RESOURCE SURVEY REPORT
2022 Sea Scallop Survey

Mid-Atlantic Bight – Georges Bank
14 May – 13 June 2022
UNOLS R/V Hugh R Sharp

Submitted to: NOAA, NEFSC

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Date: 2022

Resource Survey Report

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NOAA Fisheries Service
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A catch of over 45,000 baby scallops! This is likely the second largest tow of scallops in NEFSC dredge history, and the largest sign of recruitment since 2013 when 60,000 one year old scallops were caught in a single tow inside the Nantucket Lightship extension area.

RESOURCE SURVEY REPORT
Catch Summary

NOAA National Marine Fisheries Service
Northeast Fisheries Science Center

Sea Scallop Survey
Mid-Atlantic Bight - Georges Bank
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The following charts and station data indicate the distribution of sea scallops during the 2022 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:

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- Resource Surveys Reports
- Sea Scallop Survey RSRs
- Year of interest

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 1,125 nm in the Mid-Atlantic Bight and about 600 nm throughout part of Georges Bank, the Great South Channel and Closed Area 1. In total, 98 percent of the planned imaging track line was completed in the Mid-Atlantic Bight and Georges Bank regions.

Field Notes

In an effort to share any unique insights and observations made during the scallop survey, we have requested that certain Chief Scientists comment on any interesting events that occurred during their leg of the survey.

Leg III: Massive haul of juvenile Sea Scallops

Leg III of the Scallop survey focused on dredge and HabCam operations in the Great South Channel. One thing that was fairly consistent is the presence of small 1-2 year old scallops. Both seen on images and in dredge samples. In fact, one tow inside Closed Area 1, saw an expanded catch of over 45,000 baby scallops! This is likely the second largest tow of scallops in NEFSC dredge history, and the largest sign of recruitment since 2013 when approximately 60,000 one year old scallops were caught in a single tow inside the Nantucket Lightship extension area.

