

Oceanography Branch CTD Data Report
CTD_REPORT_2019005GU

**For further information, contact Tamara Holzwarth-Davis
National Marine Fisheries Service, Northeast Fisheries Science
Center, Woods Hole, Massachusetts 02543-1097.**

DATE: January 13, 2020

CTD REPORT 2019005GU

Oceans and Climate Branch CTD Data Report

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

GU 1905
2019 Fall ECOMON Survey
Data Coverage: October 15 – November 1, 2019
Mid Atlantic Bight, Georges Bank, and Gulf of Maine

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's 2019 ECOMON Survey aboard the NOAA Ship *Gordon Gunter*. 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.

The SBE19+ was deployed on 100 double oblique bongo casts, 2 vertical ring net casts and 2 water sampling casts. The SBE9/11+ was deployed on 24 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: **2019 Cruises**

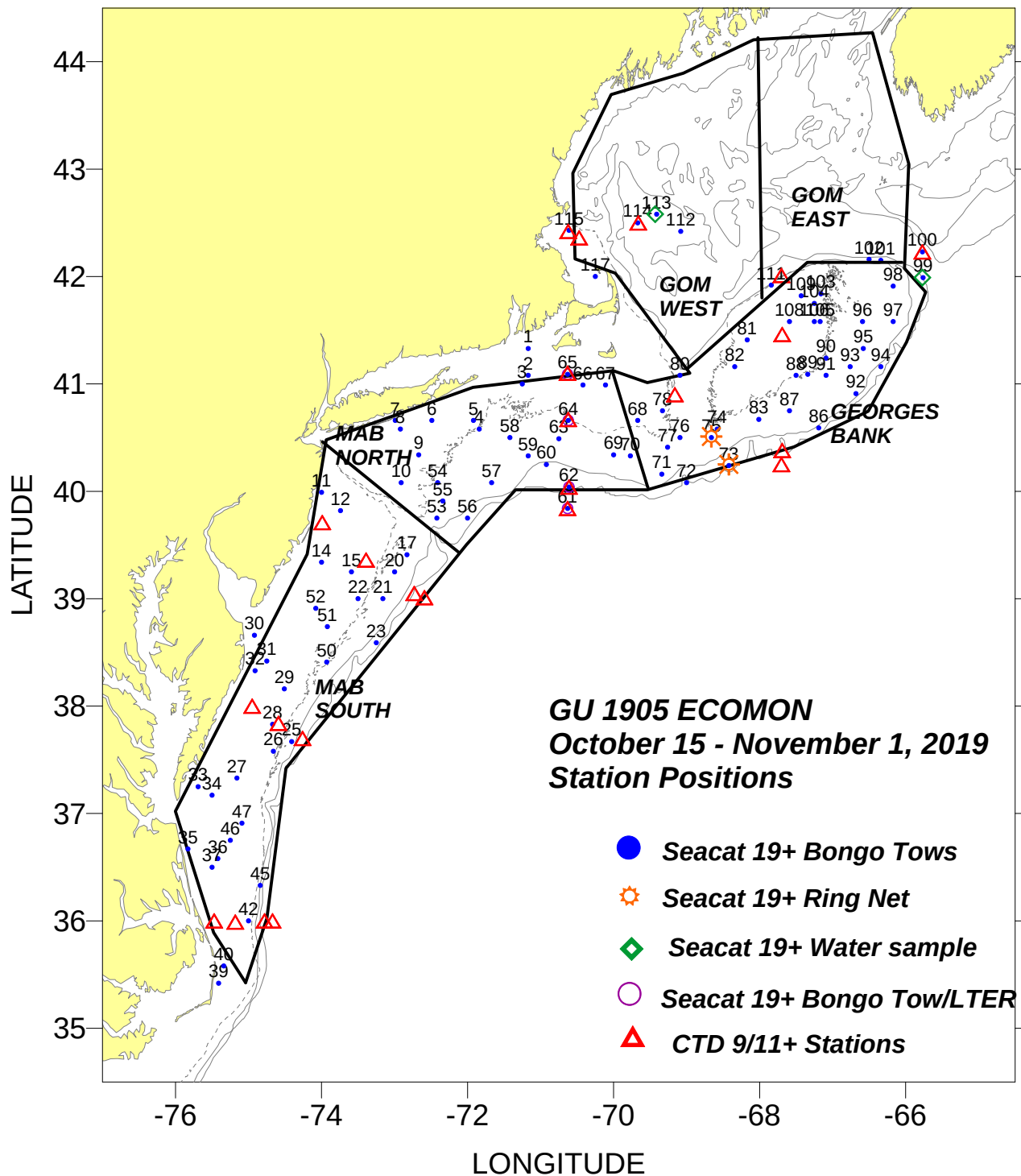
NOV_ECOMON_GU1905

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Revised: January 13, 2020



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the
GU1905 ECOMON Survey
October 15 - November 1, 2019**

CRUISE	CD	SURFACE						BOTTOM						Purpose
		#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag	
							Georges Bank							
gu1905	301	35	14.89	1.08	0.25	1.96	0	34	14.09	2.05	0.22	2.60	0	22
gu1905	301	35	33.24	0.43	0.08	0.76	0	34	33.60	0.43	0.08	0.72	0	22
							MAB North							
gu1905	295	26	17.53	1.76	0.32	1.59	0	26	16.71	3.81	0.35	2.36	0	22
gu1905	295	26	33.70	0.74	0.13	0.78	0	26	34.18	0.60	0.12	0.79	0	22
							MAB South							
gu1905	293	38	18.77	0.91	0.29	1.08	0	37	17.58	2.85	0.35	1.47	0	22
gu1905	293	38	33.08	0.39	0.17	0.81	0	37	33.59	0.14	0.12	0.94	0	22

