

RESOURCE SURVEY REPORT
Bottom Trawl Survey
NOAA Fisheries Service
Northeast Fisheries Science Center
2 March - 18 March 2020
Cape Hatteras - Gulf of Maine

Submitted to: NOAA, NEFSC

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Water Street, Woods Hole, MA 02543.

Date: 2020

Resource Survey Report

Bottom Trawl Survey

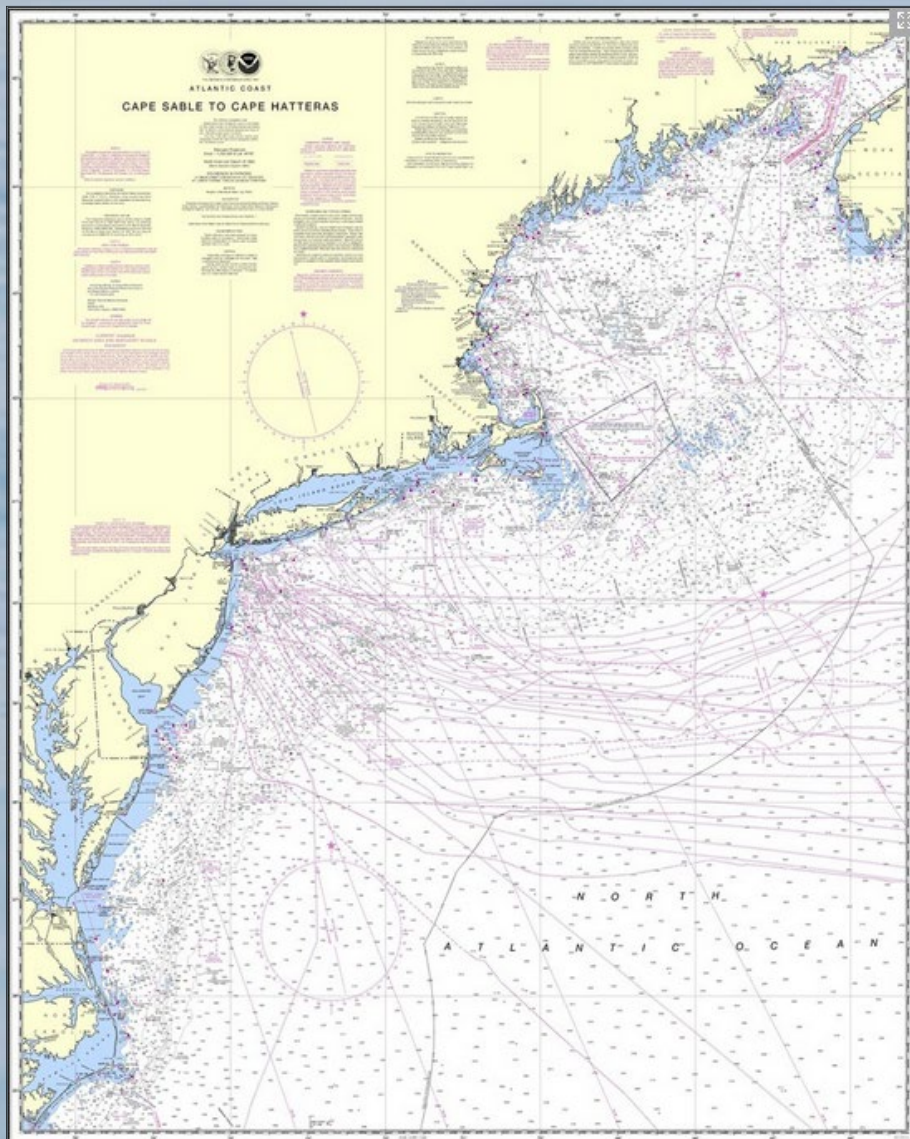
Cape Hatteras – Gulf of Maine

2 March – 18 March 2020

NOAA Ship *Henry B. Bigelow* (FSV 225)



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



NOAA

FISHERIES SERVICE
Northeast Fisheries Science Center
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NEFSC

Significant Changes to the NEFSC Multispecies Bottom Trawl Survey

Significant changes in survey methodology were implemented, beginning with the 2009 Spring Multispecies Bottom Trawl Survey, which have significant implications for the use of these data. Prior to 2009, multispecies bottom trawl surveys were conducted primarily on the NOAA Ship *Albatross IV*. In 2009, the survey was conducted on the NOAA Ship *Henry B. Bigelow*, which is equipped with an autotrawl winch system that equalizes port and starboard warp tensions throughout the duration of survey tows.

The survey bottom trawl sampling gear was also changed. Prior to 2009, the survey was conducted with a standardized Yankee 36 bottom trawl and 450kg Euronet, polyvalent trawl doors. Beginning in 2009, the is conducted using a standardized 400 x 12cm, 4-seam bottom trawl and 2.2m², 550kg, Poly-Ice oval trawl doors. The survey bottom trawl gear was designed and tested in collaboration between the NEFSC and regional fishing industry, fishery managers and academic stakeholders through the mid-Atlantic and New England Trawl Advisory Panel.

The standard survey towing speed was decreased from 3.8kn to 3.0kn, speed measured over ground, beginning in 2009. This towing speed was selected after extensive towing speed and warp to depth ratio trials conducted on the NOAA Ship *Henry B. Bigelow*. The standard tow duration was also changed from 30 minutes (timed from winch lock to winch reengage) to 20 minutes of actual time on-bottom (measured in real-time by acoustic trawl mensuration equipment). The decrease of both the towing speed and duration resulted in a decrease of average tow distance from 1.9nm to 1.0nm.

Station allocation also changed significantly due to an increase of available vessel time from 48 to 60 sea days and a reduction of inshore sampling by the NOAA Ship *Henry B. Bigelow*. As a result, station density was increased in offshore strata. Inshore areas of the mid-Atlantic will continue to be sampled by the Northeast Area Monitoring and Assessment Program (NEAMAP) Southern New England/Mid-Atlantic Near Shore Trawl Survey.

In 2008, the NEFSC conducted an extensive study to estimate the relative catchability of the NOAA Ship *Albatross IV*, sampling with the standard Yankee 36 survey bottom trawl following historical protocols, and the NOAA Ship *Henry B. Bigelow*, sampling with the standard 400 x 12cm, 4-seam survey bottom trawl following revised protocols. Results of this study were peer reviewed in August 2009 and can be found in the NEFSC reference document 10-05: [Estimation of Albatross IV to Henry B. Bigelow Calibration Factors](#).

RESOURCE SURVEY REPORT

Catch Summary

NOAA Fisheries

Northeast Fisheries Science Center

Spring Multispecies Bottom Trawl Survey

Cape Hatteras – Southern New England

2 March – 18 March 2020

Due to COVID-19, the Northeast Fisheries Science Center 2020 spring bottom trawl survey only completed 17 days at sea. 132 representative stations were sampled, conducted March 2 – March 18, 2020, covering the Mid-Atlantic region south and West of Hudson Canyon and some stations sampled inshore along western Long Island, NY, only.

Attached are station and catch summaries and a series of geographical plots of commercially and recreationally important species caught during the Northeast Fisheries Science Center's (NEFSC) 2020 spring bottom trawl survey aboard the NOAA Ship *Henry B. Bigelow*. Details regarding NEFSC bottom trawl survey standard operating procedures can be found in the NEFSC reference document 14-06: [NEFSC Bottom Trawl Survey Protocols for the NOAA Ship Henry B. Bigelow](#).

Because of the 20-minute tow duration, and random selection of station locations, catches can be light compared with commercial tows. Also, vessel operations are on a 24-hour basis and catches have not been adjusted for day/night differences. Nevertheless, these data can provide useful information about the distribution and relative abundance of species inhabiting the survey area (Cape Hatteras to the Gulf of Maine).

For further information contact Philip Politis (508-495-2171; Philip.Politis@noaa.gov), NOAA Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543. To view this report, go to the [Ecosystems Surveys Branch website](#).

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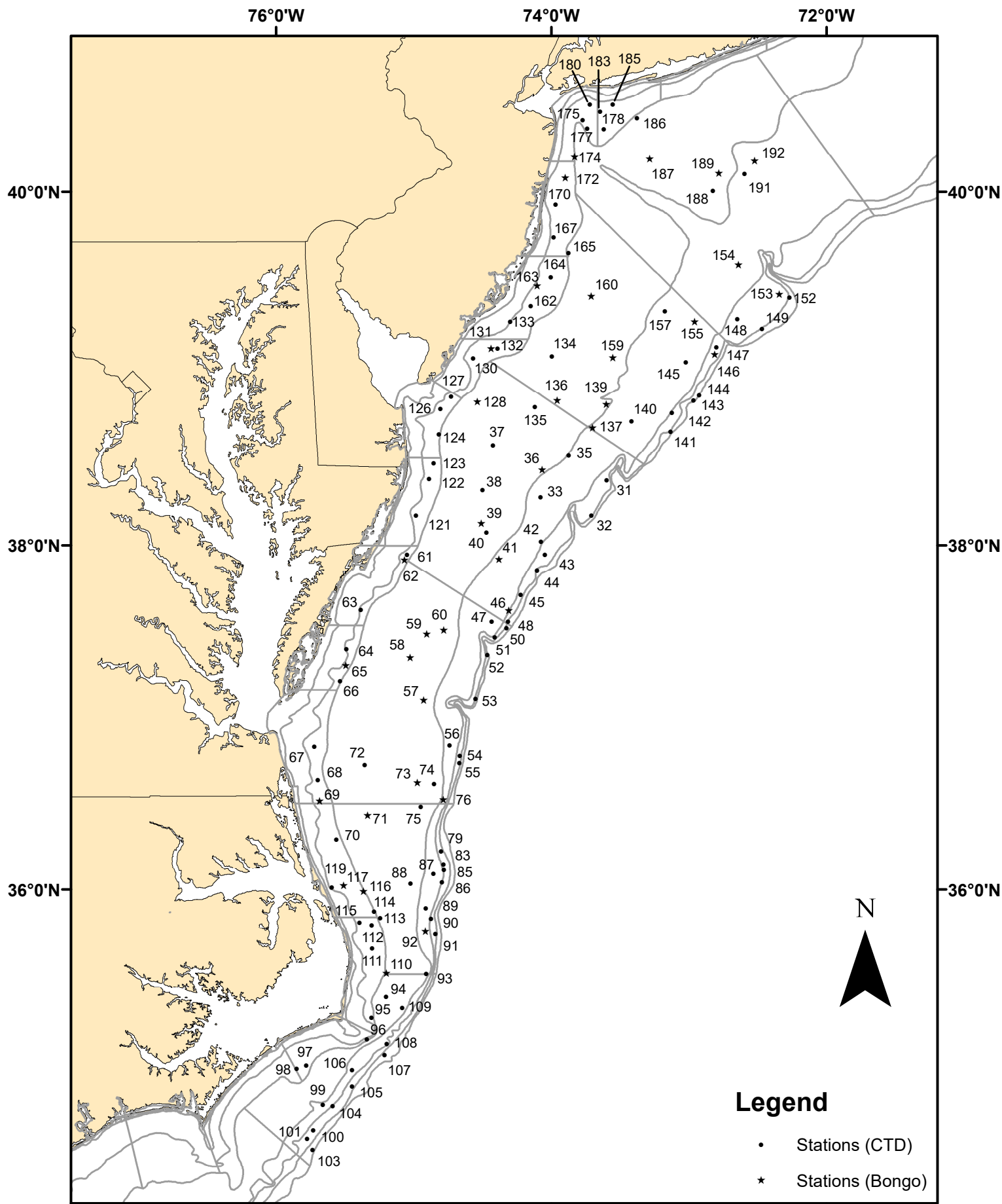


Figure 1. Representative trawl hauls made from NOAA Ship *Henry B. Bigelow*, during the Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020.

