

*Oceanography Branch CTD Data Report,  
CTD\_REPORT\_2018002HB*

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# CTD\_REPORT\_2018002HB.pdf

## Oceans and Climate Branch CTD Data Report

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

HB 1802  
2018 Spring Bottom Trawl Survey  
Data Coverage: March 14 – May 12, 2018  
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 2018 Bottom Trawl Survey aboard the NOAA FSV *Henry B Bigelow*. All data was obtained with a Seabird Electronics SBE Model 9/11+ CTD (serial # 0832) and a NMFS SBE19+ Seacat profiling CTD (s/n 4477). Salt water samples were collected for the purpose of calibrating the conductivity cell.

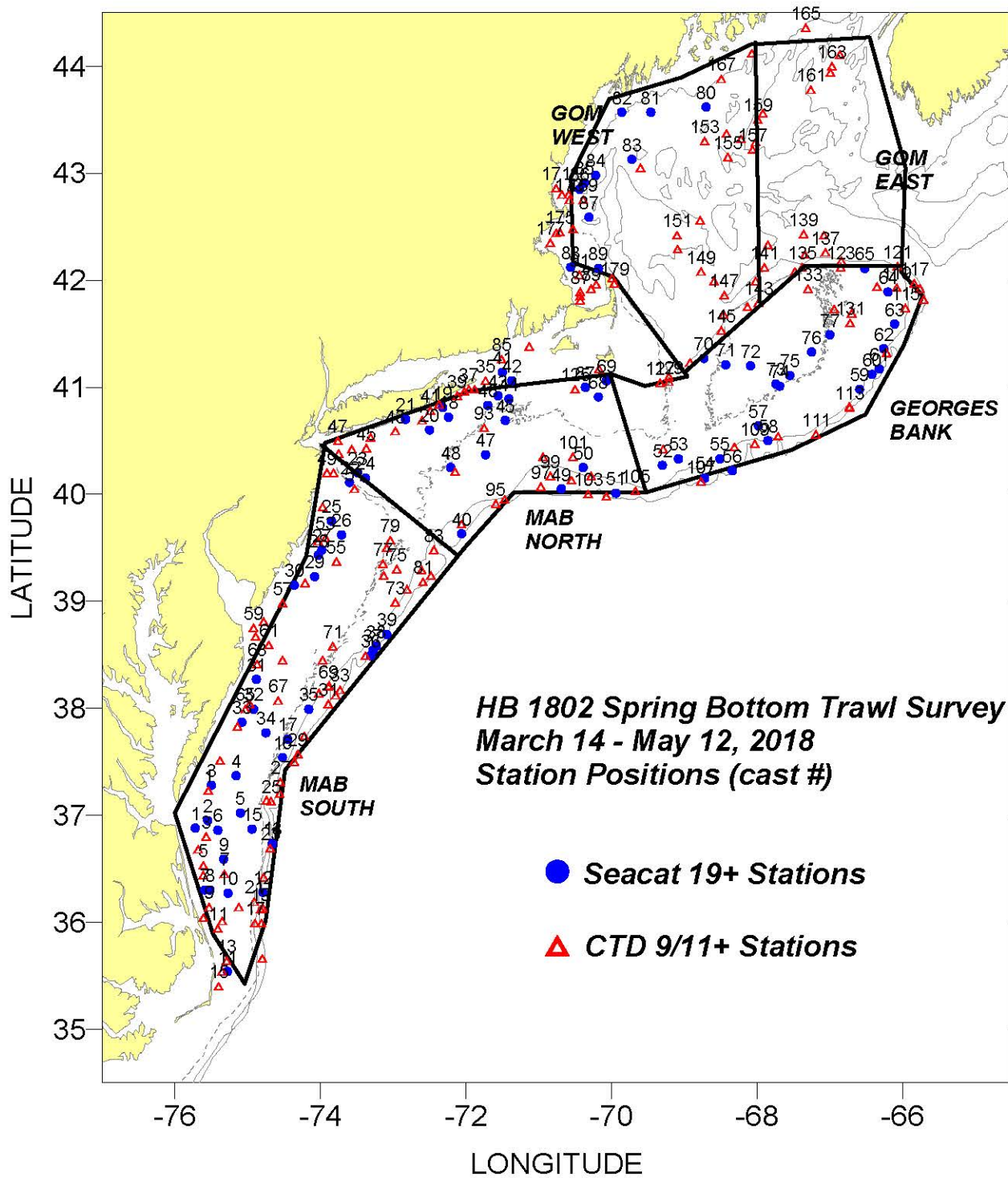
The SBE19+ was successfully deployed on 70 double oblique bongo casts, 10 water casts, and 6 vertical casts. The SBE9/11+ was used successfully on 179 stations. Data presented here have been audited; however, corrections and/or updates may be applied at a later time.

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**  
**MAR\_TRAWL\_HB1802**  
**CTD\_REPORT\_2018002HB.pdf**

Revised: May 10, 2019



**Areal average surface and bottom temperature/salinity and temperature/salinity anomalies for the  
HB1802 Spring Bottom Trawl Survey  
March 14 - May 12, 2018**

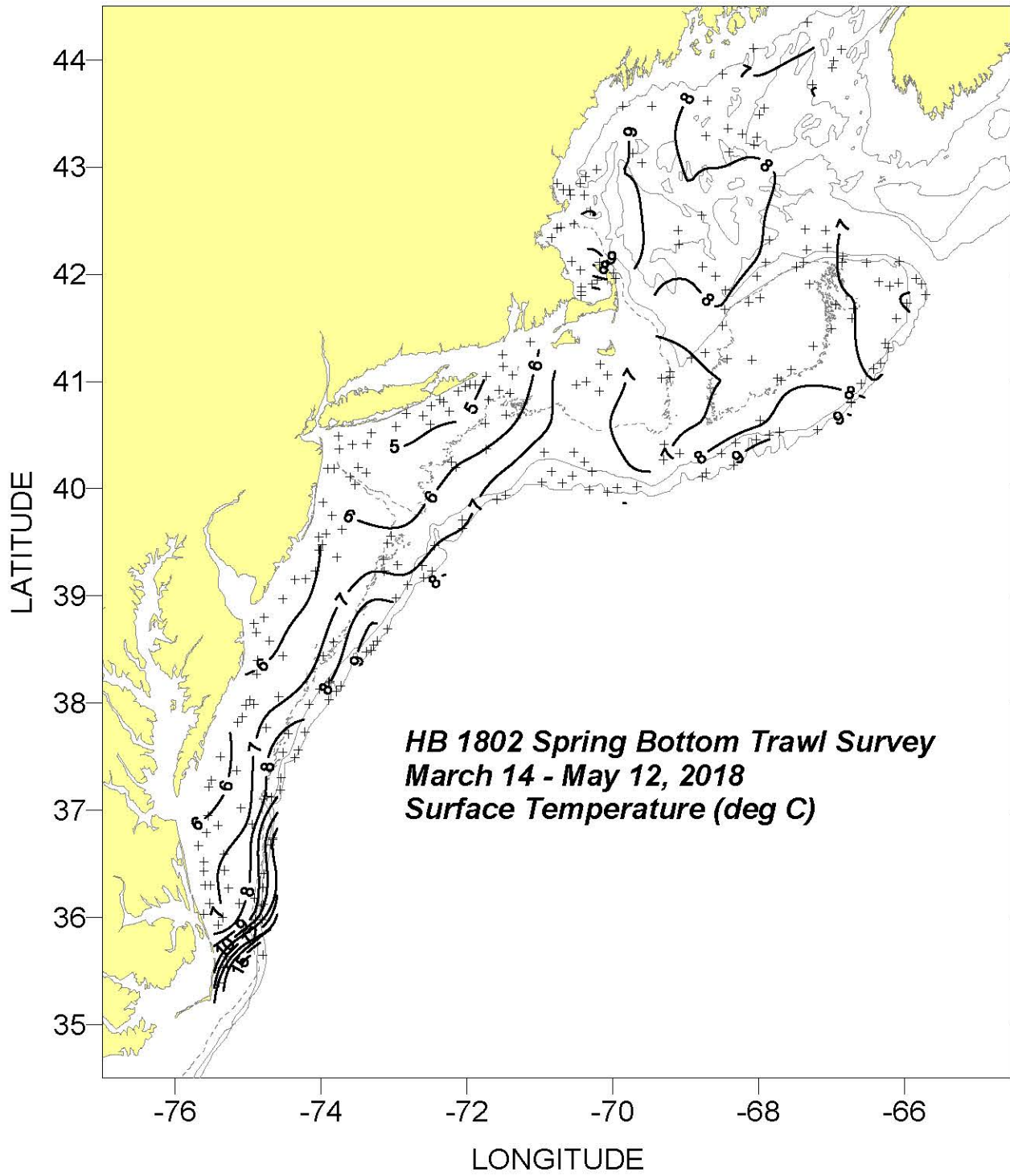
CRUISE	CD	SURFACE						BOTTOM						Purpose
		#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag	
<b>Western Gulf of Maine</b>														
hb1802	128	32	8.30	1.47	0.19	0.59	0	31	6.37	1.09	0.18	0.54	0	10
hb1802	128	32	31.84	-0.49	0.08	1.34	0	31	33.19	-0.05	0.06	0.21	0	10
<b>Eastern Gulf of Maine</b>														
hb1802	124	17	7.46	1.14	0.20	0.49	0	17	8.49	1.46	0.25	0.89	0	10
hb1802	124	17	32.47	-0.14	0.11	0.29	0	17	34.40	0.30	0.07	0.30	0	10
<b>Georges Bank</b>														
hb1802	117	39	7.38	1.05	0.25	0.86	0	37	8.12	1.33	0.25	1.03	0	10
hb1802	117	39	33.31	0.34	0.08	0.54	0	37	33.80	0.37	0.09	0.44	0	10
<b>MAB North</b>														
hb1802	104	42	6.32	0.53	0.27	0.65	0	42	7.53	0.47	0.30	0.98	0	10
hb1802	104	42	32.67	-0.06	0.12	0.50	0	42	33.48	-0.17	0.10	0.38	0	10
<b>MAB South</b>														
hb1802	85	94	7.03	0.31	0.19	0.78	0	92	7.92	0.80	0.23	0.86	0	10
hb1802	85	94	32.82	-0.21	0.11	0.76	0	92	33.73	0.01	0.08	0.42	0	10

