

Oceans and Climate Branch CTD Data Report
CTD_REPORT_2022007HB

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DATE: 16 February 2023

Oceans and Climate Branch CTD Data Report

CTD_REPORT_2022007HB

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

HB 2207
Fall Bottom Trawl Survey
Data Coverage: September 11 – November 15, 2022
Mid Atlantic Bight, Georges Bank, Gulf of Maine

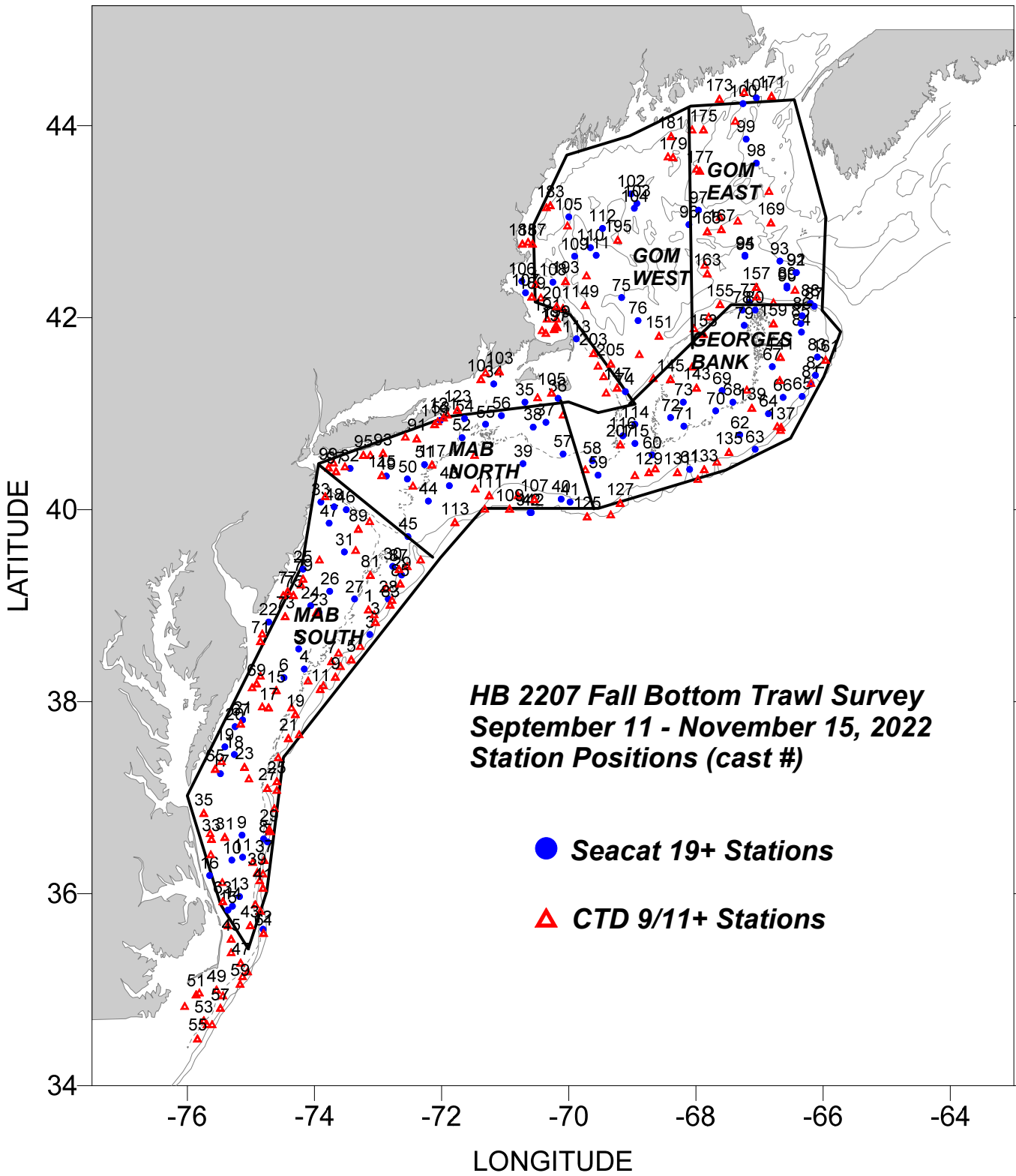
This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's HB2207 Fall Bottom Trawl Survey aboard the NOAA FSV *Henry B Bigelow*. Data was obtained with a Sea-Bird Electronics SBE Model 19+V2 profiling CTD (s/n 7142) during double oblique bongo tows and a SBE Model 9/11+ s/n 0832 during vertical casts. Sea water samples were taken for the purpose of calibrating salinity values. Dual SBE43 Dissolved Oxygen sensors were attached to the SBE9/11+ but malfunctions rendered the data unstable. A Biospherical Instruments Inc. QSP2300 PAR (Photosynthetically Active Radiation) sensor was attached to the SBE 9/11+.

An SBE19+V2 was deployed on 95 double oblique bongo casts, 5 vertical cast, and 15 water sampling casts. The SBE9/11+ was used successfully on 205 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 by contacting [Dr. Chris Melrose](#)

Revised: February 16, 2023



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the
HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

		SURFACE TEMPERATURE						BOTTOM TEMPERATURE					
Region	CD	#obs	Temp (°C)	Anomaly	SDV1	SDV2	Flag	#obs	Temp (°C)	Anomaly	SDV1	SDV2	Flag
WGOM	312	32	13.24	2.78	0.20	0.47	0	32	9.00	1.80	0.18	0.82	0
EGOM	310	30	13.88	2.72	0.17	0.31	0	28	9.72	1.53	0.21	0.95	0
GB	301	50	17.02	3.19	0.21	1.69	0	50	14.12	1.98	0.20	1.69	0
MABN	281	44	17.64	0.54	0.26	0.91	0	44	14.88	2.07	0.28	2.28	0
MABS	262	98	23.63	1.90	0.18	1.12	0	98	15.89	2.27	0.23	2.69	0

		SURFACE SALINITY						BOTTOM SALINITY					
Region	CD	#obs	Salinity	Anomaly	SDV1	SDV2	Flag	#obs	Salinity	Anomaly	SDV1	SDV2	Flag
WGOM	312	32	32.69	-0.02	0.08	0.13	0	32	33.68	0.11	0.05	0.20	0
EGOM	310	30	32.81	0.11	0.09	0.18	0	28	34.62	0.21	0.05	0.27	0
GB	301	50	33.29	0.47	0.07	0.75	0	50	33.68	0.33	0.07	0.52	0
MABN	281	44	32.86	0.20	0.12	0.53	0	44	33.42	-0.21	0.10	0.46	0
MABS	262	98	33.08	0.73	0.11	0.57	0	98	33.50	-0.16	0.08	0.44	0

"Region"; WGOM is the Western Gulf of Maine; EGOM is the Eastern Gulf of Maine; GB is Georges Bank; MABN is the northern Mid-Atlantic Bight; MABS is the southern Mid-Atlantic Bight;

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

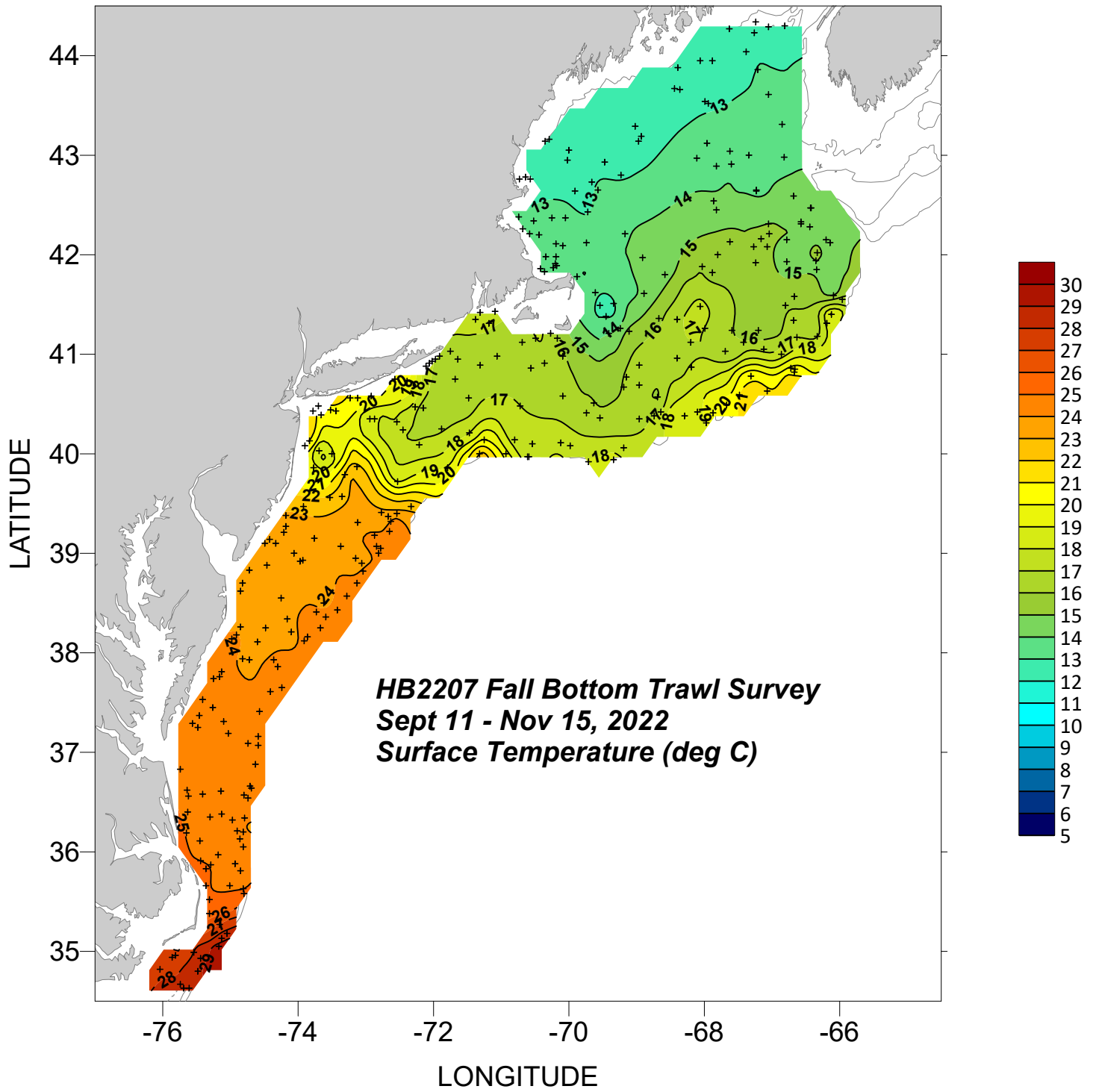
"#obs": the number of observations include in each average;