Table 1: Station report from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey,
2 March - 18 March 2020

STATION	START TRAWL (GMT)	SET LAT	SET LON	END LAT	END LON	TOW DUR (min)	TOW DIST (nm)	DEPTH MEAN (m)
31	3/3/2020 19:36	38.37233	-73.59783	38.35767	-73.60767	20.01579295	1.1324	125.48
32	3/4/2020 0:10	38.17133	-73.70817	38.15967	-73.72217	20.03475292	1.0785	205.2
33	3/4/2020 3:53	38.27400	-74.07833	38.26017	-74.09000	20.00172873	1.1132	64.92
35	3/4/2020 8:33	38.51317	-73.87367	38.49933	-73.88483	20.05388803	1.1086	57.15
36	3/4/2020 10:58	38.43383	-74.06550	38.44850	-74.05533	20.0269172	1.1426	59.16
37	3/4/2020 14:21	38.57133	-74.42450	38.55633	-74.43300	20.06035078	1.1014	43.66
38	3/4/2020 17:13	38.31833	-74.50117	38.31300	-74.48083	20.05115498	1.1035	37.17
39	3/4/2020 19:21	38.12867	-74.50900	38.11817	-74.52467	19.99875713	1.1057	41.95
40	3/4/2020 20:53	38.07250	-74.47117	38.05700	-74.47783	19.98434387	1.0851	43.76
41	3/4/2020 23:00	37.91950	-74.38033	37.91100	-74.39883	19.98453377	1.122	60.16
42	3/5/2020 2:04	38.02000	-74.07500	38.00667	-74.08767	19.99701377	1.1008	106.39
43	3/5/2020 3:43	37.94417	-74.04700	37.93067	-74.06000	20.04783513	1.1786	131.85
44	3/5/2020 5:39	37.85583	-74.10350	37.83867	-74.10500	20.03670163	1.0754	258.68
45	3/5/2020 7:48	37.71633	-74.22233	37.70050	-74.22917	19.96030205	1.1037	138.67
46	3/5/2020 9:37	37.62617	-74.30933	37.61167	-74.32033	20.04695153	1.1297	108.71
47	3/5/2020 11:24	37.56250	-74.43317	37.57733	-74.44250	20.08879985	1.1221	82.25
48	3/5/2020 14:15	37.56267	-74.31433	37.57833	-74.30667	20.01659788	1.1184	203.38
50	3/5/2020 17:37	37.52383	-74.32667	37.50967	-74.33783	19.98672195	1.1181	232.31
51	3/5/2020 19:16	37.47000	-74.41200	37.45600	-74.42367	19.9884059	1.1426	122.45
52	3/5/2020 20:58	37.36667	-74.46567	37.35100	-74.47167	19.98004322	1.086	229.37
53	3/6/2020 0:15	37.11467	-74.55117	37.13067	-74.54867	20.01204778	1.1342	266.67
54	3/6/2020 3:53	36.78133	-74.66500	36.79767	-74.66950	20.01650603	1.0707	130.79
55	3/6/2020 5:40	36.73950	-74.66883	36.72267	-74.67300	20.01103263	1.0899	145.01
56	3/6/2020 7:35	36.84450	-74.73950	36.86100	-74.73317	19.95426713	1.1221	82.15
57	3/6/2020 10:07	37.10600	-74.92850	37.11900	-74.94100	20.0230612	1.1142	46.46
58	3/6/2020 13:00	37.35567	-75.02633	37.36250	-75.00717	20.05668563	1.104	37.57
59	3/6/2020 15:31	37.49083	-74.90467	37.50600	-74.89650	19.94799595	1.1125	33.26
60	3/6/2020 17:19	37.51283	-74.78250	37.52500	-74.76833	19.99463922	1.108	56.21
61	3/6/2020 22:16	37.94733	-75.04850	37.95517	-75.02967	20.03245893	1.1312	26.87
62	3/7/2020 0:01	37.91567	-75.06717	37.93183	-75.06133	19.99450118	1.1014	27.39
63	3/7/2020 4:02	37.62850	-75.38500	37.64117	-75.37200	19.99546397	1.1071	17.66
64	3/7/2020 6:41	37.40250	-75.48967	37.41833	-75.48133	20.01667488	1.1245	23.22
65	3/7/2020 8:32	37.30833	-75.49333	37.32483	-75.49050	20.00778145	1.057	23.46
66	3/7/2020 11:25	37.21467	-75.53550	37.23100	-75.53417	20.02902533	1.0448	25.39
67	3/8/2020 2:56	36.83517	-75.72200	36.84883	-75.71033	19.98454917	1.1075	22.2
68	3/8/2020 5:34	36.64283	-75.69733	36.65983	-75.70050	20.0370147	1.109	19.39

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2 March - 18 March 2020

STATION	START TRAWL (GMT)	SET LAT	SET LON	END LAT	END LON	TOW DUR (min)	TOW DIST (nm)	DEPTH MEAN (m)
69	3/8/2020 7:49	36.52000	-75.68367	36.53483	-75.67533	20.0183571	1.096	25.78
70	3/8/2020 10:16	36.29283	-75.56250	36.29833	-75.54283	20.0115238	1.1092	28.2
71	3/8/2020 12:51	36.43667	-75.33533	36.45317	-75.33800	19.99496648	1.0718	30.43
72	3/8/2020 15:33	36.72867	-75.35683	36.73950	-75.34133	20.0051749	1.1416	22.41
73	3/8/2020 18:25	36.62600	-74.97317	36.62500	-74.95233	19.99817897	1.0349	31.02
74	3/8/2020 19:54	36.61967	-74.85250	36.62550	-74.83217	20.31282433	1.1506	49.12
75	3/8/2020 22:02	36.48317	-74.94883	36.49200	-74.93100	20.14457442	1.1418	39.5
76	3/9/2020 0:59	36.52583	-74.78433	36.53983	-74.77317	20.00694447	1.1343	86.13
79	3/9/2020 6:12	36.22450	-74.80167	36.24150	-74.80117	20.01367045	1.0272	112.14
83	3/9/2020 12:53	36.14617	-74.78467	36.16217	-74.78400	20.04996518	0.9711	190.92
85	3/9/2020 16:28	36.11317	-74.78117	36.09633	-74.78083	20.00803855	1.0373	261.01
86	3/9/2020 18:05	36.04033	-74.79450	36.02350	-74.79617	19.99734112	1.0535	199.57
87	3/9/2020 20:11	36.09200	-74.85667	36.07717	-74.86750	20.22375823	1.1645	91.52
88	3/9/2020 22:30	36.03467	-75.02367	36.01833	-75.03050	19.99837145	1.1228	38.75
89	3/10/2020 0:34	35.88783	-74.91267	35.87167	-74.91867	20.05624918	1.0888	83.74
90	3/10/2020 1:55	35.82633	-74.87433	35.81033	-74.86917	20.00250958	1.0703	158.3
91	3/10/2020 3:27	35.73717	-74.84350	35.72000	-74.84233	20.14612775	1.0918	115.35
92	3/10/2020 5:25	35.75267	-74.91533	35.73650	-74.91067	19.99991315	1.0707	67.77
93	3/10/2020 8:21	35.50117	-74.90867	35.48700	-74.91833	20.04334517	1.1122	43.91
94	3/10/2020 11:06	35.36417	-75.20033	35.35067	-75.21200	20.02201527	1.1342	31.05
95	3/10/2020 12:53	35.23983	-75.30667	35.22483	-75.31433	19.9919465	1.0702	26.99
96	3/10/2020 15:08	35.10950	-75.33967	35.10367	-75.35750	20.08803258	1.0559	28.74
97	3/10/2020 18:40	34.95333	-75.78033	34.95283	-75.80050	20.00144692	1.0182	25.83
98	3/10/2020 20:21	34.93517	-75.85067	34.92083	-75.83933	20.02794288	1.1594	24.27
99	3/10/2020 23:25	34.71817	-75.66100	34.70767	-75.67700	19.99801037	1.1458	59.97
100	3/11/2020 1:54	34.56850	-75.72967	34.55650	-75.74350	19.98098345	1.13	134.45
101	3/11/2020 3:32	34.51783	-75.77517	34.50333	-75.78683	20.03855505	1.1826	136.97
103	3/11/2020 5:41	34.44950	-75.73533	34.43533	-75.74750	20.04402662	1.1831	328.29
104	3/11/2020 9:12	34.71367	-75.58950	34.69750	-75.59367	20.00968598	1.0689	152.46
105	3/11/2020 12:04	34.82933	-75.44850	34.81317	-75.45183	19.98677827	1.0381	211.89
106	3/11/2020 13:48	34.92867	-75.44817	34.91667	-75.46083	20.00272038	1.0538	76.06
107	3/11/2020 16:36	35.01533	-75.21183	35.00183	-75.22233	20.00814488	1.0809	313.21
108	3/11/2020 18:41	35.08483	-75.19500	35.07300	-75.20933	20.01037715	1.1203	128.58
109	3/11/2020 21:33	35.29767	-75.08433	35.28283	-75.09433	20.03303852	1.1244	32.15
110	3/12/2020 0:11	35.50367	-75.19817	35.51067	-75.17967	20.00416023	1.126	36.24
111	3/12/2020 2:07	35.64950	-75.30167	35.66517	-75.30817	19.99834628	1.0809	25.88

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STATION	START TRAWL (GMT)	SET LAT	SET LON	END LAT	END LON	TOW DUR (min)	TOW DIST (nm)	DEPTH MEAN (m)
112	3/12/2020 3:44	35.78533	-75.30567	35.80067	-75.31400	19.97663075	1.1105	33.87
113	3/12/2020 5:09	35.82867	-75.24317	35.84600	-75.24517	20.00193758	1.0732	35.17
114	3/12/2020 6:46	35.86650	-75.28817	35.85767	-75.30367	20.00160642	1.0599	25.94
115	3/12/2020 8:23	35.80300	-75.39400	35.81933	-75.39283	20.01343302	1.004	28.78
116	3/12/2020 10:13	35.99017	-75.36517	35.97900	-75.38017	20.0168679	1.1325	25.89
117	3/12/2020 12:10	36.02317	-75.50867	36.00817	-75.50033	20.228702	1.1007	26.4
119	3/12/2020 13:33	36.01300	-75.59483	36.02817	-75.60367	19.98665103	1.106	24.83
121	3/13/2020 4:00	38.17000	-74.98367	38.18433	-74.97283	19.99291795	1.1194	21.86
122	3/13/2020 6:31	38.37867	-74.88850	38.39067	-74.87517	20.0127605	1.1067	23.3
123	3/13/2020 7:56	38.47083	-74.85583	38.48700	-74.85950	20.04261145	1.0493	23.06
124	3/13/2020 9:38	38.63267	-74.81817	38.64583	-74.83133	20.00311355	1.1288	29.15
126	3/13/2020 11:10	38.78017	-74.80583	38.79000	-74.82283	20.0068793	1.1206	18.34
127	3/13/2020 12:33	38.84983	-74.72917	38.86200	-74.71483	19.99637378	1.1249	18.99
128	3/13/2020 14:35	38.82150	-74.53767	38.82517	-74.51750	19.9765521	1.043	23.43
130	3/13/2020 17:02	39.06283	-74.56783	39.07483	-74.55333	20.02739228	1.1058	19.15
131	3/13/2020 18:27	39.12200	-74.43750	39.12800	-74.41733	20.01360993	1.1069	23.32
132	3/13/2020 19:32	39.11883	-74.39117	39.10633	-74.37733	20.00363973	1.127	25.87
133	3/13/2020 21:55	39.27033	-74.29933	39.28317	-74.28600	19.95682632	1.1099	18.34
134	3/14/2020 0:55	39.07700	-73.99617	39.06050	-74.00067	20.04720498	1.0769	34.91
135	3/14/2020 3:51	38.79150	-74.11917	38.77850	-74.13183	20.09543337	1.0586	49.28
136	3/14/2020 6:05	38.83000	-73.95633	38.83450	-73.97667	19.98447698	1.088	46.21
137	3/14/2020 8:43	38.67083	-73.70033	38.65833	-73.68617	20.00526595	1.1432	61.67
139	3/14/2020 10:52	38.80550	-73.60000	38.79200	-73.61200	20.00927995	1.1313	57.27
140	3/14/2020 12:56	38.71050	-73.41717	38.69600	-73.42733	20.00744446	1.0774	78.09
141	3/14/2020 15:51	38.65033	-73.13417	38.64417	-73.15317	20.00337397	1.0967	197.23
142	3/14/2020 17:49	38.75650	-73.12433	38.76833	-73.10950	20.01645347	1.1239	116.4
143	3/14/2020 20:10	38.82767	-72.96667	38.83667	-72.94967	20.00735692	1.099	188.47
144	3/14/2020 22:22	38.85650	-72.92550	38.87033	-72.91217	20.0369103	1.1493	217.53
145	3/15/2020 0:26	39.04117	-73.02200	39.05750	-73.02550	20.00832312	1.0507	80.82
146	3/15/2020 2:58	39.08967	-72.81333	39.10567	-72.80733	19.99421582	1.0761	117.78
147	3/15/2020 4:16	39.12933	-72.80167	39.14450	-72.79633	19.991465	1.0178	111.49
148	3/15/2020 6:46	39.28617	-72.64783	39.29150	-72.66717	20.00395522	1.0622	124.67
149	3/15/2020 9:28	39.23033	-72.46867	39.23850	-72.44983	20.01772635	1.108	206.87
152	3/15/2020 17:18	39.40933	-72.26883	39.42600	-72.27083	20.01711023	1.0361	194.38
153	3/15/2020 19:01	39.42833	-72.34333	39.44183	-72.33050	19.99092792	1.1334	140.48
154	3/15/2020 22:00	39.59350	-72.63950	39.60733	-72.62817	20.08319958	1.0978	78.16

