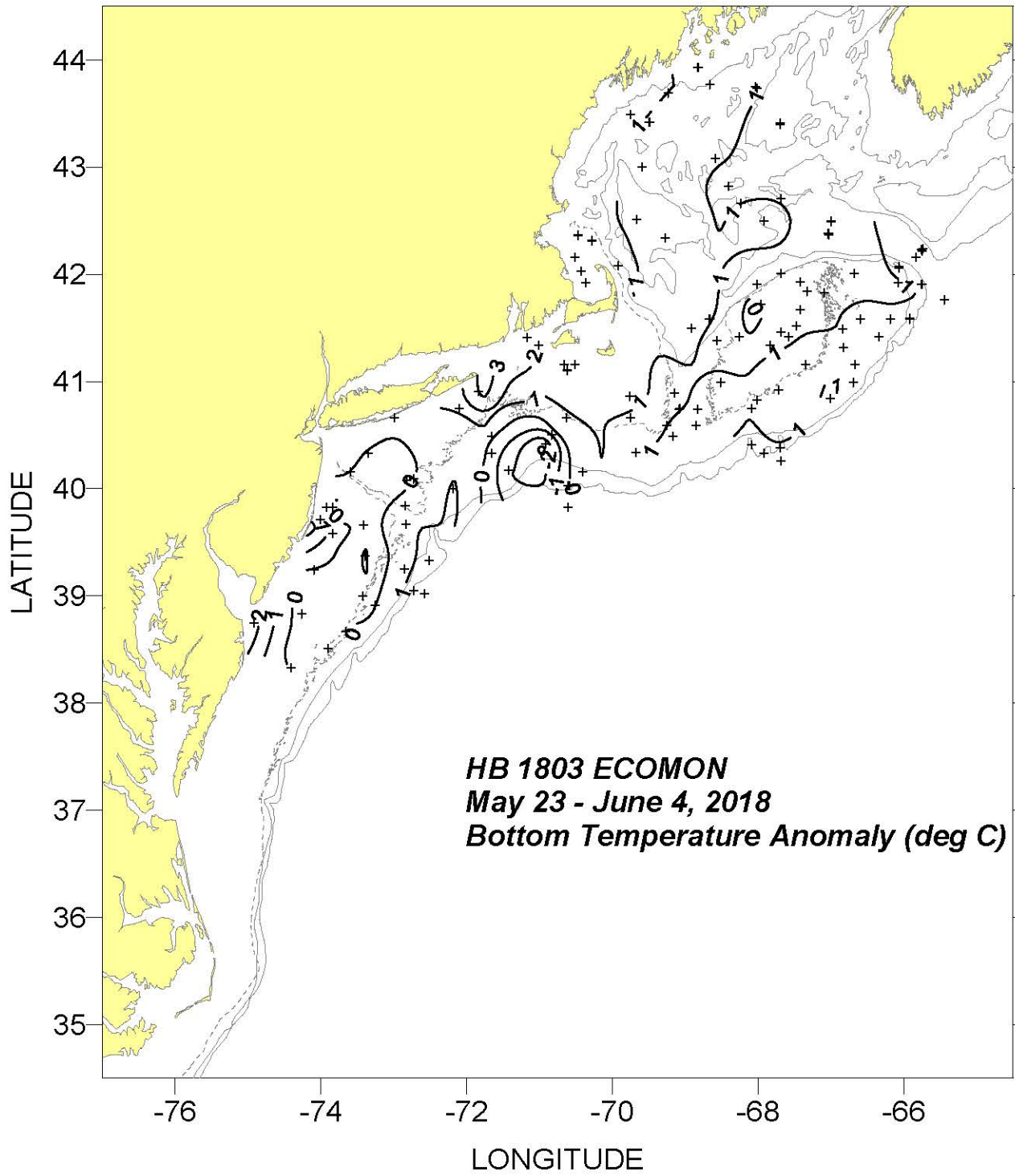


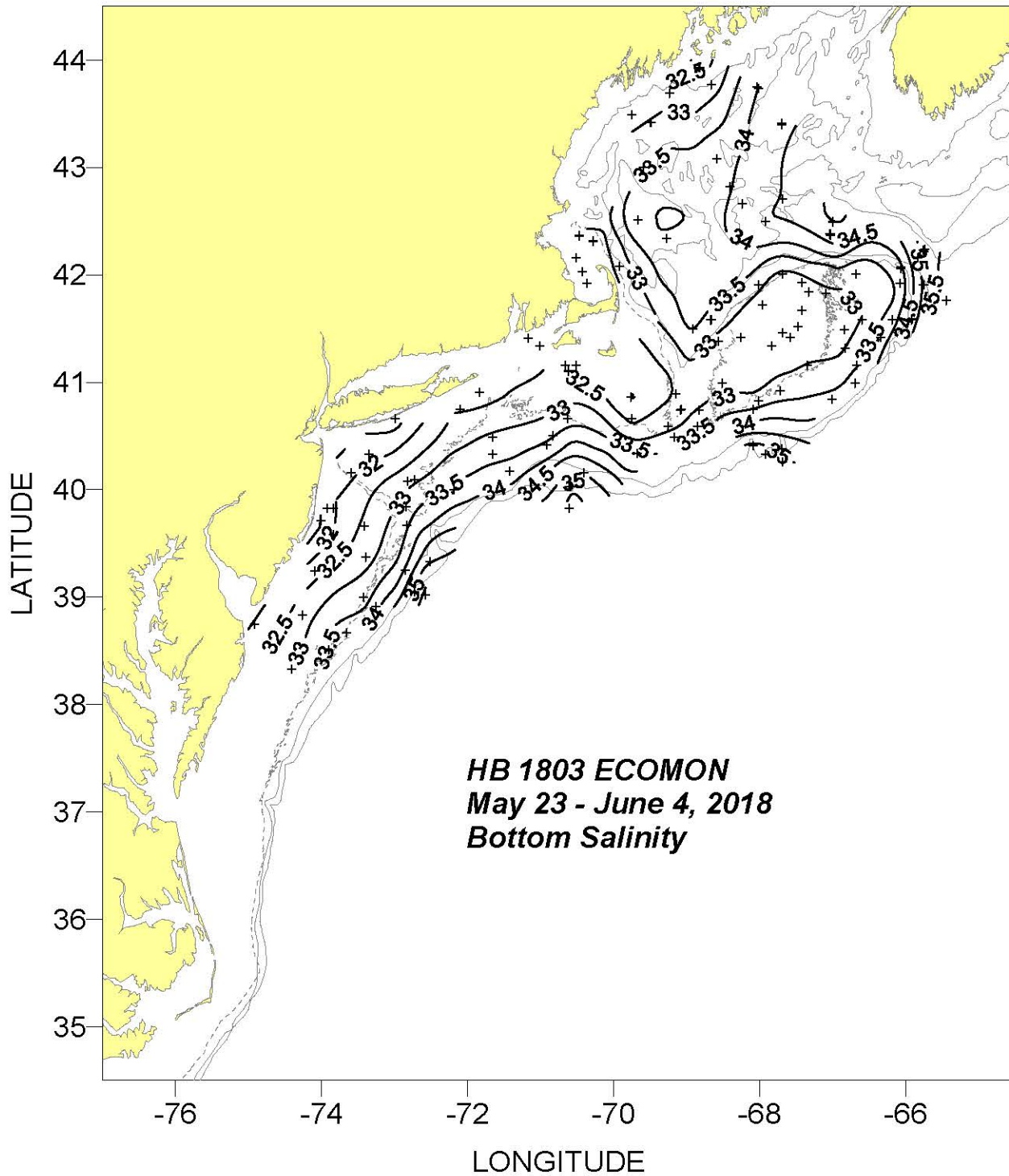


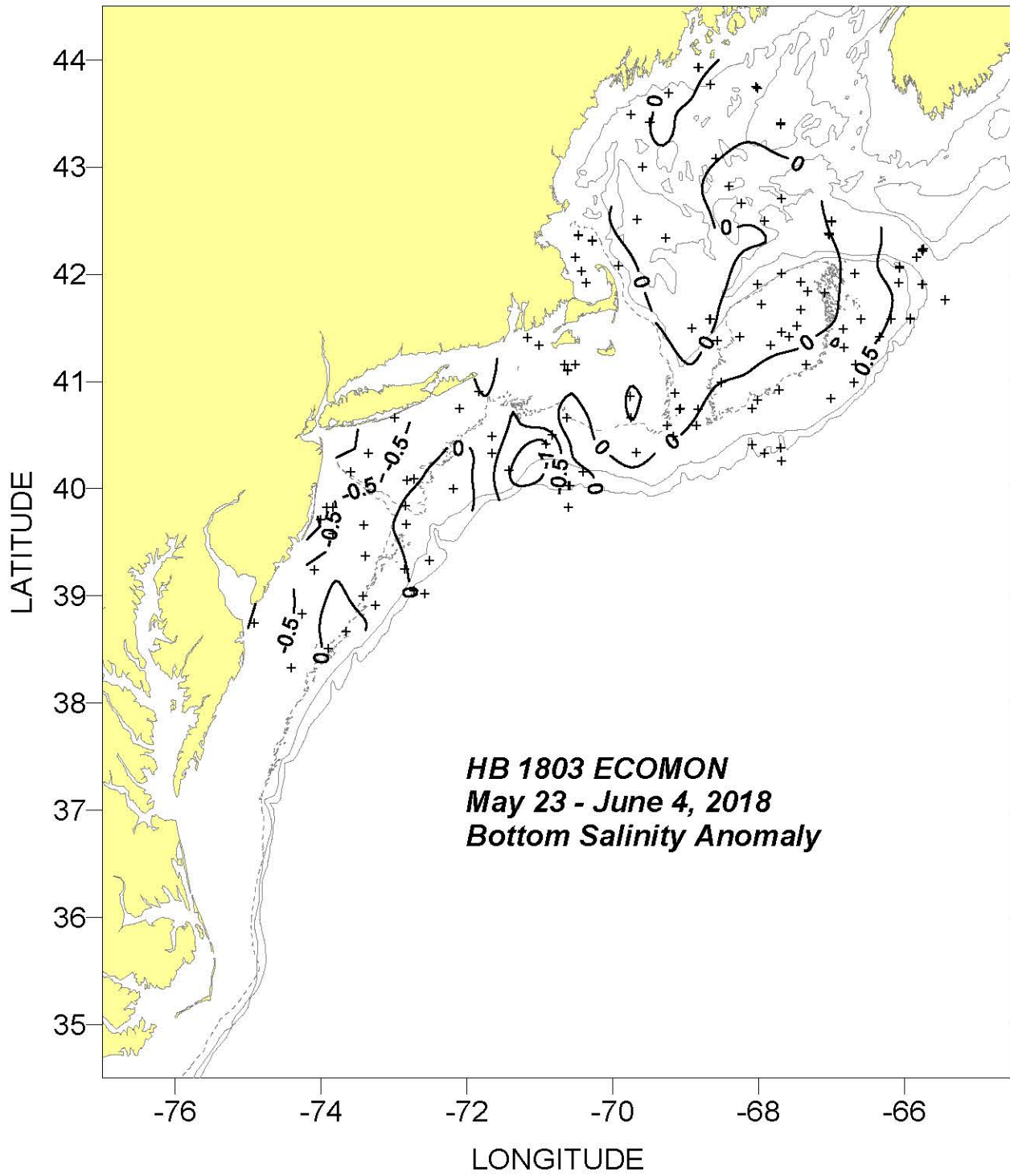












HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
1	1	4124.5	7110.4	23	5	2018	17:36	24	13.63	31.70	11.14	32.13	6	B
2	2	4120.1	7100.8	23	5	2018	18:45	28	12.22	32.11	9.92	32.38	6	B
3	3	4109.7	7039.9	23	5	2018	20:41	37	12.51	32.03	8.98	32.36	5	B
4	4	4109.5	7030.3	23	5	2018	21:43	38	11.26	32.25	9.08	32.34	5	B
5	5	4106.4	7037.2	23	5	2018	22:31	44	12.12	32.24	8.19	32.52	7	B
1	5	4106.1	7037.3	23	5	2018	22:51	44	12.05	32.30	8.17	32.58	6	W
6	6	4039.8	7037.5	24	5	2018	1:27	62	11.63	32.48	7.45	33.29	3	B
2	6	4039.4	7037.5	24	5	2018	1:49	62	11.60	32.55	7.32	33.32	1	W
7	7	4029.9	7049.9	24	5	2018	3:31	78	12.15	33.06	7.51	33.31	5	B
8	8	4025.0	7054.7	24	5	2018	4:21	87	11.59	32.94	7.54	33.51	3	B
9	9	4009.8	7024.6	24	5	2018	6:59	120	12.72	33.28	11.85	35.25	2	B
10	10	4002.0	7035.5	24	5	2018	8:19	178	15.55	34.59	12.20	35.48	4	B
3	10	4001.9	7036.5	24	5	2018	8:48	178	15.52	34.65	12.20	35.54	3	W
4	11	3949.9	7036.7	24	5	2018	10:27	894	15.62	34.68	5.92	35.11	393	W
11	11	3949.8	7036.9	24	5	2018	11:07	927	15.64	34.64	12.56	35.58	725	B
12	12	4029.7	7139.7	25	5	2018	23:33	77	12.15	32.79	6.34	33.09	3	B
13	13	4019.8	7139.7	26	5	2018	0:42	82	12.16	32.79	6.91	33.31	5	B
14	14	4010.1	7125.3	26	5	2018	2:14	89	12.01	33.24	7.75	33.67	6	B
15	15	4000.0	7210.6	26	5	2018	6:02	83	12.53	32.69	7.64	33.62	4	B
16	16	4005.1	7244.1	26	5	2018	8:49	54	12.62	31.87	5.69	32.89	4	B