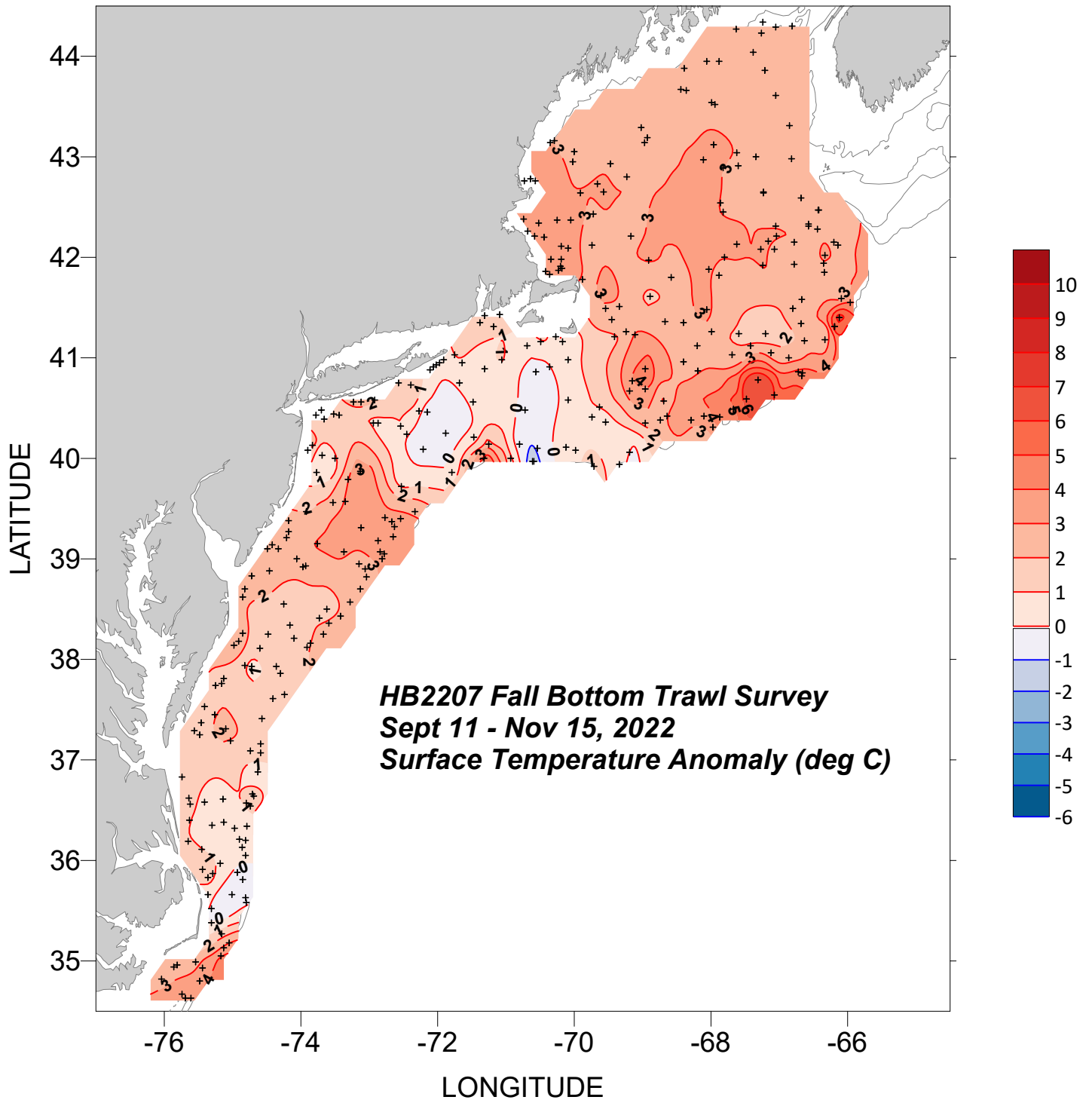
"Temp (°C)" and "Salinity": the areal averaged temperature or salinity; "Anomaly": the areal averaged temp/salt anomaly;

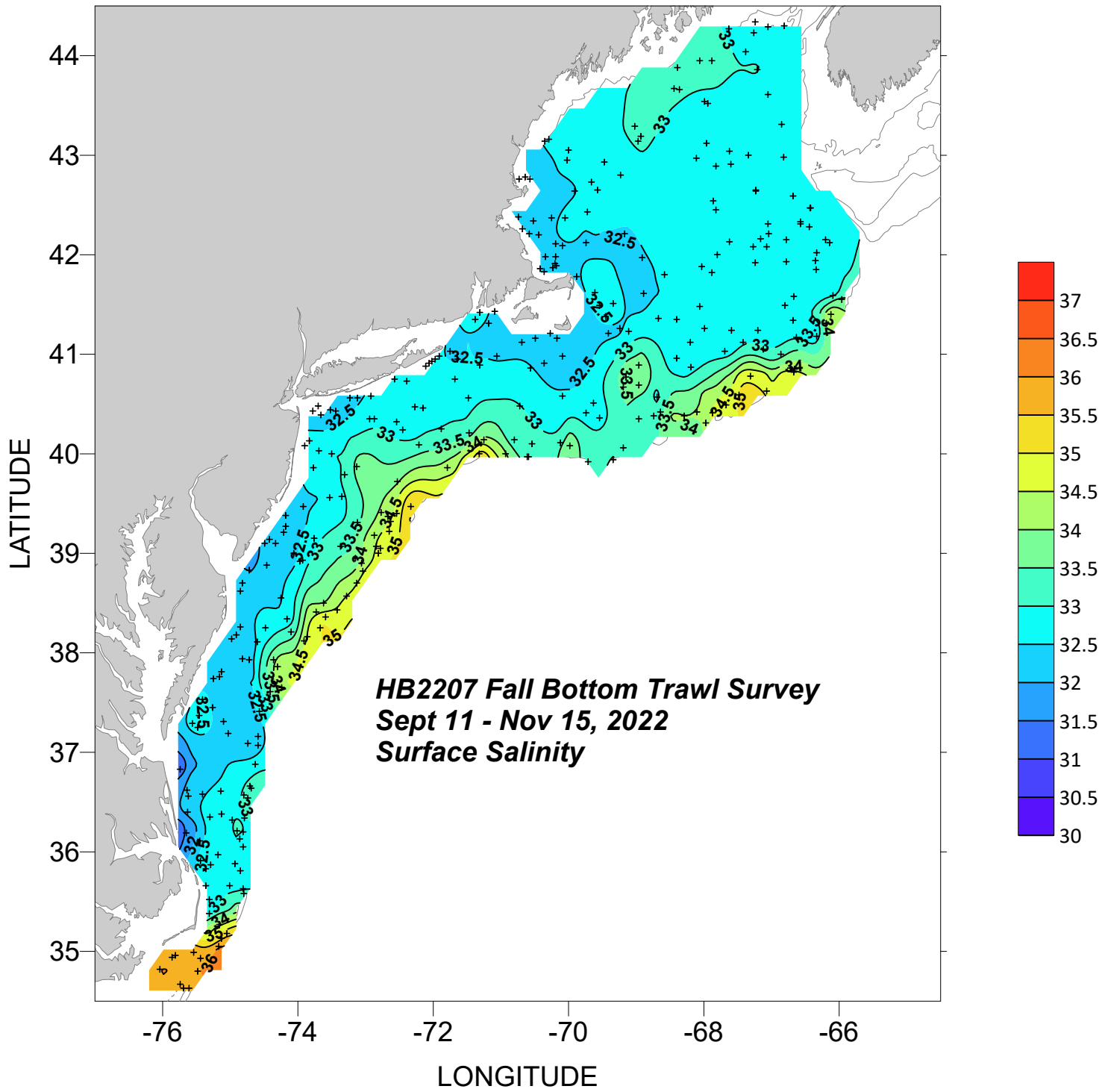
"SDV1": the standard deviation associated with the average temp/salt anomaly;