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2 March - 18 March 2020

STATION	START TRAWL (GMT)	SET LAT	SET LON	END LAT	END LON	TOW DUR (min)	TOW DIST (nm)	DEPTH MEAN (m)
155	3/16/2020 1:13	39.27150	-72.95817	39.25650	-72.94900	19.99033813	1.1018	72.62
157	3/16/2020 3:18	39.32883	-73.17400	39.33417	-73.19433	19.99148263	1.0915	64.43
159	3/16/2020 6:26	39.06900	-73.55283	39.07833	-73.57033	19.99153405	1.1216	52.82
160	3/16/2020 9:12	39.41683	-73.70900	39.41917	-73.73017	20.02073383	1.043	33.43
162	3/16/2020 11:56	39.35950	-74.15050	39.36917	-74.13300	20.00791055	1.1318	22.03
163	3/16/2020 13:22	39.47667	-74.10233	39.49250	-74.09517	20.04155722	1.1089	20.91
164	3/16/2020 14:43	39.52083	-74.00433	39.53367	-73.99050	20.00784237	1.1162	24.88
165	3/16/2020 16:27	39.65750	-73.87450	39.67400	-73.87000	20.01338978	1.086	29.23
167	3/16/2020 17:56	39.74500	-73.98350	39.75817	-73.97017	20.02202003	1.1346	23.99
170	3/16/2020 19:42	39.92933	-73.96817	39.94617	-73.96800	20.01317467	1.0174	21.65
172	3/16/2020 22:02	40.07750	-73.89833	40.09400	-73.90067	20.02475307	1.0359	23.02
174	3/16/2020 23:41	40.19467	-73.83050	40.17967	-73.82067	20.04221352	1.0856	28.38
175	3/17/2020 2:45	40.39850	-73.77183	40.38167	-73.77333	19.98815638	1.0429	34.24
177	3/17/2020 4:00	40.35300	-73.73967	40.33800	-73.73100	19.991679	1.0695	26.94
178	3/17/2020 5:24	40.34800	-73.61950	40.35350	-73.59917	20.0011925	1.0891	25.2
180	3/17/2020 7:33	40.48567	-73.72000	40.48267	-73.69850	20.02996065	1.0656	24.98
183	3/17/2020 9:36	40.44683	-73.64583	40.44633	-73.62383	20.01401878	1.011	22.21
185	3/17/2020 10:52	40.48583	-73.55300	40.48217	-73.53133	20.02479165	1.0968	22.74
186	3/17/2020 12:24	40.41050	-73.37817	40.41300	-73.35650	20.0140657	1.0553	30.95
187	3/17/2020 14:37	40.18467	-73.28500	40.17267	-73.26983	20.02120615	1.1437	40.7
188	3/17/2020 18:10	40.00750	-72.82683	40.02417	-72.82650	20.01256057	1.0357	55.29
189	3/17/2020 19:42	40.10483	-72.78150	40.11750	-72.76750	19.9887775	1.1304	53.95
191	3/17/2020 22:01	40.09867	-72.59583	40.11383	-72.58717	19.9393498	1.1133	57.46
192	3/17/2020 23:31	40.17500	-72.52167	40.17133	-72.50017	19.99645303	1.0964	62.97

Table 2: Catch summary (lbs) of important species by haul from NOAA Fisheries,
Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

STATION	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	SILVER HAKE	RED HAKE	REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BLUEFISH	ATLANTIC HERRING	ATLANTIC MACKEREL	BUTTERFISH	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER	TOTAL ALL
31	0	0	0	0	1	0	0	0	6	0	0	0	0	0	8	0	0	0	0	0	50	6	43	114
32	0	0	0	0	165	0	0	37	736	0	0	0	0	0	15	0	0	0	0	0	6	1	1023	1983
33	0	0	0	0	6	0	0	0	23	0	0	0	0	0	7	0	0	0	1	0	39	0	240	316
35	0	0	0	0	12	1	0	13	2435	0	0	0	0	0	22	0	0	2	0	0	30	0	1418	3933
36	0	0	0	0	5	0	0	0	914	0	0	0	0	0	21	0	0	0	0	0	28	0	178	1146
37	0	0	0	0	0	0	0	0	1266	0	0	0	0	1	1	0	0	0	0	0	23	0	9	1300
38	0	0	0	0	0	0	0	0	1030	0	0	0	0	0	7	0	0	0	1	0	12	0	1	1051
39	0	0	0	0	0	0	0	0	1941	0	0	0	0	0	0	0	0	0	0	0	15	0	6	1962
40	0	0	0	0	0	0	0	0	1528	0	0	0	0	0	2	0	0	0	0	0	34	0	17	1581
41	0	0	0	0	0	0	0	0	4890	0	0	0	0	0	1	7	0	0	0	0	66	0	77	5041
42	0	0	0	0	0	0	0	28	11	0	0	0	0	0	30	0	0	0	0	0	9	0	32	110
43	0	0	0	0	3	0	0	11	0	0	0	0	0	0	2	0	0	0	0	0	36	0	155	207
44	0	0	0	0	135	39	0	153	1138	0	0	0	4	0	13	0	0	0	0	0	0	0	68	1550
45	0	0	0	0	0	0	0	5	17	0	0	0	0	0	12	0	0	0	0	0	33	0	175	242
46	0	0	0	0	0	0	0	0	10	0	0	0	0	0	5	0	0	0	4	0	110	0	53	182
47	0	0	0	0	2	0	0	13	23	0	0	0	1	0	17	0	0	0	3	0	45	1	42	147
48	0	0	0	0	30	0	0	39	274	0	0	0	0	0	41	0	0	0	12	0	93	6	346	841
50	0	0	0	0	98	0	0	42	764	0	0	0	0	0	19	0	0	0	5	0	60	4	183	1175
51	0	0	0	0	0	0	0	0	3	0	0	0	0	0	13	0	0	0	0	0	311	20	13	360
52	0	0	0	0	178	0	0	13	682	0	0	0	1	0	66	0	0	0	0	0	2	3	230	1175
53	0	0	0	0	28	7	0	30	3528	0	0	0	0	0	0	0	0	1	0	0	0	0	80	3674
54	0	0	0	0	10	0	0	10	58	0	0	0	0	0	0	0	0	0	1	0	285	3	1186	1553
55	0	0	0	0	13	0	0	0	36	0	0	0	0	0	12	2	0	0	0	0	47	3	1247	1360
56	0	0	0	0	0	0	0	0	11	0	0	0	0	0	3	2	0	0	0	0	41	0	264	321
57	0	0	0	0	0	0	0	5	114	0	0	0	0	0	10	0	0	0	0	0	23	0	497	649
58	0	0	0	0	0	0	0	0	1322	0	0	0	0	0	2	0	0	0	0	0	26	0	29	1379
59	0	0	0	0	0	0	0	0	1584	0	0	0	0	0	4	0	0	0	0	0	24	0	8	1620
60	0	0	0	0	0	0	0	6	1766	0	0	0	0	0	6	0	0	0	0	0	26	0	12	1816
61	0	0	0	0	0	0	0	0	270	0	0	0	0	0	0	0	0	0	0	0	1	0	11	282
62	0	0	0	0	1	0	0	0	211	0	0	0	0	2	0	0	0	0	0	0	0	0	18	232
63	0	0	0	0	0	0	0	0	59	0	0	0	0	0	0	0	0	0	0	0	0	0	12	71
64	0	0	0	0	0	0	0	0	74	0	0	0	0	2	1	0	0	0	0	0	1	0	9	87
65	0	0	0	0	0	0	0	0	181	0	0	0	0	0	0	0	0	0	0	0	11	0	7	199
66	0	0	0	0	0	0	0	0	403	0	0	0	0	0	0	0	0	0	4	0	2	0	8	417

Table 2: Catch summary (lbs) of important species by haul from NOAA Fisheries,
Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

STATION	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	SILVER HAKE	RED HAKE	REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BLUEFISH	ATLANTIC HERRING	ATLANTIC MACKEREL	BUTTERFISH	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER	TOTAL ALL
67	0	0	0	0	0	0	0	6	112	0	0	0	0	2	2	0	0	0	0	0	6	0	79	207
68	0	0	0	0	0	0	0	0	77	0	0	0	0	1	0	0	0	0	0	0	1	0	47	126
69	0	0	0	0	0	0	0	0	643	0	0	0	0	0	0	0	0	0	0	0	1	0	80	724
70	0	0	0	0	0	0	0	0	383	0	0	0	0	0	0	0	0	0	2	0	2	0	63	450
71	0	0	0	0	0	0	0	16	1703	0	0	0	0	0	1	0	0	0	2	0	22	0	28	1772
72	0	0	0	0	0	0	0	0	322	0	0	0	0	1	0	0	0	0	4	0	5	0	18	350
73	0	0	0	0	0	0	0	7	946	0	0	0	0	0	0	11	0	0	0	0	11	0	71	1046
74	0	0	0	0	0	0	0	0	1323	0	0	0	0	0	0	18	0	0	0	0	17	0	150	1508
75	0	0	0	0	0	0	0	0	2204	0	0	0	0	0	1	6	0	0	0	0	18	0	45	2274
76	0	0	0	0	0	0	0	0	795	0	0	0	0	0	0	0	0	0	0	0	18	0	499	1312
79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	0	10	0	6207	6223
83	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	75	1	804	913
85	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139	2	253	410
86	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	315	2	633	988
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	0	155	322
88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	0	936	944
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0	16	68
90	0	0	0	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	11	0	105	0	194	322
91	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	16	0	687	707
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	0	45	144
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	103	107
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	9	11
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	11	12
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	1210	1216
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	572	576
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	273	280
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	382	384
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	42	0	194	295
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	14	0	81	143
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33	34
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	9	0	120	135
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	8	192	216
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194	194
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	3	1	266	280