17	17	4004.9	7249.4	26	5	2018	9:30	53	13.00	31.56	5.64	32.87	6	B
18	18	3950.7	7250.1	26	5	2018	11:04	60	12.94	32.27	6.94	33.31	3	B
19	19	3940.1	7249.9	26	5	2018	12:15	70	12.73	31.72	7.18	33.40	4	B
20	20	3939.6	7324.5	26	5	2018	14:58	35	13.74	31.67	6.83	32.61	4	B
5	21	3922.3	7323.4	26	5	2018	17:21	47	13.85	31.97	6.61	32.83	3	W
21	22	3915.1	7250.8	26	5	2018	20:07	84	13.94	31.83	7.82	33.68	8	B
22	23	3919.9	7230.4	26	5	2018	22:04	135	13.18	33.04	11.64	35.08	2	B
6	24	3901.3	7234.7	27	5	2018	0:16	925	17.41	34.56	6.60	35.14	424	W

HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
7	25	3903.1	7244.1	27	5	2018	1:49	259	14.19	33.01	12.40	35.65	6	W
23	26	3854.9	7315.1	27	5	2018	4:38	71	14.16	32.08	7.77	33.62	4	B
24	27	3900.1	7325.1	27	5	2018	5:46	59	14.92	31.95	7.02	33.33	5	B
25	28	3840.4	7339.7	27	5	2018	9:09	65	15.36	32.28	8.50	33.92	3	B
26	29	3830.3	7354.2	27	5	2018	10:43	56	16.43	32.30	7.39	33.44	4	B
27	30	3820.0	7424.7	27	5	2018	13:14	40	17.80	31.62	7.87	32.99	6	B
28	31	3844.9	7455.4	27	5	2018	16:39	41	17.25	29.51	11.66	31.99	6	B
29	32	3849.5	7415.5	27	5	2018	19:44	47	17.57	31.01	7.25	32.81	4	B
30	33	3914.4	7405.5	27	5	2018	22:55	29	16.20	29.37	8.32	32.39	2	B
31	34	3934.6	7350.3	28	5	2018	2:31	30	14.93	29.93	8.96	32.08	2	B
8	35	3942.8	7400.4	28	5	2018	4:09	22	14.35	30.12	12.14	30.83	2	W
32	36	3949.6	7355.5	28	5	2018	5:25	23	14.26	30.00	8.89	31.46	6	B
33	37	3950.0	7350.5	28	5	2018	6:11	26	13.78	30.76	7.21	32.04	6	B
34	38	4009.4	7335.1	28	5	2018	9:30	39	12.74	31.29	6.80	32.00	4	B
