RESOURCE SURVEY REPORT
Catch Summary
NOAA Fisheries
Northeast Fisheries Science Center
Autumn Bottom Trawl Survey
Georges Bank - Gulf of Maine
16 October – 18 November 2017

Submitted to: NOAA, NEFSC

For further information contact Philip Politis (508-495-2171), NOAA Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543.

Date: 2017

Resource Survey Report

Bottom Trawl Survey

Georges Bank – Gulf of Maine

16 October – 18 November 2017

NOAA Ship *Pisces* (FSV 226)

NOAA Fisheries
Northeast Fisheries Science Center
Woods Hole, MA 02543

NOAA Ship Pisces underway

Sorting the catch as it passes through the wet lab

Scientist working on a basket of winter flounder (Pseudopleuronectes americanus)

RESOURCE SURVEY REPORT
Catch Summary

NOAA Fisheries
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Autumn Bottom Trawl Survey
Georges Bank - Gulf of Maine
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2017 Autumn Multispecies Bottom Trawl Survey Conducted on NOAA Ship *Pisces*

Due to mechanical issues, NOAA Ship *Henry B. Bigelow* was unavailable to conduct the 2017 Autumn Bottom Trawl Survey. Given the similar hull configurations, auto-trawl winch systems, lab spaces, freezer capacity and vessel endurance, the Northeast Fisheries Science Center (NEFSC) and Office of Marine and Aviation Operations (OMAO) Marine Operations Center Atlantic decided to utilize NOAA Ship *Pisces* to conduct the 2017 autumn survey. *Bigelow's* 1" diameter trawl wire was transferred to *Pisces* along with portions of *Bigelow's* fish processing system. A Rapp Marine technical representative performed maintenance, tested and calibrated *Pisces'* auto-trawl winch system prior to conducting survey operations to ensure winch performance would match *Bigelow*. OMAO purchased and installed a Scanmar acoustic net mensuration system on *Pisces* identical to *Bigelow* and utilized *Bigelow's* Scanmar net mensuration sensors during the survey.

NEFSC was allocated a total of 33 sea-days on *Pisces* to conduct the autumn survey between October 16 and November 20, 2017. Typically, the autumn survey is allocated 60 sea-days between approximately September 1 and November 15 each year. Given the reduced sea-days and late timing of the vessel's availability, the NEFSC decided to focus all survey effort on Georges Bank and Gulf of Maine in order to keep the timing of survey effort on Georges Bank and Gulf of Maine similar to historical survey timing in those areas. This would provide survey data for 20 assessed fish stocks at full station density and meet the Transboundary Resource Assessment Committee (TRAC) obligations for stock sharing agreement.

As a result, 178 stations were planned in the following strata:

- 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1340, 1351, 1360, 1370, 1380, 1390, 1400, 3560, 3590, 3600, 3610, 3640, 3650, 3660

Within the above listed strata, the following stocks were covered:

- Atlantic cod (eastern Georges Bank), Atlantic cod (Georges Bank), Atlantic cod (Gulf of Maine), American plaice, winter flounder (Georges Bank), winter flounder (Gulf of Maine), windowpane flounder (Georges Bank/Gulf of Maine), witch flounder, yellowtail flounder (Cape Cod Bay/Gulf of Maine), yellowtail flounder (Georges Bank), goosefish (north), haddock (eastern Georges Bank), haddock (Georges Bank), haddock (Gulf of Maine), red hake (north), white hake, silver hake (north), Atlantic halibut, Acadian redfish, Atlantic pollock.

Due to reduced fish processing capabilities on *Pisces*, biological sampling was reduced for the 2017 autumn survey with priority sampling focused on species with age-based assessments. In addition, the following changes were made:

- All NEFSC external special sample requests were denied.
- Age and maturity sampling was eliminated for the following 13 species:
    - Black sea bass, fourspot flounder, weakfish, tilefish, offshore hake, Atlantic croaker, striped bass, butterfish, bluefish, Atlantic mackerel, windowpane flounder, spotted hake and ocean pout.
- Age and maturity sampling was reduced for the following 5 species:
    - American plaice, goosefish, haddock, Acadian redfish and red hake.
- Feeding ecology sampling was reduced from 51 to 17 priority species and a small reduction made to the sampling frequency of some species.

Due to minor mechanical issues on *Pisces* and significant strong wind throughout the survey season, 133 of 178 planned stations were completed. Survey effort was prioritized on Georges Bank and offshore strata of Gulf of Maine.

- Limited or no survey tows were made in the following strata: 3560, 3590, 3640, 3650, 3660.
- Three stocks that were expected to be complete do not have full survey strata coverage: windowpane flounder (Georges Bank/Gulf of Maine), winter flounder (Gulf of Maine), yellowtail flounder (Cape Cod Bay/Gulf of Maine). The remaining 17 stocks have sufficient sampling in all strata to be used in stock assessment.

The NEFSC standard 400 x 12cm, 3-bridle, 4-seam bottom trawl, rockhopper sweep and 550-kg, 2.2-m Poly-Ice oval trawl doors were utilized on *Pisces* during the 2017 autumn survey. All survey tows followed the NEFSC standard operating procedures and were monitored, evaluated and validated in real-time, at-sea, utilizing the identical tow evaluation software as used on *Bigelow*. The NEFSC is confident that vessel and trawl performance on *Pisces* matched the standard vessel and trawl performance observed in previous years on *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*.

In 2008 the Northeast Fisheries Science Center conducted an extensive study to estimate the relative catchability of the NOAA Ship *Albatross IV* sampling with the Yankee 36 bottom trawl following historical protocols and the NOAA Ship *Henry B. Bigelow* sampling with the 400 x 12cm, 4-seam 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*. At the time of release of this report, there have been no direct estimates of the relative catchability differences between *Bigelow* and *Pisces*.

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) 2017 autumn bottom trawl survey aboard the NOAA Ship *Pisces*.

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 (Georges Bank to the Gulf of Maine).

The data are now summarized from audited catch files generated from the Fisheries Scientific Computer System (FSCS).

For further information contact Philip Politis (508-495-2171), NOAA Fisheries, 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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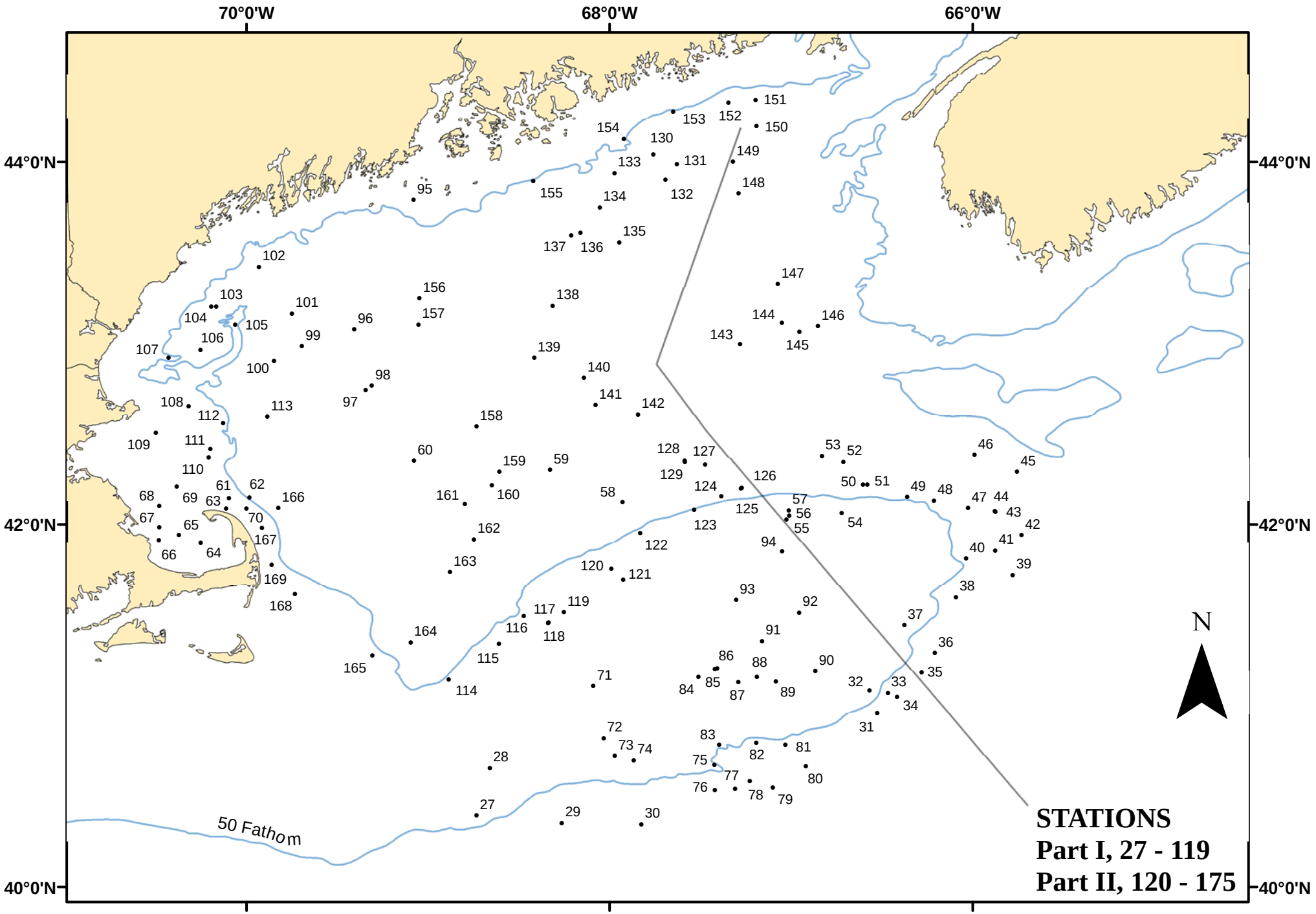


Figure 1. Trawl hauls made from NOAA Ship *Pisces*, during NOAA Fisheries, Northeast Fisheries Science Center's autumn bottom trawl survey, 16 October - 18 November 2017

NOAA Fisheries
AUTUMN BOTTOM TRAWL SURVEY
2017 STATION INFORMATION

Station	Date	Time	Lat	Lon	Loran TD's		Course	Bottom Depth (FM)
0027	Oct-20	0728	4023.7	6844.0	W13774.4	Y43398.9	157	48.9
0028	Oct-20	1033	4039.4	6839.6	W13693.9	Y43492.9	108	35.5
0029	Oct-20	1427	4021.2	6815.8	W13653.4	Y43367.2	242	76.6
0030	Oct-20	1808	4020.8	6749.5	W13538.4	Y43351.4	129	118.1
0031	Oct-21	0232	4057.6	6631.5	W13071.0	Y43510.5	039	88.6
0032	Oct-21	0530	4105.1	6634.1	W13047.7	Y43550.5	037	51.1
0033	Oct-21	0754	4104.2	6628.0	W13028.6	Y43542.6	019	61.5
0034	Oct-21	1102	4103.0	6625.0	W13023.0	Y43534.2	350	214.6
0035	Oct-21	1350	4111.0	6616.9	W12957.6	Y43569.6	188	179.6
0036	Oct-21	1703	4117.5	6612.5	W12912.8	Y43598.8	031	91.6
0037	Oct-21	1950	4126.6	6622.6	W12906.5	Y43651.1	017	53.6
0038	Oct-21	2237	4136.0	6605.5	W12801.6	Y43683.8	067	52.8
0039	Oct-22	0136	4143.3	6546.8	W12703.6	Y43704.2	190	138.6
0040	Oct-22	0601	4148.7	6602.2	W12728.8	Y43741.3	345	53.9
0041	Oct-22	0834	4151.4	6552.5	W12683.3	Y43746.2	020	67.8
0042	Oct-22	1112	4156.4	6543.8	W12630.5	Y43762.3	326	129.9
0043	Oct-22	1354	4204.3	6552.5	W12619.0	Y43805.4	146	140.5
0047	Oct-22	1747	4204.4	6552.7	W12619.0	Y43806.0	310	137.8
0048	Oct-22	2055	4217.4	6545.3	W12529.2	Y43857.9		116.2
0050	Oct-23	0245	4223.0	6559.4	W12544.6	Y43895.4	336	131.0
0051	Oct-23	0657	4205.4	6601.5	W12642.9	Y43818.3	312	96.2
0052	Oct-23	0858	4207.9	6612.8	W12668.2	Y43839.6	081	58.5
0053	Oct-23	1131	4209.0	6621.7	W12693.5	Y43852.7	108	95.1
0054	Oct-23	1503	4213.3	6636.2	W12723.4	Y43886.4	274	126.0
0055	Oct-23	1615	4213.2	6634.8	W12718.6	Y43884.8	270	125.5
0056	Oct-23	1839	4220.8	6642.7	W12707.4	Y43927.4	319	173.6
0057	Oct-23	2034	4222.7	6649.8	W12723.4	Y43943.8	268	186.5
0059	Oct-24	0004	4203.8	6643.3	W12799.5	Y43848.6	187	39.4
0060	Oct-24	0318	4201.6	6701.5	W12881.4	Y43855.6	274	33.4
0061	Oct-24	0526	4202.9	6700.6	W12870.8	Y43861.2	228	33.1
0062	Oct-24	0716	4204.6	6700.8	W12862.4	Y43869.7	309	34.2
0063	Oct-24	1348	4207.4	6755.7	W13081.5	Y43942.5	051	121.1
0064	Oct-24	1740	4218.1	6819.7	W13136.5	Y44025.5	258	113.5
0066	Oct-24	2241	4221.0	6904.7	W13349.7	Y44101.6	185	121.7
0067	Oct-25	0749	4208.8	7005.8	X25442.4	Y44127.6	129	29.5
0068	Oct-25	1055	4208.9	6959.0	W13718.7	Y44117.7	126	59.3
0069	Oct-25	1424	4205.3	7006.7	X25422.0	Y44109.1	298	14.2
0070	Oct-25	1754	4153.9	7015.1	X25387.0	Y44055.8	010	18.3
0071	Oct-25	2045	4156.4	7022.4	X25448.8	Y44081.7	337	22.4
0072	Oct-25	2325	4154.7	7028.9	X25480.4	Y44081.9	338	15.9
0073	Oct-26	0201	4159.1	7028.8	X25509.3	Y44108.6	186	21.6
0074	Oct-26	0609	4206.2	7028.8	X25556.5	Y44150.6	350	27.3
0075	Oct-26	1018	4212.6	7023.1	X25564.3	Y44177.9	188	35.0
0076	Oct-26	1420	4205.2	7000.0	X25388.9	Y44098.1	142	36.4
0077	Oct-27	0951	4106.5	6805.4	W13420.9	Y43625.8	006	26.2
0078	Oct-27	1313	4049.2	6802.0	W13479.6	Y43524.4	233	36.1
0079	Oct-27	1535	4043.4	6758.3	W13487.1	Y43488.3	270	43.2
0080	Oct-27	1717	4042.0	6752.0	W13465.0	Y43476.0	268	43.5
0081	Oct-27	2039	4040.4	6725.3	W13357.4	Y43450.3	268	51.7
0082	Oct-27	2249	4032.0	6725.2	W13391.3	Y43403.3	071	74.9
0083	Oct-28	0045	4032.5	6718.5	W13361.6	Y43402.2	049	78.5
0084	Oct-28	0155	4035.0	6713.7	W13331.6	Y43413.8	056	66.2
0085	Oct-28	0338	4033.0	6706.0	W13308.6	Y43398.9	223	123.9
0086	Oct-28	0610	4040.0	6655.1	W13236.3	Y43431.3	053	108.0

