2022 Scallop Survey Short Report

Habcam

Prepared by:

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1 2022 SURVEY BIOMASS ESTIMATES

Table 1.1. Summary of 2022 Habcam estimates for scallops larger than 40 mm shell height using the combined data from NEFSC and CFF. SARC 65 SH-MW equations were used to estimate meat weights for all SAMS areas. MeanWt is estimated using BmsMT/NumMill. #PerM^2 is estimated using NumMill/Area. The target annotation rate is 1:50 for NEFSC and 1:100 for CFF for 2022. However, 1:25 was conducted by accident in some areas for the NEFSC Habcam survey. No scallops were found in CL1-South from Habcam survey this year.

SAMS Area	NumMill	BmsMT	BmsMTSE	MeanWt	AvgSize	#PerM^2	#Annotated	AnnRate
Georges Bank								
CL1-Access	10	215	13	22.1	96.0	0.01	3755	1:50
CL1-Sliver	373	1578	33	4.2	58.1	0.46	5372	1:25/50
CL1-South	0	0.21	0.41	-	-	0.00	451	1:50
CL2-North	350	6916	175	19.7	104.4	0.79	5936	1:25/50
CL2-Southeast	842	7631	248	9.1	75.8	0.34	4563	1:100
CL2-Southwest	150	3105	158	20.7	109.6	0.14	2435	1:100
CL2-Ext	501	7227	242	14.4	89.2	0.36	3567	1:100
NLS-North	65	990	41	15.3	90.0	0.04	7550	1:50
NLS-South	115	2517	58	21.8	107.8	0.18	2503	1:100
NLS-West	8	202	16	24.1	88.9	0.01	12411	1:25
GSC	411	5368	44	13.1	74.1	0.09	14320	1:25/50
NF	315	4414	307	14.0	82.0	0.17	11863	1:25/50
SF	627	7328	114	11.7	78.1	0.15	7706	1:100
Mid-Atlantic								
BI	12	316	10	26.2	109.7	0.02	1859	1:100
LI	250	5762	46	23.1	104.7	0.02	16201	1:100
NYB	50	967	33	19.2	93.5	0.02	5590	1:100
NYB-Closure	328	6364	82	19.4	97.1	0.07	18823	1:50/100
MAB-Nearshore	24	3	11	12.7	64.7	0.01	4755	1:50
HCS	49	838	18	17.1	95.3	0.01	6567	1:50
ET	691	4232	45	6.1	68.3	0.15	11376	1:25/50
DMV	89	615	8	6.9	68.0	0.02	10947	1:50

2 FIGURES OF SURVEY COVERAGE

The 2022 NEFSC Habcam/Dredge survey took place in Mid-Atlantic from May 14th to 20th and in Georges Bank from May 21st to June 13th. The center completed 1,124 nm of Habcam tracks in Mid-Atlantic and 600 nm in Georges Bank, collected over 5.3 million image pairs, and manually annotated 123,568 images. Of all the images with scallops annotated, 68% (5684/8381) were QAQCed. The overall QAQC rate is 7% (8381/123568). A new Mako camera system with a higher resolution was used for the NEFSC Habcam survey this year. As a result, the image pixels increase from 1360*1024 to 1936*1216. Forty-four geostatistical models were constructed to produce the spatial count and biomass estimates of scallops for Georges Bank and Mid-Atlantic for 2022.