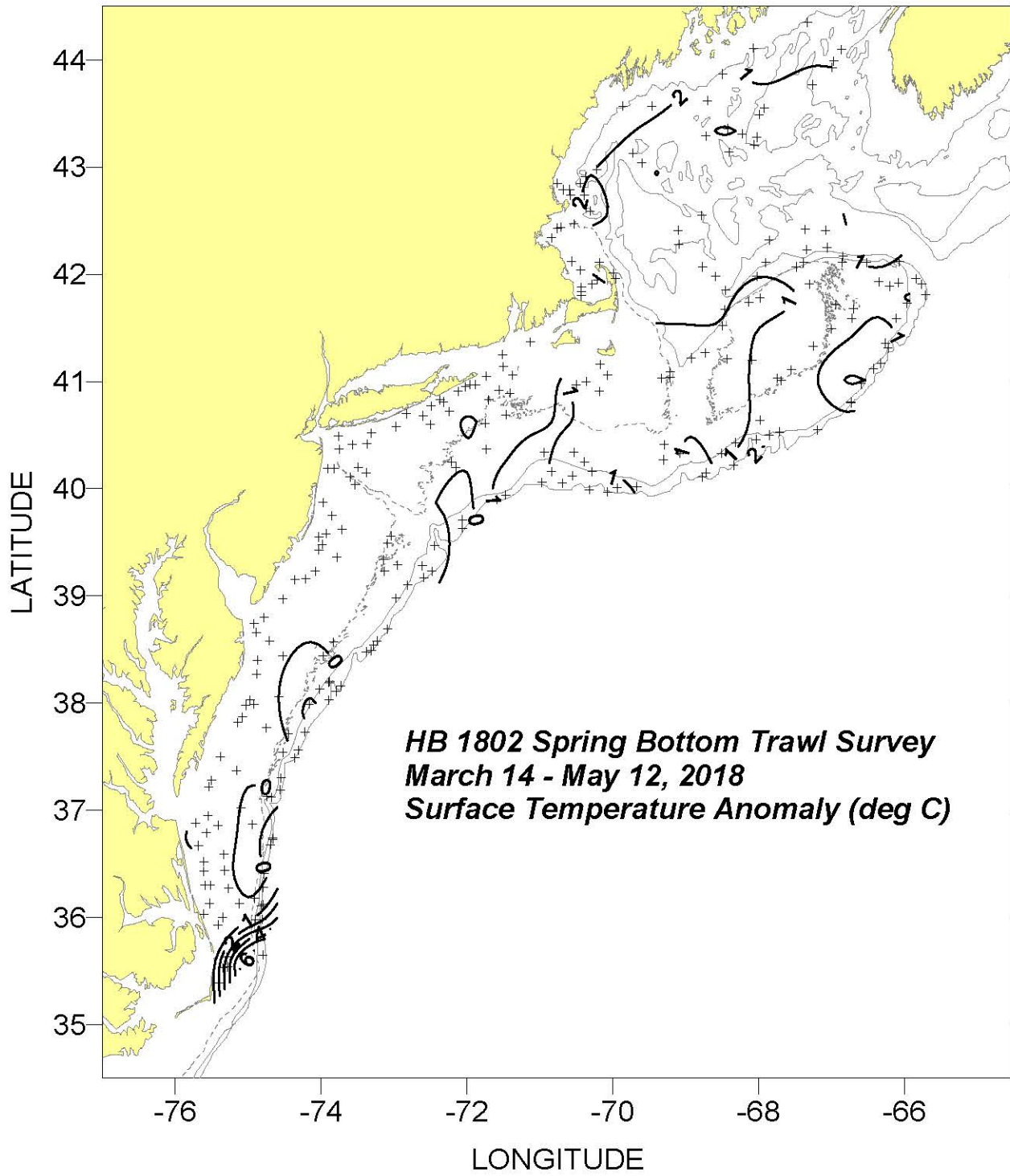
"CRUISE", the code name for a cruise: "CD", the calendar mid-date of all the stations within a region for a cruise:

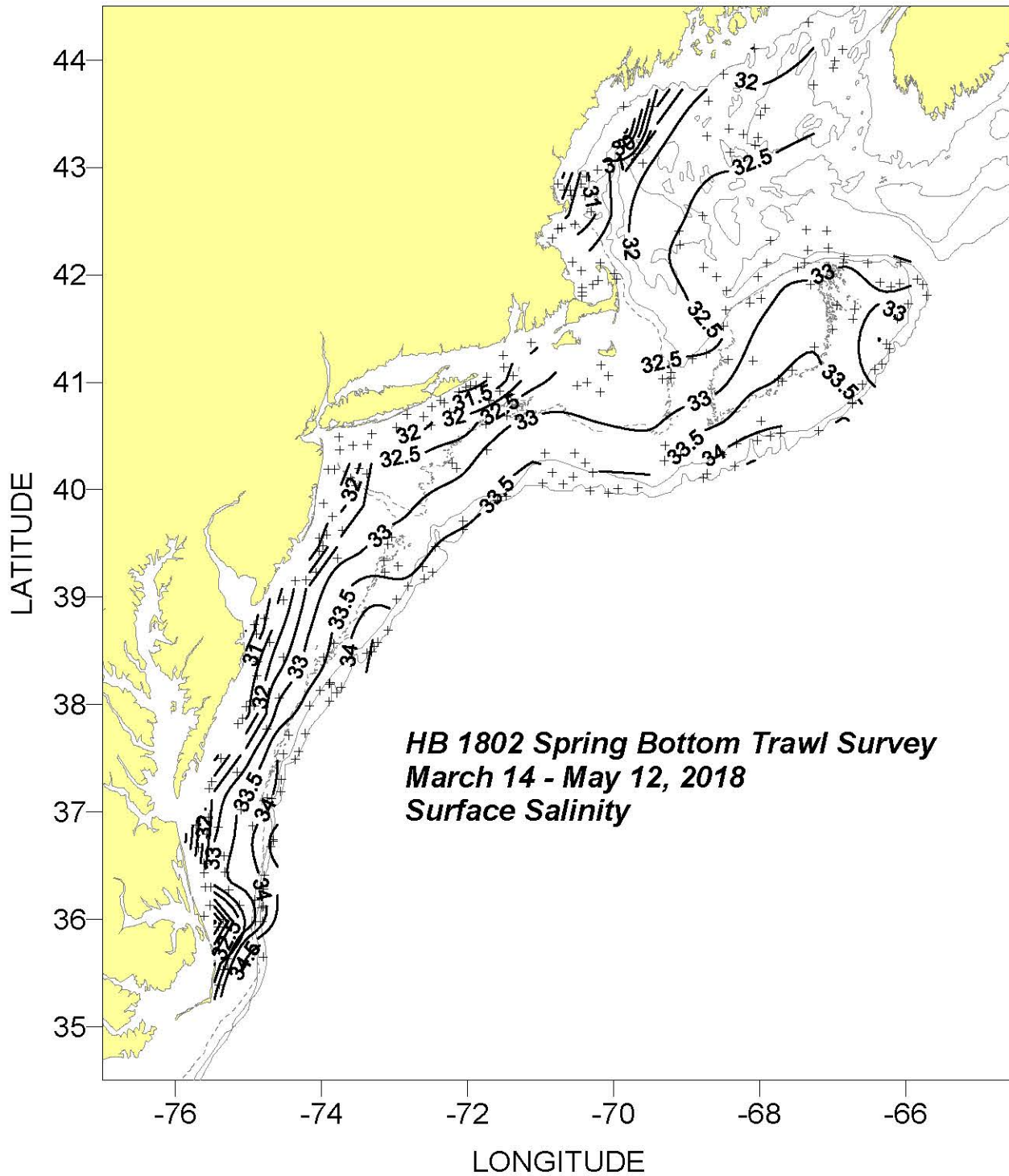
"#obs", the number of observations include in each average: "T/S", the areal average temp/salt: "Anomaly", the areal average temp/salt anomaly:

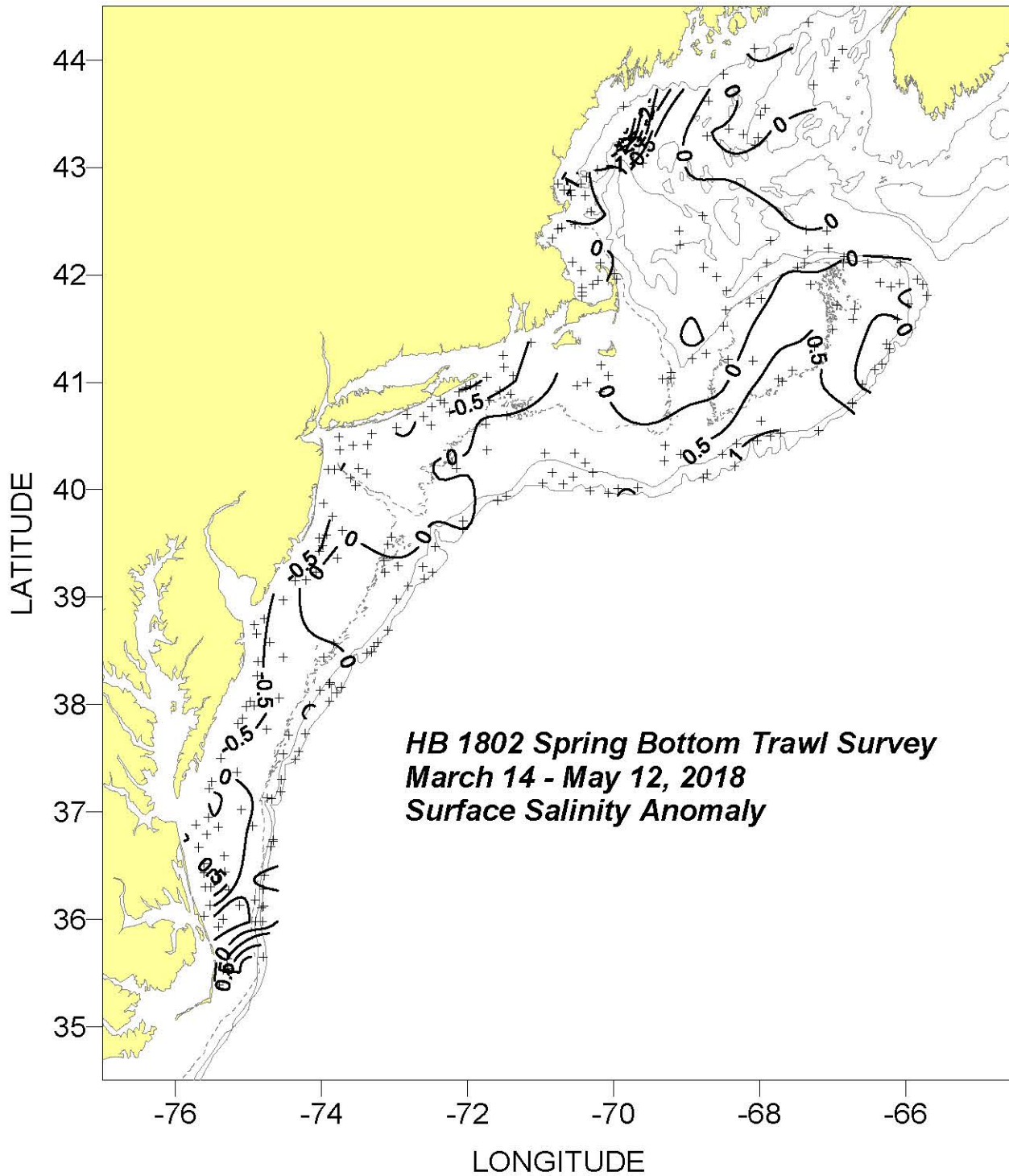
"SDV1", the standard deviation associated with the average temp/salt anomaly: "SDV2", the standard deviation of the individual anomalies from which the average anomaly was derived  
"Flag", a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal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