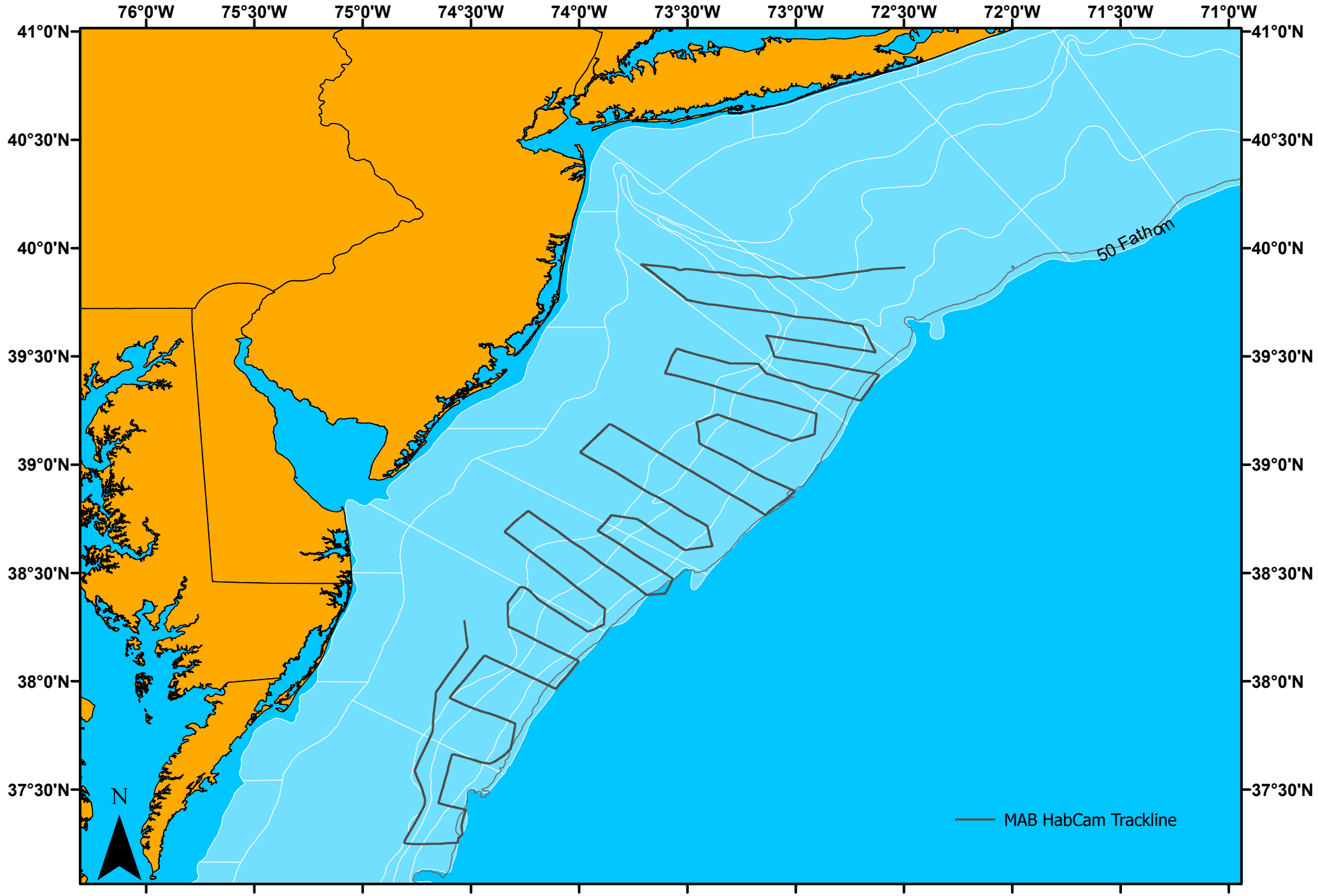

Figure 1. Approximate Mid-Atlantic Bight HabCam cruise track as followed by UNOLS R/V *Hugh R Sharp* during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

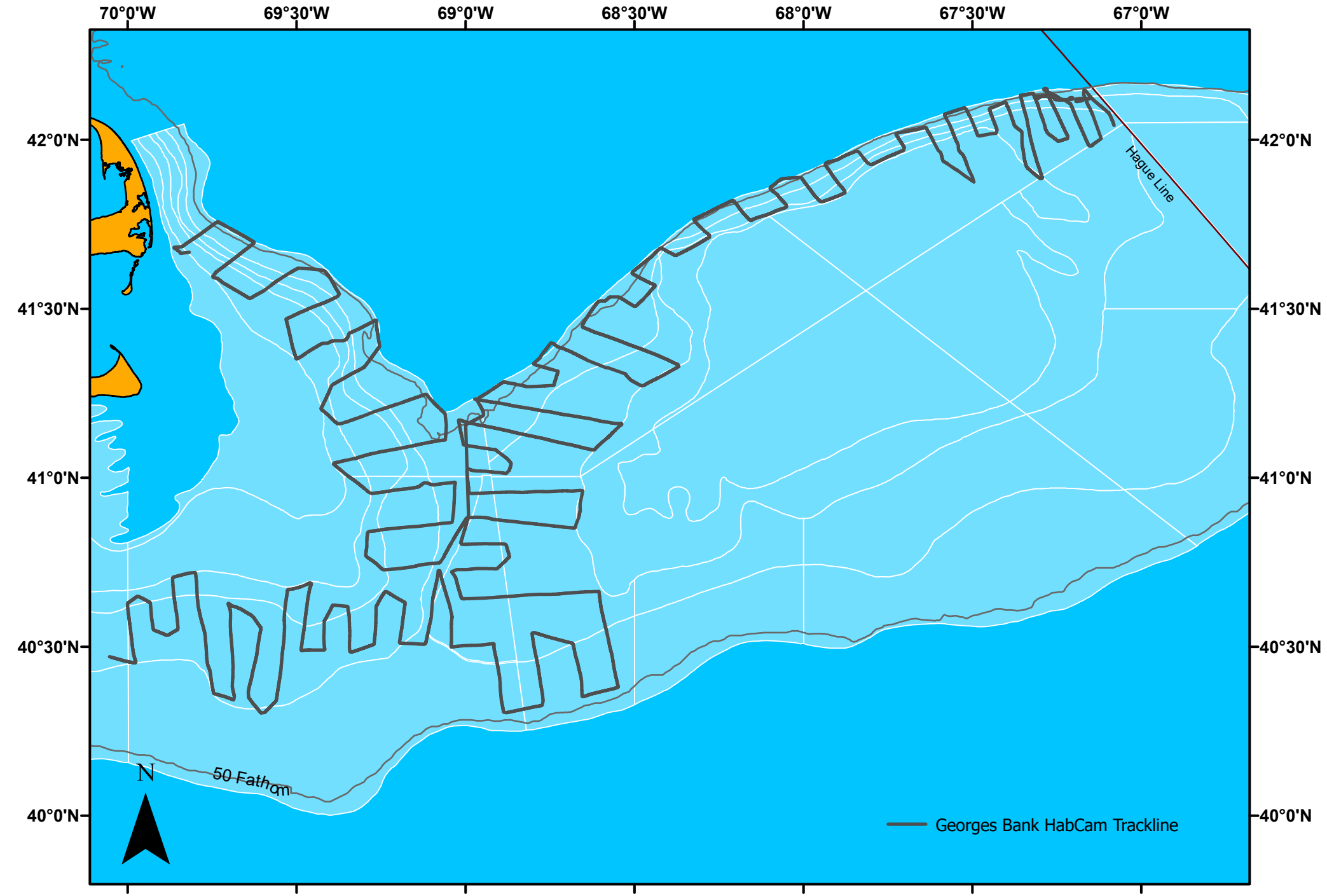

Figure 2. Approximate Georges Bank HabCam cruise track as followed by UNOLS R/V *Hugh R Sharp* during NOAA Fisheries Service,Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