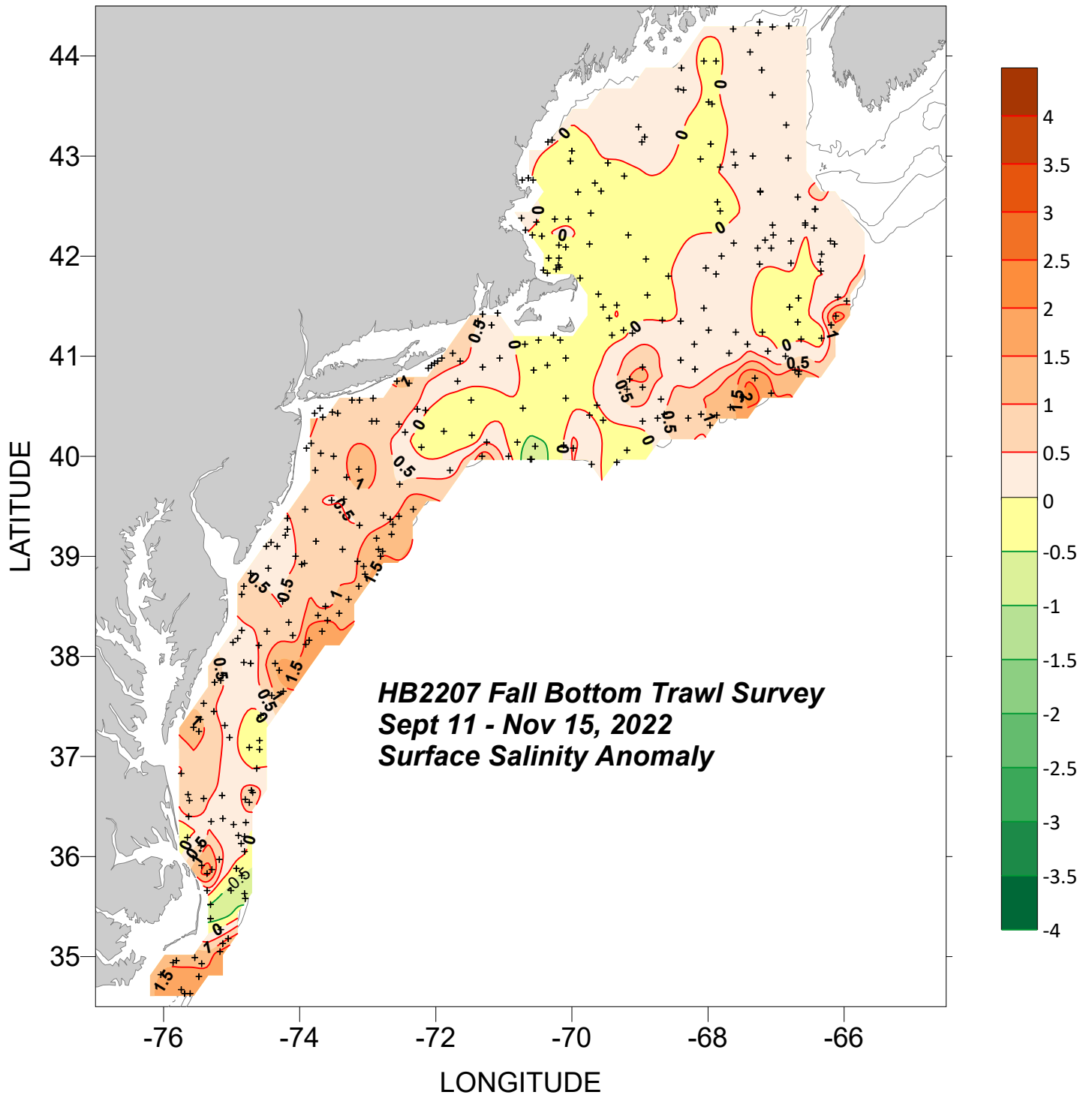
"SDV2": the standard deviation of the individual anomalies from which the average anomaly was derived;

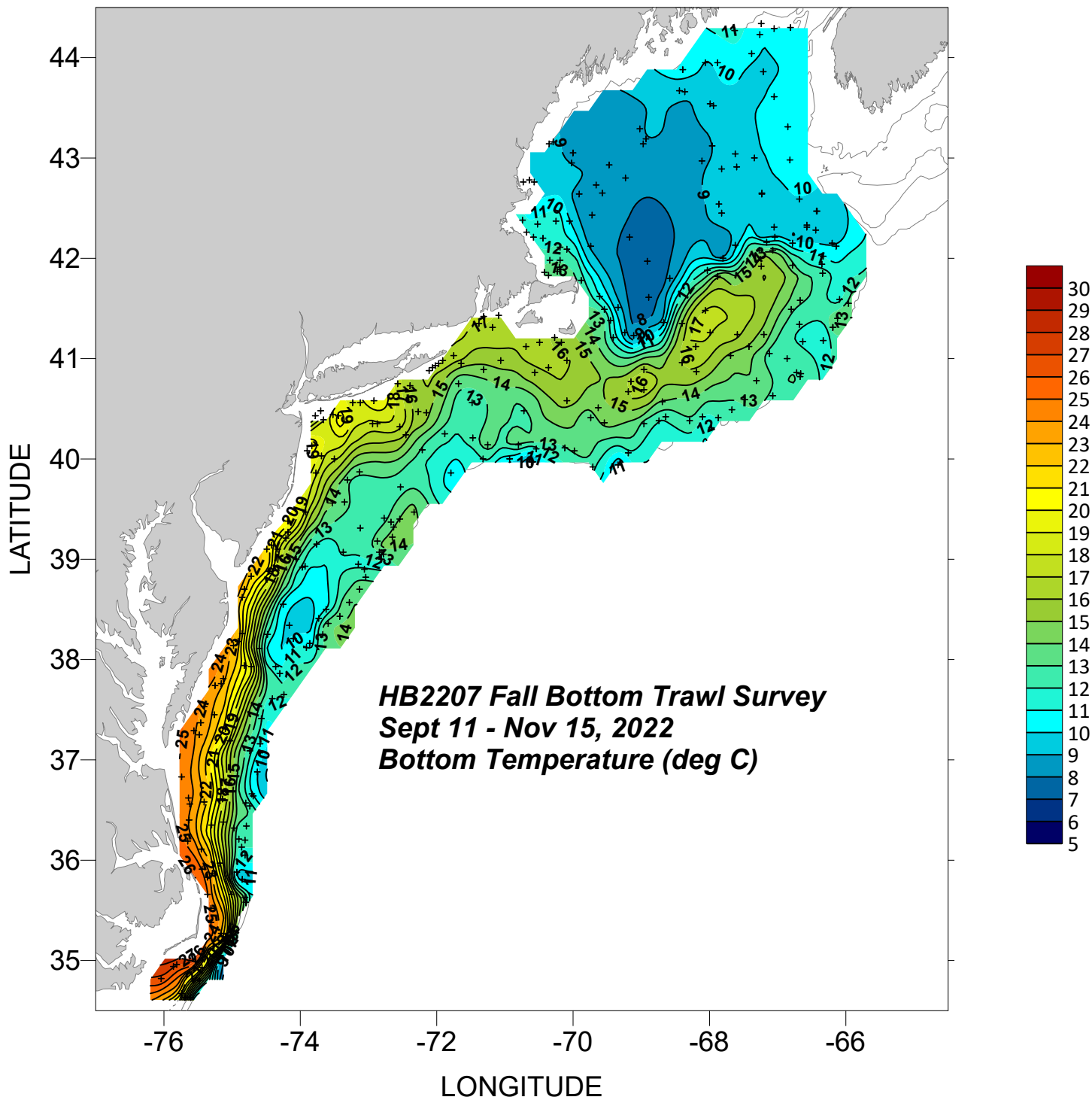
"Flag": a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