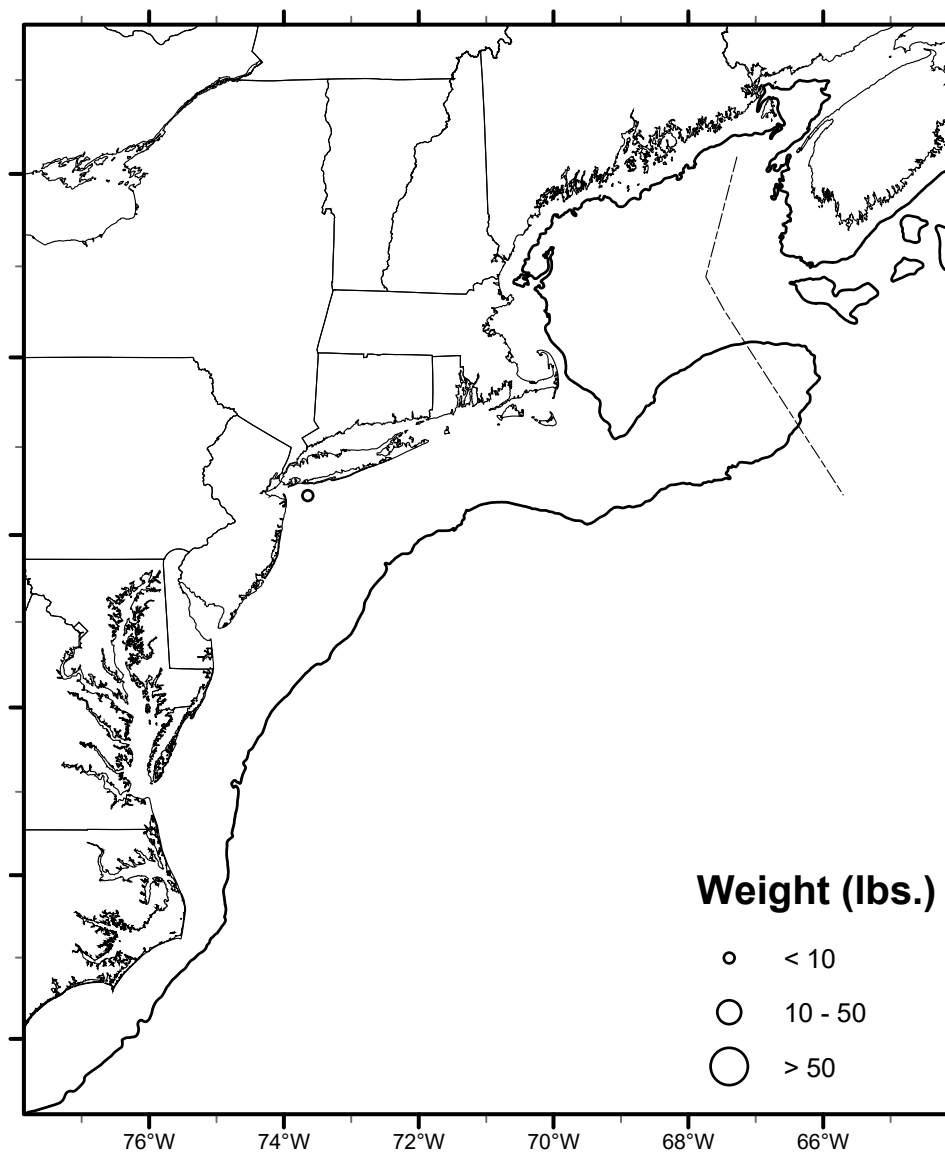
Table 2: Catch summary (lbs) of important species by haul from NOAA Fisheries,
Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

STATION	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	SILVER HAKE	RED HAKE	REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BLUEFISH	ATLANTIC HERRING	ATLANTIC MACKEREL	BUTTERFISH	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER	TOTAL ALL
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	135	137
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	320	320
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	3	0	46	56
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	544	545
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	1	0	3	0	255	289
113	0	0	0	0	0	0	0	35	79	0	0	0	0	0	1	0	0	0	0	0	3	0	131	249
114	0	0	0	0	0	0	0	12	107	0	0	0	0	0	0	0	0	0	0	0	8	0	111	238
115	0	0	0	0	0	0	0	0	584	0	0	0	0	0	2	0	0	0	4	0	2	0	285	877
116	0	0	0	0	0	0	0	0	138	0	0	0	0	0	0	0	0	0	1	0	4	0	94	237
117	0	0	0	0	0	0	0	0	94	0	0	0	0	0	1	0	0	0	1	0	1	0	35	132
119	0	0	0	0	0	0	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0	60	260
121	0	0	0	0	0	0	0	0	486	0	0	0	0	0	0	0	0	0	0	0	1	0	5	492
122	0	0	0	0	0	0	0	0	492	0	0	0	0	0	0	0	0	0	0	0	0	0	25	517
123	0	0	0	0	0	0	0	0	482	0	0	0	0	1	0	0	0	0	0	0	0	0	26	509
124	0	0	0	0	12	0	0	0	38	0	0	0	0	1	8	0	0	0	0	0	1	0	73	133
126	0	0	0	0	0	0	0	0	162	0	0	0	0	0	0	0	0	0	0	0	0	0	32	194
127	0	0	0	0	0	0	0	0	355	0	0	0	0	0	0	0	1	0	0	0	0	0	15	371
128	0	0	0	0	0	0	0	0	638	0	0	0	0	0	0	0	0	0	0	0	1	0	13	652
130	0	0	0	0	0	0	0	0	322	0	0	0	0	0	0	0	0	0	0	0	0	0	40	362
131	0	0	0	0	0	1	0	0	1291	0	0	0	0	1	0	0	14	74	0	0	0	0	39	1420
132	0	0	0	0	0	0	0	0	1679	0	0	0	0	1	0	0	5	15	0	0	1	0	159	1860
133	0	0	0	0	0	0	0	0	723	0	1	0	0	0	0	0	0	0	0	0	0	0	6	730
134	0	0	0	0	0	0	0	0	397	0	0	0	0	1	14	0	0	0	0	0	2	0	6	420
135	0	0	0	0	2	0	0	0	760	0	0	0	0	3	19	0	0	0	0	0	8	0	18	810
136	0	0	0	0	1	1	0	0	743	0	0	0	0	5	11	0	0	1	0	0	11	0	12	785
137	0	0	0	0	15	1	0	0	1120	0	0	0	0	0	4	0	0	0	0	0	5	0	299	1444
139	0	0	0	0	8	0	0	14	518	0	0	0	0	0	16	0	0	0	0	0	10	0	72	638
140	0	0	0	0	13	0	0	6	2585	0	0	0	0	0	17	0	0	0	3	0	9	0	759	3392
141	0	0	0	0	175	5	0	13	10	0	0	0	1	0	26	0	0	0	0	0	138	6	196	570
142	0	0	0	0	7	0	0	19	15	0	0	0	0	0	8	0	0	0	5	0	22	0	120	196
143	0	0	0	0	223	1	0	3	90	0	0	0	0	0	31	0	0	0	1	0	141	2	106	598
144	0	0	0	0	174	7	0	44	208	0	0	0	1	0	11	0	0	0	0	0	11	1	87	544
145	0	0	0	0	18	3	0	7	333	0	0	0	0	0	14	0	0	0	1	0	12	0	308	696
146	0	0	0	0	11	0	0	0	30	0	0	0	0	0	46	0	0	0	3	1	6	0	1030	1127

Table 2: Catch summary (lbs) of important species by haul from NOAA Fisheries,
Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	SILVER HAKE	RED HAKE	REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BLUEFISH	ATLANTIC HERRING	ATLANTIC MACKEREL	BUTTERFISH	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER	TOTAL ALL
STATION																								
147	0	0	0	0	16	1	0	0	13	0	0	0	0	0	18	0	0	0	5	0	4	0	230	287
148	0	0	0	0	38	1	0	3	54	0	0	0	0	0	55	0	0	1	7	0	5	0	329	493
149	0	0	0	0	81	1	0	15	55	0	0	0	1	0	0	0	0	0	0	0	12	0	71	236
152	0	0	0	0	0	0	0	6	0	0	0	0	0	0	7	0	0	0	0	0	0	3	50	66
153	0	0	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	0	0	173	4	99	286
154	0	0	0	0	7	1	0	7	3	0	0	0	0	0	13	0	0	0	0	3	9	0	15	58
155	0	0	0	0	9	0	0	21	39	0	0	0	0	0	10	0	0	0	0	0	11	0	123	213
157	0	0	0	0	21	2	0	16	456	0	0	0	0	0	11	0	0	0	1	0	9	0	135	651
159	0	0	0	0	21	1	0	1	696	0	0	0	0	0	6	0	0	1	0	0	9	0	88	823
160	0	0	0	0	1	0	0	0	478	0	0	0	0	6	4	0	0	0	0	0	1	0	6	496
162	0	0	0	0	0	0	0	0	1446	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1449
163	0	0	0	0	0	0	0	0	641	0	4	0	0	0	0	0	0	10	0	0	0	0	13	668
164	0	0	0	0	0	0	0	0	692	0	0	0	0	1	0	0	0	1	0	0	0	0	2	696
165	0	0	0	0	0	0	0	0	710	0	0	0	0	1	0	0	0	0	0	0	0	0	3	714
167	0	0	0	0	0	0	0	0	851	0	1	0	0	0	0	0	0	0	0	0	0	0	2	854
170	0	0	0	0	0	0	0	0	722	0	1	0	0	0	0	0	0	0	0	0	0	0	1	724
172	0	0	0	0	0	0	0	0	335	0	4	0	0	2	0	0	0	0	0	0	0	0	4	345
174	0	0	0	0	15	1	0	0	83	0	4	0	0	11	1	0	4	0	0	0	0	0	13	132
175	0	0	0	0	40	3	0	0	4	0	4	0	0	6	6	0	0	0	0	5	0	0	49	117
177	0	0	0	0	3	1	0	0	7	0	5	0	0	10	2	0	0	9	0	1	0	0	17	55
178	0	0	0	0	3	0	0	0	0	0	2	0	0	5	0	0	0	1	0	0	0	0	11	22
180	0	0	0	0	4	0	0	0	0	0	4	0	0	5	0	0	0	0	0	0	0	0	313	326
183	4	0	0	0	0	0	0	0	0	0	13	0	0	3	0	0	0	0	0	0	0	0	7	27
185	0	0	0	0	2	1	0	0	3	0	8	0	0	3	1	0	0	0	0	0	0	0	39	57
186	0	0	0	0	0	1	0	0	5	0	1	0	0	1	0	0	0	0	0	0	0	0	21	29
187	0	0	0	0	0	0	0	0	50	0	0	0	0	0	1	0	0	0	0	0	0	0	19	70
188	0	0	0	0	6	1	0	0	332	0	0	0	0	0	5	0	0	0	0	0	7	0	9	360
189	0	0	0	0	2	1	0	0	1369	0	0	0	0	1	0	0	0	22	0	0	7	0	7	1409
191	0	0	0	0	5	2	0	2	211	0	0	0	0	0	2	0	0	0	1	0	7	0	12	242
192	0	0	0	0	18	3	0	3	492	0	0	0	0	0	9	0	0	0	0	0	5	0	23	553
TOTAL	4	0	0	0	1679	88	0	661	60242	0	52	0	10	77	771	48	24	139	283	10	3340	78	29521	97027

