RESOURCE SURVEY REPORT
Catch Summary
NOAA Fisheries Service
Northeast Fisheries Science Center
Sea Scallop Survey
Mid-Atlantic Bight -Georges Bank
30 June – 25 July 2014

Submitted to: NOAA, NEFSC

For further information, contact Robert Johnston (508-495-2061), NOAA Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543.

Date: 2014

Resource Survey Report

Sea Scallop Survey

Cape Hatteras – Georges Bank

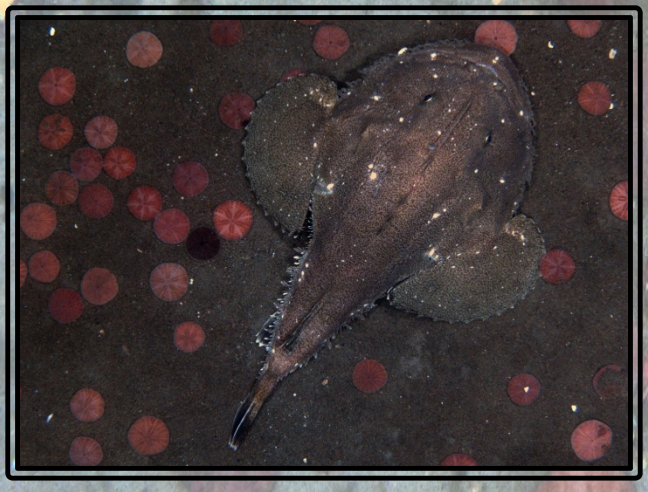
30 June – 25 July 2014

UNOLS R/V *Hugh R. Sharp*

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

A catch of sea scallops (*Placopecten magellanicus)* caught in the Great South Channel

Sea scallops (*Placopecten magellanicus*) swimming as HabCam V4 passes above



A goosefish (*Lophius americanus)* resting on the sea floor

View of an opened, female sea scallop (*Placopecten magellanicus*)

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The following charts and station data indicate the distribution of sea scallops during the 2014 sea scallop survey conducted aboard the UNOLS R/V *Hugh R. Sharp*. Additionally, there is an appendix that describes a concurrent sampling system deployed during the scallop cruise where the NEFSC, in collaboration with the Woods Hole Oceanographic Institute (WHOI), deployed a fiber optic towed vehicle fitted with stereo cameras in proximity to standard dredge hauls for the entire survey area (Appendix 1). 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 case hardened sweep chain 69 links long, 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, scallop catch is reported in numbers, by-catch is recorded in liters, depth in fathoms, and bottom temperature in degrees Fahrenheit. Bottom temperature is included at selected stations because it is an environmental factor which influences sea scallop growth rates and spawning time. Catches are reported in three categories of shell height: less than or equal to 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 by-catch is also given.

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

For further information, contact Robert Johnston (508-495-2061), 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 at:

http://www.nefsc.noaa.gov/femad/ecosurvey/mainpage/

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- Sea Scallop Survey
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Appendix 1

National Marine Fisheries Service's Northeast Fisheries Science Center collaborated with the Woods Hole Oceanographic Institute (WHOI) to integrate a stereo-optic towed vehicle, 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 legs of the survey, NOAA HabCam V4 was deployed concurrently throughout the scallop strata. Usually, dredge tows would 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. The HabCam imaged along a cruise track of approximately 540 km in the Mid-Atlantic Bight (MAB) and about 1,242 km on Georges Bank, including the Great South Channel. The total production of paired images equals approximately 3.3 million image pairs; 1 million image pairs were collected in the MAB, while 2.3 million image pairs were collected on Georges Bank.