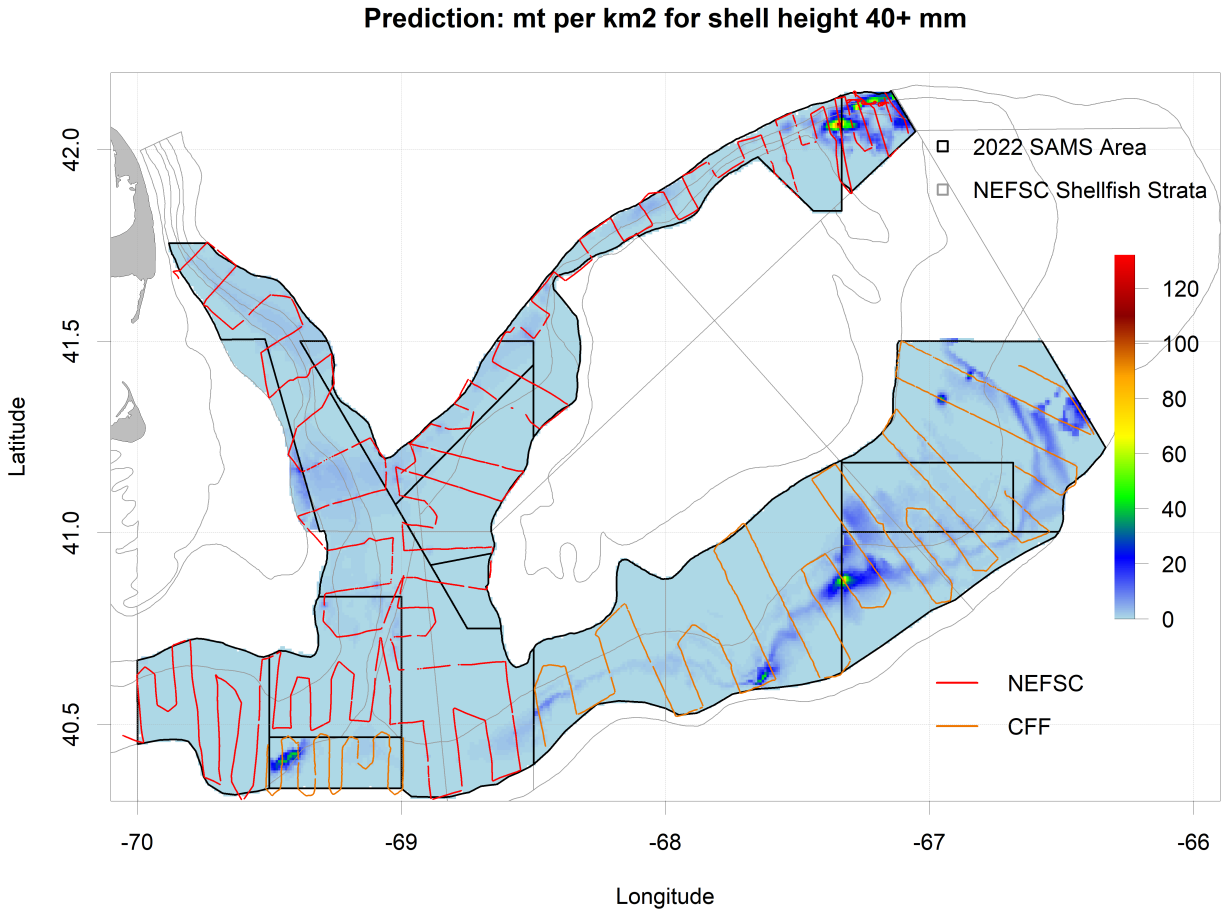

Figure 2.1. The 2022 Habcam survey tracks conducted by NEFSC and CFF, along with 2022 Habcam biomass estimates for 40+ mm scallops for Georges Bank.