NOAA Fisheries
AUTUMN BOTTOM TRAWL SURVEY
2017 STATION INFORMATION

Station	Date	Time	Lat	Lon	Loran TD's		Course	Bottom Depth (FM)
0087	Oct-28	0829	4047.1	6701.9	W13233.8	Y43473.2	046	53.6
0088	Oct-28	1030	4047.7	6711.5	W13269.7	Y43482.6	044	52.2
0089	Oct-28	1238	4047.0	6723.8	W13323.4	Y43486.0	310	49.2
0090	Oct-28	1535	4109.6	6730.6	W13253.6	Y43614.9	180	29.5
0091	Oct-28	1721	4112.2	6725.2	W13218.9	Y43624.6	072	26.8
0092	Oct-28	1805	4112.4	6724.5	W13214.9	Y43625.1	248	26.5
0093	Oct-28	1955	4107.8	6717.4	W13206.6	Y43594.9	269	32.3
0094	Oct-28	2133	4109.5	6711.4	W13173.8	Y43599.7	343	33.6
0095	Oct-28	2306	4108.1	6705.0	W13154.6	Y43587.3	031	35.8
0096	Oct-29	0056	4111.5	6652.0	W13087.5	Y43595.8	079	39.6
0097	Oct-29	0350	4121.4	6709.6	W13112.1	Y43660.6	180	31.4
0098	Oct-29	0618	4130.9	6657.3	W13018.0	Y43699.4	234	36.1
0099	Oct-29	0845	4135.1	6718.1	W13082.0	Y43738.8	359	30.1
0100	Oct-29	1146	4151.1	6703.0	W12940.6	Y43805.8	343	33.1
0101	Oct-31	1416	4347.4	6904.8	W12820.0	Y44499.1	242	46.2
0102	Oct-31	2012	4304.6	6924.4	W13208.1	Y44347.3	235	95.1
0103	Nov-01	0004	4244.6	6920.6	W13305.5	Y44245.2	288	82.8
0104	Nov-01	0131	4246.0	6918.6	W13286.3	Y44249.1	236	38.0
0105	Nov-01	0636	4259.0	6941.7	W13342.7	Y44350.0	279	77.1
0106	Nov-01	0843	4254.1	6950.9	W13426.2	Y44342.5	349	134.8
0107	Nov-01	1213	4309.9	6945.0	W13296.6	Y44406.8	181	84.2
0108	Nov-01	1529	4325.2	6955.9	W13267.2	Y44495.5	173	84.5
0109	Nov-01	1841	4312.1	7010.0	X25871.4	Y44462.1	274	61.5
0110	Nov-01	1945	4312.2	7011.6	X25880.2	Y44465.7	097	61.5
0111	Nov-01	2149	4306.0	7003.7	X25806.0	Y44422.3	355	28.4
0112	Nov-02	0101	4257.8	7015.2	X25812.6	Y44403.6	325	86.7
0113	Nov-02	0404	4255.2	7025.8	X25852.6	Y44410.4	284	41.3
0114	Nov-02	0723	4239.1	7019.2	X25716.9	Y44316.2	323	43.2
0115	Nov-02	1023	4230.2	7030.0	X25721.6	Y44288.5	158	47.8
0116	Nov-02	1307	4222.3	7012.5	X25570.6	Y44214.3	350	34.4
0117	Nov-02	1509	4225.0	7011.9	X25585.9	Y44228.1	214	36.4
0118	Nov-02	2032	4233.5	7007.7	X25621.5	Y44266.9	063	54.4
0119	Nov-02	2312	4235.6	6953.1	W13544.1	Y44252.9	329	104.7
0120	Nov-08	1710	4108.7	6853.1	W13639.7	Y43682.0	046	50.0
0121	Nov-08	2022	4120.6	6836.6	W13505.8	Y43734.8	028	42.4
0122	Nov-08	2324	4129.6	6828.4	W13424.1	Y43777.8	358	47.0
0123	Nov-09	0117	4127.4	6820.3	W13395.7	Y43757.3	095	29.8
0124	Nov-09	0215	4127.6	6820.2	W13394.5	Y43757.8	174	29.5
0125	Nov-09	0459	4130.9	6815.1	W13354.6	Y43771.4	309	20.8
0126	Nov-09	0903	4145.4	6759.4	W13211.4	Y43833.3	022	18.9
0127	Nov-09	1123	4141.7	6755.5	W13212.1	Y43809.4	111	17.8
0128	Nov-09	1533	4157.2	6749.9	W13108.3	Y43884.3	233	42.4
0129	Nov-09	1844	4204.8	6732.1	W12990.3	Y43903.3	209	51.7
0130	Nov-09	2152	4209.2	6723.0	W12928.7	Y43915.2	073	97.6
0131	Nov-10	0005	4211.9	6716.6	W12887.6	Y43921.3	079	107.7
0132	Nov-10	0132	4212.1	6716.3	W12885.5	Y43921.6	085	107.4
0133	Nov-10	0417	4219.9	6728.4	W12893.8	Y43972.6	128	166.8
0134	Nov-10	0655	4221.2	6735.2	W12915.8	Y43986.7	357	147.1
0135	Nov-10	0748	4220.6	6735.1	W12918.3	Y43983.8	168	146.3
0136	Nov-11	1455	4402.4	6745.5	W12324.4	Y44434.1	351	83.7
0137	Nov-11	1719	4359.2	6737.8	W12314.1	Y44411.2	325	113.5
0138	Nov-11	2025	4354.2	6741.6	W12364.8	Y44397.6	058	111.3
0139	Nov-11	2318	4356.3	6758.4	W12422.8	Y44430.1	082	84.5
0140	Nov-12	0355	4345.0	6803.2	W12523.5	Y44393.2	045	93.5

NOAA Fisheries
AUTUMN BOTTOM TRAWL SURVEY
2017 STATION INFORMATION

Station	Date	Time	Lat	Lon	Loran TD's		Course	Bottom Depth (FM)
0141	Nov-12	0647	4333.4	6756.8	W12572.2	Y44337.3	282	125.8
0142	Nov-12	0904	4336.5	6809.6	W12610.8	Y44368.5	066	102.3
0143	Nov-12	1059	4335.7	6812.7	W12630.7	Y44369.7	324	97.3
0144	Nov-12	1453	4312.4	6818.8	W12811.8	Y44280.3	031	105.5
0145	Nov-12	1829	4255.1	6824.9	W12949.0	Y44211.5	022	93.8
0146	Nov-12	2123	4248.5	6808.5	W12909.2	Y44158.1	327	102.5
0147	Nov-12	2356	4239.5	6804.6	W12943.8	Y44110.8	323	109.6
0148	Nov-13	0230	4236.4	6750.5	W12897.4	Y44077.9	271	119.5
0149	Nov-13	0706	4259.7	6716.9	W12616.9	Y44140.9	268	114.0
0150	Nov-13	0943	4306.8	6703.0	W12519.3	Y44154.7	147	98.2
0151	Nov-13	1135	4303.7	6657.2	W12516.6	Y44134.2	300	94.1
0152	Nov-13	1358	4305.7	6651.1	W12482.0	Y44135.4	130	90.5
0153	Nov-13	1727	4319.5	6704.4	W12446.2	Y44209.3	189	117.0
0154	Nov-13	2208	4349.5	6717.4	W12300.5	Y44346.0	050	102.8
0155	Nov-14	0101	4400.1	6719.2	W12235.4	Y44388.4	030	113.2
0156	Nov-14	0336	4412.0	6711.5	W12124.5	Y44421.4	215	76.0
0157	Nov-14	0609	4420.5	6711.7	W12065.4	Y44452.0	173	94.9
0158	Nov-14	0854	4419.6	6720.7	W12103.6	Y44461.3	047	91.0
0159	Nov-14	1220	4416.6	6739.0	W12195.9	Y44476.4	097	52.8
0160	Nov-14	1553	4407.5	6755.3	W12329.9	Y44467.4	059	55.0
0161	Nov-14	2015	4353.6	6825.2	W12568.5	Y44460.3	019	60.1
0162	Nov-15	0201	4314.8	6902.9	W13024.2	Y44358.5	030	86.1
0163	Nov-15	0503	4306.1	6903.2	W13080.0	Y44319.9	304	89.9
0164	Nov-15	1045	4232.5	6844.0	W13177.9	Y44130.4	061	107.7
0165	Nov-15	1450	4217.4	6836.4	W13222.6	Y44044.1	072	92.1
0166	Nov-15	1705	4213.1	6838.9	W13258.4	Y44025.0	073	105.3
0167	Nov-15	1925	4206.7	6847.8	W13337.7	Y44003.1	065	91.9
0168	Nov-15	2200	4155.0	6844.9	W13382.4	Y43936.8	073	81.2
0169	Nov-16	0049	4144.2	6852.7	W13475.9	Y43886.8	069	89.1
0170	Nov-16	0423	4121.0	6905.7	W13650.5	Y43767.7	070	87.2
0171	Nov-16	0728	4116.7	6918.4	W13735.1	Y43756.0	157	41.0
0172	Nov-16	1839	4205.4	6949.5	W13680.7	Y44083.0	123	97.1
0173	Nov-16	2049	4158.9	6954.9	W13744.0	Y44054.4	338	28.4
0174	Nov-18	0610	4137.0	6944.0	W13783.7	Y43909.9	342	18.9
0175	Nov-18	0833	4146.6	6951.7	W13783.6	Y43977.6	159	22.4

NOAA FISHERIES - NEFSC AUTUMN BOTTOM TRAWL SURVEY 2017
CATCH WEIGHTS (POUNDS) OF IMPORTANT SPECIES BY HAUL

STATION	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	RED HAKE	SILVER HAKE	HALIBUT	ACADIAN REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BUTTERFISH	ATLANTIC MACKEREL	ATLANTIC HERRING	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER [3]	TOTAL ALL
27	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	100	106
28	0	0	0	0	1	2	0	0	0	103	0	0	0	0	0	3	0	0	0	2	9	1	64	185
29	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	101	107	24	234
30	0	0	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	7	18	32
31	0	1	0	0	11	0	0	0	0	1547	0	0	0	0	0	0	1	0	0	11	0	5	63	1639
32	0	28	0	0	44	20	0	0	21	197	9	0	0	0	0	0	0	0	0	6	0	0	1454	1779
33	0	6	0	0	37	14	0	0	58	194	0	0	0	0	0	0	0	0	0	9	0	2	155	475
34	0	0	0	3	0	1	0	0	399	0	0	0	0	1	0	0	0	0	0	72	0	30	218	724
35	0	0	0	0	1	17	0	1	384	0	0	0	1	2	0	0	0	0	0	385	0	42	307	1140
36	0	0	0	0	16	98	0	0	5	563	0	0	0	0	0	0	0	0	0	9	0	12	42	745
37	0	400	0	4	47	3	0	0	93	143	0	0	0	0	0	0	0	0	0	39	0	1	427	1157
38	0	1	0	0	8	1	0	0	20	579	3	0	0	0	0	0	0	0	0	25	0	0	374	1011
39	0	6	0	3	3	3	0	0	14	106	0	0	0	0	0	0	0	0	0	143	0	10	64	352
40	0	4	0	0	8	0	0	0	5	886	2	9	0	0	0	0	0	0	0	30	0	0	497	1441
41	61	843	21	0	0	0	0	0	8	101	0	0	0	0	0	0	0	0	0	23	0	0	169	1226
42	25	348	9	0	1	1	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	3	42	497
43 [1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	46	4	23	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	3	0	3	57	156
48	0	2	0	0	1	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	3	61	97
50	3	42	0	0	2	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	60	118
51	0	2	0	3	5	3	0	0	36	0	0	0	0	0	0	0	0	0	4	11	0	1	470	535
52	12	756	0	0	2	0	0	0	0	9	0	0	0	0	0	0	0	0	0	5	0	0	41	825
53	0	23	0	0	6	4	0	0	48	0	0	0	0	0	0	0	0	0	3	81	0	2	99	266
54 [1]	0	93	0	0	1	2	0	9	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4	111
55	46	1936	0	24	40	33	0	108	21	13	0	0	0	0	0	0	0	0	3	19	0	6	200	2449
56	0	195	47	108	6	31	0	8	0	13	0	0	0	0	0	0	0	0	1	3	0	1	52	465
57	0	231	2	58	1	92	0	0	0	22	0	0	0	0	0	0	0	0	3	5	0	0	70	484
59	42	612	0	3	7	5	0	0	7	325	0	8	0	0	0	0	0	3	0	54	0	1	859	1926
60 [1]	2	33	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	38	92
61	0	57	0	4	3	8	0	0	9	1	0	0	0	0	3	0	0	42	1	21	1	0	290	440
62 [1]	0	710	0	3	5	9	0	0	4	0	1	45	0	0	0	0	1	105	2	72	1	0	682	1640
63	0	130	0	8	40	165	0	12	5	377	0	3	0	0	0	0	0	0	7	16	0	1	50	814
64	0	228	0	0	105	289	0	0	39	140	0	0	3	3	0	0	0	0	144	3	0	0	67	1021
66	0	324	0	3	34	338	0	13	23	37	0	0	8	1	0	0	0	0	87	2	0	0	2	872
67	0	5	0	1	3	25	0	0	0	2	29	9	0	0	1	0	25	1216	1726	34	10	4	26	3116
68	0	109	0	0	52	119	0	0	2	87	3	0	0	0	0	0	6	3	54	0	0	1	49	485
69	0	0	0	0	0	48	0	0	0	0	11	4	0	0	0	0	0	6955	92	2	130	0	27	7269

