RESOURCE SURVEY REPORT
Catch Summary
NOAA National Marine Fisheries Service
Northeast Fisheries Science Center
Sea Scallop Survey
Mid-Atlantic Bight - Georges Bank
16 May – 18 June 2018

Submitted to: NOAA, NEFSC

For further information, contact Peter Chase (508-495-2348), NOAA Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543.

Date: 2018

Resource Survey Report

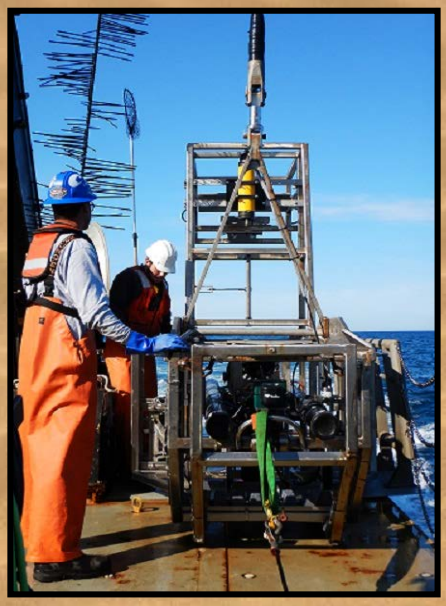
Sea Scallop Survey

Mid-Atlantic Bight – Georges Bank

16 May – 18 June 2018

UNOLS R/V *Hugh R. Sharp*

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



Crew of *Hugh R. Sharp* deploying the towed habitat-mapping camera, HabCam V4

Catch of adult scallops from dredging operations

Scientists repair a damaged dredge liner after a rocky tow

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The following charts and station data indicate the distribution of sea scallops during the 2018 Sea Scallop Survey conducted aboard the UNOLS R/V *Hugh R. Sharp*. Additionally, the included appendix describes a sampling system on the scallop cruise where the Northeast Fisheries Science Center, in collaboration with the Woods Hole Oceanographic Institution, deployed a fiber-optic towed vehicle fitted with stereo cameras in proximity to standard dredge hauls for the entire survey area. For the dredging portion of the survey, fifteen-minute tows were made at a speed of 3.8 knots using a modified 8-foot, New Bedford type scallop dredge. The dredge was equipped with a 5/8 inch, 69-link-long, case-hardened sweep chain and a 2-inch ring chain bag lined with 1-1/2 inch mesh webbing to retain small scallops. The dredge frame was outfitted with a set of roller wheels on the neck. In six, key rocky strata on Georges Bank, a set of rock chains was added to the dredge. For statistical purposes, stations were randomly selected and, therefore, were not always on or near scallop concentrations.

In this report, data are summarized from audited catch files generated from the Fisheries Scientific Computer System. Scallop catch is reported in numbers, bycatch is recorded in liters, and depth in fathoms. Catches are reported in three categories of shell height: less than 90 mm (greater than 40 count), greater than 90 mm (less than 40 count), and greater than or equal to 100 mm (less than 30 count). The percent composition of bycatch is also included. For further information, contact:

Peter Chase
NOAA National Marine Fisheries Service
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA
02543
Phone: (508)-495-2348
Email: peter.chase@noaa.gov

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Appendix 1

The Northeast Fisheries Science Center collaborated with the Woods Hole Oceanographic Institution to integrate a stereo-optic towed vehicle (HabCam V4), which was designed to collect paired images of the sea floor for the purpose of enumerating sea scallops and other commercially important groundfish (yellowtail flounder, winter flounder, skates, etc.).

During the three survey legs, HabCam V4 was deployed throughout the scallop strata. Dredge tows would often be conducted in one direction through an area and then, after turning the vessel around, a HabCam V4 transect would be conducted through the same area. HabCam V4 imaged along a cruise track of approximately 379 nm in the Mid-Atlantic Bight and about 1,640 nm throughout the Great South Channel and Georges Bank. In total, about 6,110,016 image pairs were acquired from both the Mid-Atlantic Bight and Georges Bank.

Field Notes

In an effort to share some insight and observations made during the scallop survey, we have requested that the Chief Scientists on each leg of the cruise comment on some of the more interesting catches or events that occurred.

Leg I: Paired Tows and Scallop Annotations

Leg I covered a 349 nm HabCam cruise track and completed two fixed-site dredge tows, as well as various 10-15 minute experimental tows paired with the Virginia Institute of Marine Science dredge stations. We captured a total number 836,728 HabCam images and annotated 11,529 of those images; the annotations contained 9,166 live or probable live sea scallops.

Leg II: Conquering the Great South Channel and Closed Area II

Leg II was tasked right from the start of the trip with conquering the ever-challenging Great South Channel. Cold, fierce winds; rough and confused seas; and the presence of boulders in the catches certainly added to the difficulty. Fortunately, dredge equipment only sustained minor damage throughout the Channel and the presence of seed, while minimal, was also frequently observed at these stations.

In addition, Leg II completed a 263 nm HabCam cruise track towards northern Georges Bank, navigating the large sand waves that are characteristic of the area. We then switched operations back to dredging and completed several stations in the boulder-rich Closed Area II, where the scallops are heavily encrusted with growth and barnacles. The heaviest tow of the leg (and the second largest of this year's survey) occurred at Station 94, Stratum 661, which yielded 918.502 kg of large sea scallops. However, due to the level of encrustation, this tow was estimated to contain approximately 2,700 individuals.

Leg III: Solid HabCam Coverage

Leg III covered a 1797 nm HabCam cruise track and captured 6,074,885 stereo image pairs. 157,062 stereo pairs were processed and cruise personnel annotated 73,075 of those images.

Jonathan Duquette
Chief Scientist
Leg I and III
(508) 495-2034
jonathan.duquette@noaa.gov