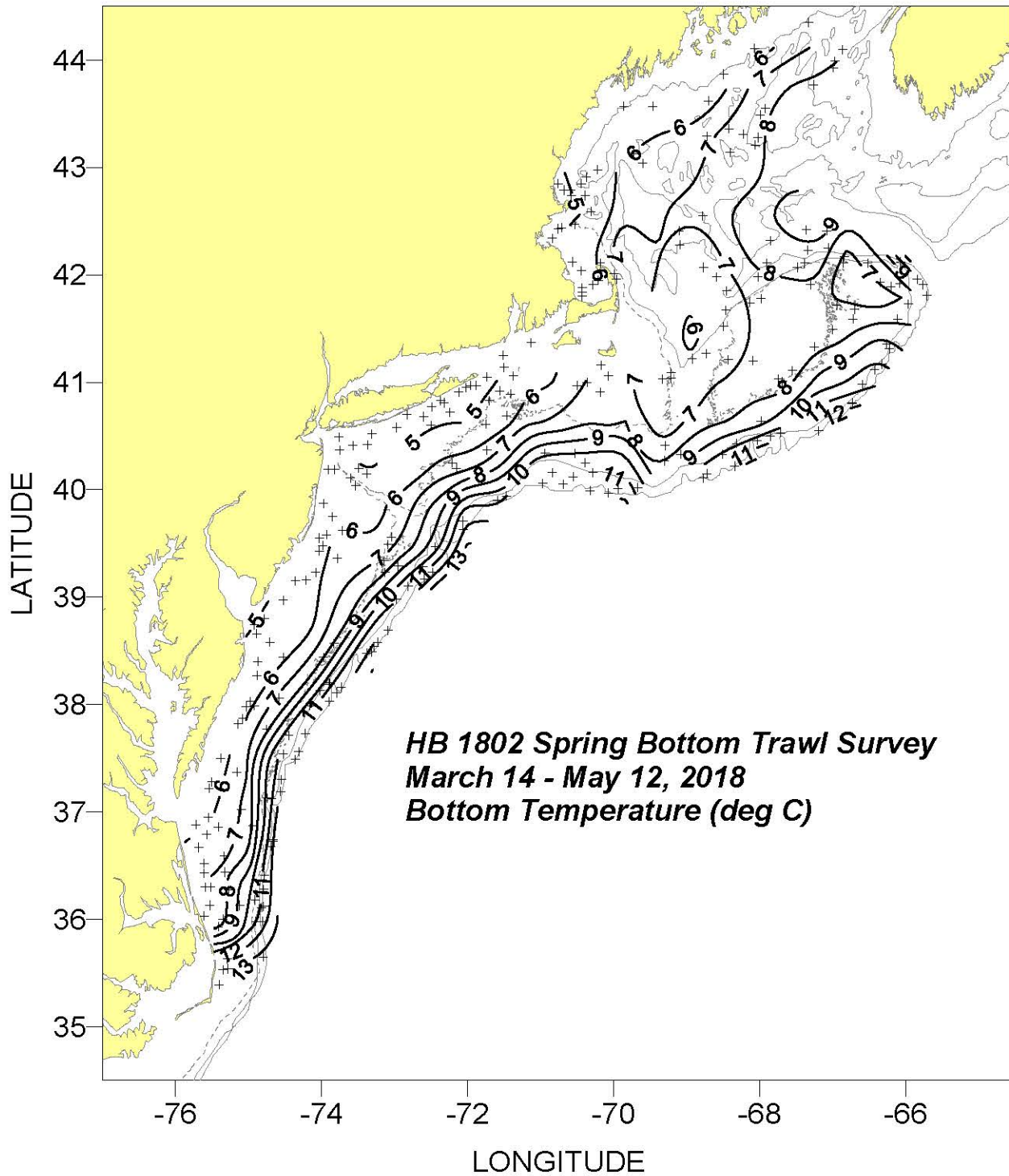


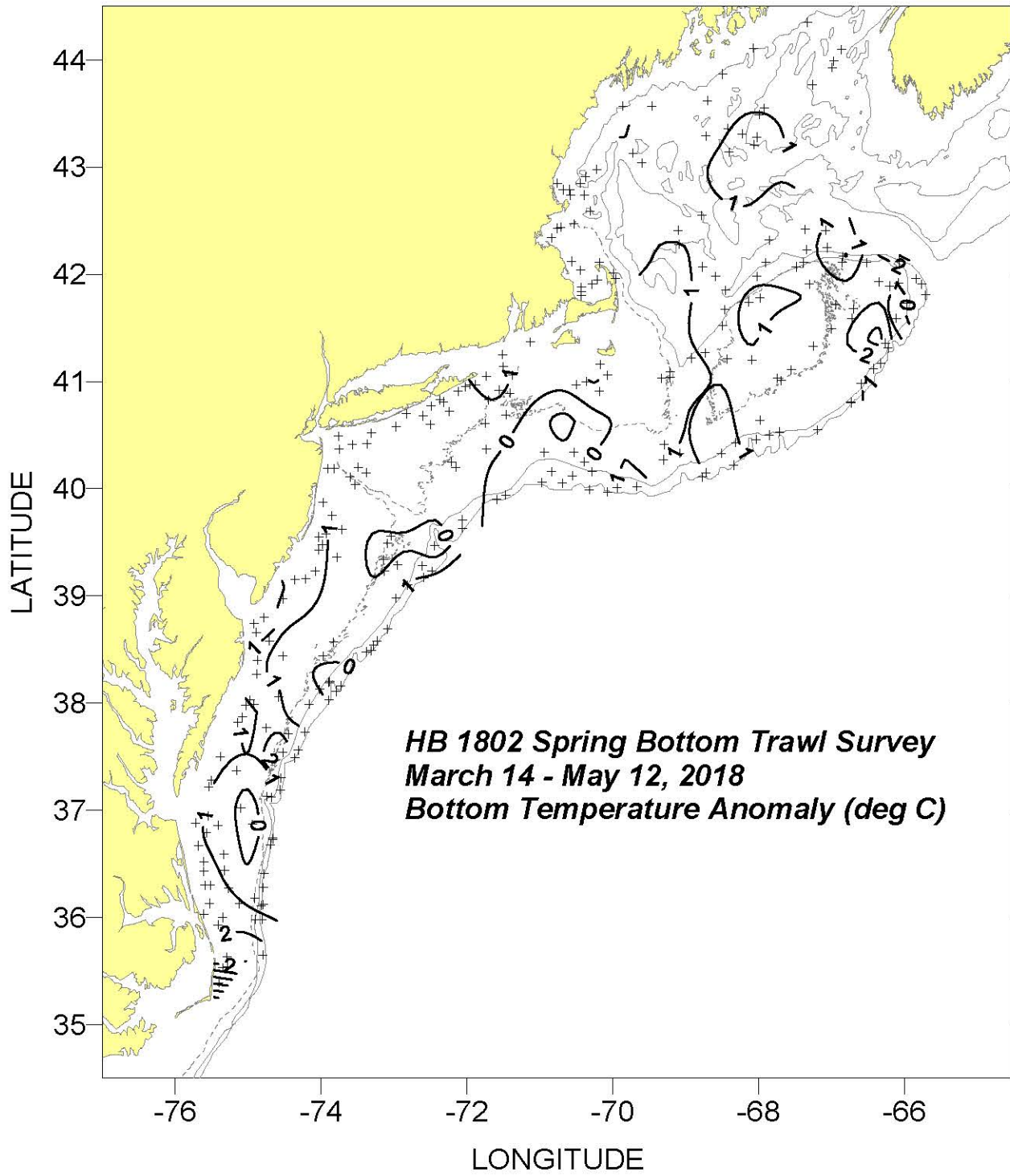


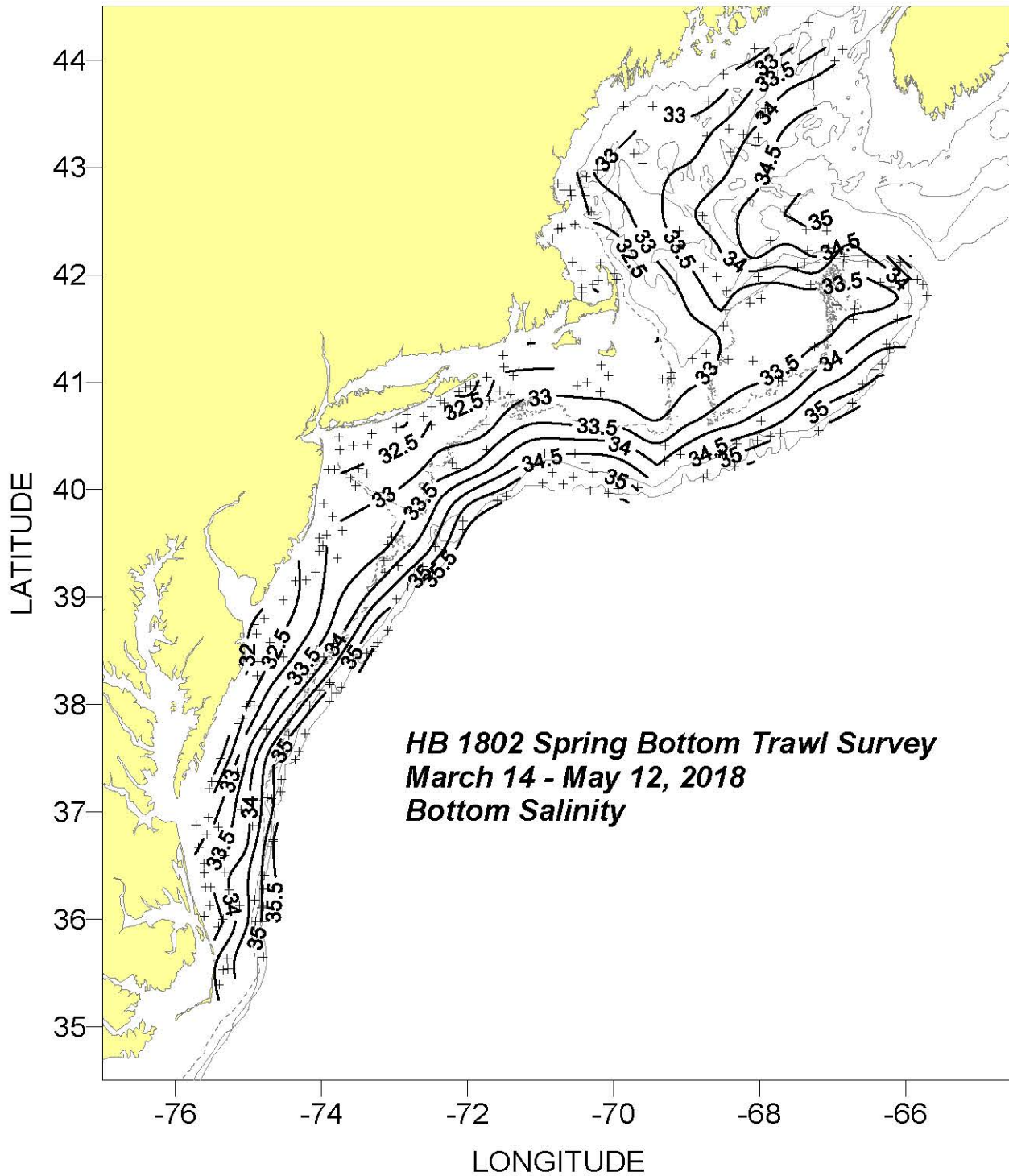


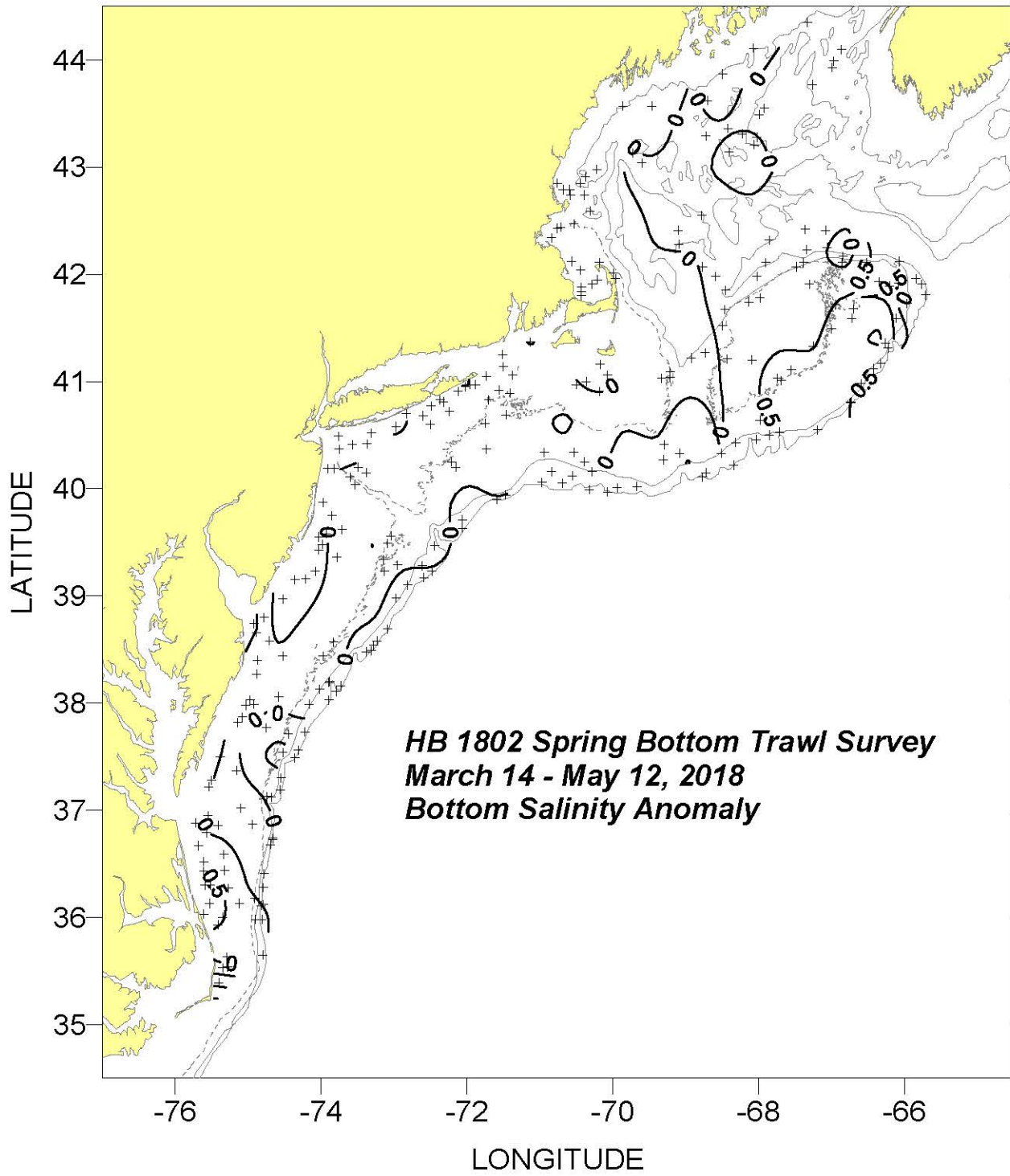












**HB1802 Spring Bottom Trawl Survey**  
**March 14 - May 12, 2018**

Cast	Site	Lat	Long	Day	Mo	Year	Time	Btm	Sfc	Sfc	Deepest Observed	Deepest Observed	Meters from	Method of
#	ID #	(deg N)	(deg W)				(GMT)	Depth (m)	Temp (deg C)	Salt	Temp (deg C)	Salt	Bottom	Deployment
1	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
2	16212	3656.9	7533.1	14	3	2018	22:46	26	6.05	32.87	6.07	32.89	5	B
<b>1</b>	<b>16229</b>	<b>3713.4</b>	<b>7532.3</b>	<b>15</b>	<b>3</b>	<b>2018</b>	<b>1:40</b>	<b>20</b>	<b>5.66</b>	<b>32.12</b>	<b>5.67</b>	<b>32.12</b>	<b>5</b>	<b>W</b>
3	16371	3716.9	7529.9	15	3	2018	3:19	20	5.55	32.37	5.63	32.58	2	B
<b>2</b>	<b>16299</b>	<b>3730.0</b>	<b>7523.0</b>	<b>15</b>	<b>3</b>	<b>2018</b>	<b>6:18</b>	<b>20</b>	<b>5.39</b>	<b>31.50</b>	<b>5.36</b>	<b>31.41</b>	<b>3</b>	<b>V</b>
4	16426	3721.9	7509.4	15	3	2018	8:56	31	5.64	33.19	5.63	33.19	3	B
5	16447	3701.5	7505.9	15	3	2018	12:11	42	6.26	33.57	6.24	33.56	4	B
6	16228	3651.6	7524.7	15	3	2018	15:19	25	6.44	33.51	6.38	33.48	4	B
<b>3</b>	<b>16205</b>	<b>3647.3</b>	<b>7534.2</b>	<b>15</b>	<b>3</b>	<b>2018</b>	<b>18:51</b>	<b>25</b>	<b>6.14</b>	<b>32.69</b>	<b>6.05</b>	<b>32.75</b>	<b>4</b>	<b>W</b>
<b>4</b>	<b>16209</b>	<b>3640.1</b>	<b>7540.8</b>	<b>15</b>	<b>3</b>	<b>2018</b>	<b>20:45</b>	<b>20</b>	<b>6.33</b>	<b>28.80</b>	<b>6.14</b>	<b>32.74</b>	<b>5</b>	<b>V</b>
<b>5</b>	<b>16306</b>	<b>3630.9</b>	<b>7536.6</b>	<b>15</b>	<b>3</b>	<b>2018</b>	<b>23:13</b>	<b>27</b>	<b>6.22</b>	<b>30.95</b>	<b>6.37</b>	<b>32.89</b>	<b>6</b>	<b>V</b>
<b>6</b>	<b>16334</b>	<b>3626.1</b>	<b>7536.5</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>1:15</b>	<b>23</b>	<b>6.24</b>	<b>31.44</b>	<b>6.58</b>	<b>33.15</b>	<b>1</b>	<b>V</b>
7	16428	3618.2	7535.3	16	3	2018	3:11	25	6.30	32.24	7.09	33.73	2	B
8	16442	3618.3	7530.9	16	3	2018	5:04	27	7.05	33.62	7.28	33.80	3	B
9	16215	3635.2	7519.6	16	3	2018	8:43	36	7.25	33.83	7.27	33.84	3	W
<b>7</b>	<b>16140</b>	<b>3626.6</b>	<b>7519.0</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>11:30</b>	<b>32</b>	<b>7.01</b>	<b>33.56</b>	<b>7.13</b>	<b>33.60</b>	<b>4</b>	<b>V</b>
10	16074	3616.4	7516.4	16	3	2018	13:24	32	7.55	33.74	7.88	34.05	4	B
<b>8</b>	<b>16433</b>	<b>3608.0</b>	<b>7507.2</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>15:43</b>	<b>37</b>	<b>7.67</b>	<b>33.65</b>	<b>7.83</b>	<b>33.87</b>	<b>5</b>	<b>W</b>
<b>9</b>	<b>16115</b>	<b>3608.1</b>	<b>7532.0</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>18:28</b>	<b>25</b>	<b>6.82</b>	<b>28.60</b>	<b>6.89</b>	<b>33.24</b>	<b>4</b>	<b>V</b>
<b>10</b>	<b>16356</b>	<b>3602.1</b>	<b>7536.4</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>20:00</b>	<b>24</b>	<b>7.10</b>	<b>30.27</b>	<b>6.87</b>	<b>32.76</b>	<b>4</b>	<b>V</b>
<b>11</b>	<b>16092</b>	<b>3555.6</b>	<b>7524.7</b>	<b>16</b>	<b>3</b>	<b>2018</b>	<b>22:42</b>	<b>24</b>	<b>6.83</b>	<b>30.90</b>	<b>7.24</b>	<b>33.34</b>	<b>4</b>	<b>V</b>
