

*Oceanography Branch CTD Data Report
Fall Bottom Trawl Survey Calibration - HB 08-07*

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DATE: September 4 – November 8, 2008

Oceanography Branch CTD Data Report

CTD_REPORT_2008007HB

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

HB 08-07
Fall Bottom Trawl Survey Calibration
Data Coverage: September 4 – November 8, 2008
Northeast Shelf

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's 2008 Fall Bottom Trawl Survey Calibration cruise aboard the NOAA FRV *Henry B. Bigelow*. All data was obtained with a Seabird Electronics SBE Model 19 profiling CTD (s/n 4759). Data from the NEFSC 2008 Spring Bottom Trawl Survey and Survey Calibration cruise aboard the NOAA FRV *Albatross IV* has been included in this report.

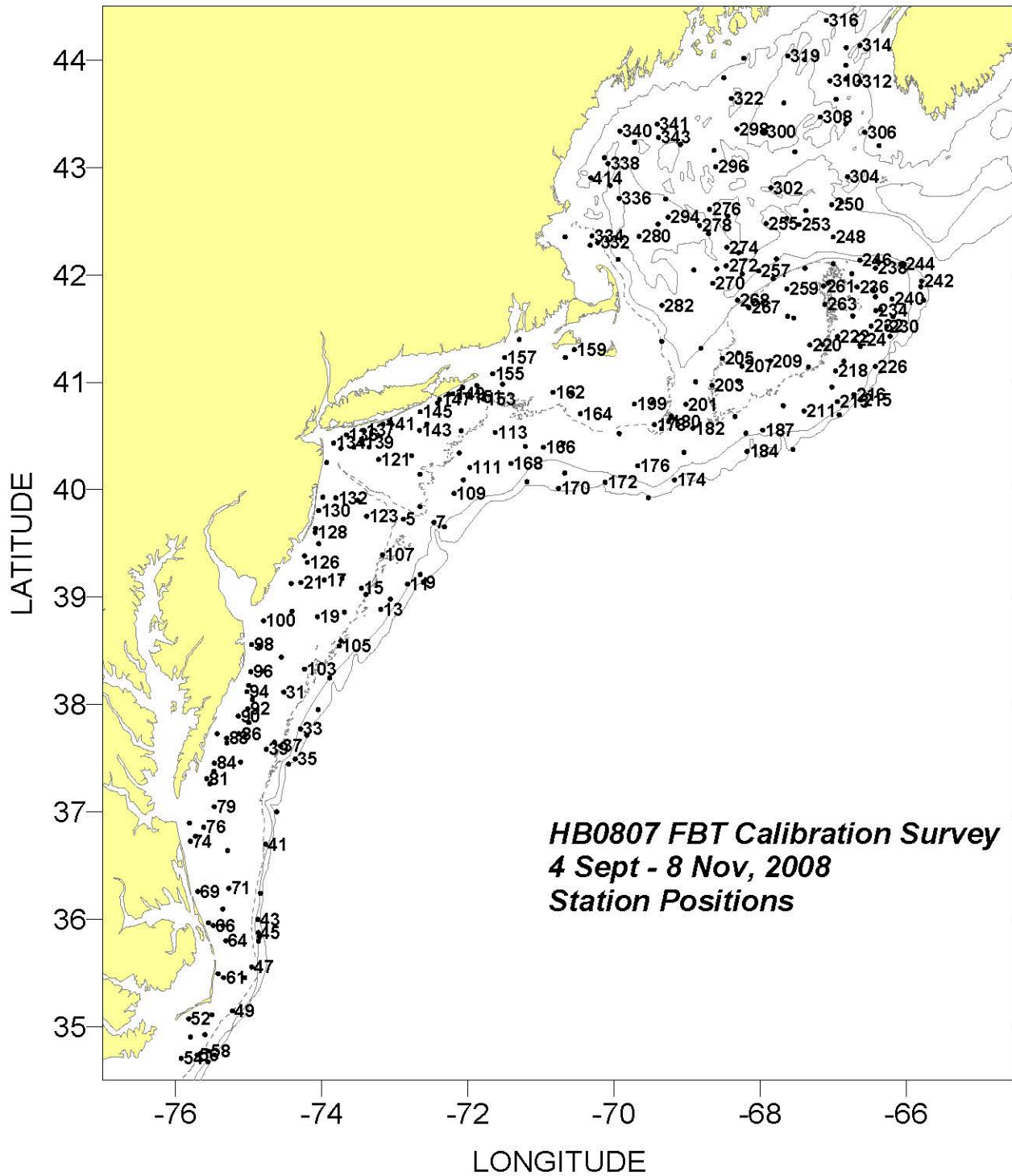
Data presented here have been audited, however, corrections and/or updates may be applied at a later time. The most recent and complete station data can be found in an NODC formatted ASCII file at:
<ftp://ftp.nefsc.noaa.gov/pub/hydro/hb0807.dat>

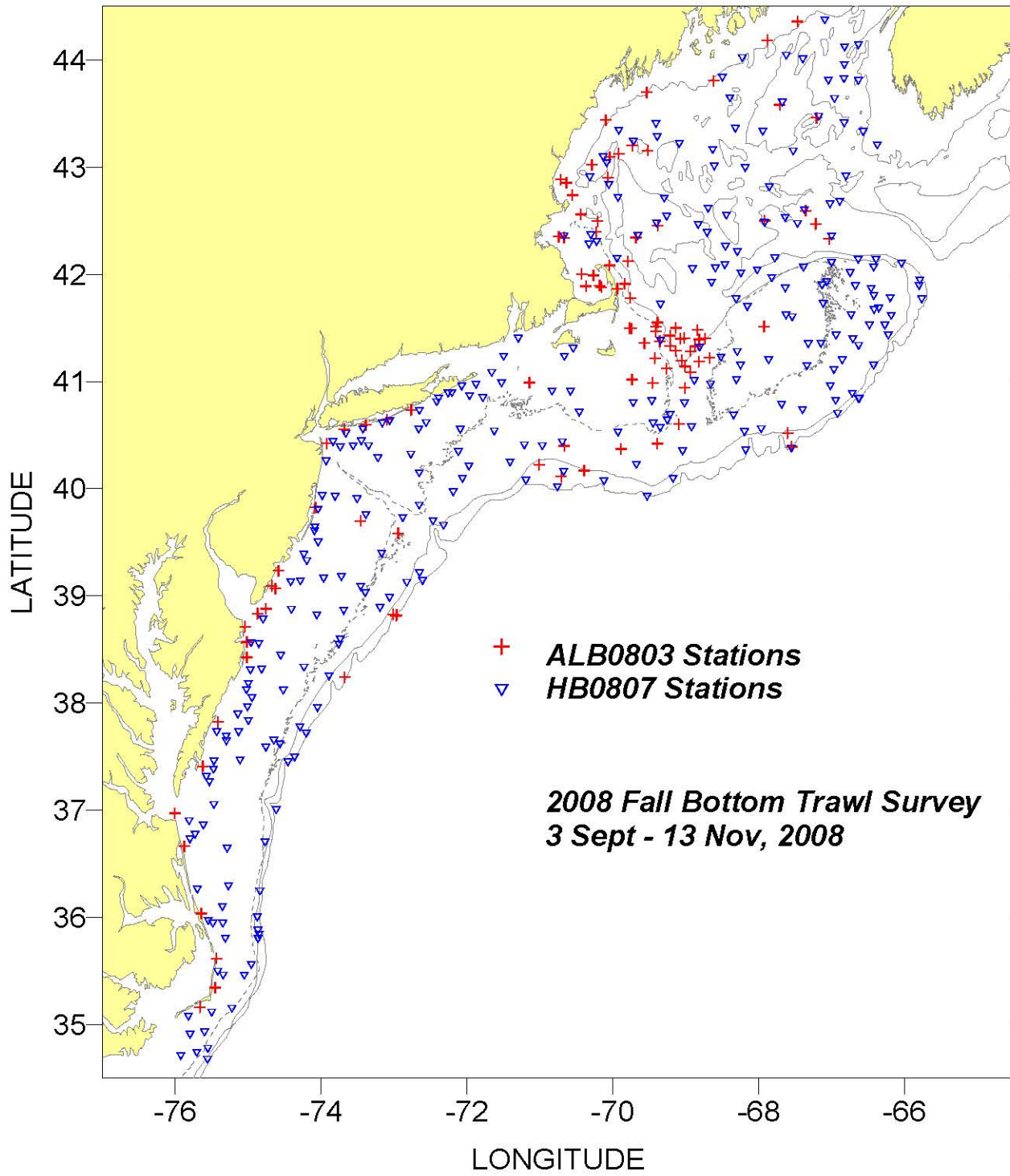
This report may be viewed on the Oceanography Branch website at:

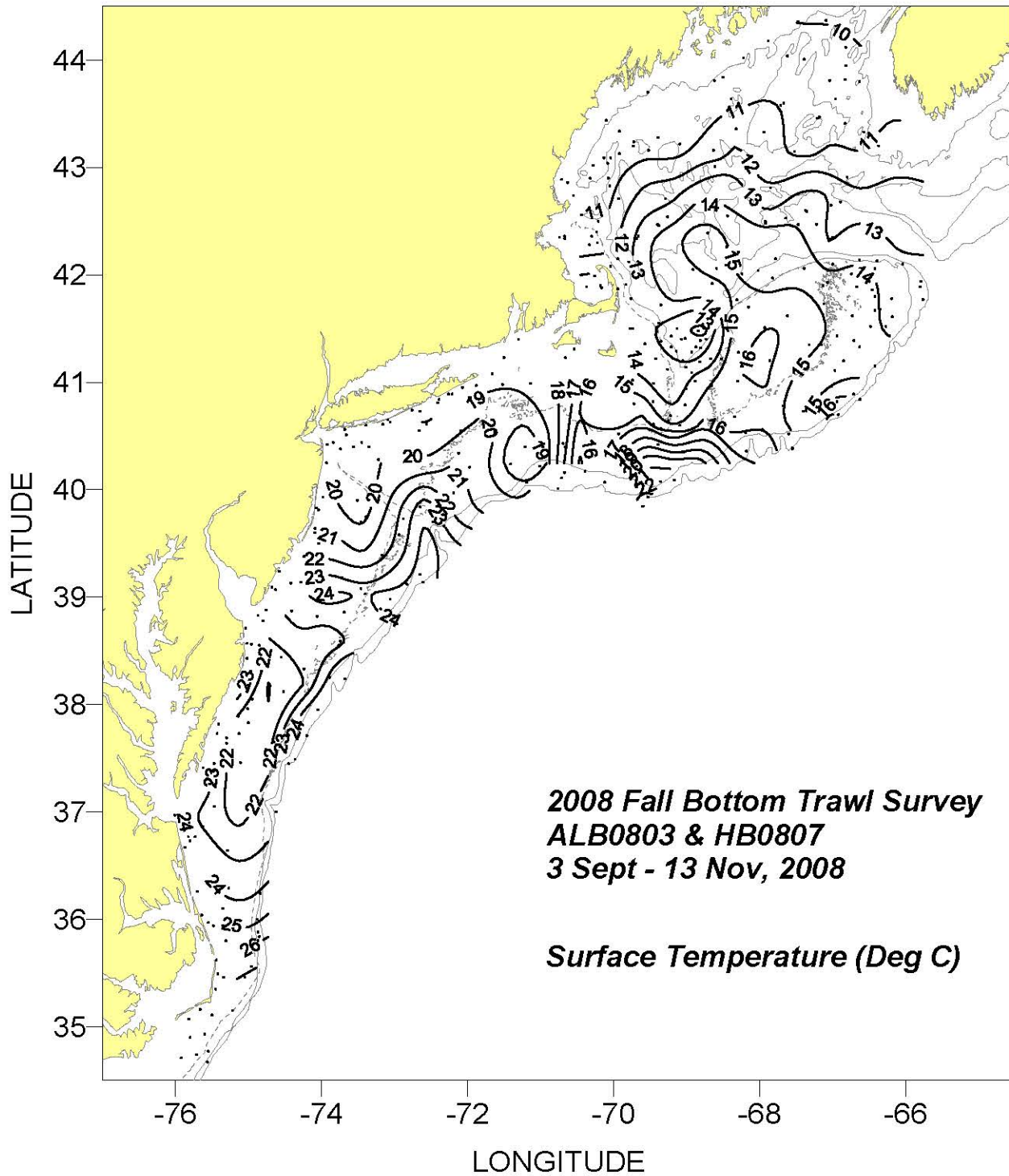
<http://www.nefsc.noaa.gov/HydroAtlas/>

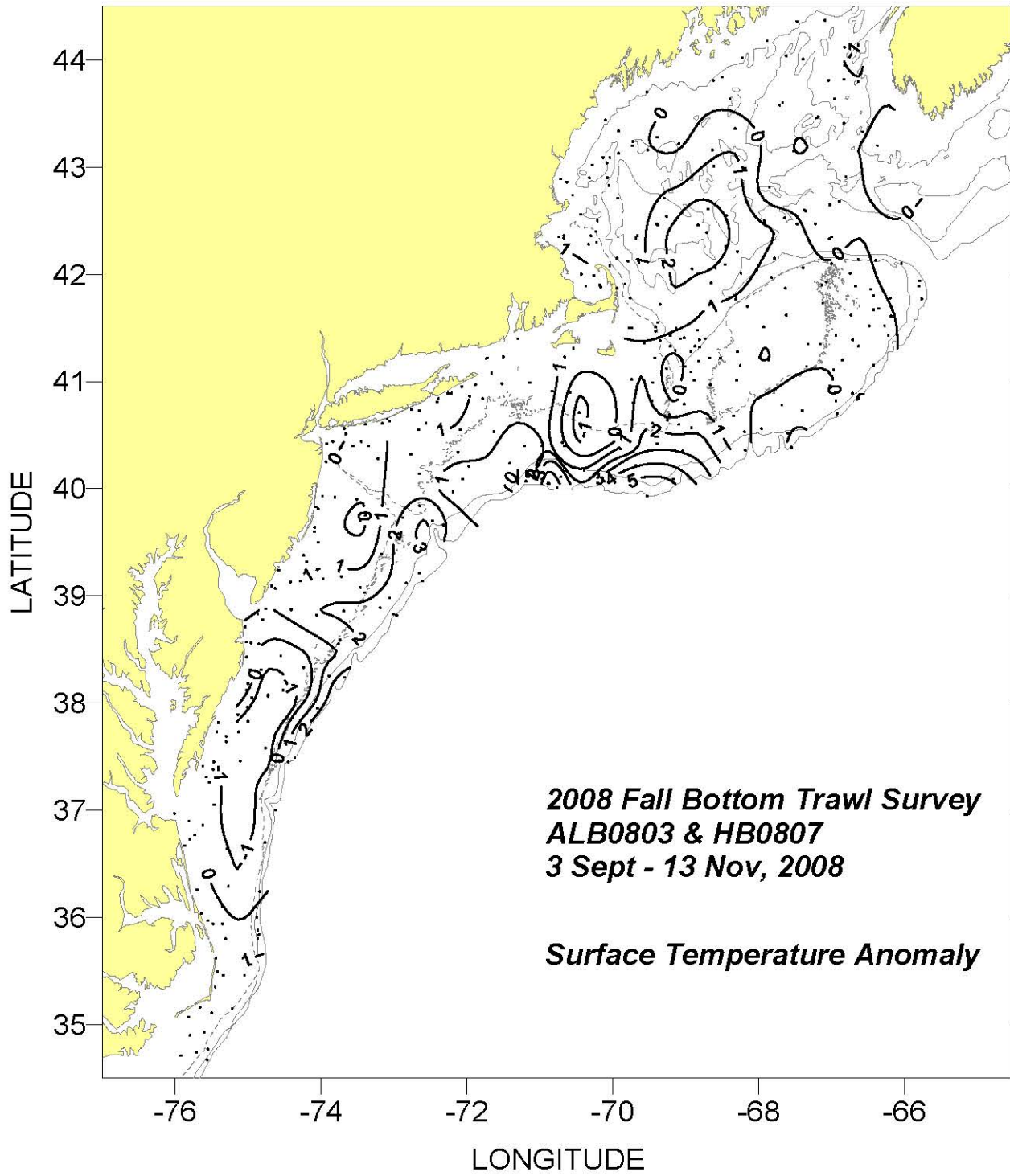
choose: **2008 Cruises**
SEP_TRAWL_HB0807
CTD_REPORT_2008007HB.pdf