35	39	4019.6	7321.0	28	5	2018	11:11	36	12.64	30.73	6.67	31.86	4	B
36	40	4039.3	7259.7	28	5	2018	13:43	19	11.49	31.09	11.89	31.25	4	B
37	41	4044.8	7206.0	28	5	2018	18:14	45	12.45	32.48	7.27	32.58	4	B
38	42	4054.9	7150.4	28	5	2018	19:59	39	12.05	31.33	10.26	32.20	2	B
39	43	4051.4	6945.6	29	5	2018	4:50	36	9.71	31.97	9.70	31.97	9	B
40	44	4039.9	6945.2	29	5	2018	6:02	55	8.68	32.28	7.94	32.32	4	B
41	45	4020.4	6940.7	29	5	2018	7:58	73	12.14	32.98	8.39	33.41	5	B
42	46	4029.5	6910.5	29	5	2018	10:43	76	9.12	32.82	9.25	33.23	4	B
43	47	4035.3	6915.1	29	5	2018	11:42	53	8.41	32.65	8.78	32.90	6	B
44	48	4035.1	6850.8	29	5	2018	13:47	70	10.46	33.12	9.30	33.21	3	B
45	49	4044.6	6850.0	29	5	2018	14:59	69	9.70	33.18	9.62	33.17	3	B
46	50	4045.1	6904.2	29	5	2018	16:24	87	8.28	32.65	7.97	32.65	5	B
47	50	4044.6	6904.6	29	5	2018	16:52	75	8.22	32.65	8.07	32.69	9	B
9	51	4053.6	6909.1	29	5	2018	18:13	70	7.22	32.40	6.92	32.45	9	W
48	52	4059.7	6830.5	29	5	2018	21:15	50	9.37	32.80	9.36	32.84	8	B

HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
49	53	4049.8	6800.5	30	5	2018	0:18	67	9.52	33.20	9.12	33.21	7	B
50	54	4045.0	6805.3	30	5	2018	1:11	73	11.29	33.02	8.56	33.24	9	B
51	55	4024.9	6805.5	30	5	2018	3:15	149	10.90	32.24	11.24	35.33	9	B
52	56	4019.8	6755.0	30	5	2018	4:51	173	11.68	32.53	11.46	35.32	4	B
10	57	4015.4	6741.2	30	5	2018	6:31	877	16.22	34.98	6.46	35.14	375	W
11	58	4022.9	6741.8	30	5	2018	7:56	196	11.26	32.25	11.53	35.29	11	W
12	59	4055.3	6743.0	30	5	2018	11:19	64	9.22	33.22	9.04	33.24	3	W
53	60	4109.8	6720.8	30	5	2018	13:40	57	10.76	32.51	8.82	33.02	4	B
