2020 Drop Camera Scallop Survey Short Report

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1.0 2020 SURVEY BIOMASS ESTIMATES

Table 1. Total biomass estimates form the 2020 SMAST drop camera survey by Scallop Area Management Simulator (SAMS) zones. Stations were 2.8 km apart for SAMS zones aligned with Elephant Trunk, Closed Area II and the Nantucket Lightship; station in the Great South Channel (grey) were 5.6 km apart. Meat weights were estimated following the 65th SARC shell-height to meat-weight formulas except in the NLS-South-Deep where the equation from the Virginia Institute of Marine Science was used.

SMAST Drop Camera **Size cutoff for estimates is 40mm**							
GB	**NumMil**	**BmsMT**	**SE**	**MeanWt**	**Avg. Size (mm)**	**Scallop density (m^2)**	**# Stations**
CL2-Southeast	505	5,086	842	10.1	74.2	0.21	316
CL2-Southwest	790	17,769	3,442	22.5	100.9	0.76	135
CL2-Ext	1,048	15,401	1,986	14.7	79.8	0.76	179
NLS-North	101	3,643	707	35.9	112.0	0.07	179
NLS-South-Deep	2,544	33,709	6,366	13.3	93.9	3.66	90
GSC	329	6,077	2,917	18.5	89.2	0.07	143
MidAtlantic							
ET Open	453	12,469	1,171	27.6	115.2	0.17	354
ET Flex	262	8,143	1,127	31.1	120.7	0.15	229

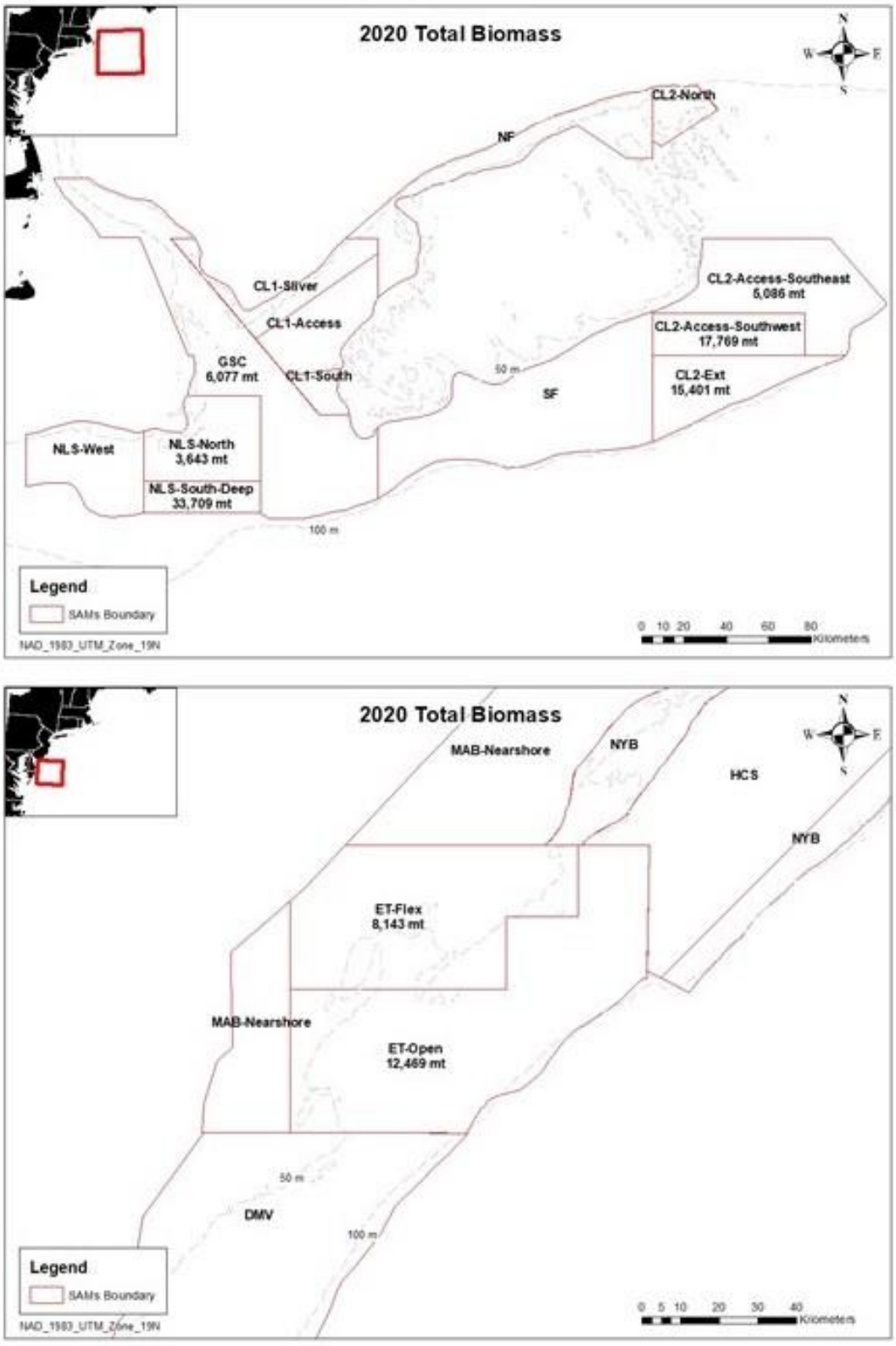

Figure 1. 2020 SMAST drop camera total biomass estimates on Georges Banks and the Mid-Atlantic by Scallop Area Management Simulator (SAMS) zones.