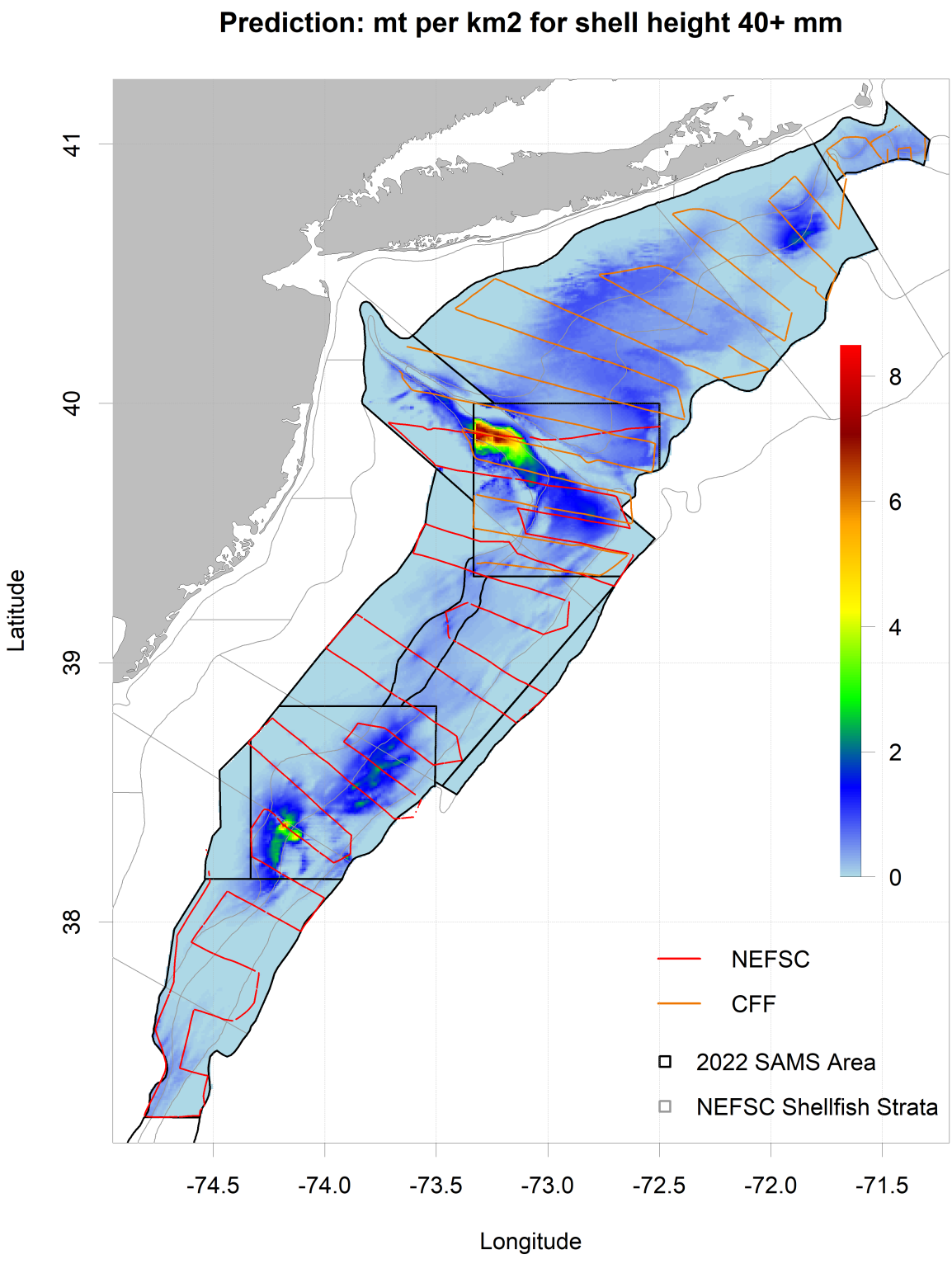

Figure 2.2. The 2022 Habcam survey tracks conducted by NEFSC and CFF, along with 2022 Habcam biomass estimates for 40+ mm scallops for Mid-Atlantic.

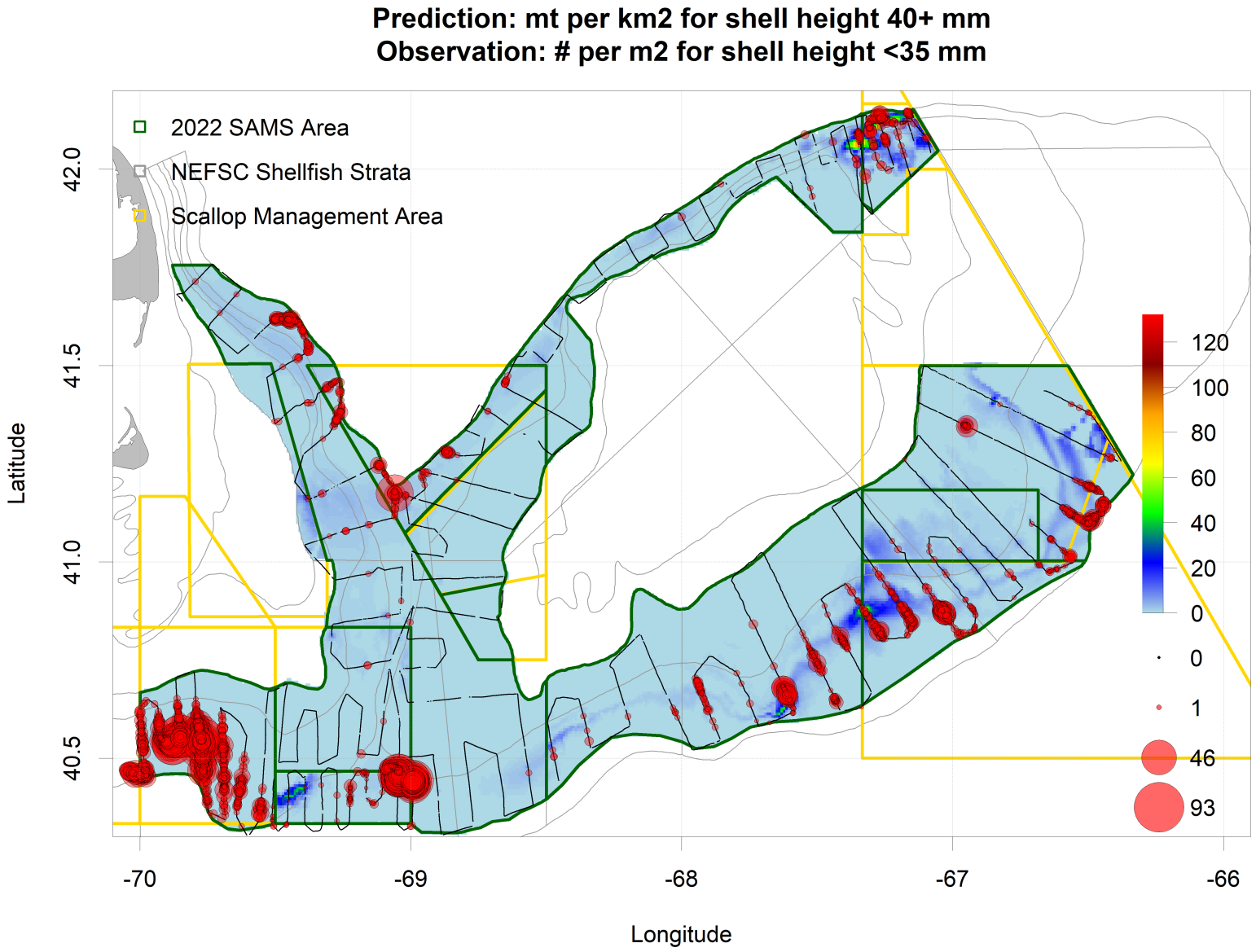

Figure 2.3. The number of <35 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Georges Bank.

