

Oceans and Climate Branch CTD Data Report
CTD_REPORT_2020001HB

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Center, Woods Hole, Massachusetts 02543-1097.**

DATE: 19 January 2021

Oceans and Climate Branch CTD Data Report

CTD_REPORT_2020001HB

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

HB 2001
Spring Bottom Trawl Survey
Data Coverage: March 3 – 17, 2020
Mid Atlantic Bight

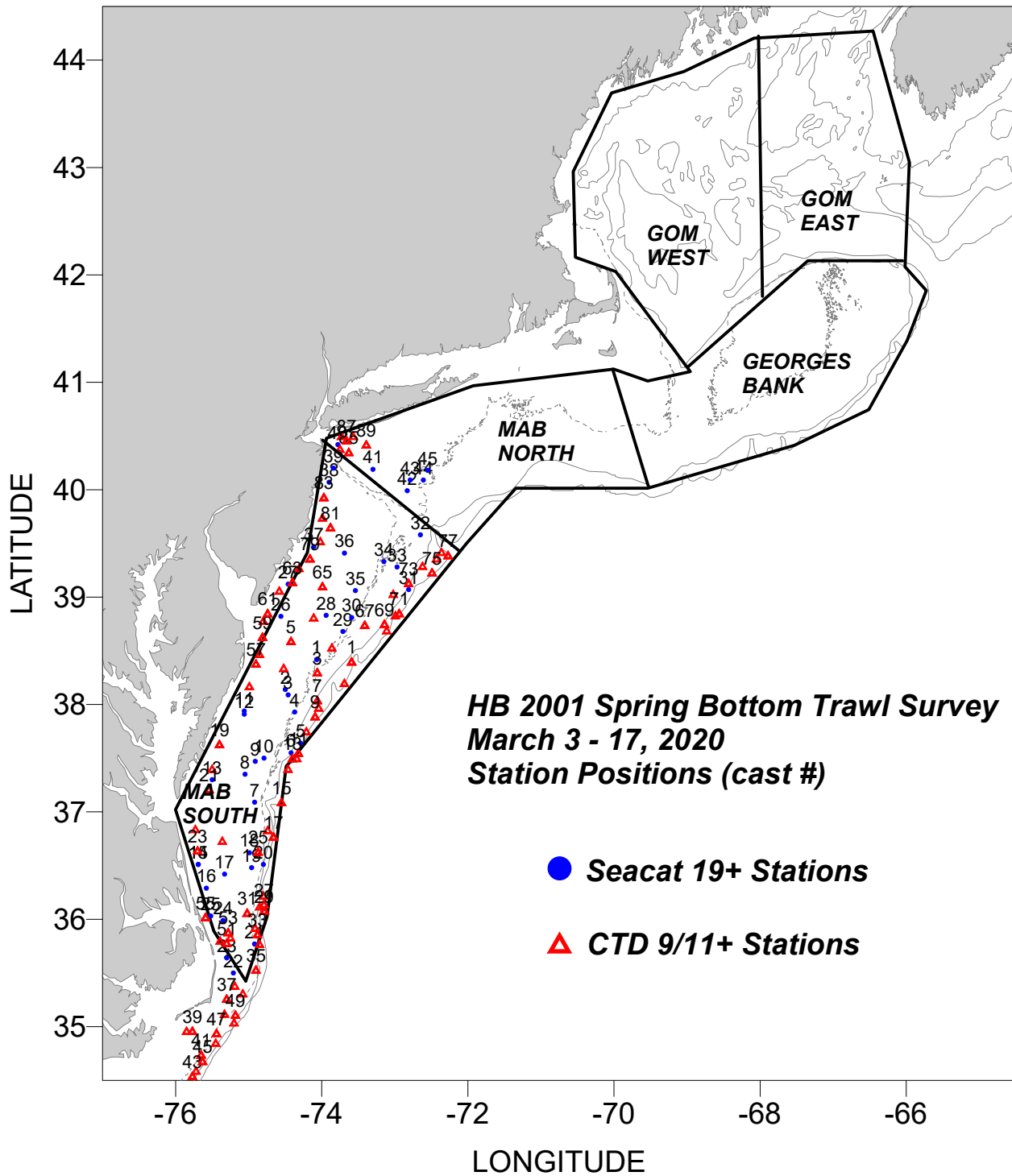
This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's HB2001 Spring Bottom Trawl Survey aboard the NOAA FSV *Henry B Bigelow*. Data was obtained with a Sea-Bird Electronics SBE Model 19+ profiling CTD (s/n 7142) during double oblique bongo tows and on vertical casts with a SBE Model 9/11+ s/n 0832. Sea water samples were taken for the purpose of calibrating salinity values. A Biospherical Instruments Inc. QSP2300 PAR (Photosynthetically Active Radiation) sensor was attached to the SBE 9/11; an SBE43 Dissolved Oxygen sensor was also deployed but malfunctioned.

Data presented here have been audited, however, corrections and/or updates may be applied at a later time.

The SBE19+ was deployed on 36 double oblique bongo casts and 9 vertical/water sampling casts. The SBE9/11+ was used successfully on 86 stations.

The most recent and complete station/CTD data can be found by contacting [Dr. Chris Melrose](#)

Revised: January 7, 2021



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the
HB2001 Spring Bottom Trawl Survey
March 3 - 17, 2020**

SURFACE								BOTTOM							
Region	CD	# Obs	T (deg C)	Anomaly	SDV1	SDV2	Flag	Region	CD	# Obs	T (deg C)	Anomaly	SDV1	SDV2	Flag
MAB North	77	10	7.22	3.08	1.36	0.15	1	MAB North	77	10	6.93	2.92	1.48	0.43	1
MAB South	70	86	8.92	2.74	0.20	1.47	0	MAB South	70	87	9.75	3.28	0.24	1.50	0
Region	CD	# Obs	Salinity	Anomaly	SDV1	SDV2	Flag	Region	CD	# Obs	Salinity	Anomaly	SDV1	SDV2	Flag
MAB North	77	10	32.50	0.18	1.10	0.43	1	MAB North	77	10	32.62	-0.32	0.66	0.27	1
MAB South	70	86	33.15	-0.08	0.12	0.63	0	MAB South	70	87	33.77	0.02	0.09	0.52	0

