RESOURCE SURVEY REPORT
Catch Summary

NOAA Fisheries Service
Northeast Fisheries Science Center

Atlantic Surfclam – Ocean Quahog Survey
Delmarva Peninsula – Nantucket Shoals
12 August – 16 August 2021

Submitted to: NOAA, NEFSC
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Resource Survey Report

Atlantic Surfclam/Ocean Quahog

Delmarva Peninsula – Georges Bank

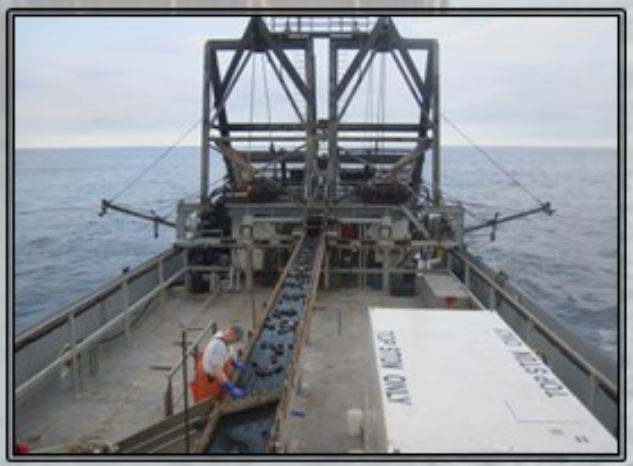
12 August – 16 August 2021

F/V *E.S.S. Pursuit*

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

The F/V *E.S.S. Pursuit* departs New Bedford harbor

Ocean quahogs (*Arctica islandica*) to be weighed and measured



A scientist sorts the catch on the deck of the *Pursuit*

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Atlantic Surfclam – Ocean Quahog Survey
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The 2021 region-wide survey for Atlantic surfclam, *Spisula solidissima;* and ocean quahog, *Arctica islandica,* was conducted in continental shelf waters from Delmarva Peninsula to Nantucket Shoals aboard the F/V *E.S.S. Pursuit.* The survey, conducted by the Northeast Fisheries Science Center, provides indices of abundance and recruitment for both species.

The following charts and station data describe the distribution of surfclams and ocean quahogs during the survey. Five-minute tows were made at the speed of 3.0 knots, scope of 2:1, and with a commercial-style hydraulic dredge equipped with a 13-foot-wide cutting blade and a surface-supplied manifold positioned on the forward end of the dredge. Survey stations were randomly selected to provide unbiased abundance measurements. Therefore, these stations were not always on or near known locations of clam concentrations.

In this report, data are summarized from audited catch files generated from the Fisheries Scientific Computer System. Clam catch quantity is recorded in numbers of clams, while depth is recorded in fathoms. Percentage estimates of surfclam catches are also reported by four categories of shell height: between 0” to 4.75”, 4.76” to 5.00”, 5.01” to 5.50”, and greater than 5.50”. Distribution plots indicate relative numbers of surfclams and ocean quahogs caught on each tow. For further information, contact:

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Appendix 1

A working group (WG) consisting of Northeast Fisheries Science Center (NEFSC) and Mid-Atlantic Fishery Management Council (MAFMC) staff, academic partners and interested persons met during 2017 to develop ideas for improving the NEFSC clam survey. The goals were to improve the precision and utility of survey data used in stock assessments and to use survey resources more efficiently. Several changes recommended by the working group were adopted for the 2018 NEFSC Atlantic Surfclam and Ocean Quahog Survey; among these were changes to the survey strata. Strata were separated by species (Atlantic surfclam and ocean quahog) and the total area covered by the survey was reduced. The new strata are individually larger and focus the survey on the areas where each species occurs. These changes allow for more tows within each stratum and put fewer tows in areas where there are no clams.

Field Notes

In an effort to share some of the natural history observations made during the clam survey, we have requested that the Chief Scientists on each part of the cruise comment on some of the more interesting catches that were brought aboard the F/V *E.S.S. Pursuit*.