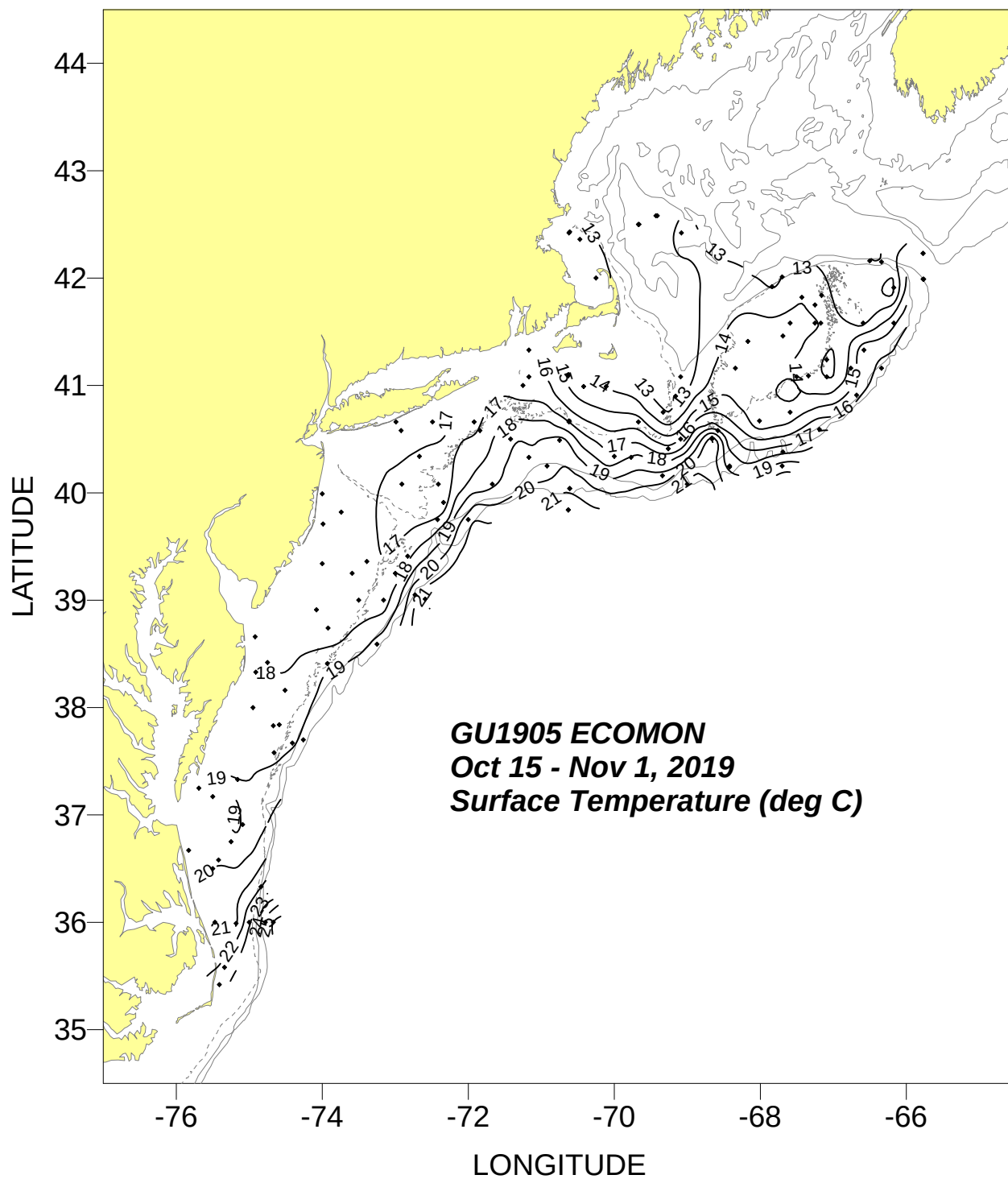
"CRUISE": the code name for a cruise; "CD": the calendar mid-date of all the stations within a region for a cruise;

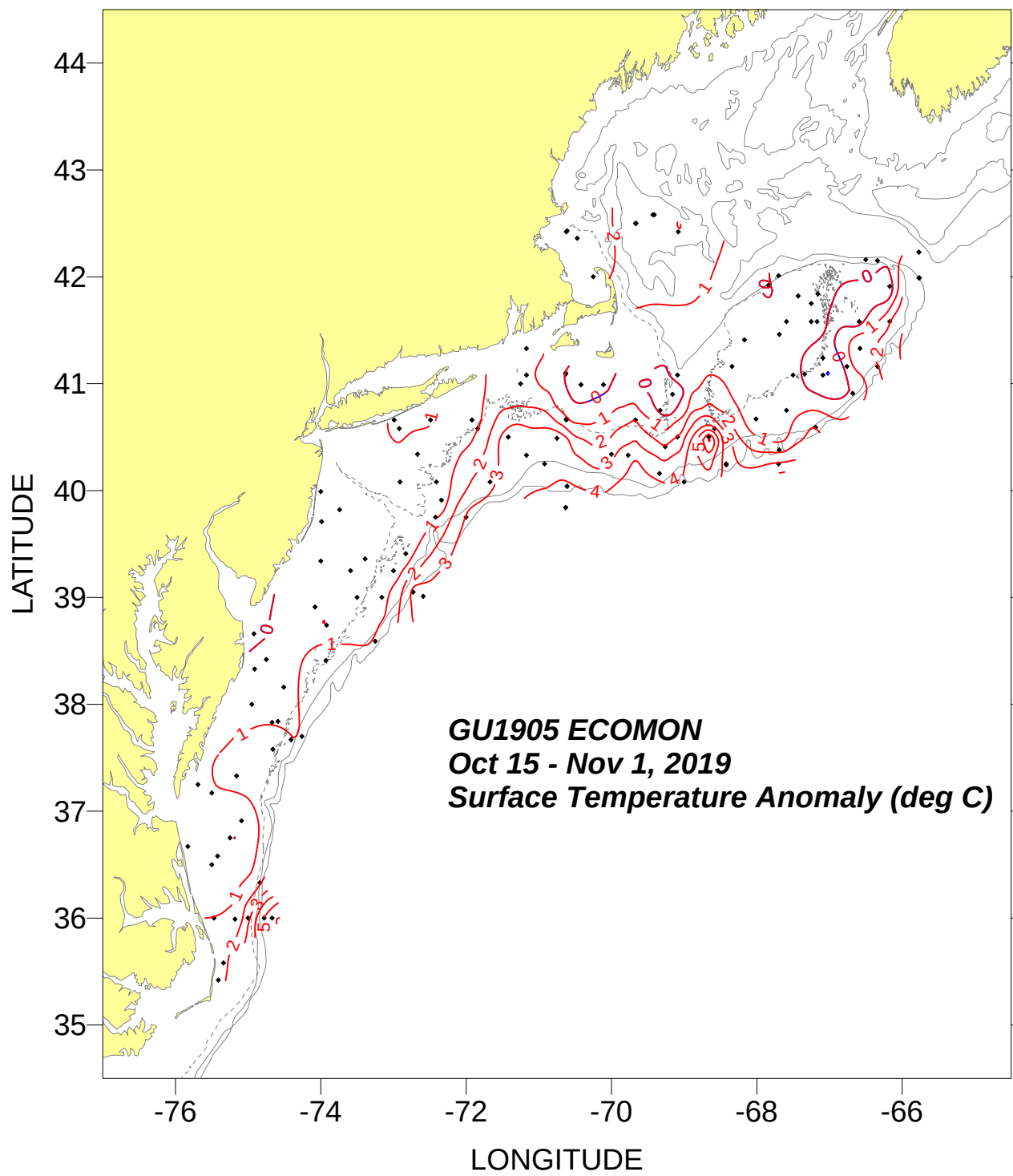
"#obs": the number of observations include in each average; "T/S": the areal average temp/salt; "Anomaly": the areal average temp/salt anomaly;