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

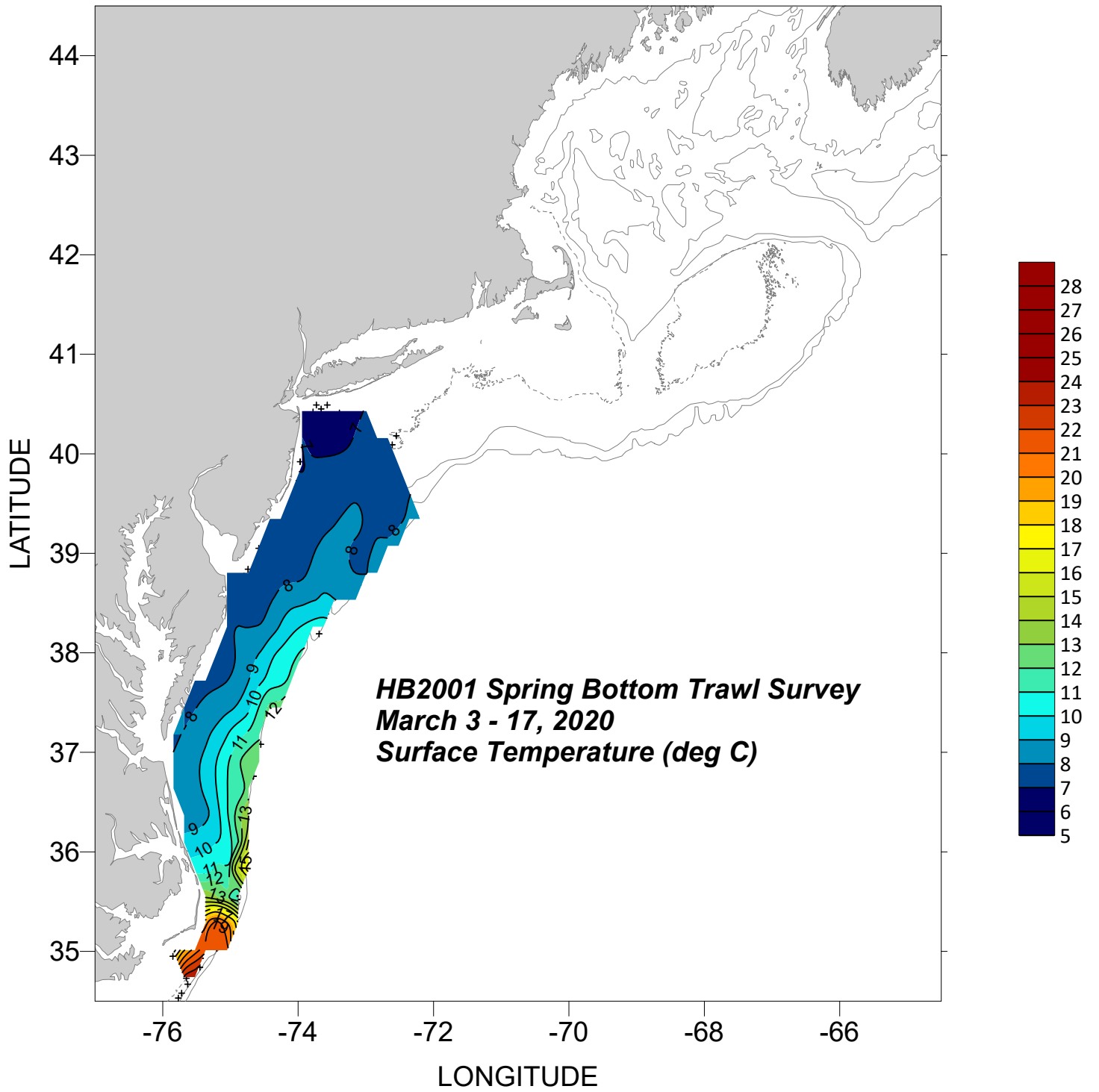
"# Obs": the number of observations include in each average;

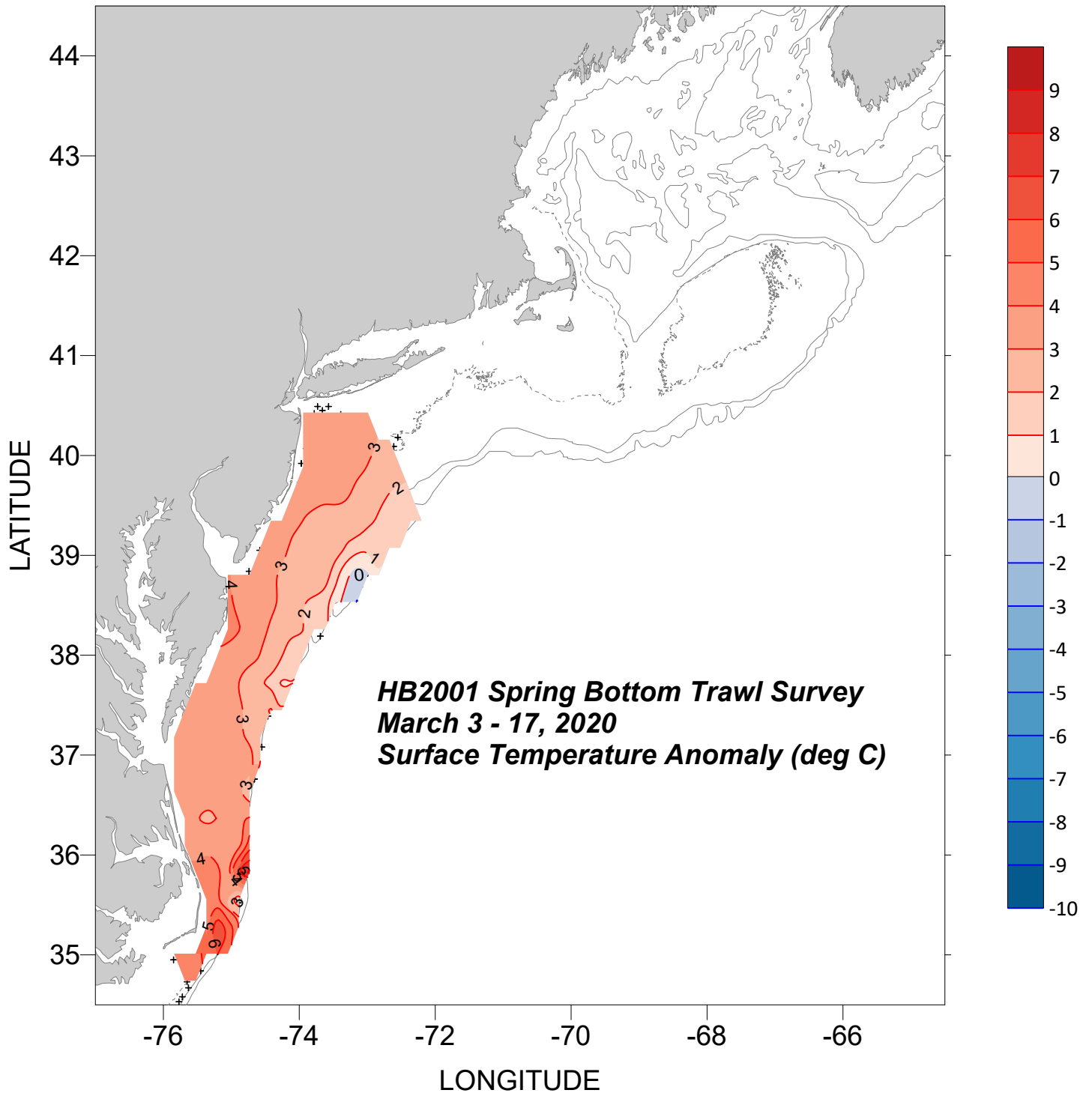
T(deg C)/Salinity: the areal average temp/salt; "Anomaly": the areal average temp/salt anomaly;