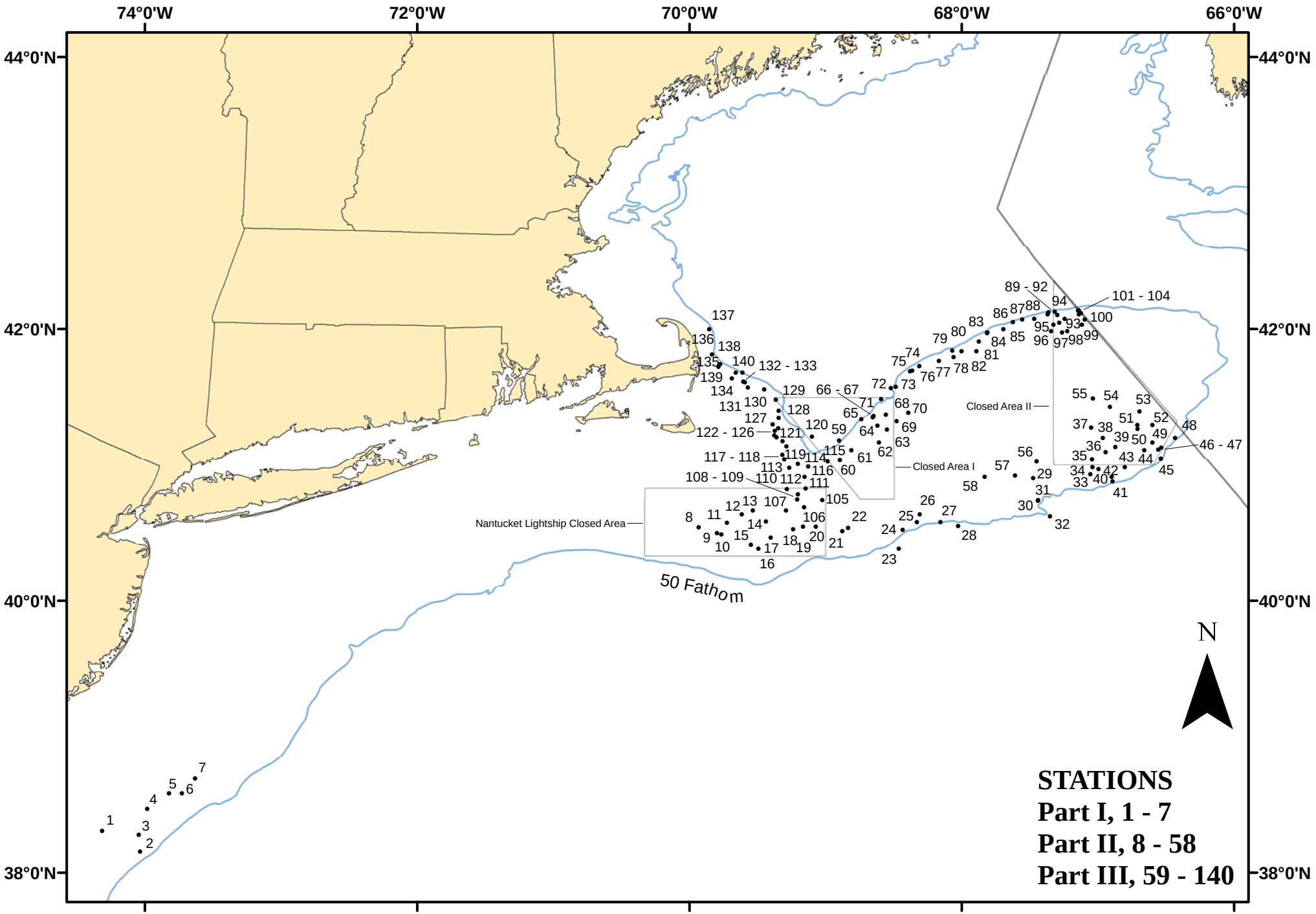

Figure 1. Dredge tows made from UNOLS R/V *Hugh R. Sharp*, during NOAA Fisheries Service, Northeast Fisheries Science Center's Sea Scallop Survey, 30 June - 25 July 2014.