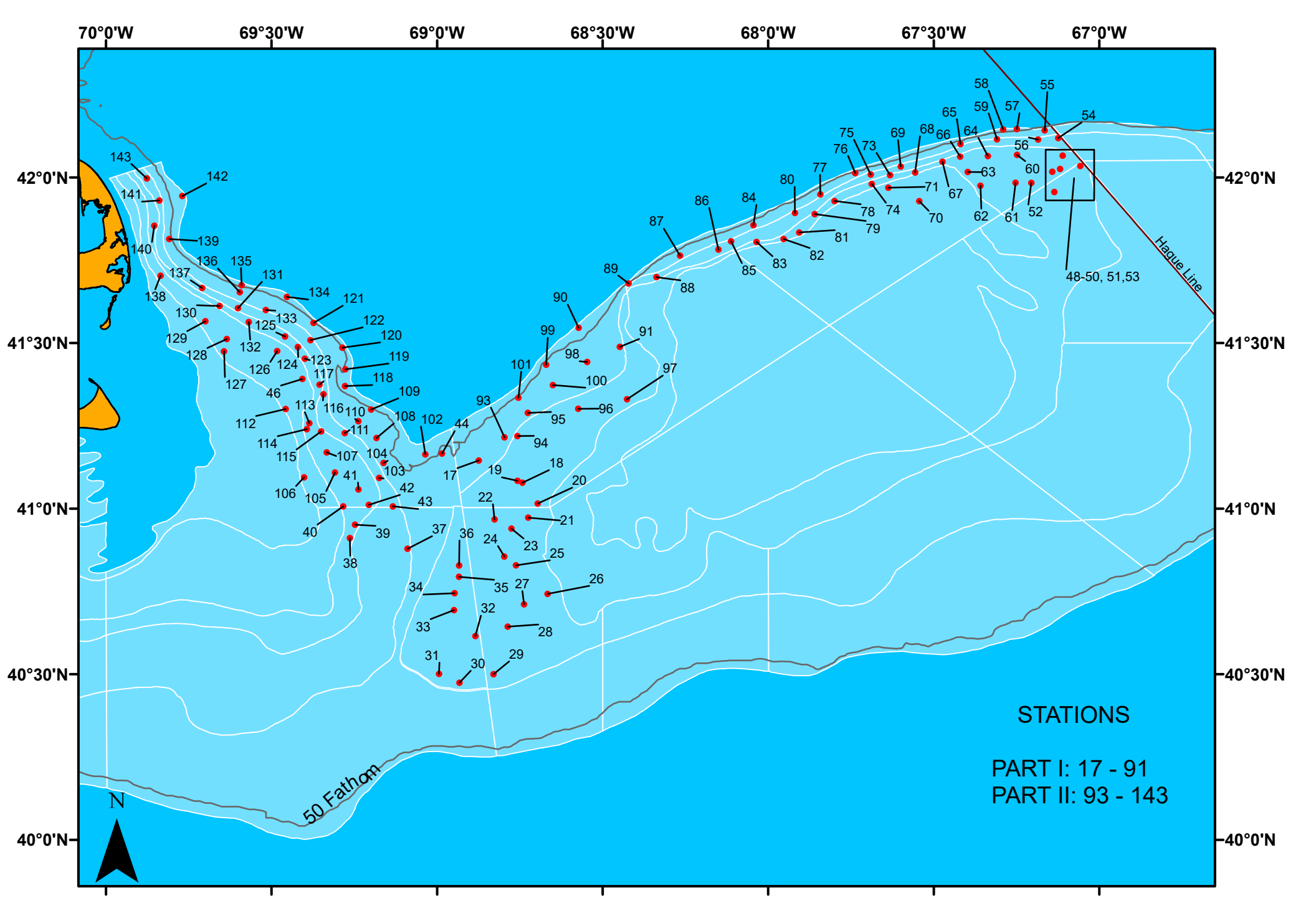

Figure 3. Dredge hauls made by UNOLS R/V *Hugh R Sharp* during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

Table 1: Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 14 May - 13 June 2022