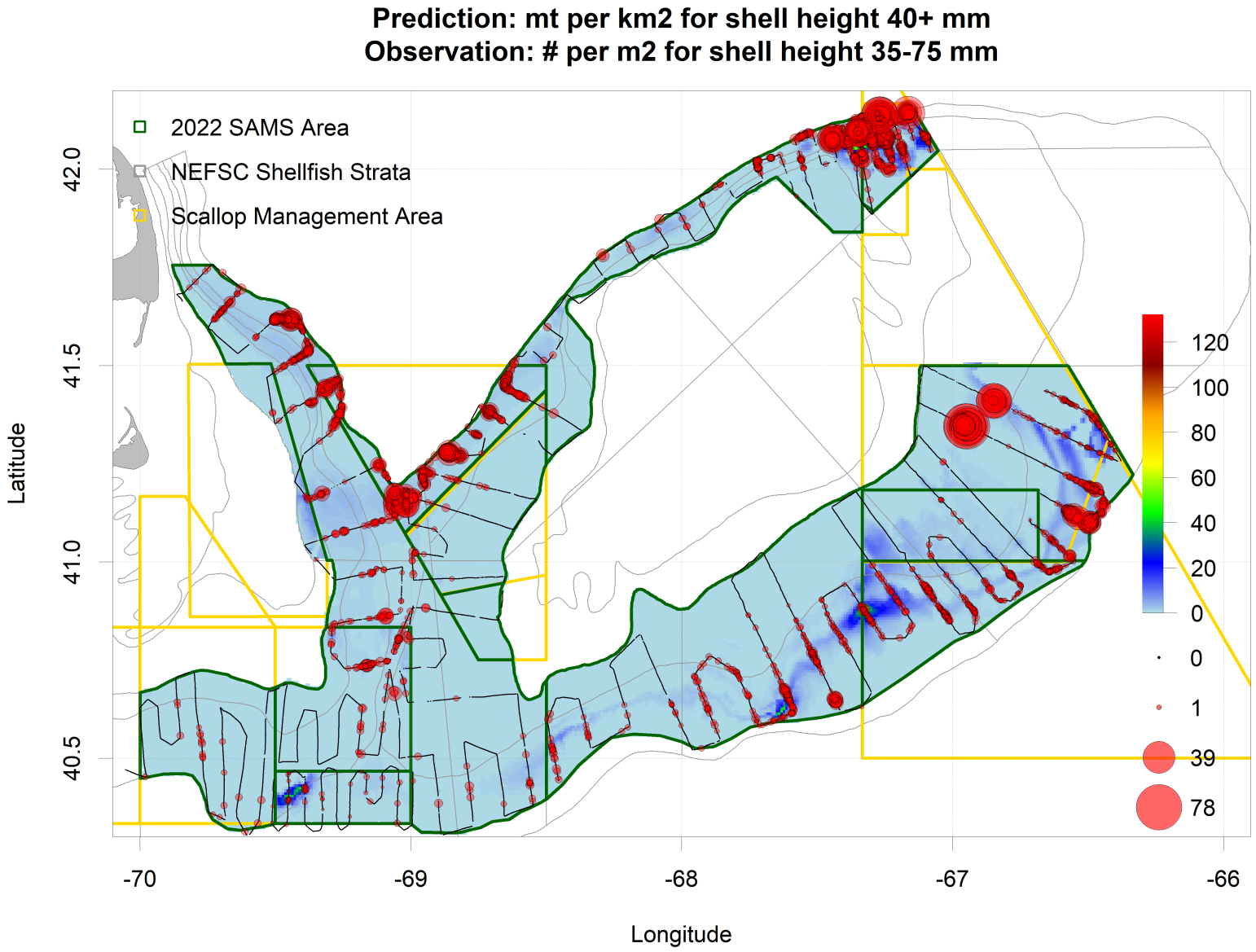

Figure 2.4. The number of 35-75 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Georges Bank.