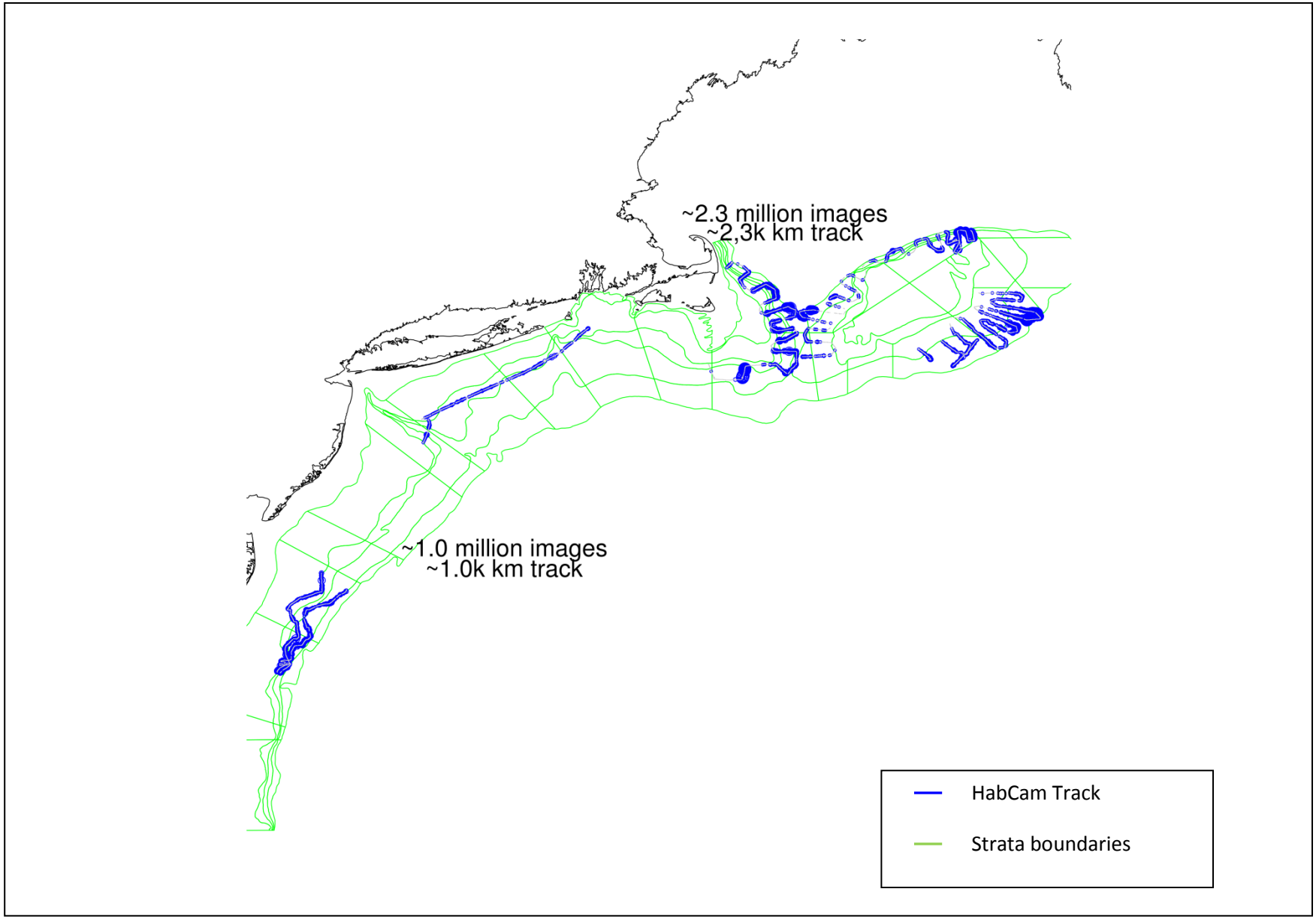

Figure 2: NOAA HabCam track from Mid-Atlantic Bight to Georges Bank, conducted by UNOLS R/V *Hugh R.Sharp* during NOAA Fisheries Service, Northeast Fisheries Science Center's Sea Scallop Survey,30 June – 25 July 2014.