ATLANTIC COD



SILVER HAKE

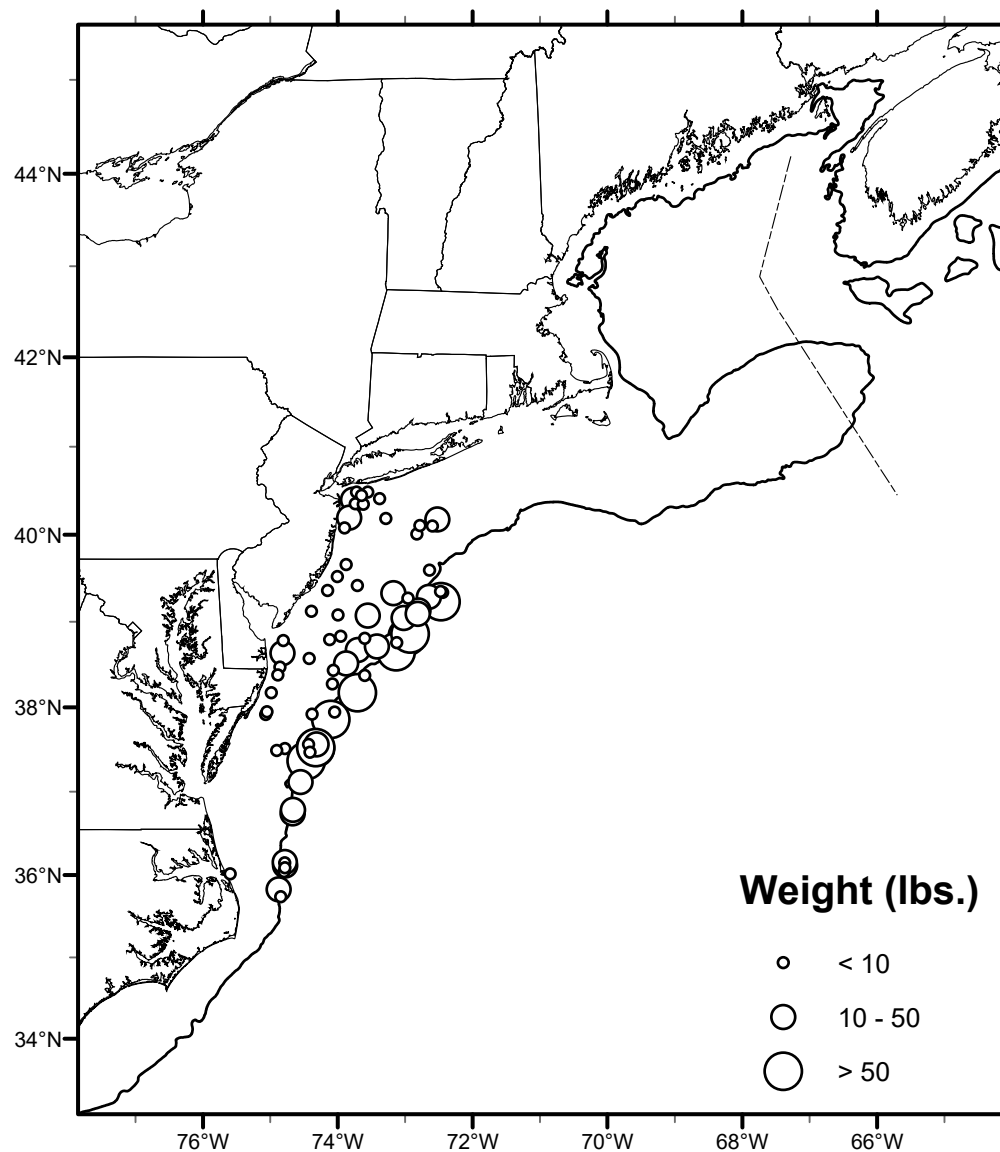
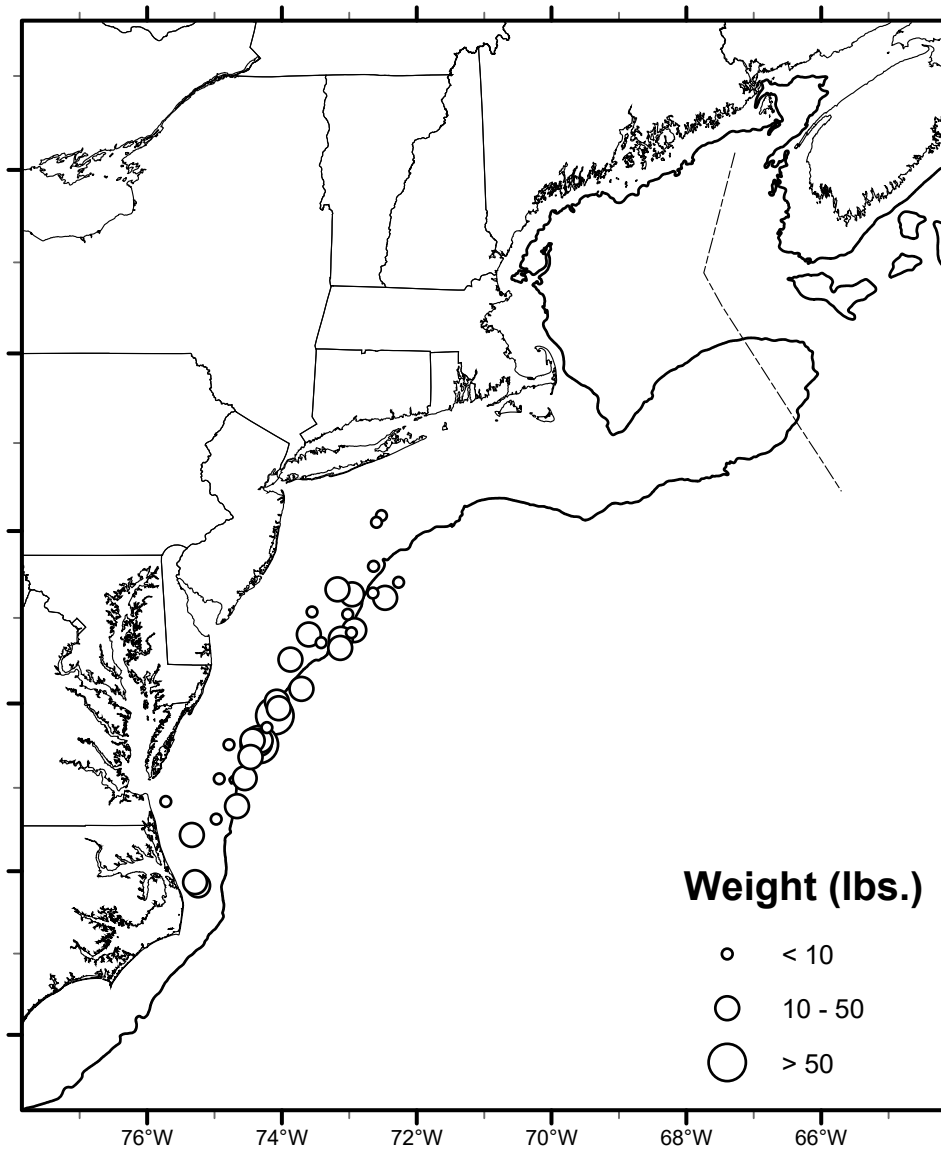


Figure 2: Total weight of Atlantic cod (left panel) and silver hake (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

GOOSEFISH



SPINY DOGFISH

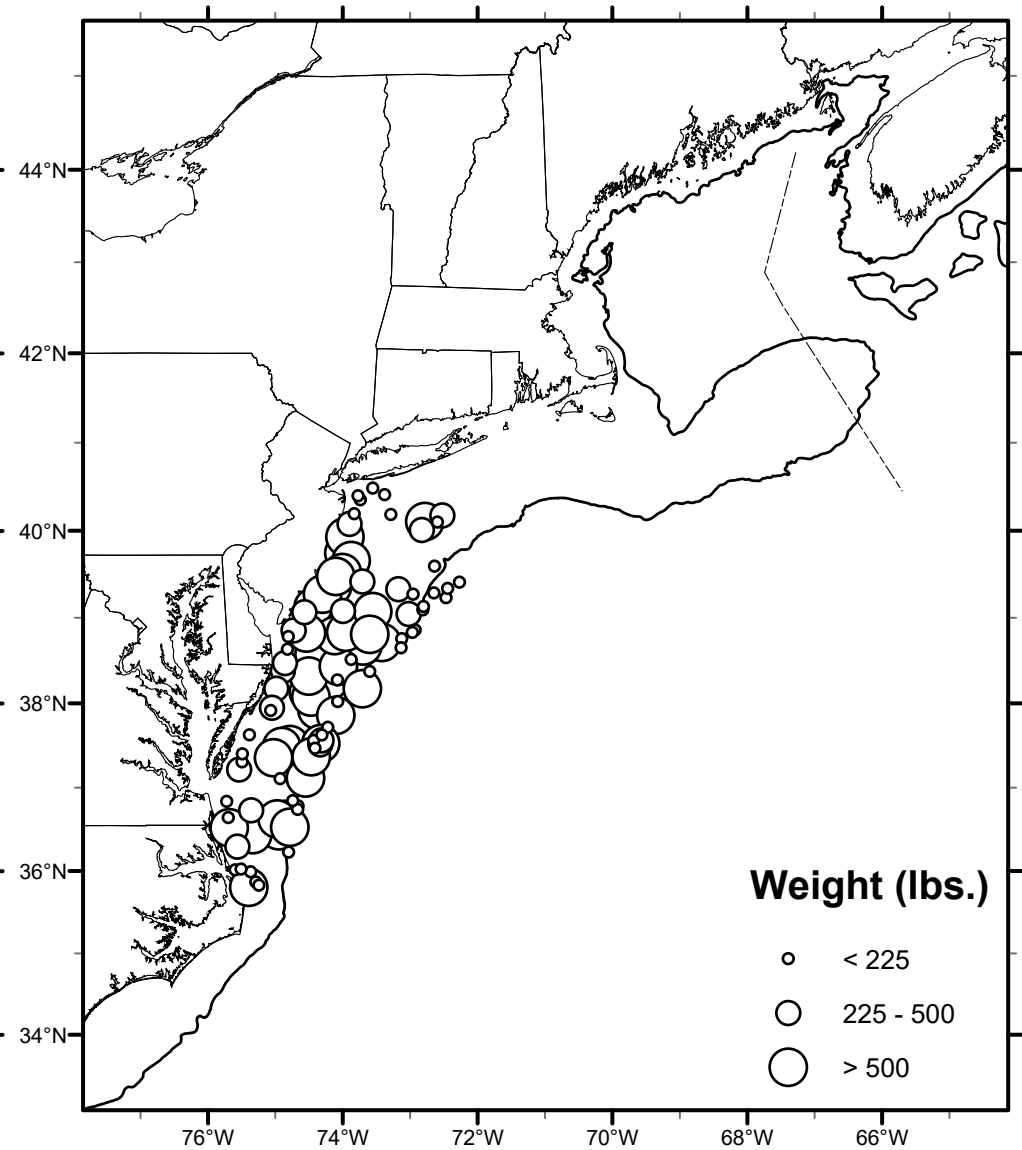
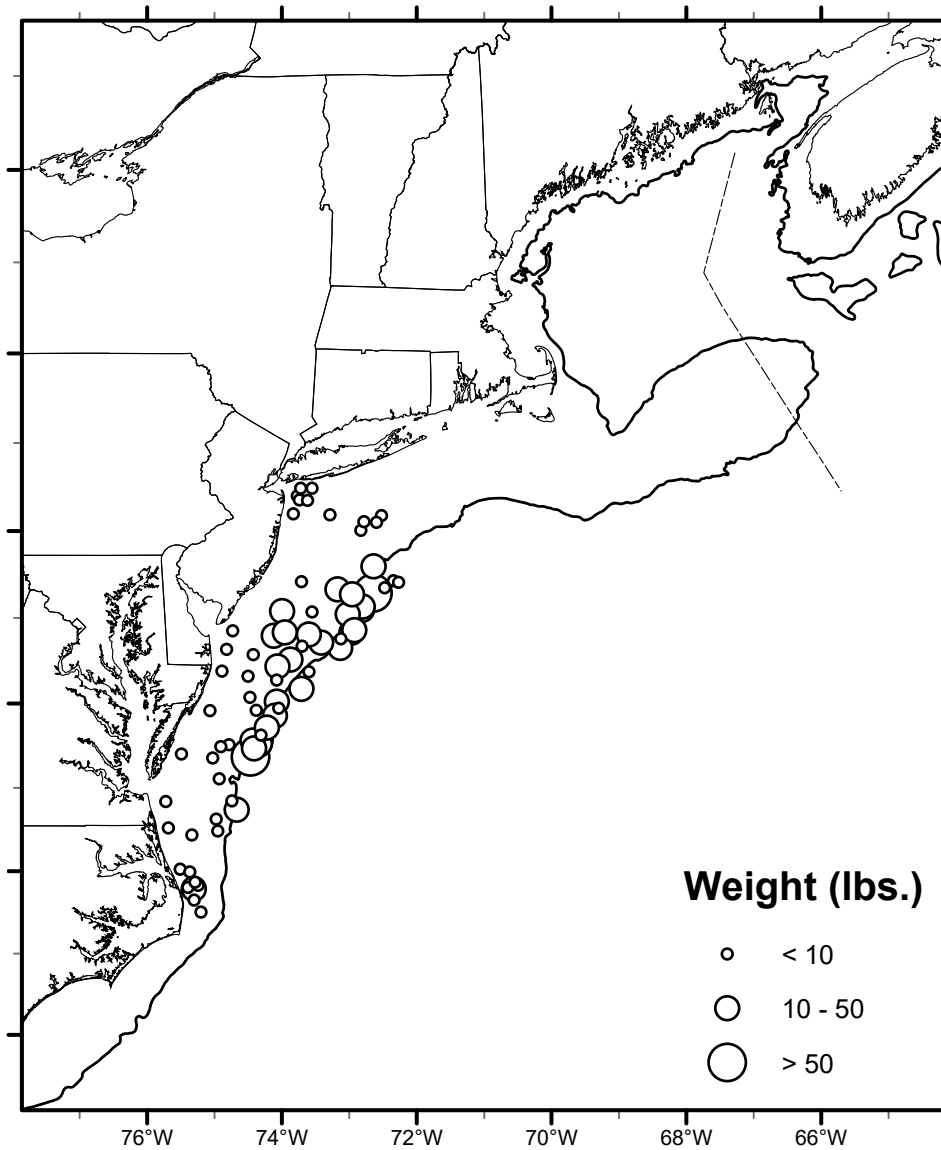