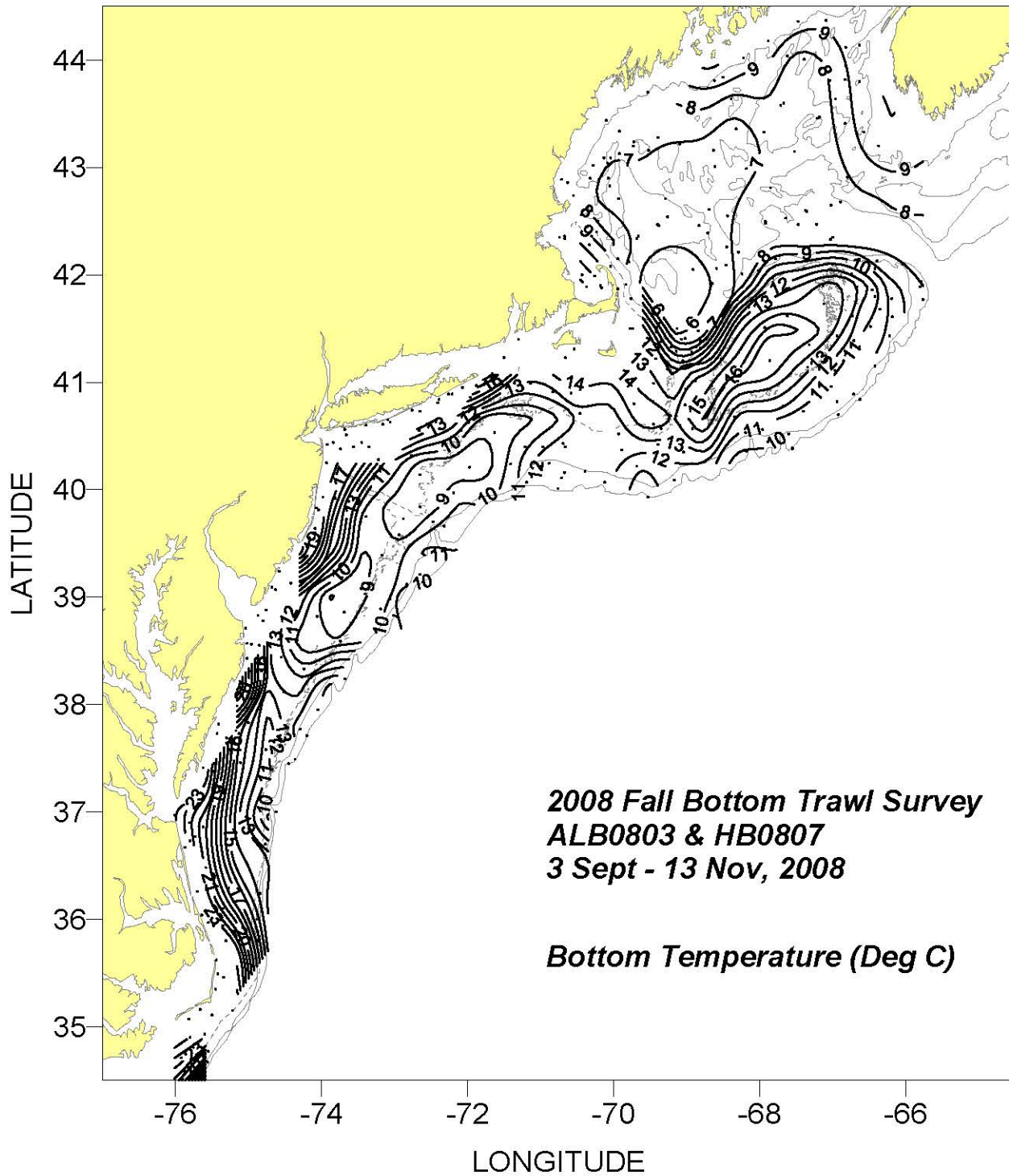
Revised: July 24, 2009

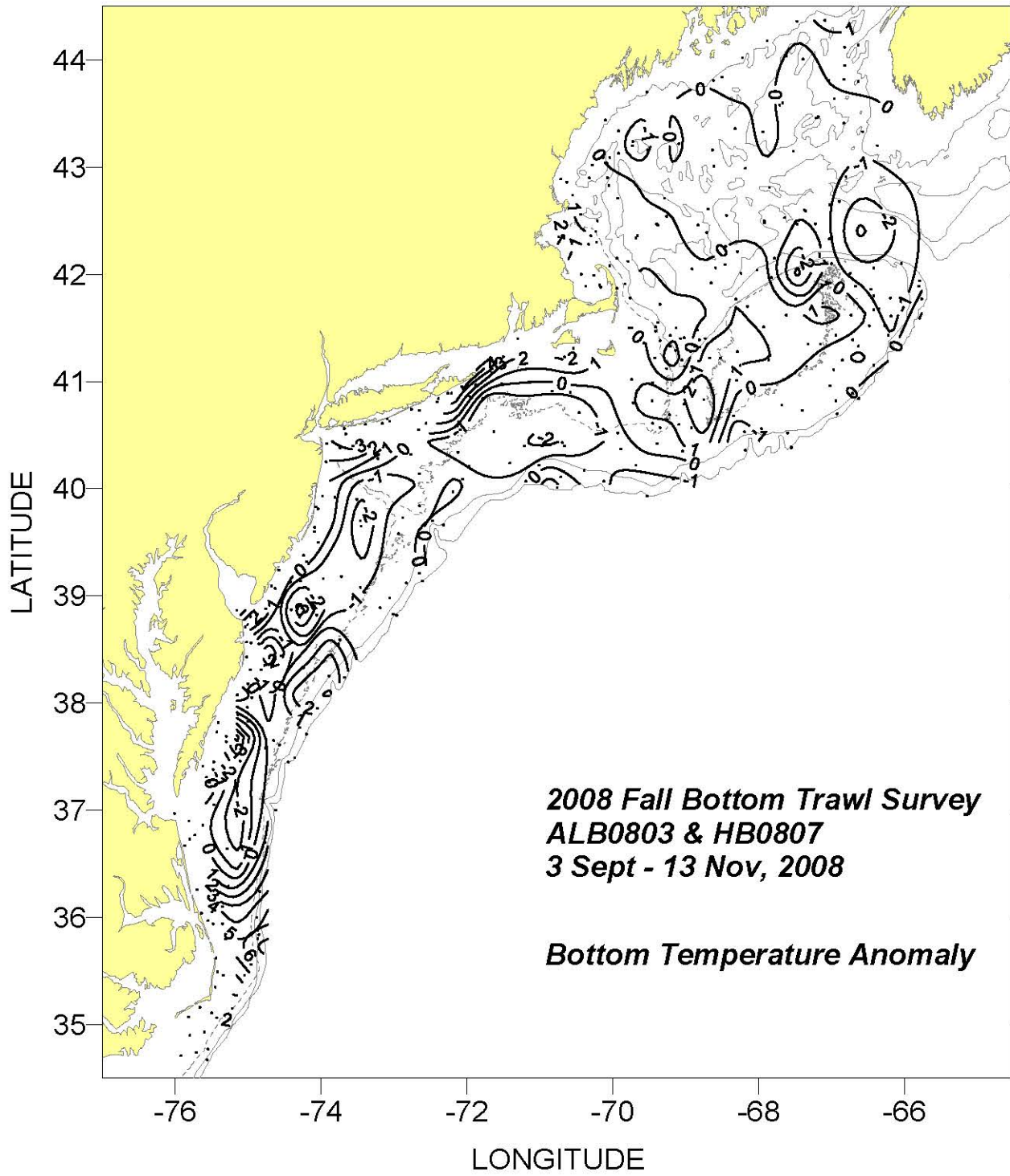


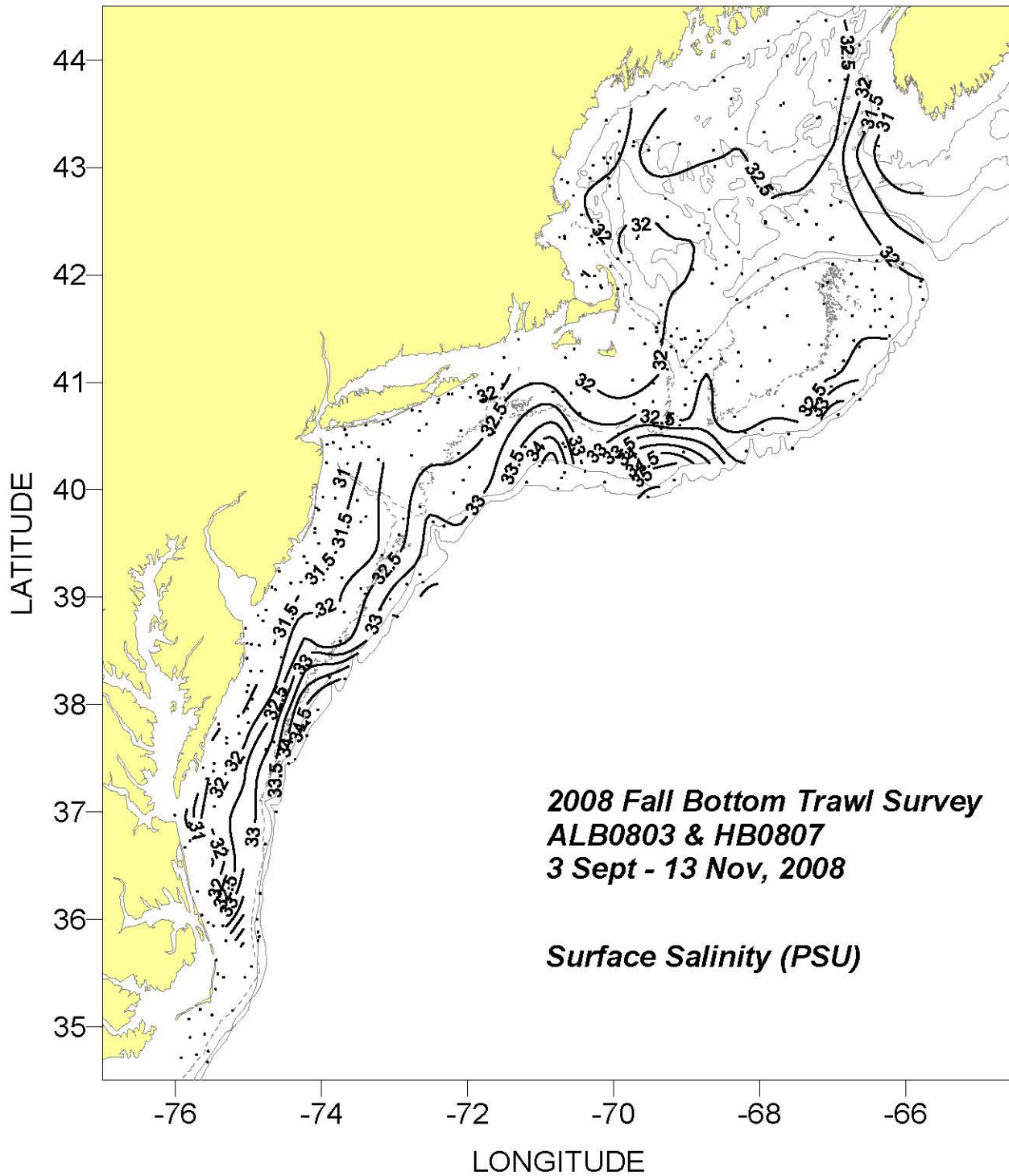


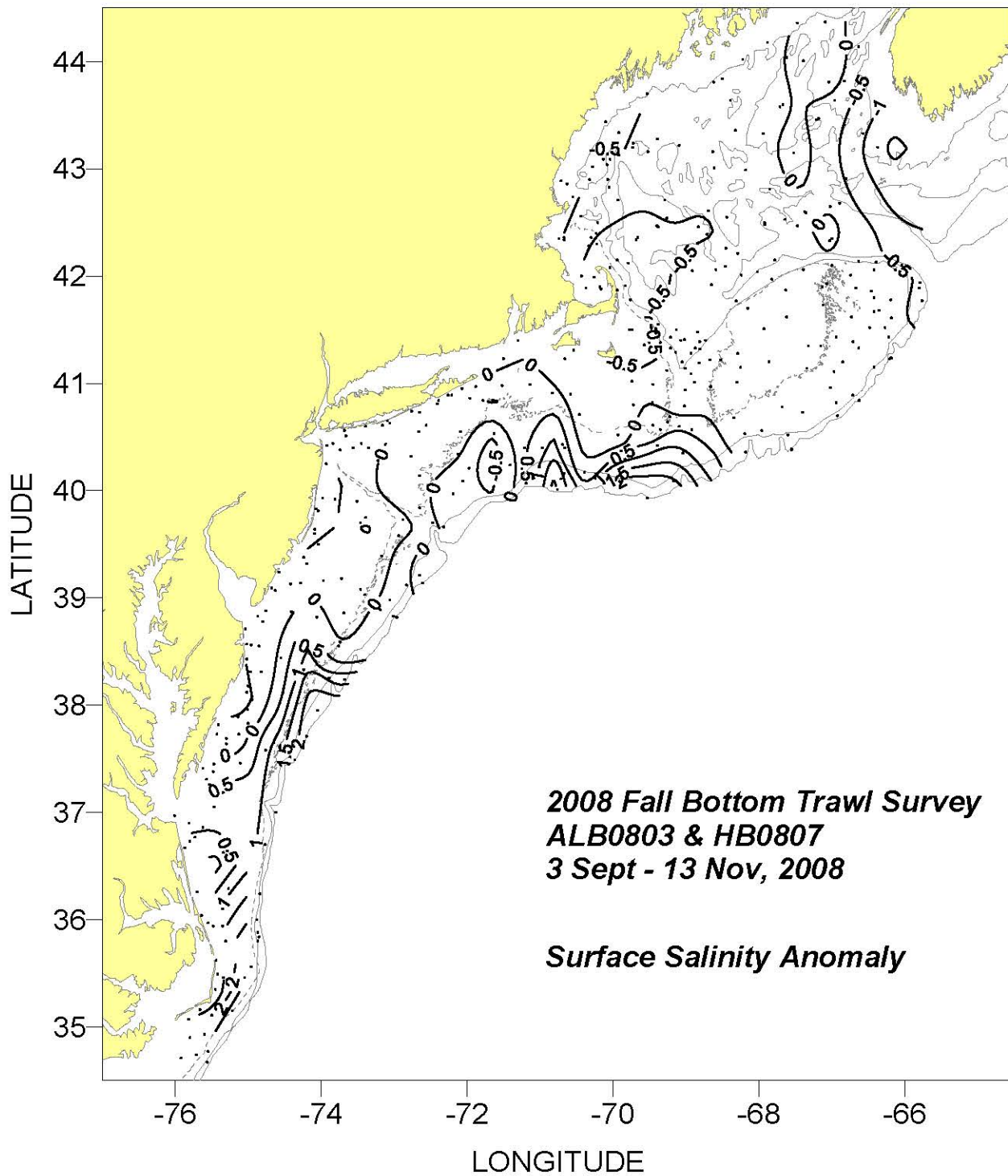


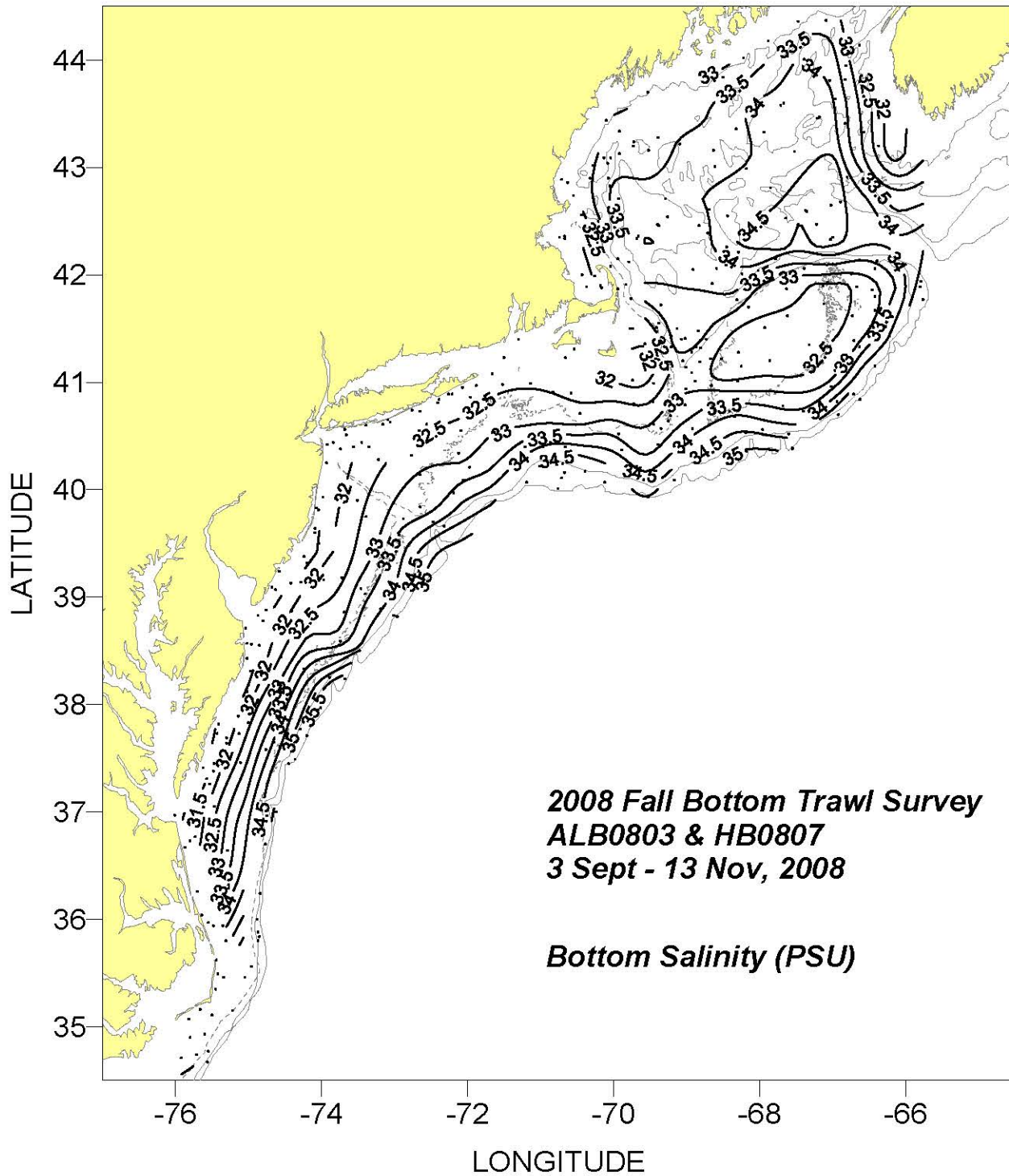


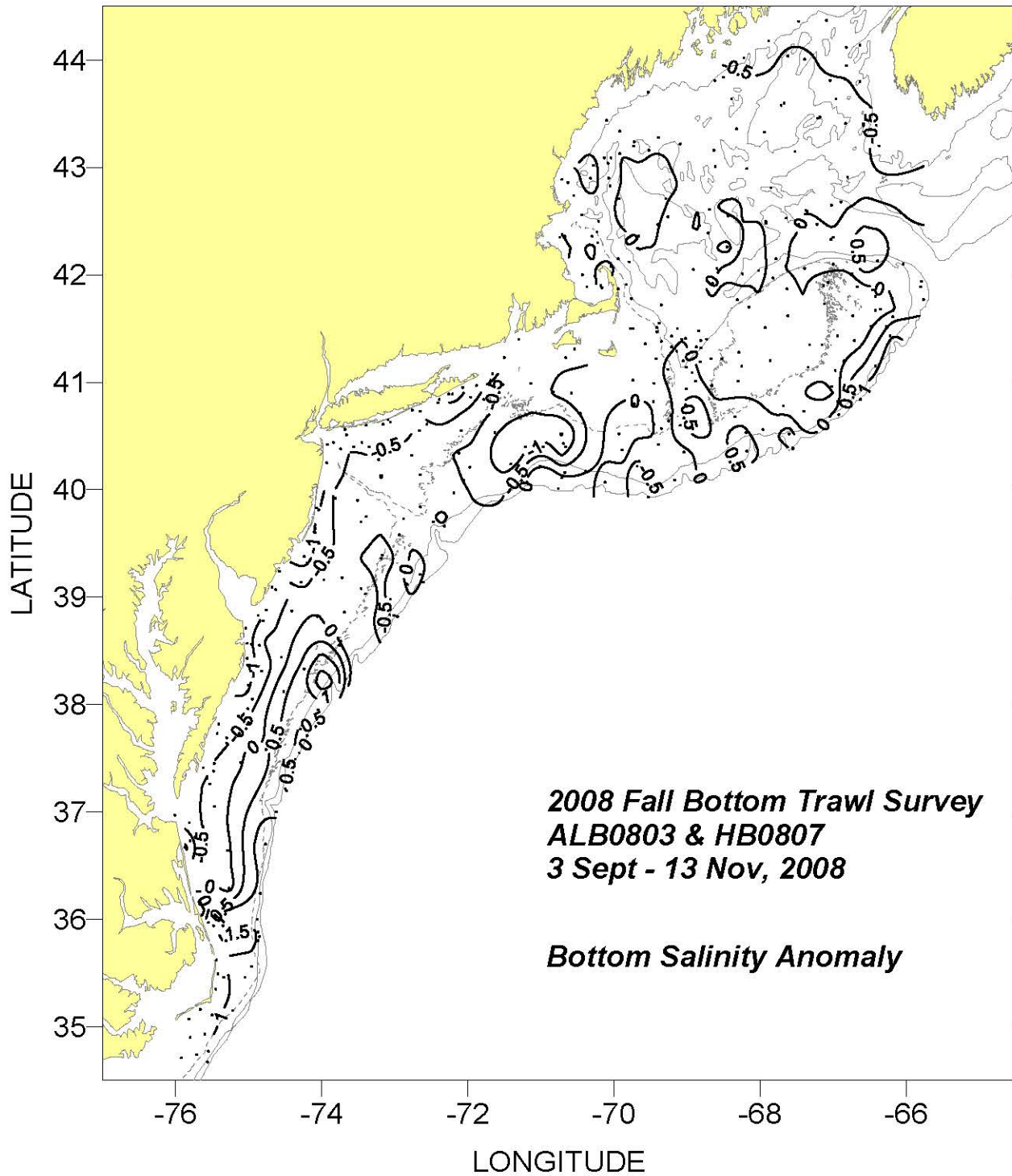












**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies
for the combined 2008 Fall Bottom Trawl Survey
including data from ALB0803 and HB0807**

CRUISE	CD	SURFACE						BOTTOM					
		#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag
Gulf of Maine West													
ALB0803/HB0807	300	70	12.34	0.84	0.14	0.91	0	68	7.35	-0.01	0.12	1.21	0
ALB0803/HB0807	300	70	32.25	-0.35	0.09	0.25	0	68	33.42	-0.16	0.07	0.24	0
Gulf of Maine East													
ALB0803/HB0807	295	33	11.88	-0.27	0.17	0.89	0	30	8.20	-0.66	0.18	1.48	0
ALB0803/HB0807	295	33	32.34	-0.27	0.13	0.33	0	30	33.87	-0.22	0.10	0.42	0
Georges Bank													
ALB0803/HB0807	285	66	15.35	0.51	0.14	1.08	0	57	12.89	0.31	0.19	1.85	0
ALB0803/HB0807	285	66	32.63	-0.11	0.08	0.46	0	57	32.96	-0.10	0.11	0.37	0
MAB North													
ALB0803/HB0807	271	58	18.95	1.05	0.18	1.38	0	51	12.08	-0.16	0.22	2.81	0