54	61	4050.2	6700.5	30	5	2018	16:58	94	10.36	32.73	8.21	33.58	6	B
55	62	4059.4	6641.1	30	5	2018	19:07	86	10.74	32.77	8.78	33.87	4	B
56	63	4109.3	6640.2	30	5	2018	20:41	82	9.75	32.88	7.84	33.26	9	B
57	64	4119.3	6649.9	30	5	2018	22:25	75	9.13	32.84	8.25	32.89	4	B
58	65	4129.4	6650.4	30	5	2018	23:42	71	9.39	32.84	8.39	32.84	5	B
59	66	4135.0	6635.4	31	5	2018	1:13	83	9.17	32.98	8.12	32.98	5	B
60	67	4125.0	6620.4	31	5	2018	2:58	99	9.23	32.37	8.32	33.75	6	B
61	68	4134.6	6610.6	31	5	2018	4:29	97	9.34	32.11	7.94	33.56	2	V+Ring Net
62	68	4134.7	6610.6	31	5	2018	4:43	97	9.40	32.08	7.86	33.52	5	B
63	69	4135.3	6555.5	31	5	2018	7:50	303	8.64	31.82	10.21	35.29	3	V+Ring Net
64	69	4135.0	6555.5	31	5	2018	8:18	267	9.10	31.84	11.43	35.28	67	B
13	70	4145.3	6526.7	31	5	2018	10:59	1863	13.29	33.73	6.35	35.13	1358	W
65	71	4154.4	6544.9	31	5	2018	13:16	207	11.24	33.51	9.05	35.18	6	V+Ring Net
66	71	4154.4	6545.8	31	5	2018	13:42	181	11.59	33.29	9.40	35.19	7	B
14	72	4213.7	6545.7	31	5	2018	16:22	223	12.25	33.63	10.37	35.39	5	W
67	72	4214.1	6544.6	31	5	2018	16:57	227	12.41	33.56	9.49	35.26	4	V+Ring Net
68	72	4213.3	6544.9	31	5	2018	17:32	229	12.88	33.52	9.97	35.29	21	B
69	73	4209.8	6549.8	31	5	2018	18:47	249	11.53	33.30	9.79	35.26	1	V+Ring Net
70	73	4209.7	6549.7	31	5	2018	19:17	249	12.01	33.16	10.20	35.27	46	B
71	74	4204.4	6604.4	31	5	2018	21:07	97	NaN	NaN	8.02	33.85	5	V+Ring Net

HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
72	74	4203.7	6604.0	31	5	2018	21:25	96	9.71	31.74	8.04	33.85	8	B