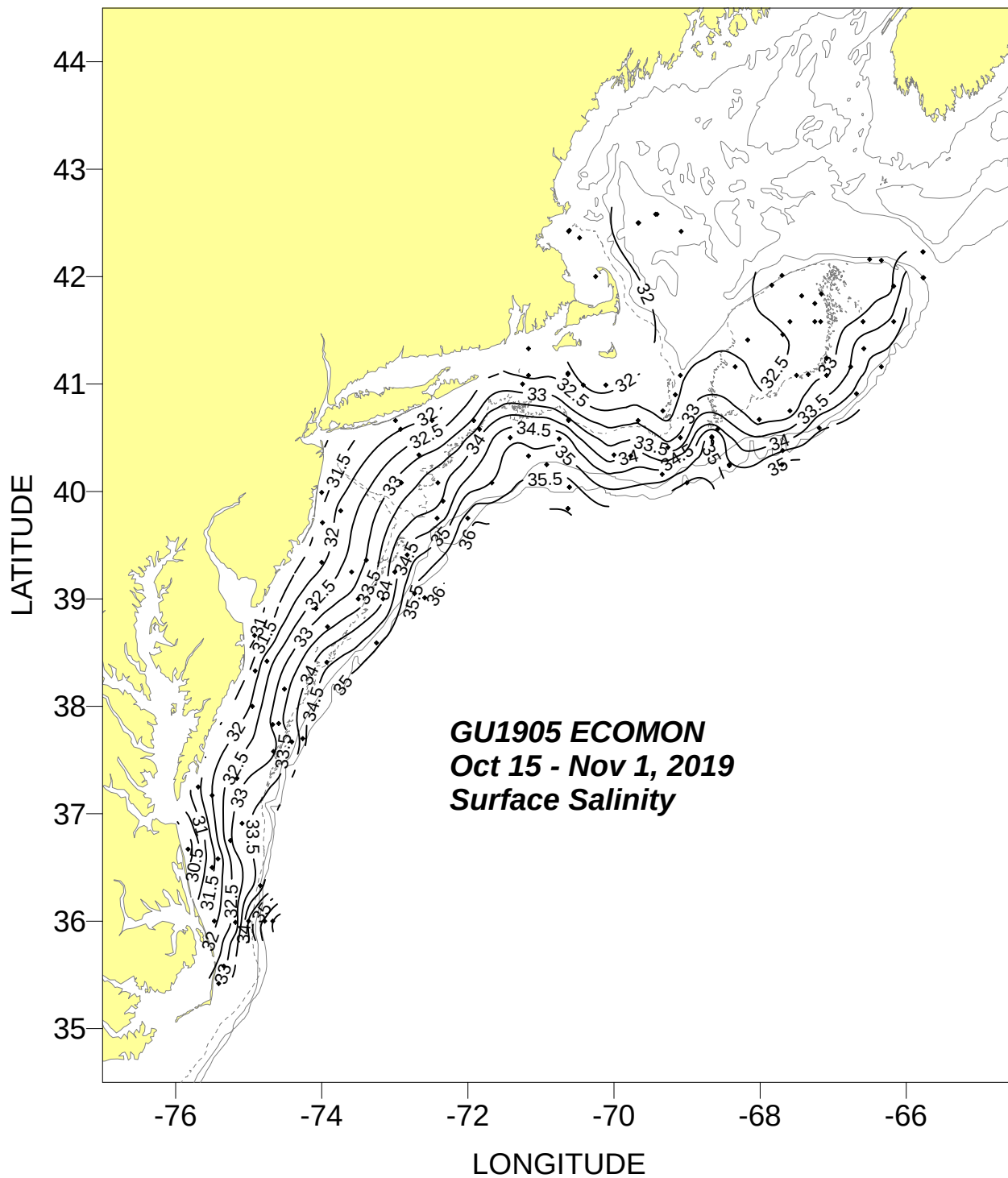
"SDV1": the standard deviation associated with the average temp/salt anomaly; "SDV2": the standard deviation of the individual anomalies from which the average anomaly was derived.

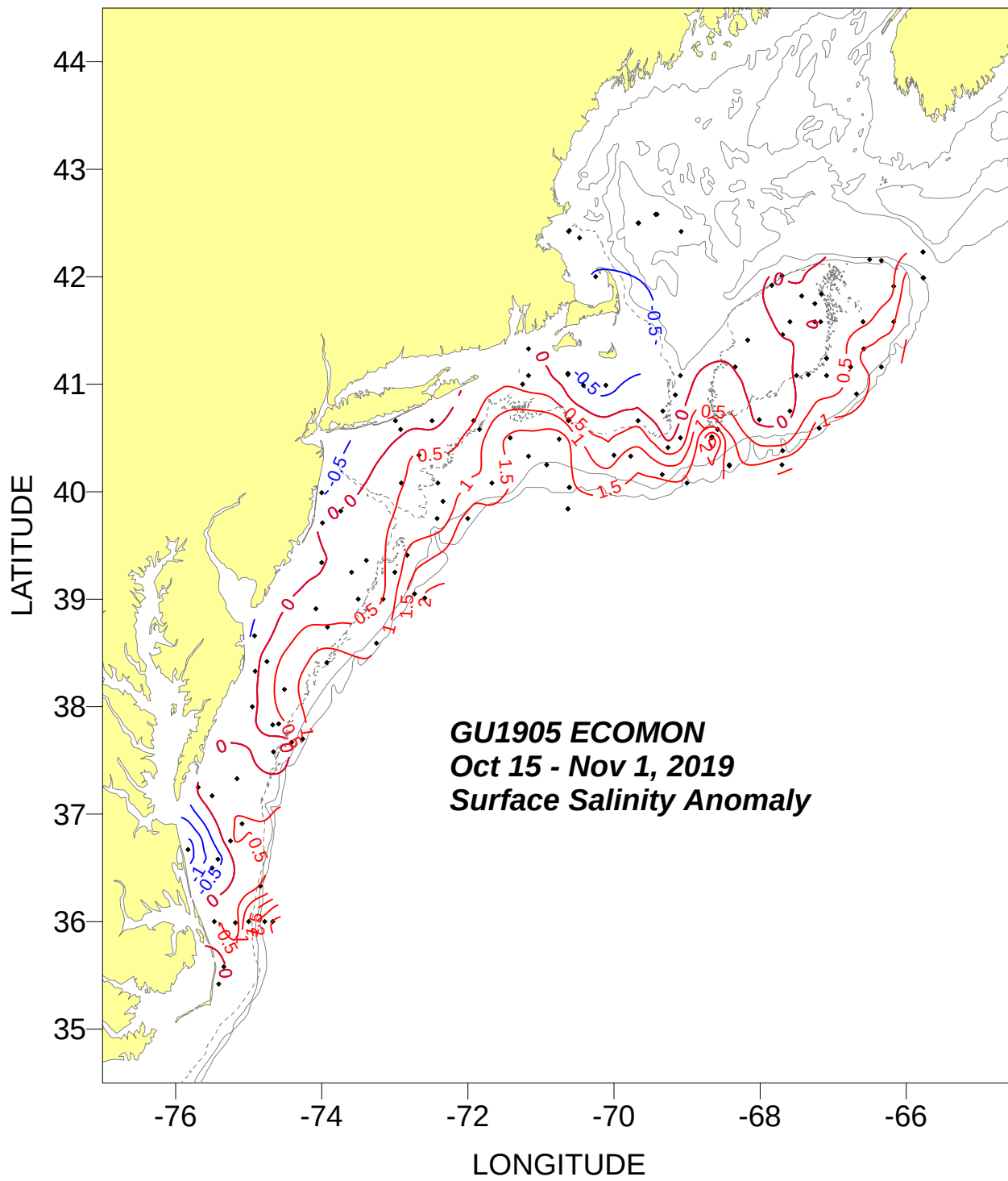
"Flag": a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