<b>12</b>	<b>16227</b>	<b>3559.9</b>	<b>7520.8</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>0:11</b>	<b>22</b>	<b>6.84</b>	<b>31.40</b>	<b>7.20</b>	<b>33.24</b>	<b>4</b>	<b>V</b>
<b>13</b>	<b>16080</b>	<b>3537.5</b>	<b>7517.2</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>5:52</b>	<b>25</b>	<b>12.74</b>	<b>33.76</b>	<b>15.01</b>	<b>34.71</b>	<b>2</b>	<b>V</b>
<b>14</b>	<b>16114</b>	<b>3531.8</b>	<b>7520.9</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>8:09</b>	<b>27</b>	<b>11.50</b>	<b>33.17</b>	<b>14.00</b>	<b>34.36</b>	<b>3</b>	<b>V</b>
11	16185	3532.2	7516.8	17	3	2018	10:03	27	13.33	34.21	14.07	34.43	5	B
<b>15</b>	<b>16388</b>	<b>3523.7</b>	<b>7524.1</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>12:30</b>	<b>23</b>	<b>12.10</b>	<b>33.57</b>	<b>13.02</b>	<b>33.89</b>	<b>4</b>	<b>V</b>
<b>16</b>	<b>16355</b>	<b>3538.8</b>	<b>7447.8</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>17:23</b>	<b>228</b>	<b>20.91</b>	<b>36.58</b>	<b>12.25</b>	<b>35.25</b>	<b>3</b>	<b>W</b>
<b>17</b>	<b>16400</b>	<b>3559.1</b>	<b>7454.2</b>	<b>17</b>	<b>3</b>	<b>2018</b>	<b>20:58</b>	<b>83</b>	<b>7.69</b>	<b>32.76</b>	<b>11.11</b>	<b>34.88</b>	<b>2</b>	<b>V</b>

**HB1802 Spring Bottom Trawl Survey**  
**March 14 - May 12, 2018**

Cast #	Site ID #	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	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
18	16332	3558.5	7448.9	18	3	2018	1:22	122	9.00	33.32	12.20	35.17	5	V
19	16207	3606.4	7449.2	18	3	2018	3:47	110	7.37	32.75	12.10	35.30	5	V
20	16122	3607.3	7447.1	18	3	2018	5:49	216	9.26	33.40	12.36	35.49	2	V
21	16179	3610.8	7454.5	18	3	2018	9:18	65	7.27	32.57	11.83	35.16	2	W
12	16375	3616.7	7447.5	18	3	2018	11:43	118	9.61	33.85	11.79	35.17	4	B
22	16310	3624.6	7446.9	18	3	2018	15:05	135	8.51	33.78	11.23	34.98	6	V
23	16312	3640.7	7441.3	18	3	2018	17:54	145	11.66	34.65	12.31	35.53	6	V
13	16328	3643.6	7439.3	18	3	2018	19:43	320	11.55	34.73	12.43	35.65	119	B
14	16328	3644.6	7439.8	18	3	2018	20:11	155	11.65	34.76	12.36	35.64	3	V
15	16446	3652.3	7456.5	19	3	2018	1:21	38	6.87	33.60	6.79	33.61	4	B
24	16195	3707.5	7444.6	19	3	2018	4:47	94	8.87	34.08	12.23	35.45	1	V
25	16362	3707.2	7441.0	19	3	2018	8:29	92	8.54	33.96	11.96	35.20	8	W
26	16412	3711.4	7433.4	19	3	2018	11:33	128	8.92	34.11	11.43	35.02	7	V
27	16449	3718.0	7432.7	19	3	2018	13:14	100	10.10	34.58	11.67	35.31	4	V
16	16261	3732.4	7431.3	19	3	2018	15:45	65	8.70	34.05	11.68	35.29	4	W
17	16238	3742.8	7427.2	19	3	2018	18:32	65	9.11	34.13	11.33	35.08	4	B
28	16429	3729.5	7421.6	19	3	2018	20:56	207	9.01	33.99	12.38	35.56	5	V
29	16396	3733.7	7418.5	19	3	2018	23:30	242	10.02	34.53	11.51	35.47	4	V
30	16360	3744.0	7413.0	20	3	2018	1:51	134	8.85	34.06	12.25	35.34	2	V
31	16191	3801.6	7353.1	20	3	2018	5:45	183	7.76	33.67	12.71	35.52	4	V
32	16254	3806.8	7347.3	20	3	2018	8:40	360	7.85	33.70	8.14	35.19	5	W
33	16282	3809.8	7343.9	20	3	2018	11:50	152	7.78	33.68	12.27	35.37	6	V
34	16284	3811.7	7352.5	20	3	2018	15:27	210	8.43	33.92	12.18	35.32	87	V
35	16274	4102.9	7143.8	28	3	2018	21:55	32	4.32	30.69	4.51	32.18	3	W
36	16301	4058.3	7152.9	28	3	2018	23:49	29	4.45	30.78	4.33	31.74	4	V
37	16079	4058.2	7157.5	29	3	2018	1:24	25	4.47	30.80	4.29	31.71	4	V
38	16217	4056.9	7201.1	29	3	2018	2:40	26	4.50	30.80	4.42	31.84	4	V