Hugh R. Sharp 2014 SEA SCALLOP SURVEY
30 June – 25 July 2014

Station Data								Number of Scallops				By-Catch			
	Position		Loran TD's				Bottom								
Station	Lat.	Long.			heading	Depth (FM)	Temp (F)	Total No.	<90mm >40ct	>90mm <40ct	>100mm <30ct	Shell	Stone (Percentage)	Inverts	Total Vol.(lt)
0001	3818.5	7418.8	X26840.5	Y42348.6	239	26.8		387	379	8	3	50	25	25	184
0002	3809.2	7402.1	X26737.4	Y42266.9	11	40.5		105	101	4	0	1	98	1	644
0003	3816.8	7402.7	X26750.0	Y42345.9	337	37.2		7	0	7	7	2	60	38	475
0004	3828.2	7358.9	X26743.4	Y42468.7	9	29.0		696	359	337	278	5	20	75	828
0005	3835.0	7349.4	X26697.5	Y42546.5	218	34.4		1035	113	922	901	25	5	70	46
0006	3835.1	7343.6	X26663.9	Y42551.3	5	33.4		2649	82	2567	2165	10	30	60	46
0007	3841.4	7337.9	X26637.3	Y42619.3	1	35.5		0	0	0	0	0	0	0	0
0008	4032.5	6955.9	W14103.5	Y43507.4	305	35.5		4	4	0	0	95	0	5	2
0009	4029.9	6947.8	W14069.9	Y43483.2	2	38.8		4775	4775	0	0	99	0	1	5
0010	4029.2	6945.9	W14062.5	Y43477.0	27	38.8		1771	1760	11	11	0	0	0	0
0011	4034.4	6943.4	W14031.3	Y43510.0	45	35.0		137	107	30	30	10	10	80	42
0012	4038.2	6936.9	W13984.0	Y43529.9	22	30.1		2	2	0	0	5	5	90	276
0013	4039.9	6932.1	W13952.9	Y43537.1	25	26.2		0	0	0	0	5	5	90	1932
0014	4035.1	6926.3	W13940.7	Y43501.0	3	29.0		8	0	8	7	5	5	90	276
0015	4024.8	6932.9	W14010.8	Y43437.8	45	35.5		99	47	52	43	25	5	70	92
0016	4022.9	6929.6	W14000.6	Y43422.9	354	38.3		175	166	9	9	25	10	65	92
0017	4027.8	6924.1	W13955.7	Y43451.5	30	36.6		233	147	86	78	60	0	40	138
0018	4031.7	6914.2	W13892.0	Y43469.8	18	38.3		325	216	108	64	0	0	100	368
0019	4032.5	6909.9	W13867.7	Y43471.8	23	38.8		9	8	1	0	5	0	95	23
0020	4032.6	6904.3	W13839.6	Y43468.4	24	42.1		503	118	385	178	5	0	95	598
0021	4030.6	6852.6	W13790.0	Y43447.6	18	40.5		1900	1778	122	47	80	0	20	138
0022	4032.2	6850.0	W13771.4	Y43455.8	15	38.3		44	3	41	34	10	0	90	460
0023	4023.0	6827.7	W13700.8	Y43384.8	17	56.3		0	0	0	0	10	5	85	184
0024	4031.2	6826.0	W13661.8	Y43433.9	15	49.8		2022	1964	58	12	10	5	85	138
0025	4034.6	6819.7	W13619.5	Y43450.4	21	49.8		132	128	4	1	10	5	85	92
0026	4038.0	6818.5	W13600.5	Y43469.9	31	43.7		28298	28289	9	9	5	0	95	46
0027	4034.6	6809.3	W13572.1	Y43443.8	351	51.9		129	126	3	0	5	0	95	368
0028	4032.9	6801.6	W13544.3	Y43429.0	9	54.1		0	0	0	0	10	80	10	1
0029	4054.2	6728.5	W13312.5	Y43529.0	60	42.1		79	20	59	51	30	0	70	138
0030	4044.0	6726.4	W13346.9	Y43471.1	31	49.8		0	0	0	0	0	0	0	0
0031	4044.5	6726.4	W13344.8	Y43473.9	22	49.8		6819	6769	50	34	70	0	30	230
0032	4037.3	6721.1	W13352.6	Y43430.7	192	53.6		149	149	0	0	97	0	3	1518
0033	4055.7	6703.3	W13202.3	Y43520.4	18	45.4		311	86	225	80	50	0	50	92
0034	4059.0	6702.3	W13183.9	Y43537.4	6	41.6		170	11	159	98	25	0	75	92
0035	4102.5	6702.5	W13169.3	Y43556.1	15	66.7		140	6	134	94	25	0	75	46
0036	4105.7	6656.6	W13131.6	Y43568.9	25	38.8		100	6	94	69	25	0	75	92
0037	4116.4	6702.9	W13108.1	Y43629.4	23	36.1		4	0	4	3	20	0	80	46
0038	4111.9	6657.8	W13108.4	Y43602.2	166	38.3		53	3	50	46	25	0	75	92
0039	4108.0	6652.3	W13104.3	Y43577.9	190	39.4		121	9	112	72	40	0	60	46
0040	4058.0	6659.7	W13177.9	Y43530.3	189	43.2		555	129	426	117	25	0	75	46

