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# Results for the 2015 VIMS/Industry Cooperative Survey of the Mid-Atlantic Sea Scallop Resource Area

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Submitted to:  
Sea Scallop Fishing Industry

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The Virginia Institute of Marine Science (VIMS) conducted a high resolution sea scallop dredge survey of the entire Mid-Atlantic sea scallop resource area including the rotational access areas during May-June of 2015. This survey was funded by the Sea Scallop Research Set-Aside Program (RSA). Exploitable biomass for the Mid-Atlantic resource is shown in Table 1 by spatially structured projection model (Scallop Area management Simulator (SAMS)) region (Figure 1). SAMS regions take into account differences in recruitment, vital rates, and fishing effort. At the time of the survey, exploitable biomass was 5,187 mt or 11.4 million pounds for the Delmarva (DMV) SAMS region, 14,338 mt or 31.6 million pounds for the Elephant Truck (ET) SAMS region and 6,566 mt or 14.5 million pounds in Long Island (LI) SAMS region.

The survey was conducted aboard three commercial vessels: *F/V Celtic*, *F/V Carolina Capes 2*, and *F/V K.A.T.E. II*. Each vessel completed one survey leg and approximately 200 stations throughout the entire survey area. The survey design was modified from previous VIMS surveys and a stratified random survey design was used in place of the systematic design used in the past. The three vessels towed a NMFS 8 foot survey dredge along with a 14 foot Coonamessett Farm Turtle Deflector Dredge (CFTDD) equipped with a 10 inch diamond mesh twine top with a 1.76 hanging ratio (60 meshes, 34 rings) and 8.5 meshes on the side. While the comparison of catches between the two dredges is informative on a relative basis, for the purposes of this report, we present only the catch data from the CFTDD during a 15 minute survey tow at 3.8 kts with a 3:1 scope in Table 2. This information is more applicable to what the industry would be expected to encounter.

Catch data in tabular form is shown in Table 2. The density and number of scallops caught in three size classes (0-30mm, 31-75mm, and >75mm) in each tow is shown in Figures 2-7. In Figure 8, the shell height frequency distribution from the catches by the survey dredge and CFTDD is shown for the different SAMS regions. All SAMS regions show evidence of a strong, broadly distributed recruiting class of two year old animals around 50mm. While there is evidence of strong recruitment, the industry may not see these scallops for two years (2017).

In addition to data on scallop abundance and biomass, we conducted a survey of meat quality. This included documenting the presence and intensity of a parasitic nematode observed in the scallop meat. Infected scallops have rust colored lesions on the meats. The typical number of nematodes observed per scallop meat ranged from 1-5 and nematodes were usually present on the exterior of the adductor muscle, typically opposite the sweet meat. The prevalence (% of sampled scallops sampled at a given station) of nematodes observed in the survey is shown in Figure 9. Intensity appears to increase as a function of decreasing latitude. VIMS will continue to investigate the nematode infection. This includes identifying the parasite, trying to understand the biology of the parasite and how it affects scallops, and the impact to the fishery.

Table 1. Exploitable biomass for scallops captured in the commercial and survey dredges during the VIMS/Industry cooperative survey by SAMS region during May-June 2015.

SAMS Region	Gear	Domain	Biomass (mt)	95% CI Lower Bound	95% CI Upper Bound
DMV	SURVEY	6,315	5,187.70	4,360.88	6,014.53
DMV	COMM	6,315	5,882.67	4,782.94	6,982.40
ET	SURVEY	6,035	14,338.16	12,912.91	15,763.41
ET	COMM	6,035	22,999.86	19,285.83	26,713.90
HC	SURVEY	8,336	7,149.00	6,445.42	7,852.58
HC	COMM	8,336	7,862.92	6,664.10	9,061.74
HCsr	SURVEY	4,001	1,482.94	1,331.88	1,633.99
HCsr	COMM	4,001	1,404.36	1,189.52	1,619.20
LI	SURVEY	14,047	6,565.90	6,218.32	6,913.47
LI	COMM	14,047	6,096.01	5,670.19	6,521.82

Table 2. Catch data for CFTDD from the VIMS/Industry cooperative survey completed during May-June 2015.

StationID	Latitude (degrees)	Latitude (minutes)	Longitude (degrees)	Longitude (minutes)	Scallops (baskets)	Scallop (number)	Scallop (lbs.)
201501001	36	35.995	74	47.707	0	0	0
201501002	36	34.74	74	47.688	0.1	1	0.01
201501003	36	42.932	74	46.561	0.1	1	0.02
201501004	36	53.595	74	50.274	0	0	0
201501005	37	2.274	74	49.219	0.1	2	0.01
201501006	37	4.911	74	47.328	0	0	0
201501007	37	16.472	74	41.632	0	0	0
201501008	37	18.559	74	48.131	0.01	1	0.01
201501009	37	21.144	74	42.172	2	212	15.83
201501010	37	28.566	74	39.095	1.25	292	9.79
201501011	37	28.94	74	40.528	0.01	3	0.22
201501012	37	29.999	74	44.472	0	0	0
201501013	37	39.572	74	40.379	0.15	22	2.07
201501014	37	40.01	74	37.022	5.25	651	43.17
201501015	37	39.782	74	34.304	4.75	608	40.69
201501016	37	45.419	74	30.086	6.1	725.9	51.94
201501017	37	48.128	74	33.007	1.33	121.03	9.54
201501018	37	49.349	74	34.439	0.2	13	1.18
201501019	37	52.545	74	38.599	0	0	0
201501020	37	51.947	74	26.334	0.2	34	2.4
201501021	37	55.382	74	12.044	0	0	0
201501022	38	2.747	74	6.865	0	0	0
201501023	38	5.7	74	15.844	2.5	290	22.3
201501024	38	7.752	74	12.195	2	258	17.59
201501025	38	5.776	74	6.984	0.75	134	6.7
201501026	38	9.289	74	7.658	7	1053.5	57.32
201501027	38	11.048	73	57.181	0.01	5	0.26
201501028	38	14.233	74	0.927	0.2	11	0.61
201501029	38	17.031	74	7.328	32	3856	240.41
201501030	38	18.962	74	1.548	0.33	31	1.81
201501031	38	21.292	73	58.627	5	565	31.39
201501032	38	22.91	73	44.83	0	0	0
201501033	38	25.283	73	47.229	0.07	5	0.24
201501034	38	28.43	73	47.964	0.04	7	0.35
201501035	38	28.974	73	51.987	23	3059	163.89
201501036	38	33.234	73	49.636	21	2257.5	149.19
201501037	38	30.675	73	44.636	28	4130	221.09
201501038	38	28.682	73	41.846	0.5	52	2.43

201501039	38	29.522	73	40.365	0.01	7	0.36
201501040	38	35.397	73	34.086	0.1	25	1.16
201501041	38	36.855	73	23.203	0.01	4	0.07
201501042	38	38.49	73	34.674	19	2419.33	138.29
201501043	38	39.268	73	34.206	21.5	2637.33	143.42
201501044	38	40.256	73	35.637	17	2074	116.87
201501045	38	42.336	73	32.741	6	594	34.09
201501046	38	42.972	73	31.689	3.5	385	21.86
201501047	38	40.838	73	43.454	24.5	2854.25	160.45
201501048	38	41.617	73	45.196	14.5	1740	98.74
201501049	38	42.033	73	44.602	19	2707.5	132.73
201501050	38	41.941	73	44.445	16.5	2590.5	123.65
201501051	38	41.674	73	46.028	11.5	2110.25	91.11
201501052	38	43.064	73	47.371	9	1296	78.19
201501053	38	44.543	73	47.713	6	1716	49.44
201501054	38	47.3	73	45.654	1	121	6.63
201501055	38	49.291	73	44.844	5.5	646.25	42.2
201501056	38	50.146	73	43.249	10.75	2515.5	98.47
201501057	38	48.655	73	42.079	8.5	1113.5	70.16
201501058	38	47.943	73	42.297	1.5	159	10.13
201501059	38	49.363	73	41.067	4.5	569.25	35.66
201501060	38	52.381	73	39.359	4.75	548.62	43.19
201501061	38	54.112	73	31.992	4.2	493.5	36.75
201501062	38	48.39	73	32.158	4	506	29.55
201501063	38	49.12	73	28.056	6.5	1118	52.5
201501064	38	47.904	73	17.823	0.08	7	0.38
201501065	38	53.173	73	3.639	0	0	0
201501066	38	57.315	73	11.302	2	195	13.09
201501067	38	55.435	73	14.012	0.2	31	1.9
201501068	38	56.098	73	19.223	6.5	871	50.71
201501069	38	57.426	73	23.19	5.25	682.5	37.55
201501070	38	59.29	73	18.711	1.75	341.25	15.35
201501071	39	1.622	73	15.977	0.6	69	4.22
201501072	39	3.022	73	15.604	1	104	5.97
201501073	39	5.762	73	13.36	23	2706.33	153.74
201501074	39	5.192	73	3.175	0.66	86	4.82
201501075	39	5.444	72	55.287	0	0	0
201501076	39	13.962	72	52.7	0.01	4	0.24
201501077	39	11.935	72	58.539	0.2	36	2.03
201501078	39	9.363	73	11.569	1	114	6.79
201501079	39	11.534	73	9.657	1.2	126	7.95
201501080	39	14.443	73	7.096	1.5	168	10.89
201501081	39	15.022	73	16.381	1	105	6.62