NOAA FISHERIES - NEFSC AUTUMN BOTTOM TRAWL SURVEY 2017
CATCH WEIGHTS (POUNDS) OF IMPORTANT SPECIES BY HAUL

	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	RED HAKE	SILVER HAKE	HALIBUT	ACADIAN REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BUTTERFISH	ATLANTIC MACKEREL	ATLANTIC HERRING	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER [3]	TOTAL ALL
70	0	0	0	4	30	431	0	0	7	0	4	35	0	0	28	1	4	0	0	68	0	1	90	703
71	0	0	0	0	21	412	0	0	1	0	3	8	0	0	4	0	6	0	69	231	0	1	92	848
72	0	0	0	1	38	174	0	0	1	0	1	16	0	0	8	0	0	1	15	114	0	0	263	632
73	0	0	0	0	33	353	0	0	5	0	8	9	0	0	14	0	0	1	20	78	0	0	81	602
74	5	0	0	0	55	156	0	0	7	15	62	66	0	0	1	0	14	11	238	113	7	0	270	1020
75	13	1569	0	1	48	89	0	0	23	134	23	76	2	1	1	0	3	0	2154	10	6	0	94	4247
76	0	7	0	0	3	27	0	0	25	0	63	3	0	0	0	0	7	234	11	12	9	4	70	475
77	0	0	0	0	1	0	0	0	11	102	1	0	0	0	2	16	0	3	0	0	21	0	398	555
78	0	300	0	1	16	0	0	0	8	11	0	3	0	0	2	35	0	0	0	14	6	2	252	650
79	0	3	0	0	13	3	0	0	5	95	0	0	0	0	0	12	0	0	0	0	1	1	101	234
80	0	1	0	0	19	2	0	0	25	28	0	0	0	0	1	0	0	0	0	3	0	1	362	442
81	0	0	0	0	40	15	0	0	7	203	0	0	0	0	0	0	1	0	0	9	0	1	79	355
82	0	0	0	0	14	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	1	34	61
83	0	0	0	0	2	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	32	42
84	0	0	0	0	2	8	0	0	0	19	0	0	0	0	0	0	0	0	0	0	2	1	44	76
85	0	0	0	0	14	2	0	0	4	74	0	0	0	0	0	0	0	0	0	0	0	1	43	138
86	0	21	0	0	8	6	0	0	7	247	0	0	0	0	0	0	3	0	0	0	16	11	44	363
87	0	1	0	1	10	3	0	0	20	254	0	0	0	0	0	0	3	0	0	7	0	1	50	350
88	0	2	0	0	19	1	0	0	9	128	0	0	0	0	0	0	0	0	0	0	1	0	162	322
89	0	1	0	0	46	6	0	0	30	55	0	0	0	0	0	0	4	0	0	9	3	1	991	1146
90	0	3	0	0	0	0	0	0	10	51	0	1	0	0	0	3	0	0	0	3	8	1	150	230
91 [1]	0	0	0	0	0	2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	2	0	44	56
92	0	1	0	1	1	24	0	0	0	63	0	0	0	0	9	0	0	0	0	0	13	1	215	328
93	0	1	0	3	2	3	0	0	0	30	0	0	0	0	2	0	0	0	0	2	6	1	265	315
94	0	0	0	1	2	40	0	0	14	23	1	1	0	0	13	0	0	0	0	0	4	1	493	593
95	0	1	0	0	1	30	0	0	5	18	1	0	0	0	3	15	0	0	0	13	1	1	747	836
96	0	1	0	0	6	2	0	0	9	13	10	0	0	0	0	0	0	0	0	15	0	1	392	449
97	0	0	0	2	2	56	0	0	0	14	6	2	0	0	5	0	0	0	0	6	3	1	223	320
98	0	19	0	1	1	2	0	0	0	46	1	3	0	0	2	3	0	0	0	6	2	4	126	216
99	0	4	0	1	0	15	0	0	4	219	0	5	0	0	2	0	1	0	1	0	37	1	150	440
100 [1]	0	39	0	11	2	22	0	0	5	171	2	10	0	0	2	0	0	0	1	17	11	1	330	624
101	0	0	0	3	1	245	0	0	6	0	0	1	0	0	0	0	2	0	4	209	0	0	58	529
102	0	100	0	10	41	120	0	33	43	5	0	0	145	6	0	0	0	0	31	1	0	0	11	546
103 [1]	0	0	0	0	1	0	0	1	0	5	0	0	0	0	0	0	0	0	2	0	0	0	1	10
104 [1]	69	40	6	0	1	5	0	0	31	0	3	0	1	0	0	0	0	0	1	1	0	1	76	235
105	21	183	4	15	10	45	0	97	7	21	0	0	2	18	0	0	3	0	8	0	0	15	128	577
106	0	218	0	11	23	331	0	3	15	22	0	0	38	1	0	0	0	0	28	2	0	8	24	724
107	0	298	0	14	128	718	0	318	22	136	0	0	45	13	0	0	2	0	1	0	0	10	96	1801

NOAA FISHERIES - NEFSC AUTUMN BOTTOM TRAWL SURVEY 2017
CATCH WEIGHTS (POUNDS) OF IMPORTANT SPECIES BY HAUL

	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	RED HAKE	SILVER HAKE	HALIBUT	ACADIAN REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BUTTERFISH	ATLANTIC MACKEREL	ATLANTIC HERRING	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER [3]	TOTAL ALL
108	0	153	0	20	80	295	0	39	37	247	0	0	49	10	0	0	0	1	6	0	0	6	138	1081
109[1]	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
110	13	28	10	21	92	423	0	36	70	47	0	0	3	7	0	0	0	0	2	6	0	3	137	898
111	105	79	1	0	12	20	2	0	52	8350	38	9	0	0	0	0	0	0	0	1	0	2	58	8729
112	18	100	0	28	70	163	0	183	28	16	0	0	28	25	0	0	0	0	2	1	0	0	102	764
113	2	69	3	0	7	28	0	156	1	0	2	4	1	0	0	0	0	50	711	26	0	1	53	1114
114	200	926	6	0	0	5	0	18	0	18	0	6	0	0	0	0	6	7	1	15	4	1	336	1549
115	4	676	0	6	48	52	0	10	44	0	10	20	32	12	0	0	15	7	16	35	3	2	81	1073
116[1]	27	288	0	0	0	1	0	0	0	4044	0	36	2	0	0	0	0	1	1	0	10	0	24	4434
117	6	249	0	0	5	31	7	0	46	21059	50	5	0	0	0	0	5	36	0	0	3	0	194	21696
118	186	152	0	4	21	268	0	6	125	38	0	27	2	2	0	0	0	1	1	0	0	0	92	925
119	0	12	0	0	22	274	0	12	47	18	0	0	25	1	0	0	0	0	4	0	0	2	7	424
120	0	46	0	2	5	2	0	0	59	119	0	0	0	0	0	0	0	0	0	0	0	0	166	399
121	12	8	0	1	1	62	0	0	106	315	0	15	0	0	0	0	0	0	0	15	0	0	412	947
122	0	8	0	4	56	30	0	0	56	0	0	5	0	0	0	0	1	0	0	140	4	0	430	734
123[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	1	0	0	2	115	0	0	4	1153	0	0	0	0	4	5	4	0	0	2	0	0	597	1887
125	0	6	0	0	1	165	0	0	8	491	0	0	0	0	1	12	1	0	0	0	0	0	922	1607
126	33	2454	0	0	0	0	0	0	0	449	0	19	0	0	1	0	0	25	0	9	5	0	362	3357
127	4	7098	0	1	0	0	0	0	13	1366	0	19	0	0	0	0	1	0	1	0	1	0	178	8682
128	0	63	0	5	28	83	0	0	38	23	0	5	0	0	0	0	0	185	79	42	4	4	630	1189
129	0	3089	0	1	85	13	0	0	30	0	0	0	0	0	0	0	0	1	3	0	0	0	482	3704
130	0	1375	0	10	171	84	0	0	81	4	0	0	0	83	0	0	0	0	18	19	0	0	83	1928
131[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	140	0	2	52	27	0	0	13	0	0	0	1	2	0	0	0	0	8	21	0	0	16	282
133	0	161	0	91	2	112	0	7	72	3	0	0	0	1	0	0	0	0	3	0	0	0	38	490
134[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	313	0	79	13	74	0	63	7	28	0	0	0	0	0	0	0	0	5	9	0	0	60	651
136	4	27	0	5	89	265	0	6	41	78	0	0	12	8	0	0	0	0	0	56	0	0	23	614
137	0	126	0	139	20	217	0	16	42	105	0	0	13	13	0	0	0	0	1	4	0	0	4	700
138	0	93	0	90	32	146	0	35	97	261	0	0	7	3	0	0	0	1	1	8	0	0	22	796
139	0	0	0	7	33	215	0	0	3	17	0	0	4	6	0	0	1	1	6	87	0	0	10	390
140	2	5	0	16	37	776	0	2	55	53	0	0	31	27	0	0	0	1	7	2	0	0	15	1029
141	0	49	0	29	20	282	0	11	45	36	0	0	16	3	0	0	0	1	2	1	0	0	8	503
142	0	17	0	61	43	130	0	115	38	61	0	0	8	21	0	0	1	0	1	2	0	1	34	533
143	0	18	0	196	45	384	0	531	88	22	0	0	3	10	0	0	0	0	1	3	0	0	11	1312
144	0	5	0	48	63	248	0	21	34	0	0	0	24	10	0	0	0	0	1	3	0	0	35	492
145	8	79	0	19	9	16	0	238	32	4	0	0	0	4	0	0	0	0	16	0	0	1	5	431

NOAA FISHERIES - NEFSC AUTUMN BOTTOM TRAWL SURVEY 2017
CATCH WEIGHTS (POUNDS) OF IMPORTANT SPECIES BY HAUL

	ATLANTIC COD	HADDOCK	POLLOCK	WHITE HAKE	RED HAKE	SILVER HAKE	HALIBUT	ACADIAN REDFISH	GOOSEFISH	SPINY DOGFISH	YELLOWTAIL FLOUNDER	WINTER FLOUNDER	AMERICAN PLAICE	WITCH FLOUNDER	WINDOWPANE FLDR	SUMMER FLOUNDER	BUTTERFISH	ATLANTIC MACKEREL	ATLANTIC HERRING	AMERICAN LOBSTER	LOLIGO	ILLEX	TOTAL OTHER [3]	TOTAL ALL
146	0	55	0	21	29	182	0	52	40	8	0	0	20	3	0	0	0	1	50	2	0	0	35	498
147	0	17	0	17	11	113	0	12	17	4	0	0	3	7	0	0	0	0	16	0	0	1	32	250
148	3	11	0	14	9	134	0	23	0	39	0	0	1	0	0	0	0	1	1	2	0	0	8	246
149	0	87	93	83	43	4	0	49	8	52	0	0	0	2	0	0	0	0	1	12	0	0	21	455
150	6	162	0	21	8	19	0	6	4	208	0	0	0	3	0	0	0	1	0	21	0	0	22	481
151	0	25	0	29	4	23	0	12	7	1276	0	0	0	0	0	0	0	18	3	11	0	0	13	1421
152	0	98	1	12	8	10	0	1	14	1192	0	1	0	0	0	0	0	1	1	38	0	0	6	1383
153	98	21	0	58	14	8	0	9	0	46	0	0	0	1	0	0	0	0	1	10	0	0	19	285
154	0	68	0	38	11	208	0	171	7	654	0	0	0	0	0	0	0	0	2	22	0	0	11	1192
155	0	66	0	8	10	62	0	27	97	113	0	0	1	2	0	0	0	1	8	16	0	0	67	478
156	1	0	0	5	7	41	0	0	10	35	0	0	1	9	0	0	0	1	3	0	0	0	66	179
157	0	0	0	23	3	39	0	0	7	90	0	1	0	3	0	0	0	1	3	19	0	0	12	201
158	0	0	0	2	3	43	0	2	3	88	0	1	1	9	0	0	0	6	2	16	0	0	6	182
159	0	0	0	7	2	42	0	0	2	18	0	4	1	0	0	0	0	1	1	347	0	0	20	445
160	0	0	0	11	3	142	0	0	2	0	0	2	1	2	0	0	4	2	1	192	0	0	12	374
161	0	0	0	14	5	305	0	0	3	0	0	1	0	0	0	0	3	1	1	200	0	0	15	548
162	15	160	0	15	137	217	0	38	63	41	0	0	31	32	0	0	0	1	10	7	0	0	26	793
163	39	182	0	15	46	75	0	70	55	4	0	0	25	27	0	0	0	0	15	0	0	2	30	585
164	0	300	0	39	78	180	0	43	23	4	0	0	9	11	0	0	0	1	4	0	0	0	64	756
165	0	492	1	41	51	50	0	416	54	3	0	0	6	7	0	0	0	0	20	0	0	0	22	1163
166	0	46	0	18	43	223	0	34	36	0	0	0	33	51	0	0	0	0	61	0	0	0	151	696
167	0	22	0	27	46	155	0	200	27	7	0	0	20	30	0	0	0	0	29	0	0	0	54	617
168	4	199	0	2	109	117	0	34	31	8	0	0	35	39	0	0	0	0	36	0	0	0	22	636
169	0	16	0	8	136	139	0	26	32	5	0	0	5	38	0	0	0	1	74	0	0	0	21	501
170	56	328	5	5	40	6	14	320	48	7455	0	7	1	2	0	0	0	0	2	3	0	1	85	8378
171[1]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	10	51	0	0	21	244	0	5	16	507	0	0	34	10	0	0	0	0	96	3	0	0	9	1006
173	9	9	0	8	5	88	0	0	1	0	211	9	0	0	1	0	2	151	11	166	8	4	132	815
174[1]	1	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	56	11	1	22	0	12	109
175	10	0	0	0	0	5	0	0	3	63	13	35	0	0	1	0	0	163	851	55	18	0	387	1604
TOTAL	1175	30312	213	1755	3193	12570	23	3746	3653	58020	572	553	734	582	111	105	132	9300	6923	3679	505	349	21448	159653