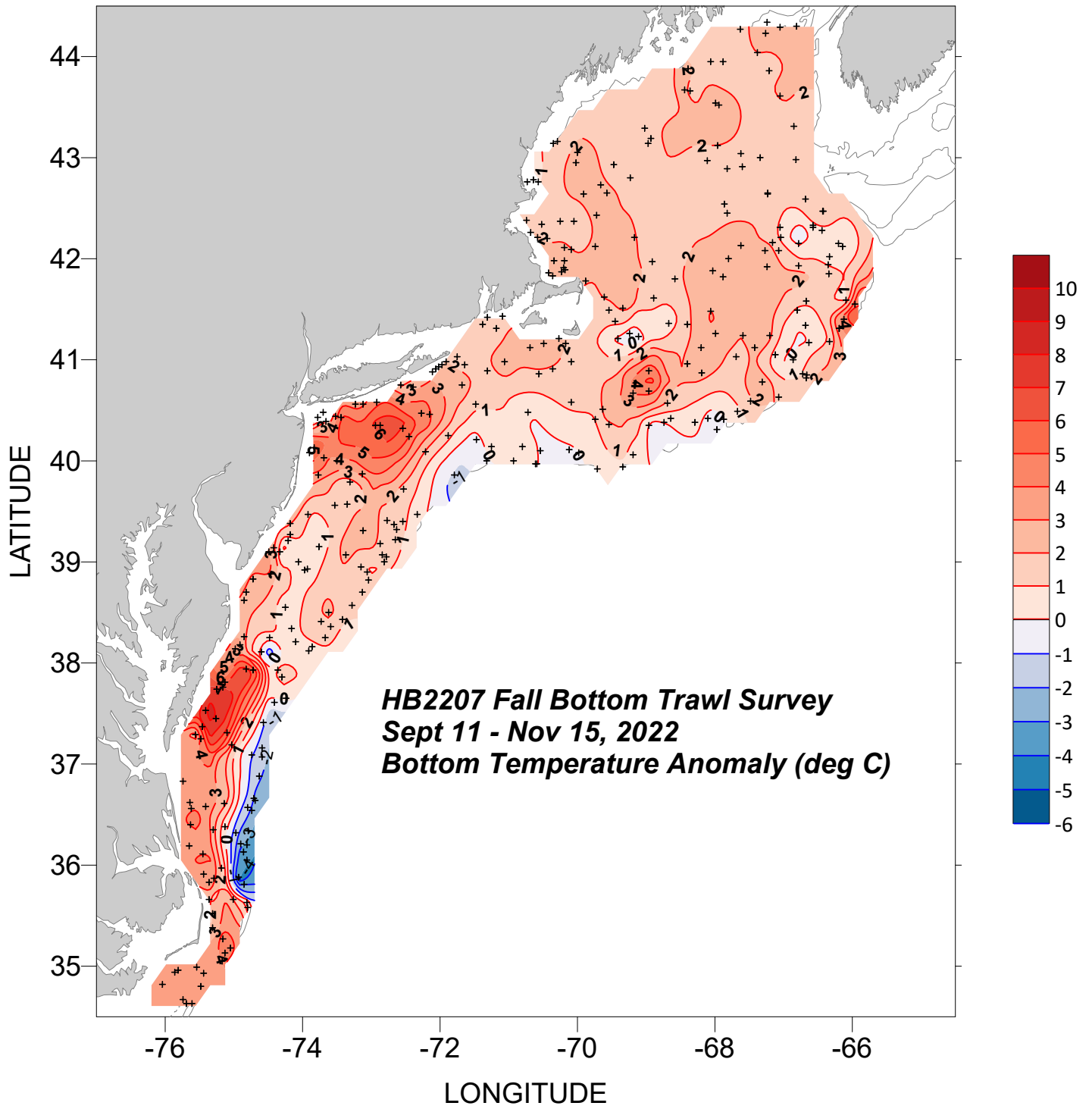


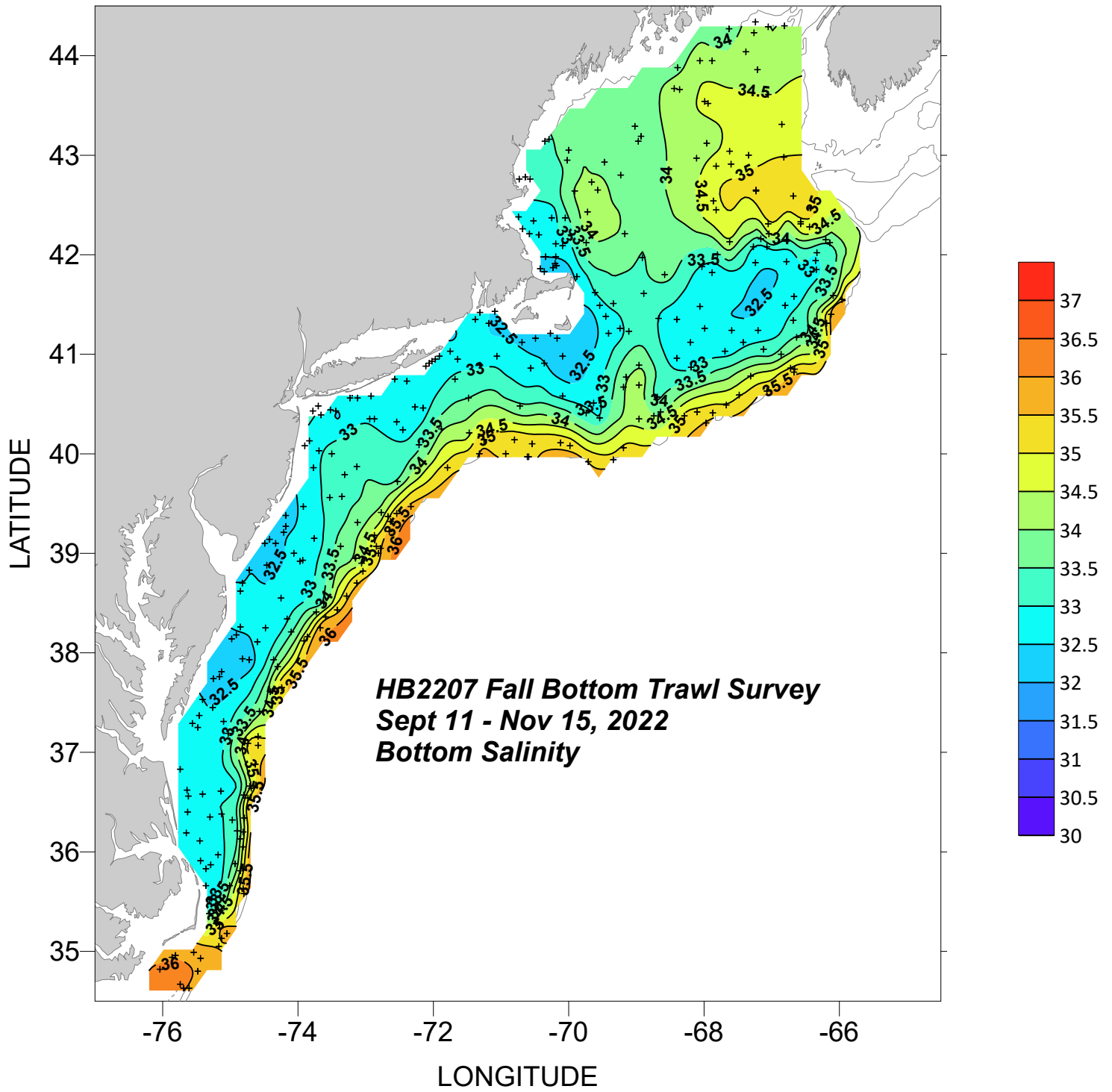


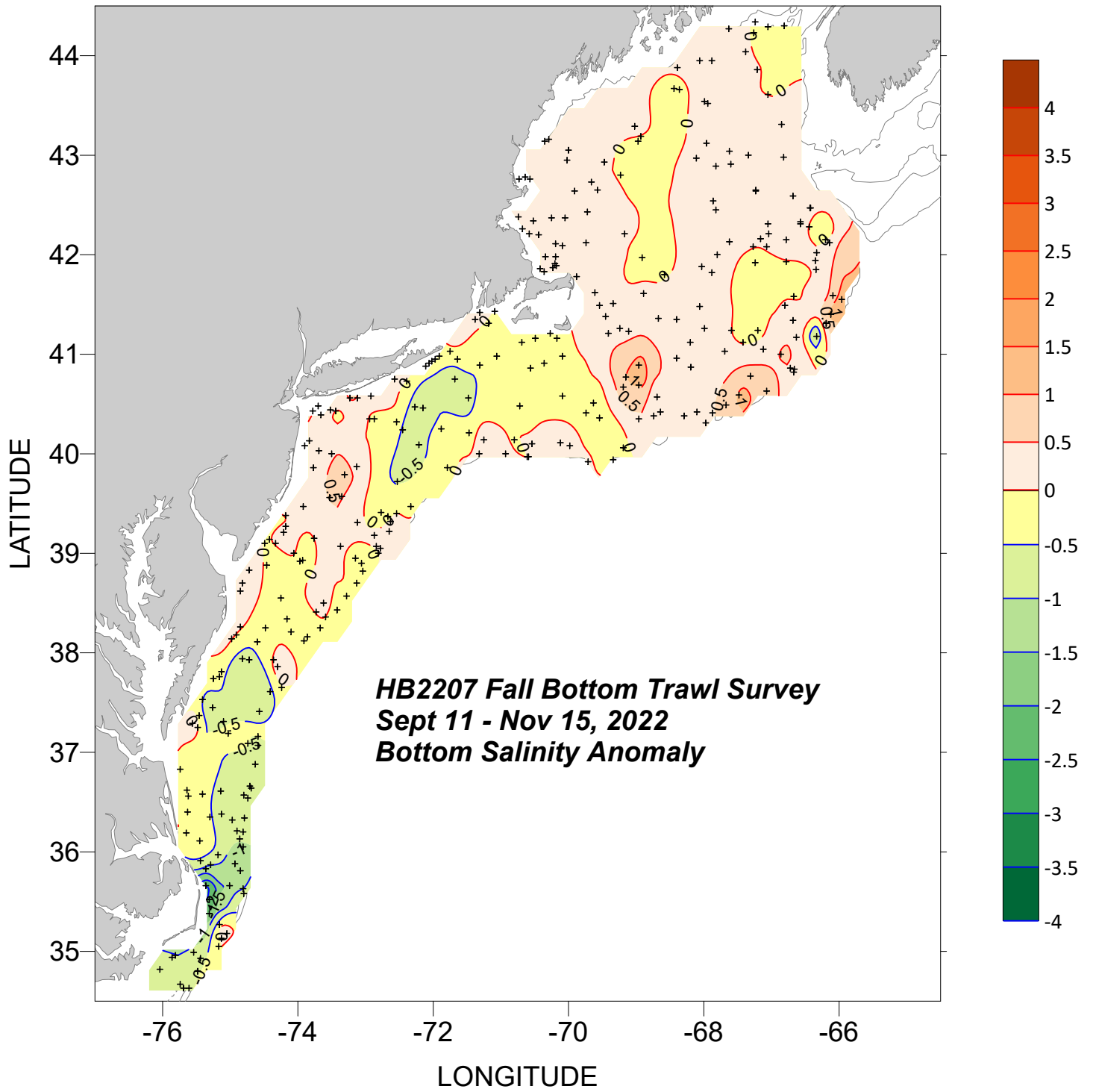












**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
1	4763	3857.1	7308.8	11	9	2022	10:49	80	23.70	33.59	11.62	33.94	4	V
2	4604	3854.1	7303.9	11	9	2022	13:19	84	23.47	33.96	11.44	33.97	5	V
3	4761	3848.9	7302.5	11	9	2022	16:05	116	24.34	34.73	13.47	35.18	3	V
3	4707	3842.0	7307.9	11	9	2022	20:01	143	23.94	34.33	13.73	35.52	4	B
4	4765	3834.1	7316.8	11	9	2022	23:31	128	25.10	34.71	13.86	35.52	2	W
5	4897	3825.7	7325.2	12	9	2022	1:31	112	24.21	34.47	13.58	35.25	3	V
6	4578	3830.2	7337.3	12	9	2022	4:07	72	23.45	33.91	10.85	33.59	6	V
7	4639	3824.4	7344.1	12	9	2022	6:02	81	24.47	34.98	10.70	33.61	5	V
8	4739	3821.8	7335.6	12	9	2022	8:36	142	24.85	34.91	13.95	35.68	5	V
9	4906	3814.8	7340.5	12	9	2022	10:53	140	24.94	34.99	13.92	35.58	5	V
10	4732	3809.7	7351.7	12	9	2022	14:07	342	24.30	34.59	8.61	35.22	8	V
11	4734	3807.3	7354.9	12	9	2022	17:59	118	24.50	34.45	13.38	34.91	3	W
12	4585	3812.8	7406.1	12	9	2022	20:27	62	23.27	32.86	9.69	33.23	7	W
4	4738	3820.5	7409.8	12	9	2022	22:13	55	24.29	32.56	9.70	32.87	3	B
5	4778	3833.0	7414.9	13	9	2022	0:14	46	23.58	32.44	10.34	32.71	4	B
6	4774	3815.2	7428.8	13	9	2022	3:16	38	23.57	32.94	11.64	32.58	4	B
15	4700	3806.4	7436.0	13	9	2022	5:17	32	23.56	32.34	12.20	32.63	3	V
16	4811	3756.5	7449.1	13	9	2022	7:25	35	23.94	32.18	20.34	32.26	4	V
17	4823	3755.8	7443.0	13	9	2022	9:18	32	23.70	32.14	19.79	32.24	5	V
18	4656	3755.7	7421.6	13	9	2022	13:02	63	24.21	34.18	9.77	33.21	7	V
19	4632	3751.3	7417.8	13	9	2022	14:45	71	24.38	34.35	11.79	34.06	5	V
20	4563	3738.9	7414.2	13	9	2022	17:11	201	24.61	34.43	12.70	35.58	2	V
21	4896	3736.3	7424.6	13	9	2022	20:14	86	24.55	33.45	11.57	34.02	5	V
22	4541	3724.4	7434.2	13	9	2022	22:15	86	24.11	32.41	10.78	33.76	5	W
23	4825	3718.7	7506.2	14	9	2022	1:34	32	24.38	32.33	21.17	32.65	6	V
24	4650	3711.5	7501.8	14	9	2022	3:08	33	24.39	32.46	15.70	32.78	5	V
25	4705	3709.3	7435.1	14	9	2022	6:09	102	24.47	32.16	12.13	34.42	5	V
26	4809	3703.9	7435.6	14	9	2022	7:50	348	24.41	32.21	9.30	35.23	1	V

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
27	4621	3705.2	7444.4	14	9	2022	10:22	174	24.21	32.09	12.59	35.47	3	V
28	4881	3652.6	7438.0	14	9	2022	14:21	300	23.97	32.75	9.67	35.28	5	V
29	4888	3639.3	7442.6	14	9	2022	17:29	126	24.52	33.18	11.61	34.16	4	V
30	4720	3638.5	7441.7	14	9	2022	19:16	316	24.71	33.31	8.93	35.21	1	V
7	4598	3632.2	7444.5	14	9	2022	22:09	178	24.76	33.34	13.58	35.40	4	W
8	4764	3634.1	7447.8	14	9	2022	23:45	62	24.39	32.95	9.90	32.97	4	B
9	4696	3636.4	7508.6	15	9	2022	2:12	32	24.22	32.52	18.82	32.87	7	B
31	4576	3634.5	7524.5	15	9	2022	4:17	21	24.28	32.57	23.48	32.65	5	V
32	4733	3624.2	7538.0	15	9	2022	6:22	21	24.79	32.60	23.89	32.86	5	V
33	4727	3633.4	7537.2	15	9	2022	8:02	27	24.80	32.06	24.02	32.87	3	V
34	4780	3637.2	7538.5	15	9	2022	9:12	17	24.65	32.48	24.25	32.80	4	V
35	4861	3649.9	7544.5	15	9	2022	11:48	20	24.90	30.96	24.67	32.55	6	V
10	4638	3621.1	7517.8	15	9	2022	22:00	31	24.38	32.53	19.14	32.96	5	B