Leg 1:

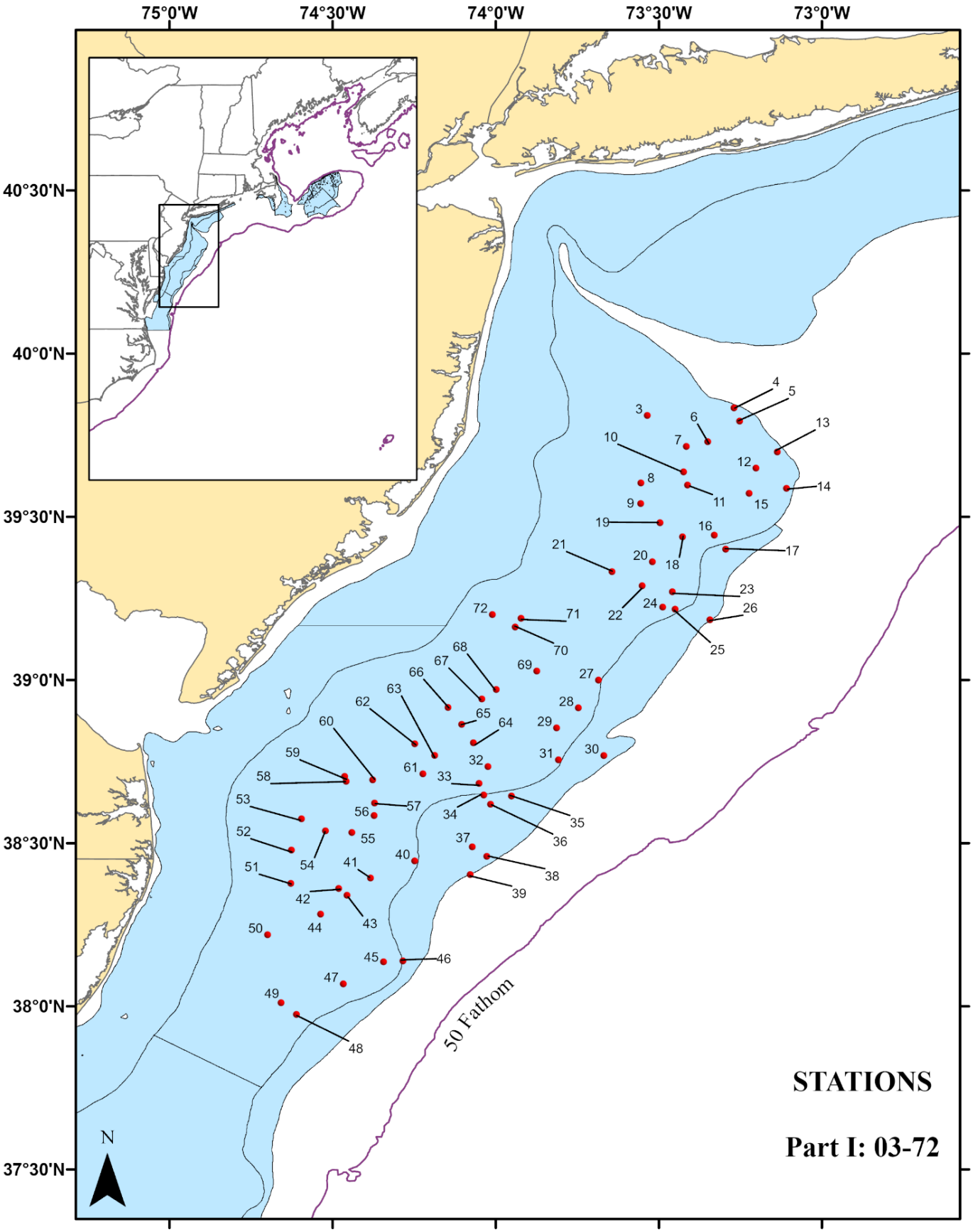
In 2021, the Northeast Fisheries Science Center primarily targeted Atlantic surfclams (*Spisula solidissima)* at random stations in newly stratified depth regions throughout the Mid-Atlantic and Southern New England. Leg 1 began from New Bedford, MA, and worked south and offshore until completing operations in Atlantic City, NJ. A total of 72 stations were completed.

Leg 2:

The second leg departed from Atlantic City, NJ, on August 16th, but was aborted due to mechanical issues.

Leg 3:

The third leg was aborted due to mechanical issues.