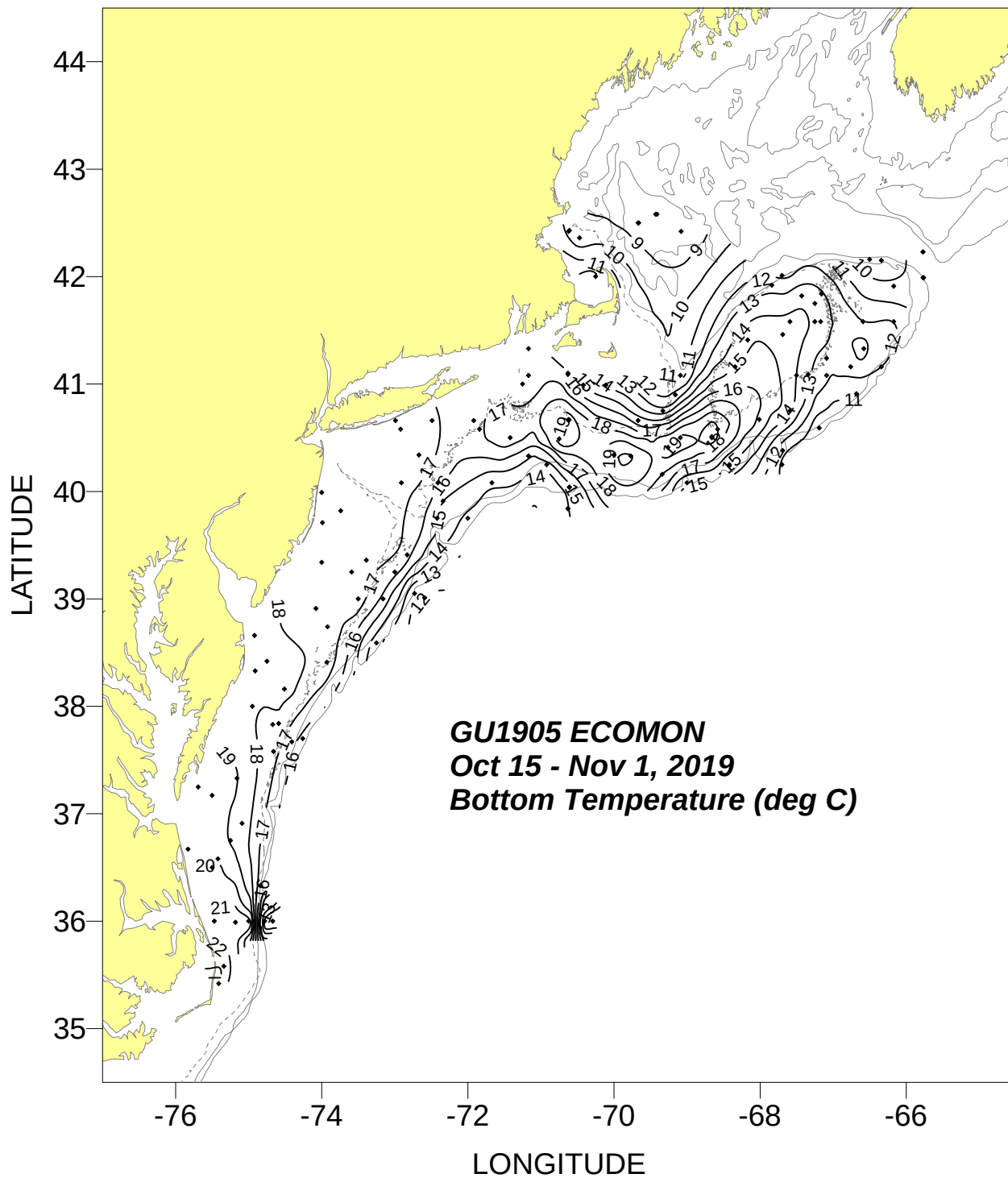
"Purpose": 2 digit code identifying the NEFSC program survey where 22 denotes an ECOMON survey.