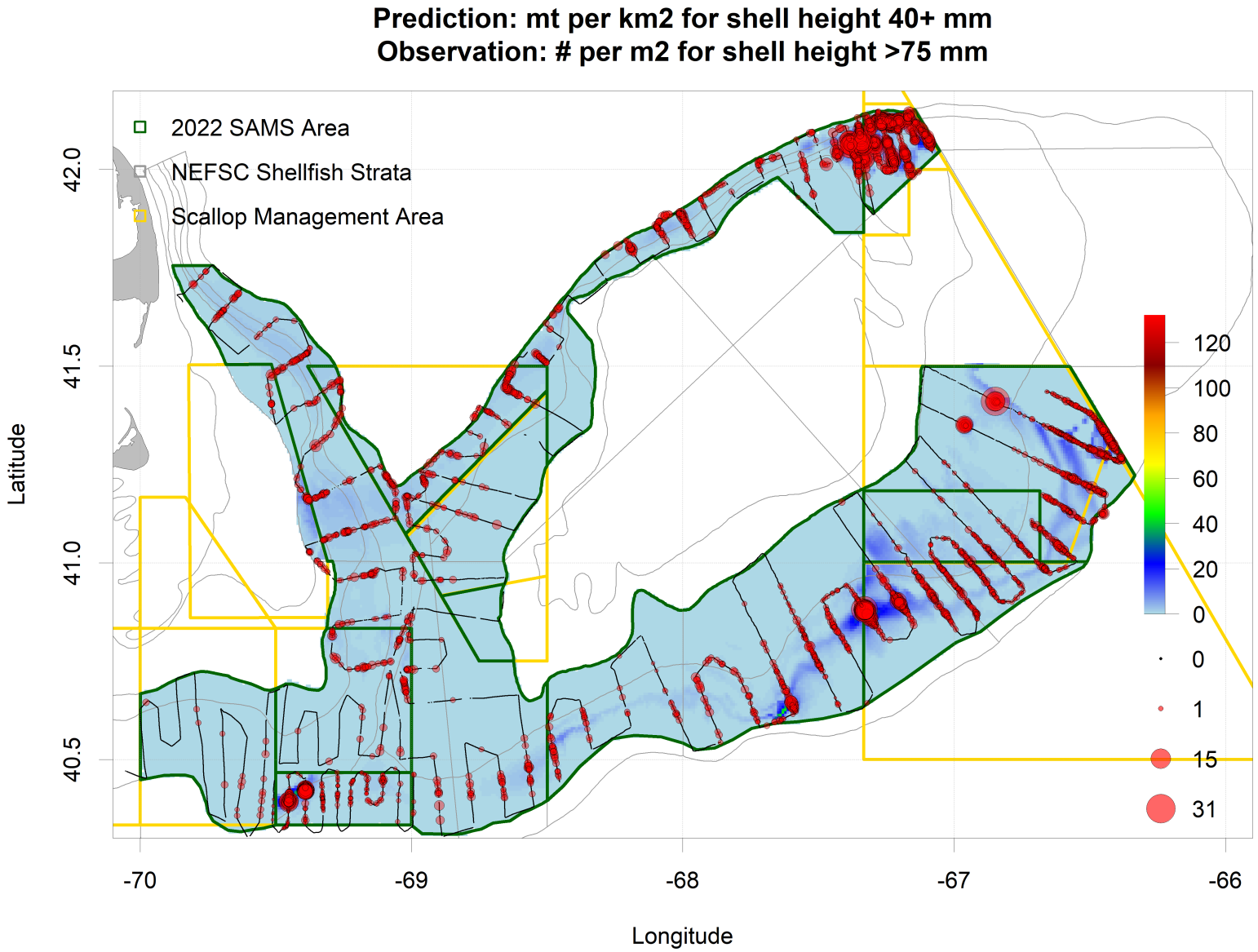

Figure 2.5. The number of >75 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Georges Bank.