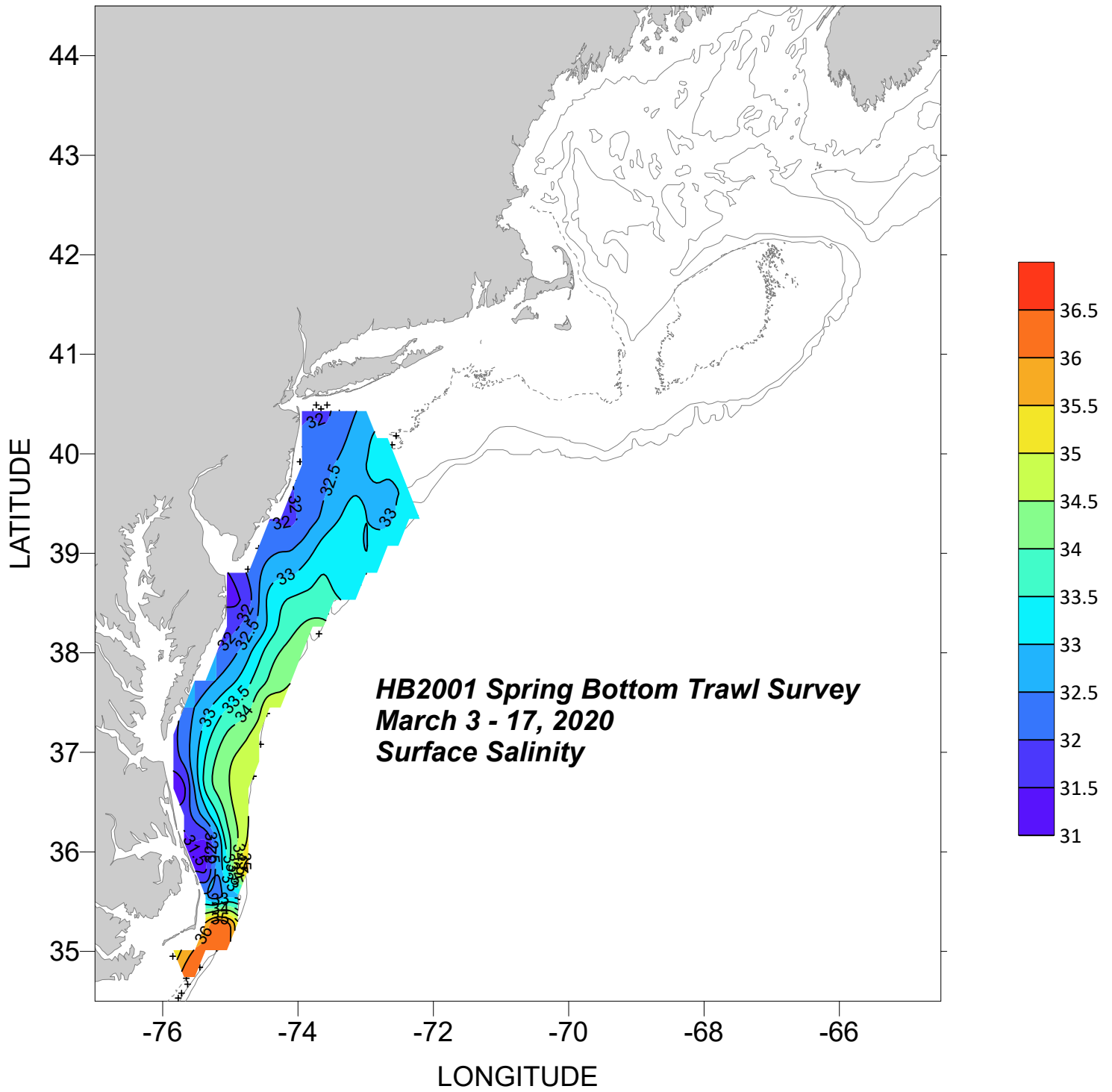
"SDV1": the standard deviation associated with the average temp/salt anomaly;