ALB0803/HB0807	271	58	32.74	0.15	0.12	0.70	0	51	32.79	-0.64	0.13	0.55	0
MAB South													
ALB0803/HB0807	255	81	22.76	0.47	0.15	1.32	0	75	14.40	0.30	0.18	2.90	0
ALB0803/HB0807	255	80	32.41	0.30	0.12	1.09	0	74	33.09	-0.04	0.11	0.88	0

"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.

HB0807
Fall Bottom Trawl Calibration Survey
4 September - 8 November, 2008

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
1	5	3943.5	7252.8	4	9	2008	13:11	74	22.91	32.28	8.62	33.37	3
2	6	3950.5	7239.2	4	9	2008	15:13	60	23.83	32.97	8.16	33.24	5
3	7	3941.7	7227.9	4	9	2008	17:15	90	24.15	33.17	8.53	33.46	3
4	8	3939.3	7219.2	4	9	2008	18:53	114	23.63	32.83	11.81	34.78	4
5	9	3908.2	7236.5	4	9	2008	23:00	256	24.63	33.33	8.98	35.19	4
6	10	3912.6	7239.0	5	9	2008	1:27	131	24.67	33.42	13.23	35.65	3
7	11	3907.3	7249.5	5	9	2008	3:19	97	24.91	33.56	12.04	34.65	1
8	12	3858.8	7303.7	5	9	2008	5:40	76	24.54	33.05	9.84	33.81	4
9	13	3853.2	7311.5	5	9	2008	7:40	80	24.55	32.63	9.77	33.80	4
10	14	3901.5	7323.7	5	9	2008	10:11	58	23.74	32.48	9.04	33.40	3
11	15	3905.0	7327.4	5	9	2008	11:51	56	23.46	32.02	8.53	33.11	2
12	16	3910.5	7343.3	5	9	2008	13:49	35	23.43	31.82	8.73	32.44	5