Dredge tows made from *F/V E.S.S. Pursuit* during NOAA Fisheries Service,
Northeast Fisheries Science Center's Atlantic Surfclam/Ocean Quahog Survey, 12 August - 16 August 2021

Table 1: Catch summary report from NOAA Fisheries Service, Northeast Fisheries Science Center's Surfclam / Ocean Quahog Survey 12 August – 16 August 2021

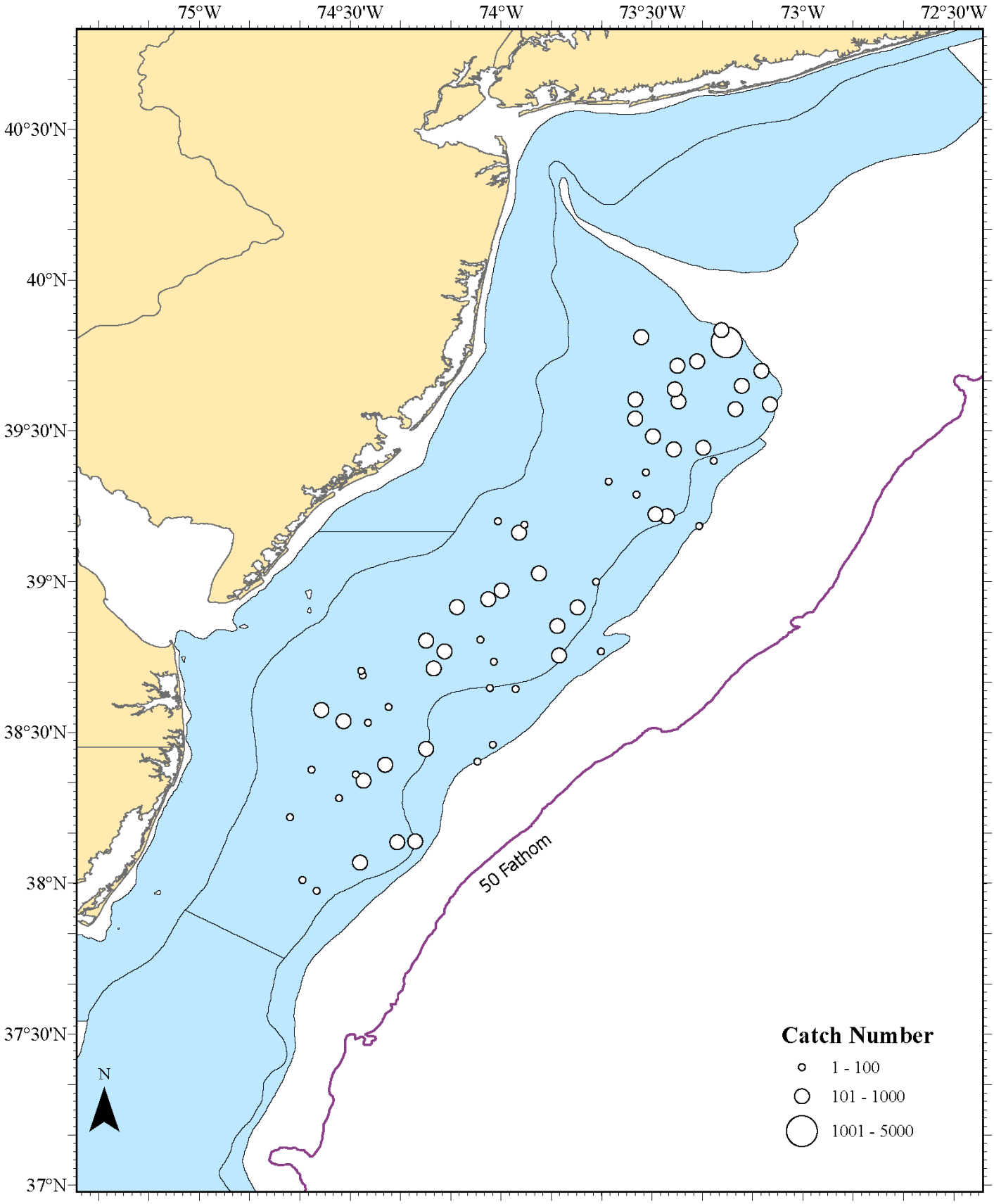
Stratum	Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Depth	Number of Surfclams	% Surfclams	% Surfclams	% Surfclams	% Surfclams	Number of Quahogs
						(Fathoms)		0-4.74"	4.76-5.00"	5.01-5.50"	>5.50"	
3S	3	3948.6	7332.1	X26693.0	Y43300.3	18.6	501	26.7	22.2	41.1	10	150
3S	4	3950	7316.1	X26579.5	Y43306.5	23	252	52.4	20.2	21	6.3	27
3S	5	3947.6	7315.1	X26568.8	Y43282.8	22.4	1266	44.3	19.2	29.9	6.6	161
3S	6	3943.8	7321	X26605.7	Y43248.1	20.8	226	27.4	18.1	38.5	15.9	25
3S	7	3942.9	7324.9	X26632.1	Y43240.8	18	622	11.9	9	37.3	41.8	34
3S	8	3936.2	7333.3	X26680.6	Y43176.6	20.8	281	18.1	9.6	36.3	35.9	14
3S	9	3932.4	7333.3	X26674.6	Y43138.4	19.7	595	8.6	4.5	29.4	57.5	45
3S	10	3938.2	7325.4	X26628.5	Y43194.4	18	361	14.4	7.2	40.7	37.7	15
3S	11	3935.8	7324.7	X26620.2	Y43170.4	20.2	562	23.8	14.9	33.5	27.8	102
3S	12	3938.9	7312.1	X26535.9	Y43197.1	21.3	450	33.3	20.9	35.1	10.7	68