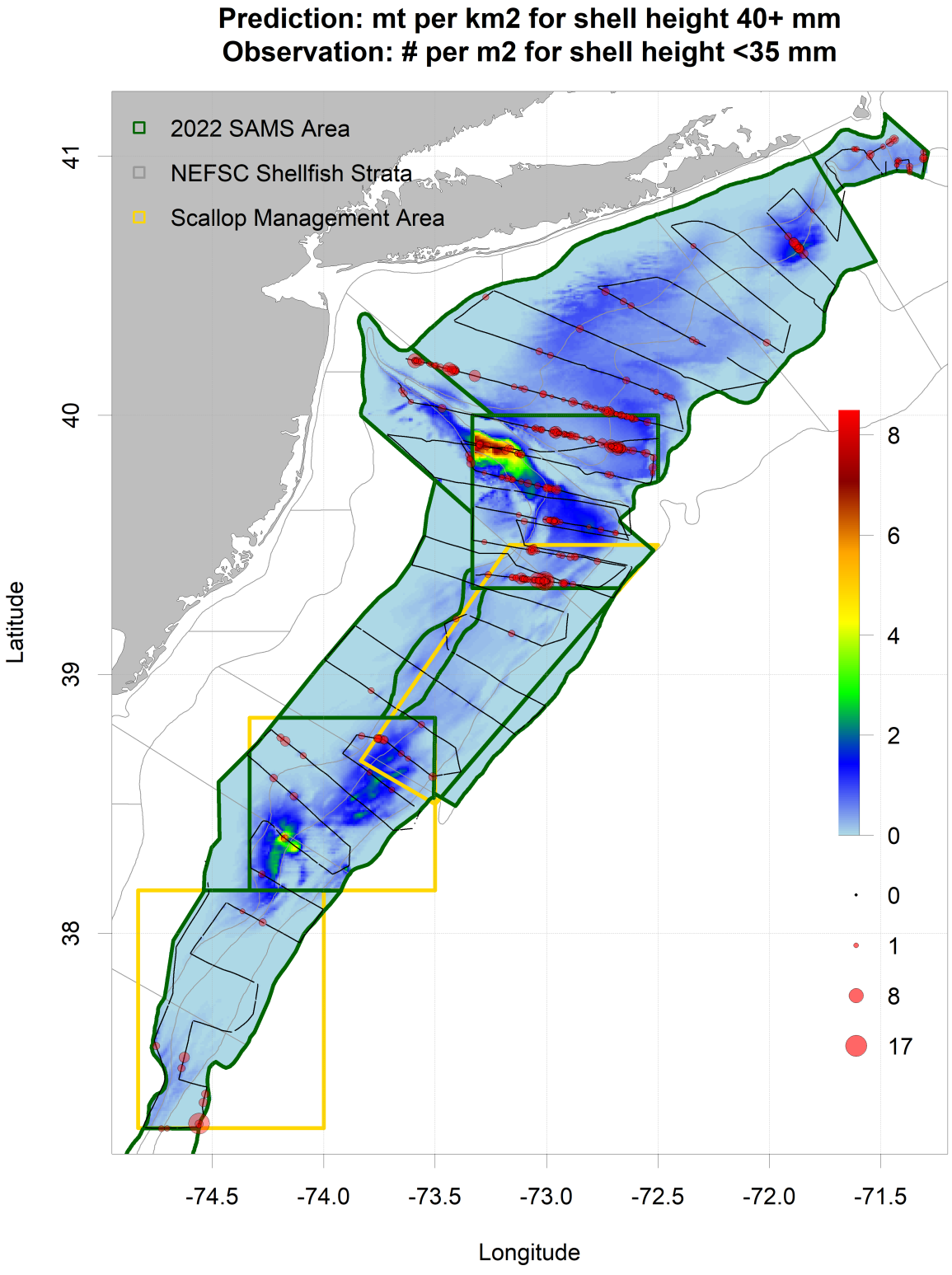

Figure 2.6. The number of <35 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Mid-Atlantic.