Station	Latitude	Longitude	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of
17	4108.719	6852.4541	284	51.40	3	1	2	2	1	99	0	1707
19	4105.048	6845.43	310.2	37.73	14	2	12	11	60	20	20	276
22	4058.049	6849.5835	283.3	40.46	20	9	11	9	50	10	40	327
27	4042.663	6844.2455	305.2	37.18	4	3	1	1	2	97	1	1431
28	4038.617	6847.2086	308	36.09	11	1	10	10	2	98	0	465
29	4030.001	6849.7827	301.1	39.37	8	7	1	1	10	90	0	557
30	4028.453	6855.948	306.8	41.01	7	1	6	4	30	50	20	46
31	4030.053	6859.655	308.6	41.01	28	5	23	23	5	15	80	23
32	4036.909	6853.0643	300.2	36.09	34	12	22	19	60	30	10	511
33	4041.612	6856.9391	306.7	37.73	3	3	0	0	10	90	0	1656
34	4044.679	6856.8351	311.7	37.73	19	8	11	11	10	90	0	1155
35	4047.656	6856.0403	329.3	39.92	6	6	0	0	10	90	0	1380
36	4049.698	6856.0128	307.2	41.01	23	7	16	15	1	98	1	1017
37	4052.735	6905.37	304.7	39.37	194	134	60	52	20	30	50	184
38	4054.666	6915.8096	3.4	31.17	45	21	24	21	10	55	35	508
39	4057.094	6914.8825	22.1	34.45	27	11	16	14	30	35	35	414
40	4100.406	6917.0137	351.1	30.07	76	8	68	65	90	1	9	1720
41	4103.472	6914.2568	314.8	31.17	277	151	125	83	5	90	5	1012
43	4100.402	6908.018	324	40.46	172	81	91	74	30	10	60	465
44	4109.974	6859.1133	5.7	54.68	3268	3095	172	122	60	40	0	644
46	4123.503	6924.4107	12	23.51	31	9	22	22	20	5	75	557
48	4202.089	6703.4523	256.2	33.36	18	1	17	17	15	80	5	2075
50	4201.544	6707.1126	229.7	29.53	29	27	2	0	90	5	5	557
51	4157.372	6708.1478	230	32.26	39	0	39	39	4	95	1	2438
52	4159.025	6712.3252	247.2	28.98	787	69	718	610	90	1	9	1306
53	4203.962	6706.6444	294	31.17	1004	54	950	863	5	85	10	1840
54	4207.138	6707.4508	236	32.26	876	26	848	834	90	5	5	787
55	4208.531	6709.9032	226.9	45.38	5263	3034	2229	2175	60	20	20	552
56	4206.876	6711.0922	226.5	32.81	33	3	30	30	3	90	7	1937
57	4208.772	6714.9475	230.5	59.06	5737	5683	54	44	60	20	20	193
58	4208.685	6717.4211	234.5	59.06	178	147	31	25	90	10	0	97
59	4206.915	6718.5441	250.3	42.10	2586	1592	994	980	85	5	10	465
60	4204.102	6714.9103	304.8	26.25	4232	1658	2555	1829	90	5	5	557

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 14 May - 13 June 2022

Station	Latitude	Longitude	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of
61	4159.046	6715.1845	338.3	26.25	137	14	123	102	20	80	0	1431
62	4158.507	6721.544	323	28.98	5	1	4	2	7	90	3	2116
63	4201.005	6723.8459	329.5	26.25	289	14	275	251	15	80	5	2581
64	4203.879	6720.1942	327.2	28.43	5905	685	5220	5040	30	50	20	368
65	4206.055	6725.1649	47.6	47.03	2458	2345	113	98	7	90	3	552
66	4203.776	6725.2231	99.5	29.53	2212	828	1378	1300	30	30	40	874
67	4202.853	6728.4253	64.8	30.62	27	14	13	13	25	45	30	235
68	4200.904	6733.371	70.4	25.70	678	406	272	224	70	10	20	230
69	4201.98	6735.9898	70.9	35.54	9	4	5	4	2	98	0	235
70	4155.714	6732.6307	70.3	26.25	73	15	58	53	75	10	15	1260
71	4158.153	6738.2368	74.6	26.79	196	14	182	156	3	90	7	2162
73	4200.427	6737.9229	199.5	28.43	30	24	6	3	20	50	30	511
75	4200.539	6741.4232	242.1	34.45	38	26	12	7	10	90	0	557
76	4200.79	6744.2344	252.6	48.67	263	81	182	126	60	40	0	143
77	4156.944	6750.5557	42.1	43.74	123	68	55	51	60	40	0	276
78	4155.731	6747.9729	47.1	29.53	4	3	1	1	10	90	0	66
79	4153.369	6751.5759	55.7	27.34	1	1	0	0	10	90	0	1472
80	4153.57	6755.1573	183.7	34.45	15	6	9	9	10	90	0	1339
81	4150.03	6754.3809	12.1	26.79	2	0	2	2	65	10	25	230
82	4148.855	6757.2074	34.1	27.89	3	0	3	2	2	98	0	2042
84	4151.368	6802.679	86	44.29	439	80	359	275	98	2	0	235
85	4148.433	6806.7308	84.2	36.64	18	1	17	16	1	99	0	2898
86	4146.939	6809.0186	67.3	33.36	4	0	4	4	1	99	9	1891
87	4145.835	6815.97	68.3	45.38	160	27	133	98	75	23	2	235
88	4141.947	6820.2537	63.1	33.36	7	3	4	2	60	40	0	143
89	4140.806	6825.3011	63.1	48.67	5	1	4	4	15	40	45	2167
90	4132.765	6834.3545	44.8	66.71	3	2	1	1	10	90	0	235
91	4129.31	6826.8924	1.1	43.20	10	3	7	5	20	80	0	557
93	4112.916	6847.7933	202.4	44.29	5	0	5	4	1	99	0	925
95	4117.357	6843.5605	43.2	45.38	5	0	5	5	40	60	0	143
98	4126.577	6832.8081	20.7	51.40	391	337	54	30	50	50	0	51
99	4126.072	6840.2356	345.4	55.23	861	829	32	10	10	40	50	322
100	4122.388	6839.0216	355.9	51.95	408	388	20	14	75	25	0	281