13	17	3909.5	7357.9	5	9	2008	15:43	34	23.62	31.66	8.90	32.40	6
14	18	3851.6	7341.4	5	9	2008	18:40	49	24.82	31.98	8.17	32.66	4
15	19	3849.0	7403.5	5	9	2008	21:13	47	24.71	32.40	8.17	32.66	3
16	20	3852.2	7424.3	6	9	2008	0:07	29	23.84	31.28	10.09	32.26	3
17	21	3908.1	7417.0	6	9	2008	2:28	23	23.23	31.33	15.32	31.66	4
18	22	3907.6	7425.0	6	9	2008	4:16	25	23.70	31.25	14.34	31.80	6
19	31	3806.9	7431.1	7	9	2008	16:58	43	18.97	32.28	12.15	33.53	4
20	32	3757.2	7403.0	7	9	2008	20:30	127	25.25	35.09	13.46	35.72	3
21	33	3746.3	7417.4	7	9	2008	23:01	95	25.05	34.82	14.72	35.66	4
22	34	3742.7	7412.2	8	9	2008	0:34	191	24.79	35.26	10.14	35.33	6
23	35	3729.5	7421.7	8	9	2008	3:04	211	24.95	34.84	9.40	35.26	4
24	36	3726.7	7427.2	8	9	2008	5:55	222	24.58	34.69	11.32	35.45	20
25	37	3736.7	7433.9	8	9	2008	8:10	60	23.05	33.79	15.39	35.35	5
26	38	3738.8	7438.8	8	9	2008	9:52	55	22.10	33.17	11.50	33.80	3
27	39	3735.0	7445.4	8	9	2008	11:43	46	20.69	32.68	11.86	33.49	5
28	40	3659.9	7436.9	8	9	2008	18:10	346	22.69	33.48	6.22	35.06	1
29	41	3641.9	7446.1	8	9	2008	20:16	69	22.94	33.24	13.62	35.30	4
30	42	3614.5	7450.3	8	9	2008	23:34	87	24.02	33.86	14.03	35.09	2