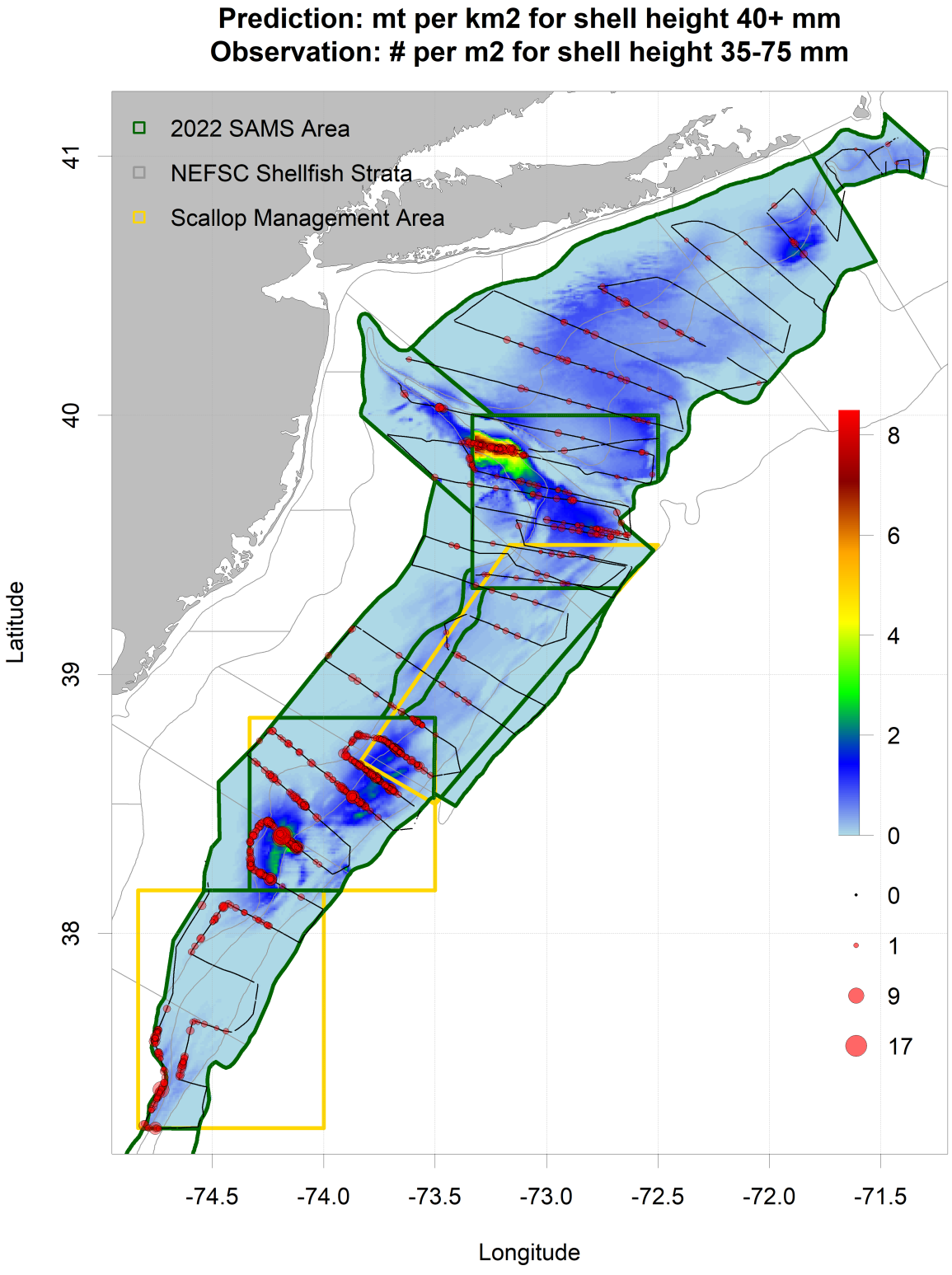

Figure 2.7. The number of 35-75 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Mid-Atlantic.

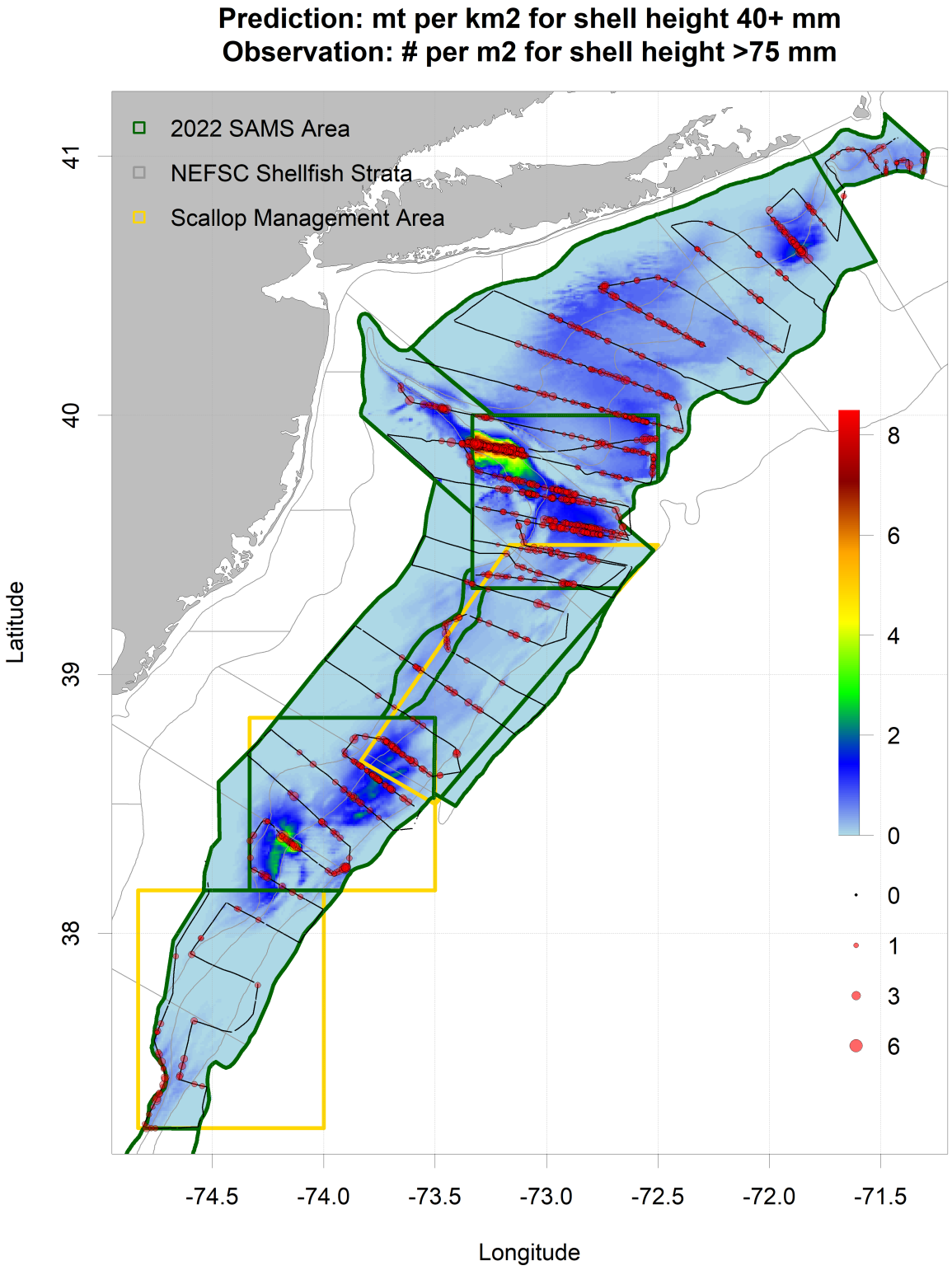

Figure 2.8. The number of >75 mm scallops observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam biomass estimates for 40+ mm scallops for Mid-Atlantic.