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101	4120.094	6845.2711	354.3	57.41	994	967	27	24	30	70	0	97
102	4109.827	6902.1359	358.8	58.51	8043	8023	20	12	10	25	65	469
103	4105.567	6910.5062	339.7	36.09	85	54	31	29	2	13	85	552
104	4108.284	6909.7109	354.7	49.21	27	15	12	12	5	60	35	97
105	4106.542	6918.5104	345.2	32.26	151	36	115	97	40	15	45	695
106	4105.667	6924.0984	357.5	22.42	12	2	10	10	5	85	10	2668
107	4110.185	6920.0072	347.5	28.98	1469	1245	224	166	45	1	54	971
108	4112.8	6910.9812	351.5	50.85	313	299	14	10	2	97	1	1017
109	4117.953	6911.9612	355.8	56.32	47484	47428	55	37	5	15	80	883
110	4115.843	6914.2754	4.8	50.31	708	587	121	104	5	95	0	327
111	4113.685	6916.7349	348.7	37.73	49	10	39	34	15	5	80	230
113	4115.477	6923.1534	359.7	27.34	8	0	8	8	50	40	10	184
114	4114.394	6923.6126	184.4	26.79	28	7	21	21	50	10	40	741
115	4113.99	6921.0125	213.5	32.81	107	34	72	63	1	1	98	738
116	4120.724	6920.5899	41.1	37.18	162	64	98	90	45	50	5	189
117	4122.468	6921.3064	15.4	32.81	218	124	94	83	3	2	95	368
118	4122.205	6916.693	348.9	63.43	706	572	134	102	90	7	3	649
119	4125.256	6916.6295	358.9	52.49	3713	3618	95	69	45	45	10	358
120	4129.164	6917.1712	345.1	55.77	5443	5397	45	36	35	15	50	561
121	4133.651	6922.398	321.1	52.49	3927	3916	11	8	40	15	45	943
122	4130.521	6922.9582	342.7	39.92	1774	1560	214	118	1	4	95	787
123	4127.168	6923.9811	345.5	28.98	435	300	135	123	33	2	65	1196
124	4129.282	6925.2322	336.2	31.71	980	842	138	96	40	20	40	971
125	4131.184	6927.5613	315.1	31.17	238	166	72	57	10	10	80	782
126	4128.55	6928.9807	330.3	22.97	24	3	21	21	8	2	90	419
127	4128.497	6938.6148	3.9	16.40	5	4	1	1	30	50	20	322
129	4133.959	6941.9934	344.1	16.95	7	1	6	6	45	10	45	46
130	4136.719	6939.416	339.7	31.17	880	680	200	159	8	90	2	419
131	4136.315	6936.0867	340.4	36.64	783	655	128	95	5	95	0	419
132	4133.81	6934.1285	341.3	30.62	253	157	96	84	35	50	15	419
133	4135.988	6931.0438	337.3	42.65	448	333	115	92	45	10	45	506
134	4138.361	6927.2181	331.6	63.43	4063	4062	1	1	8	2	90	193
136	4139.214	6935.7603	326.6	49.21	236	229	7	5	20	10	70	115

Table 1 (cont.): Catch summary report from NOAA National Marine Fisheries Service, Northeast Fisheries Science Center's summer sea scallop survey, 14 May - 13 June 2022

Station	Latitude	Longitude	Heading (Degrees)	Depth (Fathoms)	Total Number	Scallops <90mm	Scallops >90mm	Scallops ≥100mm	% Shell Bycatch	% Stone Bycatch	% Inverts Bycatch	Total Volume of
137	4139.984	6942.5763	326.1	35.54	225	178	47	23	25	70	5	327
138	4142.202	6950.11	340.8	18.59	9	9	0	0	7	90	3	299
139	4148.856	6948.5454	333	51.95	1	1	0	0	75	25	0	14
140	4151.259	6951.2492	342.4	30.62	129	96	33	31	60	30	10	253
141	4155.833	6950.3306	340	40.46	247	217	29	13	8	2	90	598
142	4156.647	6946.1755	325.2	60.15	244	239	5	2	4	1	95	281
143	4159.822	6952.5932	316.9	40.46	443	379	64	54	25	10	65	419