HB0807
Fall Bottom Trawl Calibration Survey
4 September - 8 November, 2008

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
31	43	3559.9	7452.5	9	9	2008	1:53	91	25.14	34.41	14.18	35.51	2
32	44	3550.2	7450.9	9	9	2008	4:40	214	25.42	34.53	10.50	35.35	2
33	45	3552.5	7452.0	9	9	2008	6:58	140	25.42	34.52	13.08	35.63	8
34	46	3547.8	7451.9	9	9	2008	9:11	204	26.54	35.93	10.78	35.39	11
35	47	3533.3	7457.4	9	9	2008	11:51	46	27.23	36.17	26.55	36.24	6
36	48	3527.3	7503.2	9	9	2008	12:45	35	27.03	36.20	26.30	36.27	4
37	49	3508.8	7513.3	9	9	2008	15:40	52	28.40	36.23	23.82	36.49	5
38	50	3506.7	7530.0	9	9	2008	18:51	19	27.60	36.27	25.89	36.35	4
39	52	3504.4	7549.2	9	9	2008	20:30	21	27.53	35.99	26.01	36.36	4
40	53	3454.2	7547.8	9	9	2008	22:40	27	27.61	36.33	25.74	36.38	4
41	54	3442.3	7555.4	10	9	2008	0:58	36	27.61	36.26	24.50	36.45	3
42	55	3428.0	7551.6	10	9	2008	3:07	104	28.01	36.09	19.83	36.53	1
43	56	3444.1	7542.3	10	9	2008	5:41	47	28.08	36.26	23.97	36.50	3
44	57	3440.3	7533.5	10	9	2008	7:22	403	27.55	36.21	8.17	35.16	9
45	58	3446.4	7533.2	10	9	2008	9:52	117	27.42	36.21	18.70	36.49	4
46	59	3455.5	7535.9	10	9	2008	11:46	42	27.58	36.33	25.38	36.39	6
47	61	3527.4	7520.6	10	9	2008	17:55	23	26.63	34.81	26.47	36.16	5
48	62	3529.6	7525.0	10	9	2008	19:25	19	26.28	32.15	26.41	35.06	4
49	64	3548.0	7518.8	10	9	2008	22:34	33	24.69	33.84	23.96	35.39	2
50	65	3556.4	7520.9	11	9	2008	0:46	19	24.67	33.59	22.79	34.47	4
51	66	3556.4	7529.0	11	9	2008	2:10	23	24.92	33.32	22.84	34.12	4
52	67	3558.0	7532.9	11	9	2008	3:58	22	24.83	32.73	22.97	33.94	6
53	69	3615.5	7541.9	11	9	2008	7:46	23	24.75	30.48	23.74	33.23	7
54	70	3605.7	7521.2	11	9	2008	10:49	30	23.87	32.48	21.91	34.38	5
55	71	3617.3	7516.2	11	9	2008	13:10	34	23.79	32.73	16.59	33.38	2
56	72	3638.4	7517.3	11	9	2008	15:55	35	22.78	32.21	14.52	33.04	2
57	74	3643.6	7547.9	11	9	2008	20:21	16	23.82	31.27	23.72	31.27	4
58	75	3646.3	7543.6	11	9	2008	22:34	19	23.71	31.55	23.22	31.64	3
59	76	3651.4	7536.9	12	9	2008	0:31	20	23.10	31.85	22.03	32.08	5
60	77	3653.8	7548.6	12	9	2008	3:47	15	23.91	31.19	23.90	31.20	2

HB0807
Fall Bottom Trawl Calibration Survey
4 September - 8 November, 2008

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
61	79	3702.9	7528.2	12	9	2008	7:52	30	21.52	32.31	16.67	32.39	4
62	80	3715.7	7531.9	12	9	2008	10:41	20	22.51	31.76	22.11	31.80	5
63	81	3718.5	7534.4	12	9	2008	12:07	17	23.54	31.49	23.54	31.49	4
64	83	3722.7	7528.5	12	9	2008	16:16	20	22.61	31.67	22.21	31.69	4
65	84	3727.2	7528.2	12	9	2008	18:47	20	23.10	31.65	22.88	31.65	3
66	85	3727.8	7506.7	12	9	2008	21:34	32	20.95	32.22	13.69	32.69	4
67	86	3743.6	7507.9	13	9	2008	0:04	29	20.77	31.77	13.14	32.24	1
68	87	3738.5	7517.9	13	9	2008	2:01	24	21.95	31.45	21.09	31.67	4
69	88	3741.2	7518.1	13	9	2008	3:49	21	21.92	31.43	21.24	31.53	5
70	89	3743.6	7525.9	13	9	2008	6:39	16	23.14	31.54	23.13	31.54	5
71	90	3753.5	7508.5	13	9	2008	10:22	23	22.14	31.34	20.19	31.55	7
72	91	3749.9	7459.8	13	9	2008	12:55	31	20.98	31.57	12.18	32.29	4
73	92	3757.6	7500.6	13	9	2008	14:46	24	20.66	31.67	15.48	31.98	3
74	93	3802.7	7456.8	13	9	2008	16:16	26	21.68	31.36	14.21	32.05	5
75	94	3807.2	7501.4	13	9	2008	17:55	16	22.27	31.27	21.87	31.30	3
76	95	3810.6	7459.8	13	9	2008	19:22	21	23.59	31.24	18.88	31.54	6
77	96	3818.3	7458.1	13	9	2008	21:06	17	23.03	31.18	21.52	31.37	4
78	97	3818.6	7448.9	13	9	2008	23:31	21	22.01	31.33	15.90	31.69	3
79	98	3833.5	7457.6	14	9	2008	2:12	16	22.90	30.99	22.15	31.02	4
80	99	3833.0	7451.2	14	9	2008	3:45	23	22.76	30.97	14.17	31.88	5
81	100	3846.7	7447.7	14	9	2008	7:03	18	21.19	31.17	20.37	31.40	5
82	102	3826.4	7433.2	14	9	2008	10:18	34	20.82	32.02	9.65	32.35	5
83	103	3819.8	7414.1	14	9	2008	12:43	55	22.23	33.60	11.98	33.80	3
84	104	3814.9	7353.4	14	9	2008	14:58	78	24.17	34.51	15.67	35.77	5
85	105	3832.7	7345.5	14	9	2008	17:21	58	21.26	32.11	8.83	33.20	4
86	106	3835.5	7344.2	14	9	2008	18:43	60	21.65	32.11	8.73	33.10	2
87	107	3923.5	7310.0	15	9	2008	0:26	61	20.88	31.95	8.34	33.15	3
88	108	4008.6	7239.2	15	9	2008	5:25	55	20.09	32.23	7.99	33.00	4
89	109	3957.9	7211.3	15	9	2008	9:04	84	20.62	32.59	8.95	33.39	3
90	110	4005.5	7203.6	15	9	2008	11:45	72	20.34	32.73	9.08	33.29	5

HB0807
Fall Bottom Trawl Calibration Survey
4 September - 8 November, 2008

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
91	111	4012.4	7158.3	15	9	2008	13:58	67	20.77	32.58	8.29	32.94	3
92	112	4020.4	7207.0	15	9	2008	16:34	61	21.54	32.42	8.04	32.96	4
93	113	4032.0	7137.5	15	9	2008	20:37	76	20.94	32.27	7.83	32.89	4
94	120	4019.0	7246.1	21	9	2008	2:43	51	20.41	32.58	9.96	32.70	3
95	121	4016.9	7313.2	21	9	2008	5:54	36	19.77	31.85	11.37	32.56	4
96	122	3954.0	7330.3	21	9	2008	9:18	39	19.71	31.67	11.29	32.39	4
97	123	3945.2	7323.1	21	9	2008	11:04	36	19.11	31.88	9.32	32.51	4
98	125	3929.8	7402.4	21	9	2008	16:16	25	20.90	31.09	20.16	31.43	4
99	126	3919.4	7411.7	21	9	2008	18:19	27	20.63	31.27	20.42	31.33	6
100	127	3923.0	7414.2	21	9	2008	20:10	19	21.24	31.15	20.61	31.14	5
101	128	3936.1	7405.4	21	9	2008	22:31	18	21.28	31.11	20.41	31.15	5
102	129	3938.3	7405.1	21	9	2008	23:52	19	21.03	31.10	20.44	31.12	6
103	130	3948.3	7402.4	22	9	2008	1:49	18	20.40	30.62	20.14	30.99	5
104	131	3955.8	7359.0	22	9	2008	3:32	20	20.20	30.79	20.00	31.36	4
105	132	3955.4	7348.4	22	9	2008	5:20	28	20.17	31.21	15.59	31.99	4
106	133	4015.2	7355.9	22	9	2008	8:11	19	19.78	29.76	19.95	31.17	4
107	134	4026.1	7350.1	22	9	2008	10:10	25	19.94	30.20	17.35	31.58	4
108	135	4023.0	7344.2	22	9	2008	11:51	25	20.43	30.87	15.96	31.93	4
109	136	4030.7	7339.7	22	9	2008	13:55	19	19.69	30.79	19.24	31.72	2
110	137	4033.1	7325.6	22	9	2008	16:01	21	19.87	31.53	19.66	31.79	5
111	138	4023.7	7333.6	22	9	2008	18:31	28	19.87	32.08	18.93	32.02	5
112	139	4026.4	7326.9	22	9	2008	20:10	26	19.34	31.38	19.25	31.82	4
113	140	4023.8	7320.9	22	9	2008	21:58	30	19.44	31.34	19.05	31.65	6
114	141	4036.5	7309.6	23	9	2008	0:22	21	19.62	31.28	19.57	31.36	5
115	142	4037.8	7303.5	23	9	2008	2:04	21	19.55	31.31	19.27	31.31	5
116	143	4033.1	7239.6	23	9	2008	4:46	42	19.57	32.42	11.98	32.55	3
117	144	4036.7	7233.6	23	9	2008	6:46	40	19.32	32.31	12.99	32.48	4
118	145	4043.6	7239.1	23	9	2008	8:28	29	18.28	31.49	18.31	31.69	3
119	146	4048.4	7224.8	23	9	2008	10:26	27	18.33	31.52	18.40	31.69	4
120	147	4050.4	7223.2	23	9	2008	11:52	19	18.34	31.31	18.34	31.32	3