201501082	39	25.392	73	5.981	0.5	59	4.02
201501083	39	22.935	72	59.866	2.5	285	18.41
201501084	39	24.286	72	53.44	0.8	64	3.58
201501085	39	22.908	72	45.77	0.01	3	0.16
201501086	39	29.354	72	53.299	17	1768	123.51
201501087	39	28.956	72	58.313	2	215	15.58
201501088	39	31.503	73	2.378	1.5	90	7.12
201501089	39	34.28	73	9.781	0.9	64	6.38
201501090	39	35.186	73	4.788	1	62	6.21
201501091	39	35.37	72	50.486	1.2	141.6	8.96
201501092	39	43.403	72	46.226	0.4	53	3.4
201501093	39	44.1	72	48.359	0.15	12	0.84
201501094	39	44.494	73	3.783	0.5	55	4.67
201501095	39	46.25	73	3.244	0.5	56	4.84
201501096	39	47.499	72	59.595	0.05	7	0.55
201501097	39	50.657	73	2.74	0.1	8	0.7
201501098	40	2.039	73	1.667	0.75	92	6
201501099	39	58.227	72	45.488	1.25	166.25	10.1
201501100	40	2.123	72	45.705	1.75	163	12.14
201501101	39	58.805	72	37.752	1.5	168	11.45
201501102	40	1.5	72	31.624	0.01	10	0.68
201501103	39	56.615	72	23.675	0.5	29	2.03
201501104	39	57.533	72	22.075	0.01	8	0.49
201501105	40	4.376	72	4.684	0.1	18	1.09
201501106	40	7.151	72	19.832	0.01	10	0.68
201501107	40	11.1	72	37.757	2.5	151.25	13.06
201501108	40	13.322	72	35.432	1.75	106	8.68
201501109	40	10.791	72	30.354	0.33	39	3.26
201501110	40	13.439	72	27.506	1.15	84	6.83
201501111	40	14.073	72	13.55	0.9	87	7.22
201501112	40	14.068	72	4.476	1.33	127.68	9.16
201501113	40	14.044	71	54.295	0.01	4	0.3
201501114	40	17.386	71	50.727	0	0	0
201501115	40	23.595	72	9.109	0.25	27	2.19
201501116	40	29.42	72	7.544	0.4	25	2.32
201501117	40	30.805	72	12.698	2.5	196.25	17.43
201501118	40	29.277	72	21.17	1.66	189.24	12.92
201501119	40	33.122	72	27.672	1.2	147.6	10.31
201501120	40	33.124	72	30.263	0.8	70	5.17
201501121	40	37.228	72	13.661	0.6	31	2.52
201501122	40	39.612	72	8.522	1	101	8.5
201501123	40	37.948	72	3.478	0.7	43	3.6
201501124	40	36.12	71	51.931	0	0	0



201501125	40	35.998	71	50.56	1	126	5.28
201501126	40	35.174	71	32.524	0	0	0
201501127	40	38.342	71	40.303	0	0	0
201501128	40	40.325	71	45.311	1	94	6.66
201501129	40	45.599	71	50.792	0.8	61	4.9
201501130	40	47.581	71	52.076	1	69	6.59
201501131	40	53.789	71	52.583	0.2	19	1.85
201501132	40	55.461	71	35.105	0.05	7	0.56
201501133	41	2.771	71	25.559	0.75	54	4.74
201501134	40	59.949	71	39.312	1.1	146	9.72
201501135	40	55.894	71	52.34	0	0	0
201501136	40	49.683	72	10.259	0.05	11	0.8
201501137	40	44.726	72	5.617	1.1	132	9.2
201501138	40	44.067	72	25.366	0.05	8	0.39
201501139	40	43.015	72	38.081	0	0	0
201501140	40	37.911	72	49.446	0	0	0
201501141	40	26.496	72	40.12	0.9	79	5.98
201501142	40	23.495	72	37.498	1	82	5.91
201501143	40	21.852	72	41.784	1	115	9.59
201501144	40	27.89	72	54.486	0.8	79	5.41
201501145	40	17.4	72	52.727	0.5	50	3.73
201501146	40	15.997	72	49.36	1	88	6.72
201501147	40	16.103	73	0.944	0.8	50	4.14
201501148	40	26.47	73	7.7	0.05	5	0.41
201501149	40	23.809	73	14.139	0.01	1	0.11
201501150	40	13.573	73	13.583	0.9	88	6.6
201501151	40	7.595	73	7.585	0.75	71	6.16
201501152	40	5.09	73	9.946	0.8	81	6.43
201501153	40	6.315	73	13.944	0.6	55	5.03
201501155	40	5.892	73	25.471	1.5	126	11.31
201501156	40	6.526	73	31.958	0.05	6	0.4
201501157	40	6.106	73	41.951	0	0	0
201501158	40	7.166	73	46.101	0	0	0
201501159	40	0.917	73	45.785	0	0	0
201501160	40	2.154	73	30.42	1.5	138	10.22
201501161	39	54.631	73	35.884	0.1	9	0.87
201501162	39	53.201	73	17.729	3.25	456.62	24.24
201501163	39	48.86	73	22.68	0.8	40	4.21
201501164	39	42.694	73	23.391	0.03	6	0.89
201501165	39	40.917	73	21.425	0.5	25	3.23
201501166	39	38.724	73	13.813	1	74	6.22
201501167	39	35.762	73	21.888	0.5	18	2.55
201501168	39	36.238	73	22.692	0.5	19	2.74

201501169	39	35.702	73	26.401	0.5	23	2.57
201501170	39	34.806	73	29.275	0.1	12	0.98
201501171	39	27.579	73	30.882	0.05	8	0.56
201501172	39	14.482	73	25.827	0.75	52	5.65
201501173	39	7.407	73	34.443	2.33	218	17.35
201501174	39	0.624	73	32.248	2	226	15.17
201501175	39	2.599	73	34.8	1.75	208	13.73
201501176	39	4.661	73	52.289	0.15	5	0.67
201501177	38	59.632	73	56.345	0.04	5	0.79
201501178	38	54.565	74	0.392	0.05	6	0.65
201501179	38	53.554	73	49.102	1	104	7.16
201501180	38	50.636	73	49.865	0.8	123	5.59
201501181	38	47.674	73	53.558	5	332.5	32.49
201501182	38	49.247	74	0.982	0.9	76	6.02
201501183	38	49.117	74	12.465	0.1	8	0.88
201501184	38	44.848	74	7.298	0.2	21	1.36
201501185	38	41.614	74	5.303	2	129	11.68
201501186	38	38.844	73	58.444	35	2817.5	218.61
201501187	38	32.512	74	0.207	1.75	153	10
201501188	38	29.57	74	0.403	17.75	1686.25	111.43
201501189	38	28.521	74	2.655	3.5	374.5	21.57
201501190	38	32.789	74	3.15	0.8	58	4.1
201501191	38	36.304	74	9.08	14	1129.33	87.17
201501192	38	39.37	74	12.94	0.5	59	3.67
201501193	38	34.502	74	19.654	0.01	1	0.15
201501194	38	26.548	74	19.643	0.01	3	0.39
201501195	38	23.765	74	25.606	0.5	26	3.12
201501196	38	23.965	74	17.67	2.33	262	18.39
201501197	38	25.086	74	8.658	35	3686.67	222.86
201501198	38	22.518	74	3.313	30	3270	176.85
201501199	38	21.049	74	8.885	7.5	836.25	50.82
201501200	38	22.232	74	13.093	23	2123.67	139.04
201501201	38	14.621	74	17.097	0.66	75	5.01
201501202	38	11.437	74	17.127	3	270	20.56
201501203	38	4.561	74	23.178	0	0	0
201501204	38	6.485	74	38.409	0.1	17	0.22
201501205	37	57.497	74	47.482	0	0	0
201501206	37	45.373	74	48.803	0	0	0
201502001	41	3.522	71	24.518	0.8	79	4.99
201502002	40	55.785	71	38.438	1.3	147	10.85
201502003	40	45.375	71	53.761	0.9	107	7.46
201502004	40	46.095	71	50.359	0.7	52	4.05
201502005	40	43.37	71	47.343	0.9	76	5.74