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	Position		Loran				Bottom								
Station	Lat.	Long.	TD's		heading	Depth (FM)	Temp (F)	Total No.	<90mm >40ct	>90mm <40ct	>100mm <30ct	Shell	Stone	Inverts	Total Vol.(lt)
												(Percentage)			
0041	4052.6	6653.6	W13177.3	Y43497.8	20	50.3		0	0	0	0	0	0	0	0
0042	4054.6	6653.9	W13169.8	Y43508.6	346	49.2		3046	2413	633	312	95	0	5	690
0043	4058.9	6648.1	W13128.4	Y43527.6	17	41.0		433	158	275	49	70	0	30	46
0044	4106.3	6639.5	W13062.6	Y43560.5	8	44.8		0	0	0	0	0	0	0	0
0045	4102.8	6632.2	W13050.7	Y43537.8	181	51.4		6263	6263	0	0	80	5	15	230
0046	4106.6	6633.3	W13037.8	Y43557.9	64	51.9		0	0	0	0	0	0	0	0
0047	4107.4	6632.0	W13029.4	Y43561.2	225	51.9		9832	9663	169	154	60	0	40	10
0048	4111.7	6626.0	W12987.8	Y43579.0	214	49.2		2382	2382	0	0	95	0	5	46
0049	4109.7	6635.9	W13033.7	Y43575.5	269	48.1		1321	1080	241	129	25	0	75	36
0050	4115.7	6642.5	W13031.4	Y43610.7	291	41.0		0	0	0	0	0	0	100	1
0051	4117.5	6642.6	W13023.5	Y43619.9	94	42.1		157	6	151	105	25	5	70	138
0052	4117.6	6635.9	W12997.7	Y43615.6	301	47.0		1413	246	1167	222	50	0	50	46
0053	4123.6	6641.6	W12991.4	Y43650.1	322	45.9		86	7	79	62	50	0	50	138
0054	4125.6	6654.7	W13032.7	Y43670.4	344	37.7		7	0	7	7	50	0	50	92
0055	4129.2	6702.2	W13045.3	Y43694.9	152	35.5		0	0	0	0	5	0	95	1100
0056	4101.6	6727.0	W13274.0	Y43568.5	321	36.1		11	0	11	11	5	0	95	1120
0057	4055.4	6736.4	W13341.0	Y43541.1	314	38.3		100	7	93	81	20	0	80	92
0058	4054.8	6749.9	W13402.3	Y43547.5	303	33.4		5	1	4	4	2	0	98	552
0059	4110.8	6854.0	W13635.1	Y43695.2	360	55.8		209	132	77	70	2	0	98	1058
0060	4102.1	6853.7	W13670.6	Y43642.7	352	37.7		6	0	6	6	50	10	40	184
0061	4106.5	6848.6	W13626.7	Y43664.3	355	38.8		43	8	35	25	10	70	20	92
0062	4110.0	6836.5	W13552.3	Y43673.6	350	27.9		0	0	0	0	0	0	0	0
0063	4115.5	6833.0	W13511.0	Y43702.2	344	34.4		0	0	0	0	10	5	85	1104
0064	4117.2	6837.1	W13523.4	Y43716.0	41	38.3		27	4	23	19	15	5	80	46
0065	4120.2	6844.2	W13544.9	Y43740.5	12	53.6		798	748	50	50	20	20	60	103
0066	4120.9	6839.2	W13517.1	Y43739.4	9	47.0		0	0	0	0	0	0	0	0
0067	4121.4	6838.7	W13512.3	Y43741.8	347	48.1		267	141	126	103	60	10	30	56
0068	4122.1	6833.5	W13483.7	Y43740.5	350	42.7		45	7	38	32	65	10	25	12
0069	4119.2	6828.7	W13473.7	Y43719.2	354	35.0		30	1	29	29	50	5	45	265
0070	4123.0	6823.6	W13431.9	Y43735.7	8	33.9		2	1	1	1	1	0	99	1886
0071	4129.1	6835.5	W13461.3	Y43782.3	328	53.6		67	19	48	45	40	0	60	184
0072	4133.9	6831.3	W13418.2	Y43804.8	356	60.1		12	2	10	10	10	10	80	966
0073	4134.4	6829.0	W13404.6	Y43805.1	6	50.3		95	5	90	84	2	0	98	690
0074	4141.5	6821.8	W13335.6	Y43836.3	255	32.8		0	0	0	0	0	0	0	0
0075	4141.4	6822.8	W13340.9	Y43836.9	244	33.9		0	0	0	0	0	0	0	0
0076	4143.6	6818.7	W13310.5	Y43844.3	276	38.8		3	0	3	3	1	0	99	92
0077	4145.7	6810.0	W13259.0	Y43846.0	304	31.2		11	0	11	9	1	0	99	1610
0078	4147.4	6803.5	W13220.2	Y43848.0	70	24.6		14	0	14	11	9	1	90	1120
0079	4150.5	6804.1	W13207.5	Y43865.0	28	43.7		1541	949	592	150	15	5	80	46
0080	4150.1	6800.1	W13191.0	Y43858.5	54	33.9		46	15	31	30	15	5	80	1120