HB0807
Fall Bottom Trawl Calibration Survey
4 September - 8 November, 2008

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
121	148	4053.2	7215.5	23	9	2008	13:46	20	18.37	31.33	18.36	31.39	5
122	149	4053.5	7212.3	23	9	2008	15:08	24	18.39	31.49	18.42	31.53	4
123	150	4057.2	7204.3	23	9	2008	16:38	21	18.35	31.35	18.31	31.36	5
124	151	4051.8	7157.8	23	9	2008	18:45	41	18.65	32.30	15.71	32.26	3
125	152	4032.9	7205.4	24	9	2008	0:12	55	19.76	32.60	9.53	32.83	3
126	153	4050.6	7146.8	24	9	2008	3:37	50	19.38	32.44	12.20	32.55	3
127	154	4058.1	7152.5	24	9	2008	5:58	30	18.25	31.60	18.45	31.96	4
128	155	4104.8	7139.6	24	9	2008	8:18	37	18.09	31.73	18.66	32.24	3
129	156	4058.9	7131.4	24	9	2008	10:13	52	19.38	32.54	12.01	32.56	4
130	157	4113.8	7129.8	24	9	2008	12:40	34	18.36	31.98	18.20	32.02	4
131	158	4123.9	7117.7	24	9	2008	15:04	31	18.76	31.85	18.68	31.86	4
132	159	4118.3	7032.5	24	9	2008	19:43	20	17.85	31.70	17.85	31.70	5
133	160	4113.8	7039.8	24	9	2008	21:34	29	17.42	31.77	17.07	31.88	5
134	162	4054.4	7049.9	25	9	2008	4:04	54	18.80	32.50	11.82	32.55	4
135	163	4054.2	7034.8	25	9	2008	6:16	52	17.05	32.40	11.55	32.60	5
136	164	4042.5	7027.5	25	9	2008	8:55	55	15.92	32.43	12.70	32.54	5
137	165	4025.9	7041.5	25	9	2008	13:43	82	19.12	34.30	10.08	33.07	7
138	166	4023.8	7057.9	30	9	2008	4:56	88	19.47	34.31	10.86	33.78	5
139	167	4024.2	7112.7	30	9	2008	8:28	83	18.06	33.67	10.22	33.19	5
140	168	4014.6	7124.5	30	9	2008	12:03	87	17.82	33.32	10.33	33.62	5
141	169	4004.4	7111.4	30	9	2008	14:18	183	19.77	34.11	12.01	35.47	7
142	170	4000.7	7045.5	30	9	2008	17:13	266	20.35	34.43	10.39	35.32	5
143	171	4009.3	7040.4	30	9	2008	19:37	128	19.31	33.79	12.55	35.36	6
144	172	4004.1	7007.2	30	9	2008	22:58	163	23.28	35.66	12.13	35.40	2
145	173	3955.5	6931.7	1	10	2008	2:43	267	23.40	35.72	9.89	35.27	3
146	174	4005.5	6910.3	1	10	2008	6:04	130	23.22	35.64	11.97	35.26	4
147	175	4020.8	6902.5	1	10	2008	8:48	90	21.24	35.03	11.10	33.65	3
148	176	4013.3	6940.5	1	10	2008	12:16	85	22.22	35.39	10.36	33.26	6
149	177	4031.3	6955.6	1	10	2008	15:10	68	16.09	32.61	11.10	33.41	5
150	178	4036.4	6926.7	1	10	2008	17:55	52	17.98	33.09	15.05	33.12	4

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
151	179	4034.1	6920.9	1	10	2008	19:51	60	16.49	32.50	14.89	32.91	4
152	180	4038.1	6915.1	1	10	2008	21:43	65	15.43	32.36	13.42	32.68	5
153	181	4041.1	6912.9	1	10	2008	23:13	63	14.79	32.27	13.52	32.66	3
154	182	4034.2	6855.2	2	10	2008	1:43	72	15.82	32.63	17.24	34.17	5
155	183	4031.6	6811.5	2	10	2008	5:52	106	16.16	32.31	8.55	35.13	4
156	184	4021.4	6810.6	2	10	2008	8:18	227	16.03	32.51	8.80	35.18	5
157	185	4022.5	6732.9	2	10	2008	12:41	342	15.52	32.73	10.22	35.31	141
158	187	4033.3	6757.8	2	10	2008	17:40	100	16.38	32.61	10.85	34.45	3
159	188	4040.9	6820.6	2	10	2008	20:55	70	15.21	32.25	13.36	32.49	15
160	199	4047.9	6943.1	8	10	2008	1:08	36	15.05	32.08	15.07	32.50	3
161	200	4048.9	6927.8	8	10	2008	3:45	46	14.49	32.18	14.47	32.15	6
162	201	4047.6	6900.9	8	10	2008	7:52	76	14.92	32.37	16.51	33.86	4
163	202	4100.3	6852.8	8	10	2008	10:43	71	14.97	32.56	15.46	33.04	4
164	203	4058.3	6839.4	8	10	2008	12:37	60	15.79	32.35	15.78	32.36	3
165	204	4119.0	6848.5	8	10	2008	15:40	109	14.82	32.03	6.44	32.90	3
166	205	4113.4	6830.9	8	10	2008	18:04	62	15.75	32.46	15.45	32.48	3
167	206	4116.5	6817.6	8	10	2008	21:53	47	16.34	32.40	16.33	32.40	2
168	207	4108.9	6814.8	8	10	2008	23:40	44	16.45	32.37	16.46	32.37	2
169	208	4100.7	6818.2	9	10	2008	1:22	43	15.70	32.30	15.72	32.30	5
170	209	4111.9	6751.6	9	10	2008	4:16	37	16.58	32.31	16.58	32.31	4
171	210	4046.9	6740.9	9	10	2008	8:40	71	14.23	32.53	10.82	32.88	3
172	211	4043.9	6723.8	9	10	2008	10:49	95	14.16	32.47	10.08	33.21	3
173	212	4057.3	6700.9	9	10	2008	13:31	80	13.84	32.50	10.40	32.97	3
174	213	4049.2	6656.5	9	10	2008	15:11	100	13.88	32.72	9.90	33.54	19
175	214	4041.9	6655.0	9	10	2008	17:12	176	18.90	34.59	10.29	35.28	3
176	215	4050.2	6637.7	9	10	2008	20:25	272	18.66	34.68	10.75	35.33	68
177	215	4050.2	6637.1	9	10	2008	20:57	330	18.69	34.71	6.08	34.99	6
178	216	4053.1	6642.8	10	10	2008	0:01	105	14.85	33.13	11.96	34.87	2
179	217	4111.8	6651.1	10	10	2008	3:01	72	14.18	32.36	10.64	32.87	3
180	218	4106.4	6658.0	10	10	2008	5:00	70	14.25	32.36	10.92	32.77	6

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
181	219	4108.6	6720.2	10	10	2008	7:45	59	14.87	32.38	13.66	32.49	3
182	220	4120.9	6719.0	10	10	2008	9:51	45	15.67	32.33	15.58	32.33	3
183	221	4121.1	6708.7	10	10	2008	11:52	58	15.40	32.35	14.30	32.43	3
184	222	4125.6	6656.3	10	10	2008	13:36	67	14.33	32.43	13.51	32.48	7
185	223	4137.0	6643.8	10	10	2008	15:52	73	14.44	32.43	14.29	32.43	3
186	224	4123.6	6642.4	10	10	2008	18:17	83	14.59	32.42	10.95	32.73	5
187	225	4119.9	6637.6	10	10	2008	19:58	86	14.25	32.39	9.93	32.88	4
188	226	4108.8	6625.2	10	10	2008	21:58	109	14.20	32.43	11.37	34.67	2
189	228	4125.7	6613.2	11	10	2008	1:55	117	13.82	32.46	10.08	34.50	4
190	230	4131.2	6616.0	11	10	2008	4:58	89	13.97	32.38	9.40	33.31	6
191	231	4136.7	6610.7	11	10	2008	7:04	97	13.98	32.37	9.24	33.05	6
192	232	4131.4	6628.7	11	10	2008	9:37	93	14.06	32.37	9.89	32.81	5
193	233	4140.8	6621.0	11	10	2008	11:40	85	13.79	32.38	10.96	32.69	6
194	234	4140.0	6624.9	11	10	2008	13:01	84	13.77	32.37	11.23	32.66	5
195	235	4147.8	6625.1	11	10	2008	15:08	82	13.93	32.39	11.76	32.59	4
196	236	4153.3	6640.4	11	10	2008	17:40	67	14.49	32.41	13.76	32.43	3
197	237	4200.6	6644.6	11	10	2008	19:46	72	13.96	32.35	12.00	32.59	5
198	238	4203.8	6625.3	11	10	2008	22:06	89	14.02	32.39	8.63	33.24	3
199	239	4151.8	6627.4	12	10	2008	0:22	83	14.30	32.36	10.76	32.76	3
200	240	4146.6	6611.6	12	10	2008	2:19	85	13.80	32.44	9.92	32.81	2
201	241	4145.9	6545.6	12	10	2008	4:46	165	12.84	31.63	9.77	34.55	4
202	242	4156.5	6547.2	12	10	2008	8:49	195	13.74	32.05	7.38	34.93	6
203	243	4153.4	6547.9	12	10	2008	11:08	149	14.04	32.30	7.91	34.85	5
204	244	4205.9	6602.3	12	10	2008	13:56	181	12.61	31.70	7.52	34.64	4
205	245	4208.0	6623.3	12	10	2008	16:55	111	14.08	32.37	7.93	33.74	8
206	246	4208.2	6638.0	12	10	2008	19:21	93	14.01	32.37	7.78	33.87	5
207	247	4206.2	6659.9	12	10	2008	21:49	63	13.76	32.38	9.01	32.85	4
208	248	4221.2	6659.9	13	10	2008	0:04	333	13.06	32.46	7.35	34.92	131
209	249	4240.6	6653.2	13	10	2008	3:22	218	12.67	32.41	7.72	34.88	5
210	250	4239.2	6701.1	13	10	2008	5:46	286	13.43	32.45	7.45	34.78	4