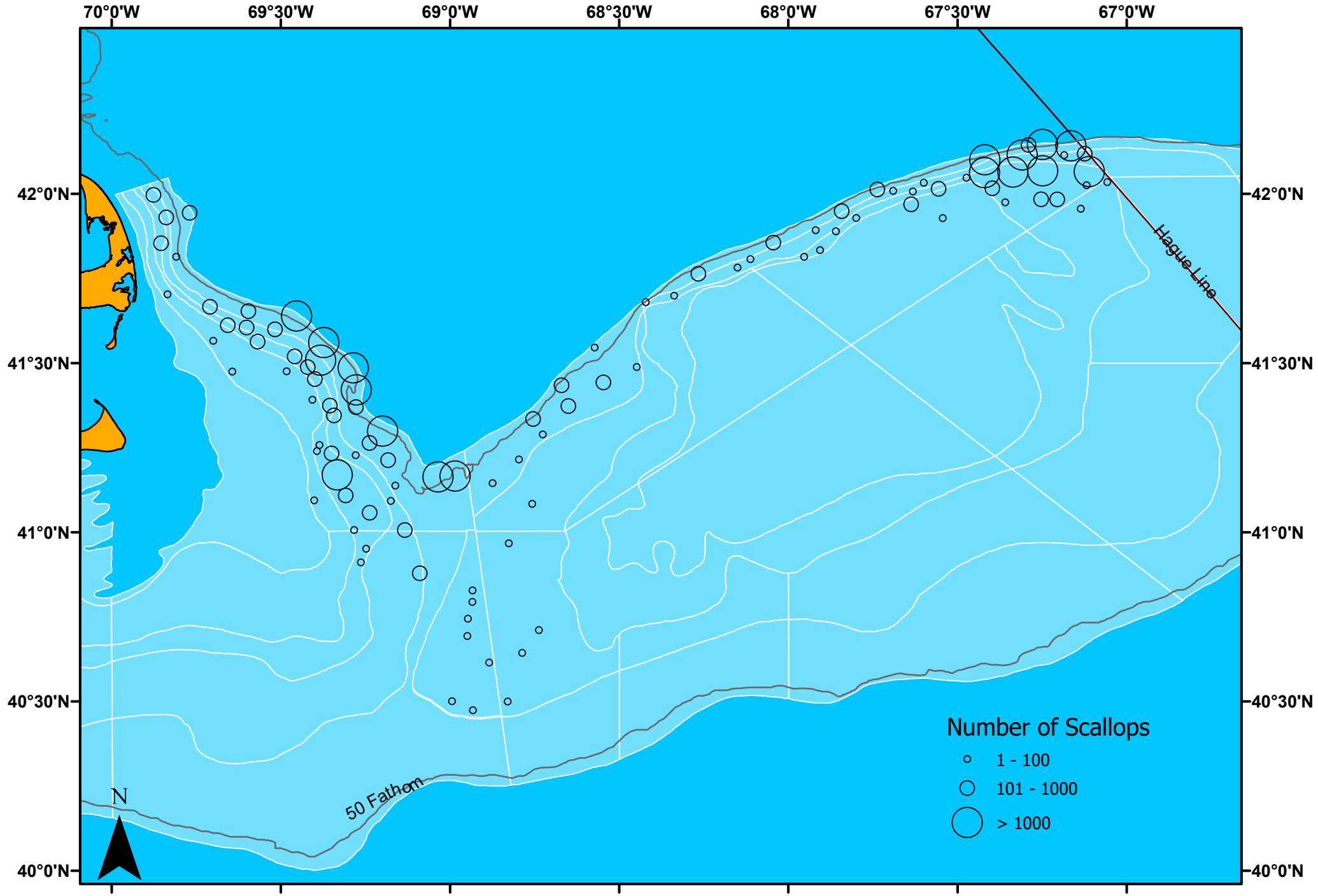

Figure 4. Total number of Atlantic sea scallops per tow during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