11	4643	3622.5	7508.0	15	9	2022	23:45	36	24.28	32.59	16.73	33.13	4	W
36	4557	3619.4	7458.1	16	9	2022	1:49	42	24.27	33.05	14.48	33.27	5	W
37	4845	3620.1	7447.6	16	9	2022	3:27	120	23.75	32.91	13.28	34.91	2	V
38	4814	3611.7	7448.3	16	9	2022	5:31	111	23.81	32.77	11.86	34.22	4	V
39	4731	3612.7	7454.0	16	9	2022	7:00	69	24.45	33.11	11.10	33.13	5	V
40	4678	3608.0	7451.6	16	9	2022	8:51	90	24.48	33.06	9.90	33.18	6	V
41	4725	3603.0	7448.6	16	9	2022	10:35	128	24.25	32.86	13.96	35.11	8	V
42	4744	3552.9	7455.9	16	9	2022	13:37	70	24.48	32.84	9.90	33.28	4	V
43	4874	3539.7	7500.4	16	9	2022	15:58	49	24.75	33.01	18.29	33.49	6	V
44	4648	3539.8	7521.6	16	9	2022	18:46	27	25.05	32.66	25.01	32.65	5	V
45	4799	3531.5	7518.3	16	9	2022	20:39	24	25.13	32.29	25.06	32.48	5	W
46	4673	3522.6	7518.7	16	9	2022	23:24	25	25.03	32.64	25.17	33.10	5	V
47	4642	3516.5	7509.5	17	9	2022	1:30	35	26.14	33.91	27.60	35.34	5	V
48	4704	3508.1	7507.9	17	9	2022	3:52	153	29.54	35.94	17.48	36.13	4	V
49	4568	3459.2	7532.1	17	9	2022	8:18	42	28.12	36.05	28.04	36.02	5	V

HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
50	4769	3457.3	7548.3	17	9	2022	10:17	25	26.89	35.64	27.03	36.01	5	V
51	5127	3456.2	7551.9	17	9	2022	11:42	26	27.40	36.09	27.40	36.08	5	V
52	4726	3449.2	7602.4	17	9	2022	13:41	31	27.86	36.00	26.82	36.13	5	V
53	4559	3440.2	7544.2	17	9	2022	16:27	57	28.50	35.83	21.87	36.32	4	V
54	4694	3437.9	7541.4	17	9	2022	18:03	116	28.58	35.82	17.96	36.29	5	V
55	4892	3429.1	7550.5	17	9	2022	20:09	109	28.35	35.80	17.88	36.31	6	V
56	4545	3437.7	7536.6	17	9	2022	22:39	285	28.24	35.80	11.14	35.43	4	W
57	4626	3447.9	7528.7	18	9	2022	1:13	193	28.70	35.90	14.86	35.94	3	V
58	4535	3455.8	7526.5	18	9	2022	3:37	77	29.02	35.94	21.71	36.32	4	V
59	4721	3503.1	7510.0	18	9	2022	5:45	335	29.53	36.00	9.00	35.22	1	V
60	4856	3510.7	7503.2	18	9	2022	8:19	269	29.53	36.01	10.95	35.43	8	V
61	4658	3534.5	7447.8	18	9	2022	12:41	176	24.81	32.85	12.88	35.65	1	V
12	4597	3537.5	7448.7	18	9	2022	14:19	156	24.97	32.63	14.98	35.92	9	B
62	4773	3548.4	7451.0	18	9	2022	16:42	414	24.83	32.82	7.38	35.12	1	V
13	4551	3558.3	7510.8	18	9	2022	20:05	34	25.01	32.65	19.76	32.95	4	B
14	4661	3552.3	7517.1	18	9	2022	21:53	22	25.02	32.78	24.42	32.78	5	B
15	4767	3549.6	7521.3	18	9	2022	23:18	27	25.05	32.72	24.43	32.77	4	W
63	4876	3554.4	7526.6	19	9	2022	1:20	25	24.99	32.67	24.62	32.69	5	W
64	4723	3606.3	7527.3	19	9	2022	3:44	23	24.65	32.79	23.93	32.81	5	V
16	4795	3611.4	7539.2	19	9	2022	5:40	20	25.03	30.62	24.48	32.64	4	B
17	4882	3715.1	7528.9	19	9	2022	12:25	24	24.40	32.67	24.15	32.66	6	B
65	4565	3717.4	7533.8	19	9	2022	13:42	16	24.41	32.71	24.12	32.69	3	V
66	4866	3722.2	7527.4	19	9	2022	15:15	24	23.98	32.67	23.82	32.66	3	V
18	4895	3727.1	7515.4	19	9	2022	17:23	30	24.15	32.42	23.14	32.43	4	B
19	4907	3732.0	7524.4	19	9	2022	19:08	23	24.32	32.60	23.50	32.53	5	B
20	4602	3744.6	7514.8	19	9	2022	21:39	23	24.09	32.41	23.55	32.38	4	W
67	4770	3745.4	7509.9	19	9	2022	23:14	25	24.04	32.39	23.33	32.34	4	V
21	4538	3748.6	7507.7	20	9	2022	0:40	23	23.99	32.37	23.54	32.33	5	B