73	75	4155.1	6605.0	31	5	2018	22:26	96	9.25	31.92	7.26	33.43	6	B
74	76	4200.6	6640.9	1	6	2018	1:15	75	9.14	32.17	7.68	32.97	8	B
75	77	4149.9	6705.2	1	6	2018	3:21	60	8.62	32.84	8.62	32.84	2	B
76	78	4150.3	6720.0	1	6	2018	4:42	41	8.87	32.59	8.88	32.59	3	B
77	79	4155.6	6725.1	1	6	2018	5:32	52	8.88	32.64	8.86	32.65	4	B
78	80	4140.1	6725.5	1	6	2018	7:30	46	9.18	32.63	9.18	32.64	5	B
79	81	4131.2	6728.3	1	6	2018	8:29	51	9.26	32.65	9.27	32.66	7	B
80	82	4125.5	6734.9	1	6	2018	9:18	33	9.48	32.66	9.49	32.66	5	B
15	83	4127.7	6741.1	1	6	2018	10:09	41	9.56	32.61	9.55	32.62	5	W
81	84	4120.2	6749.6	1	6	2018	11:16	41	9.77	32.65	9.76	32.66	4	B
82	85	4125.1	6815.4	1	6	2018	13:49	42	9.10	32.60	8.99	32.59	4	B
83	86	4122.7	6833.7	1	6	2018	15:29	83	11.58	32.07	5.62	32.75	4	B
84	87	4130.1	6854.5	1	6	2018	18:21	156	12.35	31.81	6.51	33.66	5	V+Ring Net
85	87	4129.8	6854.4	1	6	2018	18:48	154	12.09	31.75	6.48	33.64	6	B
86	88	4134.8	6840.1	1	6	2018	20:18	135	11.99	31.78	6.37	33.53	5	V+Ring Net
87	88	4134.7	6839.8	1	6	2018	20:36	137	11.99	31.76	6.32	33.50	6	B
88	89	4143.3	6757.7	2	6	2018	0:00	34	8.85	32.56	8.84	32.56	5	B
89	90	4154.8	6800.3	2	6	2018	1:20	140	11.54	32.12	6.37	33.28	7	B
16	91	4200.5	6741.3	2	6	2018	3:06	65	10.63	32.28	6.64	32.78	4	W
17	92	4222.9	6702.4	2	6	2018	6:34	338	10.08	32.10	9.92	35.28	2	W
90	92	4222.5	6701.9	2	6	2018	7:10	340	10.11	32.02	9.85	35.20	1	V+Ring Net
91	92	4222.2	6701.6	2	6	2018	7:35	338	10.38	31.93	10.10	35.20	136	B
92	93	4230.1	6700.2	2	6	2018	8:58	335	9.71	31.69	11.26	35.33	135	B