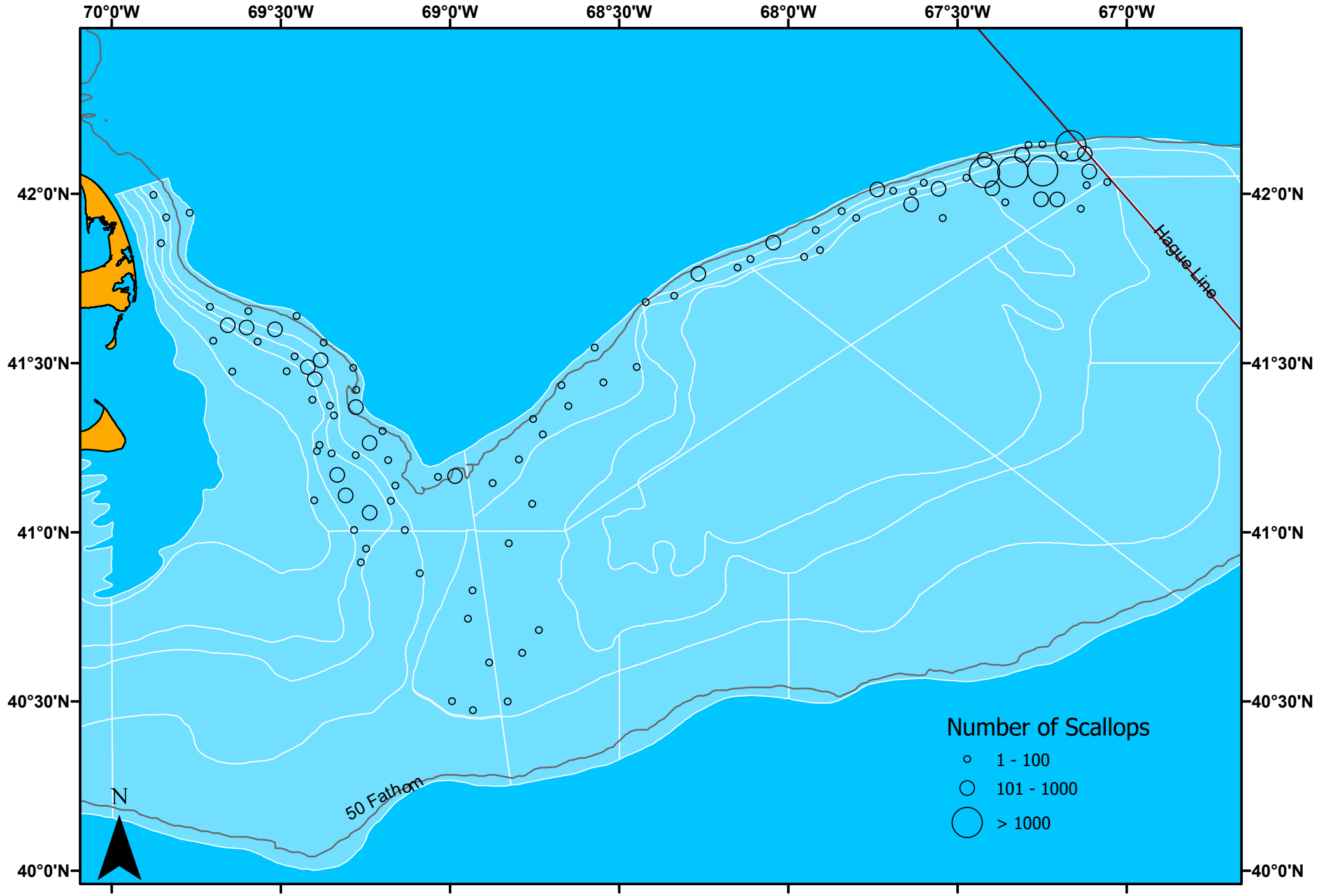

Figure 5. Total number of Atlantic sea scallops per tow that are greater than 90 mm during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