2.0 FIGURES OF SURVEY COVERAGE

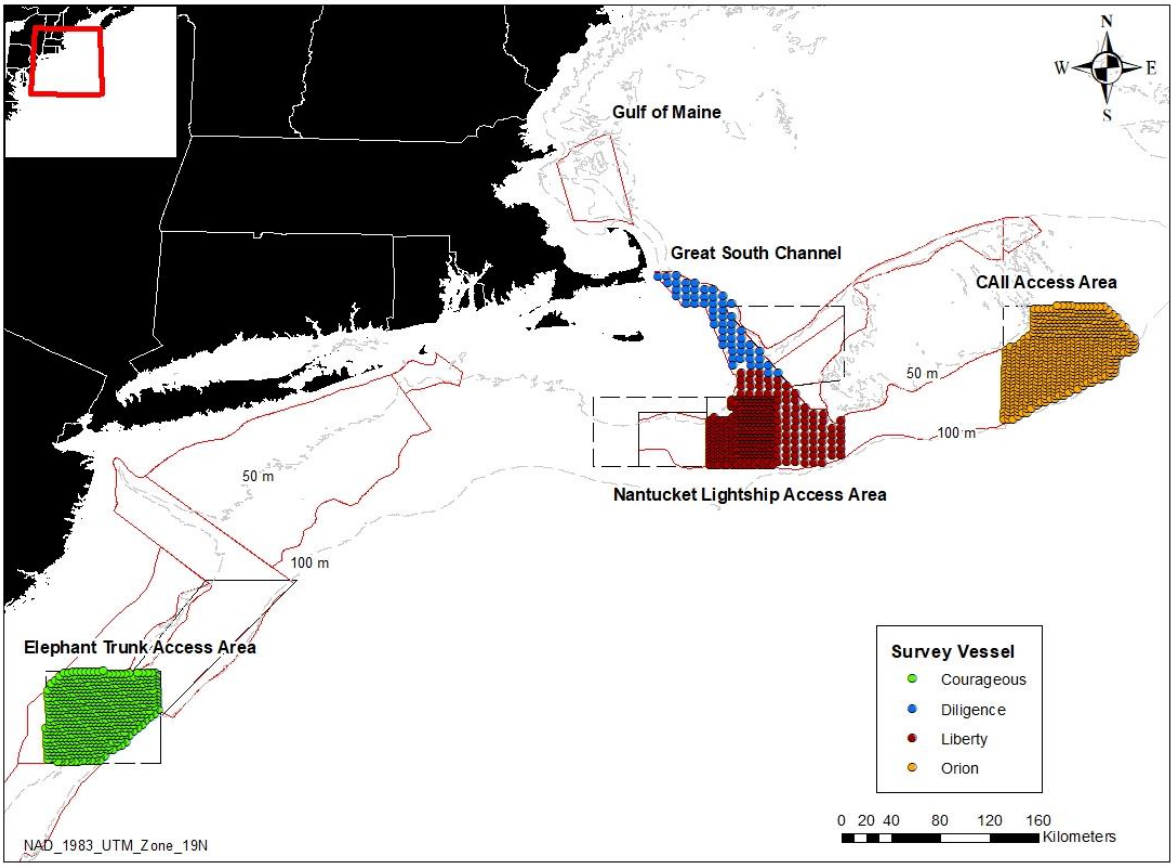

Figure 2. 2020 SMAST drop camera survey locations by vessel. Stations were 2.8 km apart except in the Great South Channel where they were 5.6 km apart.

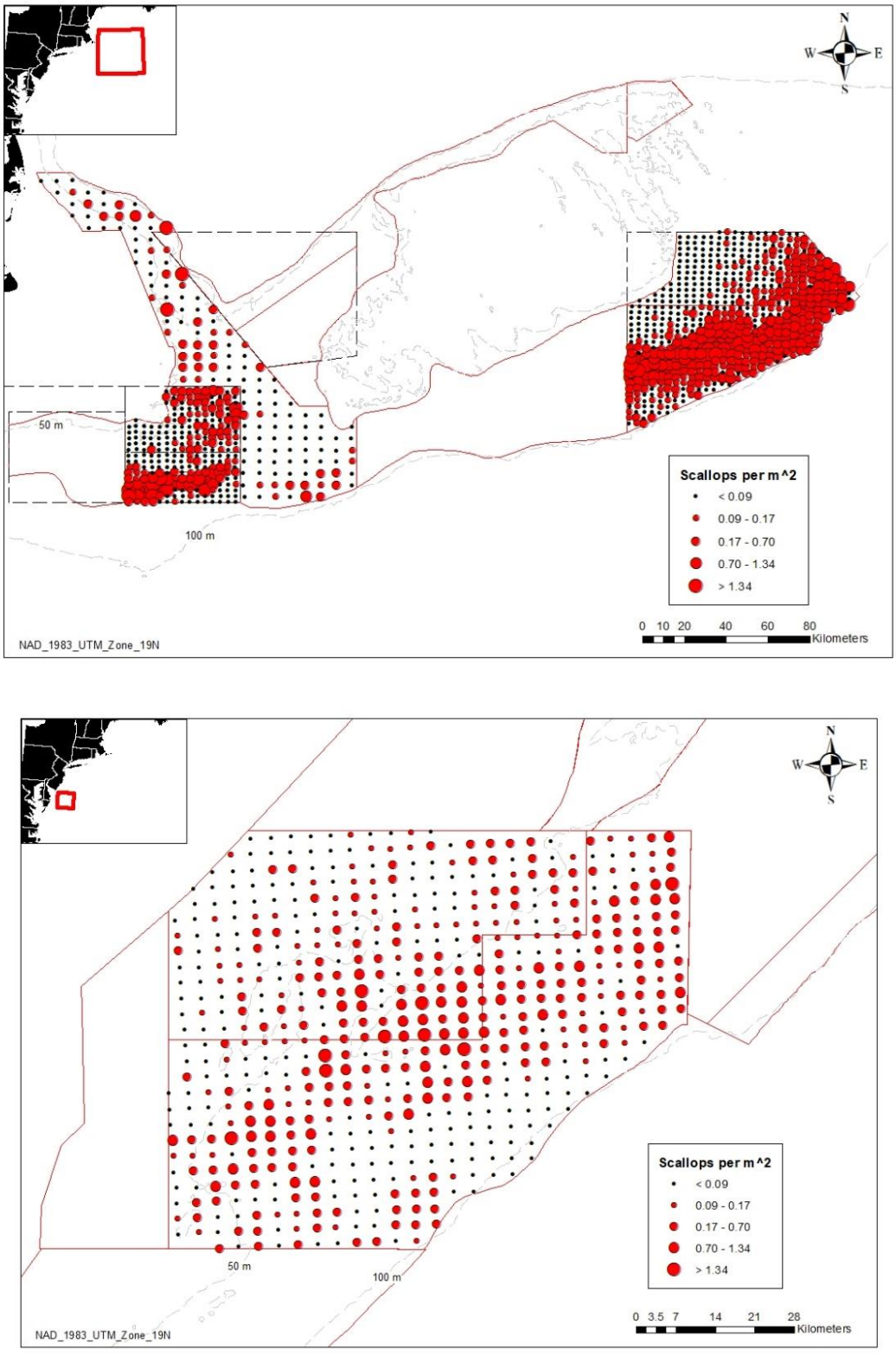

Figure 3. Overall scallop density at 2020 SMAST drop camera survey stations on Georges Bank (top) and in the Elephant Trunk area (bottom).