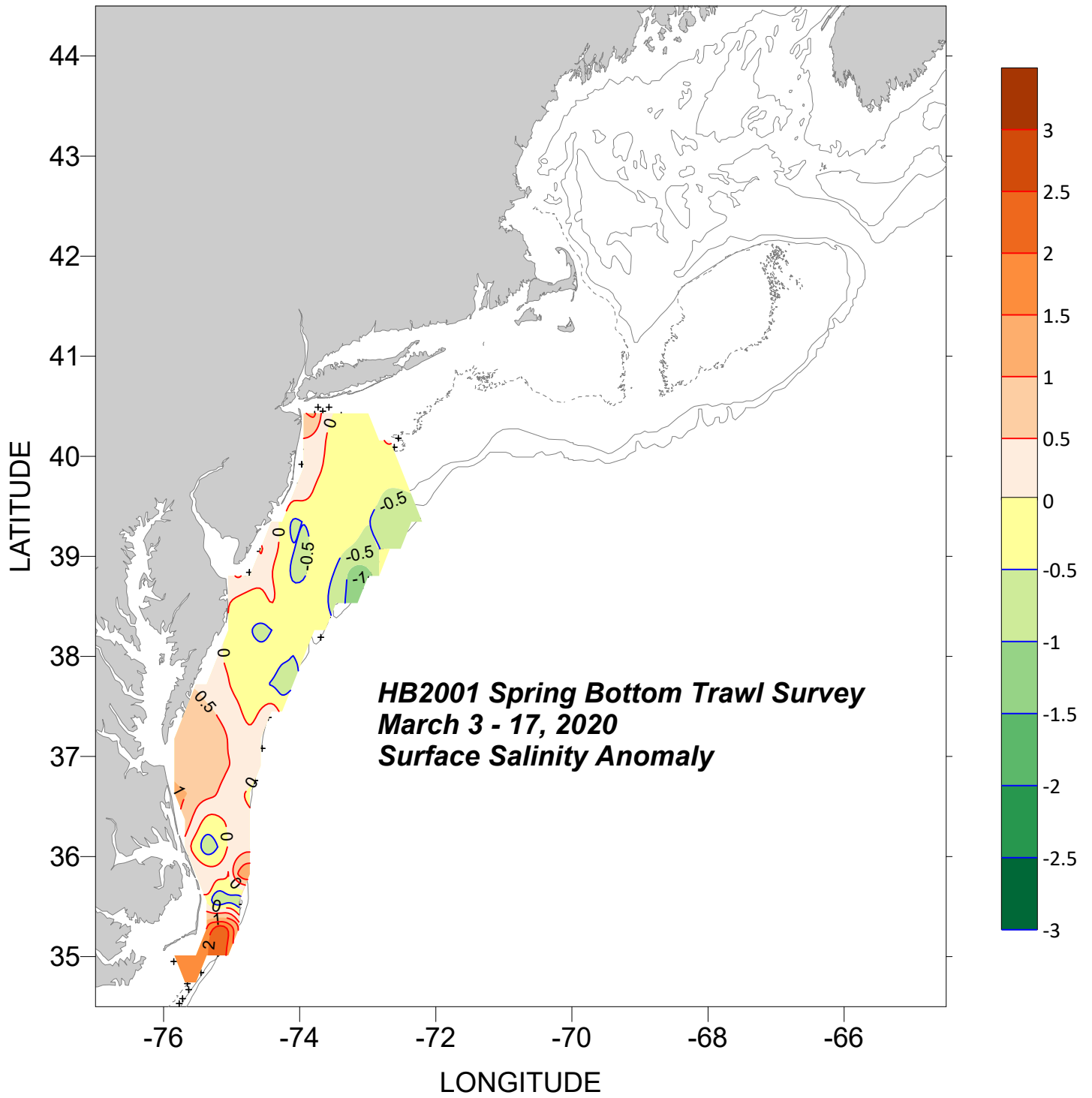
SDV2: the standard deviation of the individual anomalies from which the average anomaly was derived.

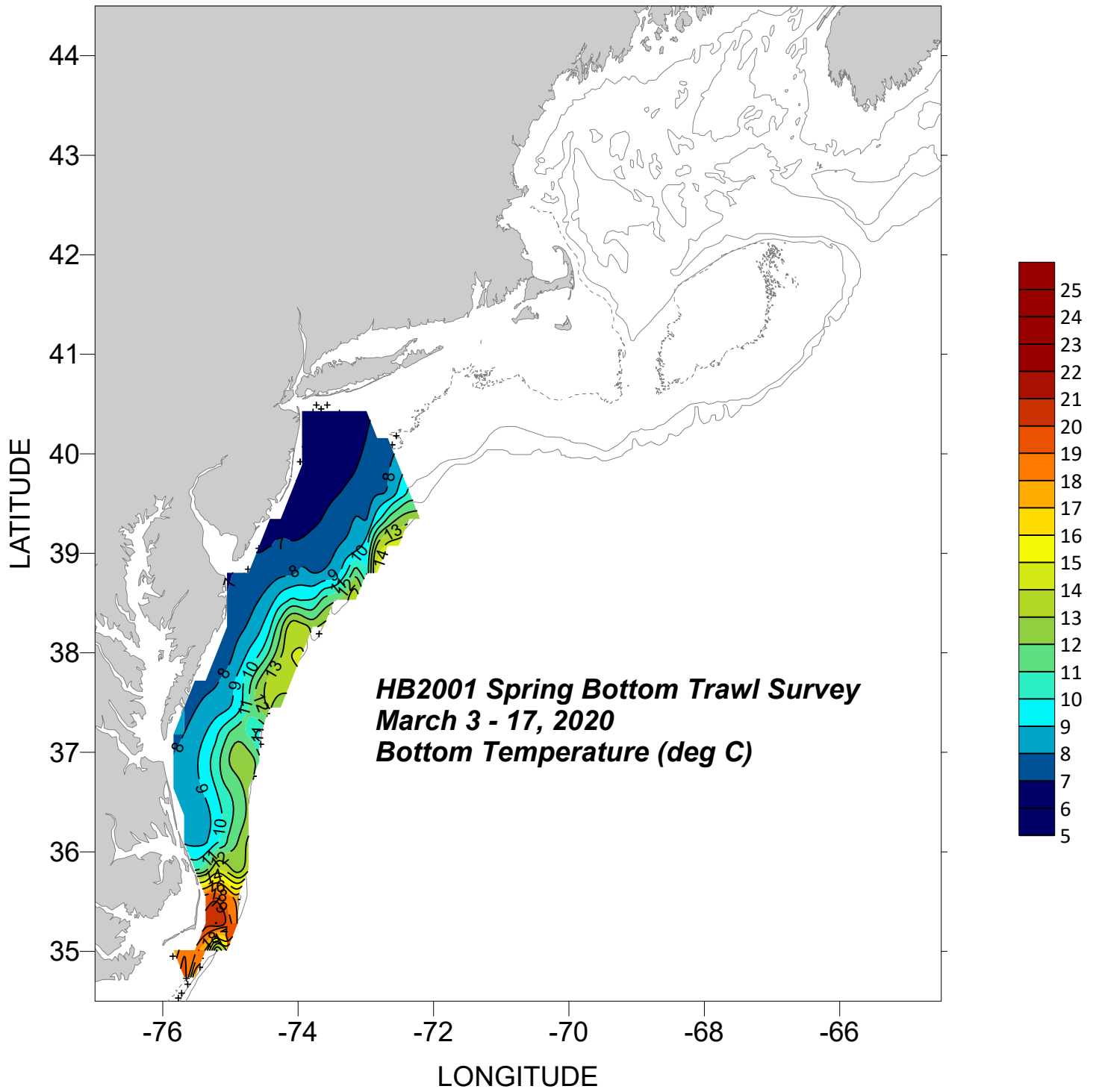
"Flag": a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