Nicole Charriere
Chief Scientist
Leg II
(508) 495-2072
nicole.charriere@noaa.gov

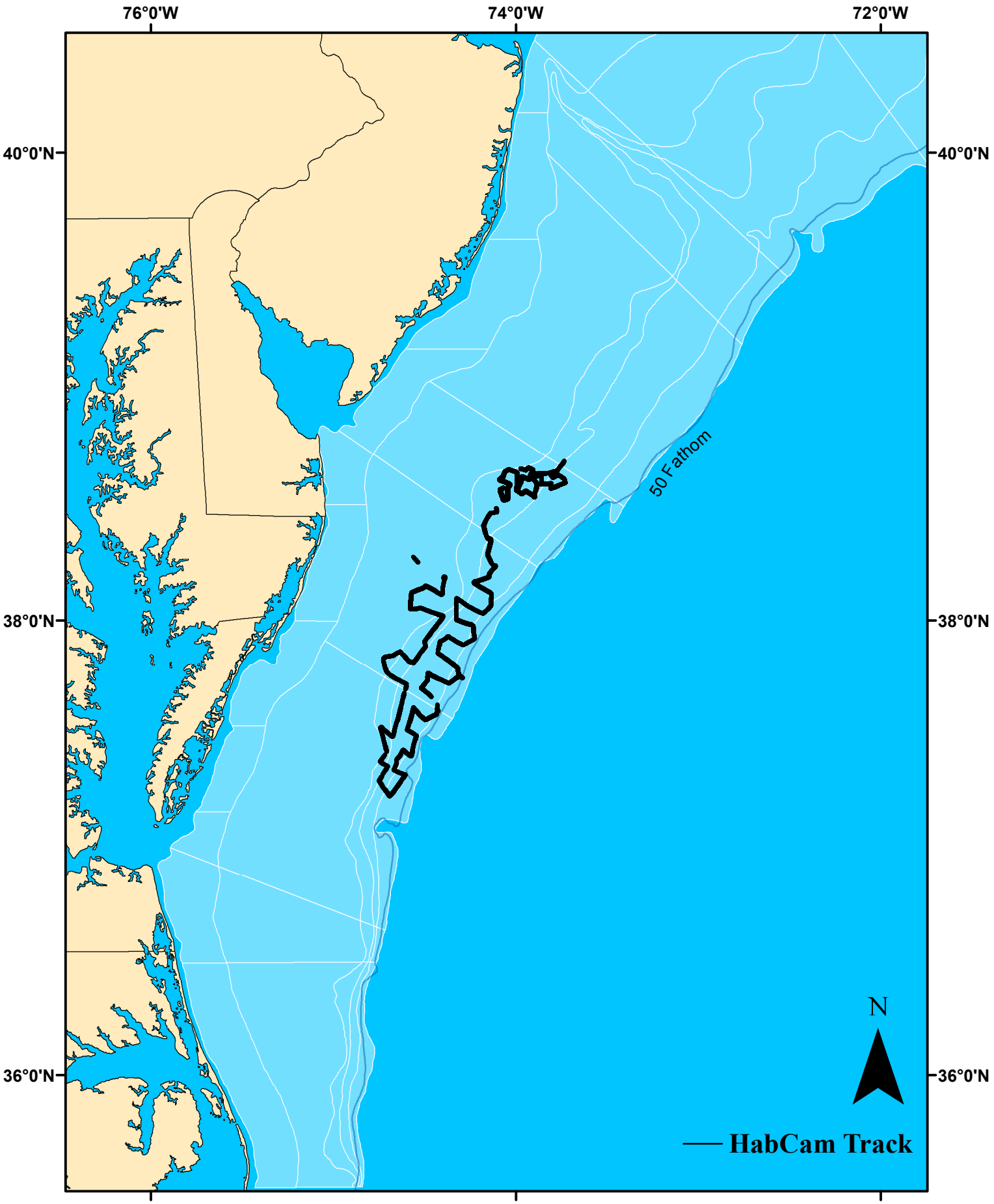

Figure 1. Approximate HabCam Mid-Atlantic Bight cruise track, as followed by UNOLS R/V *Hugh R. Sharp*, during NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

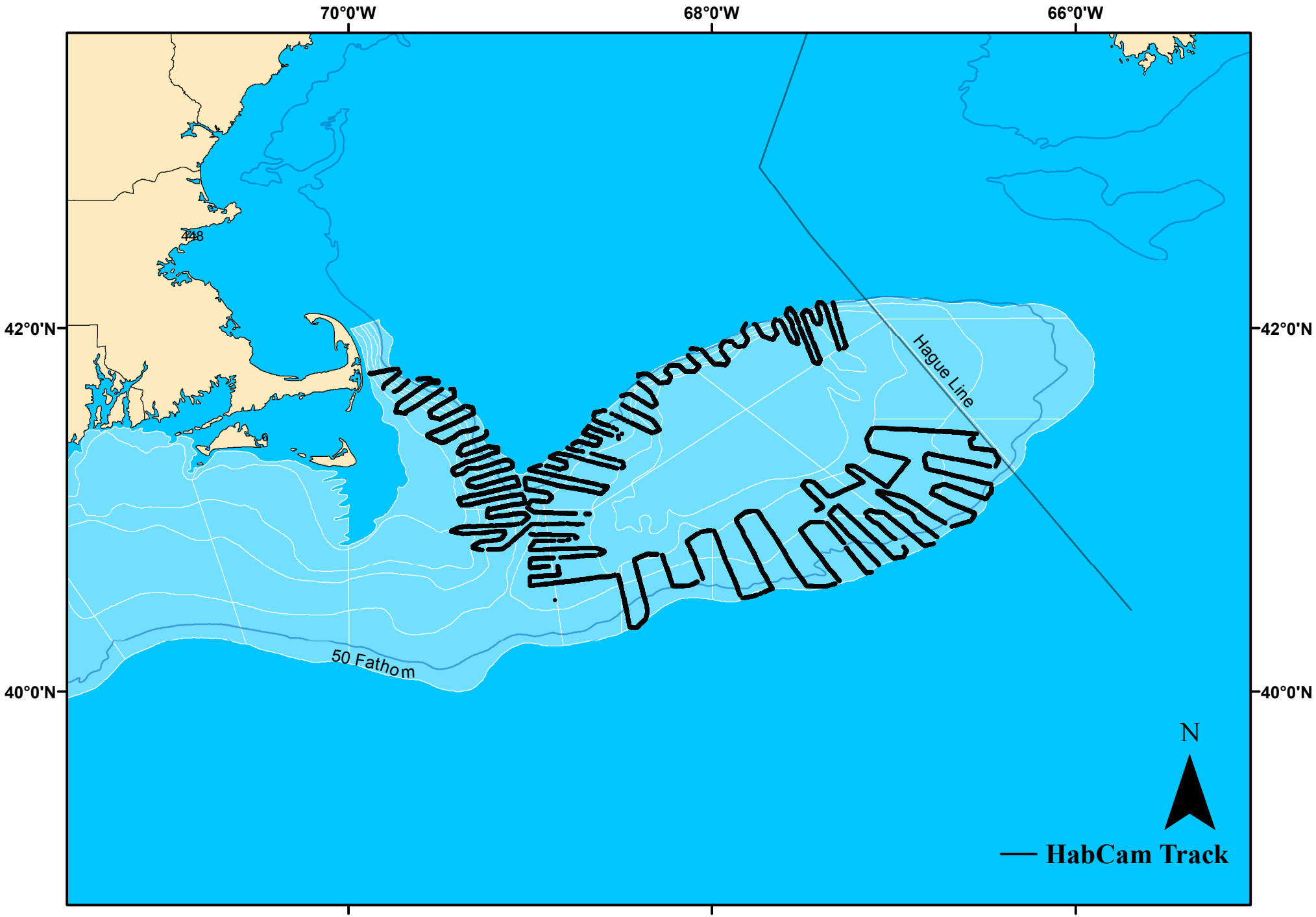

Figure 2. Approximate Georges Bank NOAA HabCam cruise track, as followed by UNOLS R/V *Hugh R. Sharp*, during NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