Hugh R. Sharp 2014 SEA SCALLOP SURVEY
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Station Data								Number of Scallops				By-Catch			
	Position		Loran			Depth	Bottom Temp	Total	<90mm >40ct	>90mm <40ct	>100mm <30ct	Shell	Stone	Inverts	Total
Station	Lat.	Long.	TD's		heading	(FM)	(F)	No.				(Percentage)			Vol.(lt)
0081	4150.2	6753.5	W13160.4	Y43851.9	42			0	0	0	0	40	0	60	46
0082	4154.5	6752.5	W13134.1	Y43873.1	38	33.9		0	0	0	0	0	0	0	0
0083	4158.1	6748.8	W13098.9	Y43887.6	354	44.3		0	0	0	0	0	0	0	0
0084	4158.3	6748.6	W13097.0	Y43888.4	283	44.8		264	53	211	52	40	10	50	138
0085	4159.7	6741.5	W13058.2	Y43887.7	285	30.1		32	10	22	22	50	0	50	184
0086	4202.9	6737.4	W13023.6	Y43899.4	204	53.0		95	7	88	60	25	10	65	460
0087	4204.0	6733.4	W13000.5	Y43900.5	235	51.9		358	109	249	96	5	0	95	414
0088	4204.4	6728.0	W12975.3	Y43896.7	210	37.7		0	0	0	0	0	0	0	0
0089	4206.4	6722.1	W12939.9	Y43900.2	200	41.6		451	307	144	56	90	5	5	46
0090	4207.3	6721.8	W12933.8	Y43904.3	120	52.5		536	398	138	80	98	0	2	138
0091	4207.5	6719.0	W12921.1	Y43902.3	300	48.1		301	23	278	270	30	0	70	184
0092	4206.0	6717.9	W12924.5	Y43893.9	318	29.0		662	14	648	643	60	20	20	138
0093	4204.3	6714.7	W12920.3	Y43882.2	325	26.2		890	94	796	668	60	20	20	414
0094	4202.5	6717.0	W12939.2	Y43875.8	350	24.6		734	274	460	326	60	20	20	828
0095	4201.7	6719.6	W12954.1	Y43874.5	2	28.4		1023	57	966	927	70	20	10	184
0096	4159.0	6720.6	W12972.3	Y43862.2	142	29.0		242	90	152	91	25	50	25	1120
0097	4158.3	6715.8	W12956.0	Y43853.9	123	29.5		41	1	40	39	65	25	10	115
0098	4158.9	6713.5	W12943.5	Y43854.5	142	30.1		103	51	52	30	50	25	25	368
0099	4201.7	6707.0	W12902.6	Y43861.7	211	25.2		2	0	0	0	25	50	25	276
0100	4204.1	6705.7	W12884.8	Y43872.0	215	30.6		2181	146	2035	1844	50	30	20	1012
0101	4206.3	6708.3	W12883.7	Y43885.3	283	31.2		1558	275	1283	1231	15	60	25	506
0102	4208.0	6708.7	W12876.4	Y43894.0	302	39.4		946	721	225	220	20	50	30	230
0103	4207.9	6708.4	W12875.7	Y43893.2	316	36.6		1047	370	677	648	35	30	35	345
0104	4206.9	6707.5	W12877.4	Y43887.4	358	32.8		1857	94	1763	1726	65	30	5	617
0105	4044.4	6901.4	W13780.4	Y43540.6	236	36.1		158	23	135	118	2	0	98	345
0106	4041.2	6909.4	W13832.6	Y43526.9	225	36.6		397	41	356	322	2	10	88	414
0107	4039.7	6917.4	W13878.5	Y43523.7	20	26.8		9	3	6	6	0	0	100	35
0108	4044.6	6912.4	W13834.6	Y43550.9	51	35.0		221	60	161	111	10	50	40	276
0109	4046.9	6912.2	W13824.7	Y43565.3	37	35.5		561	209	352	190	50	30	20	184
0110	4049.3	6917.1	W13840.3	Y43584.7	56	32.3		1138	926	212	179	25	50	25	552
0111	4049.6	6908.8	W13797.0	Y43579.4	26	38.8		1213	942	271	123	25	35	40	161
0112	4054.6	6909.2	W13779.2	Y43610.9	205	36.6		2200	1929	271	149	40	50	10	230
0113	4058.8	6916.0	W13797.0	Y43643.4	244	33.4		0	0	0	0	0	0	0	0
0114	4059.2	6907.6	W13752.5	Y43638.0	188	39.4		925	586	339	167	25	60	15	414
0115	4101.6	6859.1	W13699.7	Y43644.7	312	42.7		445	264	181	98	35	45	20	276
0116	4100.4	6912.2	W13771.0	Y43649.7	354	33.4		26	6	20	16	85	10	5	46
0117	4102.5	6918.1	W13792.9	Y43668.5	9	29.0		1838	1616	222	145	40	30	30	828
0118	4104.5	6919.0	W13789.3	Y43681.8	20	27.9		327	111	216	169	55	30	15	368
0119	4108.1	6917.2	W13765.1	Y43702.2	203	29.0		702	587	115	80	70	20	10	736
0120	4112.3	6905.9	W13689.0	Y43716.2	191	72.2		35	18	17	16	80	0	20	23