**HB1802 Spring Bottom Trawl Survey**  
**March 14 - May 12, 2018**

Cast #	Site ID #	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	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
<b>39</b>	<b>16134</b>	<b>4054.8</b>	<b>7207.0</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>4:06</b>	<b>28</b>	<b>4.51</b>	<b>30.92</b>	<b>4.22</b>	<b>31.44</b>	<b>7</b>	<b>V</b>
18	16365	4043.2	7214.7	29	3	2018	5:59	45	4.60	32.21	4.98	32.72	3	B
19	16411	4048.5	7219.0	29	3	2018	7:38	34	4.68	31.11	4.43	32.22	3	W
<b>40</b>	<b>16135</b>	<b>4050.0</b>	<b>7222.1</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>9:12</b>	<b>26</b>	<b>4.57</b>	<b>31.06</b>	<b>4.21</b>	<b>31.55</b>	<b>6</b>	<b>V</b>
<b>41</b>	<b>16223</b>	<b>4046.2</b>	<b>7229.3</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>10:50</b>	<b>32</b>	<b>4.61</b>	<b>31.02</b>	<b>4.44</b>	<b>32.05</b>	<b>5</b>	<b>V</b>
<b>42</b>	<b>16166</b>	<b>4041.0</b>	<b>7235.9</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>12:41</b>	<b>34</b>	<b>4.54</b>	<b>31.94</b>	<b>4.49</b>	<b>32.32</b>	<b>7</b>	<b>V</b>
20	16321	4036.2	7229.9	29	3	2018	14:05	41	4.94	32.18	4.88	32.66	4	B
21	16271	4042.1	7249.8	29	3	2018	17:20	25	4.96	31.40	4.33	31.88	5	B
<b>43</b>	<b>16346</b>	<b>4034.5</b>	<b>7258.1</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>19:16</b>	<b>25</b>	<b>4.46</b>	<b>31.72</b>	<b>4.27</b>	<b>31.82</b>	<b>3</b>	<b>V</b>
<b>44</b>	<b>16288</b>	<b>4031.3</b>	<b>7318.6</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>21:39</b>	<b>27</b>	<b>5.01</b>	<b>31.80</b>	<b>4.55</b>	<b>31.89</b>	<b>5</b>	<b>V</b>
<b>45</b>	<b>16084</b>	<b>4025.5</b>	<b>7322.3</b>	<b>29</b>	<b>3</b>	<b>2018</b>	<b>23:15</b>	<b>27</b>	<b>5.06</b>	<b>32.03</b>	<b>4.62</b>	<b>32.11</b>	<b>4</b>	<b>W</b>
<b>46</b>	<b>16298</b>	<b>4024.9</b>	<b>7334.0</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>0:57</b>	<b>26</b>	<b>5.17</b>	<b>32.05</b>	<b>4.81</b>	<b>32.05</b>	<b>2</b>	<b>W</b>
<b>47</b>	<b>16406</b>	<b>4029.2</b>	<b>7345.4</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>3:04</b>	<b>27</b>	<b>5.24</b>	<b>31.93</b>	<b>5.25</b>	<b>32.44</b>	<b>4</b>	<b>V</b>
<b>48</b>	<b>16138</b>	<b>4021.9</b>	<b>7344.8</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>4:59</b>	<b>25</b>	<b>5.61</b>	<b>31.48</b>	<b>5.04</b>	<b>32.33</b>	<b>3</b>	<b>V</b>
<b>49</b>	<b>16101</b>	<b>4011.3</b>	<b>7354.3</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>7:27</b>	<b>22</b>	<b>5.41</b>	<b>29.78</b>	<b>5.11</b>	<b>31.92</b>	<b>4</b>	<b>V</b>
<b>50</b>	<b>16110</b>	<b>4011.2</b>	<b>7349.4</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>9:37</b>	<b>30</b>	<b>5.50</b>	<b>30.18</b>	<b>5.11</b>	<b>32.22</b>	<b>6</b>	<b>W</b>
22	16435	4006.4	7336.0	30	3	2018	12:16	60	5.27	32.34	5.12	32.86	7	B
23	16340	4012.1	7329.5	30	3	2018	14:43	39	4.98	32.48	5.08	32.78	7	B
24	16314	4009.1	7322.6	30	3	2018	16:50	39	5.29	32.78	5.11	32.76	8	B
<b>51</b>	<b>16097</b>	<b>4002.4</b>	<b>7331.8</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>19:16</b>	<b>47</b>	<b>5.44</b>	<b>32.20</b>	<b>5.17</b>	<b>32.75</b>	<b>5</b>	<b>V</b>
<b>52</b>	<b>16094</b>	<b>3952.3</b>	<b>7358.2</b>	<b>30</b>	<b>3</b>	<b>2018</b>	<b>22:08</b>	<b>23</b>	<b>5.36</b>	<b>31.02</b>	<b>5.32</b>	<b>32.31</b>	<b>2</b>	<b>V</b>
25	16221	3945.1	7351.1	31	3	2018	0:26	28	6.20	31.81	5.93	33.06	5	B
26	16102	3937.0	7342.9	31	3	2018	2:35	33	6.46	32.27	6.21	33.16	2	B
<b>53</b>	<b>16308</b>	<b>3934.9</b>	<b>7355.9</b>	<b>31</b>	<b>3</b>	<b>2018</b>	<b>4:41</b>	<b>27</b>	<b>5.90</b>	<b>30.66</b>	<b>5.92</b>	<b>33.07</b>	<b>5</b>	<b>V</b>
<b>54</b>	<b>16444</b>	<b>3933.1</b>	<b>7401.8</b>	<b>31</b>	<b>3</b>	<b>2018</b>	<b>5:59</b>	<b>25</b>	<b>5.83</b>	<b>30.70</b>	<b>5.79</b>	<b>32.92</b>	<b>4</b>	<b>V</b>
27	16373	3929.1	7358.9	31	3	2018	7:37	24	5.79	31.90	5.93	33.19	3	B
28	16250	3925.8	7401.7	31	3	2018	9:11	26	5.79	31.49	5.76	33.03	6	W

**HB1802 Spring Bottom Trawl Survey  
March 14 - May 12,2018**

Cast #	Site ID #	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	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
<b>55</b>	<b>16194</b>	<b>3921.4</b>	<b>7346.8</b>	<b>31</b>	<b>3</b>	<b>2018</b>	<b>11:36</b>	<b>40</b>	<b>6.34</b>	<b>33.19</b>	<b>6.32</b>	<b>33.20</b>	<b>4</b>	<b>V</b>
29	16313	3913.9	7404.9	31	3	2018	13:59	29	5.88	32.19	5.65	32.82	8	B
<b>56</b>	<b>16118</b>	<b>3909.3</b>	<b>7412.8</b>	<b>31</b>	<b>3</b>	<b>2018</b>	<b>15:26</b>	<b>27</b>	<b>5.67</b>	<b>32.50</b>	<b>5.47</b>	<b>32.59</b>	<b>6</b>	<b>V</b>
30	16401	3909.0	7421.5	31	3	2018	16:57	22	6.65	31.62	5.27	32.72	5	B
<b>57</b>	<b>16445</b>	<b>3857.9</b>	<b>7431.2</b>	<b>31</b>	<b>3</b>	<b>2018</b>	<b>19:05</b>	<b>17</b>	<b>5.32</b>	<b>31.90</b>	<b>5.12</b>	<b>32.02</b>	<b>5</b>	<b>V</b>
<b>58</b>	<b>16086</b>	<b>3847.8</b>	<b>7446.5</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>0:45</b>	<b>21</b>	<b>6.09</b>	<b>31.21</b>	<b>5.34</b>	<b>31.93</b>	<b>3</b>	<b>W</b>
<b>59</b>	<b>16423</b>	<b>3844.3</b>	<b>7455.3</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>2:28</b>	<b>41</b>	<b>5.95</b>	<b>30.03</b>	<b>5.01</b>	<b>32.18</b>	<b>5</b>	<b>V</b>
<b>60</b>	<b>16409</b>	<b>3839.9</b>	<b>7453.2</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>3:54</b>	<b>26</b>	<b>6.08</b>	<b>30.36</b>	<b>4.99</b>	<b>32.17</b>	<b>3</b>	<b>V</b>
<b>61</b>	<b>16120</b>	<b>3835.0</b>	<b>7442.6</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>6:51</b>	<b>19</b>	<b>5.87</b>	<b>31.41</b>	<b>5.28</b>	<b>32.41</b>	<b>4</b>	<b>V</b>
<b>62</b>	<b>16421</b>	<b>3826.6</b>	<b>7431.2</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>9:20</b>	<b>34</b>	<b>6.05</b>	<b>32.54</b>	<b>5.98</b>	<b>32.98</b>	<b>4</b>	<b>V</b>
<b>63</b>	<b>16117</b>	<b>3823.8</b>	<b>7452.4</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>12:00</b>	<b>23</b>	<b>5.82</b>	<b>31.57</b>	<b>5.76</b>	<b>31.67</b>	<b>5</b>	<b>W</b>
31	16420	3816.1	7452.9	1	4	2018	13:47	17	6.07	31.69	5.60	32.50	6	W
32	16252	3759.5	7455.5	1	4	2018	17:03	33	6.40	31.64	5.76	32.87	6	B
<b>64</b>	<b>16124</b>	<b>3802.0</b>	<b>7458.4</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>18:43</b>	<b>20</b>	<b>6.06</b>	<b>31.61</b>	<b>5.57</b>	<b>32.52</b>	<b>5</b>	<b>V</b>
<b>65</b>	<b>16198</b>	<b>3758.8</b>	<b>7501.8</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>19:53</b>	<b>14</b>	<b>6.40</b>	<b>31.18</b>	<b>5.70</b>	<b>32.06</b>	<b>4</b>	<b>V</b>
33	16169	3752.1	7505.0	1	4	2018	21:42	25	6.67	31.26	5.93	32.85	3	B
<b>66</b>	<b>16112</b>	<b>3749.0</b>	<b>7508.3</b>	<b>1</b>	<b>4</b>	<b>2018</b>	<b>23:01</b>	<b>22</b>	<b>6.80</b>	<b>30.84</b>	<b>6.03</b>	<b>32.92</b>	<b>1</b>	<b>V</b>
34	16368	3746.3	7444.8	2	4	2018	1:58	45	6.85	33.19	7.43	33.82	2	B
<b>67</b>	<b>16106</b>	<b>3803.4</b>	<b>7434.6</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>4:38</b>	<b>41</b>	<b>6.60</b>	<b>32.81</b>	<b>6.57</b>	<b>33.23</b>	<b>3</b>	<b>V</b>
35	16267	3759.2	7409.4	2	4	2018	7:13	95	7.49	33.69	10.32	34.88	2	B
<b>68</b>	<b>16256</b>	<b>3808.1</b>	<b>7401.0</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>9:22</b>	<b>80</b>	<b>7.26</b>	<b>33.51</b>	<b>9.32</b>	<b>34.41</b>	<b>3</b>	<b>W</b>
<b>69</b>	<b>16284</b>	<b>3811.4</b>	<b>7353.3</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>11:37</b>	<b>119</b>	<b>7.21</b>	<b>33.49</b>	<b>11.22</b>	<b>35.10</b>	<b>4</b>	<b>V</b>
<b>70</b>	<b>16367</b>	<b>3826.4</b>	<b>7358.2</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>14:17</b>	<b>58</b>	<b>7.28</b>	<b>33.51</b>	<b>7.17</b>	<b>33.64</b>	<b>5</b>	<b>V</b>
<b>71</b>	<b>16262</b>	<b>3834.0</b>	<b>7349.5</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>17:32</b>	<b>59</b>	<b>7.16</b>	<b>33.51</b>	<b>7.28</b>	<b>33.66</b>	<b>8</b>	<b>V</b>
<b>72</b>	<b>16296</b>	<b>3828.9</b>	<b>7322.5</b>	<b>2</b>	<b>4</b>	<b>2018</b>	<b>20:58</b>	<b>118</b>	<b>10.01</b>	<b>34.63</b>	<b>12.55</b>	<b>35.56</b>	<b>4</b>	<b>V</b>
36	16316	3829.3	7318.6	2	4	2018	23:20	200	10.19	34.78	12.10	35.66	7	B
37	16147	3832.4	7316.6	3	4	2018	1:49	146	9.64	34.61	12.82	35.71	4	W