Figure 3: Total weight of goosefish (left panel) and spiny dogfish (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

SUMMER FLOUNDER



WITCH FLOUNDER

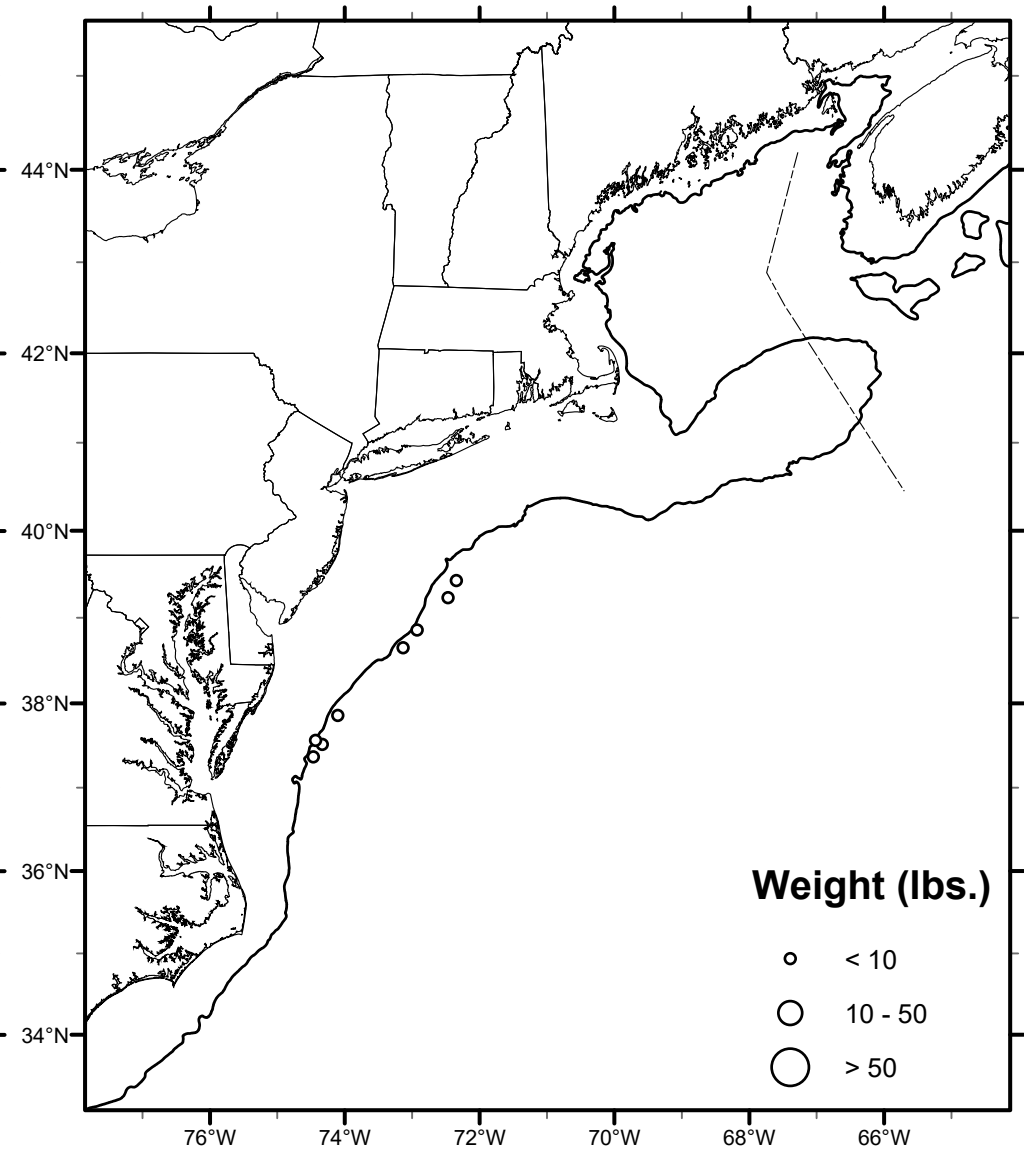
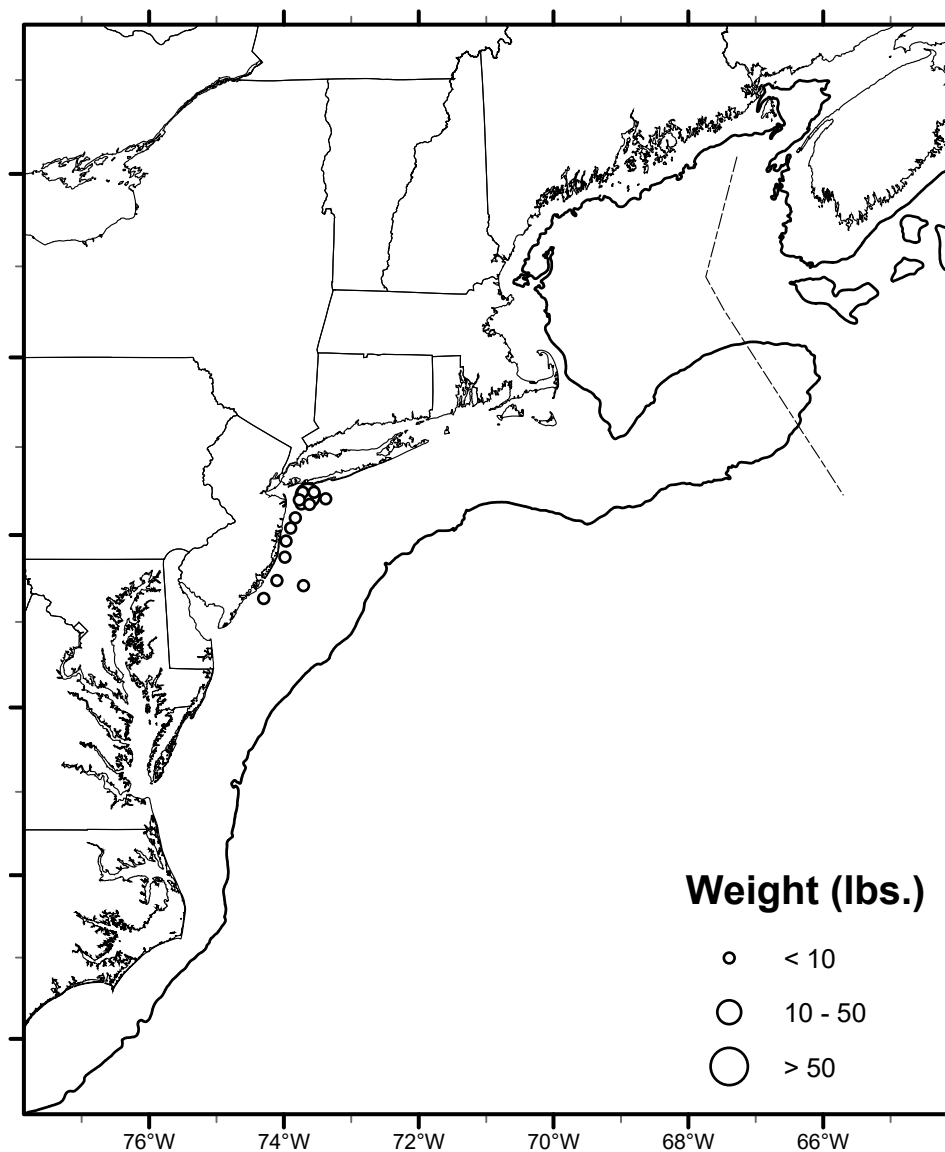


Figure 4: Total weight of summer flounder (left panel) and witch flounder (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