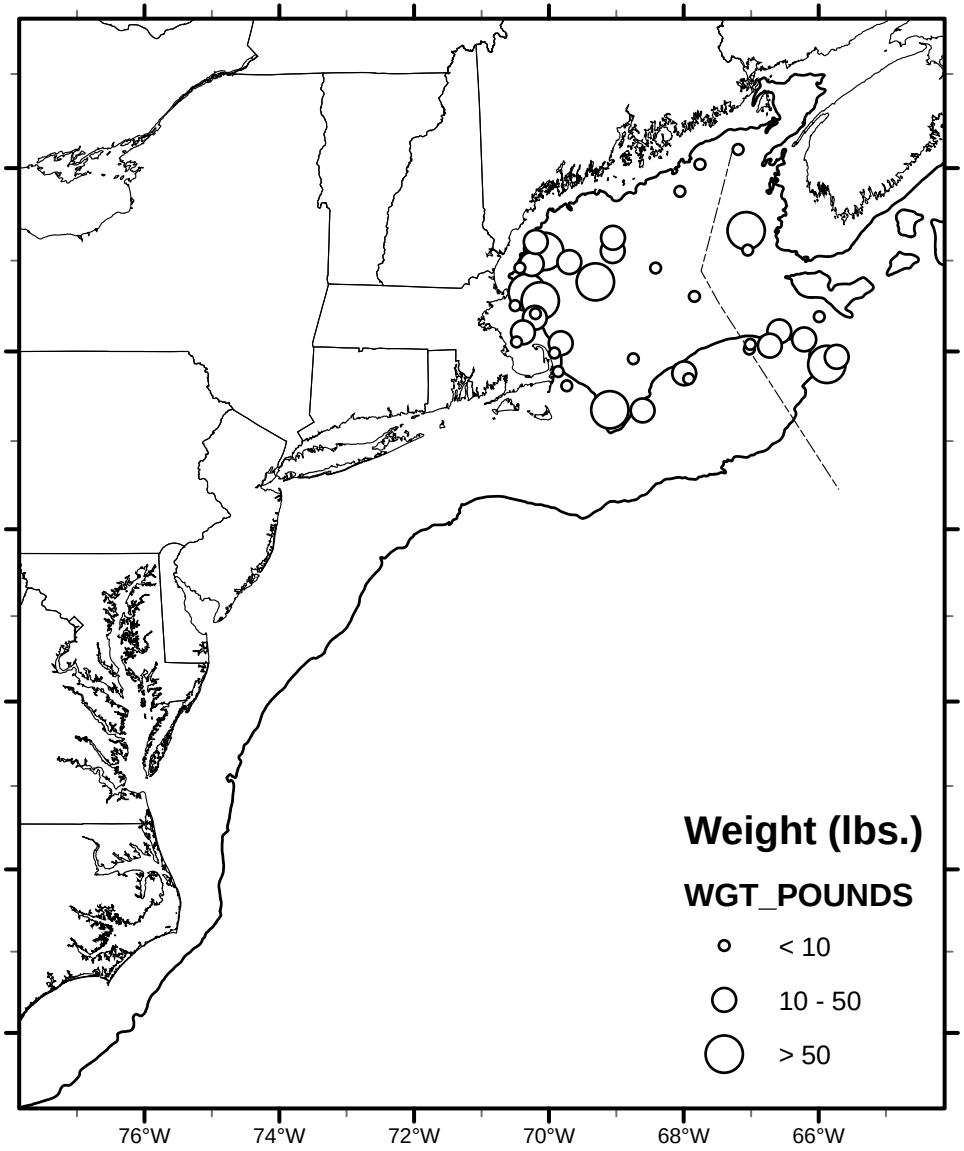
[1] Excluded from stock assessment due to an unacceptable tow evaluation code

[2] Non-sequential station numbers indicate either a test-tow or no trawl was attempted

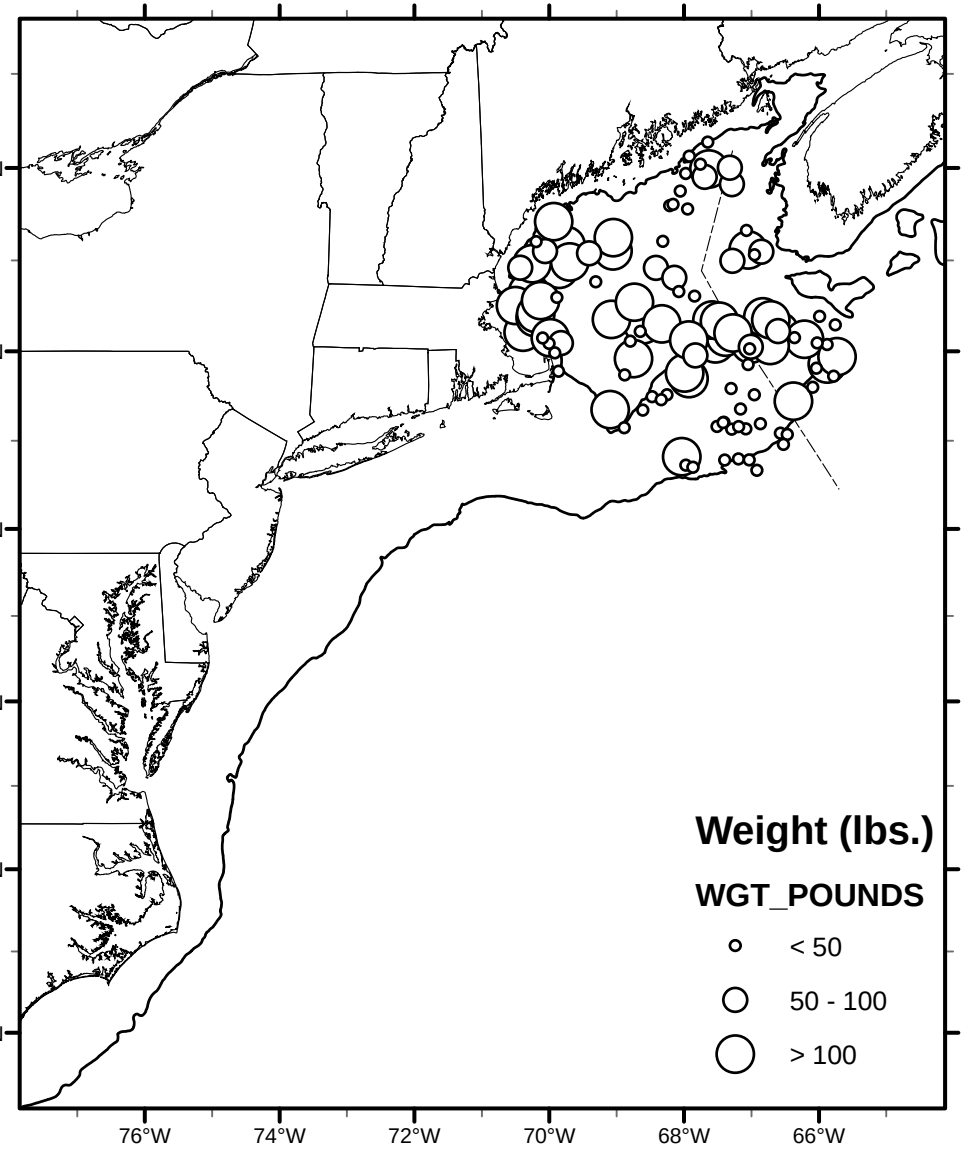
[3] "Total others" comprised primarily of sea scallops and various skate species

NOAA Fisheries
NEFSC Autumn Bottom Trawl Survey
16 October to 18 November 2017

ATLANTIC COD



HADDOCK



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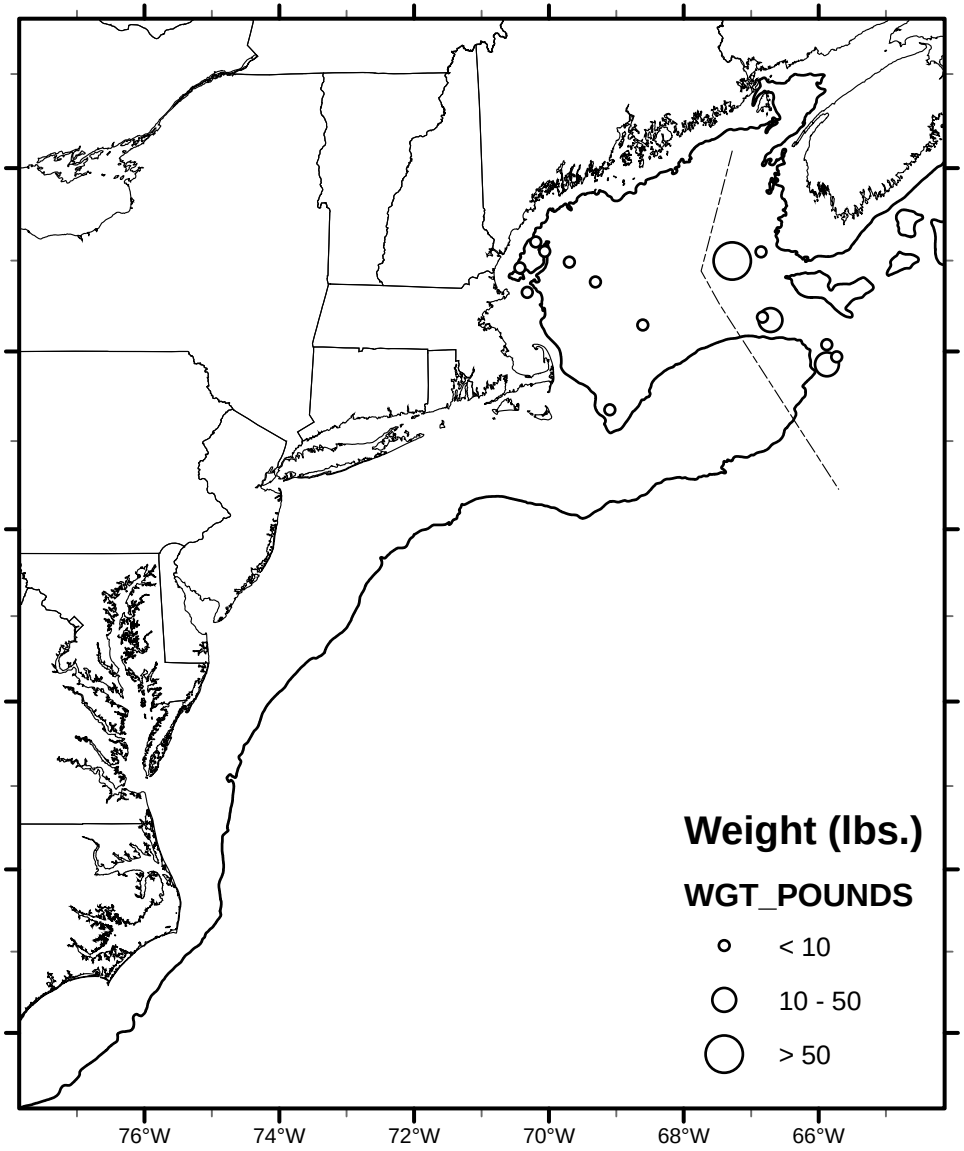
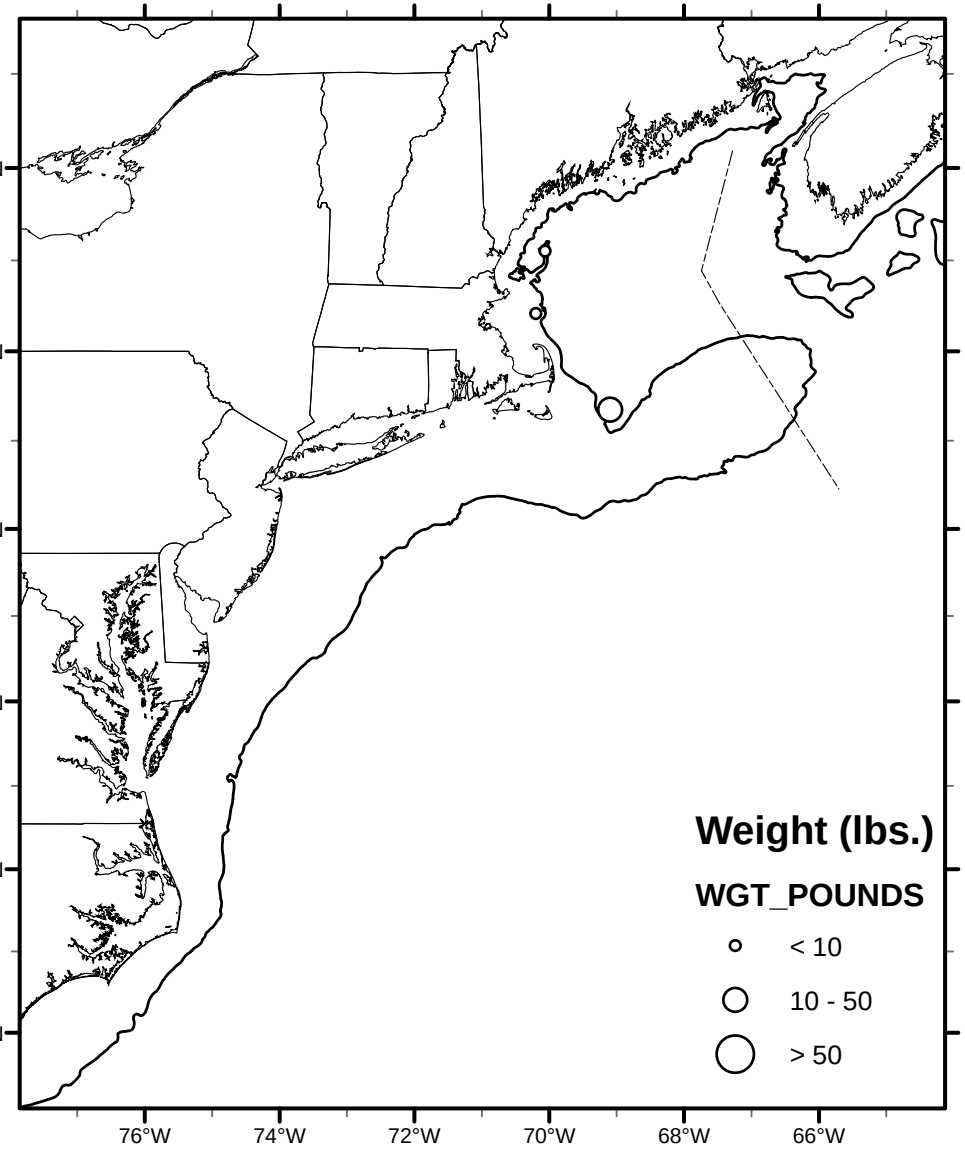
POLLOCK