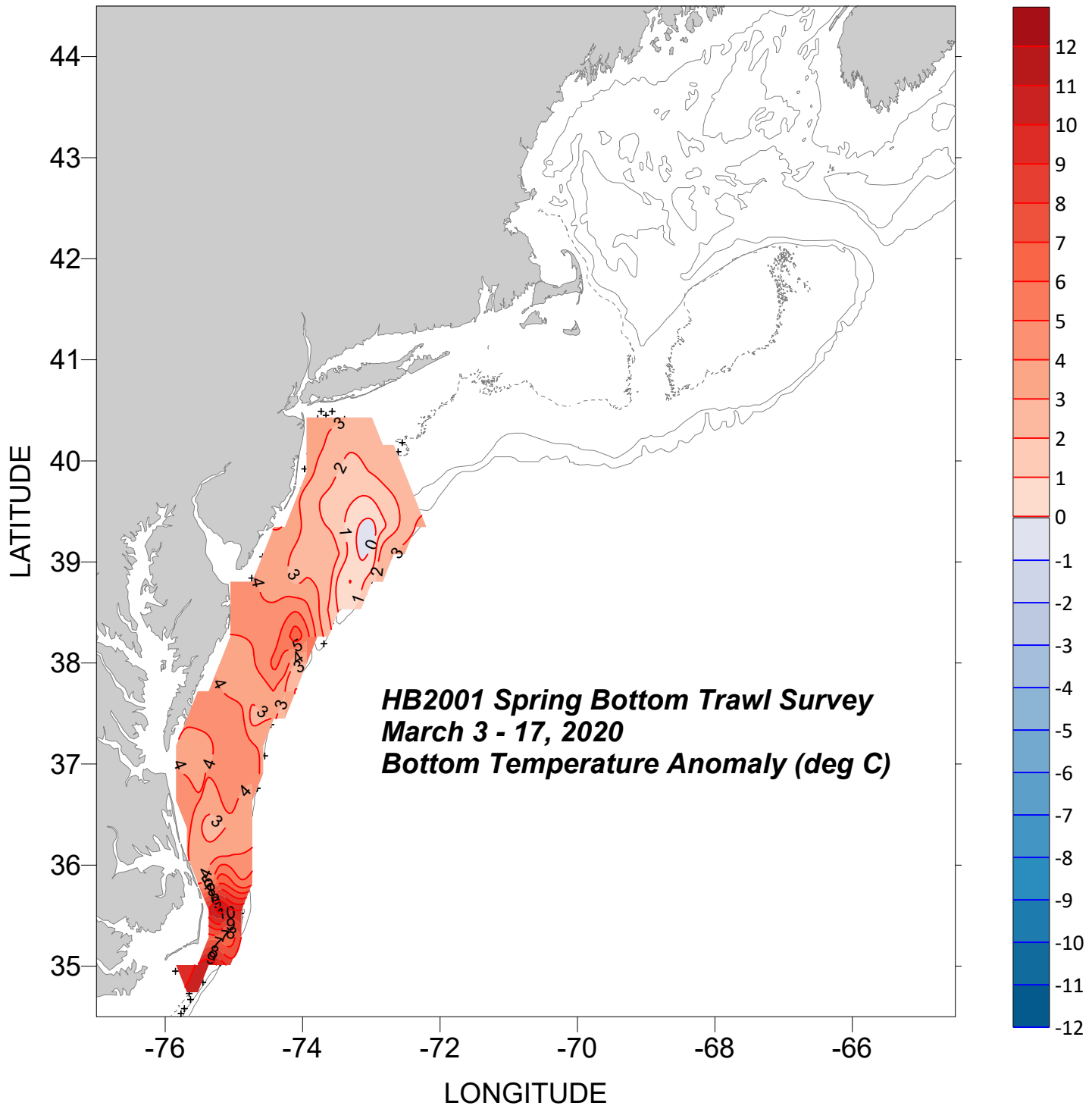


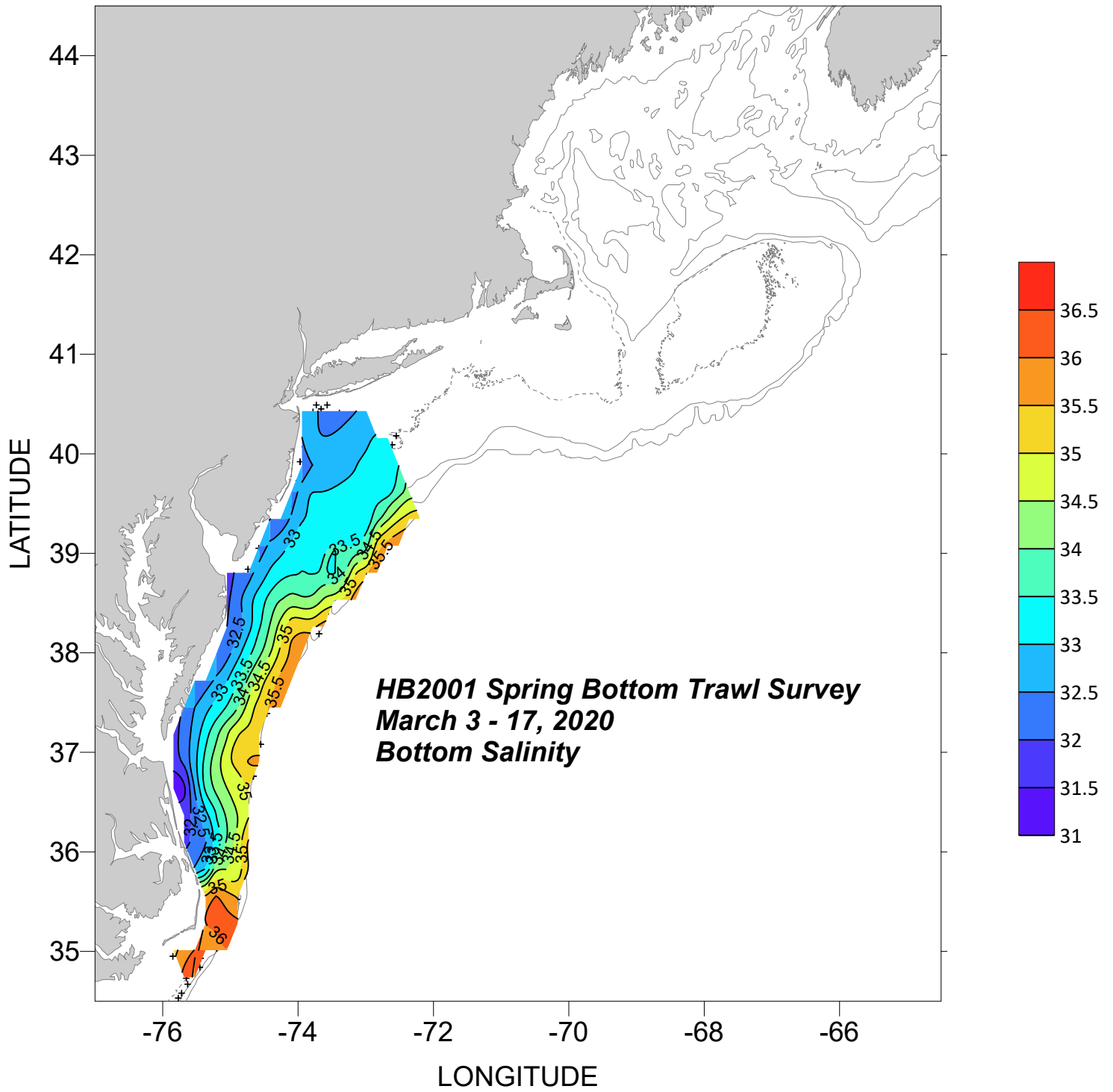


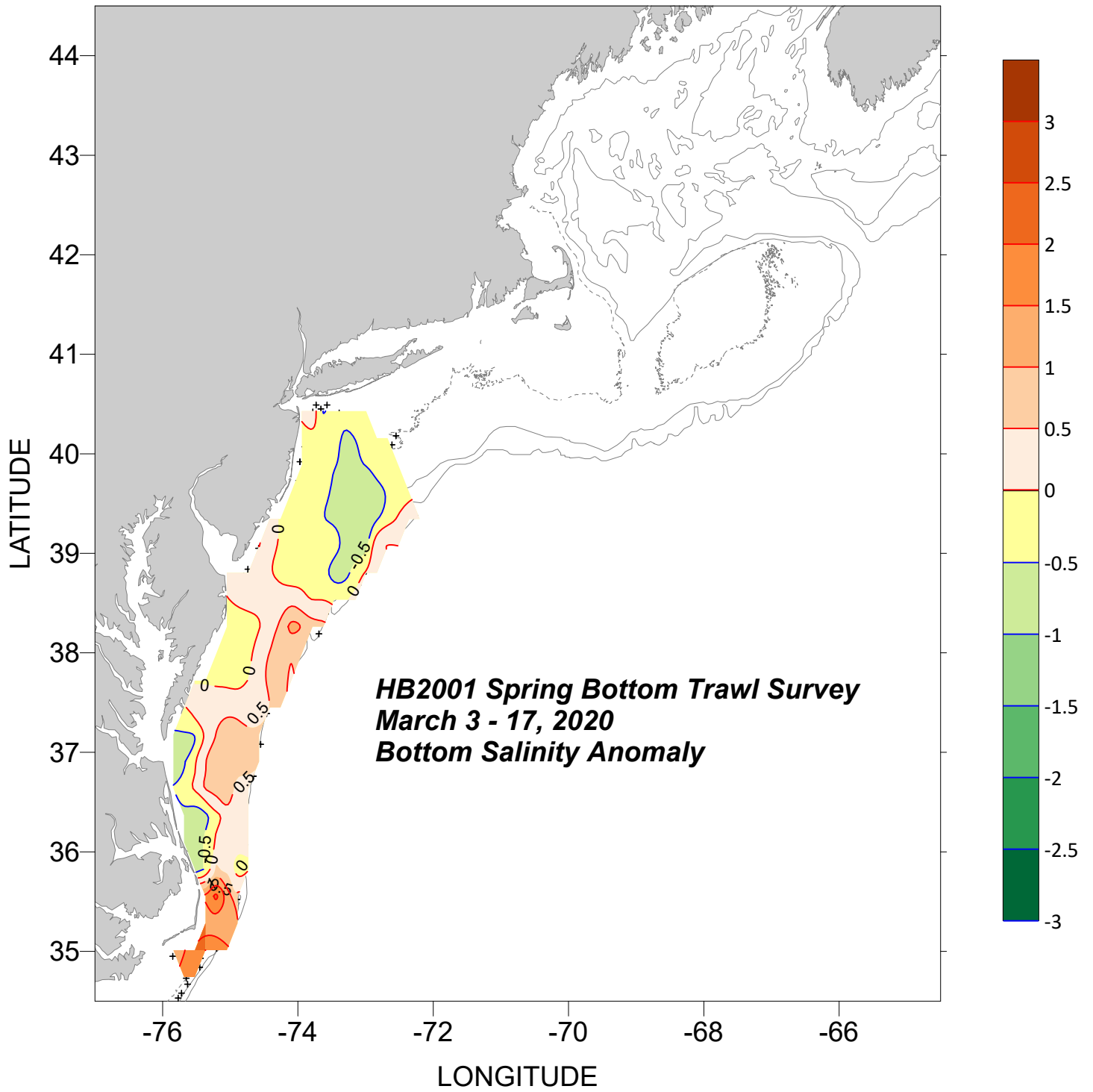












**HB2001 Spring Bottom Trawl Survey
March 3 - 17, 2020**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	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	2700	3823.5	7335.6	3	3	2020	19:04	156	9.66	33.83	14.40	35.75	5	W
2	2607	3811.2	7341.5	3	3	2020	23:33	260	10.98	34.37	12.30	35.61	8	V
3	2678	3817.2	7403.8	4	3	2020	3:30	66	9.74	33.92	14.13	35.49	3	V
4	2654	3831.3	7351.9	4	3	2020	6:57	56	8.73	33.70	9.70	34.00	3	V
1	2837	3825.2	7404.2	4	3	2020	10:35	60	9.33	33.85	11.56	34.65	13	B
5	2752	3834.9	7425.3	4	3	2020	13:59	43	7.83	33.32	8.27	33.60	7	W
6	2536	3819.5	7431.2	4	3	2020	16:52	40	7.75	32.60	8.88	33.62	6	V
2	2829	3808.2	7429.9	4	3	2020	19:03	41	8.75	33.37	9.23	33.84	4	B
3	2522	3805.2	7427.8	4	3	2020	20:30	42	8.84	33.45	9.48	33.89	4	B
4	2683	3755.8	7422.0	4	3	2020	22:39	61	10.40	34.12	12.42	34.96	4	B
7	2672	3801.9	7403.7	5	3	2020	1:35	108	10.46	34.14	14.15	35.73	2	V
8	2776	3757.6	7402.2	5	3	2020	3:16	128	11.26	34.45	14.36	35.73	3	V