93	93	4229.3	6700.2	2	6	2018	9:28	337	9.80	31.69	10.35	35.25	3	V
18	94	4242.4	6741.2	2	6	2018	12:57	191	11.49	32.16	8.44	34.45	3	W
94	95	4230.0	6755.2	2	6	2018	14:53	224	11.45	32.29	9.70	34.87	4	V+Ring Net
95	95	4230.0	6755.4	2	6	2018	15:22	223	11.81	32.28	9.69	34.87	21	B

HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
96	96	4239.7	6814.2	2	6	2018	17:16	189	11.78	32.46	7.45	33.99	7	B
97	97	4249.0	6824.8	2	6	2018	19:13	209	11.23	31.87	7.24	33.90	5	V+Ring Net
98	97	4249.0	6824.9	2	6	2018	19:36	208	11.54	31.83	7.26	33.90	5	B
99	98	4304.5	6835.1	2	6	2018	21:51	186	11.97	32.08	7.24	33.79	4	B
100	99	4324.4	6741.9	3	6	2018	2:22	250	NaN	NaN	8.35	34.27	2	V+Ring Net
101	99	4324.7	6742.1	3	6	2018	2:41	250	11.12	32.09	8.38	34.27	47	B
19	99	4323.9	6742.1	3	6	2018	3:30	253	11.10	32.18	8.40	34.36	9	W
102	100	4344.6	6800.8	3	6	2018	6:23	169	NaN	NaN	8.22	34.15	12	V+Ring Net
103	100	4344.8	6801.6	3	6	2018	6:47	168	11.94	32.28	8.21	34.15	9	B
20	101	4346.2	6839.9	3	6	2018	9:40	113	10.10	31.92	6.58	32.69	2	W
104	102	4355.8	6849.5	3	6	2018	11:50	94	10.00	31.39	6.72	31.95	1	B
105	102	4356.0	6849.4	3	6	2018	12:07	82	NaN	NaN	7.17	31.53	54	V+Ring Net
106	103	4341.3	6913.7	3	6	2018	16:02	116	10.20	31.49	5.34	32.56	5	B
107	104	4325.3	6929.8	3	6	2018	18:36	156	12.74	32.10	6.20	33.30	4	V+Ring Net
108	104	4325.1	6929.7	3	6	2018	18:58	160	12.82	32.07	6.19	33.29	6	B
109	105	4329.6	6945.2	3	6	2018	20:31	128	NaN	NaN	5.38	32.76	4	V+Ring Net
110	105	4329.6	6945.0	3	6	2018	20:48	138	11.57	31.52	5.47	32.82	6	B