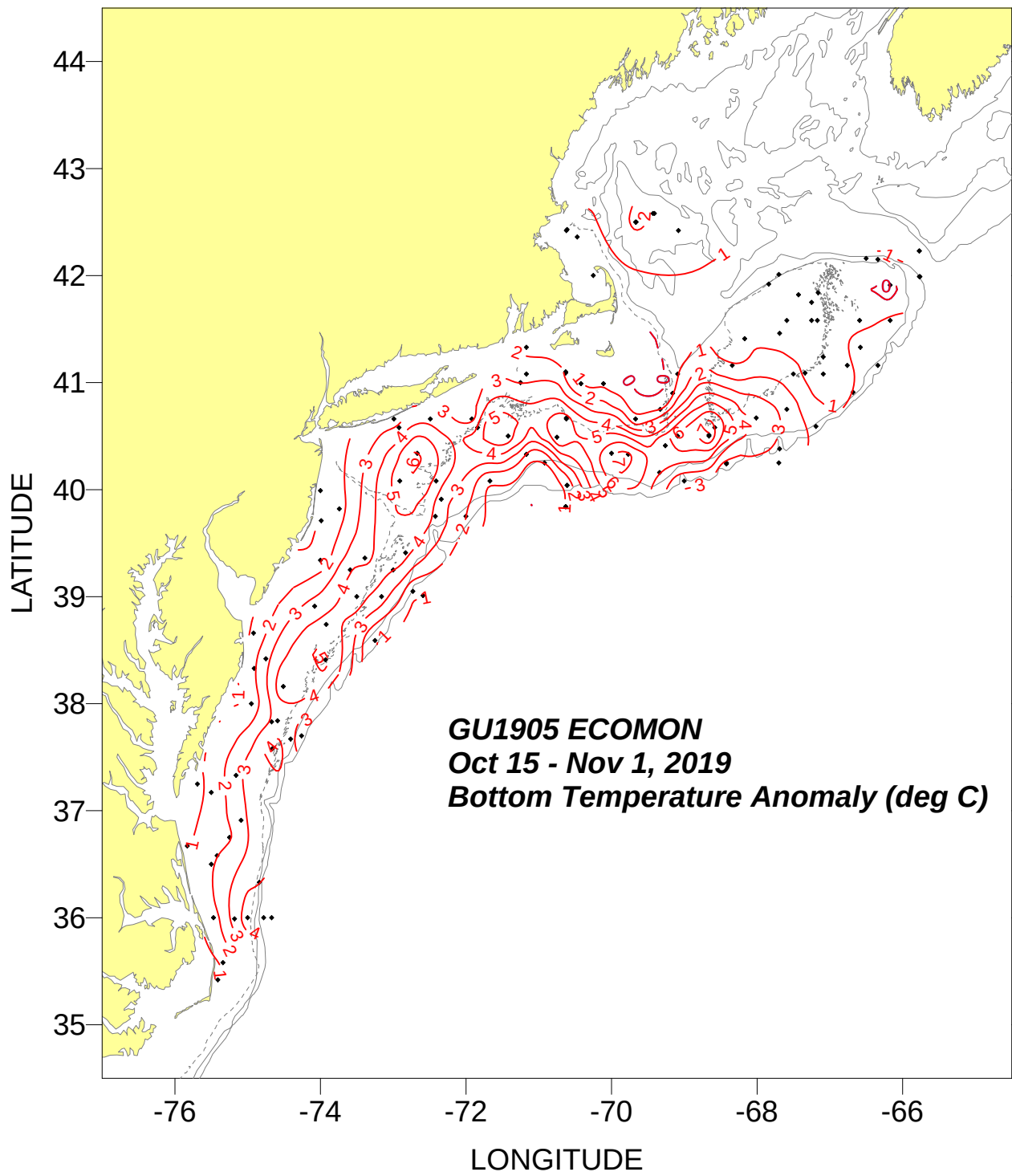


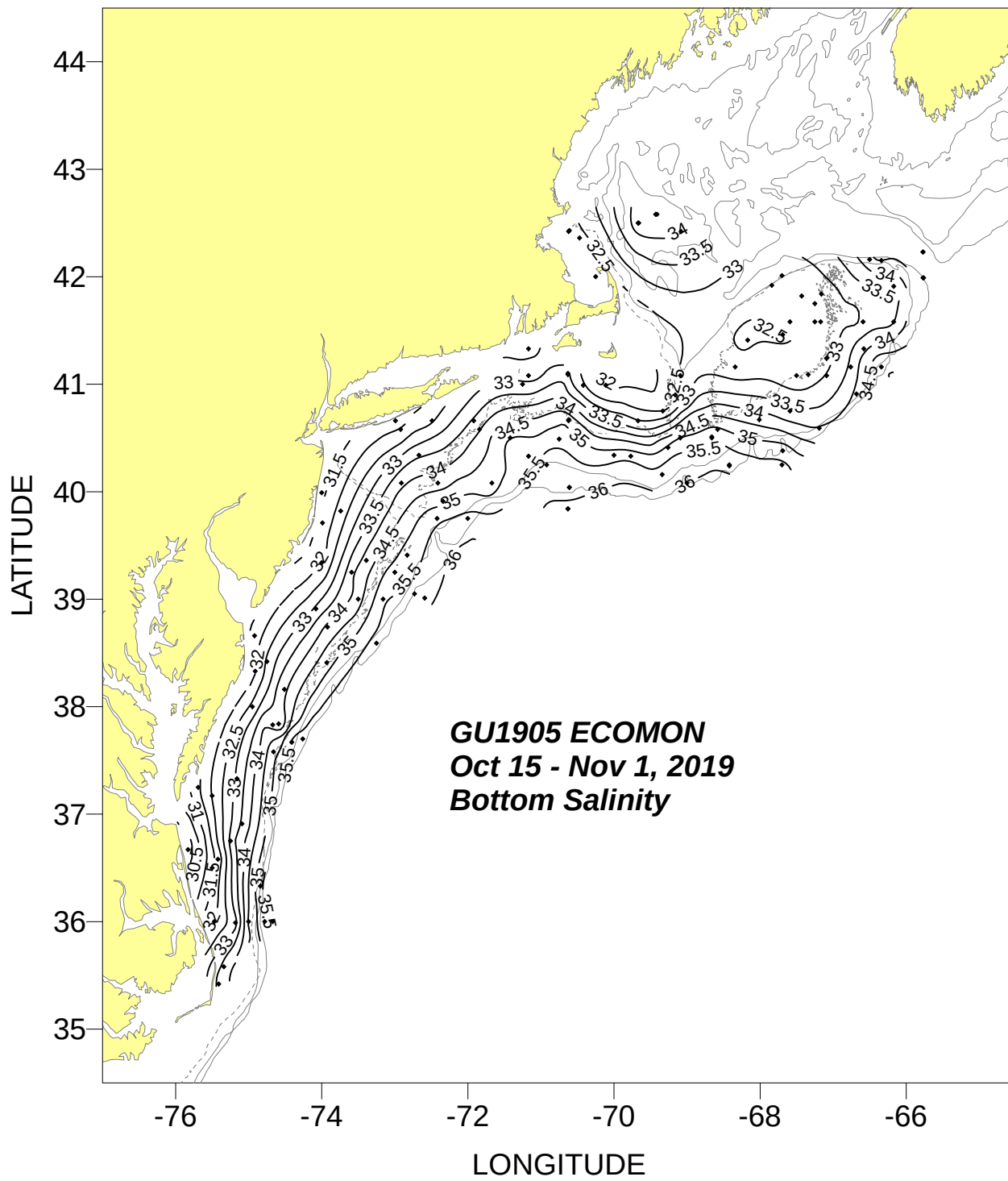


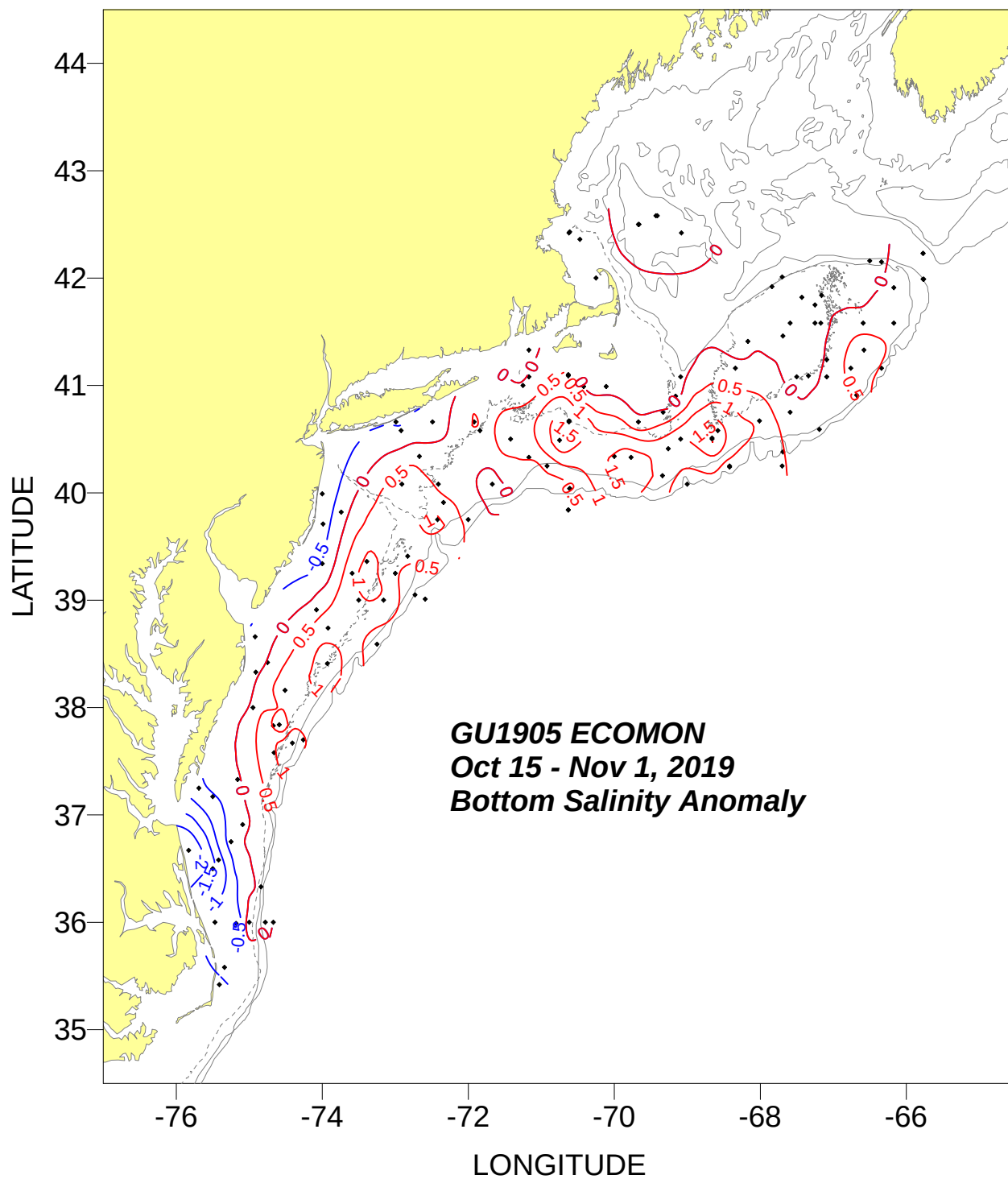












GU1905 ECOMON Survey
Oct 15 - Nov 2019

Cast	Station	Lat	Long	Day	Mo	Year	Time	Btm	Sfc	Sfc	Deepest Observed	Deepest Observed	Meters from	Method of
#	#	(DDMM.M)	(DDMM.M)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
1	1	4119.8	7110.5	15	10	2019	20:21	30	16.96	32.38	16.59	32.39	6	B
2	2	4105.0	7110.2	15	10	2019	22:11	32	16.41	32.28	16.28	32.61	6	B
3	3	4100.0	7114.9	15	10	2019	23:07	43	16.23	32.62	15.82	33.08	5	B
4	4	4034.9	7150.2	16	10	2019	3:34	58	17.11	33.93	17.25	34.07	5	B
5	5	4039.9	7155.0	16	10	2019	4:32	48	16.63	32.93	16.19	33.54	4	B
6	6	4039.7	7229.7	16	10	2019	7:33	33	17.47	31.97	17.23	32.40	4	B
7	7	4039.7	7259.3	16	10	2019	10:11	14	17.36	31.76	17.35	31.76	5	B
8	8	4034.8	7255.0	16	10	2019	11:02	25	17.86	31.96	17.84	31.96	5	B
9	9	4020.2	7240.5	16	10	2019	13:22	49	16.79	32.97	17.64	33.52	2	B
10	10	4005.0	7254.9	16	10	2019	15:48	46	16.59	33.22	17.34	33.92	4	B
11	11	3959.7	7400.1	16	10	2019	21:43	18	17.89	31.29	17.94	31.39	3	B
12	12	3949.2	7344.5	18	10	2019	9:51	26	17.70	32.19	17.72	32.20	4	B