ATLANTIC HALIBUT



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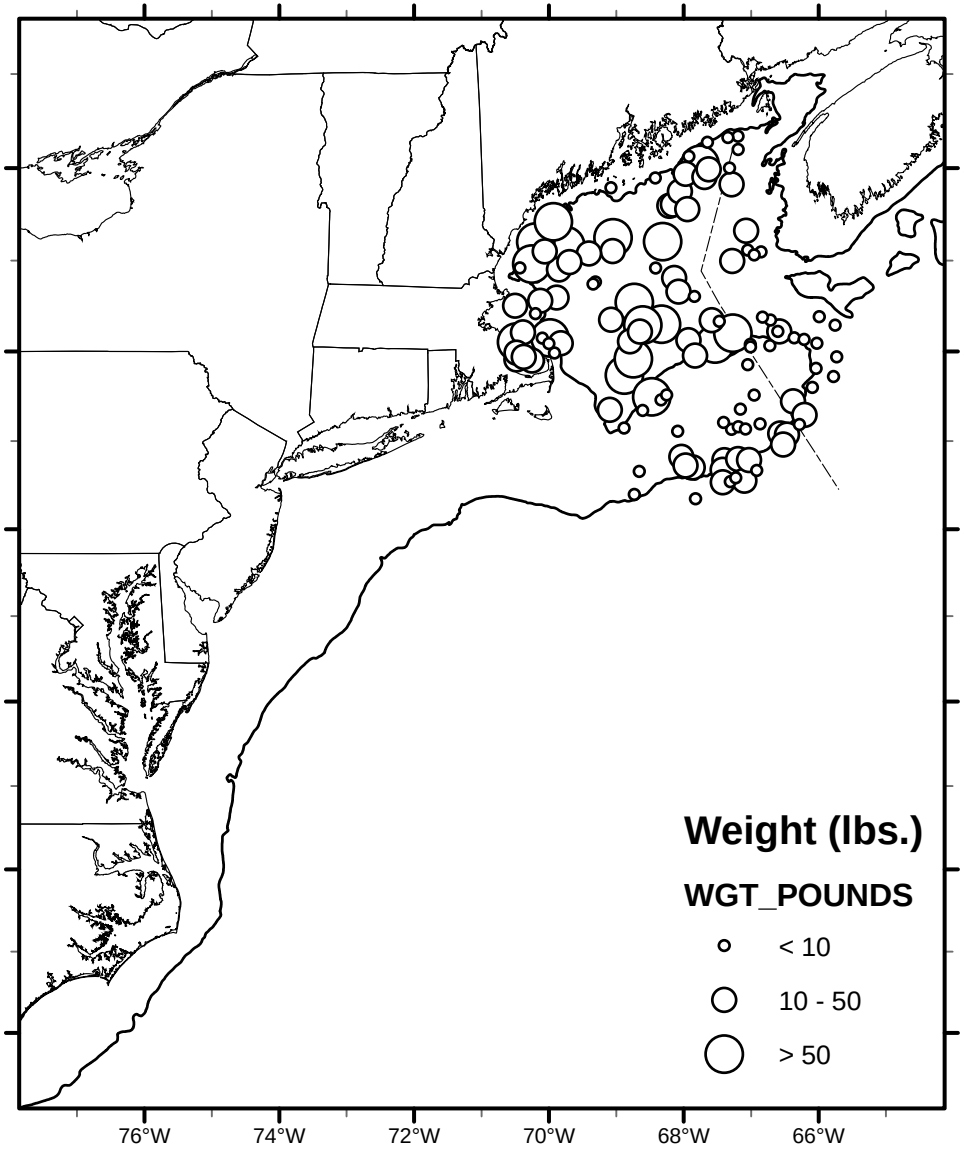
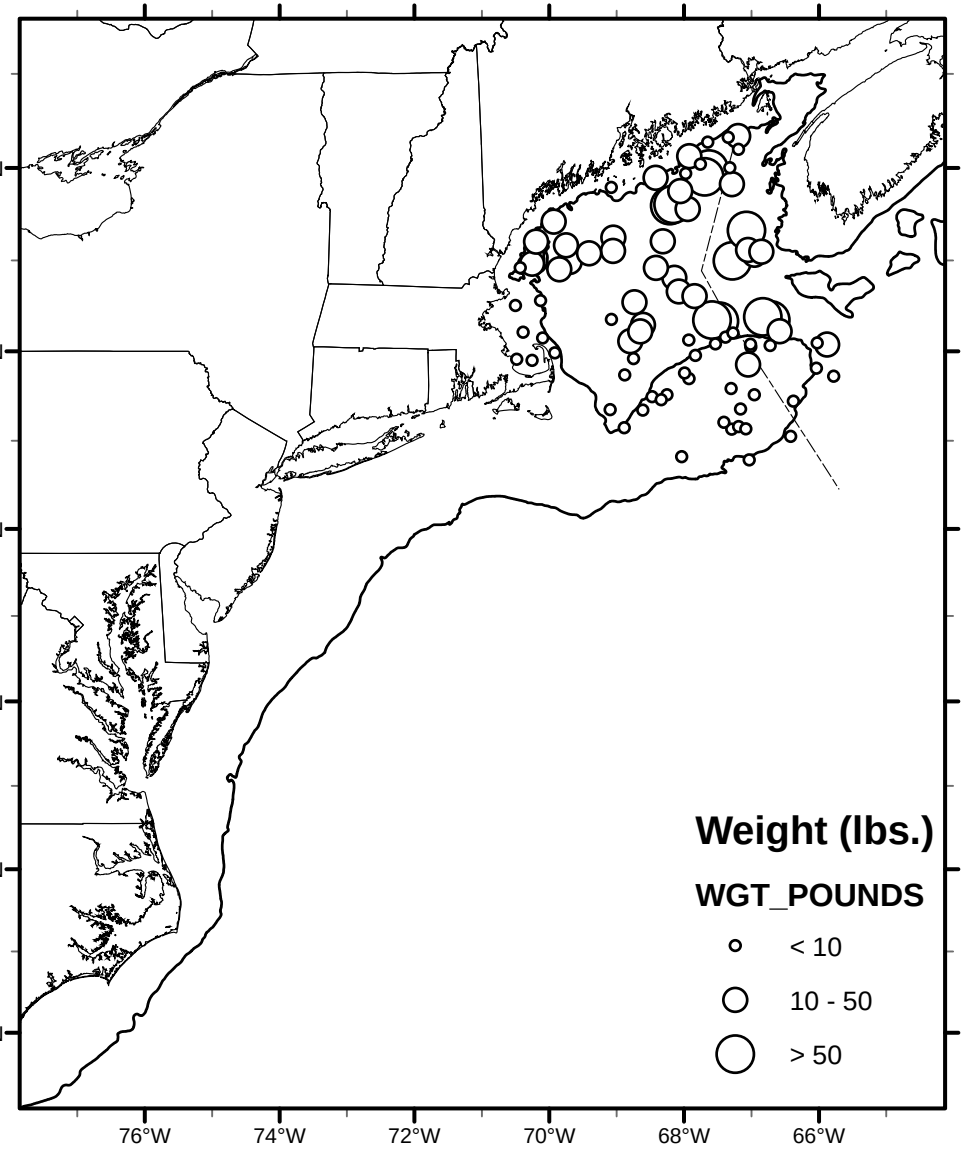
RED HAKE



WHITE HAKE



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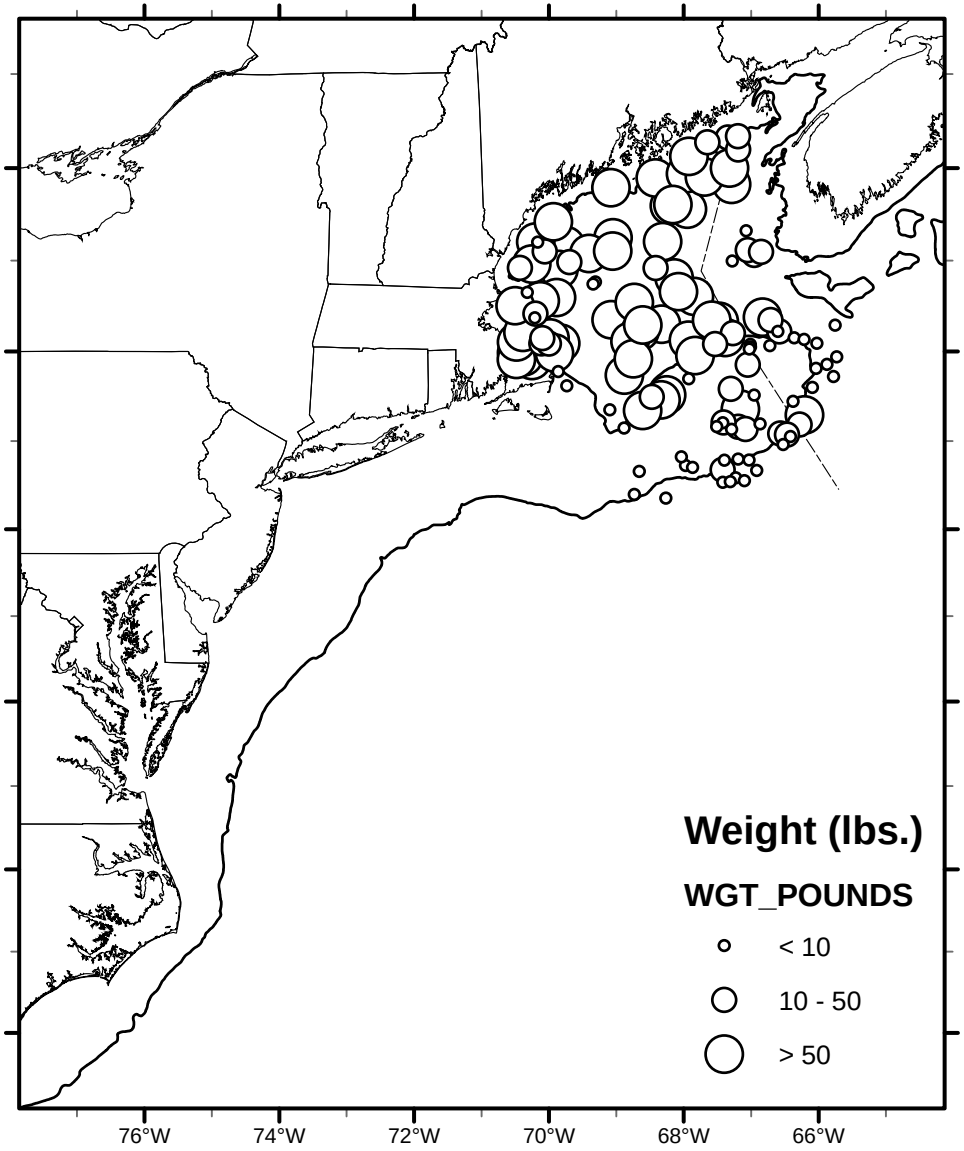
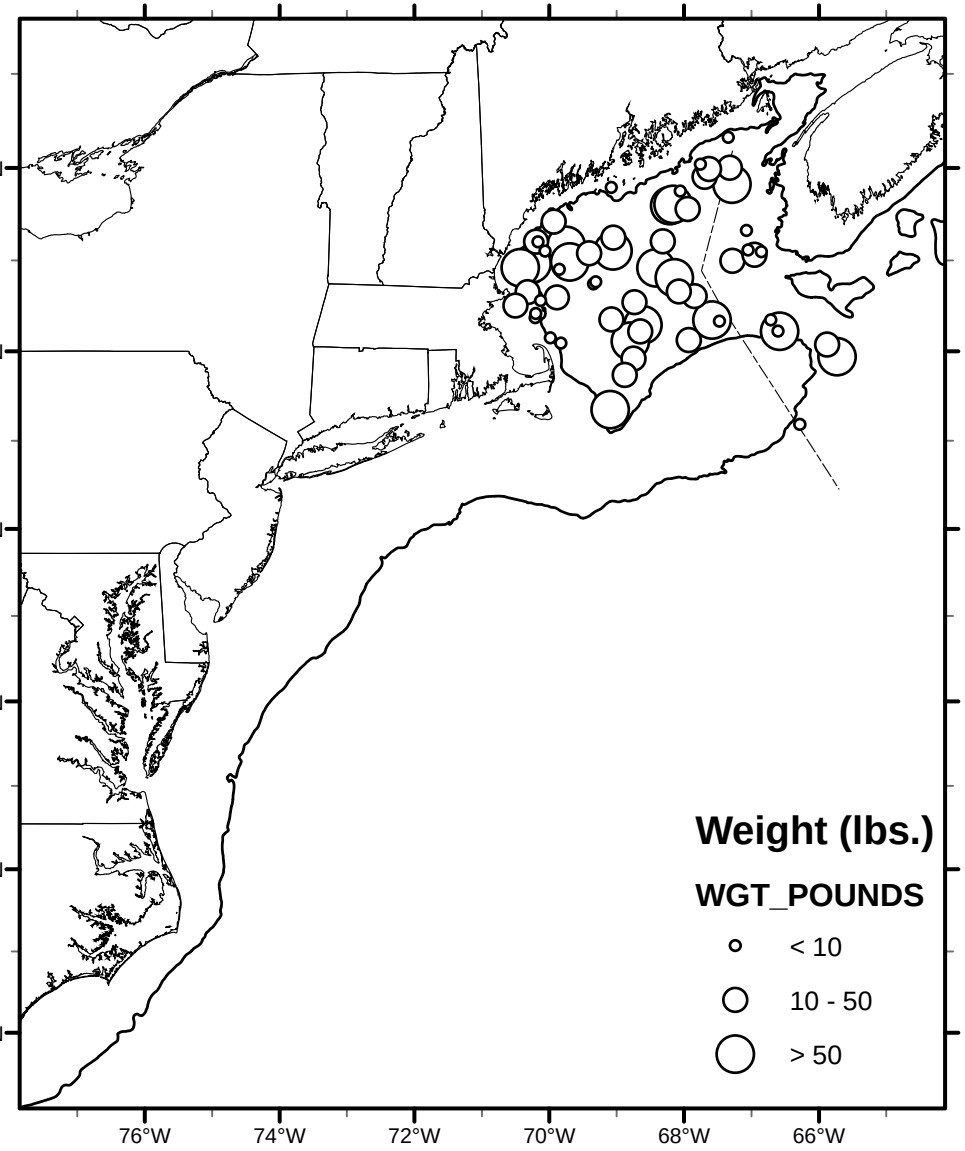
SILVER HAKE