201502006	40	38.414	71	48.787	0.8	49	3.19
201502007	40	35.065	71	43.72	0.01	3	0.12
201502008	40	36.087	71	38.702	0.01	2	0.07
201502009	40	26.467	71	25.663	0.01	2	0.14
201502010	40	16.06	71	50.661	0	0	0
201502011	40	15.287	72	0.921	0.5	60	4.07
201502012	40	27.279	71	57.636	0.01	3	0.21
201502013	40	28.051	72	3.177	2.9	287.1	22.53
201502014	40	21.919	72	17.17	1	97	7.43
201502015	40	10.934	72	6.574	0.5	48	3.9
201502016	40	8.457	72	6.593	0.2	26	1.76
201502017	40	5.622	72	2.739	0.2	26	1.41
201502018	40	4.073	72	7.962	0.01	2	0.11
201502019	40	10.093	72	16.592	1	91	7.75
201502020	40	14.083	72	33.268	0.8	65	5.42
201502021	40	14.066	72	34.927	1	93	6.42
201502022	40	20.094	72	42.299	0.8	60	4.36
201502023	40	16.373	72	43.811	1.5	132	9.84
201502024	40	6.333	72	56.574	1.2	142	8.8
201502025	40	4.301	72	55.218	1.5	239	12.42
201502026	39	59.594	72	59.093	1	115	5.96
201502027	39	58.325	72	59.077	0.8	57	4.59
201502028	40	1.707	72	52.741	2	213	11.88
201502029	40	3.079	72	42.776	1	87	5.96
201502030	40	3.074	72	36.417	1	70	4.81
201502031	40	1.327	72	29.566	0.4	45	3.07
201502032	39	52.335	72	33.48	1.9	230.11	13.49
201502033	39	47.626	72	33.497	1	135	8.79
201502034	39	53.15	72	45.318	1	97	8.27
201502035	39	43.821	72	51.328	0.2	14	1.04
201502036	39	40.885	72	50.069	0.1	9	0.64
201502037	39	43.093	73	0.554	0.9	66	7.1
201502038	39	45.22	73	2.029	0.8	71	6.75
201502039	39	49.112	73	9.573	0.9	87	6.28
201502040	39	37.975	73	15.695	0.25	55	3.39
201502041	39	34.185	73	13.189	0.5	38	3.03
201502042	39	32.007	73	13.117	0.25	29	2.42
201502043	39	36.051	73	10.872	1	88	7.4
201502044	39	35.03	73	6.425	0.66	49	4.73
201502045	39	34.988	73	3.303	1	77	6.53
201502046	39	31.302	73	1.77	2.2	126.5	9.69
201502047	39	27.407	73	1.643	2	183	10.97
201502048	39	27.037	73	2.553	1.9	181	12.67

201502049	39	27.057	73	0.765	2.5	235	15.38
201502050	39	31.034	72	55.821	1	106	7.23
201502051	39	29.024	72	42.38	0.2	33	1.49
201502052	39	29.038	72	40.667	0.01	1	0.05
201502053	39	15.093	72	51.105	0.01	2	0.1
201502054	39	24.024	73	7.353	0.9	69	5.03
201502055	39	19.705	73	9.279	1.3	104	8.16
201502056	39	27.046	73	19.845	0.1	11	1.07
201502057	39	14.942	73	27.201	0.25	34	3.24
201502058	39	11.982	73	21.849	0.8	75	5.74
201502059	39	10.008	73	10.543	2.2	244.2	17.6
201502060	39	7.664	73	8.093	1.5	231	12.74
201502061	39	6.005	73	13.255	11.5	1529.5	89.75
201502062	39	3.942	73	18.233	3.9	546	33.26
201502063	39	2.002	73	16.168	0.5	58	3.75
201502064	39	1.318	73	13.132	1	115	7.39
201502065	39	0.121	73	13.088	1	109	7.31
201502066	38	53.767	73	14.619	3	450	22.55
201502067	38	55.527	73	17.79	6	801	48.62
201502068	38	58.48	73	20.342	3	408	24.24
201502069	39	1.238	73	24.15	1.5	175.5	12.74
201502070	39	1.955	73	30.14	3.25	429	29.32
201502071	38	56.872	73	39.994	0.2	170	14.24
201502072	38	52.742	73	29.781	6.5	854.75	47.52
201502073	38	50.922	73	37.447	5	525	37.94
201502074	38	49.383	73	41.311	6.5	695.5	55.51
201502075	38	48.168	73	37.429	2.5	250	14.49
201502076	38	43.596	73	34.972	2.5	242.5	15.55
201502077	38	44.101	73	31.077	4	434	25.75
201502078	38	39.508	73	32.392	40	5080	269.44
201502079	38	38.878	73	28.516	0.5	42	2.53
201502080	38	41.618	73	25.944	0.5	51	2.66
201502081	38	38.352	73	24.634	0.01	9	0.37
201502082	38	37.042	73	19.652	0.01	3	0.13
201502083	38	32.598	73	23.346	0.01	2	0.08
201502084	38	30.413	73	24.711	0.1	11	0.41
201502085	38	34.139	73	32.501	0.1	2	0.08
201502086	38	36.339	73	36.142	24.75	3947.62	189.24
201502087	38	38.193	73	34.881	22	3245	174.92
201502088	38	39.426	73	38.725	18	2448	133.1
201502089	38	41.188	73	39.948	31.25	3906.25	233.44
201502090	38	43.372	73	39.998	1.5	196.5	12.15
201502091	38	44.204	73	40.979	19.1	2721.75	148.03

201502092	38	45.509	73	42.376	11	1375	86.23
201502093	38	46.51	73	42.182	4.25	612	36.16
201502094	38	47.276	73	45.146	0	0	0
201502095	38	48.55	73	44.894	5	745	47.21
201502096	38	44.912	73	45.1	1.1	201.3	10.75
201502097	38	44.991	73	46.507	3.25	458.25	29.21
201502098	38	43.382	73	47.664	4.25	837.25	43.12
201502099	38	42.993	73	47.834	4.9	749.7	44.91
201502100	38	41.373	73	48.935	2.1	235.2	16.98
201502101	38	40.981	73	47.419	1.5	165	11.97
201502102	38	35.495	73	43.927	24	2244	135.57
201502103	38	34.1	73	42.545	25.33	2368.36	134.3
201502104	38	32.932	73	45.99	31	3162	183.57
201502105	38	35.544	73	46.391	27.5	3781.25	197.94
201502106	38	39	73	53.28	4.5	355.5	29.49
201502107	38	40.992	73	54.744	3.5	318.5	30.54
201502108	38	39.182	73	57.96	18.5	1563.25	119.63
201502109	38	38.99	73	58.362	5	1305	38.62
201502110	38	34.495	74	0.484	61	5551	432.62
201502111	38	29.367	74	5.649	3	286.5	19.09
201502112	38	26.966	73	59.637	16	1528	110.22
201502113	38	28.698	73	57.915	16	3232	190.02
201502114	38	25.493	73	48.989	0.5	66	3.58
201502115	38	12.633	73	54.121	0.01	13	0.21
201502116	38	17.365	73	55.256	0.1	18	0.73
201502117	38	20.585	73	59.233	2	256	15.21
201502118	38	20.966	74	0.494	2.9	333.5	21.76
201502119	38	23.982	74	7.252	34	4267	258.28
201502120	38	21.576	74	12.005	6.5	968.5	49.08
201502121	38	15.244	74	12.018	9	1057.5	66.34
201502122	38	17.062	74	5.044	0.9	97	5.43
201502123	38	11.639	74	1.359	0.1	5	0.24
201502124	38	9.604	74	6.905	18.9	2655.45	123.29
201502125	38	7.983	74	1.911	0	0	0
201502126	37	57.912	74	14.592	13.75	1863.12	100.97
201502127	38	3.048	74	16.374	1	152	9.62
201502128	38	1.785	74	21.849	2	308	20.31
201502129	37	55.877	74	23.56	1.75	194.25	14.57
201502130	37	54.417	74	23.49	3	408	24.58
201502131	37	46.712	74	26.076	7.5	720	51.32
201502132	37	43.583	74	21.437	2.33	258.63	13.73
201502133	37	36.867	74	30.011	9	891	63.75
201502134	37	28.505	74	36.337	6	585	40.8

201502135	37	24.446	74	35.277	2.5	240	13.75
201502136	37	25.525	74	41.392	0.01	5	0.28
201502137	37	23.105	74	40.161	3	303	21.52
201502138	37	20.296	74	42.646	1.3	131.3	9.72
201502139	37	11.161	74	45.382	0.01	5	0.28
201502140	37	2.61	74	42.705	0.01	6	0.38
201502141	37	2.904	74	45.626	0	0	0
201502142	36	56.708	74	51.084	0	0	0
201502143	37	5.496	74	52.763	0.1	1	0.07
201502144	37	22.28	74	46.537	0.1	10	0.09
201502145	37	40.316	74	49.134	0	0	0
201502146	37	41.941	74	43.712	0.1	4	0.15
201502147	37	43.457	74	47.794	0	0	0
201502148	37	50.054	74	37.587	0.1	2	0.22
201502149	37	51.499	74	46.49	0	0	0
201502150	37	56.968	74	40.882	0.1	3	0.09
201502151	38	3.592	74	47.933	0	0	0
201502152	38	4.486	74	40.411	0	0	0
201502153	38	15.988	74	22.19	0.5	65	4.37
201502154	38	18.377	74	19.701	0.1	25	1.27
201502155	38	20.619	74	18.375	1	113	7.37
201502156	38	24.727	74	14.618	3.75	403.12	30.49
201502157	38	26.732	74	17.176	0.4	33	2.82
201502158	38	29.223	74	10.987	1	139	8.04
201502159	38	35.311	74	8.192	6.75	553.5	47.76
201502160	38	42.454	74	15.474	0.4	20	1.88
201502161	38	46.172	74	12.602	0.2	14	1.56
201502162	38	48.478	74	10.664	0.01	1	0.11
201502163	38	51.047	74	3.933	0.01	2	0.18
201502164	38	49.875	74	2.403	0.1	22	1.07
201502165	38	49.994	74	0.122	0.2	44	2.03
201502166	38	54.579	73	57.968	0.01	3	0.3
201502167	38	58.116	73	54.455	0.2	17	0.81
201502168	39	0.095	73	48.494	0.01	4	0.22
201502169	39	1.177	73	49.291	0.01	3	0.44
201502170	39	4.355	73	48.941	0.1	13	1.79
201502171	39	11.342	73	45.126	0.1	7	0.91
201502172	39	31.065	73	34.691	0.1	9	1.27
201502173	39	38.122	73	30.401	0.1	6	0.87
201502174	39	44.983	73	22.384	0.1	9	1.2
201502175	39	54.18	73	18.175	3.4	969	36.5
201502176	39	59.251	73	31.718	1	157	8.58
201502177	40	2.325	73	46.425	0.01	2	0.2