1	13	3942.6	7359.6	18	10	2019	11:45	22	17.55	31.64	17.57	31.64	4	W
13	14	3920.4	7400.2	18	10	2019	14:39	29	17.94	31.88	17.93	31.87	4	B
14	15	3915.0	7335.4	18	10	2019	17:02	49	17.89	32.80	17.35	33.92	3	B
2	16	3921.6	7323.6	18	10	2019	18:32	48	17.18	32.98	17.06	34.22	1	W
15	17	3924.7	7249.9	18	10	2019	21:43	69	17.67	34.74	16.66	35.17	4	B
3	18	3900.8	7235.1	19	10	2019	1:06	960	21.78	35.86	6.41	35.08	454	W
4	19	3903.1	7244.1	19	10	2019	2:56	258	20.96	35.65	11.69	35.49	6	W
16	20	3914.8	7259.9	19	10	2019	5:38	74	17.36	34.32	16.54	35.21	5	B
17	21	3900.0	7309.9	19	10	2019	7:49	81	17.24	33.84	15.76	35.46	3	B
18	22	3859.9	7329.9	19	10	2019	9:57	53	17.55	33.21	17.92	34.18	3	B
19	23	3835.1	7315.0	19	10	2019	13:16	138	19.34	34.91	13.12	35.72	4	B
5	24	3742.2	7415.5	19	10	2019	22:53	106	19.37	34.60	15.52	35.80	1	W
20	25	3740.1	7424.4	20	10	2019	0:03	71	18.78	33.25	16.34	35.74	4	B
21	26	3735.0	7439.8	20	10	2019	1:41	60	18.79	32.85	17.35	34.80	5	B
22	27	3719.9	7509.9	20	10	2019	4:52	31	19.04	32.86	19.14	33.09	4	B
23	28	3749.8	7440.2	20	10	2019	9:27	47	18.50	33.14	17.54	34.44	4	B
24	29	3809.7	7430.5	20	10	2019	12:08	45	18.04	33.33	18.52	33.98	3	B