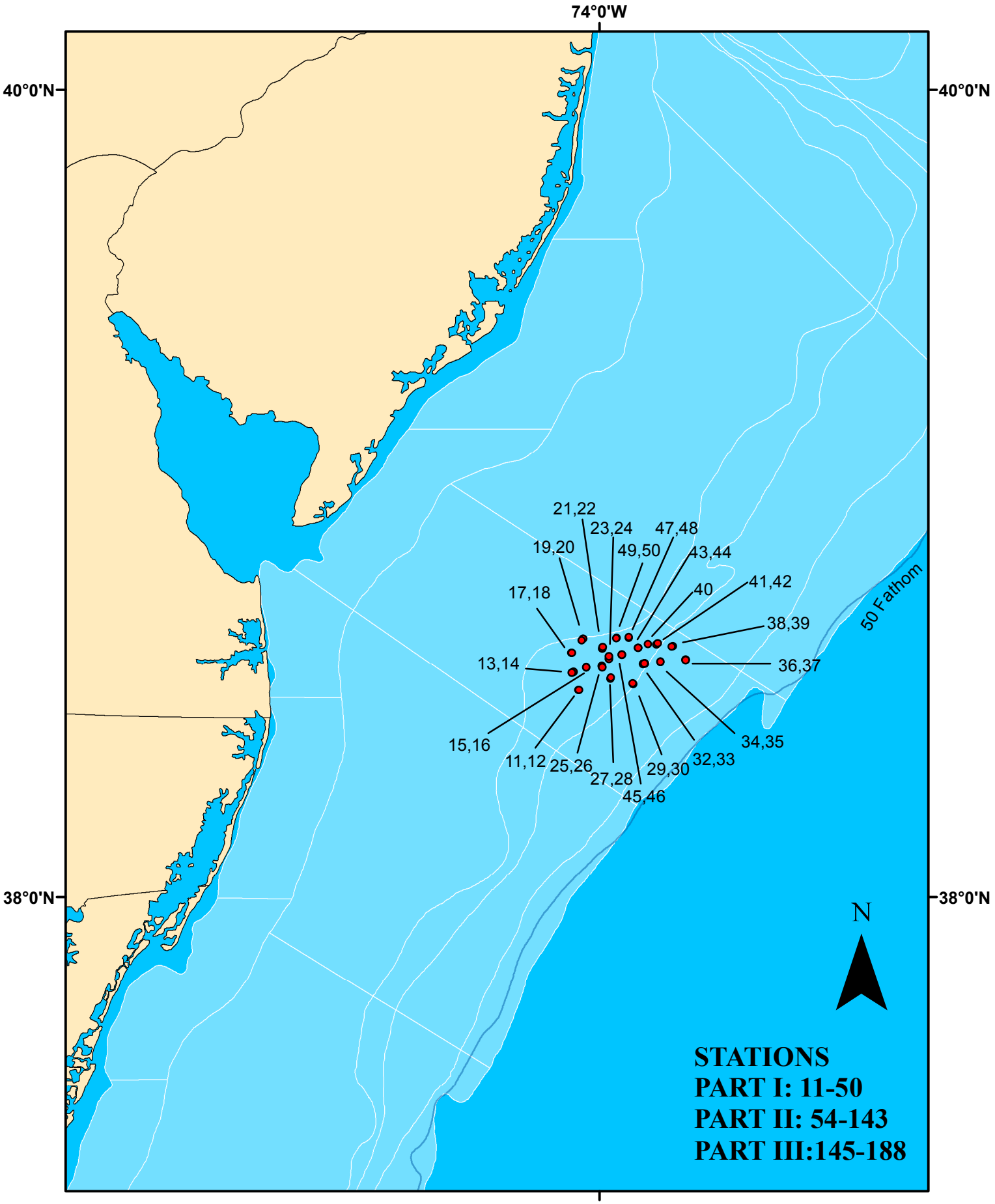

Figure 3. Dredge tows made from UNOLS R/V *Hugh R. Sharp* during NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