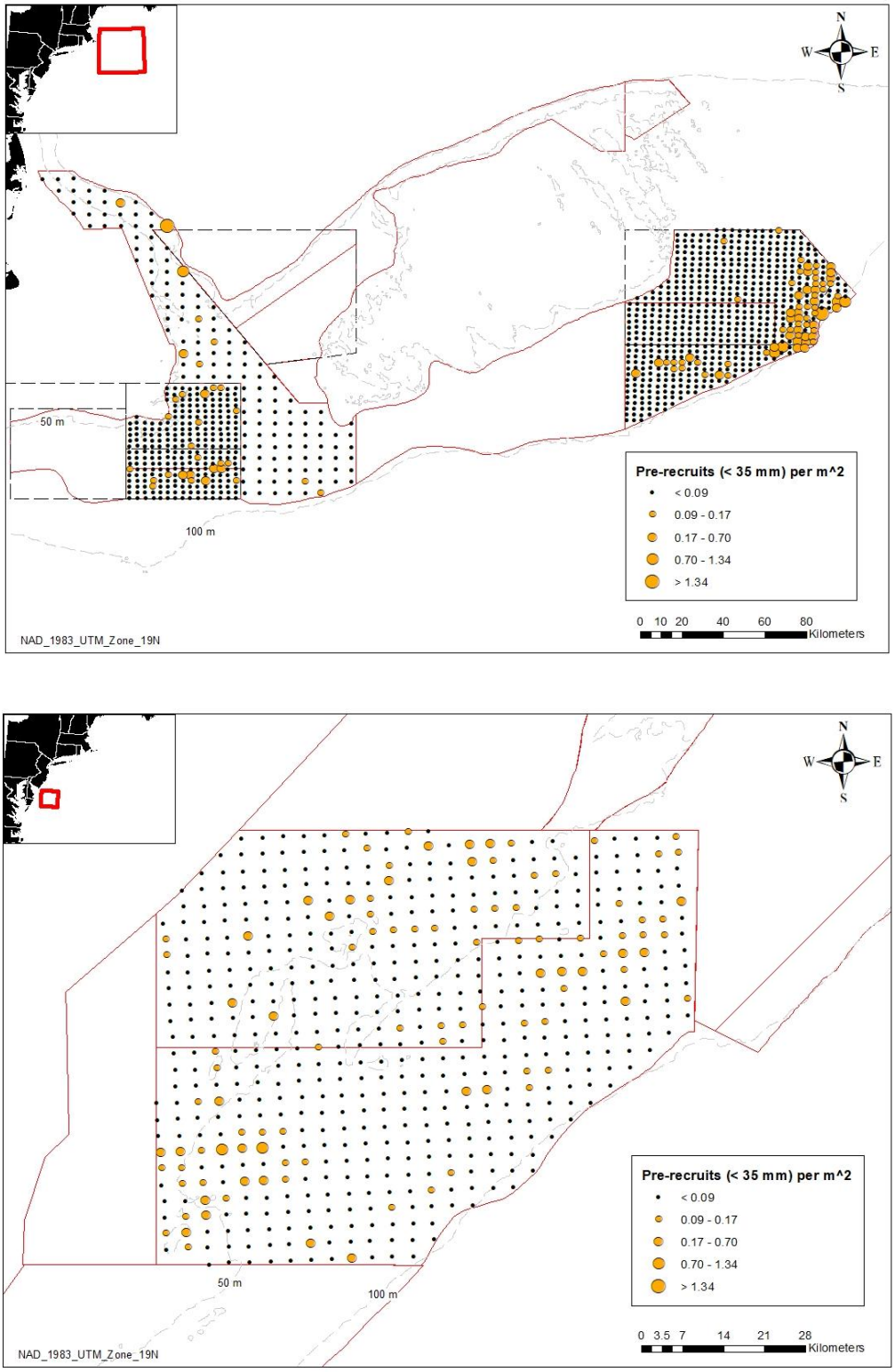

Figure 4. Pre-recruit scallop density at 2020 SMAST drop camera survey stations on Georges Bank (top) and in the Elephant Trunk area (bottom).