201502178	40	11.197	73	42.045	0	0	0
201502180	40	16.366	73	32.34	0	0	0
201502181	40	14.135	73	36.366	0	0	0
201502182	40	7.631	73	33.986	0.1	6	0.61
201502183	40	8.526	73	28.785	0.33	24	2.72
201502184	40	1.752	73	16.178	0.75	56	5.33
201502185	40	9.686	73	11.823	1	75	7.53
201502186	40	12.651	73	10.639	1	74	6.44
201502187	40	18.166	73	19.291	0.5	41	4.28
201502188	40	19.246	73	19.614	0.5	40	4.1
201502189	40	19.421	73	16.065	1	84	8.18
201502190	40	26.203	72	58.993	1	137	10.44
201502191	40	27.091	72	39.668	1.25	145	10.74
201502192	40	31.179	72	43.68	1	112	9.32
201502193	40	37.21	72	43.694	0.5	44	3.76
201502194	40	33.102	72	30.944	0.9	111	8.08
201502195	40	33.1	72	26.948	0.75	89	6.52
201502196	40	34.105	72	20.562	1	124	10.63
201502197	40	36.333	72	12.87	1	94	8.49
201502198	40	40.093	72	18.492	0.75	71	6.12
201502199	40	40.129	72	21.946	1	113	8.66
201502200	40	44.04	72	19.576	0.5	58	4.65
201502201	40	42.089	72	7.758	0.75	66	4.44
201502202	40	53.37	72	2.815	0.1	9	0.84
201502203	40	56.557	71	48.892	1	90	7.22
201502204	40	58.38	71	46.66	0.5	39	3.64
201503013	40	28.863	72	17.666	0.1	3	0.15
201503014	40	28.006	72	3.463	1.3	126.1	9.91
201503015	40	26.897	72	1.949	1	95	7
201503016	40	22.67	71	52.899	0	0	0
201503017	40	12.01	72	1.524	0.75	65	4.49
201503018	40	9.731	72	0.014	1.8	165.6	11.6
201503019	40	12.408	72	3.595	0.75	61	4.43
201503020	40	18.422	72	13.947	1	101	7.86
201503021	40	23.955	72	31.947	0.5	68	4.65
201503022	40	20.293	72	42.296	0.8	75	5.52
201503023	40	15.399	72	39.813	1	89	7.25
201503024	40	13.077	72	41.57	1	73	6.72
201503025	40	15.765	72	27.374	1.2	108	8.63
201503026	40	4.206	72	8.68	0.01	4	0.23
201503027	40	8.149	72	22.333	0.06	8	0.52
201503028	40	9.697	72	36.868	1.7	180	12.12
201503029	40	3.778	72	47.346	1.2	123	8.42

201503030	39	57.973	72	44.444	0	0	0
201503031	39	58.558	72	43.711	0.8	89	6.72
201503032	39	58.02	72	41.983	1.25	137.5	9.26
201503033	39	56.624	72	33.779	1	105	6.74
201503034	39	45.687	72	29.884	0.1	17	1.01
201503035	39	51.365	72	41.933	1	98	7.08
201503036	39	54.5	72	45.969	1.1	112.2	8.7
201503037	39	56.32	72	47.361	1.25	121.25	10.4
201503038	39	55.888	72	50.809	1.1	96.8	8.52
201503039	39	46.751	73	6.259	1	106	7.88
201503040	39	38.909	72	56.106	0.9	84	5.83
201503041	39	32.906	72	41.789	0.6	53	3.28
201503042	39	28.67	72	42.613	0.4	41	2.33
201503043	39	24.806	72	40.191	0.01	2	0.12
201503044	39	24.469	72	54.964	15	1912.5	98.78
201503045	39	28.229	72	58.71	1.7	182	11.5
201503046	39	30.042	72	52.334	0.5	53	3.29
201503047	39	32.267	72	52.028	0.8	94	6.04
201503048	39	31.985	72	55.507	1	99	6.78
201503049	39	27.059	73	5.842	1	77	5.61
201503050	39	24.179	73	6.904	0.5	45	3.51
201503051	39	16.959	73	18.652	1.8	181	14.6
201503052	39	10.855	73	17.377	0.5	54	4.25
201503053	39	11.025	73	13.774	2.5	250	16.3
201503054	39	11.031	73	7.435	1	73	4.96
201503055	39	14.297	73	3.395	0.5	54	3.48
201503056	39	10.991	72	56.36	0.01	2	0.09
201503057	39	8.925	73	2.076	0.75	59	3.89
201503058	39	6.965	73	11.242	5	620	34.48
201503060	39	5.605	73	10.225	4.2	537.6	28.15
201503061	39	4.793	73	8.452	5.2	566.8	31.27
201503062	38	57.539	73	2.807	0	0	0
201503063	38	52.709	73	9.463	0	0	0
201503064	38	51.284	73	6.836	0	0	0
201503065	38	46.933	73	9.948	0.01	1	0.05
201503066	38	54.174	73	26.465	2	240	13.75
201503067	38	55.577	73	28.36	4.1	762.6	40.78
201503068	38	58.459	73	28.309	4.6	294.4	20.87
201503069	38	51.718	73	34.978	3	282	20.07
201503070	38	49.928	73	31.816	8.5	684.25	46.87
201503071	38	50.841	73	40.661	2.75	434.5	23.98
201503072	38	49.608	73	44.023	5.5	456.5	38.95
201503073	38	49.913	73	42.044	6	531	39.56



201503074	38	48.895	73	41.738	2.5	265	16.28
201503075	38	47.956	73	40.919	1.2	123.6	7.69
201503076	38	48.009	73	44.446	2.5	215	15.51
201503077	38	46.67	73	47.268	5.33	389.09	28.06
201503078	38	46.999	73	44.466	0.8	125	6.6
201503079	38	47.007	73	40.855	7.5	761.25	44.14
201503080	38	45.762	73	39.281	6.5	728	41.91
201503081	38	45.964	73	36.796	15.5	15887.5	937.01
201503082	38	45.805	73	32.736	4	332	21.69
201503083	38	44.922	73	27.923	0.4	31	1.88
201503084	38	43.917	73	30.179	5	545	29.05
201503085	38	42.209	73	35.758	20.5	2449.75	139.89
201503086	38	43.008	73	37.622	2	224	13.39
201503087	38	43.013	73	39.174	1.5	183	10.59
201503088	38	44.992	73	42.011	20	1860	101.97
201503089	38	44.618	73	43.567	20	1540	81.41
201503090	38	42.958	73	47.104	14	1274	99.65
201503091	38	41.462	73	47.749	6	489	38.56
201503092	38	39.554	73	56.821	8.5	459	36.59
201503093	38	37.029	73	49.469	0.8	63	4.07
201503094	38	37.999	73	39.458	10	965	65.46
201503095	38	36.07	73	23.58	0.01	12	0.74
201503096	38	34.971	73	29.096	0.01	1	0.06
201503097	38	34.025	73	39.404	20.9	2455.75	143.48
201503098	38	33.862	73	41.292	9.1	796.25	52.91
201503099	38	34.558	73	43.604	31	3487.5	210.32
201503100	38	32.728	73	54.999	7.5	1627.5	55.75
201503101	38	31.834	73	57.184	2.2	215.6	15.75
201503102	38	29.771	73	58.61	1.7	164.9	12.77
201503103	38	28.848	74	0.97	11.2	996.8	69.4
201503104	38	27.165	73	52.351	8.1	862.65	53.16
201503105	38	28.024	73	47.262	0.4	49	2.97
201503106	38	26.582	73	45.624	1	120	6.8
201503107	38	22.839	73	45.917	0.01	2	0.09
201503108	38	20.983	73	55.627	0.5	66	4.49
201503109	38	19.434	74	6.736	30	3345	253.35
201503110	38	18.917	74	2.679	0.2	13	0.87
201503111	38	17.752	74	0.918	0.01	3	0.16
201503112	38	14.683	74	2.832	0.1	9	0.58
201503113	38	12.829	73	55.002	0.01	2	0.11
201503114	38	7.798	74	12.671	2.5	290	22.69
201503115	38	5.897	74	10.41	12.33	1362.46	85.31
201503116	38	2.833	74	17.603	2.75	327.25	25.59