ACADIAN REDFISH



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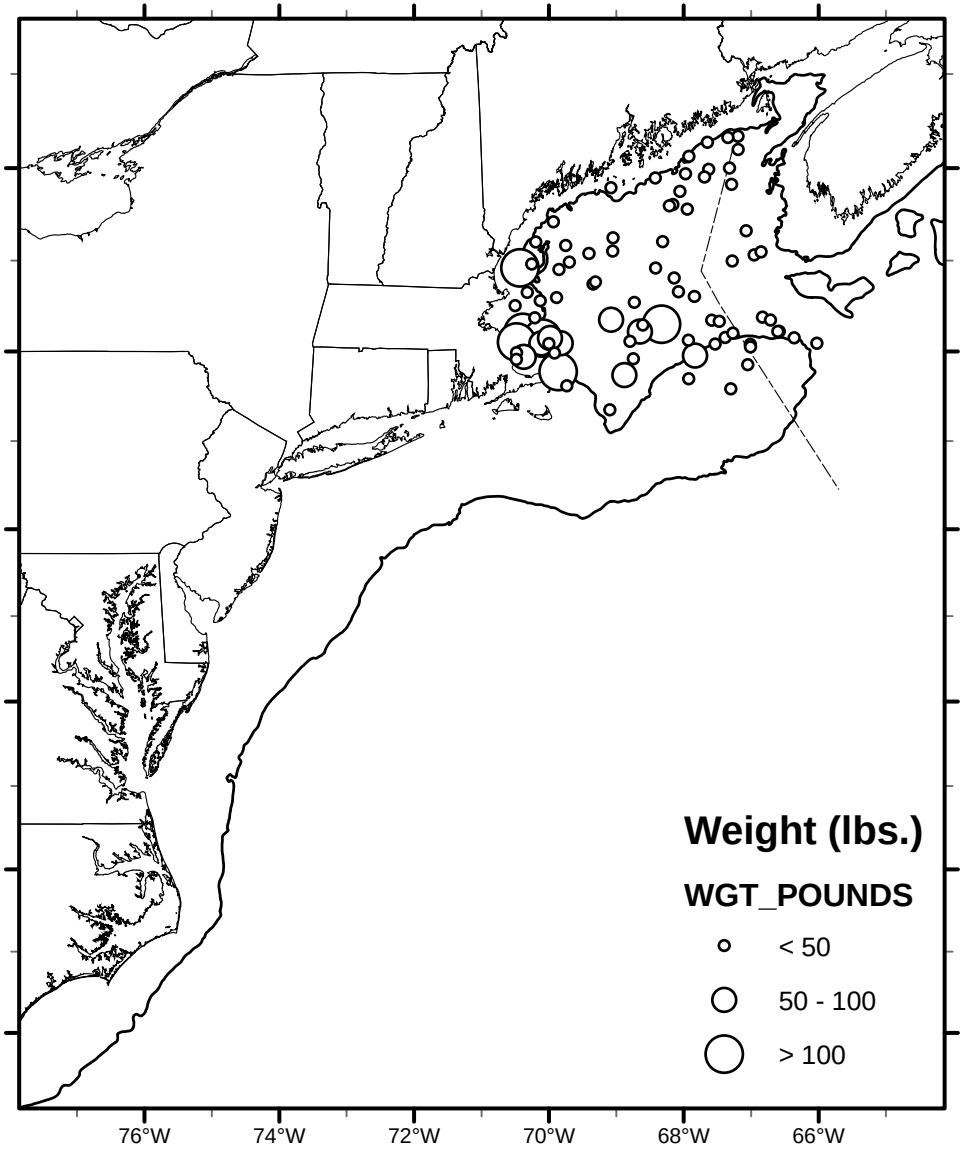
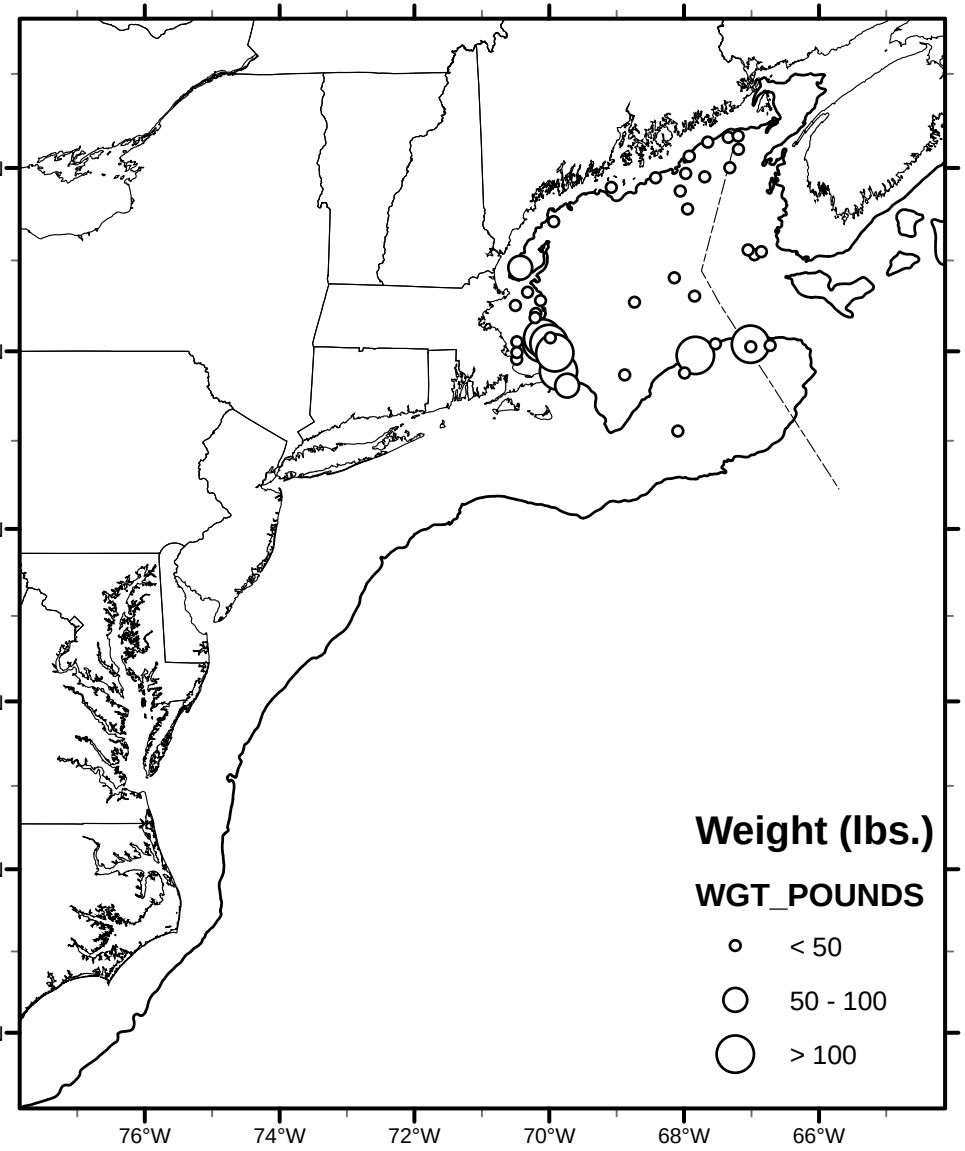
ATLANTIC HERRING



ATLANTIC MACKEREL



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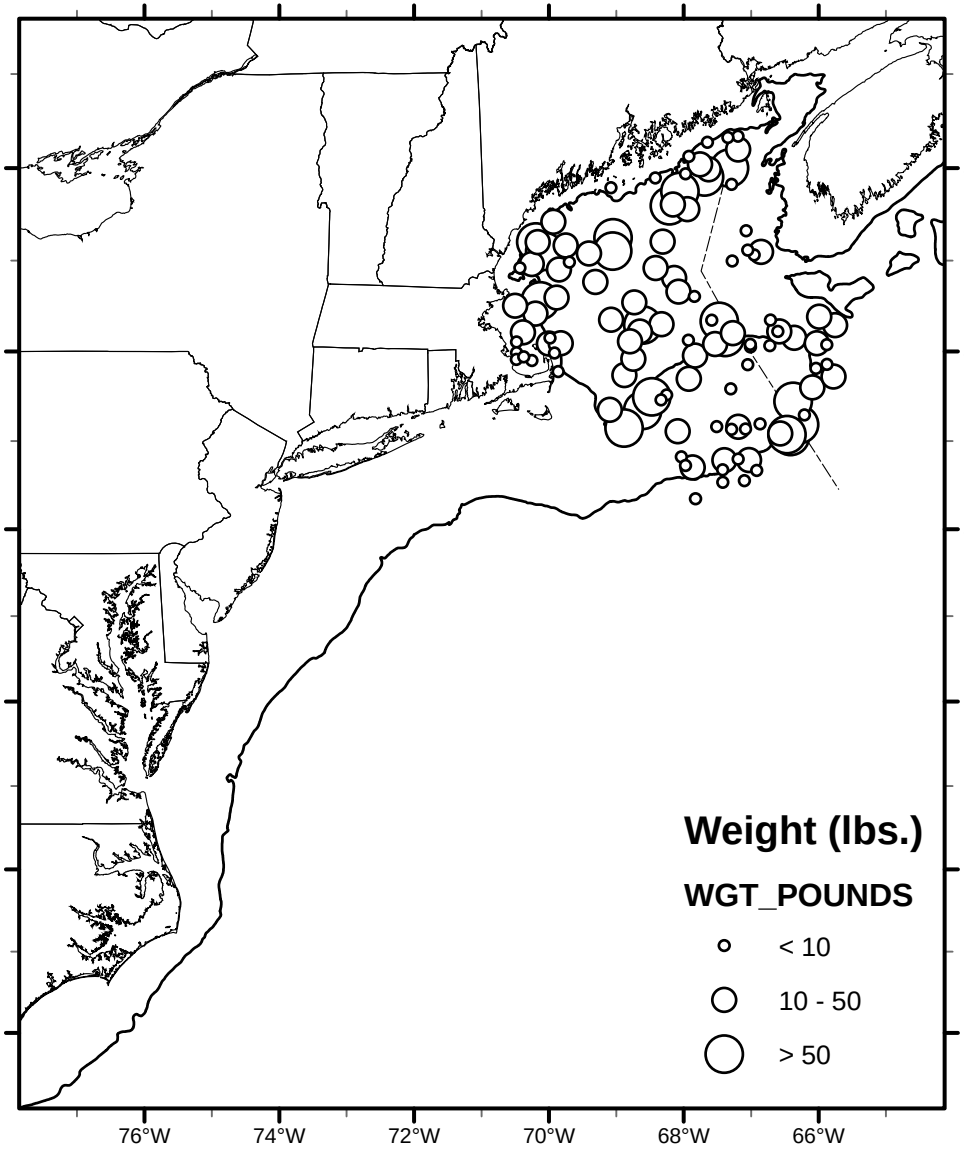
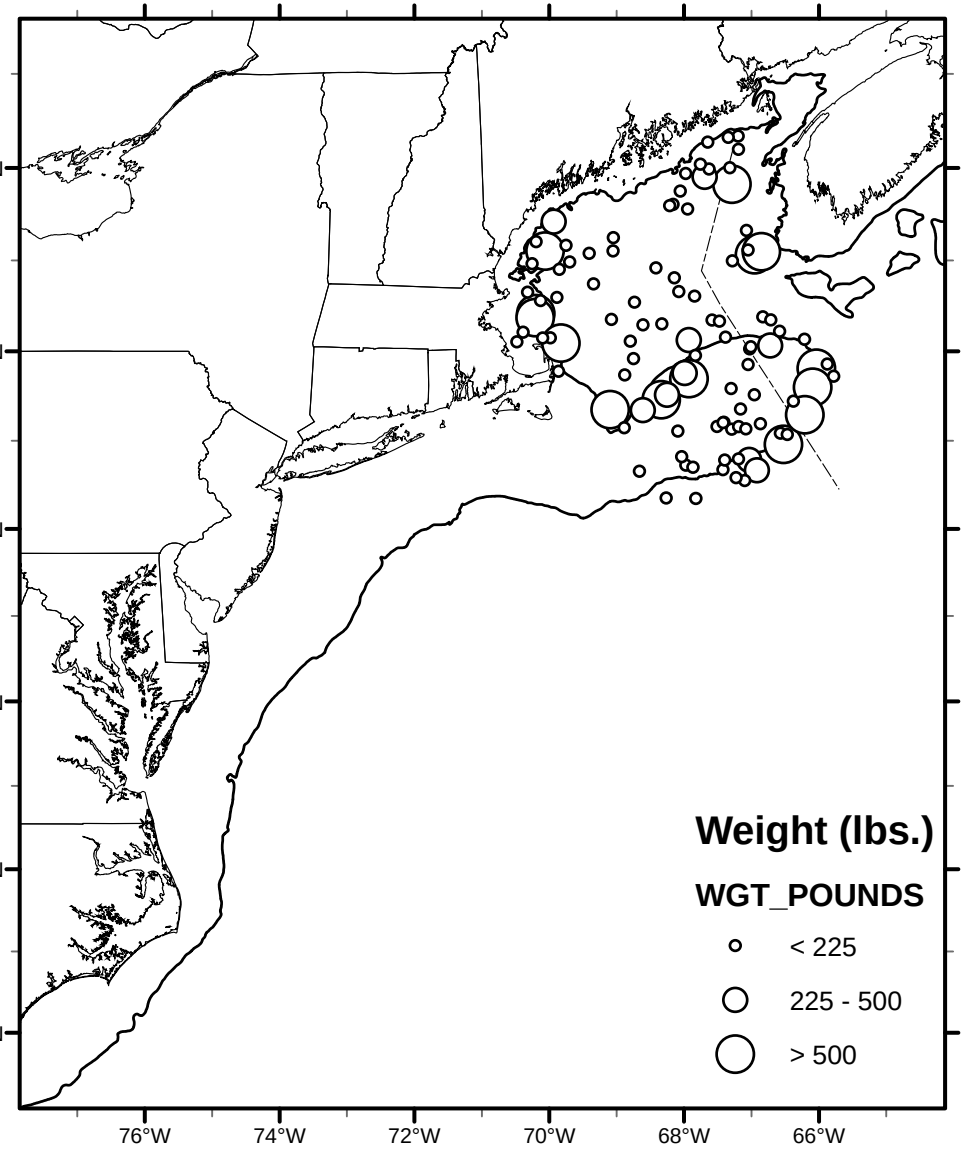
GOOSEFISH