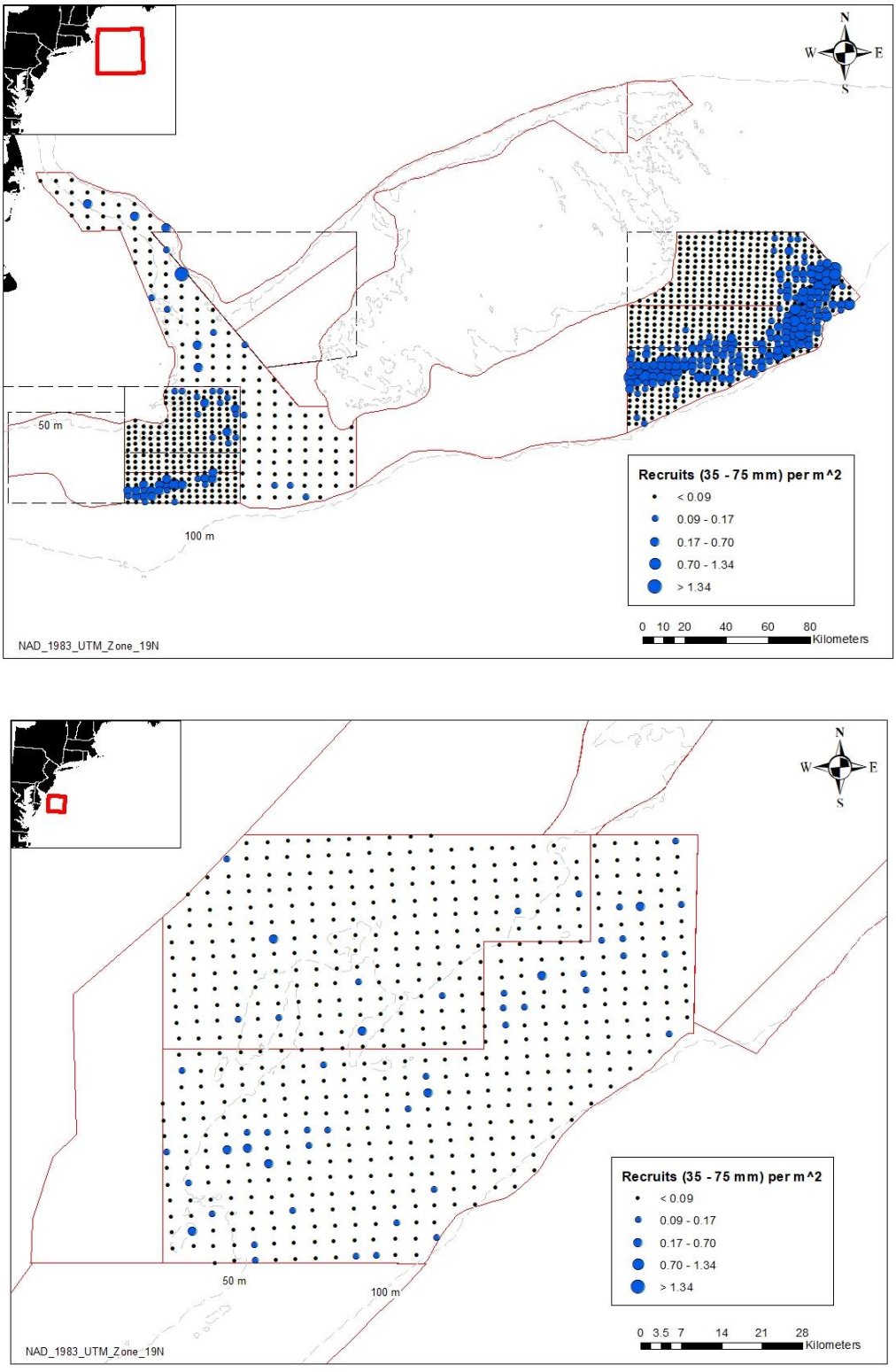

Figure 5. Recruit scallop density at 2020 SMAST drop camera survey stations on Georges Bank (top) and in the Elephant Trunk area (bottom).

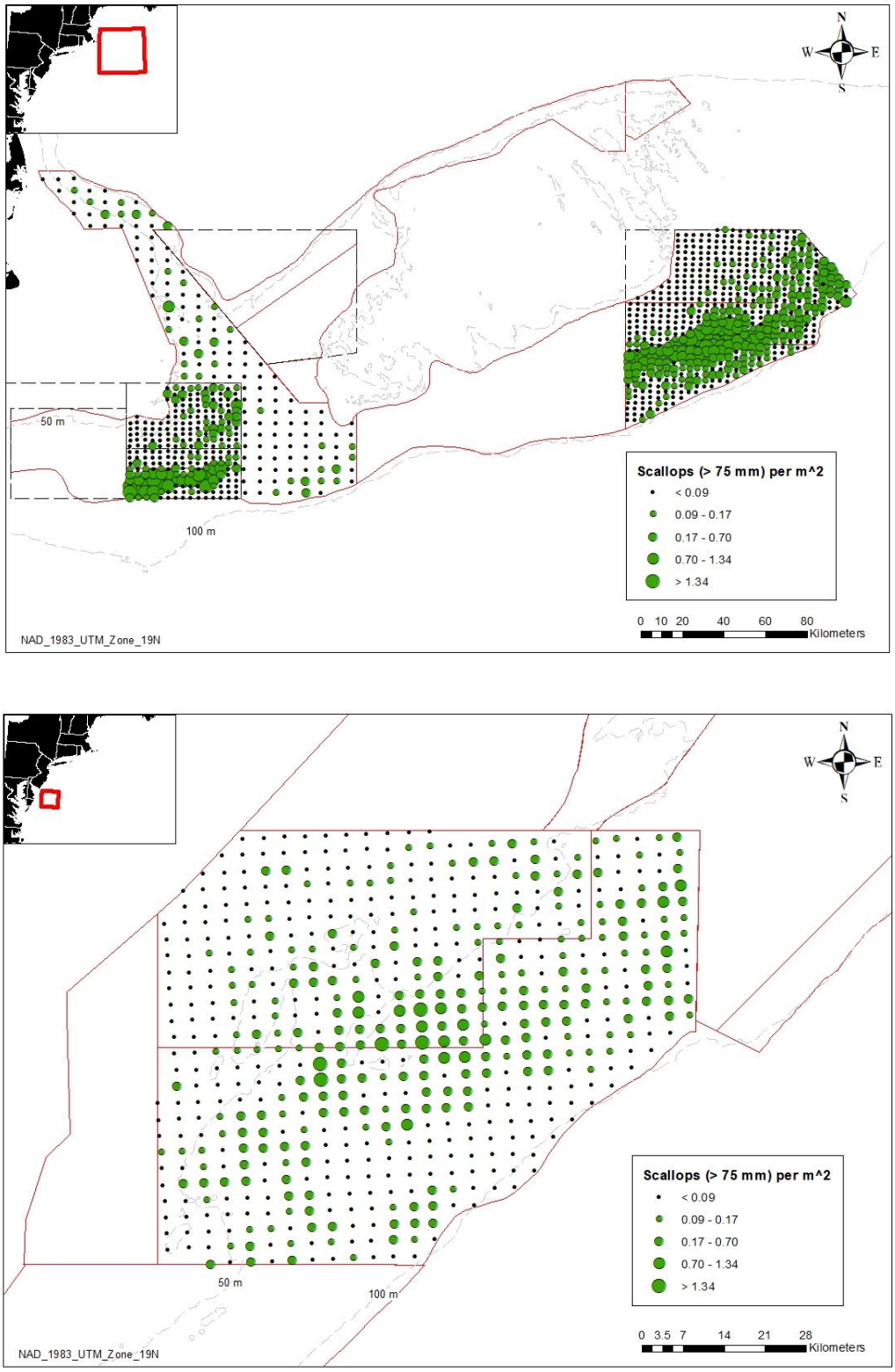

Figure 6. Scallops over 75 mm density at 2020 SMAST drop camera survey stations on Georges Bank (top) and in the Elephant Trunk area (bottom).