201503117	38	1.846	74	14.198	7.5	1001.25	62.82
201503118	38	0.811	74	11.356	8	936	51.4
201503119	37	58.793	74	18.932	2.5	265	20.89
201503120	37	52.732	74	17.535	0.01	4	0.25
201503121	37	51.949	74	30.37	0.7	43	4.45
201503122	37	40.716	74	26.511	9.9	1103.85	75.53
201503123	37	37.662	74	28.721	9	904.5	63.04
201503124	37	34.601	74	21.188	0.01	1	0.07
201503125	37	30.64	74	30.691	2.3	232.3	15.17
201503126	37	18.278	74	39.946	0.1	19	1.21
201503127	37	10.685	74	37.75	0	0	0
201503128	37	8.236	74	47.83	0.01	2	0.12
201503129	36	54.584	74	46.648	0.01	1	0.01
201503130	36	57.105	74	48.676	0	0	0
201503131	37	12.352	74	49.154	0	0	0
201503132	37	26.278	74	49.183	0.01	2	0.11
201503133	37	33.018	74	47.869	0	0	0
201503134	37	34.114	74	48.69	0	0	0
201503135	37	36.036	74	42.184	0	0	0
201503136	37	38.013	74	38.466	4	620	36.02
201503137	37	39.079	74	34.783	6	696	47.46
201503138	37	40.047	74	41.793	0	0	0
201503139	37	57.277	74	48.851	0	0	0
201503140	38	4.073	74	44.735	0.01	1	0.08
201503141	38	8.215	74	48.406	0	0	0
201503142	38	6.234	74	31.779	0	0	0
201503143	38	13.396	74	14.948	1	94	7.08
201503144	38	16.292	74	13.43	4.8	360	23.54
201503145	38	17.302	74	14.155	3.5	283.5	17.94
201503146	38	21.148	74	14.514	9.5	551	34.98
201503147	38	22.076	74	17.648	0.5	39	3.26
201503148	38	23.221	74	18.925	3.5	182	16.3
201503149	38	26.031	74	14.134	1.9	195.7	11.32
201503150	38	29.291	74	16.582	2	222	16.75
201503151	38	33.037	74	6.562	1.8	138.6	10.09
201503152	38	36.145	74	10.005	4.6	312.8	24.6
201503153	38	33.855	74	15.135	0.01	9	0.45
201503154	38	33.968	74	21.18	0.01	1	0.08
201503155	38	44.148	74	12.684	0.01	4	0.39
201503156	38	48.272	74	15.41	0.01	6	0.67
201503157	38	49.288	74	0.095	0.5	94	4.85
201503158	38	58.149	73	58.656	0.2	17	2.1
201503159	39	5.099	73	42.337	0.5	44	3.82

201503160	39	7.304	73	43.258	0.1	6	0.75
201503161	39	7.982	73	46.644	0.05	6	0.88
201503162	39	9.08	73	43.582	0	0	0
201503163	39	9.066	73	41.629	0.2	12	1.59
201503164	39	8.929	73	38.089	0.6	44	5.05
201503165	39	5.872	73	31.869	1.66	167.66	14.08
201503166	39	13.212	73	28.736	0.5	37	4.58
201503167	39	14.158	73	30.125	0.5	40	4.48
201503168	39	19.091	73	35.434	0.5	33	3.39
201503169	39	22.019	73	24.202	0.8	48	4.58
201503170	39	30.129	73	25.707	0.1	26	2.34
201503171	39	33.841	73	24.145	0.1	14	1.82
201503172	39	34.081	73	11.738	0.6	42	4.83
201503173	39	48.847	73	25.896	0.5	45	3.09
201503174	39	54.315	73	27.087	0.4	35	2.84
201503175	39	55.193	73	32.883	0.1	15	0.74
201503176	39	58.175	73	43.153	0.01	2	0.08
201503177	40	2.105	73	46.07	0.01	2	0.11
201503178	40	2.138	73	45.319	0.01	4	0.2
201503179	39	59.308	73	32.991	0.4	69	3.44
201503180	40	0.682	73	28.784	1.2	120	8.41
201503181	39	56.93	73	22.974	0.6	32	2.65
201503182	40	2.147	73	23.635	0.9	65	4.98
201503183	40	2.013	73	20.789	0.9	66	5.1
201503184	40	3.246	73	18.798	0.7	75	6.44
201503185	40	6.168	73	31.47	0.1	11	0.74
201503186	40	9.118	73	26.861	0.9	50	5.46
201503187	40	11.324	73	31.541	0.2	21	2.08
201503188	40	13.175	73	33.216	0.03	4	0.39
201503189	40	18.141	73	26.909	0.01	1	0.07
201503190	40	14.05	73	21.264	1	95	8.24
201503191	40	13.082	73	4.02	0.7	78	6.86
201503192	40	23.282	72	59.198	1.1	125.4	8.48
201503193	40	25.068	73	12.086	0	0	0
201503194	40	31.115	73	3.083	0.1	13	0.49
201503195	40	28.016	72	58.464	0.9	68	5.9
201503196	40	30.183	72	43.421	1.2	122.4	8.93
201503197	40	34.173	72	46.723	0.8	50	4.46
201503198	40	41.168	72	44.206	0.01	2	0.19
201503199	40	36.17	72	34.94	0.4	45	3.8
201503200	40	37.155	72	22.752	0.4	34	2.59
201503201	40	40.296	72	22.762	0.5	36	2.88
201503202	40	41.178	72	21.549	0.9	70	5.12

201503203	40	46.422	72	18.391	0.6	40	3.28
201503204	40	39.718	72	9.53	0.8	61	5.37
201503205	40	34.029	72	0.892	1	85	7.53
201503206	40	33.156	71	43.539	0.1	20	1.39
201503207	40	30.978	71	44.647	0	0	0
201503208	40	32.462	71	44.734	0	0	0
201503209	40	38.385	71	33.739	0	0	0
201503210	40	37.199	71	44.129	0.5	38	2.71
201503211	40	38.755	71	52.493	0.2	16	0.99
201503212	40	41.266	71	50.791	0.66	51	4.38
201503214	40	53.208	71	42.649	0	0	0
201503215	40	56.155	71	57.793	0	0	0
201503217	41	2.777	71	41.281	0.01	2	0.13
201503218	40	57.161	71	31.335	0.4	41	2.99
201503219	41	0.101	71	19.407	1.1	80.3	7.89

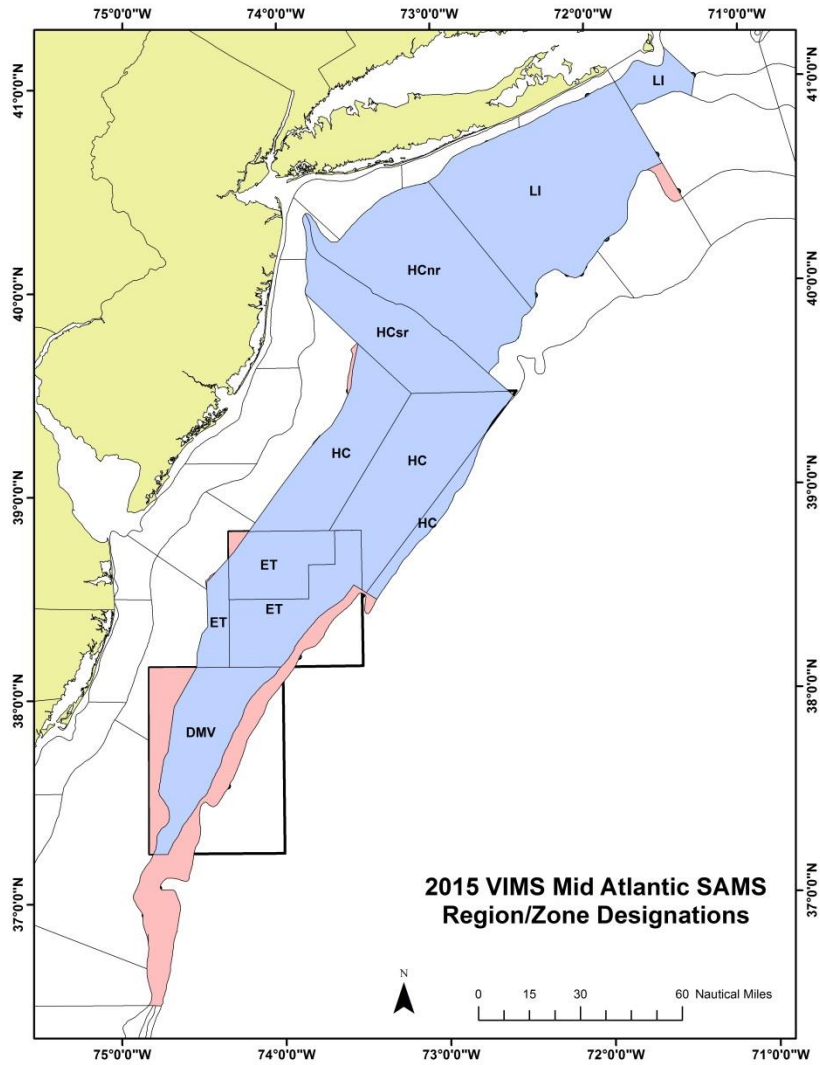


Figure 1. SAMS regions used to calculate biomass estimates for the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