3S	13	3941.9	7308.2	X26511.8	Y43224.7	23	182	54.4	9.9	30.8	4.9	66
3S	14	3935.2	7306.5	X26492.3	Y43159.5	23	192	29.7	18.8	37.5	14.1	127
3S	15	3934.3	7313.4	X26539.4	Y43152.6	20.8	477	28.1	20.5	34.4	17	98
3S	16	3926.6	7319.8	X26574.2	Y43078.2	18	109	32.1	16.5	33.9	17.4	1
3S	18	3926.3	7325.6	X26613.2	Y43076.0	17.5	505	22.4	7.9	31.5	38.2	22
3S	19	3928.9	7329.7	X26644.7	Y43102.6	18.6	311	17.7	7.7	38.3	36.3	49
3S	20	3921.7	7331.2	X26644.6	Y43030.3	25.7	9	33.3	22.2	11.1	33.3	2955
3S	21	3919.9	7338.6	X26691.2	Y43012.3	23	21	33.3	14.3	38.1	14.3	462
3S	22	3917.3	7333	X26650.5	Y42985.9	25.7	53	49.1	17	26.4	7.5	640
3S	23	3916.2	7327.5	X26612.8	Y42975.0	24.6	0	0	0	0	0	0
3S	24	3913.4	7329.3	X26621.1	Y42946.8	24.1	703	60	21.3	16.9	1.7	723
3S	25	3913	7327	X26605.6	Y42942.9	23	807	49.1	24.9	21.9	4.1	529
3S	27	3859.9	7341.1	X26679.1	Y42807.3	24.6	61	88.5	6.6	4.9	0	223
3S	28	3854.8	7344.8	X26695.2	Y42753.6	25.7	358	67	19.6	10.6	2.8	729
3S	29	3851.1	7348.8	X26714.7	Y42713.7	22.4	862	43.2	29.4	23.8	3.7	312
3S	31	3845.3	7348.4	X26704.6	Y42653.8	24.6	924	63.2	24.2	12.6	0	637
3S	32	3844	7401.4	X26780.0	Y42633.1	25.7	5	40	40	20	0	281
3S	33	3840.9	7403	X26784.8	Y42599.4	27.3	0	0	0	0	0	374
3S	40	3826.7	7414.9	X26831.4	Y42439.9	26.2	209	65.6	19.6	12.9	1.9	299
3S	41	3823.5	7423	X26871.3	Y42398.5	21.3	925	20.5	27.2	40.5	11.7	10