3.0 LENGTH FREQUENCY PLOTS BY SAMS AREA

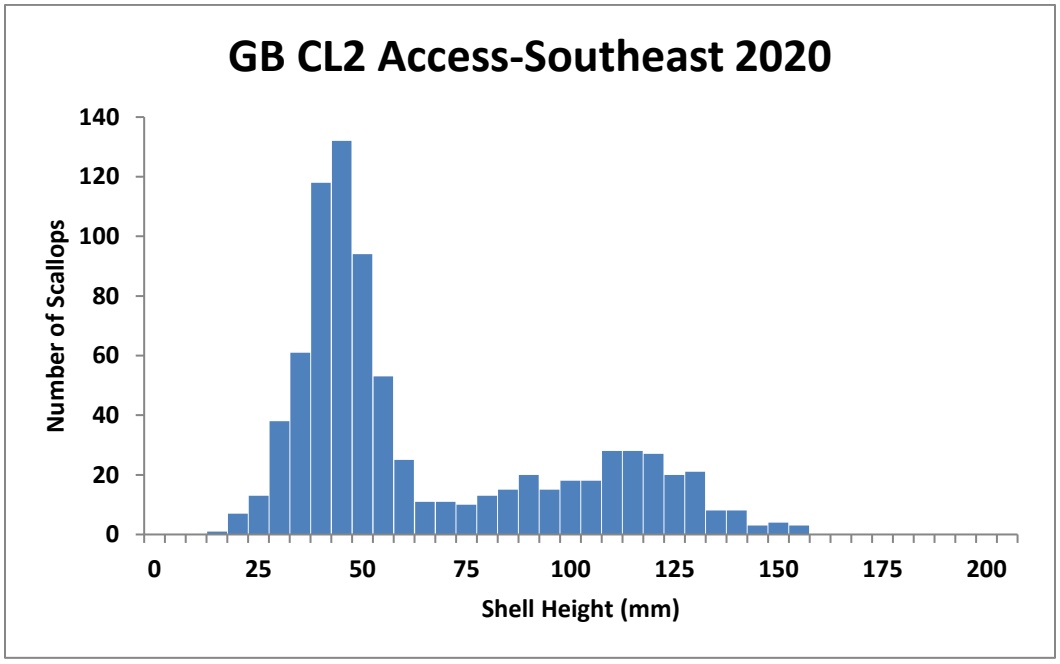

Figure 7. Shell height distribution of scallops in the CL2-Access-Southeast SAMS zone from the SMAST drop camera digital images. The overall average shell height was 62.4 mm and 823 scallops were measured.

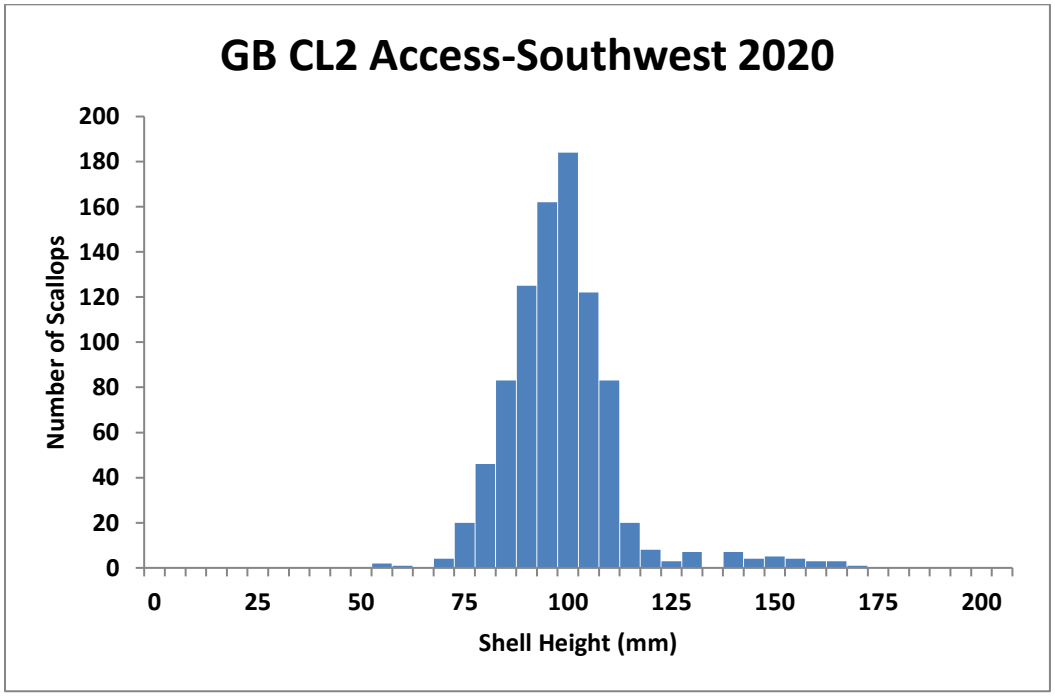

Figure 8. Shell height distribution of scallops in the CL2-Access-Southwest SAMS zone from the SMAST drop camera digital images. The overall average shell height was 100.9 mm and 897 scallops were measured.

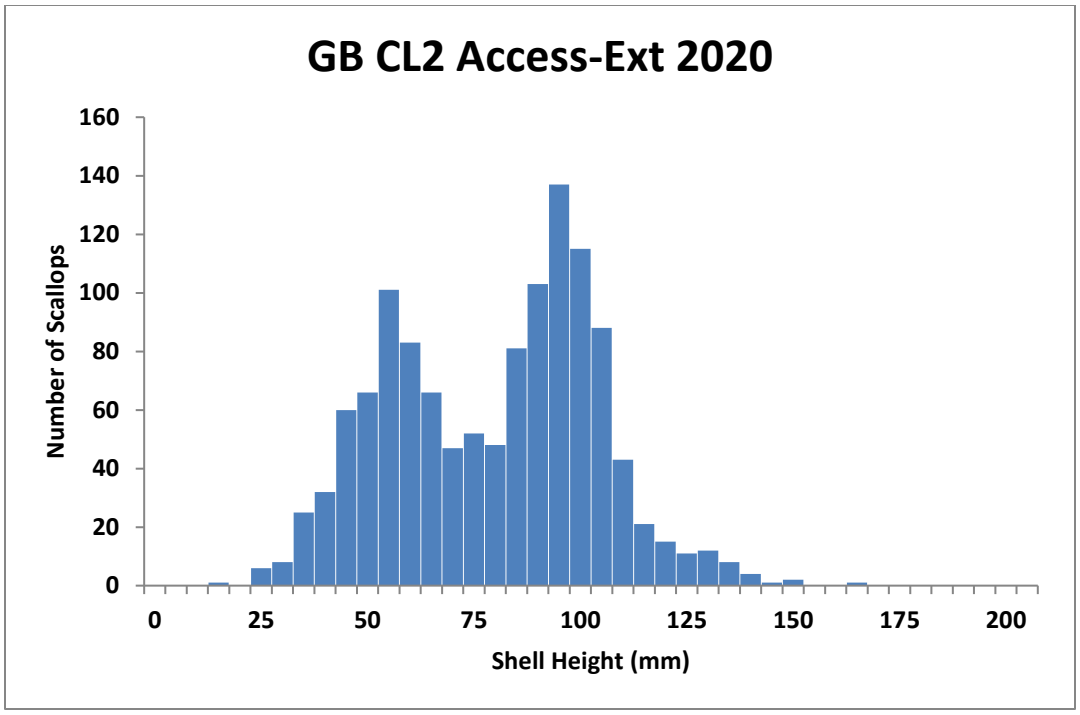

Figure 9. Shell height distribution of scallops in the CL2-Access-Ext SAMS zone from the SMAST drop camera digital images. The overall average shell height was 77.1 mm and 1,237 scallops were measured.