9	2812	3753.0	7405.5	5	3	2020	4:54	182	11.09	34.39	13.78	35.75	7	W
10	2698	3744.3	7412.6	5	3	2020	7:19	138	10.70	34.23	13.87	35.75	5	V
5	2783	3738.6	7417.2	5	3	2020	9:07	118	10.76	34.28	14.29	35.73	5	B
6	2865	3732.8	7425.5	5	3	2020	10:58	94	11.30	34.51	14.08	35.63	9	W
11	2670	3732.3	7419.4	5	3	2020	13:27	201	11.35	34.54	13.47	35.75	9	V
12	2845	3729.7	7420.4	5	3	2020	15:39	266	12.57	35.00	11.39	35.49	5	V
13	2611	3729.3	7423.9	5	3	2020	18:48	108	12.09	34.80	14.02	35.60	7	V
14	2744	3723.3	7427.8	5	3	2020	20:23	242	12.45	34.96	12.34	35.61	1	V
15	2778	3705.0	7433.1	5	3	2020	23:27	451	11.91	34.77	8.20	35.21	5	V
16	2828	3645.6	7439.6	6	3	2020	3:30	159	13.12	34.90	13.80	35.69	6	V
17	2728	3645.4	7439.9	6	3	2020	5:10	130	13.06	34.88	14.04	35.67	5	V
18	2677	3649.4	7444.2	6	3	2020	7:13	81	13.10	34.90	13.90	35.62	6	V
7	2631	3705.4	7455.0	6	3	2020	9:47	48	11.09	34.44	12.97	35.31	6	B
8	2628	3720.8	7502.7	6	3	2020	12:40	37	9.08	33.80	9.14	33.84	5	B
9	2621	3728.2	7454.5	6	3	2020	15:09	30	9.00	33.58	9.27	33.88	8	B
10	2644	3729.9	7447.4	6	3	2020	16:55	55	8.99	33.56	10.73	34.46	3	B