Stratum	Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Depth	Number of Surfclams	% Surfclams	% Surfclams	% Surfclams	% Surfclams	Number of Quahogs
3S	42	3821.6	7428.8	X26899.9	Y42372.7	22.4	14	28.6	0	35.7	35.7	3
3S	43	3820.4	7427.3	X26889.8	Y42361.0	20.8	157	21	19.1	47.1	12.7	1
3S	44	3816.9	7432.2	X26910.4	Y42318.2	19.7	51	17.6	17.6	49	15.7	0
3S	45	3808.1	7420.6	X26834.9	Y42235.3	22.4	159	62.3	18.9	16.4	2.5	3
3S	47	3804.1	7428	X26867.9	Y42184.0	23	295	52.2	27.5	20	0.3	0
3S	48	3758.5	7436.6	X26903.8	Y42113.0	19.1	42	57.1	21.4	19	2.4	1
3S	49	3800.6	7439.4	X26921.5	Y42132.4	17	25	8	0	20	72	0
3S	50	3813.1	7441.9	X26955.5	Y42266.7	17.5	4	50	0	25	25	0
3S	51	3822.6	7437.6	X26949.4	Y42375.4	18.6	1	0	0	0	100	0
3S	52	3828.7	7437.5	X26960.1	Y42442.6	12.6	0	0	0	0	0	0
3S	53	3834.4	7435.7	X26960.8	Y42506.8	15.9	256	7.8	3.1	37.5	51.6	0
3S	54	3832.2	7431.3	X26932.2	Y42486.1	18.6	137	4.4	2.9	40.1	52.6	0
3S	55	3831.9	7426.4	X26904.3	Y42486.6	23.5	9	0	33.3	33.3	33.3	0
3S	56	3835	7422.3	X26886.5	Y42523.4	23	4	0	0	50	50	0
3S	57	3837.3	7422.2	X26889.9	Y42548.3	20.8	0	0	0	0	0	0
3S	58	3841.3	7427.5	X26927.4	Y42588.2	17	4	25	0	25	50	0
3S	59	3842.2	7427.7	X26930.3	Y42597.8	18	1	0	0	100	0	0
3S	60	3841.6	7422.6	X26899.8	Y42594.6	20.2	0	0	0	0	0	0
3S	61	3842.7	7413.4	X26848.4	Y42612.2	21.9	234	30.3	29.1	29.9	10.7	15
3S	62	3848.2	7414.9	X26866.6	Y42670.3	19.1	282	16.3	13.1	35.1	35.5	3
3S	63	3846.1	7411.2	X26841.2	Y42649.9	22.4	549	26.2	22.4	40.4	10.9	37
3S	64	3848.4	7404.1	X26802.8	Y42678.1	24.6	7	57.1	14.3	14.3	14.3	115
3S	65	3851.8	7406.2	X26820.9	Y42713.1	22.4	0	0	0	0	0	165
3S	66	3854.9	7408.7	X26841.2	Y42745.0	21.9	151	4.6	2	13.2	80.1	12
3S	67	3856.5	7402.5	X26806.2	Y42764.5	20.8	307	10.4	5.2	40.7	43.6	10
3S	68	3858.2	7359.9	X26793.1	Y42783.4	19.7	176	9.7	5.7	34.1	50.6	118
3S	69	3901.6	7352.4	X26752.0	Y42821.5	19.7	424	20	11.1	38.2	30.7	435
3S	70	3909.7	7356.4	X26790.3	Y42905.2	19.1	196	5.6	7.1	26.5	60.7	56
3S	71	3911.3	7355.3	X26786.0	Y42922.1	18.6	45	15.6	2.2	26.7	55.6	5
3S	72	3912	7400.6	X26821.1	Y42928.6	13.1	80	2.5	0	15	82.5	2
4S	17	3924	7317.7	X26556.9	Y43052.3	27.9	26	69.2	3.8	23.1	3.8	885
4S	26	3911	7320.6	X26561.7	Y42923.5	29.5	6	66.7	16.7	16.7	0	1007
4S	30	3846.1	7340.1	X26655.8	Y42666.2	27.9	75	93.3	4	2.7	0	274
4S	34	3838.8	7402.2	X26777.0	Y42577.8	26.8	2	100	0	0	0	626