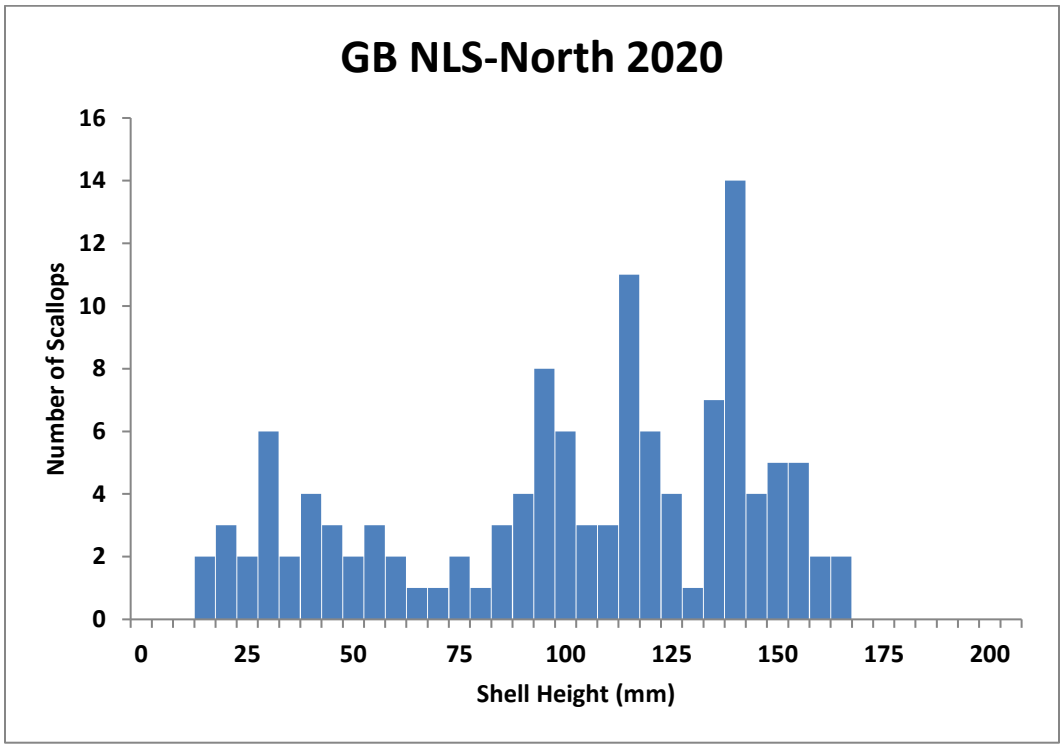

Figure 10. Shell height distribution of scallops in the NLS-North SAMS zone from the SMAST drop camera digital images. The overall average shell height was 98.7 mm and 122 scallops were measured.

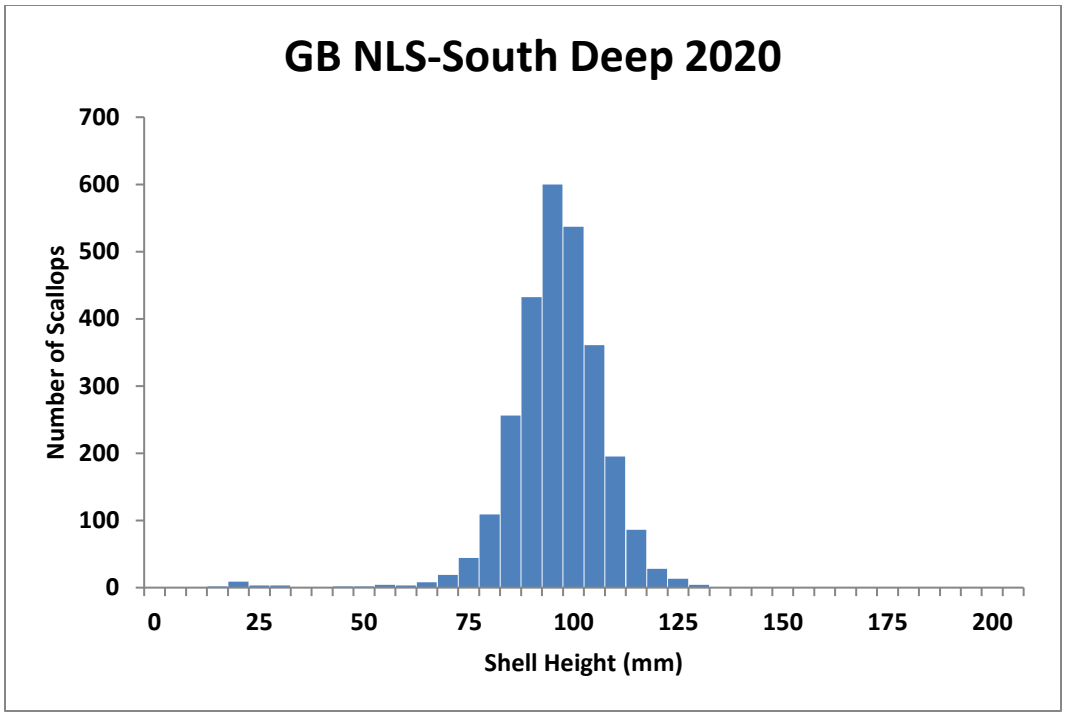

Figure 11. Shell height distribution of scallops in the NLS-South-Deep SAMS zone from the SMAST drop camera digital images. The overall average shell height was 93.4 mm and 2,723 scallops were measured.