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1	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
38	16083	3834.9	7314.1	3	4	2018	3:33	152	9.75	34.66	12.52	35.61	3	B
39	16279	3841.2	7305.5	3	4	2018	6:20	197	9.91	34.70	12.00	35.41	4	B
<b>73</b>	<b>16225</b>	<b>3858.6</b>	<b>7258.3</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>9:14</b>	<b>87</b>	<b>8.56</b>	<b>34.09</b>	<b>11.03</b>	<b>34.98</b>	<b>5</b>	<b>V</b>
<b>74</b>	<b>16309</b>	<b>3906.1</b>	<b>7248.8</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>11:13</b>	<b>113</b>	<b>6.88</b>	<b>33.44</b>	<b>11.06</b>	<b>34.97</b>	<b>3</b>	<b>V</b>
<b>75</b>	<b>16405</b>	<b>3917.5</b>	<b>7257.3</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>13:25</b>	<b>72</b>	<b>6.63</b>	<b>33.33</b>	<b>7.18</b>	<b>33.69</b>	<b>2</b>	<b>V</b>
<b>76</b>	<b>16078</b>	<b>3914.0</b>	<b>7307.9</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>15:07</b>	<b>68</b>	<b>6.48</b>	<b>33.22</b>	<b>7.09</b>	<b>33.66</b>	<b>5</b>	<b>W</b>
<b>77</b>	<b>16338</b>	<b>3920.7</b>	<b>7308.4</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>17:15</b>	<b>64</b>	<b>6.41</b>	<b>33.16</b>	<b>6.60</b>	<b>33.46</b>	<b>3</b>	<b>V</b>
<b>78</b>	<b>16095</b>	<b>3929.6</b>	<b>7305.3</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>19:01</b>	<b>65</b>	<b>6.17</b>	<b>33.07</b>	<b>6.19</b>	<b>33.22</b>	<b>3</b>	<b>V</b>
<b>79</b>	<b>16162</b>	<b>3933.8</b>	<b>7302.6</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>20:27</b>	<b>67</b>	<b>5.94</b>	<b>32.97</b>	<b>6.66</b>	<b>33.48</b>	<b>4</b>	<b>V</b>
<b>80</b>	<b>16450</b>	<b>3916.9</b>	<b>7236.5</b>	<b>3</b>	<b>4</b>	<b>2018</b>	<b>23:54</b>	<b>132</b>	<b>6.78</b>	<b>33.41</b>	<b>6.78</b>	<b>33.41</b>	<b>127</b>	<b>V</b>
<b>81</b>	<b>16234</b>	<b>3910.4</b>	<b>7235.1</b>	<b>4</b>	<b>4</b>	<b>2018</b>	<b>2:01</b>	<b>202</b>	<b>7.06</b>	<b>33.50</b>	<b>12.30</b>	<b>35.56</b>	<b>6</b>	<b>V</b>
<b>82</b>	<b>16100</b>	<b>3913.7</b>	<b>7228.6</b>	<b>4</b>	<b>4</b>	<b>2018</b>	<b>3:49</b>	<b>212</b>	<b>8.40</b>	<b>33.99</b>	<b>12.53</b>	<b>35.57</b>	<b>5</b>	<b>V</b>
<b>83</b>	<b>16141</b>	<b>3928.1</b>	<b>7226.7</b>	<b>4</b>	<b>4</b>	<b>2018</b>	<b>6:28</b>	<b>123</b>	<b>6.96</b>	<b>33.50</b>	<b>9.54</b>	<b>34.57</b>	<b>3</b>	<b>W</b>
40	16331	3937.6	7203.3	4	4	2018	9:50	156	6.67	33.48	12.71	35.69	4	B
<b>84</b>	<b>16085</b>	<b>3942.3</b>	<b>7203.9</b>	<b>4</b>	<b>4</b>	<b>2018</b>	<b>12:26</b>	<b>139</b>	<b>6.62</b>	<b>33.36</b>	<b>12.80</b>	<b>35.58</b>	<b>3</b>	<b>V</b>
<b>85</b>	<b>16103</b>	<b>4115.0</b>	<b>7130.8</b>	<b>14</b>	<b>4</b>	<b>2018</b>	<b>17:12</b>	<b>41</b>	<b>5.67</b>	<b>30.39</b>	<b>5.14</b>	<b>32.54</b>	<b>6</b>	<b>V</b>
41	16275	4108.5	7129.9	14	4	2018	19:10	31	5.77	30.79	5.04	32.16	8	B
42	16286	4103.8	7122.1	14	4	2018	21:47	48	5.68	31.55	5.13	32.81	6	B
43	16259	4055.0	7133.6	15	4	2018	0:14	56	5.73	31.76	5.30	33.09	9	W
<b>86</b>	<b>16206</b>	<b>4148.0</b>	<b>7026.0</b>	<b>15</b>	<b>4</b>	<b>2018</b>	<b>20:50</b>	<b>22</b>	<b>5.07</b>	<b>31.78</b>	<b>5.08</b>	<b>31.79</b>	<b>5</b>	<b>W</b>
<b>87</b>	<b>16327</b>	<b>4153.0</b>	<b>7025.8</b>	<b>15</b>	<b>4</b>	<b>2018</b>	<b>23:40</b>	<b>32</b>	<b>4.89</b>	<b>32.06</b>	<b>4.89</b>	<b>32.08</b>	<b>5</b>	<b>V</b>
<b>88</b>	<b>16706</b>	<b>4150.6</b>	<b>7026.0</b>	<b>16</b>	<b>4</b>	<b>2018</b>	<b>1:27</b>	<b>27</b>	<b>5.02</b>	<b>31.91</b>	<b>5.00</b>	<b>31.99</b>	<b>5</b>	<b>V</b>
<b>89</b>	<b>16184</b>	<b>4154.4</b>	<b>7016.7</b>	<b>16</b>	<b>4</b>	<b>2018</b>	<b>3:42</b>	<b>36</b>	<b>4.84</b>	<b>32.01</b>	<b>4.68</b>	<b>32.07</b>	<b>6</b>	<b>V</b>
<b>90</b>	<b>16203</b>	<b>4157.0</b>	<b>7012.7</b>	<b>16</b>	<b>4</b>	<b>2018</b>	<b>5:48</b>	<b>35</b>	<b>4.80</b>	<b>32.00</b>	<b>4.37</b>	<b>32.19</b>	<b>4</b>	<b>V</b>
<b>91</b>	<b>16214</b>	<b>4202.1</b>	<b>7026.7</b>	<b>16</b>	<b>4</b>	<b>2018</b>	<b>12:15</b>	<b>50</b>	<b>4.53</b>	<b>32.12</b>	<b>4.16</b>	<b>32.26</b>	<b>5</b>	<b>W</b>
<b>92</b>	<b>16076</b>	<b>4122.1</b>	<b>7107.7</b>	<b>17</b>	<b>4</b>	<b>2018</b>	<b>20:15</b>	<b>29</b>	<b>5.35</b>	<b>31.91</b>	<b>5.20</b>	<b>31.93</b>	<b>6</b>	<b>W</b>
44	16091	4053.5	7124.7	18	4	2018	0:32	60	5.17	32.52	5.16	32.78	7	B

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1	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
45	16272	4041.5	7127.8	18	4	2018	3:24	65	5.41	32.92	5.22	32.94	2	B
46	16376	4049.7	7142.0	18	4	2018	6:37	63	5.40	32.41	5.37	32.84	4	B
<b>93</b>	<b>16226</b>	<b>4036.6</b>	<b>7145.2</b>	<b>18</b>	<b>4</b>	<b>2018</b>	<b>9:24</b>	<b>63</b>	<b>5.33</b>	<b>32.57</b>	<b>5.29</b>	<b>32.85</b>	<b>6</b>	<b>V</b>
47	16273	4022.0	7143.9	18	4	2018	12:52	78	5.74	32.97	5.56	33.15	1	B
48	16410	4014.8	7212.7	18	4	2018	17:16	62	6.08	32.89	6.06	33.14	4	B
<b>94</b>	<b>16178</b>	<b>4011.8</b>	<b>7209.0</b>	<b>18</b>	<b>4</b>	<b>2018</b>	<b>19:41</b>	<b>68</b>	<b>6.19</b>	<b>32.90</b>	<b>6.11</b>	<b>33.18</b>	<b>5</b>	<b>W</b>
<b>95</b>	<b>16323</b>	<b>3954.1</b>	<b>7135.7</b>	<b>18</b>	<b>4</b>	<b>2018</b>	<b>23:59</b>	<b>222</b>	<b>7.70</b>	<b>33.55</b>	<b>10.67</b>	<b>35.38</b>	<b>6</b>	<b>V</b>
<b>96</b>	<b>16188</b>	<b>3956.5</b>	<b>7128.2</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>2:23</b>	<b>205</b>	<b>8.24</b>	<b>33.73</b>	<b>11.49</b>	<b>35.48</b>	<b>2</b>	<b>V</b>
<b>97</b>	<b>16424</b>	<b>4003.7</b>	<b>7058.4</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>6:39</b>	<b>202</b>	<b>7.96</b>	<b>33.67</b>	<b>12.21</b>	<b>35.48</b>	<b>9</b>	<b>V</b>
<b>98</b>	<b>16165</b>	<b>4020.3</b>	<b>7056.5</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>10:18</b>	<b>96</b>	<b>7.38</b>	<b>33.45</b>	<b>9.70</b>	<b>34.48</b>	<b>3</b>	<b>V</b>
<b>99</b>	<b>16201</b>	<b>4009.8</b>	<b>7050.1</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>12:28</b>	<b>133</b>	<b>7.47</b>	<b>33.49</b>	<b>12.33</b>	<b>35.41</b>	<b>7</b>	<b>W</b>
49	16244	4003.1	7041.7	19	4	2018	14:32	135	8.15	33.86	12.55	35.65	6	B
<b>100</b>	<b>16361</b>	<b>4007.1</b>	<b>7033.1</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>17:35</b>	<b>118</b>	<b>7.50</b>	<b>33.49</b>	<b>12.45</b>	<b>35.47</b>	<b>5</b>	<b>W</b>
<b>101</b>	<b>16075</b>	<b>4020.6</b>	<b>7031.8</b>	<b>19</b>	<b>4</b>	<b>2018</b>	<b>20:21</b>	<b>92</b>	<b>7.16</b>	<b>33.35</b>	<b>7.97</b>	<b>33.81</b>	<b>5</b>	<b>V</b>
50	16280	4014.8	7023.7	19	4	2018	22:27	103	7.13	33.45	9.72	34.66	4	B
<b>102</b>	<b>16231</b>	<b>4009.8</b>	<b>7016.9</b>	<b>20</b>	<b>4</b>	<b>2018</b>	<b>0:47</b>	<b>114</b>	<b>7.36</b>	<b>33.49</b>	<b>11.79</b>	<b>35.22</b>	<b>5</b>	<b>V</b>
<b>103</b>	<b>16175</b>	<b>3959.4</b>	<b>7019.4</b>	<b>20</b>	<b>4</b>	<b>2018</b>	<b>3:03</b>	<b>336</b>	<b>8.87</b>	<b>34.04</b>	<b>8.93</b>	<b>35.25</b>	<b>7</b>	<b>V</b>
<b>104</b>	<b>16276</b>	<b>3958.1</b>	<b>7004.0</b>	<b>20</b>	<b>4</b>	<b>2018</b>	<b>6:38</b>	<b>217</b>	<b>8.27</b>	<b>33.82</b>	<b>11.79</b>	<b>35.49</b>	<b>6</b>	<b>V</b>
51	16081	4000.7	6956.6	20	4	2018	9:44	148	7.69	33.80	12.73	35.64	7	B
<b>105</b>	<b>16350</b>	<b>4000.9</b>	<b>6940.0</b>	<b>20</b>	<b>4</b>	<b>2018</b>	<b>12:53</b>	<b>124</b>	<b>7.28</b>	<b>33.58</b>	<b>10.88</b>	<b>34.93</b>	<b>6</b>	<b>V</b>
52	16302	4016.5	6917.7	20	4	2018	17:04	86	6.65	33.35	7.51	33.85	6	B
<b>106</b>	<b>16204</b>	<b>4024.3</b>	<b>6917.4</b>	<b>20</b>	<b>4</b>	<b>2018</b>	<b>19:29</b>	<b>78</b>	<b>6.37</b>	<b>33.21</b>	<b>6.30</b>	<b>33.21</b>	<b>7</b>	<b>W</b>
53	16133	4019.6	6904.8	20	4	2018	21:51	91	7.31	33.72	8.28	34.20	4	B
<b>107</b>	<b>16172</b>	<b>4006.3</b>	<b>6846.1</b>	<b>21</b>	<b>4</b>	<b>2018</b>	<b>1:05</b>	<b>194</b>	<b>9.24</b>	<b>34.26</b>	<b>11.11</b>	<b>35.15</b>	<b>5</b>	<b>V</b>
54	16253	4009.0	6843.4	21	4	2018	3:21	162	8.43	34.13	10.95	35.28	4	B
55	16364	4019.9	6830.5	21	4	2018	6:20	108	8.01	34.01	9.56	34.68	3	B
56	16283	4013.0	6820.5	21	4	2018	9:44	212	10.09	34.76	12.69	35.72	7	W