WINTER FLOUNDER



WINDOWPANE FLOUNDER

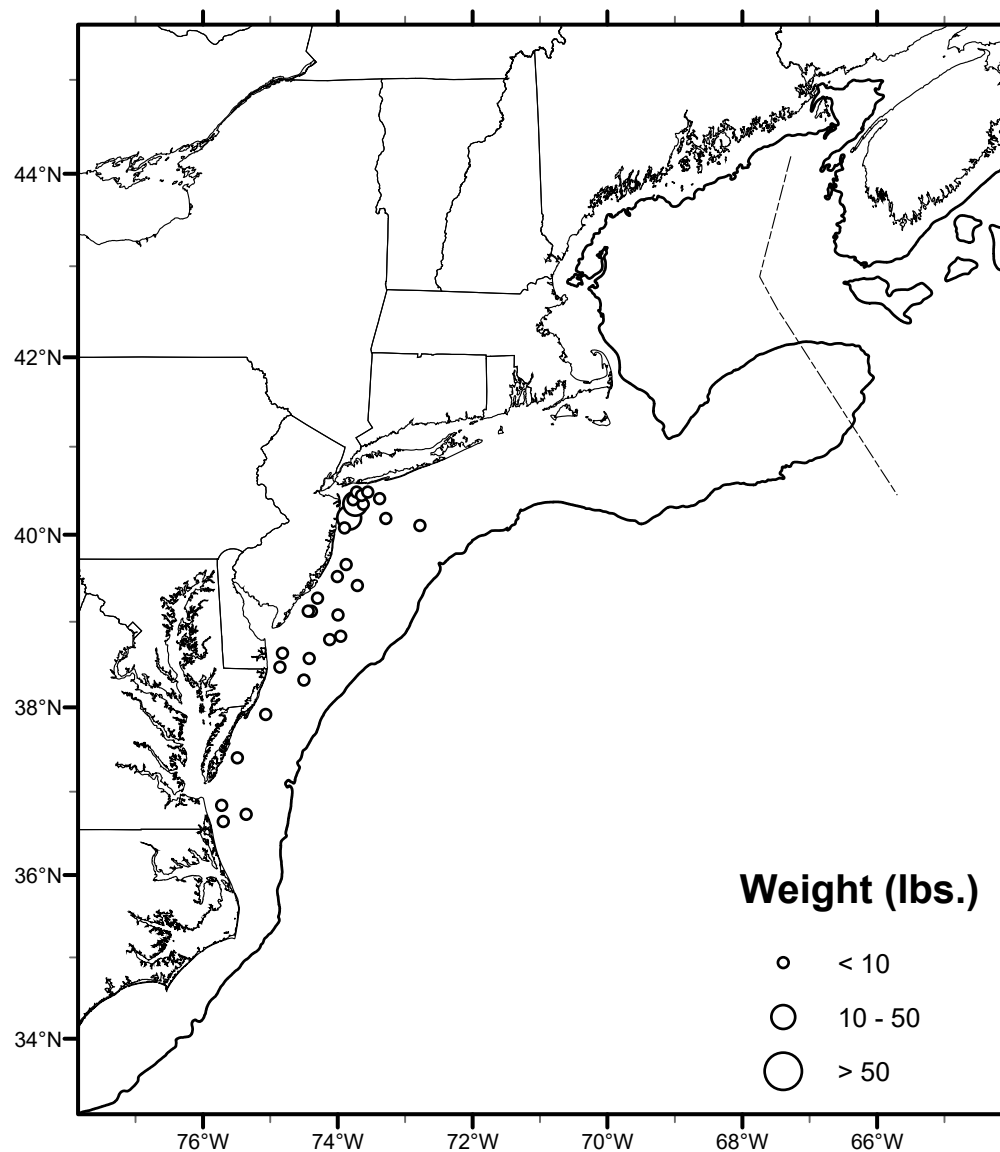
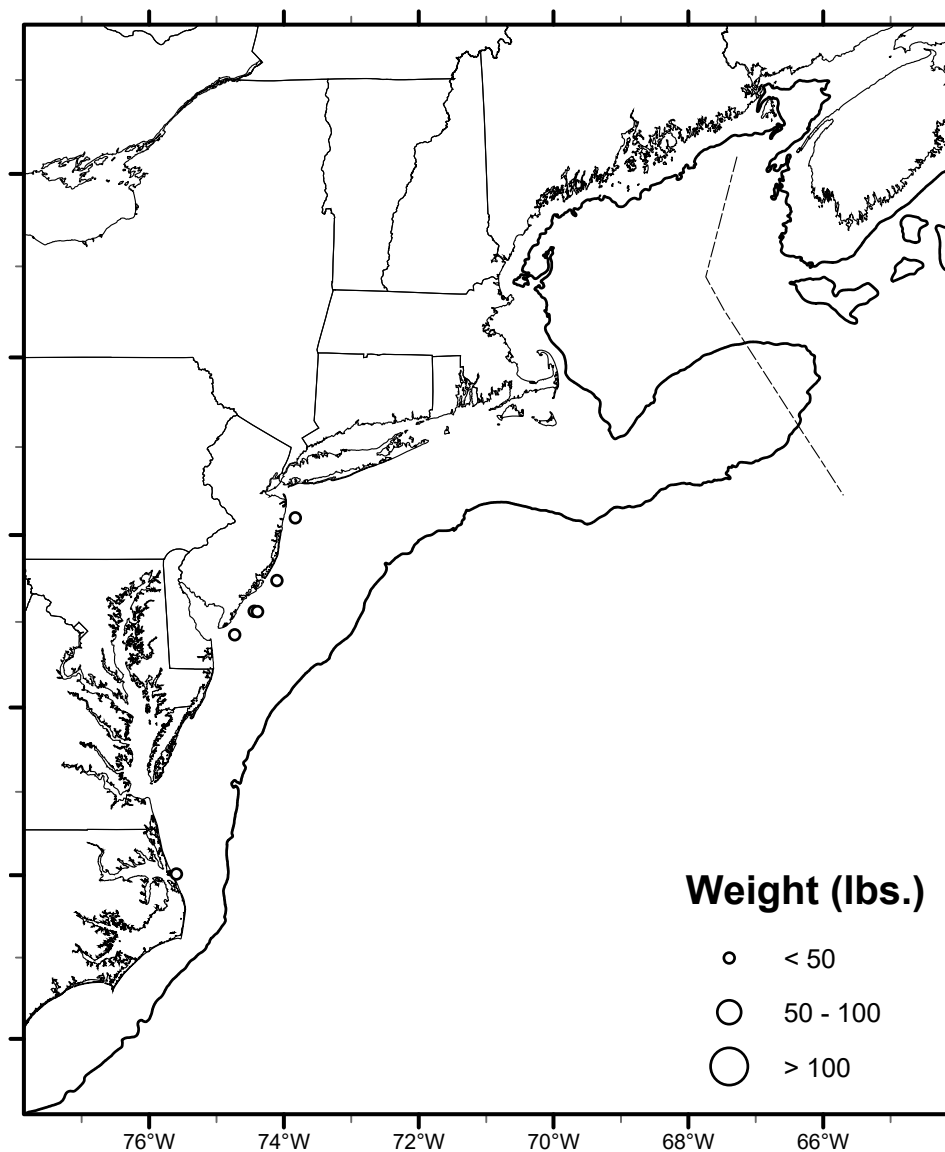


Figure 5: Total weight of winter flounder (left panel) and windowpane flounder (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

ATLANTIC HERRING



ATLANTIC MACKEREL

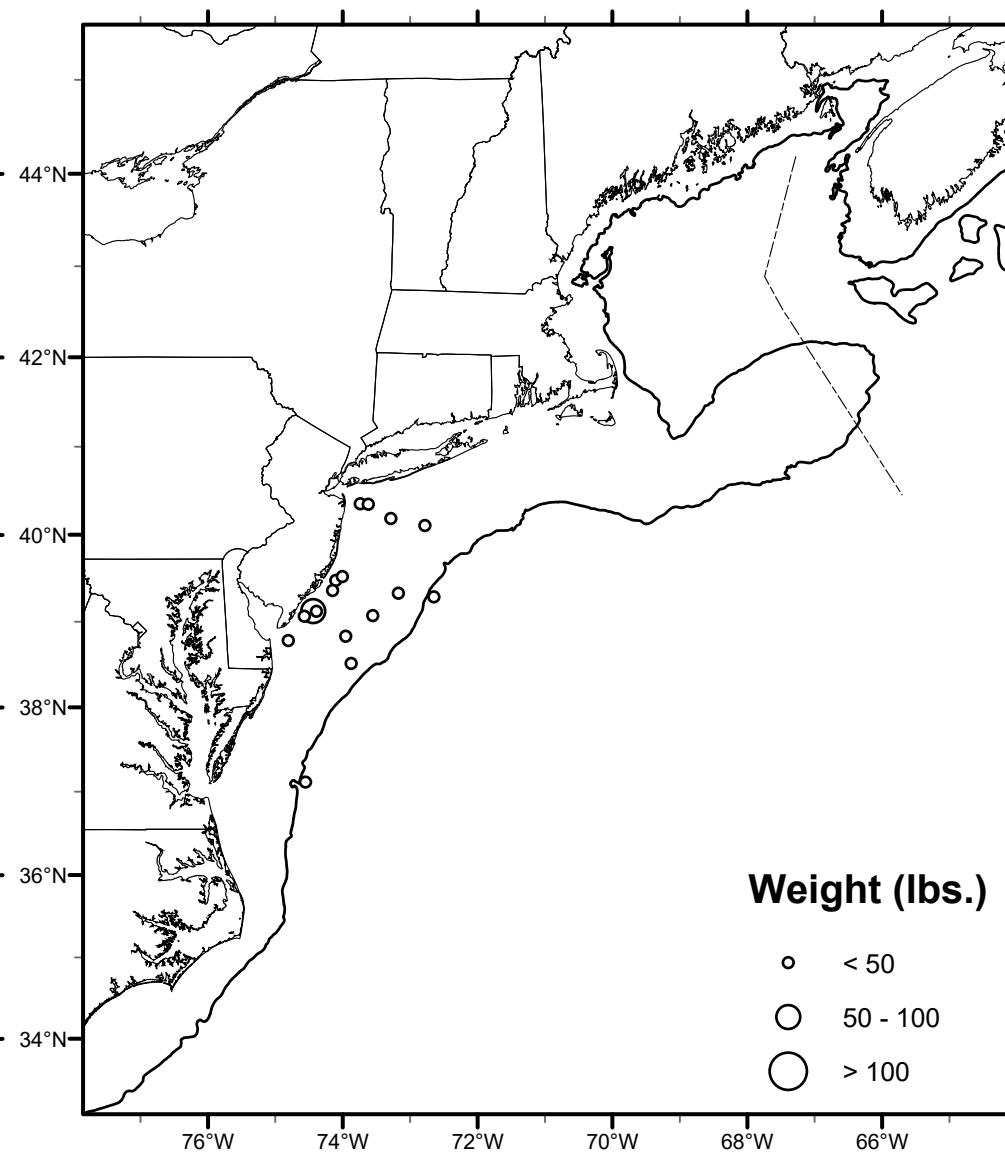
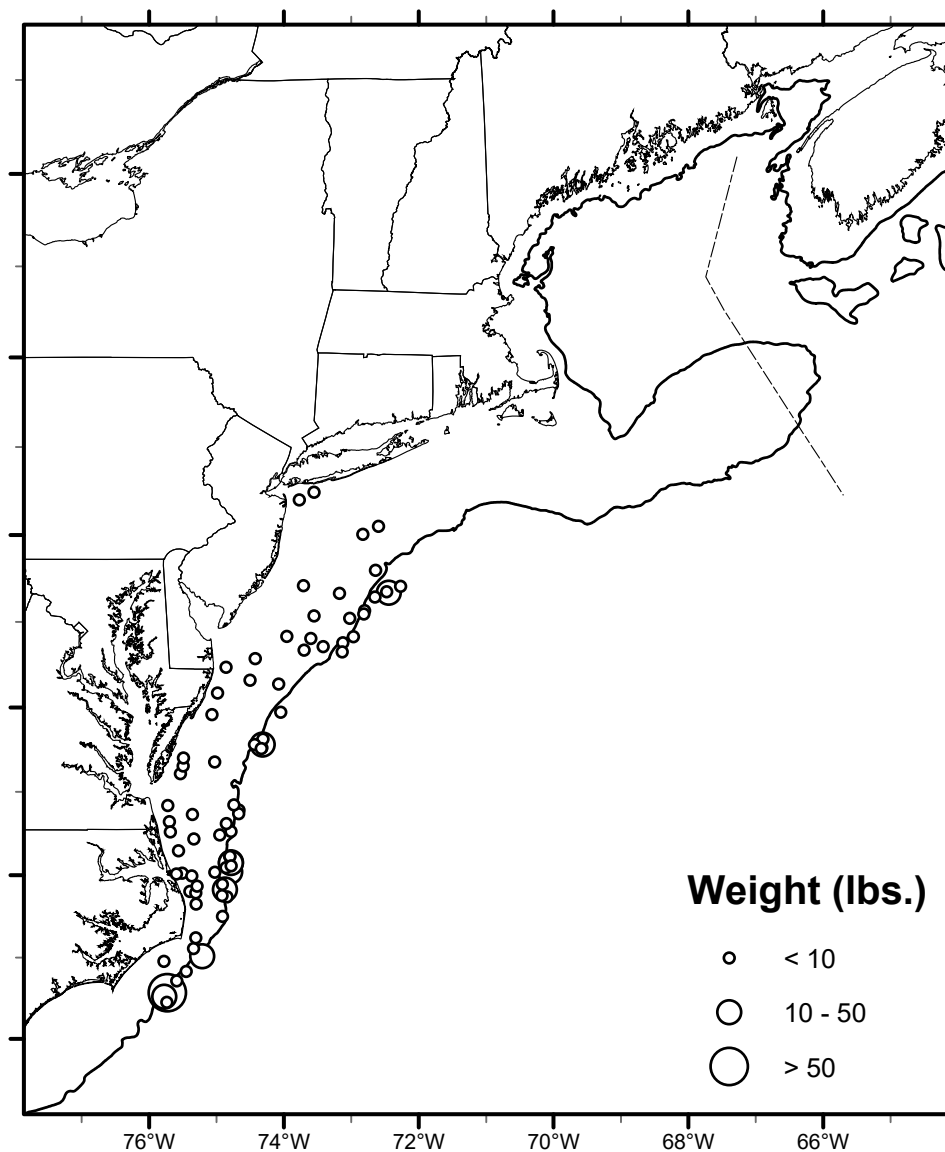