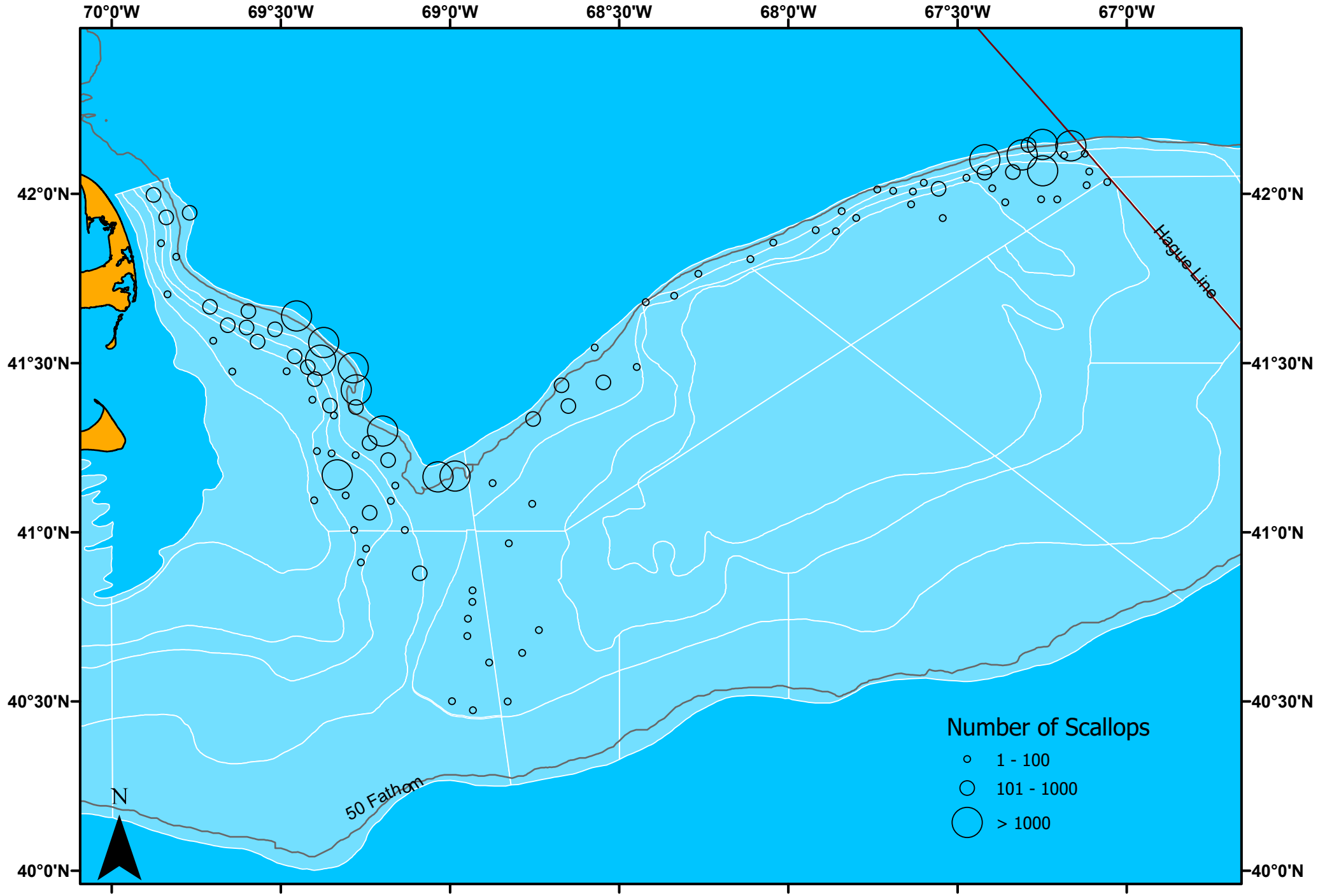

Figure 6. Total number of Atlantic sea scallops per tow that are less than 90 mm during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.

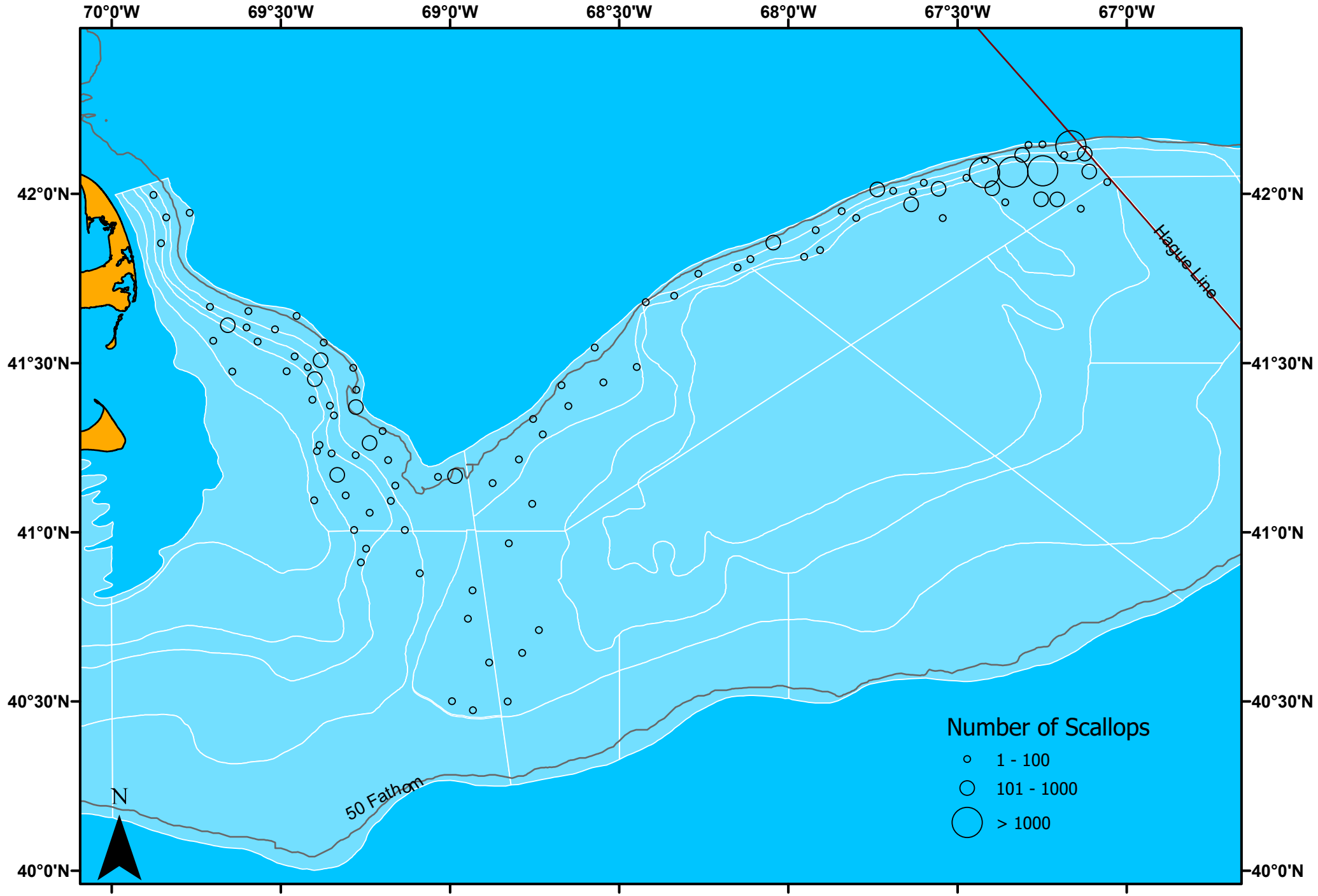

Figure 7. Total number of Atlantic sea scallops per tow that are greater than or equal to 100 mm during NOAA Fisheries Service, Northeast Fisheries Science Center's, summer sea scallop survey, 14 May - 13 June 2022.