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Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
68	4594	3808.4	7458.7	20	9	2022	3:44	18	24.21	32.31	22.72	32.34	3	V
69	4735	3810.8	7454.4	20	9	2022	5:24	25	24.20	32.32	22.83	32.53	4	V
70	4810	3815.3	7451.0	20	9	2022	6:57	25	23.77	32.33	22.17	32.56	5	V
71	4614	3837.1	7450.8	20	9	2022	10:17	26	23.57	32.22	21.49	32.93	5	V
72	4586	3841.9	7449.2	20	9	2022	12:05	18	23.42	32.22	23.42	32.22	6	V
22	4782	3849.5	7443.1	20	9	2022	14:05	21	23.64	31.86	21.20	32.66	4	B
73	4603	3852.7	7427.8	20	9	2022	17:38	22	23.69	32.14	21.04	32.32	4	V
74	4829	3855.4	7358.3	20	9	2022	20:43	38	23.44	32.63	11.77	32.61	4	W
23	4867	3855.7	7355.6	20	9	2022	22:15	43	23.57	32.77	11.52	32.63	4	B
24	4787	3859.9	7403.3	20	9	2022	23:46	38	23.51	32.27	12.84	32.62	5	B
75	4653	3905.8	7419.8	21	9	2022	1:47	27	23.79	32.17	17.65	32.43	5	W
76	4663	3906.1	7429.3	21	9	2022	3:15	20	23.72	32.08	23.19	32.14	5	V
77	4623	3908.6	7425.4	21	9	2022	4:24	26	23.74	32.08	17.87	32.37	4	V
78	4746	3912.3	7412.9	21	9	2022	5:59	22	23.59	32.17	19.00	32.47	1	V
79	4870	3915.9	7411.0	21	9	2022	7:03	27	23.51	32.12	18.77	32.52	4	V
25	4865	3922.6	7410.9	21	9	2022	8:36	20	23.20	32.15	21.58	32.29	4	B
80	4805	3928.4	7355.1	21	9	2022	10:52	27	22.93	32.36	17.73	32.58	4	V
26	4834	3909.0	7345.8	21	9	2022	13:41	37	23.50	32.93	11.24	32.68	3	B
27	4622	3904.4	7322.4	21	9	2022	16:38	59	23.65	33.39	12.21	33.76	3	B
81	4903	3918.5	7307.1	21	9	2022	19:28	62	23.79	33.24	12.43	33.79	5	V
82	4812	3910.8	7252.4	21	9	2022	21:48	86	24.32	34.61	13.60	34.85	4	W
28	4573	3904.1	7250.1	21	9	2022	23:41	113	24.38	34.71	14.17	35.45	3	B
83	4875	3859.9	7248.8	22	9	2022	1:35	254	24.14	34.68	10.62	35.37	3	V
84	4577	3903.1	7246.6	22	9	2022	3:42	125	24.09	34.62	14.19	35.59	4	V
85	4813	3913.0	7239.0	22	9	2022	6:27	133	23.91	34.49	14.19	35.56	6	V
29	4645	3919.4	7237.6	22	9	2022	8:28	125	23.92	34.66	14.13	35.40	7	B
86	4873	3924.2	7232.1	22	9	2022	10:24	124	23.96	34.58	14.10	35.52	4	V
87	4901	3922.0	7240.4	22	9	2022	11:57	106	23.76	34.34	14.20	35.16	4	V

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September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
30	4686	3924.3	7246.4	22	9	2022	13:41	78	23.36	34.04	12.25	33.92	6	B
88	4815	3952.2	7307.9	22	9	2022	20:19	55	23.13	33.89	12.74	33.65	6	V
89	4672	3947.3	7318.6	22	9	2022	22:55	41	22.45	33.05	12.62	33.31	6	W
90	4549	3934.4	7321.2	23	9	2022	1:12	35	22.56	32.88	13.71	33.22	5	V
31	4902	3933.6	7332.0	23	9	2022	3:27	39	22.54	32.50	13.67	33.19	4	B
91	4570	4044.0	7223.6	24	9	2022	3:58	37	20.97	33.01	14.92	32.95	5	V
92	4685	4045.1	7234.1	24	9	2022	5:35	28	20.18	32.81	17.50	32.83	4	V
93	4887	4034.9	7255.5	24	9	2022	8:12	28	21.06	32.63	21.00	32.67	5	V
94	4613	4033.4	7307.0	24	9	2022	10:04	28	20.76	32.38	16.51	32.97	5	V
95	4741	4033.6	7314.1	24	9	2022	11:43	23	20.86	32.23	19.13	33.02	5	V
32	4802	4025.8	7326.3	24	9	2022	13:29	27	21.17	32.21	21.15	32.24	6	B
96	4666	4026.6	7331.4	24	9	2022	14:33	24	20.84	32.04	20.06	32.67	4	V
97	4752	4023.7	7339.5	24	9	2022	15:56	25	20.92	32.11	17.84	32.85	5	V
98	4574	4028.5	7342.3	24	9	2022	17:31	23	20.86	32.33	14.36	33.22	4	V
99	4580	4025.6	7346.7	24	9	2022	18:54	32	21.01	32.15	13.65	33.28	5	V
100	4803	4007.6	7350.0	24	9	2022	21:42	31	21.46	32.75	21.40	32.80	6	W
33	4536	4005.0	7353.9	24	9	2022	23:20	23	21.24	32.49	21.26	32.62	4	W
101	4628	4120.9	7122.7	7	10	2022	16:07	35	17.44	32.60	17.15	32.65	5	V
102	4691	4125.2	7118.5	7	10	2022	18:18	30	17.63	32.70	17.30	32.72	5	V
103	4710	4126.0	7105.4	7	10	2022	20:34	20	17.27	32.39	16.92	32.37	6	V
34	4556	4118.7	7110.8	7	10	2022	22:00	28	17.02	32.30	16.71	32.33	5	B
35	4784	4107.1	7041.5	8	10	2022	2:00	44	16.65	32.29	16.33	32.42	5	B
104	4714	4109.7	7029.6	8	10	2022	4:14	36	17.22	32.14	16.90	32.22	5	V
105	4640	4112.3	7016.4	8	10	2022	6:29	25	17.22	32.09	15.44	32.06	4	V
36	4762	4109.4	7010.4	8	10	2022	8:04	22	15.36	32.10	15.34	32.11	4	B
106	4588	4058.9	7005.6	8	10	2022	11:41	25	16.42	32.06	16.43	32.05	4	V
37	4886	4054.9	7021.6	8	10	2022	13:59	44	16.48	32.25	16.16	32.59	3	B
38	4596	4051.3	7033.5	8	10	2022	15:44	54	16.11	32.59	16.00	32.72	5	B

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
39	4793	4028.8	7043.5	8	10	2022	20:27	78	17.20	33.11	11.79	33.26	6	B
40	4751	4006.3	7007.4	9	10	2022	0:54	153	17.89	33.10	12.93	35.47	4	W
41	4835	4004.9	6958.9	9	10	2022	2:57	143	17.46	34.20	13.32	35.46	6	B
42	4537	3958.0	7035.3	9	10	2022	6:36	330	17.51	33.23	11.64	35.48	127	B
942	4537	3957.9	7036.3	9	10	2022	7:08	328	17.26	33.19	8.04	35.14	2	W
107	4817	4006.0	7032.6	9	10	2022	10:16	132	17.45	33.18	13.01	35.53	5	V
108	4775	4008.3	7048.2	9	10	2022	12:27	138	17.12	33.10	13.91	35.54	5	V
109	4715	4000.2	7056.0	9	10	2022	14:30	291	19.72	34.07	9.53	35.26	6	V
110	4617	3959.9	7119.3	9	10	2022	18:08	324	23.14	35.57	9.51	35.26	19	W
111	4561	4008.3	7114.9	9	10	2022	20:41	121	19.94	34.15	13.90	35.59	7	V
112	4852	4012.3	7128.3	9	10	2022	22:40	89	17.58	33.18	12.33	34.30	4	V
43	4669	4015.2	7152.9	10	10	2022	1:41	75	16.82	32.97	12.47	34.00	7	B
44	4708	4005.4	7212.6	10	10	2022	4:29	75	17.28	33.21	12.32	33.23	5	B
113	4668	3951.5	7147.3	10	10	2022	8:02	190	18.86	34.12	10.27	35.34	4	V
114	4816	3928.4	7219.7	10	10	2022	12:26	167	23.05	35.75	14.80	35.86	3	V
45	4627	3943.1	7231.5	10	10	2022	16:31	79	18.47	33.90	12.21	33.41	5	B
46	4900	3959.8	7329.8	10	10	2022	21:44	44	17.86	32.93	17.88	33.28	6	B
47	4804	3951.7	7346.0	11	10	2022	0:15	31	17.94	32.84	17.92	32.87	7	B
48	4750	4001.6	7341.2	11	10	2022	2:16	39	17.80	32.89	17.75	32.89	6	B
115	4792	4021.0	7256.4	11	10	2022	6:53	42	17.45	32.80	17.77	32.96	4	V
49	4592	4021.2	7252.4	11	10	2022	8:22	45	17.38	32.80	17.69	32.94	3	B
50	4729	4018.9	7232.1	11	10	2022	10:58	53	17.80	32.92	17.81	32.92	3	B
116	4616	4014.4	7227.0	11	10	2022	13:09	60	16.75	32.65	15.67	32.89	5	V
51	4644	4027.9	7215.9	11	10	2022	15:40	58	17.33	32.76	15.76	32.74	4	B
117	4713	4027.3	7208.9	11	10	2022	17:23	58	16.48	32.64	15.83	32.74	5	W
118	4703	4033.4	7128.7	11	10	2022	21:45	69	16.62	32.93	11.98	33.49	4	V
52	4637	4045.2	7140.8	11	10	2022	23:57	69	16.37	32.67	12.90	33.12	6	B
119	4730	4053.0	7206.5	12	10	2022	3:25	32	17.07	32.58	16.97	32.59	6	V