SPINY DOGFISH



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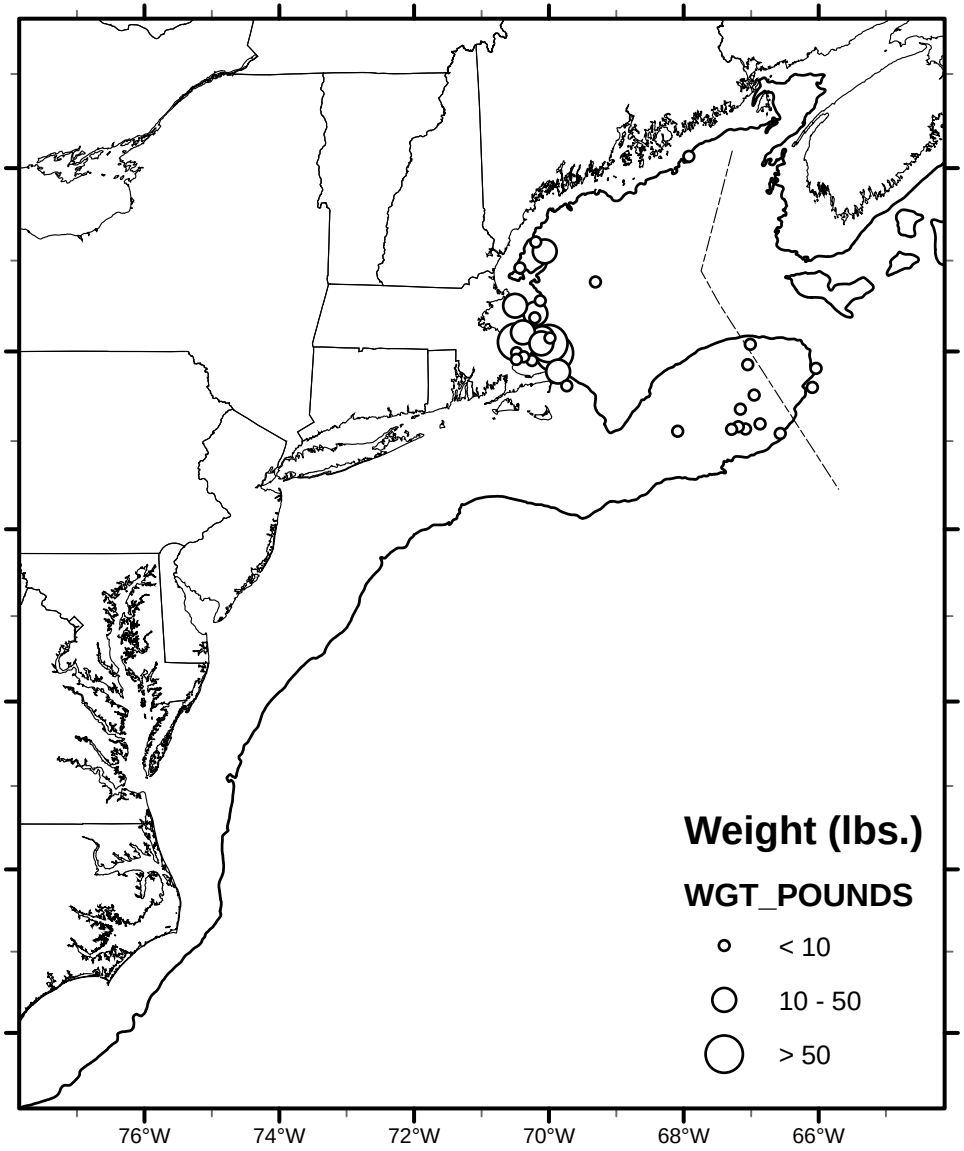
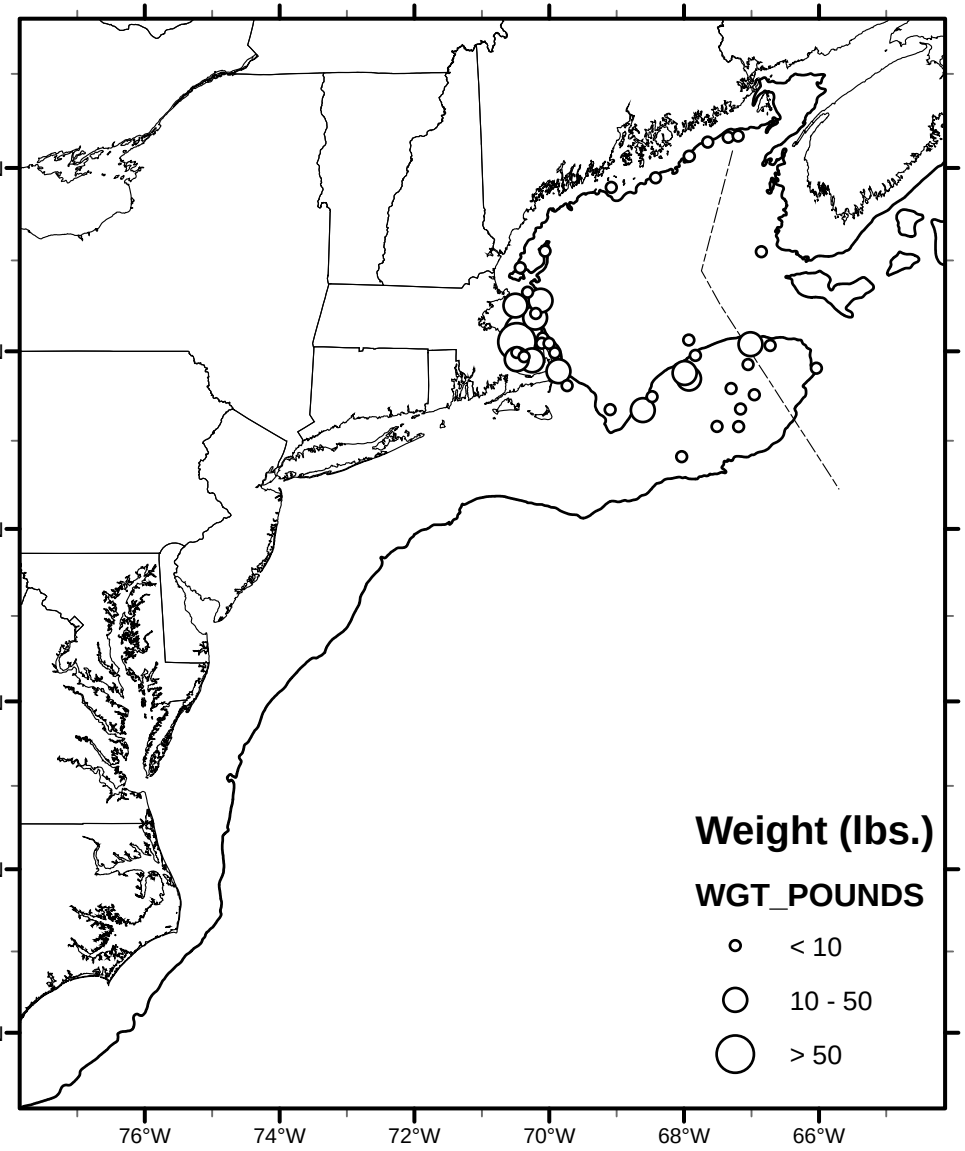
YELLOWTAIL FLOUNDER



WINTER FLOUNDER



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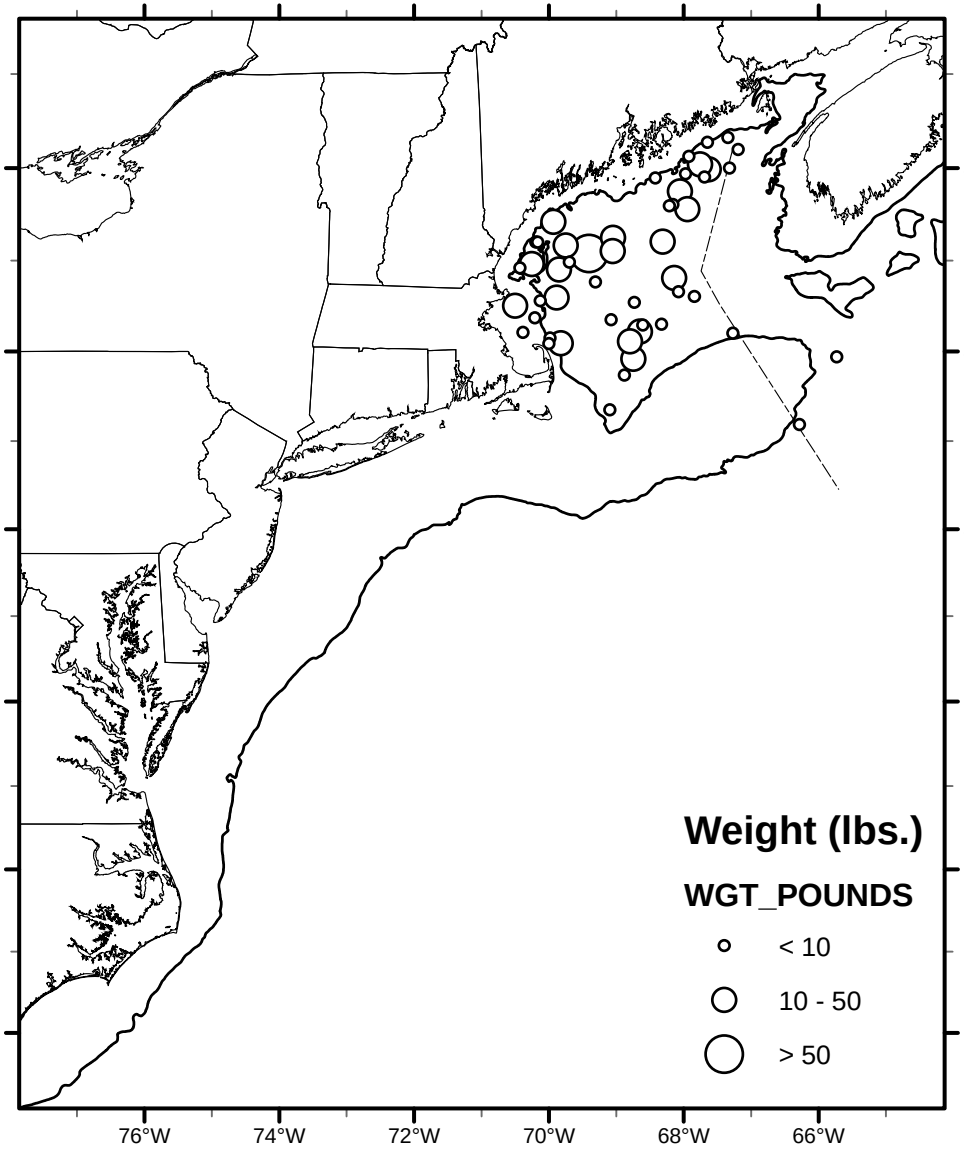
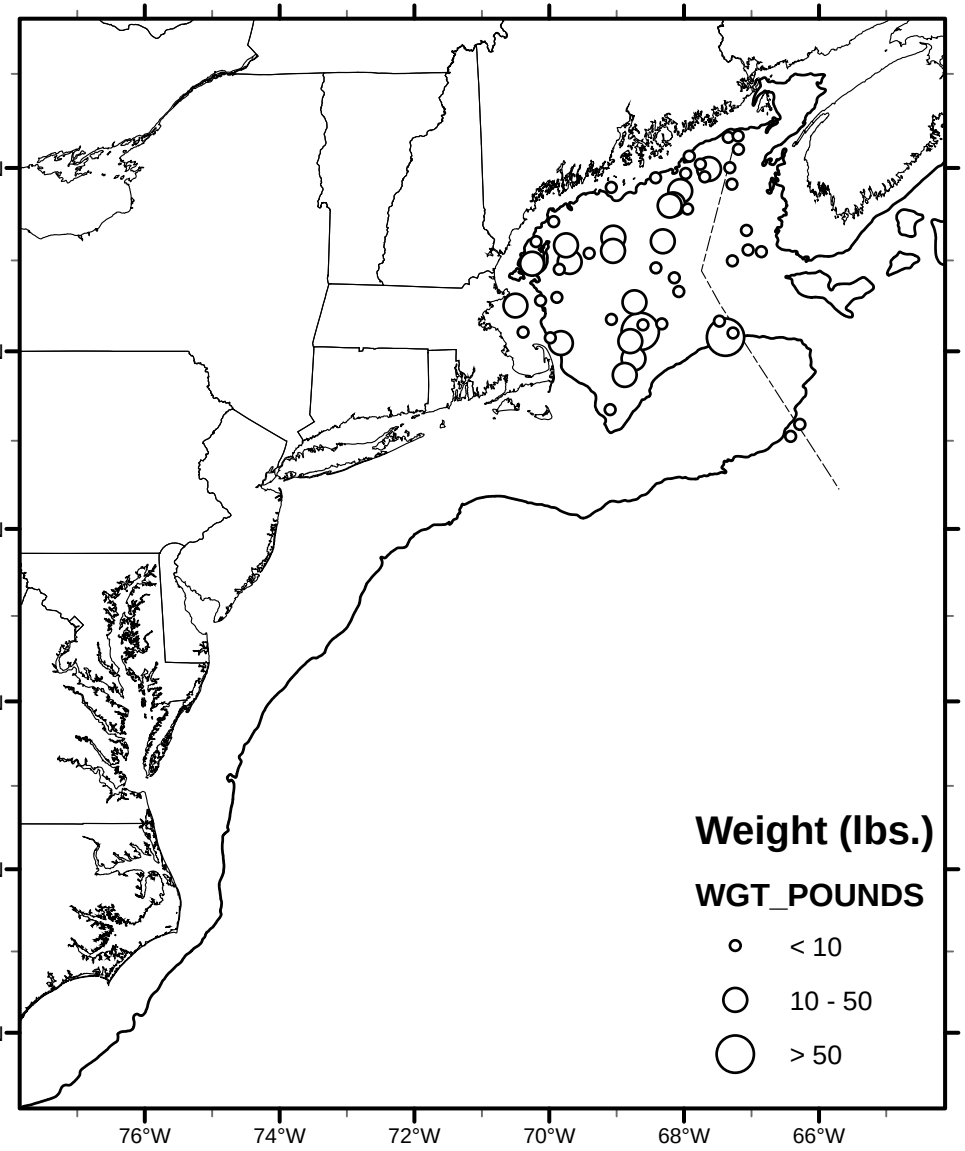
AMERICAN PLAICE