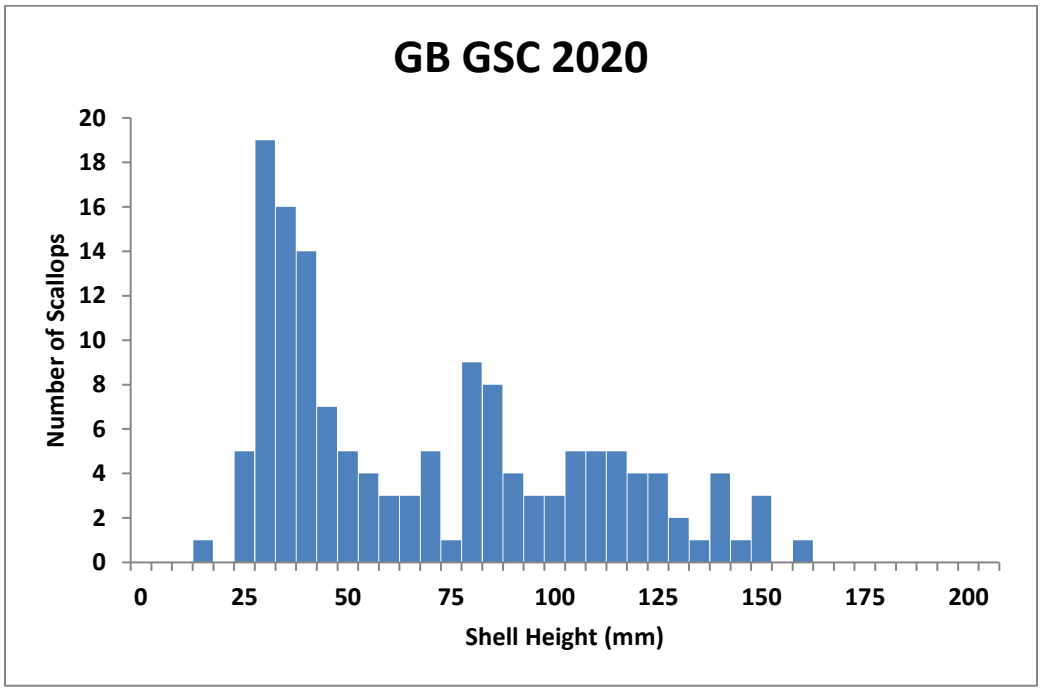

Figure 12. Shell height distribution of scallops in the GSC SAMS zone from the SMAST drop camera digital images. The overall average shell height was 67.1 mm and 145 scallops were measured.

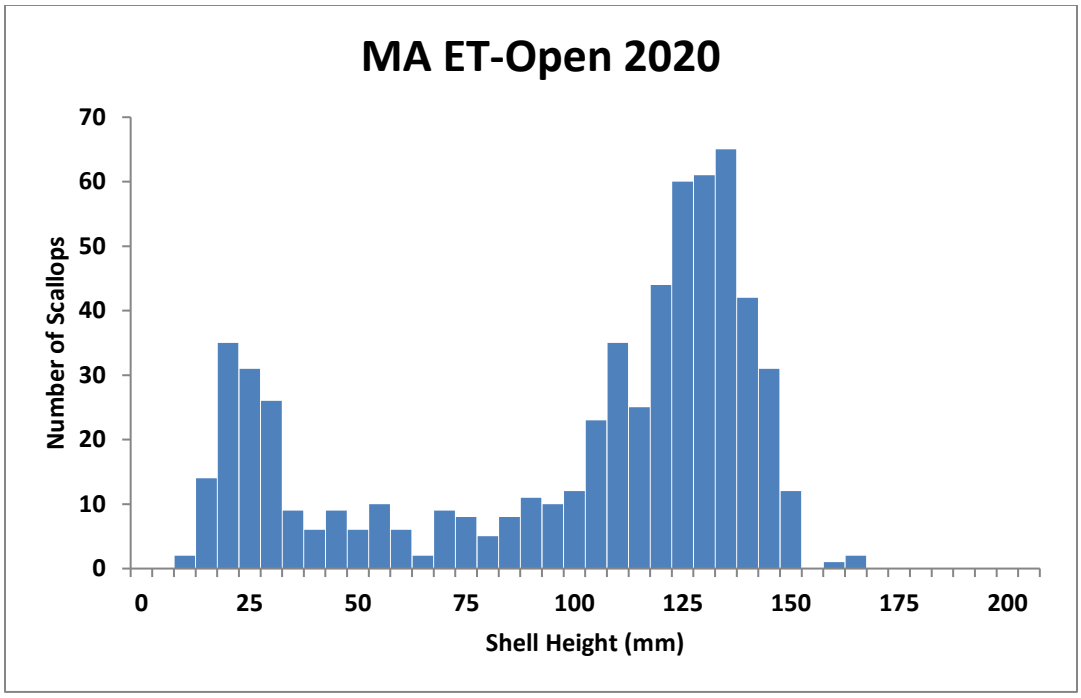

Figure 13. Shell height distribution of scallops in the ET-Open SAMS zone from the SMAST drop camera digital images. The overall average shell height was 96.7 mm and 620 scallops were measured.

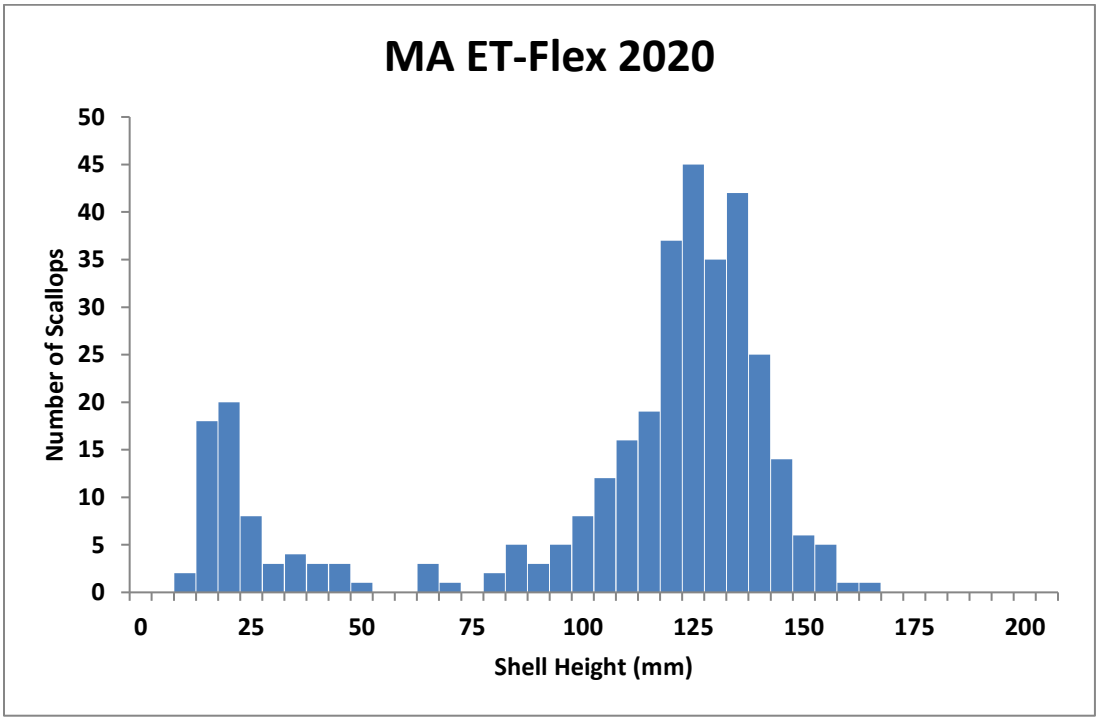

Figure 14. Shell height distribution of scallops in the ET-Flex SAMS zone from the SMAST drop camera digital images. The overall average shell height was 103.7 mm and 347 scallops were measured.