111	105	4329.5	6945.1	3	6	2018	21:29	135	11.51	31.50	5.38	32.76	18	B
112	106	4259.8	6935.3	4	6	2018	0:36	167	14.15	30.64	6.37	33.41	10	V+Ring Net
113	106	4300.0	6935.2	4	6	2018	0:53	167	14.09	30.67	6.45	33.49	5	B
114	107	4230.3	6939.9	4	6	2018	4:23	249	11.33	32.04	7.68	34.07	7	V+Ring Net
21	107	4230.6	6940.2	4	6	2018	4:48	251	11.32	32.09	7.64	34.07	2	W
115	107	4230.9	6940.1	4	6	2018	5:14	242	11.39	32.06	6.76	33.77	35	B
116	108	4220.4	6916.3	4	6	2018	8:18	243	11.18	32.24	7.41	34.03	8	V+Ring Net
117	108	4220.6	6915.9	4	6	2018	8:42	244	11.37	32.30	7.19	33.91	42	B
118	109	4204.8	6955.0	4	6	2018	12:41	92	12.37	31.33	5.13	32.56	9	V+Ring Net
119	109	4204.8	6955.0	4	6	2018	12:57	92	12.44	31.27	5.22	32.62	5	B
120	110	4218.9	7016.8	4	6	2018	15:11	34	12.97	31.19	5.43	32.06	5	W

HB1803 ECOMON
May 23 - June 4, 2018

Cast #	Sta #	Lat (deg N)	Long (deg W)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (deg C)	Sfc Salt	Deepest Observed Temp (deg C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
22	110	4219.1	7017.0	4	6	2018	15:24	35	12.97	31.20	5.64	32.09	6	W
23	111	4221.7	7028.1	4	6	2018	16:43	68	13.66	30.75	4.84	32.43	6	W
121	111	4222.2	7028.4	4	6	2018	17:04	82	13.61	30.67	4.85	32.42	6	W
122	112	4209.9	7030.4	4	6	2018	18:37	54	13.25	30.69	4.87	32.08	14	B
123	113	4201.8	7025.7	4	6	2018	20:00	52	13.61	31.01	4.81	32.08	6	B
124	114	4155.2	7021.5	4	6	2018	21:18	40	13.09	31.29	5.14	32.05	9	B

Deployment codes: B=bongo cast; W=water cast; and V=vertical cast
Casts in **BOLD** are from the CTD s/n 0402