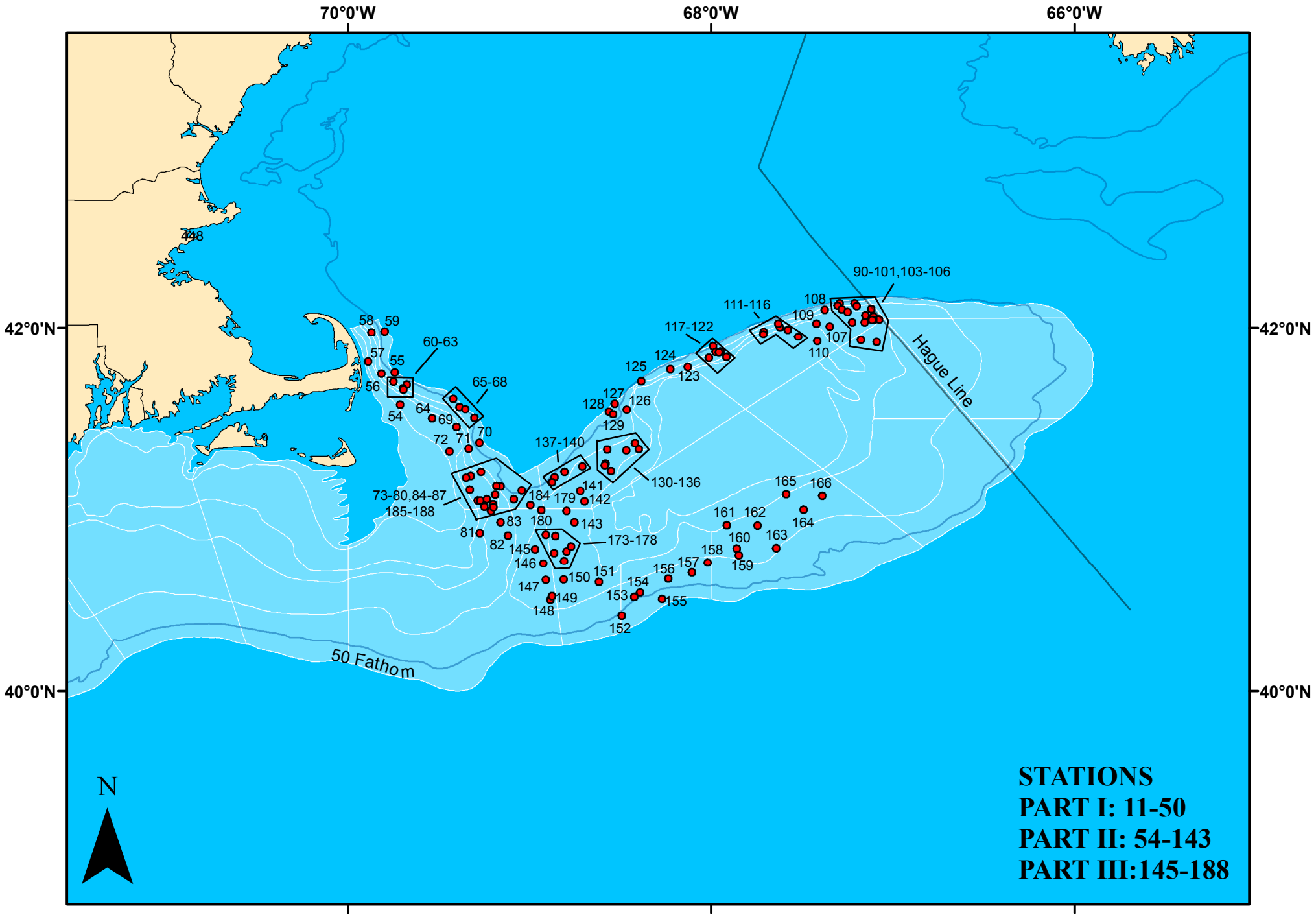

Figure 4. Dredge tows made from UNOLS R/V *Hugh R. Sharp* during NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Table 1: Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of Bycatch (Liters)
11	3831	7404	X26776.2	Y42494.2	70	33.4	327	65	262	130	20	75	5	184
12	3831	7403.9	X26775.6	Y42494.3	66	33.4	604	40	564	367	25	65	10	156
13	3833.8	7405	X26785.9	Y42523.1	62	31.7	152	22	130	77	10	0	90	0
14	3833.6	7405.2	X26786.8	Y42520.8	66	31.7	46	9	37	21	15	20	65	140
15	3834.4	7402.4	X26771.9	Y42531.3	60	30.1	1188	200	988	472	65	10	25	184
16	3834.4	7402.5	X26772.4	Y42531.2	47	30.6	1967	364	1603	624	25	40	35	232
17	3836.5	7405.3	X26791.6	Y42551.4	71	31.2	1580	80	1500	1241	5	50	45	184
18	3836.5	7405.2	X26791.0	Y42551.5	69	31.2	1287	93	1194	940	10	60	30	138
19	3838.7	7403.1	X26782.1	Y42576.1	60	28.4	6183	395	5788	3525	40	20	40	46
20	3838.4	7403.4	X26783.4	Y42572.8	54	28.4	7932	1100	6832	3478	60	20	20	138
21	3837.2	7359.5	X26759.0	Y42562.7	2	28.4	2191	77	2114	1757	30	30	40	92
22	3837.4	7359.4	X26758.7	Y42564.9	5	27.9	1463	68	1395	1182	50	20	30	36
23	3835.7	7358.2	X26749.4	Y42547.8	16	27.9	6244	425	5819	3740	70	20	10	92
24	3836.1	7358.2	X26750.0	Y42552.0	19	27.9	1985	43	1942	1668	10	0	90	416
25	3834.7	7359.5	X26755.6	Y42536.4	196	29.5	3359	435	2924	1993	15	0	85	138
26	3834.4	7359.5	X26755.1	Y42533.3	189	30.1	2438	339	2099	1059	15	0	85	94
27	3832.7	7357.8	X26743.1	Y42516.7	5	29.5	1126	96	1030	685	65	15	20	598
28	3832.9	7357.8	X26743.3	Y42518.8	45	29.5	777	35	742	513	35	55	10	462
29	3831.9	7353.6	X26717.9	Y42511.3	15	30.6	281	14	267	235	25	60	15	460
30	3832	7353.7	X26718.6	Y42512.3	20	30.6	580	17	563	463	20	75	5	186
31	3835	7351.4	X26709.1	Y42545.1	293	32.8	0	0	0	0	0	0	0	0
32	3834.9	7351.6	X26710.1	Y42543.9	263	32.3	3248	40	3208	2930	55	5	40	138
33	3835	7351.4	X26709.1	Y42545.1	249	32.3	2295	35	2260	1885	45	25	30	140
34	3835.2	7348.3	X26691.3	Y42549.3	187	34.4	1393	31	1362	1256	30	50	20	184
35	3835.3	7348.3	X26691.4	Y42550.3	188	34.4	1404	45	1359	1230	60	30	10	92
36	3835.6	7343.6	X26664.4	Y42556.5	355	33.4	335	59	276	255	70	15	15	92
37	3835.5	7343.6	X26664.3	Y42555.5	352	33.9	456	89	367	338	10	85	5	460
38	3837.6	7346	X26680.8	Y42575.5	219	32.3	463	12	451	429	20	70	10	368
39	3837.5	7346.2	X26681.8	Y42574.4	225	32.3	392	18	374	346	20	70	10	322
40	3837.9	7350.7	X26708.7	Y42575.7	32	30.6	0	0	0	0	0	0	0	0
41	3837.8	7349.1	X26699.2	Y42575.7	233	31.2	310	3	307	287	50	40	10	92
42	3838	7348.9	X26698.2	Y42577.9	208	31.2	331	10	321	308	40	40	20	138
43	3837.3	7352.6	X26719.0	Y42568.2	31	30.1	834	8	826	798	40	50	10	184
44	3837.3	7352.6	X26719.0	Y42568.2	51	30.1	417	3	414	404	15	80	5	278

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of Bycatch (Liters)
45	3836.3	7355.7	X26735.7	Y42555.8	21	29	2254	34	2220	2045	65	10	25	92
46	3836.3	7355.7	X26735.7	Y42555.8	44	28.4	4397	104	4293	3693	75	5	20	0
47	3838.8	7354.3	X26730.9	Y42582.8	360	25.7	199	34	165	153	15	15	70	690
48	3838.9	7354.4	X26731.6	Y42583.8	350	25.7	159	37	122	104	25	25	50	554
49	3838.8	7356.7	X26744.9	Y42581.3	290	26.8	261	18	243	221	25	25	50	828
50	3838.7	7356.7	X26744.8	Y42580.2	290	27.3	455	30	425	383	25	25	50	828
54	4134.6	6942.8	W13788.2	Y43893.7	312	17	18	15	3	3	5	70	25	23
55	4142.2	6945.1	W13766.6	Y43942.3	272	37.2	65	36	29	27	70	10	20	419
56	4144.7	6948.9	W13776.5	Y43962.4	210	36.6	25	7	18	16	80	10	10	281
57	4148.7	6953.3	W13783.0	Y43992.3	10	17.5	10	10	0	0	20	5	75	97
58	4158.4	6952.2	W13730.7	Y44047.3	0	38.8	378	290	88	85	30	5	65	92
59	4158.7	6947.9	W13704.6	Y44042.7	215	61.8	155	146	9	9	30	0	70	143
60	4145.2	6944.6	W13750.0	Y43959.4	249	60.7	20	11	9	9	60	20	20	51
61	4141.2	6940.6	W13746.1	Y43930.3	251	47.6	93	85	8	8	75	10	15	46
62	4139.9	6941.9	W13759.2	Y43924.3	242	37.7	104	61	43	38	5	5	90	281
63	4139.6	6941.7	W13759.5	Y43922.2	232	35.5	96	90	6	5	15	5	80	419
64	4130.1	6932.2	W13750.0	Y43853.2	224	21.3	6	3	3	2	5	75	20	557
65	4136.5	6925.3	W13683.7	Y43882.7	241	58.5	141	140	1	1	40	40	20	552
66	4133.7	6923.2	W13685.2	Y43863.5	238	49.8	79	33	46	46	30	60	10	327
67	4133	6921.3	W13678.2	Y43857.1	270	55.2	264	178	86	80	25	25	50	64
68	4130.2	6918.3	W13674.9	Y43836.9	285	53.6	238	187	51	41	35	5	60	20
69	4127.1	6924.2	W13720.2	Y43825.5	17	27.9	299	174	125	85	25	70	5	327
70	4122	6916.7	W13703.0	Y43786.2	230	60.7	115	16	99	93	25	50	25	184
71	4120	6920.3	W13730.7	Y43778.2	34	38.8	86	43	43	41	10	0	90	97
72	4119.1	6926.6	W13768.0	Y43779.9	201	20.2	29	28	1	0	60	10	30	143
73	4112.4	6916.1	W13741.3	Y43727.4	17	33.4	5	4	1	1	35	50	15	184
74	4111	6919.6	W13765.4	Y43722.6	15	27.9	3713	1477	2236	694	45	45	10	603
75	4110.5	6921	W13774.9	Y43721.0	32	29.5	1874	806	1068	425	35	60	5	1012
76	4106.5	6919.9	W13785.8	Y43695.1	78	29	683	292	391	213	30	55	15	971
77	4102.9	6917.2	W13786.6	Y43670.1	82	30.6	0	0	0	0	0	0	0	0
78	4102.9	6916.4	W13782.4	Y43669.3	275	31.7	1712	1232	480	220	45	45	10	0
79	4103.4	6914.2	W13769.0	Y43670.2	258	32.8	3418	2602	816	159	50	45	5	649
80	4100.9	6915	W13783.4	Y43655.5	256	32.3	986	695	291	173	50	30	20	557
81	4052.2	6916.6	W13826.4	Y43602.6	261	29	326	140	186	128	60	30	10	377