GU1905 ECOMON Survey
Oct 15 - Nov 2019

Cast	Station	Lat	Long	Day	Mo	Year	Time	Btm	Sfc	Sfc	Deepest Observed	Deepest Observed	Meters from	Method of
#	#	(DDMM.M)	(DDMM.M)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
25	30	3839.9	7455.1	20	10	2019	16:23	22	17.22	30.76	18.15	31.72	6	B
26	31	3825.0	7445.2	20	10	2019	18:40	31	18.03	32.33	18.14	32.64	5	B
27	32	3819.8	7454.8	20	10	2019	19:58	12	18.12	31.75	18.13	31.77	3	B
28	33	3715.0	7541.3	21	10	2019	10:53	12	19.07	31.44	19.18	31.48	2	B
29	34	3710.0	7530.1	21	10	2019	12:27	19	19.37	32.04	19.38	32.05	4	B
30	35	3640.3	7549.6	21	10	2019	16:21	18	19.53	29.59	19.51	29.60	4	B
31	36	3635.0	7525.2	21	10	2019	18:59	20	20.02	31.61	20.03	31.62	4	B
32	37	3630.1	7529.8	21	10	2019	19:55	29	20.02	31.48	20.02	31.47	5	B
6	38	3559.8	7528.3	21	10	2019	23:24	24	20.97	31.95	21.00	31.99	2	W
33	39	3525.3	7524.5	22	10	2019	3:20	22	22.56	32.97	23.08	33.62	4	B
34	40	3534.8	7520.1	22	10	2019	4:51	32	22.23	32.76	23.06	33.77	4	B
7	41	3559.7	7510.6	22	10	2019	8:27	36	20.82	32.61	21.24	32.79	1	W
35	42	3559.8	7500.1	22	10	2019	9:41	44	22.84	34.76	22.86	34.74	4	B
8	43	3600.0	7446.9	22	10	2019	11:13	360	25.44	35.65	9.56	35.25	5	W
9	44	3559.9	7440.4	22	10	2019	12:29	1174	26.70	36.26	6.25	35.07	671	W
36	45	3619.9	7450.2	22	10	2019	15:43	85	21.68	33.58	16.75	35.55	3	B
37	46	3645.0	7515.1	22	10	2019	19:51	29	19.04	33.12	18.83	33.32	3	B
38	47	3654.9	7505.1	22	10	2019	21:35	45	18.85	33.36	18.58	33.49	2	B
10	48	3750.5	7435.1	23	10	2019	5:04	53	18.00	33.36	17.82	33.43	2	W
11	49	3759.8	7457.0	23	10	2019	7:55	24	18.13	32.07	18.00	32.62	2	W
39	50	3824.8	7355.6	23	10	2019	14:54	62	18.92	34.47	17.79	34.81	3	B
40	51	3844.7	7355.2	23	10	2019	17:46	45	16.92	33.37	17.41	34.17	4	B
41	52	3854.8	7405.0	23	10	2019	19:43	42	17.52	32.77	17.10	33.05	3	B
42	53	3944.9	7225.2	24	10	2019	6:30	86	17.04	34.15	15.34	35.49	3	B
43	54	4004.5	7224.9	24	10	2019	9:05	65	16.18	33.93	16.38	34.25	3	B
44	55	3954.8	7220.1	24	10	2019	10:29	78	16.33	33.87	14.68	34.82	3	B
45	56	3945.0	7200.1	24	10	2019	12:43	149	21.15	35.94	13.88	35.77	6	B
46	57	4004.8	7140.2	24	10	2019	15:53	89	18.63	34.91	14.11	34.63	5	B

GU1905 ECOMON Survey
Oct 15 - Nov 2019

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#	#	(DDMM.M)	(DDMM.M)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
47	58	4030.0	7125.1	24	10	2019	19:24	71	19.11	35.04	18.11	35.20	4	B
48	59	4019.8	7110.0	24	10	2019	21:27	91	19.30	35.17	14.89	35.18	4	B
49	60	4014.9	7055.0	24	10	2019	23:06	124	19.26	35.20	14.04	35.79	3	B
50	61	3950.4	7037.8	25	10	2019	2:31	822	21.55	35.95	13.55	35.79	618	B
12	61	3950.1	7037.6	25	10	2019	3:13	866	21.49	35.88	6.53	35.09	360	W
51	62	4002.2	7036.5	25	10	2019	5:11	168	21.00	35.72	14.32	35.79	4	B
13	62	4002.3	7036.3	25	10	2019	5:51	165	21.00	35.68	14.50	35.75	3	W
52	63	4029.7	7044.9	25	10	2019	9:09	76	19.83	35.08	20.30	35.37	4	B
53	64	4039.9	7037.1	25	10	2019	10:40	61	16.66	33.52	19.80	34.94	4	B
14	64	4040.2	7037.2	25	10	2019	10:54	62	16.50	33.42	19.79	34.89	6	W
54	65	4105.7	7037.8	25	10	2019	13:48	44	14.56	32.21	16.00	33.30	3	B
15	65	4105.9	7038.0	25	10	2019	14:04	44	14.60	32.17	16.02	33.25	2	W
55	66	4059.7	7025.2	25	10	2019	15:35	42	14.28	31.87	14.47	32.36	4	B
56	67	4059.7	7006.3	25	10	2019	17:27	27	13.91	31.80	13.91	31.79	4	B
57	68	4039.9	6940.0	25	10	2019	21:51	52	15.50	32.94	15.31	32.94	3	B
58	69	4020.4	7000.0	26	10	2019	0:48	84	16.96	33.61	19.97	35.30	2	B
59	70	4019.9	6946.0	26	10	2019	2:15	76	18.50	34.29	20.67	35.48	3	B
60	71	4009.8	6920.3	26	10	2019	4:50	92	19.47	34.80	17.97	35.61	4	B
61	72	4004.7	6900.2	26	10	2019	6:52	171	21.83	35.67	14.55	35.93	4	B
62	73	4014.7	6825.2	26	10	2019	10:18	159	18.41	34.43	14.59	35.88	2	B
63	73	4015.2	6825.4	26	10	2019	10:43	157	18.32	34.39	14.64	35.89	4	V+Ring Net
64	74	4034.5	6834.9	26	10	2019	13:04	69	17.30	33.95	19.67	35.09	3	B
65	75	4029.9	6839.7	26	10	2019	14:05	76	21.25	35.70	19.62	35.52	3	B
66	75	4030.3	6839.6	26	10	2019	14:23	75	19.77	35.05	19.73	35.49	3	V+Ring Net
67	76	4029.9	6905.2	26	10	2019	16:57	78	15.64	32.94	19.88	35.10	4	B
68	77	4024.7	6915.3	26	10	2019	18:30	79	16.20	33.13	19.61	35.27	3	B
69	78	4044.8	6919.9	26	10	2019	21:06	34	12.85	32.27	12.86	32.27	4	B
16	79	4054.2	6909.4	26	10	2019	22:45	68	12.34	32.40	12.18	32.38	2	W