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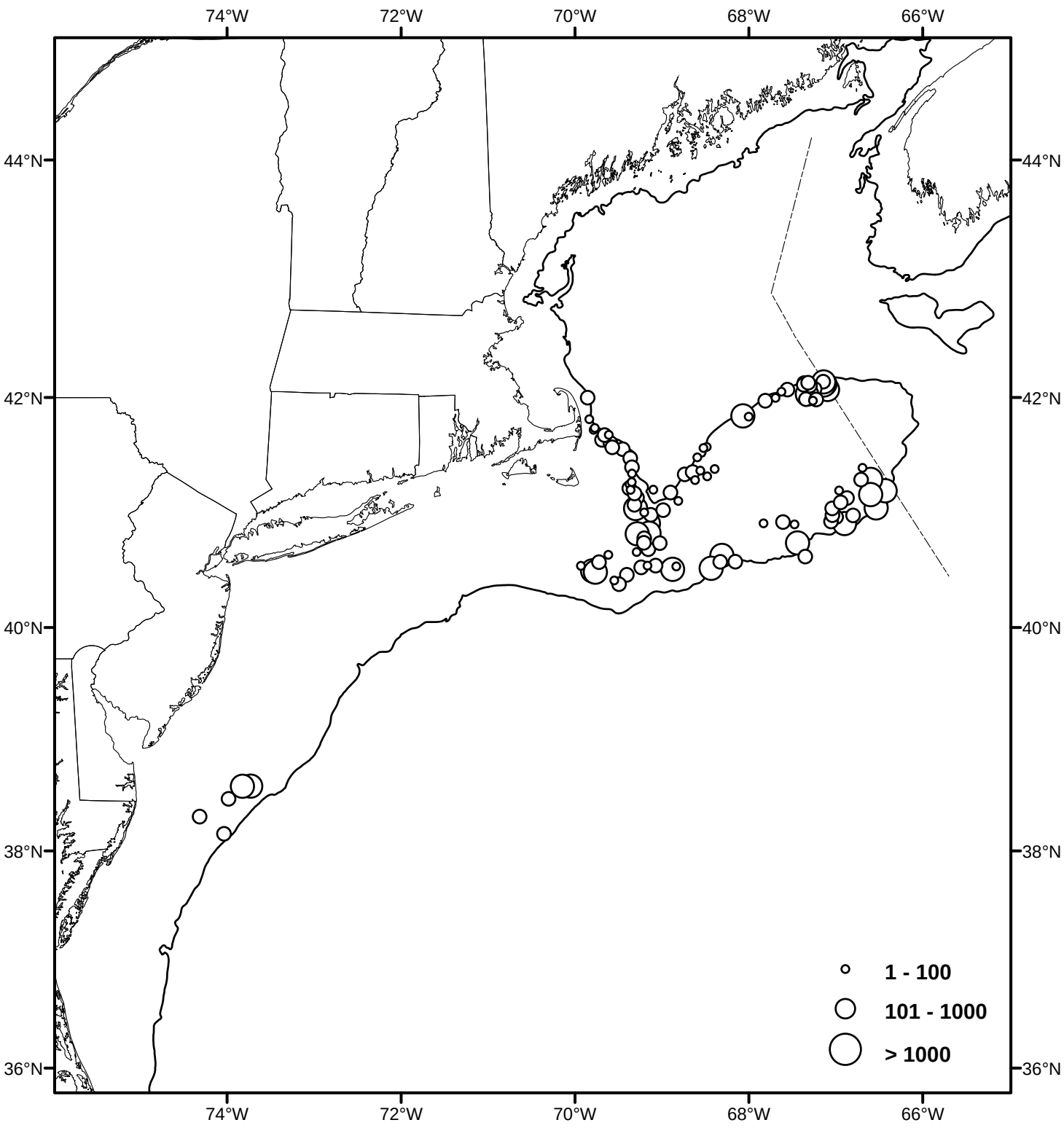
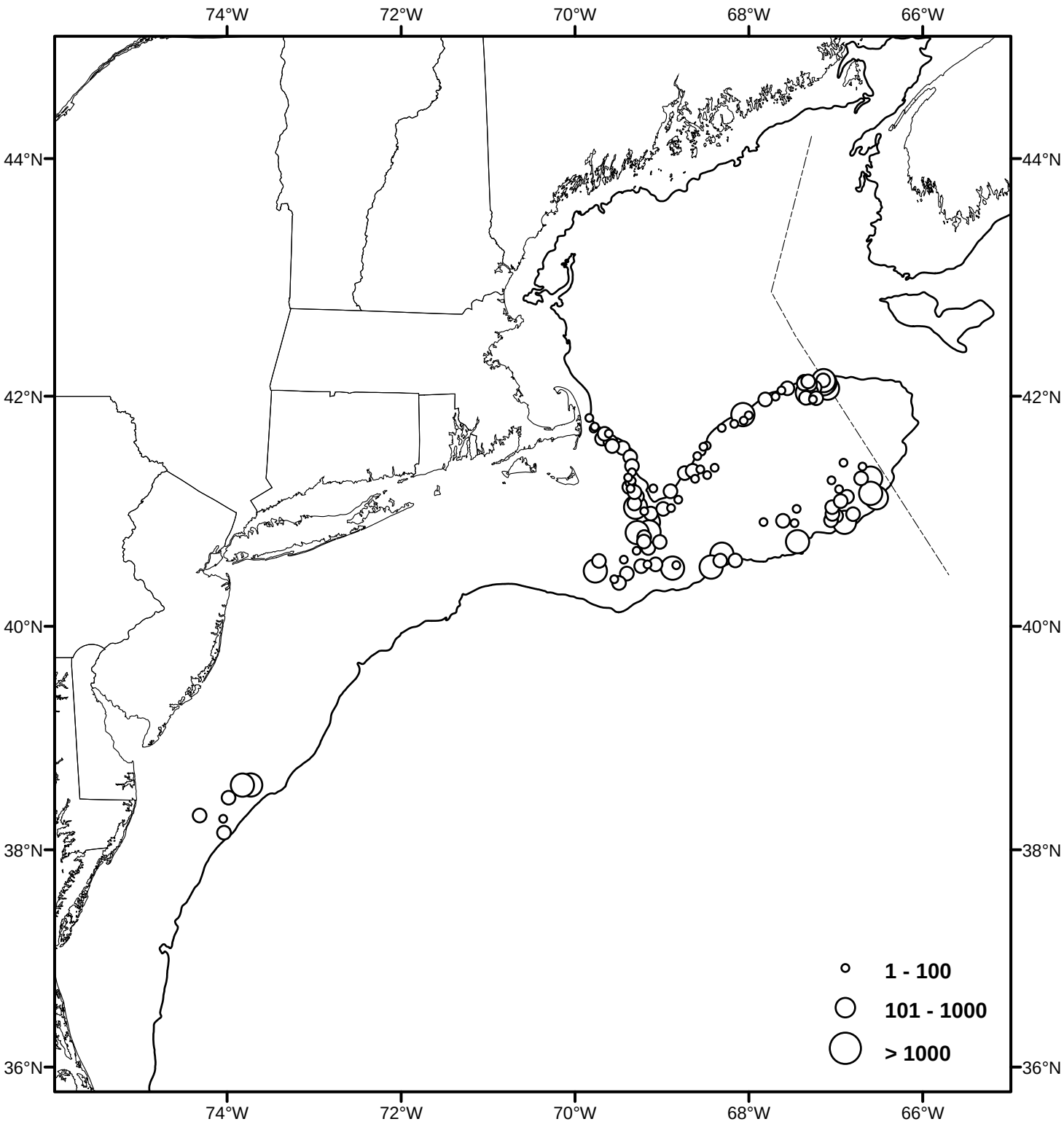
Station Data								Number of Scallops				By-Catch			
Station	Position Lat.	Position Long.	Loran TD's		heading	Depth (FM)	Bottom Temp (F)	Total No.	<90mm >40ct	>90mm <40ct	>100mm <30ct	Shell (Percentage)	Stone (Percentage)	Inverts (Percentage)	Total Vol.(lt)
0121	4110.4	6918.9	W13764.3	Y43718.1	3	27.9		145	89	56	37	30	55	15	552
0122	4112.2	6921.6	W13770.9	Y43732.1	12	28.4		31	5	26	19	25	55	20	299
0123	4113.0	6922.5	W13772.2	Y43738.0	358	27.9		465	151	314	234	25	55	20	460
0124	4115.1	6922.3	W13762.3	Y43750.6	16	30.6		57	7	50	44	25	65	10	368
0125	4116.2	6920.8	W13749.7	Y43755.7	193	35.0		23	4	19	17	20	60	20	345
0126	4117.9	6923.3	W13755.6	Y43768.8	208	25.7		2	0	2	2	15	15	70	207
0127	4120.7	6920.6	W13729.2	Y43782.8	196	33.4		93	29	64	50	30	5	65	322
0128	4123.9	6920.6	W13715.2	Y43802.0	174	35.0		107	13	94	86	20	10	70	368
0129	4128.6	6921.8	W13700.7	Y43831.6	205	42.7		192	54	138	126	60	20	20	276
0130	4133.3	6927.0	W13707.5	Y43865.9	327	37.7		330	209	121	115	50	40	10	460