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of Bycatch (Liters)
82	4051.5	6907.2	W13781.4	Y43589.8	49	41.6	360	112	248	211	20	70	10	235
83	4055.7	6909.7	W13777.3	Y43618.2	261	36.1	696	419	277	169	60	30	10	368
84	4059.5	6912.8	W13777.8	Y43644.7	259	37.7	130	33	97	76	30	20	50	189
85	4106.2	6902.7	W13698.6	Y43676.1	269	54.1	190	17	173	169	5	2	93	695
86	4103.4	6905.3	W13723.5	Y43661.6	265	45.9	187	59	128	106	5	1	94	281
87	4107.6	6909.6	W13727.9	Y43691.4	97	45.4	57	3	54	51	10	80	10	235
90	4208	6717.7	W12913.1	Y43903.4	315	51.9	190	6	184	183	4	1	95	138
91	4207.3	6718.4	W12919.7	Y43900.7	297	43.7	1054	98	956	954	40	1	59	235
92	4205.9	6717	W12921.3	Y43892.4	305	29	1986	170	1816	1778	10	30	60	644
93	4205.1	6715.1	W12917.7	Y43886.5	155	27.9	748	608	140	49	70	10	20	419
94	4208.1	6712.7	W12892.1	Y43898.6	148	48.1	2693	907	1786	1771	30	10	60	552
95	4207	6712.1	W12895.4	Y43892.7	185	33.4	50	3	47	46	3	2	95	1978
96	4206.1	6707.2	W12880.4	Y43883.3	242	30.6	1911	933	978	690	15	25	60	340
97	4204	6709.1	W12899.0	Y43875.0	278	29	13	5	8	7	89	2	9	478
98	4203.6	6706.5	W12890.7	Y43870.4	321	31.2	3187	1882	1305	558	60	5	35	1150
99	4202.7	6704.6	W12887.8	Y43864.2	359	30.6	1047	707	340	238	40	5	55	846
100	4202.5	6706.6	W12896.8	Y43865.2	174	29.5	0	0	0	0	0	0	0	0
101	4202.5	6707	W12898.4	Y43865.6	177	30.6	14	5	9	5	60	30	10	184
103	4201.7	6709.5	W12912.7	Y43864.2	183	30.6	7	3	4	1	80	5	15	593
104	4155.2	6705.5	W12930.1	Y43828.4	197	36.1	3	2	1	1	5	25	70	1799
105	4155.9	6710.7	W12947.5	Y43836.9	255	31.7	1	1	0	0	70	5	25	189
106	4201.8	6713.6	W12928.8	Y43868.9	313	27.9	753	604	149	52	50	25	25	741
107	4200.3	6721	W12967.2	Y43869.1	12	29.5	244	231	13	10	50	40	10	1063
108	4205.9	6722.6	W12944.6	Y43898.3	208	35.5	612	503	109	75	15	80	5	281
109	4201.3	6725.3	W12980.1	Y43878.5	6	26.2	486	482	4	1	30	60	10	281
110	4155.4	6725.1	W13009.8	Y43848.9	153	28.4	5	5	0	0	80	15	5	143
111	4156.9	6731.4	W13028.9	Y43862.9	170	25.7	3	2	1	0	90	5	5	1030
112	4159.3	6734.8	W13031.1	Y43878.5	186	25.7	27	26	1	0	60	30	10	460
113	4200.1	6737.5	W13038.6	Y43885.4	225	29.5	1	1	0	0	10	70	20	557
114	4201.3	6737.9	W13034.1	Y43891.9	257	35.5	18	12	6	5	60	0	40	20
115	4158.6	6742.8	W13069.7	Y43883.6	265	29	5	1	4	4	5	0	95	2254
116	4157.7	6742.8	W13074.3	Y43879.0	286	24.6	1	0	1	1	2	0	98	1950
117	4150.2	6755.1	W13167.7	Y43853.6	12	27.9	9	9	0	0	5	0	95	1426
118	4152	6757.1	W13167.7	Y43865.2	144	35	11	4	7	7	5	0	95	1214