GU1905 ECOMON Survey
Oct 15 - Nov 2019

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#	#	(DDMM.M)	(DDMM.M)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
70	80	4104.7	6905.1	27	10	2019	0:03	95	12.13	32.45	10.27	32.61	7	B
71	81	4124.7	6810.2	27	10	2019	4:56	44	15.00	32.48	15.04	32.47	2	B
72	82	4109.7	6820.1	27	10	2019	6:52	47	14.78	32.55	14.79	32.55	3	B
73	83	4040.1	6800.4	27	10	2019	10:53	86	14.22	32.78	16.02	34.29	4	B
17	84	4015.0	6741.9	27	10	2019	14:27	1234	20.12	35.26	5.84	35.05	727	W
18	85	4023.0	6741.5	27	10	2019	16:05	224	17.44	34.49	10.87	35.37	9	W
74	86	4035.1	6711.2	27	10	2019	19:53	142	17.09	34.50	10.06	34.01	6	B
75	87	4044.9	6735.4	27	10	2019	22:21	84	14.12	32.61	14.52	33.54	3	B
76	88	4104.9	6730.2	28	10	2019	23:28	62	13.95	32.68	13.98	32.68	4	B
77	89	4105.4	6720.7	29	10	2019	1:15	65	13.62	32.92	13.63	32.91	15	B
78	90	4114.6	6705.3	29	10	2019	4:56	64	12.68	32.80	12.34	32.87	4	B
79	91	4104.8	6705.2	29	10	2019	6:16	69	12.52	32.87	12.04	32.98	5	B
80	92	4054.7	6640.9	29	10	2019	9:43	104	15.73	34.17	11.08	34.08	2	B
81	93	4109.6	6645.4	29	10	2019	11:48	71	14.12	33.47	12.53	33.58	4	B
82	94	4109.8	6620.6	29	10	2019	14:34	136	16.08	34.15	11.88	35.03	3	B
83	95	4119.5	6634.6	29	10	2019	16:26	87	16.09	34.03	13.63	34.01	4	B
84	96	4134.8	6635.2	29	10	2019	19:02	84	12.68	33.04	11.94	32.95	7	B
85	97	4134.9	6610.5	29	10	2019	21:23	98	14.85	33.62	12.14	33.42	4	B
86	98	4154.3	6610.2	30	10	2019	0:16	93	11.18	32.94	10.02	33.06	5	B
87	99	4159.6	6545.8	30	10	2019	2:53	251	18.66	35.17	10.11	35.30	46	B
88	99	4159.3	6546.0	30	10	2019	3:18	250	17.93	NaN	10.05	35.29	2	W
89	100	4213.6	6546.2	30	10	2019	5:10	228	13.40	32.88	11.21	35.38	27	B
19	100	4213.6	6546.2	30	10	2019	5:56	227	13.36	32.84	10.56	35.31	4	W
90	101	4209.2	6620.2	30	10	2019	9:24	186	13.08	32.83	9.54	34.68	4	B
91	102	4209.6	6630.2	30	10	2019	10:42	158	13.07	32.82	8.95	34.37	7	B
92	103	4150.2	6709.8	30	10	2019	14:44	65	13.27	32.71	13.28	32.70	8	B
93	104	4145.1	6715.0	30	10	2019	15:47	60	13.68	32.65	13.65	32.65	8	B
94	105	4134.9	6710.0	30	10	2019	17:14	54	13.56	32.67	13.53	32.67	7	B
95	106	4134.8	6715.0	30	10	2019	18:13	55	14.42	32.53	13.99	32.54	5	B

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#	#	(DDMM.M)	(DDMM.M)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
20	107	4127.8	6741.4	30	10	2019	20:50	35	14.45	32.48	14.47	32.47	2	W
96	108	4134.9	6735.3	30	10	2019	22:19	41	14.27	32.56	14.27	32.57	5	B
97	109	4149.4	6725.6	31	10	2019	0:29	48	13.94	32.63	13.73	32.65	6	B
21	110	4200.8	6741.8	31	10	2019	2:15	73	13.02	32.58	11.52	32.69	3	W
98	111	4155.1	6750.3	31	10	2019	3:39	58	12.82	32.61	12.63	32.62	4	B
99	112	4225.2	6904.9	31	10	2019	10:52	192	13.21	32.38	8.02	34.11	3	B
100	113	4235.0	6924.3	31	10	2019	13:15	237	12.62	32.27	8.13	34.17	33	B
101	113	4235.0	6925.7	31	10	2019	13:46	237	12.82	32.29	8.34	34.28	5	W
22	114	4230.2	6939.9	31	10	2019	15:52	255	12.60	32.20	8.43	34.30	9	W
102	114	4230.1	6940.5	31	10	2019	16:21	266	12.52	32.32	8.00	34.10	64	B
103	115	4225.8	7036.7	31	10	2019	21:52	88	13.21	31.78	9.73	32.36	3	B
23	115	4225.5	7037.0	31	10	2019	22:13	88	13.22	31.75	9.82	32.32	4	W
24	116	4221.7	7028.4	31	10	2019	23:36	78	13.22	31.77	9.24	32.31	3	W
104	117	4200.0	7015.1	1	11	2019	4:12	45	13.33	31.69	12.42	32.04	5	B

Deployment codes: B=bongo cast; W=water cast; and V=vertical cast

Records in bold are collected with an SBE911+ CTD