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
120	4893	4054.9	7203.9	12	10	2022	4:47	29	16.88	32.56	16.84	32.57	4	V
53	4635	4055.8	7200.9	12	10	2022	6:08	27	16.75	32.54	16.85	32.59	4	B
121	4684	4056.7	7158.0	12	10	2022	7:30	28	16.80	32.59	16.78	32.59	5	V
122	4665	4059.1	7154.8	12	10	2022	9:01	21	16.66	32.57	16.66	32.57	4	V
123	4587	4101.7	7144.8	12	10	2022	10:49	29	16.73	32.32	16.75	32.42	5	V
54	4839	4056.7	7138.6	12	10	2022	12:27	48	16.50	32.54	15.72	32.75	4	B
55	4759	4053.3	7118.5	12	10	2022	14:58	59	16.34	32.54	14.61	32.92	4	B
56	4857	4058.7	7103.9	12	10	2022	17:14	48	16.66	32.44	15.53	32.85	5	B
57	4847	4034.6	7005.2	12	10	2022	22:24	58	16.30	32.57	15.49	32.75	4	B
58	4850	4030.7	6937.7	13	10	2022	1:38	69	16.17	32.75	14.54	32.90	4	B
124	4749	4024.8	6944.2	13	10	2022	3:51	73	16.17	32.74	13.17	33.03	4	V
59	4550	4021.4	6932.3	13	10	2022	5:59	72	16.06	32.82	14.34	32.99	4	B
125	4531	3955.3	6942.8	13	10	2022	9:28	241	18.14	33.15	12.79	35.56	1	V
126	4868	3956.3	6920.7	13	10	2022	12:58	312	18.46	33.58	8.87	35.19	6	V
127	4830	4003.8	6911.2	13	10	2022	15:36	148	17.25	33.14	12.51	35.29	6	V
128	4905	4020.9	6857.6	23	10	2022	2:24	90	16.90	33.29	12.42	34.20	4	W
129	4891	4022.8	6844.2	23	10	2022	4:33	90	15.98	32.66	12.05	34.02	5	V
130	4608	4025.4	6838.7	23	10	2022	6:45	89	18.91	34.27	11.93	33.82	4	V
60	4679	4034.0	6841.4	23	10	2022	8:47	68	15.80	32.86	13.85	33.33	4	B
131	4883	4023.1	6817.5	23	10	2022	12:00	123	18.43	34.00	12.94	35.17	5	V
61	4862	4025.0	6805.8	23	10	2022	13:49	150	19.27	34.32	11.63	35.34	3	B
132	4599	4018.6	6758.2	23	10	2022	16:11	244	17.44	33.48	11.09	35.39	5	V
133	4768	4024.4	6752.2	23	10	2022	18:05	192	20.48	34.88	12.32	35.46	6	V
134	4796	4029.7	6740.1	23	10	2022	20:33	145	19.97	34.62	12.35	35.05	6	W
135	4848	4035.6	6728.8	23	10	2022	22:28	101	21.20	35.15	13.44	34.93	6	V
62	4589	4046.8	6718.3	24	10	2022	0:39	96	21.62	35.36	13.92	34.65	8	B
63	4841	4038.0	6704.1	24	10	2022	3:14	201	21.28	34.79	12.82	35.60	8	B
136	4785	4049.1	6640.2	24	10	2022	6:47	240	21.32	34.74	11.99	35.54	6	V

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
137	4654	4051.2	6639.7	24	10	2022	9:51	188	21.16	34.87	13.30	35.65	5	V
138	4846	4051.8	6643.0	24	10	2022	11:49	114	21.08	34.92	14.43	35.42	5	V
139	4575	4103.1	6707.2	24	10	2022	14:32	69	16.39	32.89	12.29	33.14	4	V
64	4863	4100.0	6651.9	24	10	2022	16:17	74	16.95	33.05	11.85	33.43	5	B
65	4791	4110.9	6619.6	24	10	2022	19:26	132	16.68	32.56	11.03	33.54	5	W
66	4719	4110.4	6637.7	24	10	2022	21:40	85	16.60	32.78	11.65	33.43	3	B
140	4542	4120.6	6640.6	24	10	2022	23:42	83	16.14	32.65	11.99	33.11	5	V
141	4872	4134.6	6640.3	25	10	2022	1:57	78	15.87	32.54	13.39	32.80	4	V
67	4709	4129.4	6647.7	25	10	2022	4:19	73	16.05	32.65	13.03	32.87	4	B
142	4728	4114.6	6712.0	25	10	2022	7:40	56	15.24	32.65	14.85	32.67	4	V
68	4567	4107.3	6725.2	25	10	2022	9:44	60	15.52	32.64	14.77	32.69	3	B
69	4595	4114.1	6735.2	25	10	2022	12:08	42	16.42	32.62	16.44	32.62	6	B
70	4566	4101.7	6741.3	25	10	2022	14:34	61	15.57	32.62	14.37	32.74	4	B
71	4789	4052.0	6811.4	25	10	2022	17:56	57	16.78	32.62	15.86	32.73	5	B
72	4797	4057.4	6824.0	25	10	2022	19:55	44	16.45	32.67	16.43	32.67	7	B
73	4543	4107.1	6812.0	25	10	2022	22:29	46	17.07	32.64	17.12	32.65	6	B
143	4736	4115.6	6759.7	26	10	2022	1:48	50	17.03	32.63	17.07	32.63	4	W
144	4662	4128.8	6803.5	26	10	2022	3:57	39	17.57	32.66	17.58	32.67	5	V
145	4828	4120.9	6823.9	26	10	2022	6:47	63	16.83	32.64	16.23	32.66	6	V
146	4624	4121.4	6840.0	26	10	2022	9:07	90	15.81	32.68	8.96	32.97	5	V
74	4772	4113.6	6906.9	26	10	2022	12:35	106	15.27	32.53	7.89	33.06	5	B
147	4675	4115.6	6914.6	26	10	2022	14:46	89	14.46	32.46	9.06	32.91	6	V
148	4889	4112.9	6924.9	26	10	2022	18:21	45	13.83	32.29	11.63	32.68	5	V
149	4600	4207.0	6944.6	2	11	2022	1:00	211	14.00	32.42	8.18	34.02	3	W
75	4807	4212.3	6910.1	2	11	2022	5:25	201	13.91	32.46	8.05	33.96	6	B
76	4619	4158.3	6854.8	2	11	2022	9:04	138	14.66	32.48	7.27	33.39	7	B
150	4634	4136.3	6853.4	2	11	2022	12:05	118	14.18	32.31	7.35	33.34	5	V
151	4842	4147.9	6834.5	2	11	2022	15:32	184	14.42	32.59	7.95	33.78	8	V

HB2207 Fall Bottom Trawl Survey
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Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
152	4758	4152.6	6801.9	2	11	2022	19:31	100	15.94	32.66	11.69	32.89	4	V
153	4740	4149.2	6753.0	2	11	2022	21:45	43	15.52	32.68	15.54	32.68	5	V
154	4579	4200.1	6748.1	3	11	2022	0:33	104	15.68	32.68	7.96	33.19	4	V
155	4548	4207.8	6737.3	3	11	2022	3:32	174	15.47	32.67	9.25	34.80	2	W
77	4864	4209.7	6709.6	3	11	2022	6:33	110	15.38	32.67	8.87	33.10	8	B
78	4534	4204.5	6716.4	3	11	2022	8:24	51	15.02	32.70	15.04	32.70	8	B
79	4800	4155.4	6714.3	3	11	2022	10:46	57	15.89	32.65	15.90	32.65	6	B
80	4869	4204.6	6704.1	3	11	2022	13:08	58	15.07	32.68	14.95	32.68	4	B
156	4776	4212.8	6702.4	3	11	2022	15:26	203	15.39	32.68	9.60	35.10	6	V
157	4688	4218.6	6702.7	3	11	2022	17:37	291	15.11	32.59	9.15	35.15	2	V
158	4674	4209.1	6646.9	3	11	2022	20:40	105	15.17	32.61	9.12	33.06	5	V
159	4826	4155.6	6646.7	3	11	2022	23:41	65	14.26	32.71	14.28	32.71	4	W
160	4649	4118.5	6611.2	4	11	2022	5:32	180	19.08	34.43	13.83	35.56	6	V
81	4552	4118.4	6611.2	4	11	2022	7:25	176	18.09	34.16	13.03	35.60	7	B
82	4680	4123.9	6607.0	4	11	2022	10:00	137	19.34	34.60	14.12	35.62	7	B
161	4569	4133.1	6557.6	4	11	2022	12:41	153	16.15	33.52	13.94	35.63	7	V
83	4664	4135.7	6605.6	4	11	2022	15:01	97	14.27	32.66	10.94	33.62	6	B
84	4788	4150.9	6620.7	4	11	2022	17:55	85	14.82	32.61	12.66	32.84	5	B
85	4884	4156.4	6621.2	4	11	2022	19:47	86	14.97	32.67	11.94	32.88	4	B
86	4771	4201.5	6619.7	4	11	2022	21:44	81	15.17	32.65	11.00	32.95	3	B
87	4711	4207.0	6608.3	5	11	2022	0:15	100	14.74	32.59	10.14	33.25	4	B
88	4618	4209.1	6612.0	5	11	2022	2:22	172	14.55	32.61	9.07	33.89	5	W
162	4801	4216.6	6626.6	5	11	2022	5:18	261	14.74	32.59	9.06	35.14	9	V
89	4781	4219.6	6634.0	5	11	2022	7:37	294	14.60	32.60	9.17	35.14	93	B
90	4781	4218.9	6634.3	5	11	2022	8:03	287	14.61	32.60	9.02	35.15	5	V
91	4583	4228.2	6625.2	5	11	2022	12:21	263	14.67	32.85	9.39	35.11	61	B
92	4583	4228.0	6625.8	5	11	2022	13:01	264	14.65	32.85	9.38	35.11	7	V
93	4745	4235.5	6640.8	5	11	2022	15:37	208	14.10	32.72	10.12	35.17	3	V

HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
94	4581	4239.0	6713.8	5	11	2022	19:04	272	13.74	32.86	9.42	35.11	70	B
95	4581	4238.3	6714.1	5	11	2022	19:26	275	13.72	32.86	9.32	35.14	6	V
163	4890	4226.8	6749.4	6	11	2022	0:59	210	14.24	32.60	9.78	34.98	4	W
164	4697	4232.6	6751.9	6	11	2022	2:59	226	14.07	32.65	9.67	35.03	3	V
165	4786	4253.7	6749.1	6	11	2022	6:37	211	13.84	32.72	9.46	34.73	6	V
96	4899	4258.3	6806.7	6	11	2022	9:49	154	13.74	32.73	8.92	34.29	8	B
97	4747	4307.2	6757.6	6	11	2022	12:42	188	13.86	32.70	8.81	34.16	6	B
166	4838	4302.1	6737.1	6	11	2022	15:44	190	13.85	32.73	9.52	34.67	8	V
167	4625	4254.3	6736.1	6	11	2022	17:46	214	13.92	32.74	9.59	34.91	3	V
168	4584	4259.8	6720.2	6	11	2022	20:46	235	13.46	32.91	9.73	34.80	3	V
169	4844	4258.8	6649.3	7	11	2022	1:23	171	13.92	32.87	10.95	35.00	3	V
170	4612	4318.9	6651.2	7	11	2022	4:39	185	13.18	32.94	10.55	34.75	5	V
98	4766	4336.9	6702.9	7	11	2022	8:06	192	13.11	32.91	10.45	34.46	7	B
99	4652	4351.8	6712.9	7	11	2022	11:36	171	13.04	33.02	9.35	34.43	4	B
100	4858	4413.5	6715.6	7	11	2022	16:55	188	12.76	32.90	9.94	34.57	3	W
101	4540	4417.6	6703.1	7	11	2022	19:30	120	12.77	32.82	11.06	33.85	4	B
171	4601	4418.3	6648.8	7	11	2022	21:48	188	12.65	32.74	10.27	34.18	2	V
172	4699	4420.7	6714.2	8	11	2022	2:55	156	12.71	32.99	10.43	34.25	2	V
173	4760	4416.2	6737.5	8	11	2022	6:28	107	12.35	32.98	11.61	33.49	1	V
174	4833	4402.3	6723.0	8	11	2022	9:13	163	NaN	NaN	10.22	34.35	9	V
175	4851	4356.7	6753.0	9	11	2022	0:35	143	12.21	33.05	10.24	34.24	4	V
176	4593	4357.0	6803.3	9	11	2022	3:30	174	12.21	33.05	9.72	34.36	3	V
177	4822	4331.2	6756.5	9	11	2022	7:13	243	12.73	32.97	9.75	34.68	6	V
178	4822	4332.4	6759.4	9	11	2022	12:47	225	12.72	32.96	9.75	34.68	7	V
179	4562	4339.3	6821.9	9	11	2022	14:49	188	12.24	33.04	8.75	34.19	6	V
180	4821	4340.4	6826.6	9	11	2022	18:12	185	12.25	33.02	9.06	34.23	3	W
181	5002	4352.8	6823.7	9	11	2022	21:38	120	12.25	33.01	11.09	33.78	4	V
102	4629	4317.2	6900.9	10	11	2022	4:23	165	12.60	33.07	8.54	33.72	4	W

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
103	4885	4311.5	6856.0	10	11	2022	6:26	159	12.53	33.08	9.32	33.72	6	B
104	4560	4308.6	6858.2	10	11	2022	8:54	182	12.49	33.10	8.55	33.65	7	W
182	4722	4257.2	7001.2	10	11	2022	18:11	100	12.54	32.60	10.01	33.40	5	V
105	4798	4303.3	7000.1	10	11	2022	20:10	156	12.48	32.52	8.08	33.96	3	B
183	4553	4309.9	7017.3	10	11	2022	23:11	121	12.66	32.53	9.28	33.44	3	V
184	4988	4308.6	7021.0	11	11	2022	3:40	96	12.53	32.52	9.96	33.39	5	V
185	4572	4245.8	7043.6	11	11	2022	7:28	29	12.63	32.30	10.89	33.12	6	V
186	4790	4247.0	7038.7	11	11	2022	9:56	73	12.60	32.40	9.06	32.97	4	V
187	4943	4245.7	7034.1	11	11	2022	11:26	90	12.69	32.35	8.65	33.04	3	W
106	4690	4222.6	7044.3	11	11	2022	16:50	45	13.09	32.25	10.97	32.78	3	B
107	4647	4215.6	7040.6	11	11	2022	19:00	28	13.12	32.25	11.36	32.66	4	W
188	4855	4220.1	7031.3	11	11	2022	21:59	92	13.20	32.30	11.22	33.01	3	V
189	4755	4212.8	7034.8	12	11	2022	0:48	34	13.19	32.23	11.93	32.47	5	V
190	4607	4149.7	7021.4	12	11	2022	16:46	18	13.87	32.12	13.87	32.12	5	V
191	4659	4158.9	7020.5	12	11	2022	18:40	48	13.46	32.32	12.48	32.71	4	V
192	4818	4211.9	7026.6	12	11	2022	21:11	65	13.53	32.28	11.13	32.79	4	W
108	4717	4222.1	7015.1	12	11	2022	23:53	48	13.28	32.42	12.26	32.68	4	B
193	4620	4222.0	7002.7	13	11	2022	1:43	96	13.28	32.59	9.57	33.38	5	V
194	4610	4226.0	6943.2	13	11	2022	4:33	270	12.84	32.60	8.52	34.25	6	V
109	4615	4238.4	6954.5	13	11	2022	7:28	195	12.70	32.42	8.36	34.15	7	B
110	4611	4243.8	6939.3	13	11	2022	10:32	278	12.95	32.69	8.73	34.33	6	W
111	4657	4238.9	6934.3	13	11	2022	12:57	271	13.09	32.67	8.65	34.32	5	V
112	4820	4255.8	6928.0	13	11	2022	15:51	157	12.87	32.79	7.87	33.57	6	B
195	4716	4247.9	6913.9	13	11	2022	18:33	143	12.87	32.71	8.12	33.47	3	V
196	4753	4151.7	7025.0	14	11	2022	3:39	27	13.63	32.10	13.60	32.12	4	W
197	4555	4152.0	7013.9	14	11	2022	5:32	28	13.59	32.11	13.61	32.12	5	V
198	4636	4153.3	7010.8	14	11	2022	6:58	25	13.75	32.11	13.75	32.10	5	V
199	4646	4154.9	7011.9	14	11	2022	8:38	33	13.53	32.16	13.54	32.16	5	V

**HB2207 Fall Bottom Trawl Survey
September 11 - November 15, 2022**

Cast #	Site ID #	Lat (DDMM.M)	Long (DDMM.M)	Day	Mo	Year	Time (GMT)	Btm Depth (m)	Sfc Temp (° C)	Sfc Salt	Deepest Observed Temp (° C)	Deepest Observed Salt	Meters from Bottom	Method of Deployment
200	4871	4158.9	7011.1	14	11	2022	10:23	34	13.64	32.05	13.10	32.51	5	V
201	4693	4206.3	7011.7	14	11	2022	12:47	55	12.74	32.48	11.71	32.95	7	V
202	4676	4205.2	7005.2	14	11	2022	16:21	33	12.74	32.52	12.74	32.52	6	V
113	4819	4146.7	6953.0	14	11	2022	21:39	29	12.71	32.54	12.73	32.54	5	B
203	4854	4137.1	6936.7	15	11	2022	0:08	64	13.09	32.57	10.72	33.11	4	V
204	4827	4129.3	6932.6	15	11	2022	3:23	34	12.93	32.55	12.72	32.65	4	V
205	4633	4130.7	6920.1	15	11	2022	6:06	91	12.81	32.66	9.14	33.19	5	V
206	4641	4122.9	6927.2	15	11	2022	8:31	35	12.30	32.69	12.31	32.70	3	V
114	4591	4053.5	6857.4	15	11	2022	14:00	71	16.71	34.07	16.74	34.11	6	B
115	4564	4041.3	6857.4	15	11	2022	16:58	68	16.74	33.90	17.34	34.39	4	B
116	4532	4046.0	6909.2	15	11	2022	20:10	72	16.09	33.87	16.28	33.95	4	W
207	4824	4040.5	6911.3	15	11	2022	21:37	66	15.84	33.73	16.42	34.03	4	W

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

Records in bold are collected with an SBE911+ CTD