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of Bycatch (Liters)
119	4153.8	6759.5	W13169.5	Y43877.2	178	54.1	158	38	120	112	40	0	60	92
120	4151.9	6758.6	W13175.0	Y43866.3	195	39.4	24	11	13	10	2	1	97	833
121	4151.7	6757.6	W13171.5	Y43864.2	206	35.5	34	18	16	14	9	1	90	1334
122	4149.9	6800.8	W13195.2	Y43858.2	240	35.5	2	2	0	0	3	1	96	1707
123	4147	6807.8	W13242.2	Y43850.5	260	31.7	0	0	0	0	1	0	99	1891
124	4146.2	6813.7	W13273.9	Y43852.7	269	42.1	21	17	4	4	40	0	60	97
125	4142.2	6823.2	W13339.0	Y43841.7	265	47	8	0	8	7	30	0	70	189
126	4132.9	6828.1	W13407.4	Y43795.8	44	42.1	4	1	3	3	2	0	98	966
127	4134.9	6832	W13416.9	Y43811.1	144	67.8	8	5	3	3	60	10	30	97
128	4132.2	6833.9	W13438.9	Y43798.1	205	63.4	58	7	51	51	3	0	97	506
129	4131.5	6832.5	W13435.4	Y43792.6	210	56.3	203	172	31	30	5	0	95	327
130	4121.8	6825.3	W13445.5	Y43730.6	163	37.2	7	2	5	5	5	0	95	506
131	4119.9	6824.1	W13448.4	Y43718.7	223	32.3	1	1	0	0	2	0	98	1186
132	4119.5	6828.2	W13469.9	Y43720.4	251	36.6	3	0	3	3	2	0	98	708
133	4119.8	6834.5	W13499.0	Y43728.4	278	39.9	13	1	12	12	70	0	30	51
134	4115.1	6835.1	W13523.0	Y43701.9	187	35.5	2	0	2	2	70	0	30	2
135	4114.5	6835.2	W13526.2	Y43698.5	347	35	4	1	3	3	55	5	40	46
136	4112.7	6833.2	W13524.4	Y43686.2	26	33.9	1	1	0	0	70	0	30	51
137	4114.2	6842.7	W13564.2	Y43704.1	55	37.2	7	1	6	6	40	0	60	97
138	4112.4	6848.5	W13600.8	Y43699.2	64	47	14	0	14	14	2	0	98	2272
139	4110.7	6851.8	W13624.6	Y43692.4	133	51.4	38	10	28	28	1	0	99	1288
140	4109	6852.7	W13636.4	Y43683.2	120	52.5	4	0	4	4	1	0	99	2305
141	4106.1	6843.3	W13602.3	Y43657.0	76	35	76	13	63	62	10	5	85	460
142	4102.6	6842	W13610.9	Y43635.0	22	35.5	0	0	0	0	1	2	97	833
143	4055.9	6845.3	W13655.0	Y43597.8	58	35	0	0	0	0	40	1	59	23
145	4046.9	6858.3	W13755.2	Y43553.7	220	40.5	24	11	13	9	5	0	95	1260
146	4042.2	6855.5	W13759.8	Y43522.2	207	38.8	14	2	12	12	5	0	95	1260
147	4036.8	6854.8	W13777.2	Y43488.0	225	36.6	6	3	3	3	5	0	95	800
148	4030.2	6853.2	W13794.4	Y43445.5	238	40.5	3248	56	3192	2457	90	0	10	294
149	4031.3	6852.6	W13787.3	Y43452.0	210	39.4	179	2	177	144	5	0	95	662
150	4036.9	6848.9	W13748.2	Y43484.4	31	36.1	0	0	0	0	5	0	95	303
151	4036.1	6837.2	W13695.3	Y43471.2	51	35	1	1	0	0	1	0	99	649
152	4024.9	6829.6	W13702.5	Y43397.6	206	54.1	40	40	0	0	15	65	20	235
153	4031.1	6825.5	W13659.8	Y43433.0	50	51.4	165	158	7	1	80	2	18	92

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of Bycatch (Liters)
154	4032.6	6823.6	W13645.2	Y43440.8	226	50.3	100	98	2	0	85	0	15	51
155	4030.4	6816.3	W13620.3	Y43423.0	225	55.8	5	5	0	0	50	0	50	11
156	4037.1	6814.3	W13584.8	Y43461.8	245	49.2	42	35	7	4	75	0	25	97
157	4039.2	6806.5	W13541.1	Y43469.1	245	47	49	24	25	8	70	5	25	143
158	4042.4	6801.2	W13504.3	Y43484.3	235	44.3	31	14	17	15	40	0	60	66
159	4044.9	6751	W13448.8	Y43491.9	58	40.5	109	12	97	85	20	0	80	66
160	4047.2	6751.7	W13442.3	Y43505.5	225	38.8	5	0	5	5	5	0	95	1904
161	4054.9	6755	W13424.4	Y43551.8	59	32.8	0	0	0	0	5	0	95	772
162	4054.6	6744.8	W13380.8	Y43542.6	125	35.5	5	2	3	2	5	0	95	1214
163	4047.3	6738.7	W13385.3	Y43497.4	227	41	169	55	114	88	70	0	30	94
164	4059.9	6729.6	W13292.4	Y43561.1	226	37.2	13	3	10	9	5	0	95	879
165	4105	6735.4	W13294.7	Y43593.4	218	32.3	0	0	0	0	3	0	97	741
166	4104.5	6723.5	W13246.4	Y43581.7	96	35.5	0	0	0	0	1	0	99	1109
173	4051.7	6854.8	W13718.8	Y43580.4	217	39.9	47	17	30	30	50	30	20	110
174	4051.3	6851.6	W13704.6	Y43575.2	252	37.2	3	3	0	0	30	60	10	94
175	4045.6	6852	W13729.3	Y43540.6	246	35.5	35	10	25	23	19	1	80	202
176	4043	6848.7	W13723.5	Y43521.9	249	37.2	31	7	24	21	24	1	75	143
177	4046.2	6847.9	W13707.0	Y43541.0	30	36.6	2	1	1	0	75	0	25	184
178	4047.9	6846.3	W13692.4	Y43550.1	234	37.2	1	0	1	1	5	0	95	235
179	4059.5	6847.9	W13652.8	Y43621.8	336	37.2	0	0	0	0	8	2	90	207
180	4059.8	6856.3	W13693.1	Y43631.2	195	76.6	53	8	45	40	60	30	10	327
184	4101.5	6859.8	W13703.6	Y43644.7	197	50.9	83	36	47	37	40	40	20	143
185	4101.7	6912.1	W13765.2	Y43657.7	189	33.4	0	0	0	0	0	0	0	0
186	4100.7	6912.1	W13769.3	Y43651.5	356	33.4	2	2	0	0	35	45	20	14
187	4104.8	6911.4	W13748.8	Y43676.1	344	31.7	36	1	35	35	50	40	10	92
188	4107.8	6911.1	W13734.8	Y43694.2	351	38.3	77	19	58	56	15	75	10	465