WITCH FLOUNDER



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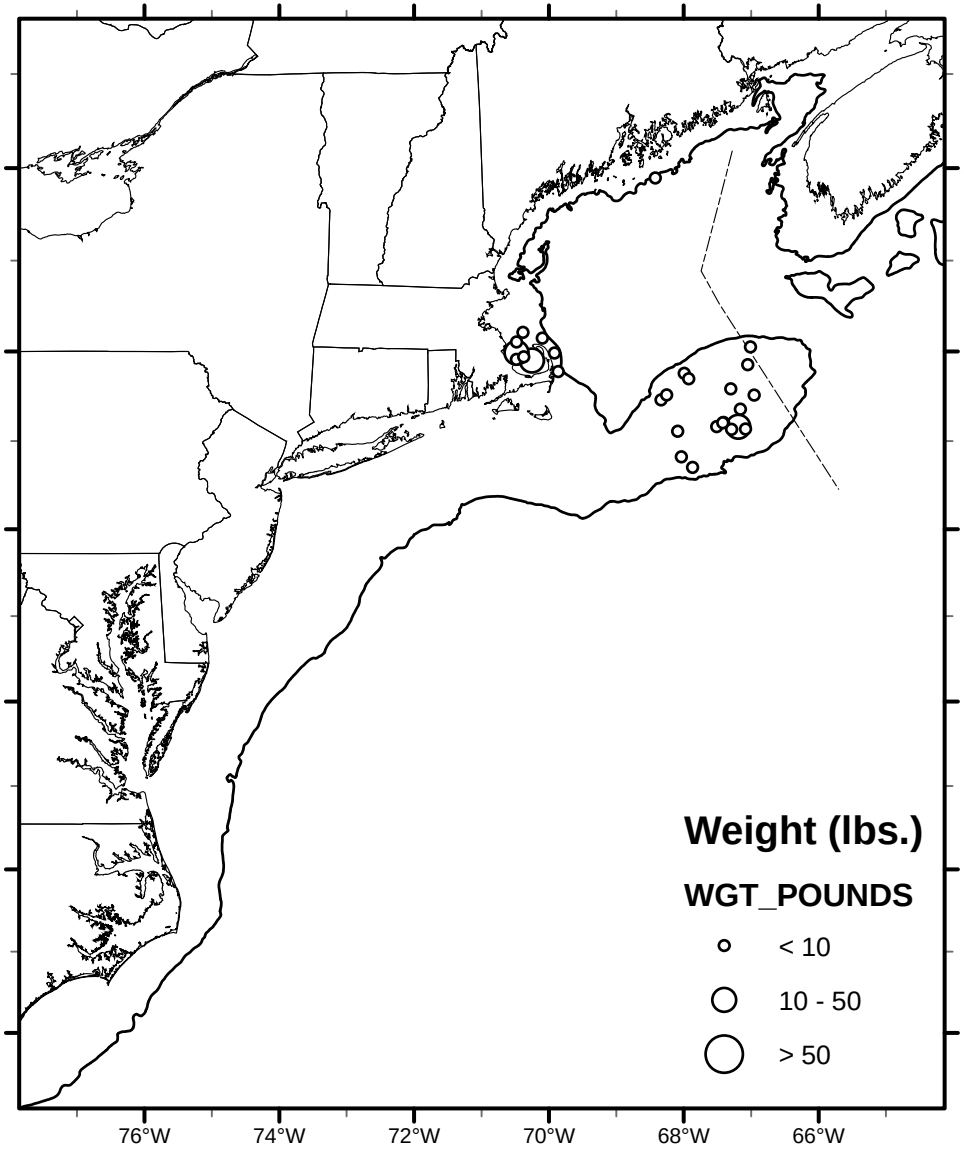
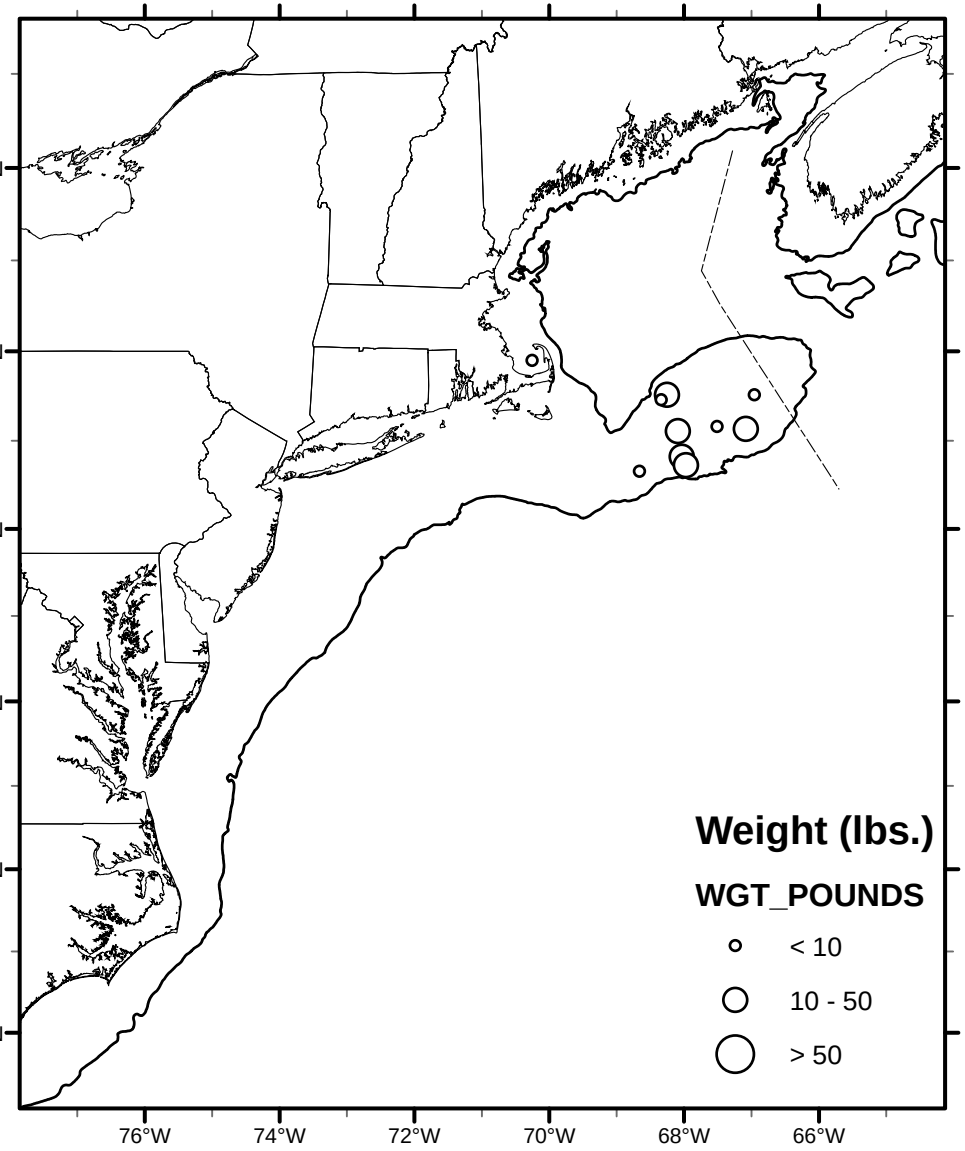
WINDOWPANE FLOUNDER



SUMMER FLOUNDER



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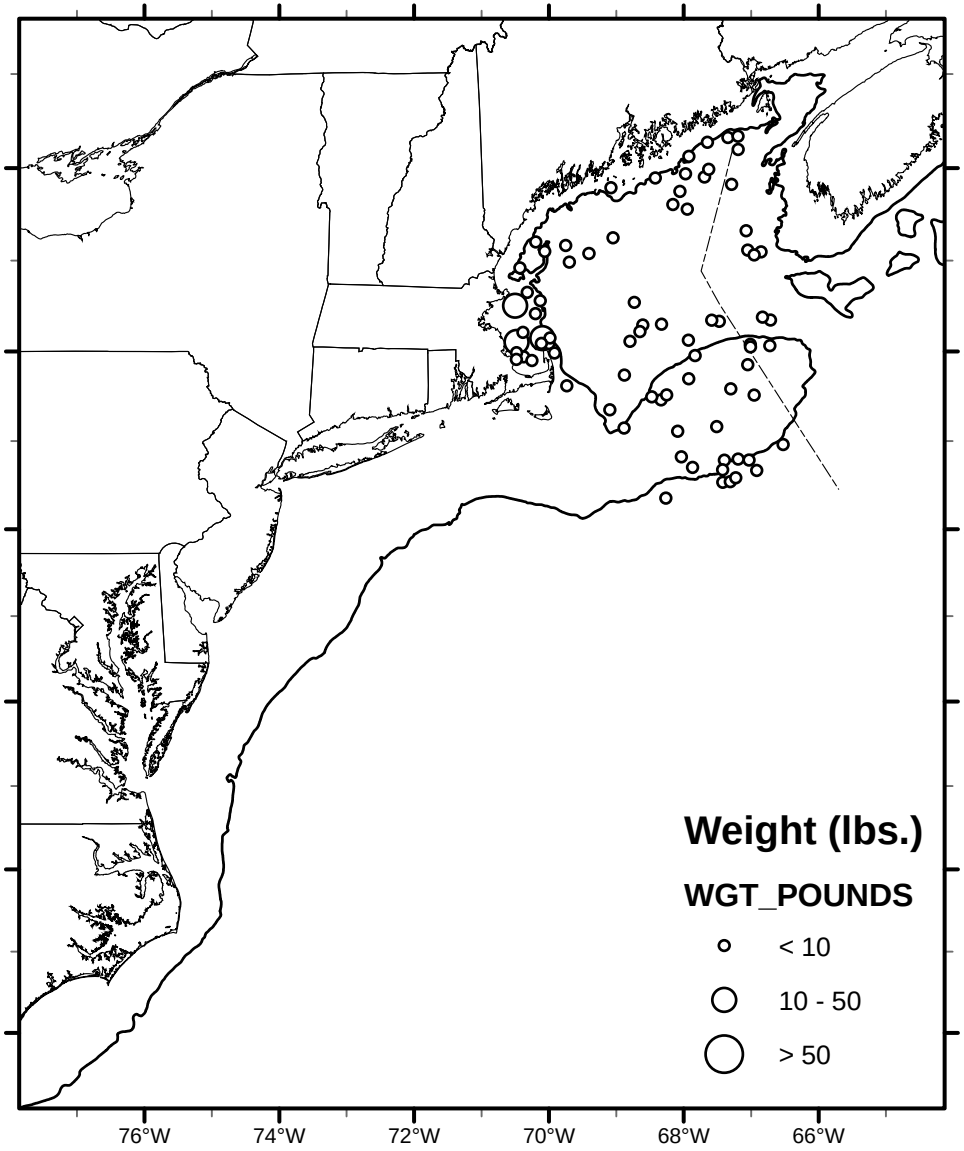
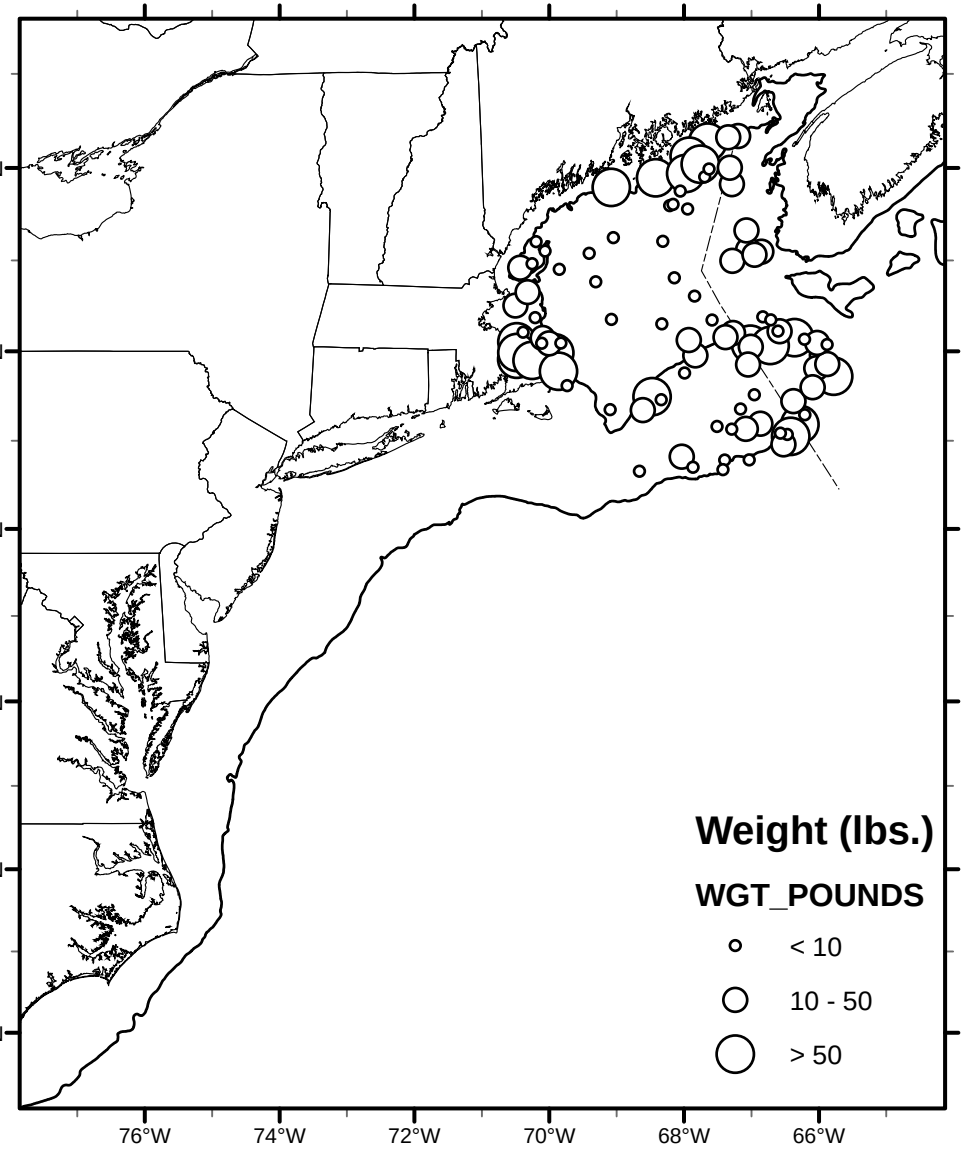
BUTTERFISH



AMERICAN LOBSTER



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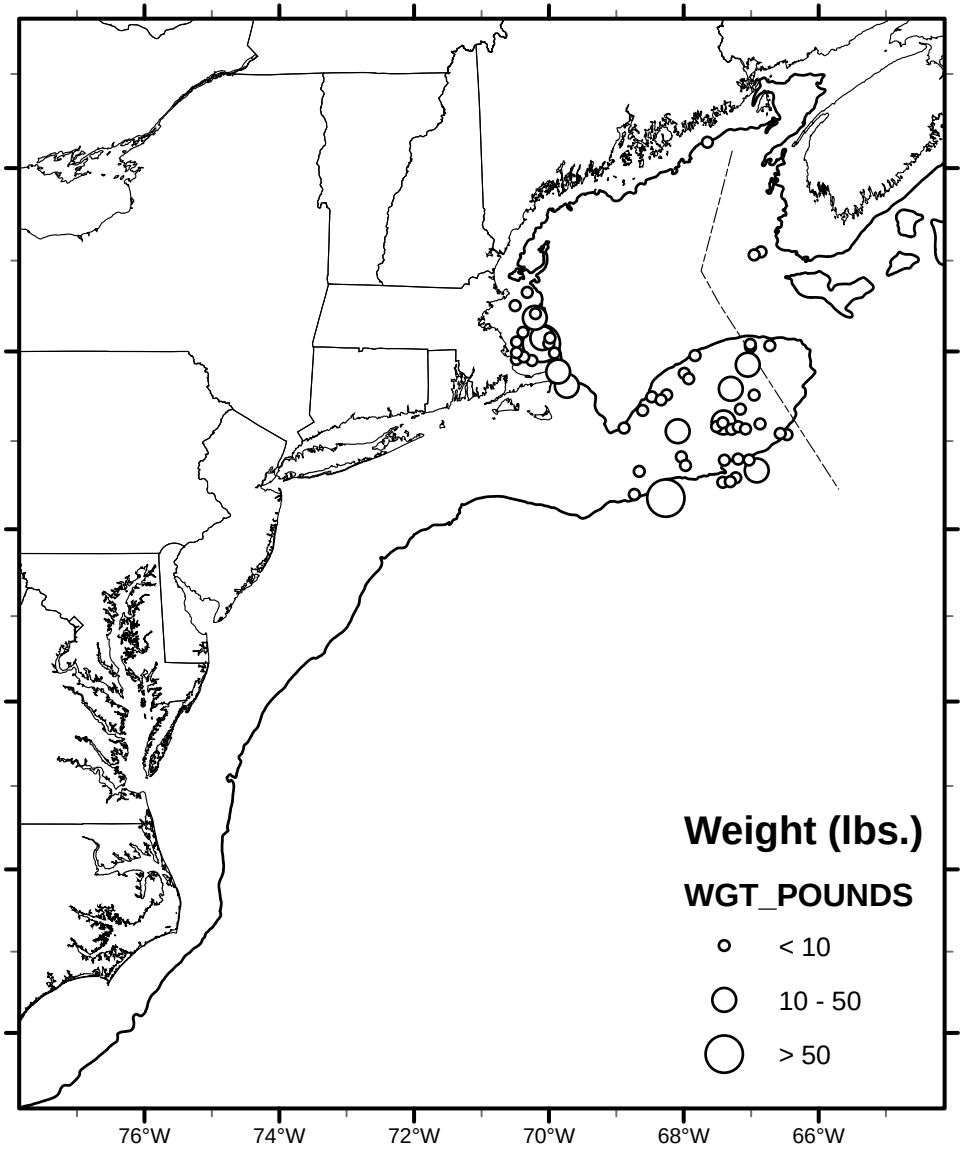
LOLIGO SQUID



ILLEX SQUID