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11	2614	3756.3	7503.9	6	3	2020	21:50	26	7.55	32.29	7.60	32.36	3	W
12	2585	3754.3	7503.9	6	3	2020	23:39	26	7.55	32.36	7.65	32.56	4	B
19	2528	3737.0	7523.9	7	3	2020	3:39	20	7.90	32.39	7.91	32.40	3	W
20	2715	3723.6	7529.9	7	3	2020	6:19	21	8.08	32.72	8.09	32.72	6	V
13	2787	3717.8	7529.9	7	3	2020	8:12	24	8.21	32.86	8.22	32.90	4	B
21	2645	3711.9	7532.1	7	3	2020	10:30	27	8.27	32.64	8.27	32.64	1	V
22	2722	3649.6	7543.9	8	3	2020	2:27	20	8.23	31.85	8.23	31.86	4	W
23	2625	3638.0	7541.9	8	3	2020	5:18	17	8.24	31.27	8.25	31.27	5	V
14	2832	3630.4	7541.2	8	3	2020	7:16	23	8.32	31.67	8.29	31.75	8	B
15	2832	3630.6	7541.4	8	3	2020	7:29	24	8.24	31.70	8.28	31.74	6	B
16	2844	3617.4	7534.6	8	3	2020	9:59	27	8.51	31.91	8.50	31.92	5	W
17	2858	3625.1	7519.5	8	3	2020	12:29	35	8.72	33.12	8.72	33.13	8	B
24	2842	3643.3	7521.9	8	3	2020	15:17	20	9.46	33.94	9.45	33.99	5	V
18	2863	3637.3	7459.4	8	3	2020	18:05	30	11.36	34.62	11.24	34.62	2	B
25	2862	3636.9	7452.0	8	3	2020	19:36	46	11.37	34.56	11.26	34.57	8	W
19	2556	3629.1	7457.7	8	3	2020	21:40	41	11.31	34.57	10.99	34.53	1	W
20	2765	3630.4	7447.8	9	3	2020	0:27	82	11.28	34.53	11.40	34.59	5	B
26	2785	3612.7	7448.1	9	3	2020	3:37	114	15.90	35.25	12.59	34.91	8	V
27	2538	3607.7	7447.2	9	3	2020	7:57	220	15.40	35.19	13.62	35.48	10	V
28	2771	3604.1	7447.0	9	3	2020	14:19	251	13.40	34.74	13.21	35.61	6	V
29	2726	3604.3	7447.3	9	3	2020	17:29	229	12.45	34.58	13.37	35.60	6	W
30	2623	3606.5	7450.8	9	3	2020	19:48	96	12.32	34.66	12.20	34.80	5	V
31	2849	3602.8	7501.2	9	3	2020	22:12	42	10.34	34.00	11.46	34.36	3	V
32	2816	3554.4	7454.3	10	3	2020	0:08	86	14.08	34.88	12.32	34.77	3	V
33	2748	3550.9	7452.7	10	3	2020	1:31	99	16.00	35.36	12.27	34.77	6	V
34	2791	3545.5	7451.0	10	3	2020	3:00	156	18.32	35.92	13.70	35.31	6	V
21	2595	3546.0	7455.1	10	3	2020	5:07	69	11.31	33.87	12.57	34.50	7	B
35	2710	3531.0	7454.0	10	3	2020	7:58	44	10.07	32.48	17.95	35.51	6	V

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36	2593	3522.3	7511.4	10	3	2020	10:47	31	21.45	36.27	21.47	36.27	6	V
37	2496	3515.0	7518.2	10	3	2020	12:35	25	20.87	36.22	20.86	36.22	7	V
38	2640	3506.6	7519.6	10	3	2020	14:45	35	21.92	36.43	18.99	35.95	4	V
39	2671	3457.2	7545.9	10	3	2020	18:25	28	18.57	35.68	18.66	35.77	3	W
40	2682	3456.7	7551.1	10	3	2020	20:04	23	16.49	35.22	16.84	35.38	4	V
41	2721	3443.5	7538.9	10	3	2020	23:04	60	NaN	NaN	19.80	36.19	4	V
42	2779	3434.5	7543.2	11	3	2020	1:20	140	NaN	NaN	19.00	36.30	1	V
43	2746	3431.7	7545.9	11	3	2020	3:03	136	24.91	36.46	19.42	36.34	2	V
44	2835	3428.1	7543.3	11	3	2020	4:48	330	24.32	36.47	10.49	35.36	1	V
45	2572	3440.2	7537.5	11	3	2020	7:59	158	24.82	36.47	14.81	35.97	7	V
46	2667	3450.4	7527.1	11	3	2020	11:05	167	23.14	36.46	14.48	35.93	4	V
47	2498	3456.1	7526.6	11	3	2020	13:27	75	21.48	36.41	17.32	36.26	6	W
48	2624	3502.0	7512.2	11	3	2020	15:53	286	21.40	36.40	11.75	35.54	5	V
49	2711	3505.9	7510.9	11	3	2020	18:10	131	21.47	36.42	18.11	36.32	2	V
50	2856	3518.3	7504.7	11	3	2020	20:53	34	20.61	36.37	20.32	36.38	6	V
22	2643	3530.1	7512.9	11	3	2020	23:49	33	14.07	32.17	19.77	36.11	6	B
23	2804	3538.2	7518.0	12	3	2020	1:49	25	12.02	32.16	20.29	35.99	3	W
51	2530	3546.5	7518.0	12	3	2020	3:26	34	11.09	31.86	19.10	35.65	4	V
52	2490	3548.9	7514.9	12	3	2020	4:53	35	11.46	32.63	14.30	34.31	7	V
53	2772	3552.2	7516.6	12	3	2020	6:27	22	11.01	31.65	11.22	33.33	6	V
54	2601	3547.4	7523.6	12	3	2020	8:07	29	10.30	31.53	10.85	32.75	6	V
24	2531	3559.6	7521.1	12	3	2020	9:58	23	10.32	30.62	9.20	32.40	7	B
25	2508	3602.0	7531.2	12	3	2020	11:52	26	9.77	31.51	9.00	32.28	8	B
55	2750	3600.3	7535.5	12	3	2020	13:21	24	9.67	31.21	8.85	32.01	4	W
56	2540	3809.6	7459.4	13	3	2020	3:48	24	8.14	32.08	7.61	32.40	6	V
57	2836	3822.2	7453.8	13	3	2020	6:10	21	7.87	31.72	7.51	31.92	4	V
58	2533	3827.6	7451.1	13	3	2020	7:39	20	7.57	31.49	7.28	32.36	4	V