**HB1802 Spring Bottom Trawl Survey**  
**March 14 - May 12, 2018**

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1	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
<b>108</b>	<b>16297</b>	<b>4025.9</b>	<b>6818.4</b>	<b>21</b>	<b>4</b>	<b>2018</b>	<b>12:34</b>	<b>110</b>	<b>8.36</b>	<b>34.01</b>	<b>9.64</b>	<b>34.47</b>	<b>4</b>	<b>V</b>
57	16404	4038.5	6759.0	21	4	2018	15:45	85	7.13	33.75	7.87	33.98	4	B
<b>109</b>	<b>16345</b>	<b>4027.8</b>	<b>6801.8</b>	<b>21</b>	<b>4</b>	<b>2018</b>	<b>18:14</b>	<b>135</b>	<b>9.14</b>	<b>34.18</b>	<b>10.93</b>	<b>35.02</b>	<b>3</b>	<b>V</b>
58	16161	4029.9	6750.9	21	4	2018	20:31	105	8.22	34.05	9.97	34.73	4	B
<b>110</b>	<b>16385</b>	<b>4031.8</b>	<b>6742.9</b>	<b>22</b>	<b>4</b>	<b>2018</b>	<b>0:34</b>	<b>234</b>	<b>8.75</b>	<b>34.08</b>	<b>10.51</b>	<b>35.29</b>	<b>12</b>	<b>W</b>
<b>111</b>	<b>16315</b>	<b>4033.3</b>	<b>6711.1</b>	<b>22</b>	<b>4</b>	<b>2018</b>	<b>4:37</b>	<b>161</b>	<b>8.83</b>	<b>33.93</b>	<b>12.61</b>	<b>35.57</b>	<b>9</b>	<b>V</b>
<b>112</b>	<b>16389</b>	<b>4048.6</b>	<b>6643.7</b>	<b>22</b>	<b>4</b>	<b>2018</b>	<b>8:35</b>	<b>177</b>	<b>8.24</b>	<b>33.55</b>	<b>12.50</b>	<b>35.59</b>	<b>6</b>	<b>V</b>
<b>113</b>	<b>16093</b>	<b>4048.2</b>	<b>6643.9</b>	<b>22</b>	<b>4</b>	<b>2018</b>	<b>10:30</b>	<b>186</b>	<b>9.37</b>	<b>34.05</b>	<b>12.58</b>	<b>35.59</b>	<b>5</b>	<b>V</b>
59	16242	4058.8	6635.3	22	4	2018	13:49	97	6.98	33.14	9.03	34.43	5	B
60	16303	4107.1	6625.3	22	4	2018	16:14	124	6.53	32.58	10.77	35.07	3	B
61	16087	4110.1	6619.0	22	4	2018	18:07	150	6.88	32.66	12.12	35.47	21	B
62	16402	4121.7	6615.8	22	4	2018	20:46	110	6.03	32.27	9.54	34.59	6	B
<b>114</b>	<b>16324</b>	<b>4118.9</b>	<b>6613.0</b>	<b>22</b>	<b>4</b>	<b>2018</b>	<b>23:12</b>	<b>142</b>	<b>6.09</b>	<b>32.27</b>	<b>9.81</b>	<b>34.66</b>	<b>6</b>	<b>W</b>
63	16348	4135.4	6606.8	23	4	2018	1:45	95	5.89	32.20	7.11	33.49	1	B
<b>115</b>	<b>16366</b>	<b>4143.5</b>	<b>6557.6</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>3:55</b>	<b>107</b>	<b>6.67</b>	<b>33.17</b>	<b>6.60</b>	<b>33.26</b>	<b>4</b>	<b>V</b>
<b>116</b>	<b>16260</b>	<b>4148.7</b>	<b>6542.8</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>6:56</b>	<b>409</b>	<b>9.13</b>	<b>33.98</b>	<b>7.72</b>	<b>35.17</b>	<b>7</b>	<b>V</b>
<b>117</b>	<b>16335</b>	<b>4157.7</b>	<b>6550.5</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>9:43</b>	<b>175</b>	<b>8.56</b>	<b>33.72</b>	<b>10.93</b>	<b>35.38</b>	<b>7</b>	<b>V</b>
<b>118</b>	<b>16289</b>	<b>4154.8</b>	<b>6545.6</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>12:02</b>	<b>216</b>	<b>8.95</b>	<b>33.86</b>	<b>10.49</b>	<b>35.35</b>	<b>3</b>	<b>V</b>
<b>119</b>	<b>16146</b>	<b>4155.3</b>	<b>6604.6</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>15:16</b>	<b>95</b>	<b>5.85</b>	<b>32.30</b>	<b>6.48</b>	<b>33.44</b>	<b>7</b>	<b>V</b>
64	16143	4153.7	6611.8	23	4	2018	18:02	84	6.97	33.46	6.48	33.50	6	B
<b>120</b>	<b>16270</b>	<b>4155.7</b>	<b>6621.1</b>	<b>23</b>	<b>4</b>	<b>2018</b>	<b>21:43</b>	<b>82</b>	<b>6.86</b>	<b>33.04</b>	<b>6.36</b>	<b>33.07</b>	<b>4</b>	<b>W</b>
<b>121</b>	<b>16237</b>	<b>4207.3</b>	<b>6604.0</b>	<b>24</b>	<b>4</b>	<b>2018</b>	<b>0:05</b>	<b>196</b>	<b>4.82</b>	<b>31.67</b>	<b>11.38</b>	<b>35.26</b>	<b>9</b>	<b>V</b>
65	16176	4206.3	6631.1	24	4	2018	4:35	84	6.77	33.05	6.75	33.77	6	B
<b>122</b>	<b>16414</b>	<b>4210.5</b>	<b>6650.4</b>	<b>24</b>	<b>4</b>	<b>2018</b>	<b>7:35</b>	<b>170</b>	<b>6.67</b>	<b>32.80</b>	<b>6.70</b>	<b>33.65</b>	<b>3</b>	<b>V</b>
<b>123</b>	<b>16107</b>	<b>4206.6</b>	<b>6650.9</b>	<b>24</b>	<b>4</b>	<b>2018</b>	<b>9:58</b>	<b>66</b>	<b>6.51</b>	<b>33.27</b>	<b>6.53</b>	<b>33.30</b>	<b>8</b>	<b>V</b>
<b>124</b>	<b>16380</b>	<b>4140.7</b>	<b>6642.0</b>	<b>24</b>	<b>4</b>	<b>2018</b>	<b>13:13</b>	<b>67</b>	<b>7.02</b>	<b>33.38</b>	<b>7.00</b>	<b>33.42</b>	<b>4</b>	<b>W</b>
<b>125</b>	<b>16149</b>	<b>4057.9</b>	<b>7030.2</b>	<b>1</b>	<b>5</b>	<b>2018</b>	<b>20:52</b>	<b>47</b>	<b>8.42</b>	<b>32.77</b>	<b>6.49</b>	<b>32.89</b>	<b>4</b>	<b>W</b>