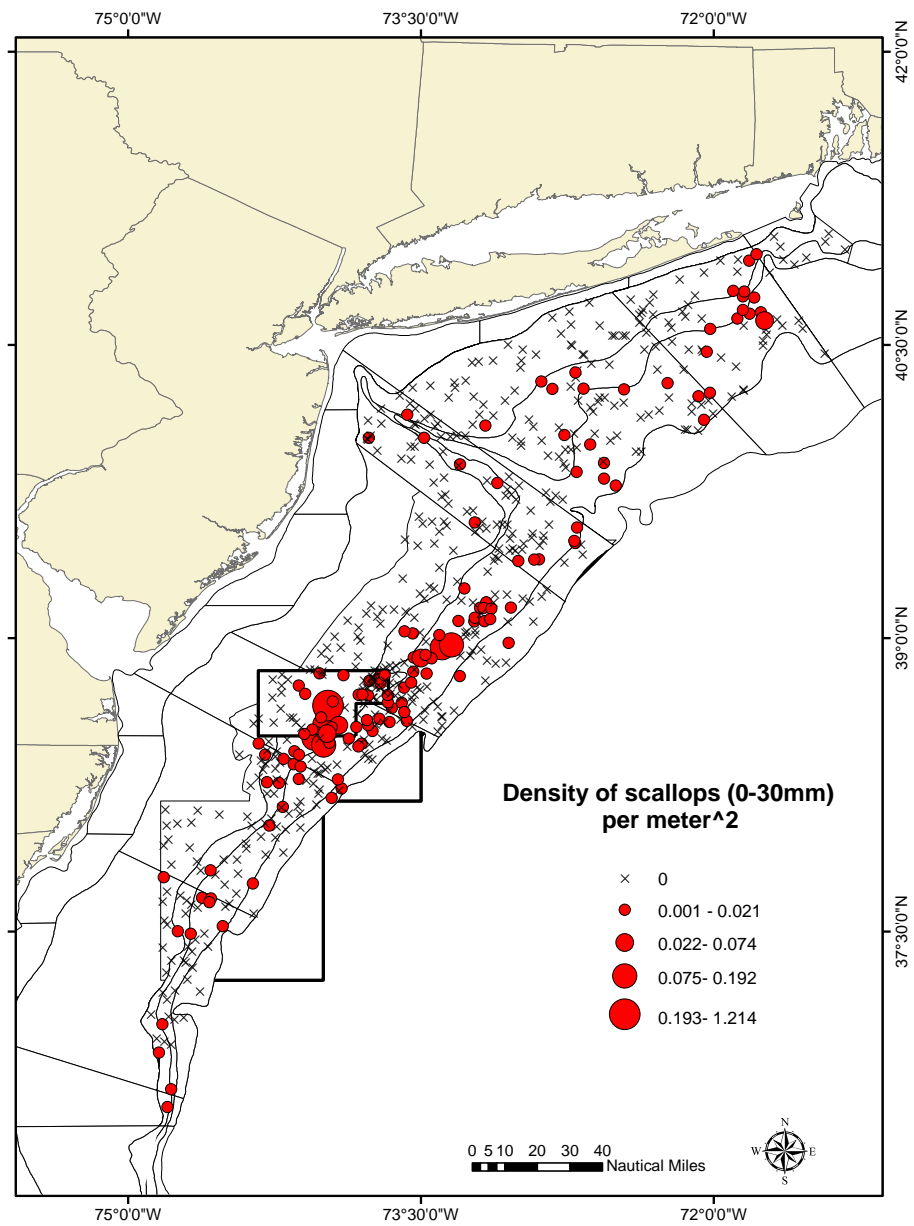


Figure 2. Density of scallops 0-30mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

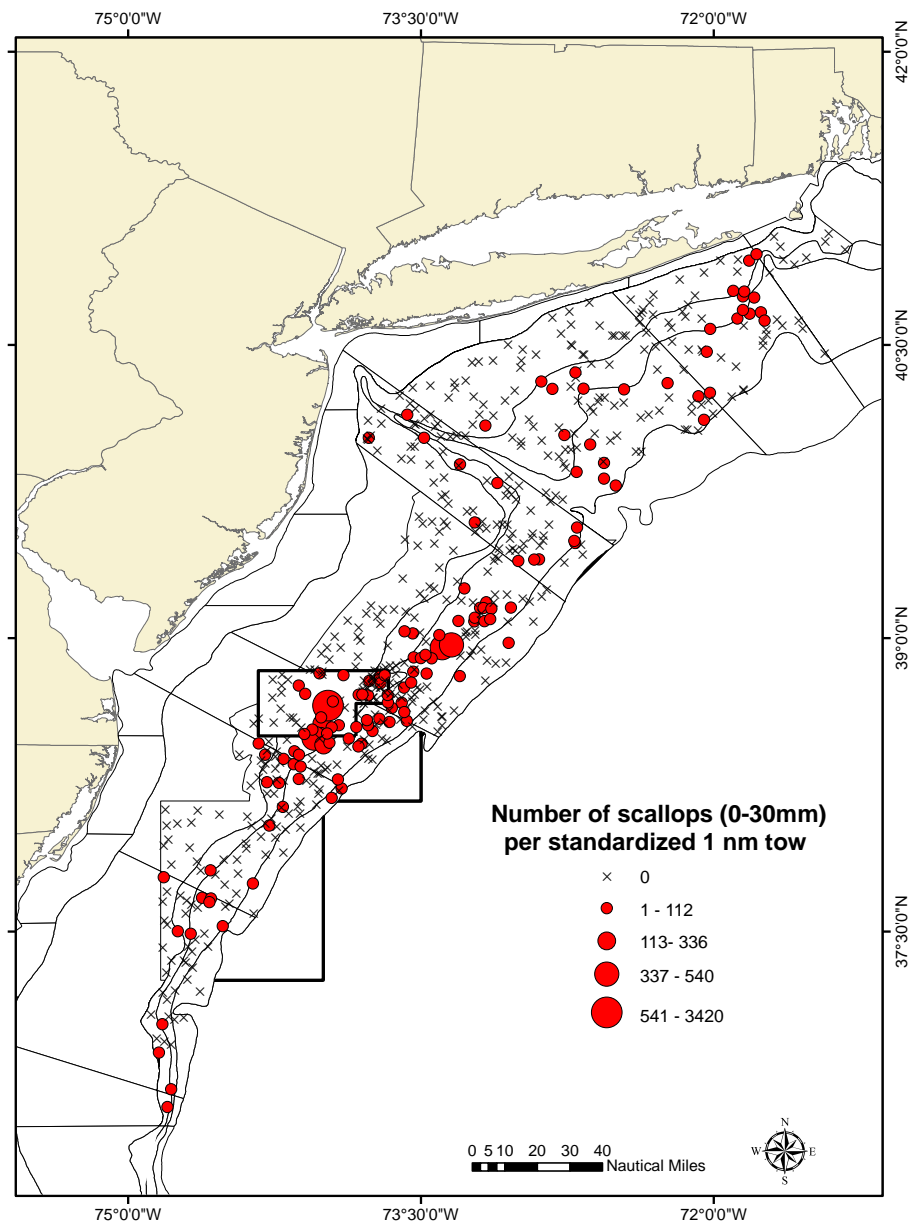


Figure 3. Number of scallops 0-30mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

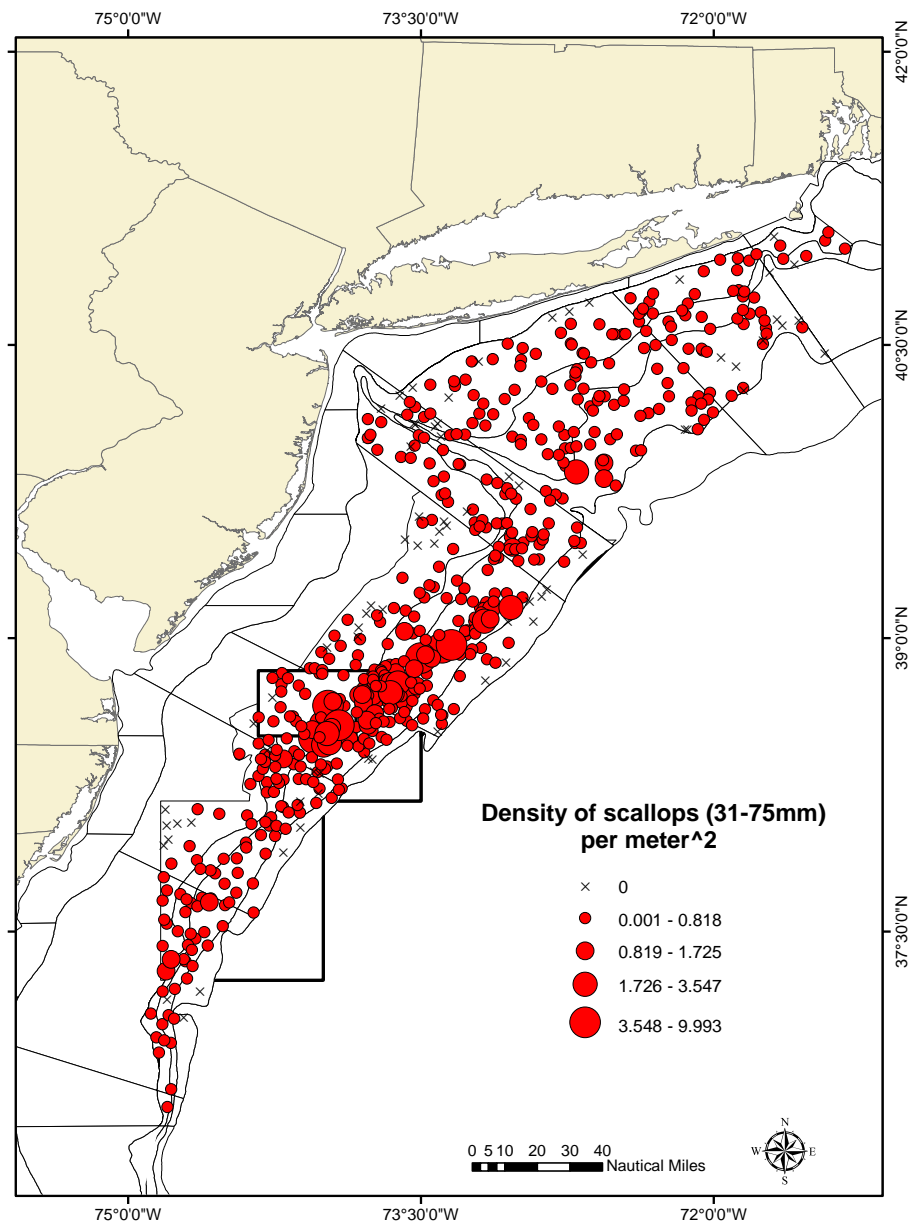


Figure 4. Density of scallops 31-75mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.