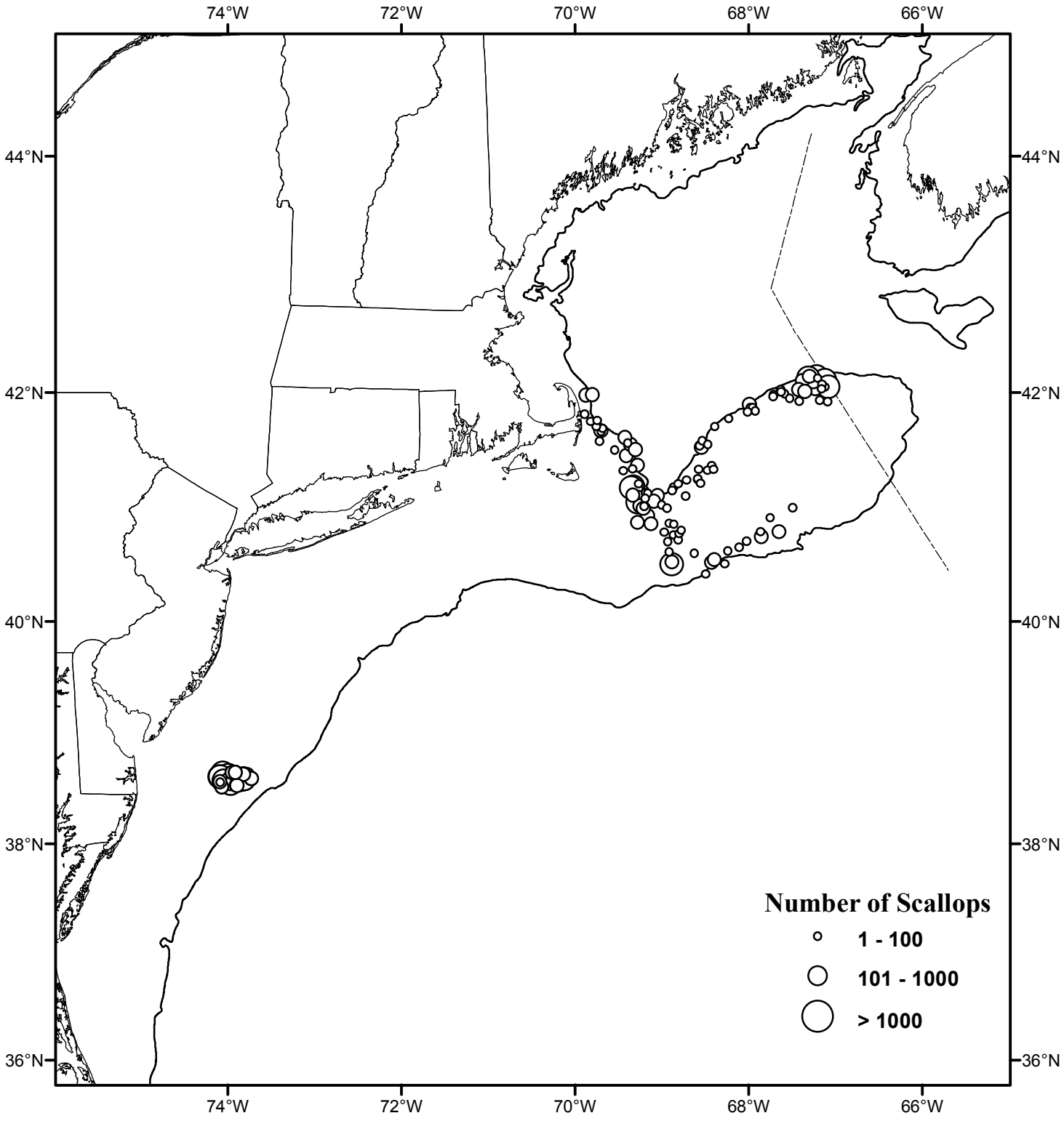

Figure 5: Total Number of Atlantic sea scallops per tow from NOAA National Marine Fisheres Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

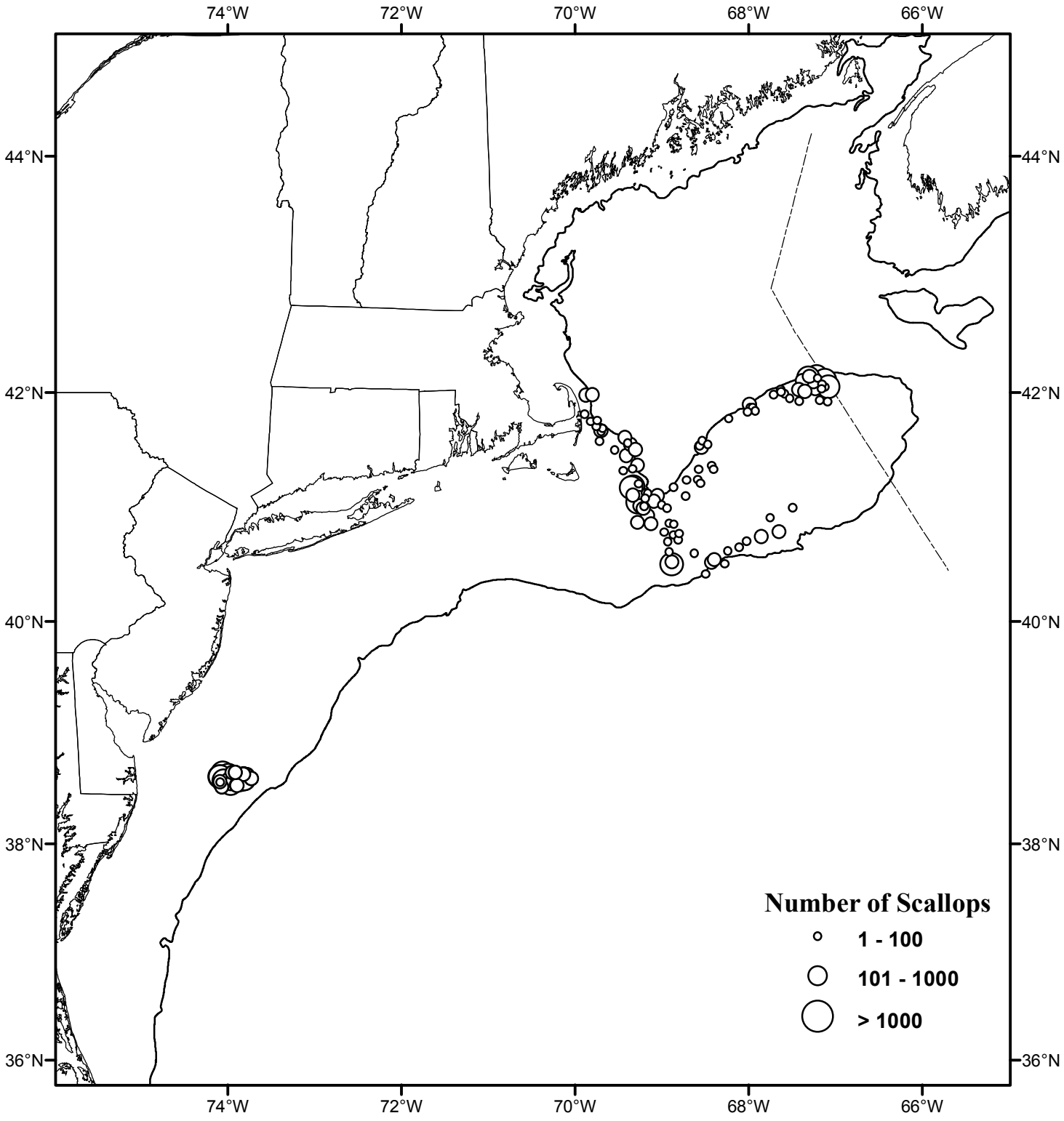

Figure 6: Number of Atlantic sea scallops per tow that are less than 90mm from NOAA National Marine Fisheres Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