0131	4134.2	6934.3	W13743.1	Y43880.4	318	30.1		232	62	170	152	10	50	40	644
0132	4136.8	6936.3	W13742.3	Y43898.5	165	36.1		0	0	0	0	0	0	0	0
0133	4136.5	6935.5	W13739.3	Y43895.7	191	36.6		424	86	338	252	15	25	60	414
0134	4138.1	6941.3	W13764.1	Y43912.8	185	31.2		667	407	260	144	20	70	10	552
0135	4143.3	6947.1	W13772.8	Y43951.6	184	35.0		57	20	37	35	15	75	10	378
0136	4148.8	6950.0	W13763.7	Y43988.2	343	43.7		7	2	5	5	0	0	0	0
0137	4159.8	6951.2	W13718.2	Y44053.9	328	47.0		138	138	0	0	30	50	20	667
0138	4144.3	6946.3	W13763.7	Y43956.4	160	44.8		22	3	19	19	25	55	20	230
0139	4140.6	6939.5	W13742.7	Y43925.3	187	47.0		103	50	53	39	50	35	15	69
0140	4140.7	6936.6	W13726.2	Y43922.0	193	56.3		26	2	24	22	60	20	20	69
Total								108857	83864	24368	18122				

NEFSC SEA SCALLOP SURVEY 2014
NOAA Fisheries Service
SEA SCALLOPS - Number/Tow
Less Than 90 mm



NEFSC SEA SCALLOP SURVEY 2014
NOAA Fisheries Service
SEA SCALLOPS - Number/Tow
Greater Than or Equal to 90 mm



NEFSC SEA SCALLOP SURVEY 2014
NOAA Fisheries Service
SEA SCALLOPS - Number/Tow
Total Number