**HB1802 Spring Bottom Trawl Survey**  
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1	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
67	16197	4059.9	7021.3	1	5	2018	23:17	40	8.24	32.79	6.97	32.95	6	B
68	16246	4054.3	7010.6	2	5	2018	1:32	30	7.34	32.63	7.37	32.63	4	B
<b>126</b>	<b>16434</b>	<b>4109.9</b>	<b>7010.1</b>	<b>2</b>	<b>5</b>	<b>2018</b>	<b>4:12</b>	<b>24</b>	<b>7.81</b>	<b>32.35</b>	<b>7.81</b>	<b>32.34</b>	<b>5</b>	<b>V</b>
69	16189	4103.5	7004.4	2	5	2018	6:47	24	7.69	32.52	7.69	32.52	6	B
<b>127</b>	<b>16437</b>	<b>4101.6</b>	<b>6919.6</b>	<b>2</b>	<b>5</b>	<b>2018</b>	<b>14:55</b>	<b>48</b>	<b>6.10</b>	<b>32.62</b>	<b>5.99</b>	<b>32.63</b>	<b>4</b>	<b>W</b>
<b>128</b>	<b>16431</b>	<b>4105.3</b>	<b>6912.8</b>	<b>2</b>	<b>5</b>	<b>2018</b>	<b>22:12</b>	<b>55</b>	<b>6.05</b>	<b>32.66</b>	<b>6.03</b>	<b>32.66</b>	<b>6</b>	<b>V</b>
<b>129</b>	<b>16532</b>	<b>4102.5</b>	<b>6912.8</b>	<b>3</b>	<b>5</b>	<b>2018</b>	<b>1:38</b>	<b>57</b>	<b>6.36</b>	<b>32.65</b>	<b>6.35</b>	<b>32.65</b>	<b>6</b>	<b>V</b>
<b>130</b>	<b>16248</b>	<b>4113.1</b>	<b>6855.3</b>	<b>3</b>	<b>5</b>	<b>2018</b>	<b>4:48</b>	<b>102</b>	<b>6.97</b>	<b>32.36</b>	<b>5.81</b>	<b>32.84</b>	<b>5</b>	<b>W</b>
70	16339	4116.1	6843.6	3	5	2018	7:30	77	7.06	32.48	6.54	32.88	4	B
71	16096	4112.7	6826.0	3	5	2018	10:43	53	7.12	32.63	6.92	32.93	7	B
72	16318	4112.1	6805.5	3	5	2018	13:45	49	7.65	33.36	7.59	33.36	5	B
73	16436	4101.6	6744.4	3	5	2018	18:55	55	7.79	33.55	7.44	33.56	1	B
74	16155	4100.4	6741.2	3	5	2018	21:39	62	7.73	33.54	7.45	33.57	7	B
75	16196	4106.8	6733.1	3	5	2018	23:58	57	7.63	33.50	7.52	33.53	4	B
76	16425	4119.9	6715.2	4	5	2018	2:49	50	7.42	33.43	7.42	33.43	4	B
77	16390	4129.4	6700.2	4	5	2018	6:44	64	7.52	33.57	7.52	33.57	3	B
<b>131</b>	<b>16126</b>	<b>4135.4</b>	<b>6643.0</b>	<b>4</b>	<b>5</b>	<b>2018</b>	<b>10:07</b>	<b>75</b>	<b>7.44</b>	<b>33.34</b>	<b>7.42</b>	<b>33.32</b>	<b>3</b>	<b>V</b>
<b>132</b>	<b>16347</b>	<b>4143.3</b>	<b>6656.5</b>	<b>4</b>	<b>5</b>	<b>2018</b>	<b>13:11</b>	<b>50</b>	<b>7.28</b>	<b>33.32</b>	<b>7.27</b>	<b>33.32</b>	<b>4</b>	<b>W</b>
<b>133</b>	<b>16127</b>	<b>4154.5</b>	<b>6718.2</b>	<b>4</b>	<b>5</b>	<b>2018</b>	<b>15:48</b>	<b>50</b>	<b>7.32</b>	<b>33.24</b>	<b>7.29</b>	<b>33.25</b>	<b>5</b>	<b>V</b>
<b>134</b>	<b>16089</b>	<b>4204.2</b>	<b>6729.0</b>	<b>4</b>	<b>5</b>	<b>2018</b>	<b>18:43</b>	<b>69</b>	<b>7.36</b>	<b>33.06</b>	<b>7.33</b>	<b>33.09</b>	<b>4</b>	<b>V</b>
<b>135</b>	<b>16222</b>	<b>4206.5</b>	<b>6722.8</b>	<b>4</b>	<b>5</b>	<b>2018</b>	<b>20:51</b>	<b>80</b>	<b>7.92</b>	<b>32.58</b>	<b>6.55</b>	<b>33.24</b>	<b>6</b>	<b>V</b>
<b>136</b>	<b>16241</b>	<b>4213.9</b>	<b>6720.6</b>	<b>5</b>	<b>5</b>	<b>2018</b>	<b>0:14</b>	<b>241</b>	<b>8.01</b>	<b>32.51</b>	<b>9.69</b>	<b>35.09</b>	<b>8</b>	<b>V</b>
<b>137</b>	<b>16159</b>	<b>4214.8</b>	<b>6703.7</b>	<b>5</b>	<b>5</b>	<b>2018</b>	<b>4:00</b>	<b>232</b>	<b>7.98</b>	<b>32.58</b>	<b>9.54</b>	<b>35.06</b>	<b>5</b>	<b>W</b>
<b>138</b>	<b>16269</b>	<b>4224.5</b>	<b>6704.6</b>	<b>5</b>	<b>5</b>	<b>2018</b>	<b>13:23</b>	<b>365</b>	<b>7.53</b>	<b>32.73</b>	<b>9.10</b>	<b>35.14</b>	<b>7</b>	<b>V</b>
<b>139</b>	<b>16344</b>	<b>4225.5</b>	<b>6721.6</b>	<b>5</b>	<b>5</b>	<b>2018</b>	<b>16:41</b>	<b>337</b>	<b>7.28</b>	<b>32.85</b>	<b>9.54</b>	<b>35.19</b>	<b>7</b>	<b>V</b>
<b>140</b>	<b>16407</b>	<b>4219.4</b>	<b>6751.2</b>	<b>5</b>	<b>5</b>	<b>2018</b>	<b>21:43</b>	<b>199</b>	<b>7.97</b>	<b>32.45</b>	<b>9.35</b>	<b>34.99</b>	<b>6</b>	<b>V</b>
<b>141</b>	<b>16438</b>	<b>4206.4</b>	<b>6754.1</b>	<b>6</b>	<b>5</b>	<b>2018</b>	<b>1:29</b>	<b>215</b>	<b>7.71</b>	<b>32.43</b>	<b>8.94</b>	<b>34.92</b>	<b>7</b>	<b>V</b>

**HB1802 Spring Bottom Trawl Survey  
March 14 - May 12,2018**

Cast #	Site ID #	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	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
142	16108	4158.7	6800.9	6	5	2018	4:10	191	8.20	32.78	7.26	33.95	4	W
143	16193	4146.6	6758.8	6	5	2018	7:25	40	7.59	32.89	7.58	32.89	3	V
144	16395	4144.2	6808.0	6	5	2018	9:50	48	7.54	32.64	6.91	32.85	3	V
145	16119	4131.3	6829.6	6	5	2018	13:01	94	8.04	32.46	5.84	33.15	7	V
146	16171	4140.3	6827.9	6	5	2018	15:04	153	8.20	32.60	5.95	33.39	6	W
147	16090	4150.8	6826.8	6	5	2018	17:55	208	8.06	32.88	7.74	34.18	6	V
148	16398	4158.7	6835.5	6	5	2018	21:40	167	8.11	32.82	6.20	33.53	4	V
149	16111	4204.0	6846.2	7	5	2018	0:11	151	8.32	32.68	6.14	33.52	5	V
150	16372	4216.7	6905.1	7	5	2018	3:31	199	8.10	32.68	6.53	33.71	5	V
151	16230	4224.5	6906.1	7	5	2018	6:38	218	8.15	32.58	6.83	33.81	4	W
152	16192	4233.2	6846.6	7	5	2018	10:28	203	8.23	32.43	7.75	34.16	7	V
153	16154	4317.6	6843.4	7	5	2018	16:42	150	7.16	32.24	6.32	33.12	5	V
154	16430	4321.6	6825.4	7	5	2018	20:30	195	7.07	32.22	7.61	33.95	5	V
155	16370	4308.5	6823.9	7	5	2018	23:42	206	8.21	32.50	7.20	33.89	9	V
156	16257	4318.4	6813.4	8	5	2018	2:37	198	7.51	32.20	7.55	33.99	7	V
157	16264	4312.5	6803.3	8	5	2018	5:45	206	8.17	32.51	7.05	33.84	7	W
158	16167	4317.0	6801.0	8	5	2018	8:45	231	7.59	32.34	7.33	33.93	5	V
159	16183	4329.7	6759.3	8	5	2018	11:38	222	7.66	32.12	8.75	34.44	7	V
160	16170	4333.2	6755.3	8	5	2018	14:08	237	7.77	32.27	8.69	34.42	7	V
161	16403	4346.5	6715.4	8	5	2018	19:11	178	8.04	32.28	8.31	34.20	5	V
162	16144	4356.0	6659.3	8	5	2018	21:50	143	7.74	32.36	8.10	34.07	5	V
163	16443	4359.4	6658.2	8	5	2018	23:50	168	7.93	32.38	8.01	34.01	5	V
164	16181	4405.8	6651.6	9	5	2018	2:48	164	7.04	32.11	7.71	33.78	7	V
165	16157	4421.0	6719.7	9	5	2018	7:15	88	5.93	31.70	6.11	32.61	5	W
166	16148	4406.5	6804.0	9	5	2018	13:41	105	6.38	31.50	5.15	32.11	7	V
167	16152	4352.0	6829.2	9	5	2018	19:18	136	7.56	32.10	5.07	32.44	4	V

**HB1802 Spring Bottom Trawl Survey**  
**March 14 - May 12,2018**

Cast #	Site ID #	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	16416	3652.6	7543.1	14	3	2018	19:32	21	6.15	32.59	6.07	32.89	5	B
80	16439	4337.4	6842.0	10	5	2018	1:43	153	7.90	32.29	5.88	33.02	6	V
81	16386	4334.3	6927.4	10	5	2018	6:07	170	8.73	31.46	5.61	33.00	6	V
82	16236	4334.1	6951.7	10	5	2018	9:36	94	9.56	24.25	4.81	32.46	8	B
83	16218	4307.6	6943.2	10	5	2018	14:20	133	8.50	31.74	6.01	33.26	6	W
<b>168</b>	<b>16359</b>	<b>4302.7</b>	<b>6936.0</b>	<b>10</b>	<b>5</b>	<b>2018</b>	<b>17:15</b>	<b>145</b>	<b>8.38</b>	<b>31.81</b>	<b>5.87</b>	<b>33.02</b>	<b>39</b>	<b>V</b>
84	16099	4258.7	7013.2	10	5	2018	21:48	162	9.55	31.26	5.92	33.28	7	V
85	16109	4254.7	7022.4	11	5	2018	0:22	86	8.41	31.57	4.71	32.47	1	V
86	16247	4251.2	7026.1	11	5	2018	3:00	137	9.41	30.80	4.76	32.72	4	V
<b>169</b>	<b>16233</b>	<b>4244.3</b>	<b>7023.5</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>5:17</b>	<b>84</b>	<b>9.58</b>	<b>30.60</b>	<b>4.71</b>	<b>32.35</b>	<b>5</b>	<b>W</b>
<b>170</b>	<b>16851</b>	<b>4247.4</b>	<b>7035.3</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>8:26</b>	<b>94</b>	<b>10.16</b>	<b>29.34</b>	<b>4.70</b>	<b>32.34</b>	<b>8</b>	<b>V</b>
<b>171</b>	<b>16392</b>	<b>4251.2</b>	<b>7045.7</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>10:50</b>	<b>32</b>	<b>9.79</b>	<b>29.66</b>	<b>5.12</b>	<b>31.86</b>	<b>6</b>	<b>V</b>
<b>172</b>	<b>16418</b>	<b>4247.2</b>	<b>7041.0</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>12:33</b>	<b>46</b>	<b>10.58</b>	<b>28.49</b>	<b>4.71</b>	<b>32.11</b>	<b>5</b>	<b>V</b>
<b>173</b>	<b>16322</b>	<b>4244.6</b>	<b>7034.6</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>14:12</b>	<b>83</b>	<b>9.85</b>	<b>29.97</b>	<b>4.68</b>	<b>32.29</b>	<b>6</b>	<b>V</b>
87	16240	4235.2	7018.3	11	5	2018	17:25	80	10.08	30.78	4.99	32.56	7	B
<b>174</b>	<b>16116</b>	<b>4228.1</b>	<b>7031.6</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>20:21</b>	<b>57</b>	<b>9.63</b>	<b>30.50</b>	<b>4.72</b>	<b>32.25</b>	<b>5</b>	<b>V</b>
<b>175</b>	<b>16292</b>	<b>4226.6</b>	<b>7042.6</b>	<b>11</b>	<b>5</b>	<b>2018</b>	<b>23:26</b>	<b>59</b>	<b>9.67</b>	<b>31.12</b>	<b>4.71</b>	<b>32.13</b>	<b>5</b>	<b>V</b>
<b>176</b>	<b>16399</b>	<b>4225.7</b>	<b>7045.7</b>	<b>12</b>	<b>5</b>	<b>2018</b>	<b>3:12</b>	<b>44</b>	<b>10.05</b>	<b>31.26</b>	<b>4.91</b>	<b>32.06</b>	<b>8</b>	<b>V</b>
<b>177</b>	<b>16121</b>	<b>4220.5</b>	<b>7050.1</b>	<b>12</b>	<b>5</b>	<b>2018</b>	<b>5:52</b>	<b>26</b>	<b>10.19</b>	<b>31.26</b>	<b>5.96</b>	<b>31.76</b>	<b>7</b>	<b>V</b>
88	16277	4207.4	7033.7	12	5	2018	10:14	31	9.62	31.53	5.38	32.15	4	B
89	16123	4206.5	7010.9	12	5	2018	13:25	48	9.70	31.76	6.79	32.08	4	W
<b>178</b>	<b>16164</b>	<b>4200.4</b>	<b>6959.4</b>	<b>12</b>	<b>5</b>	<b>2018</b>	<b>16:55</b>	<b>28</b>	<b>8.88</b>	<b>31.76</b>	<b>8.04</b>	<b>31.86</b>	<b>5</b>	<b>V</b>
<b>179</b>	<b>16796</b>	<b>4157.9</b>	<b>6957.6</b>	<b>12</b>	<b>5</b>	<b>2018</b>	<b>18:50</b>	<b>26</b>	<b>8.85</b>	<b>31.77</b>	<b>8.41</b>	<b>31.81</b>	<b>4</b>	<b>W</b>

Deployment codes: B=bongo cast; W=water cast; and V=vertical cast  
Casts in **BOLD** are from the CTD s/n 0832