Figure 6: Total weight of Atlantic herring (left panel) and Atlantic mackerel (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

BUTTERFISH



AMERICAN LOBSTER

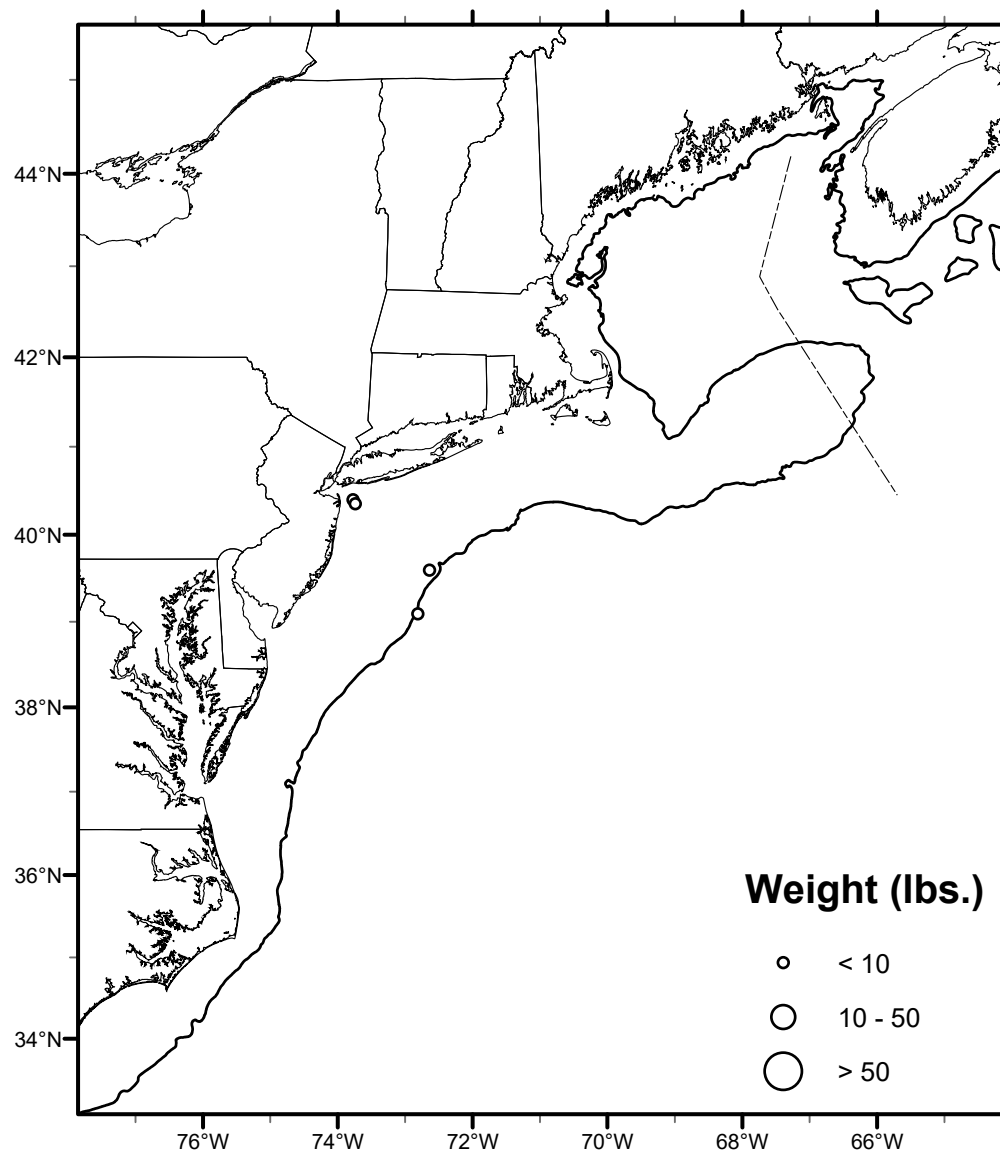
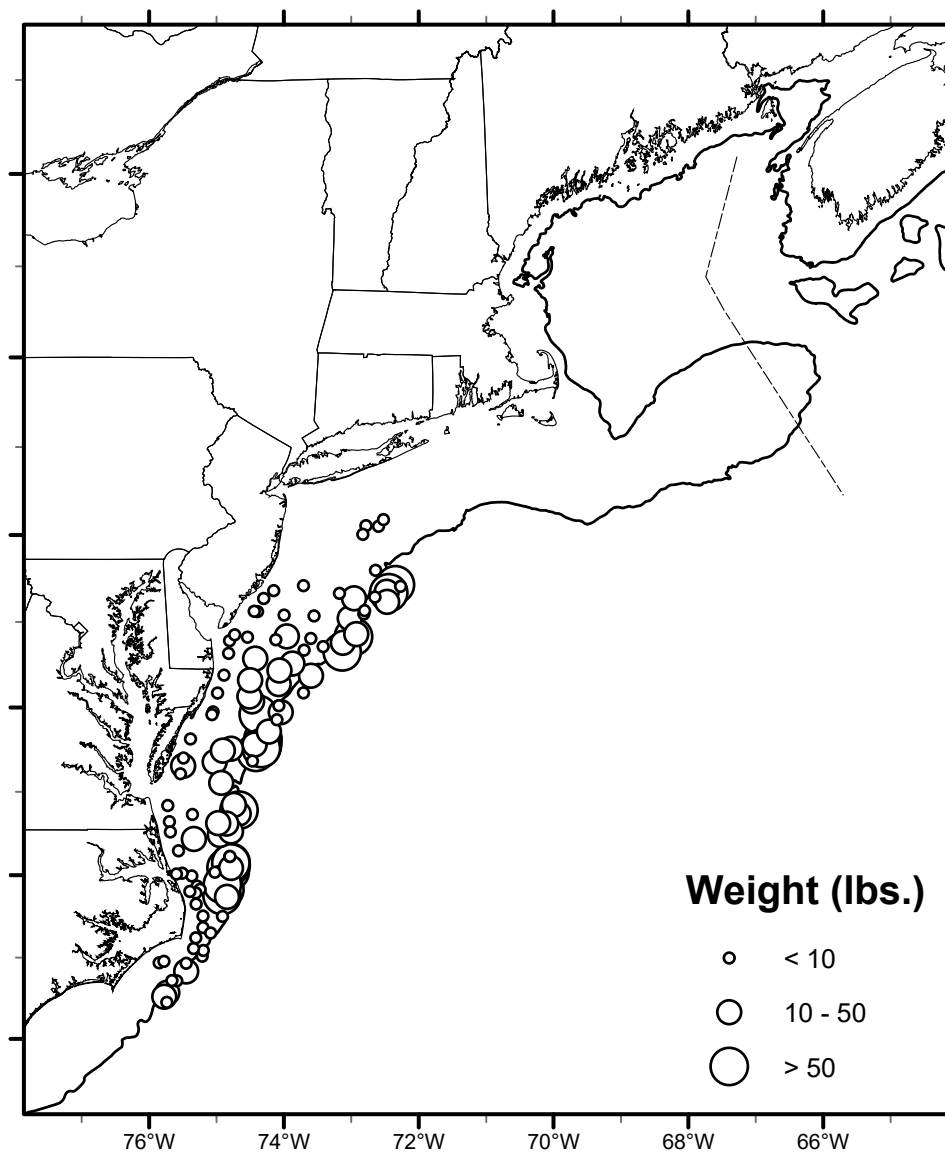


Figure 7: Total weight of butterfish (left panel) and American lobster (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020

INSHORE LONGFIN SQUID



NORTHERN SHORTFIN SQUID

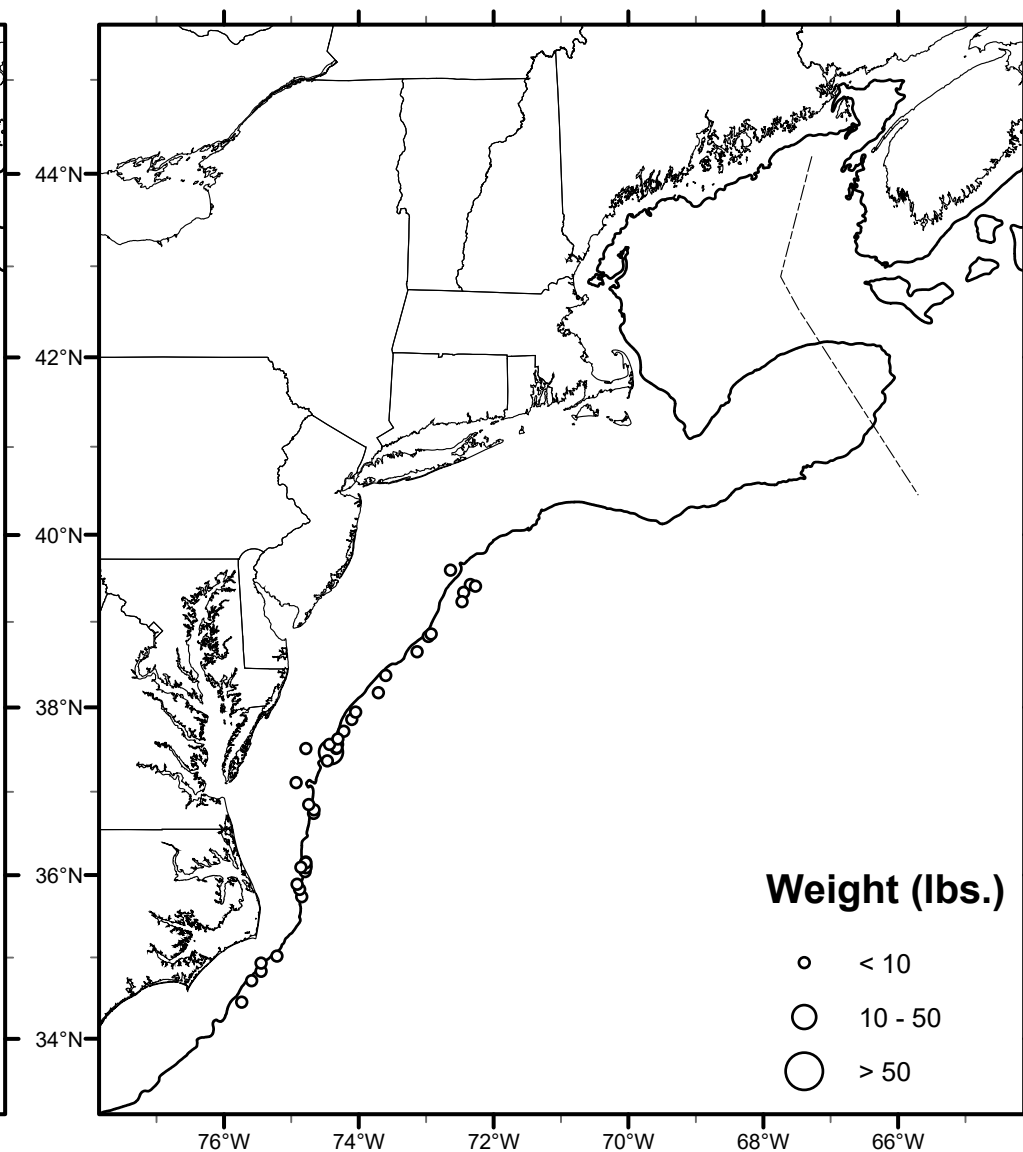


Figure 8: Total weight of Inshore longfin squid (left panel) and Northern shortfin squid (right panel) per tow from NOAA Fisheries, Northeast Fisheries Science Center's spring bottom trawl survey, 2 March - 18 March 2020