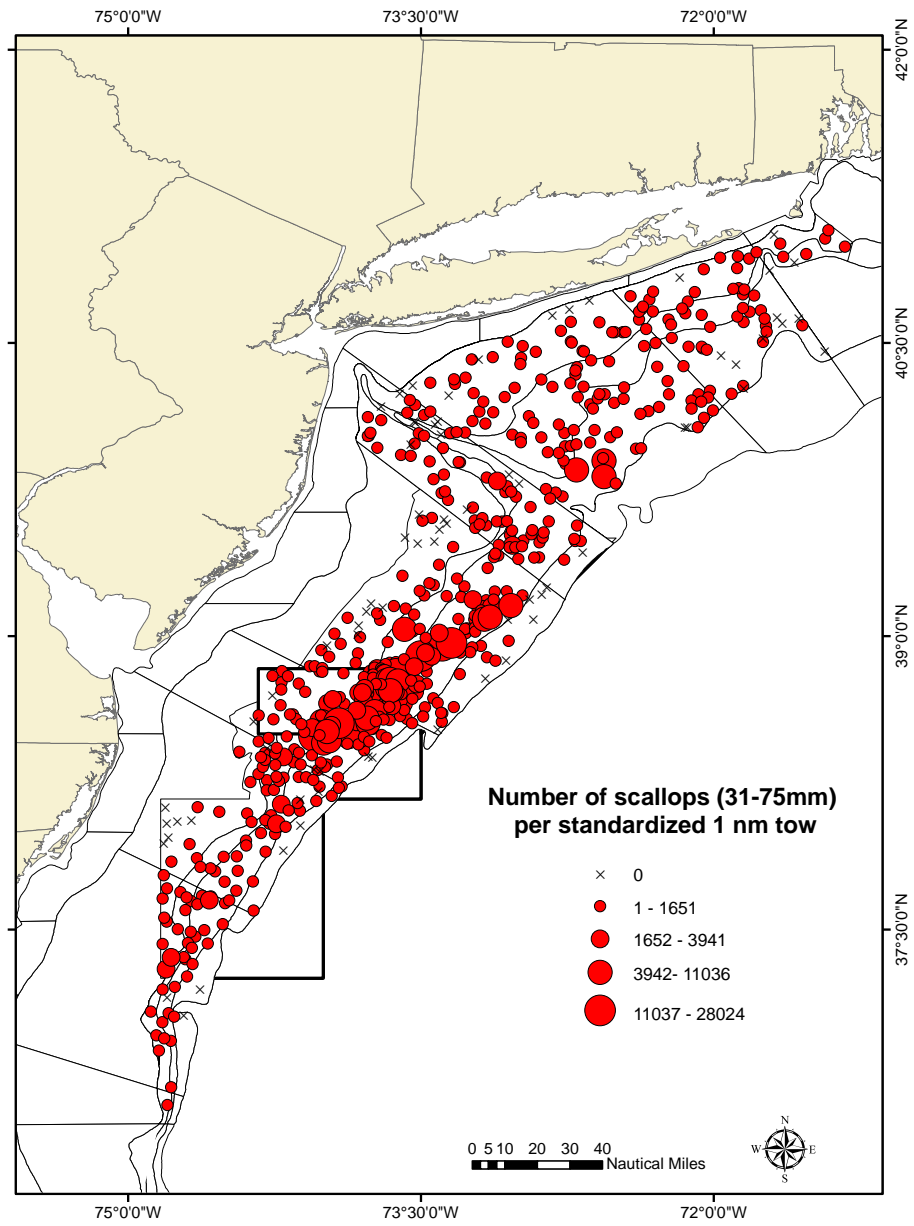


Figure 5. Number of scallops 31-75mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

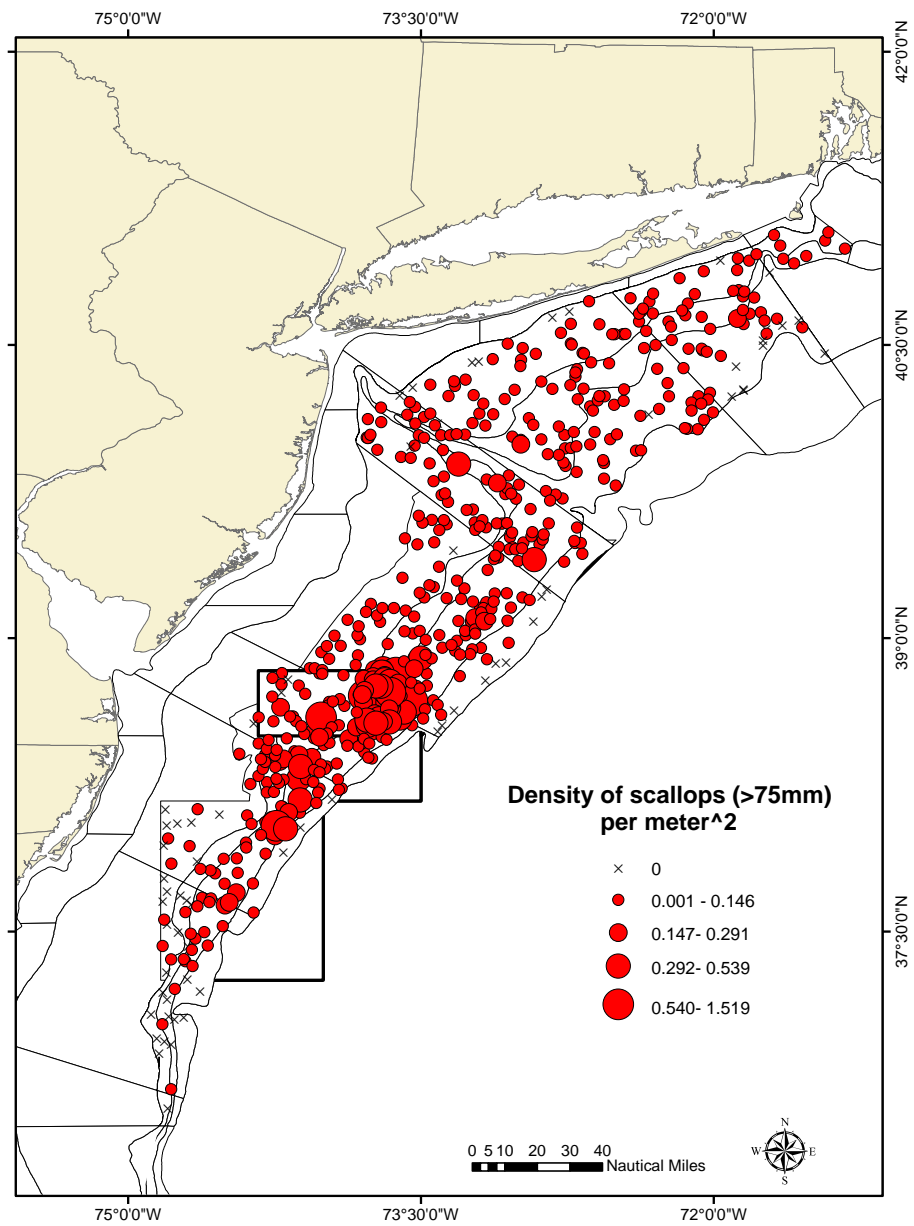


Figure 6. Density of scallops >75mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