4.0 ADDITIONAL SENSITIVITY ANALYSES

Table 2. Comparison of the total biomass in metric tons estimates in the Nantucket Lightship using the SARC 65 SH/MW estimates and VIMS SH/MW equation.

SAMS Area	SARC 65 SH/MW		VIMS SH/MW 2016-2020	
	BMS (mt)	MeanWt	BMS (mt)	MeanWt
NLS-North	3,643	35.9	3,990	39.4
NLS-South-Deep	33,709	13.3	34,918	13.7

5.0 SPECIAL COMMENTS

This survey year there were several potential recruitment events detected, most notably in the eastern portion of CL2 along the Hague line (Figure 4). Several other smaller events were detected in the ET-Open and Flex areas of the Mid-Atlantic as well as the Nantucket Lightships South Deep area.

6.0 EXPLOITABLE BIOMASS ESTIMATES FOR 2020 (CURRENT FY)

Table 3. Exploitable biomass estimates form the 2020 SMAST drop camera survey by Scallop Area Management Simulator (SAMS) zones. Stations were 2.8 km apart for SAMS zones aligned with Elephant Trunk, Closed Area II and the Nantucket Lightship; station in the Great South Channel (grey) were 5.6 km apart. Meat weights were estimated following the 65th SARC shell-height to meat-weight formulas.

SMAST Drop Camera				
Georges Bank	**NumMill**	**Exploitable BmsMT**	**SE**	**MeanWt**
CL2-Southeast	138	3,056	506	31.6
CL2-Southwest	309	8,472	1,641	27.3
CL2-Ext	255	6,287	811	24.7
NLS-North	66	3,068	596	47.5
NLS-South-Deep	932	14,302	2,701	15.4
GSC	127	4,110	1,973	33.2
MidAtlantic				
ET Open	333	10,560	992	32.4
ET Flex	210	7,033	974	33.9

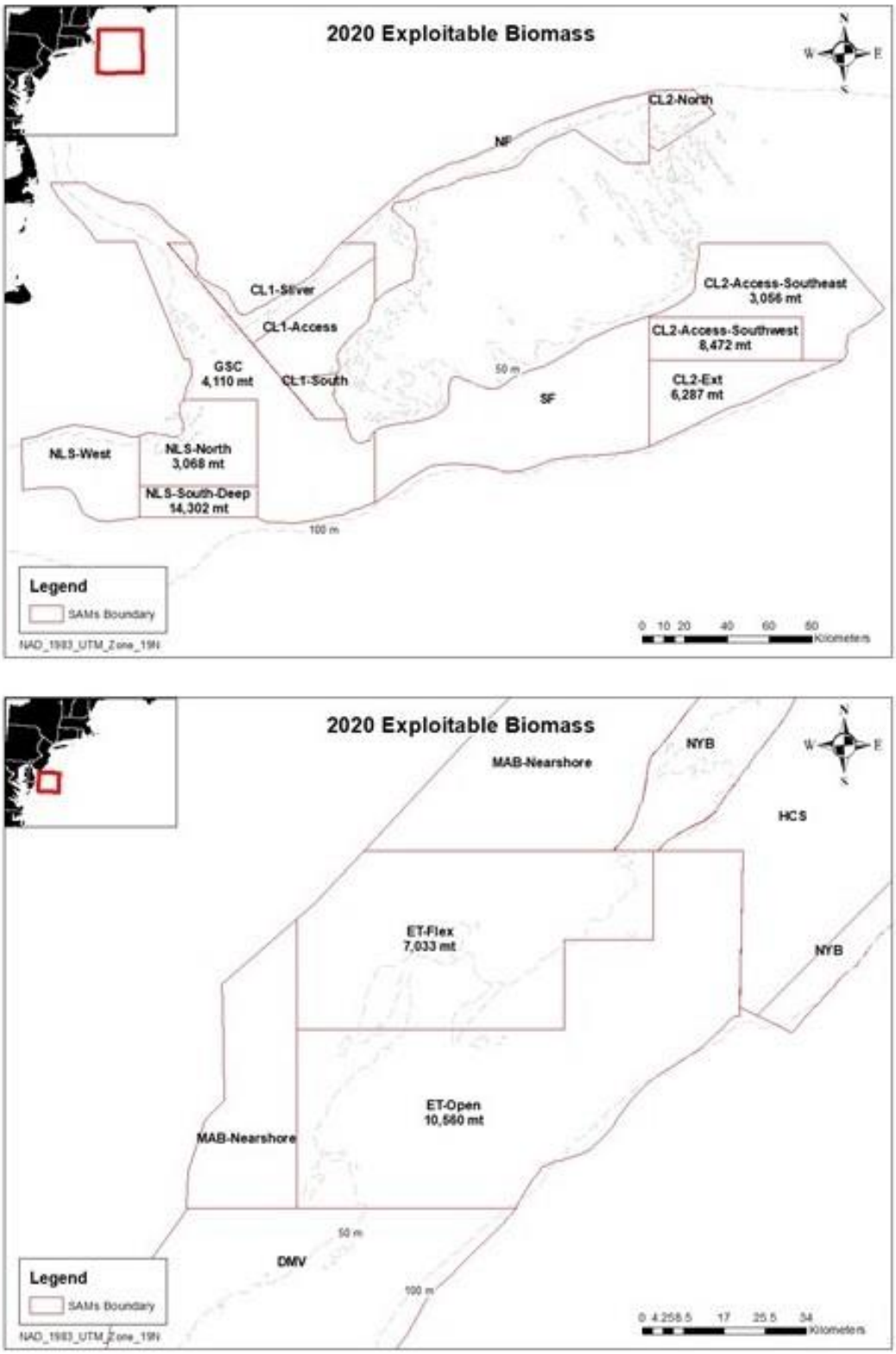

Figure 15. 2020 SMAST drop camera exploitable biomass estimates on Georges Banks and the Mid-Atlantic by Scallop Area Management Simulator (SAMS) zones.