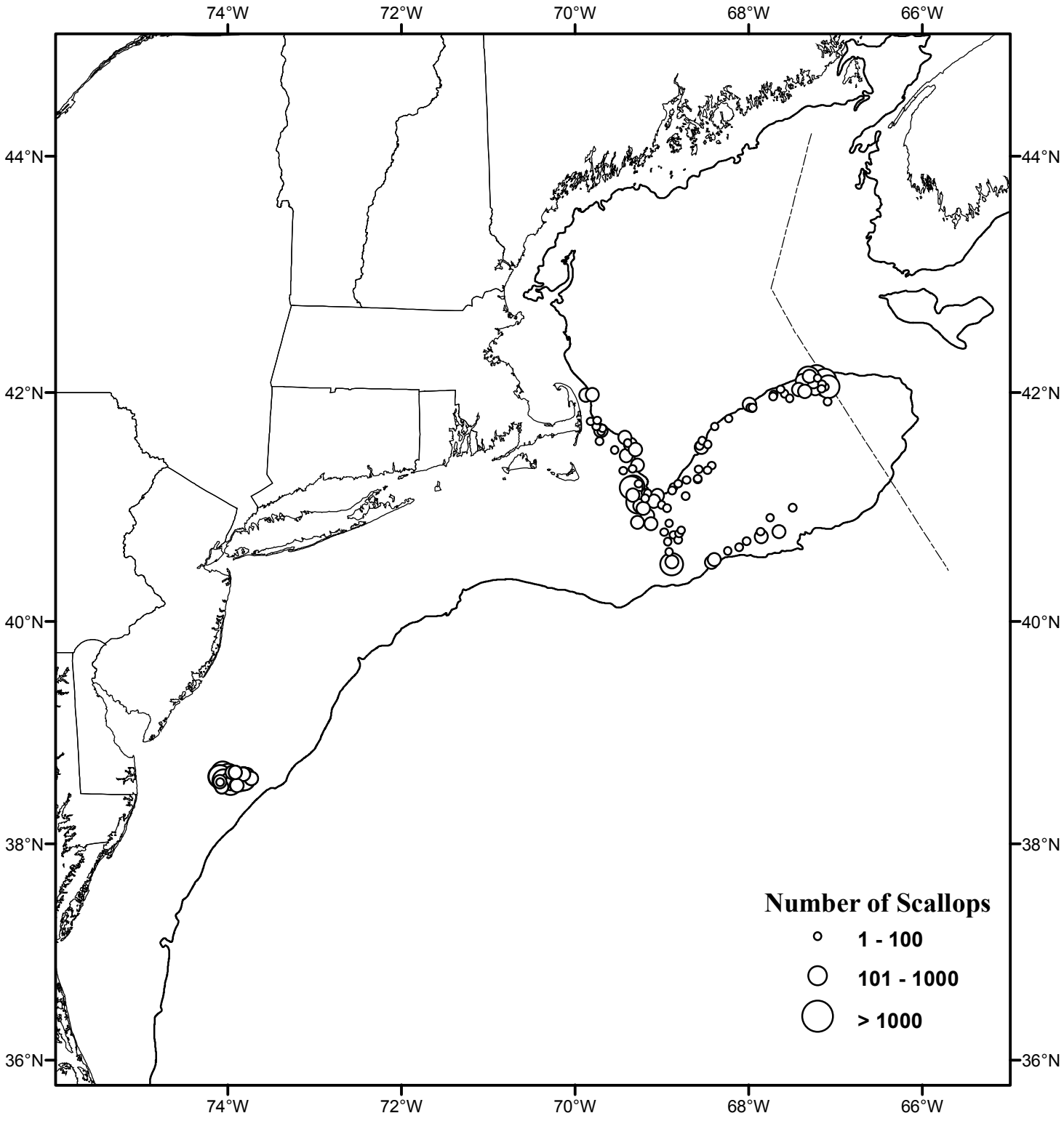

Figure 7: Number of Atlantic sea scallops per tow that are greater than 90 mm from NOAA National Marine Fisheres Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018

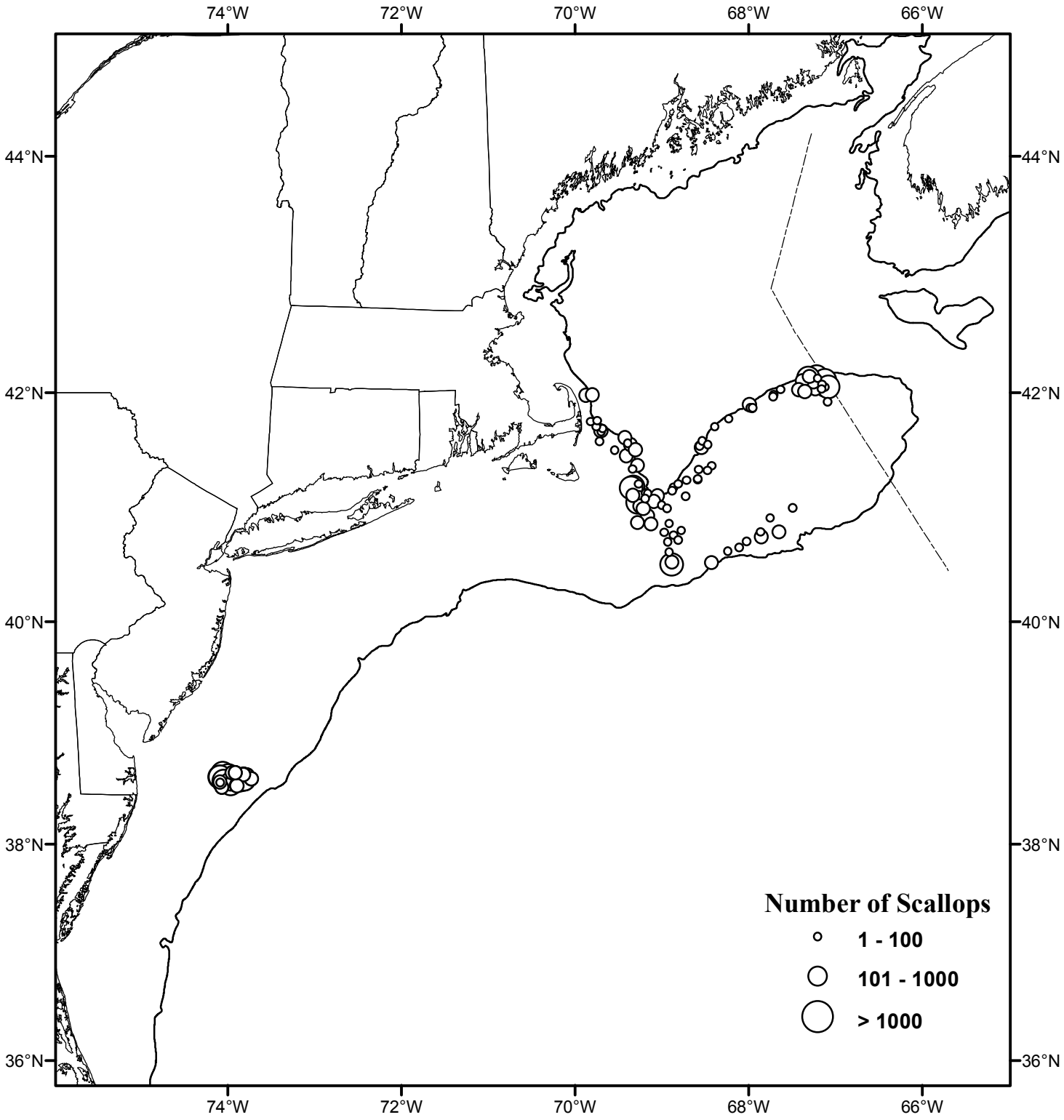

Figure 8: Number of Atlantic sea scallops per tow that are greater than or equal to 100 mm from NOAA National Marine Fisheres Service, Northeast Fisheries Science Center's summer sea scallop survey, 16 May - 18 June 2018