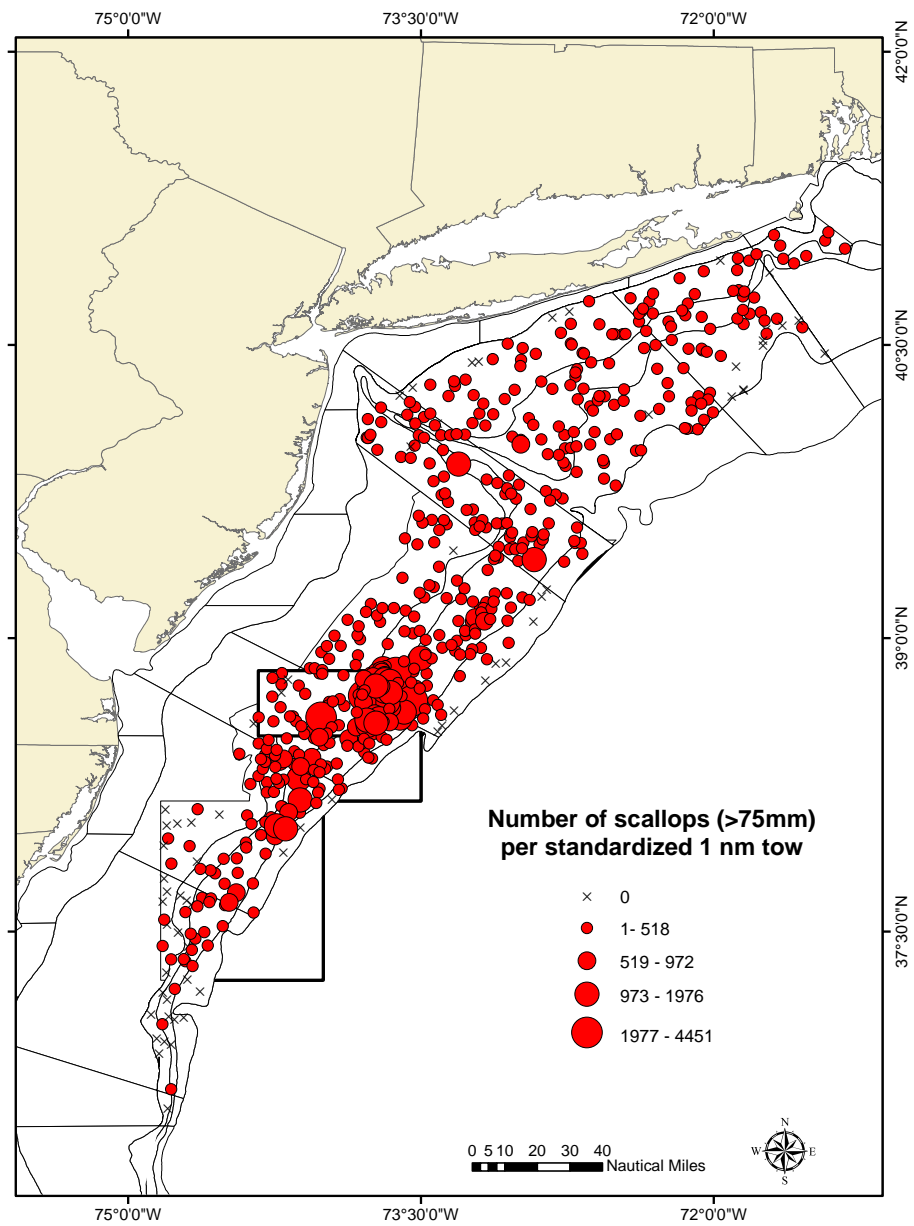


Figure 7. Number of scallops >75mm per m<sup>2</sup> caught in the NMFS survey dredge during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource during May-June 2015.

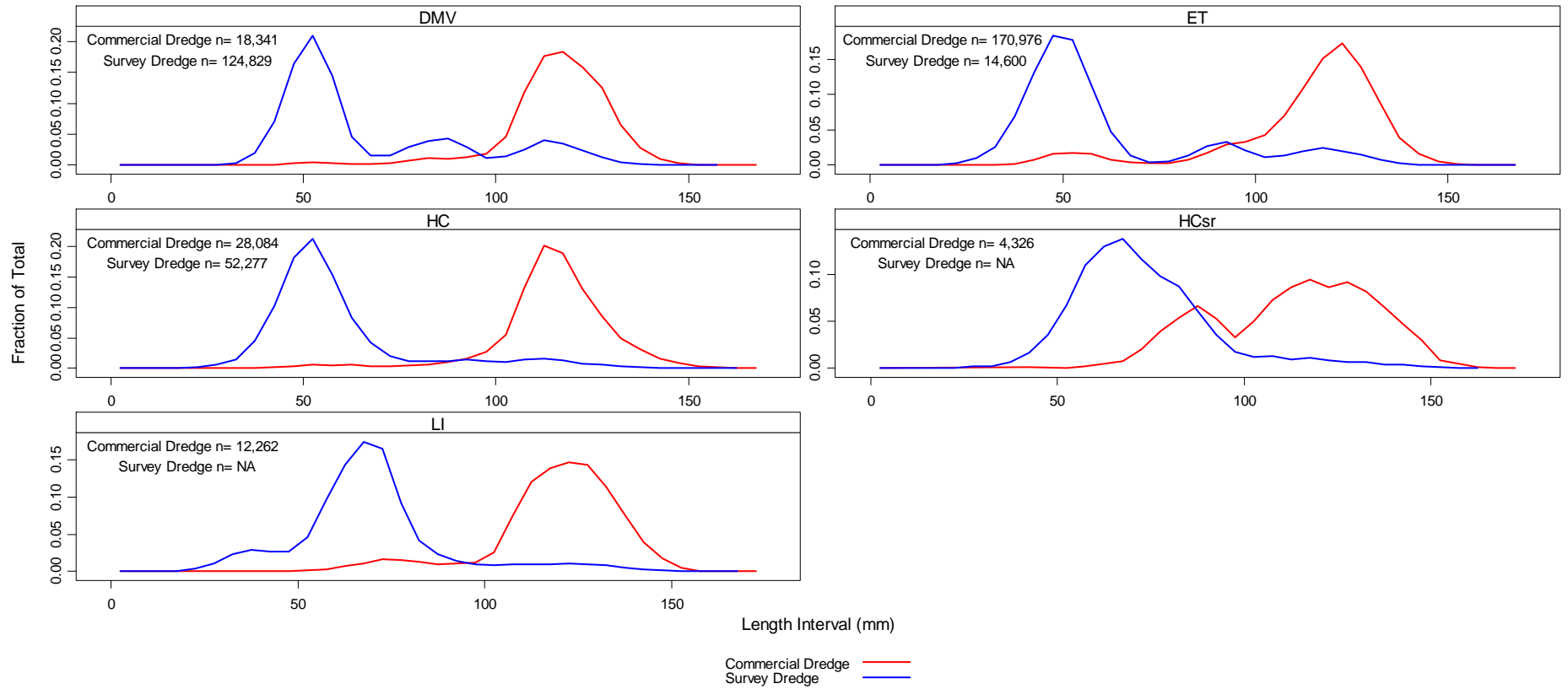


Figure 8. Length frequency of scallops captured in the survey and commercial dredges during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource area for May-June 2015.

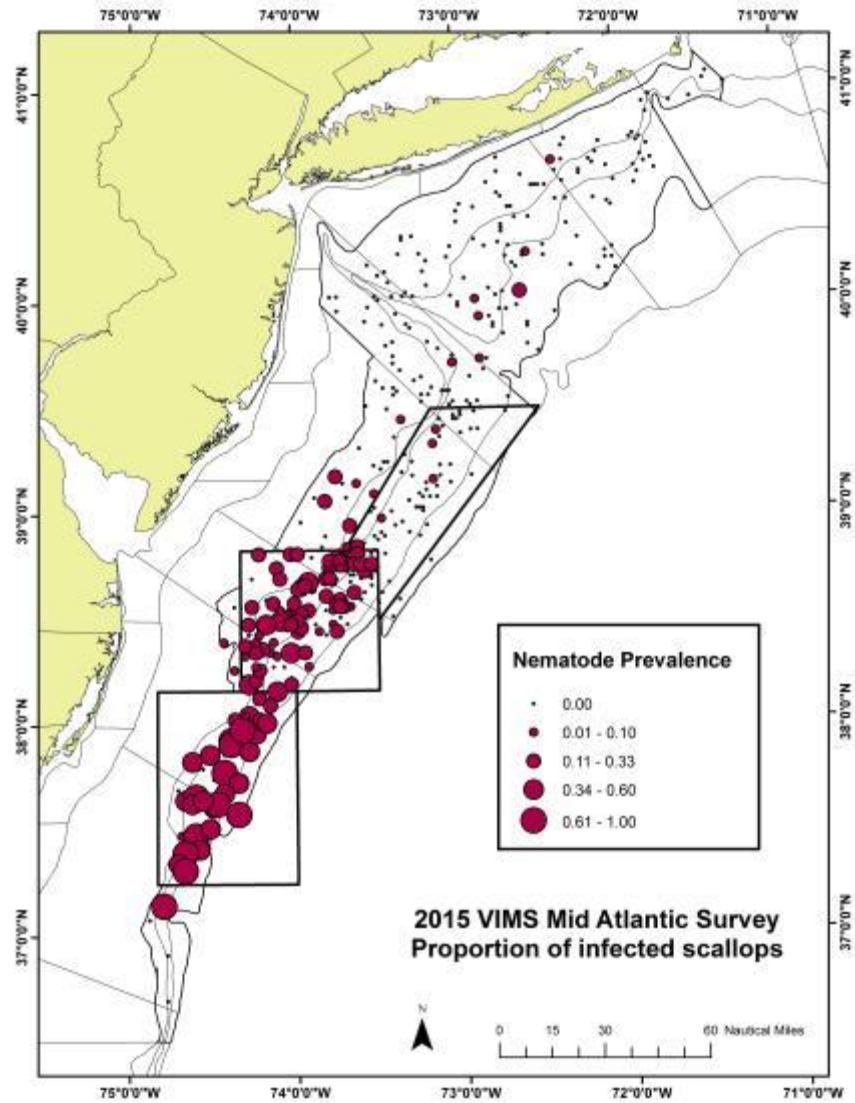


Figure 9. Nematode prevalence as documented during the VIMS/Industry cooperative survey of the Mid-Atlantic sea scallop resource area for May-June 2015.