Stratum	Station	Latitude	Longitude	Lorans TD 1	Lorans TD 2	Depth	Number of Surfclams	% Surfclams	% Surfclams	% Surfclams	% Surfclams	Number of Quahogs
4S	35	3838.6	7357.1	X26747.0	Y42578.9	25.7	4	100	0	0	0	680
4S	36	3837.1	7400.9	X26767.0	Y42560.7	27.3	0	0	0	0	0	257
4S	37	3829.3	7404.3	X26775.5	Y42476.0	29.5	0	0	0	0	0	500
4S	38	3827.5	7401.6	X26757.8	Y42459.2	27.9	1	100	0	0	0	1038
4S	39	3824.2	7404.7	X26770.8	Y42421.9	31.7	1	100	0	0	0	75
4S	46	3808.3	7417	X26816.0	Y42241.4	25.2	133	80.5	13.5	6	0	11

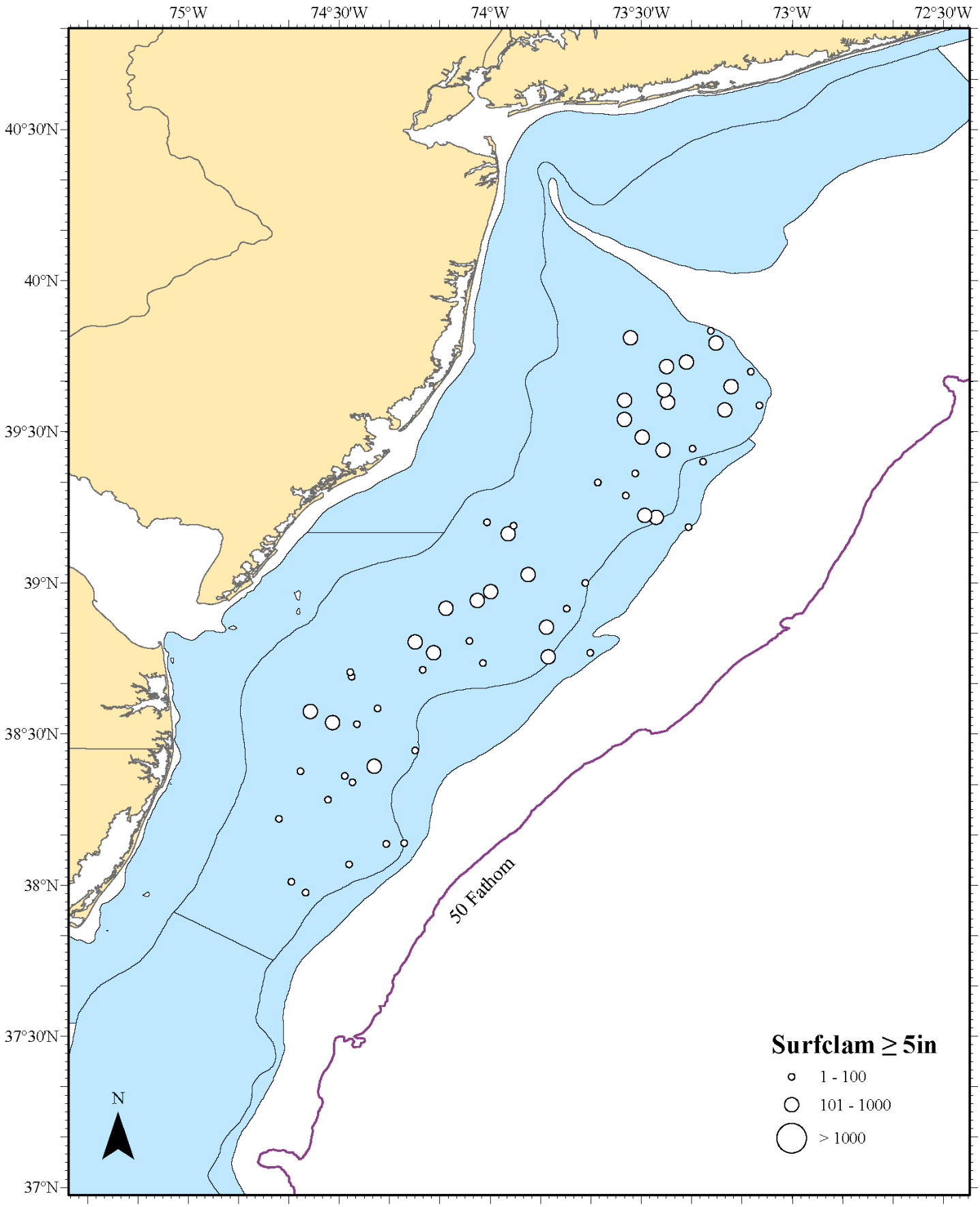
NEFSC SURFCLAM AND OCEAN QUAHOG SURVEY

2021 NOAA Fisheries Service ATLANTIC SURFCLAM - Number/Tow



NEFSC SURFCLAM AND OCEAN QUAHOG SURVEY

2021 NOAA Fisheries Service ATLANTIC SURFCLAM - Number/Tow Greater Than 5 Inches



NEFSC SURFCLAM AND OCEAN QUAHOG SURVEY
2021 NOAA Fisheries Service OCEAN QUAHOG - Number/Tow