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59	2839	3837.4	7448.6	13	3	2020	9:23	30	7.77	31.50	7.47	32.78	4	V
60	2502	3846.5	7447.8	13	3	2020	10:59	19	7.54	31.99	7.28	32.38	6	V
61	2825	3850.4	7444.7	13	3	2020	12:17	17	7.34	32.08	7.31	32.16	5	V
26	2668	3849.3	7433.3	13	3	2020	14:18	26	7.62	32.49	7.29	32.76	6	B
62	2817	3903.3	7434.7	13	3	2020	16:51	19	7.26	32.15	6.92	32.21	2	W
27	2534	3907.2	7427.4	13	3	2020	18:09	22	7.42	32.18	6.87	32.49	4	B
63	2861	3907.7	7424.1	13	3	2020	19:18	27	7.58	32.31	6.99	32.58	4	V
64	2666	3915.6	7418.5	13	3	2020	21:38	21	7.42	32.19	7.04	32.22	1	V
65	2684	3905.5	7359.5	14	3	2020	0:38	36	7.41	32.50	7.07	33.28	4	V
66	2784	3848.1	7406.7	14	3	2020	3:37	50	7.62	32.91	7.76	33.45	7	V
28	2774	3849.6	7356.3	14	3	2020	5:50	45	7.67	33.09	8.20	33.52	8	B
29	2810	3840.8	7342.4	14	3	2020	8:26	57	8.89	33.59	8.36	33.58	6	B
30	2707	3848.8	7335.2	14	3	2020	10:35	57	8.57	33.53	8.08	33.59	7	B
67	2754	3843.5	7324.5	14	3	2020	12:38	77	8.31	33.28	8.43	33.42	5	V
68	2732	3840.6	7306.4	14	3	2020	15:19	199	7.92	33.12	13.57	35.70	7	V
69	2499	3844.6	7308.4	14	3	2020	17:23	119	8.10	33.12	13.70	35.55	4	W
70	2563	3849.3	7259.5	14	3	2020	19:28	297	7.91	33.06	9.48	35.29	5	V
71	2695	3850.5	7256.3	14	3	2020	21:46	219	8.37	33.22	13.85	35.64	5	V
72	2494	3901.5	7301.3	15	3	2020	0:07	80	7.59	32.97	8.93	33.64	4	V
31	2712	3904.3	7248.8	15	3	2020	2:07	116	8.38	33.25	13.71	35.48	6	B
73	2725	3907.1	7248.5	15	3	2020	3:49	109	7.70	33.00	13.45	35.34	6	V
74	2501	3916.9	7237.4	15	3	2020	6:15	131	7.54	33.00	12.52	35.01	7	V
75	2516	3913.2	7229.7	15	3	2020	8:53	208	8.22	33.26	13.86	35.71	5	V
32	2594	3934.8	7239.0	15	3	2020	21:39	77	7.43	32.87	8.18	33.38	5	B
33	2821	3916.8	7258.0	16	3	2020	0:52	70	7.68	32.96	7.96	33.21	8	B
34	2641	3919.5	7309.1	16	3	2020	2:55	65	8.39	33.31	8.16	33.41	7	W
35	2729	3903.7	7332.4	16	3	2020	6:01	55	8.44	33.38	7.93	33.60	5	B
36	2518	3924.7	7341.5	16	3	2020	8:55	35	7.33	32.41	6.84	33.13	5	B

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79	2789	3921.1	7409.7	16	3	2020	11:42	20	7.39	31.70	6.64	32.48	3	V
37	2724	3928.0	7406.6	16	3	2020	13:08	20	7.21	31.96	6.64	32.10	6	B
80	2860	3930.7	7400.9	16	3	2020	14:30	23	NaN	NaN	6.33	32.80	2	V
81	2610	3938.7	7352.7	16	3	2020	16:12	29	NaN	NaN	6.59	32.99	6	W
82	2510	3944.1	7359.6	16	3	2020	17:43	22	6.89	32.11	6.88	32.09	2	V
83	2526	3955.0	7358.1	16	3	2020	19:26	22	NaN	NaN	7.01	31.97	4	V
38	2637	4003.9	7354.1	16	3	2020	21:44	24	7.12	32.22	6.73	32.43	6	B
39	2851	4012.1	7350.5	16	3	2020	23:26	25	6.91	32.14	6.72	32.81	4	B
40	2912	4025.1	7346.5	17	3	2020	2:24	34	6.94	31.99	6.83	32.99	3	W
84	2517	4021.9	7344.9	17	3	2020	3:43	26	6.82	31.83	6.78	31.93	4	V
85	2714	4020.4	7337.9	17	3	2020	5:12	28	NaN	NaN	6.48	32.31	5	V
86	2554	4029.3	7344.0	17	3	2020	7:19	26	6.96	31.74	6.81	32.15	4	V
87	2704	4026.8	7339.8	17	3	2020	9:21	24	6.85	31.76	6.70	32.08	5	V
88	2500	4029.3	7334.1	17	3	2020	10:38	23	6.74	31.96	6.75	31.96	4	V
89	2756	4024.5	7323.5	17	3	2020	12:13	31	6.39	32.20	6.39	32.19	4	V
41	2737	4011.4	7317.9	17	3	2020	14:18	41	6.72	32.47	6.37	32.77	5	B
42	2730	3959.6	7249.8	17	3	2020	17:49	53	7.99	33.25	7.72	33.27	8	W
43	2529	4005.2	7247.4	17	3	2020	19:20	53	7.89	33.22	7.70	33.26	10	B
44	2674	4005.1	7236.7	17	3	2020	21:43	57	7.88	33.21	7.73	33.23	8	W
45	2602	4010.7	7232.7	17	3	2020	23:13	62	7.82	33.20	7.57	33.25	5	B

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

Records in bold are collected with an SBE911+ CTD