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
211	252	4235.9	6722.2	13	10	2008	11:40	278	13.90	32.32	7.57	34.63	75
212	253	4228.2	6727.9	13	10	2008	13:52	309	14.37	32.30	7.33	34.93	7
213	254	4231.5	6738.1	13	10	2008	16:40	171	14.91	32.27	7.21	34.33	4
214	255	4228.7	6754.9	13	10	2008	19:10	222	14.60	32.17	7.51	34.72	19
215	256	4208.8	6746.6	13	10	2008	22:25	210	14.79	32.17	7.57	34.74	7
216	257	4202.2	6801.1	14	10	2008	0:58	207	14.84	32.34	7.28	34.39	5
217	258	4157.9	6749.1	14	10	2008	3:05	81	14.36	32.38	10.40	32.67	3
218	259	4152.1	6738.0	14	10	2008	4:58	37	15.41	32.40	15.42	32.40	3
219	260	4203.6	6723.1	14	10	2008	7:46	54	14.12	32.45	8.30	33.00	6
220	261	4153.8	6707.7	14	10	2008	11:22	56	13.95	32.41	13.85	32.40	5
221	262	4155.5	6703.9	14	10	2008	12:49	59	14.56	32.41	14.57	32.41	7
222	263	4143.5	6706.9	14	10	2008	15:11	57	15.14	32.40	15.04	32.40	6
223	264	4135.9	6732.3	14	10	2008	18:49	45	15.95	32.39	15.96	32.39	3
224	265	4136.9	6737.4	14	10	2008	20:43	55	15.73	32.41	15.62	32.41	3
225	267	4141.8	6809.2	15	10	2008	0:41	37	15.59	32.44	15.53	32.44	4
226	267	4141.7	6809.2	15	10	2008	0:52	37	15.59	32.44	15.60	32.44	4
227	268	4145.9	6818.4	15	10	2008	3:35	92	15.32	32.46	7.15	32.81	4
228	269	4200.5	6814.5	15	10	2008	5:58	215	15.00	32.35	7.48	34.47	6
229	270	4155.3	6838.7	15	10	2008	9:31	169	15.07	32.07	6.21	33.74	3
230	271	4203.3	6835.5	15	10	2008	11:15	180	14.97	32.13	5.74	33.50	3
231	272	4205.1	6827.7	15	10	2008	13:10	184	14.88	32.02	6.23	33.78	5
232	273	4212.4	6817.5	15	10	2008	15:40	200	14.75	32.08	7.59	34.65	5
233	274	4215.3	6827.2	15	10	2008	17:47	185	14.87	32.18	6.17	33.77	4
234	275	4232.9	6826.5	15	10	2008	20:43	199	14.57	32.08	7.30	34.44	4
235	276	4236.7	6841.5	15	10	2008	23:19	187	15.07	32.05	6.77	34.10	4
236	277	4223.1	6842.3	16	10	2008	1:53	200	15.59	31.99	6.67	34.08	4
237	278	4227.6	6849.7	16	10	2008	3:52	216	15.70	31.95	7.19	34.38	3
238	279	4228.3	6923.9	16	10	2008	7:07	270	15.05	31.88	6.24	33.77	68
239	280	4221.5	6939.3	16	10	2008	9:52	246	13.27	31.66	6.47	33.92	40
240	281	4202.8	6854.3	16	10	2008	14:21	132	15.46	32.07	5.20	33.16	5

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
241	282	4143.0	6920.7	16	10	2008	18:17	176	15.35	31.87	5.70	33.44	3
242	293	4208.7	6956.5	23	10	2008	22:40	135	12.05	32.36	6.72	33.28	5
243	294	4232.2	6915.6	24	10	2008	3:22	228	12.96	32.14	6.60	34.02	6
244	295	4242.4	6917.5	24	10	2008	5:58	174	12.91	32.18	5.86	33.53	5
245	296	4300.4	6836.4	24	10	2008	10:18	201	11.87	32.50	6.22	33.70	4
246	297	4309.6	6837.7	24	10	2008	12:31	184	11.54	32.54	6.32	33.78	1
247	298	4321.5	6819.1	24	10	2008	15:04	178	11.94	32.51	6.34	33.80	3
248	299	4336.1	6740.4	24	10	2008	18:58	246	11.18	32.82	7.61	34.29	44
249	300	4319.8	6756.5	24	10	2008	22:07	247	11.46	32.64	7.58	34.33	3
250	301	4259.4	6810.9	25	10	2008	1:08	165	12.51	32.42	6.60	33.82	8
251	302	4248.6	6751.1	25	10	2008	4:24	203	11.04	32.69	7.16	34.22	4
252	303	4308.8	6731.4	25	10	2008	7:46	188	10.70	32.85	7.32	34.18	2
253	304	4254.8	6648.1	25	10	2008	12:04	186	11.41	32.04	7.86	34.60	5
254	305	4312.2	6622.3	25	10	2008	15:10	79	11.48	30.35	9.99	31.24	5
255	306	4319.7	6633.9	25	10	2008	19:01	93	10.49	31.27	9.70	32.71	6
256	307	4324.4	6649.5	25	10	2008	21:25	209	10.41	32.45	7.80	34.23	6
257	308	4328.2	6710.5	26	10	2008	0:10	226	10.67	32.87	7.46	34.17	17
258	309	4338.2	6657.5	26	10	2008	3:04	164	10.57	32.78	8.59	34.00	7
259	310	4348.4	6702.5	26	10	2008	6:03	172	10.24	32.98	7.59	33.93	1
260	311	4349.3	6649.7	26	10	2008	9:21	135	10.80	32.83	9.37	33.52	1
261	312	4348.2	6637.9	26	10	2008	11:56	138	10.13	32.39	9.69	32.75	6
262	313	4357.1	6649.4	26	10	2008	15:23	118	10.54	32.82	9.68	33.25	6
263	314	4408.2	6637.8	27	10	2008	3:52	97	9.92	32.04	9.69	32.35	5
264	315	4407.0	6649.2	27	10	2008	6:09	150	9.79	32.43	8.76	33.58	2
265	316	4422.2	6705.5	27	10	2008	9:34	146	10.01	32.92	9.39	33.28	6
266	318	4400.3	6723.5	27	10	2008	16:45	185	10.44	32.92	7.41	33.98	8
267	319	4402.4	6737.1	27	10	2008	19:46	191	9.89	33.04	7.77	34.19	4
268	321	4401.1	6813.3	28	10	2008	5:16	100	10.01	32.82	9.92	32.93	4
269	322	4338.5	6823.5	28	10	2008	8:16	170	10.46	32.92	7.58	33.93	7
270	323	4350.1	6829.8	28	10	2008	12:55	119	10.38	32.73	9.66	33.12	5

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Sfc Temp	Sfc Salt	Btm Temp	Btm Salt	Meters from Bottom
271	332	4218.0	7013.2	4	11	2008	2:46	39	10.83	31.82	10.35	32.27	4
272	333	4216.6	7019.5	4	11	2008	4:49	53	10.79	31.83	10.83	31.88	7
273	334	4221.8	7018.0	4	11	2008	7:11	38	10.63	31.91	10.44	32.19	5
274	335	4221.3	7040.1	4	11	2008	9:26	63	11.01	31.70	9.47	32.36	3
275	336	4242.7	6955.6	4	11	2008	14:30	210	10.98	32.42	6.48	33.92	4
276	337	4249.9	7003.2	4	11	2008	16:31	137	10.91	32.55	5.95	33.20	4
277	338	4302.2	7004.9	4	11	2008	19:01	101	10.47	32.48	8.07	32.79	4
278	339	4305.5	7007.8	4	11	2008	20:25	106	10.34	32.20	7.13	32.82	6
279	340	4320.3	6955.0	4	11	2008	23:04	129	10.18	31.88	6.03	33.18	7
280	341	4324.2	6924.4	5	11	2008	2:16	170	10.42	32.69	5.87	33.36	1
281	342	4312.9	6905.2	5	11	2008	5:19	176	10.26	32.80	6.87	33.58	6
282	343	4316.8	6923.3	5	11	2008	7:50	173	10.51	32.69	7.15	33.42	8
283	344	4314.1	6943.0	5	11	2008	10:25	120	10.17	32.21	6.48	33.10	3
284	414	4254.2	7018.9	6	11	2008	18:25	163	10.63	31.92	6.03	32.91	4
285	346	4122.8	6920.7	8	11	2008	17:40	59	11.07	32.19	8.57	32.74	2