3 LENGTH FREQUENCY PLOTS BY SAMS AREA

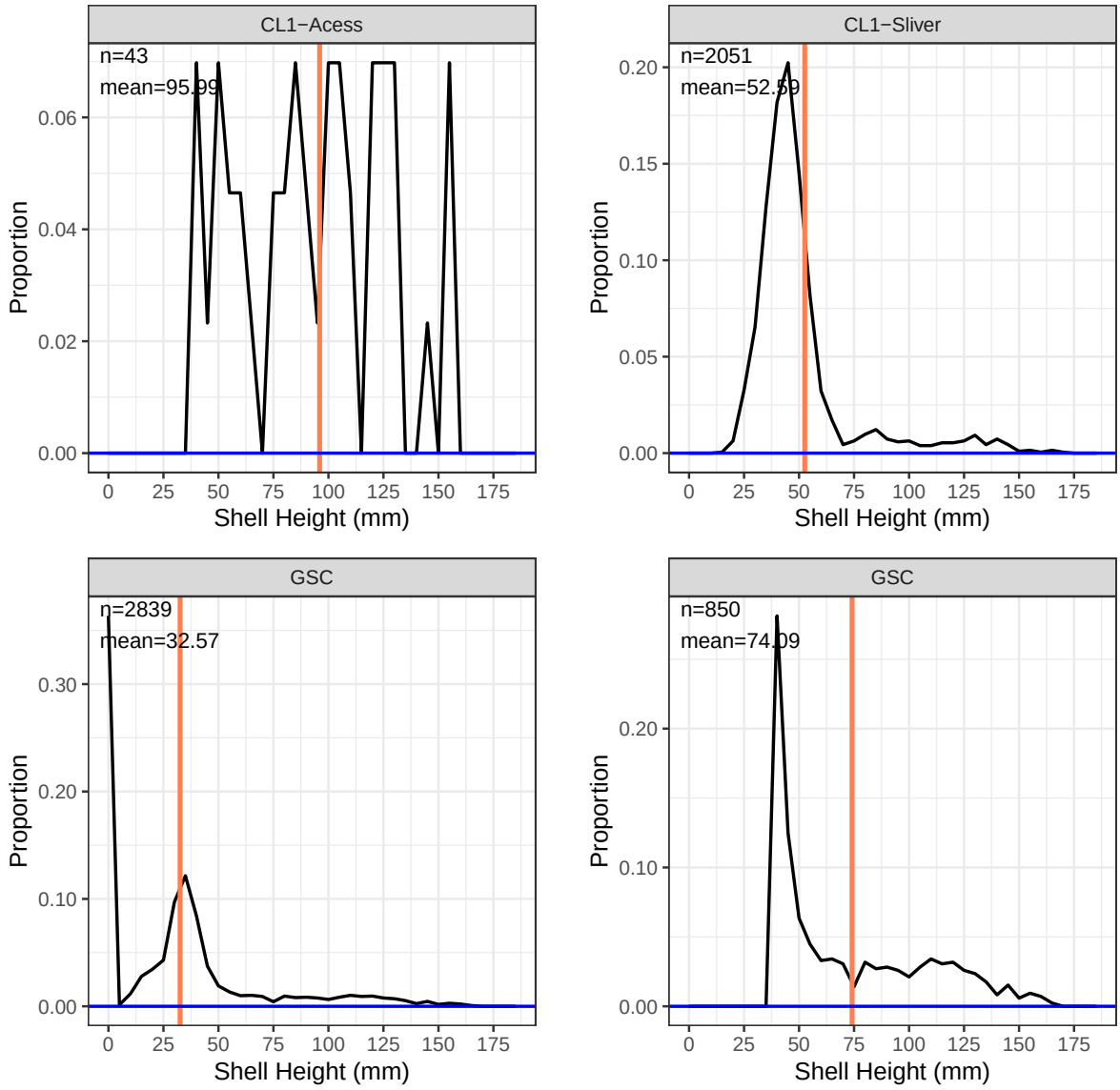

Figure 3.1. The 2022 Habcam size frequencies, mean shell height, and its sample size by SAMS area for 0+ mm scallops using combined data from NEFSC and CFF surveys for Georges Bank. Both 0+ mm and 40+ mm size frequencies were provided for areas with large portions of seeds observed (GSC, CL2-Ext, SF, NLS-North, NLS-South, and NLS-West).

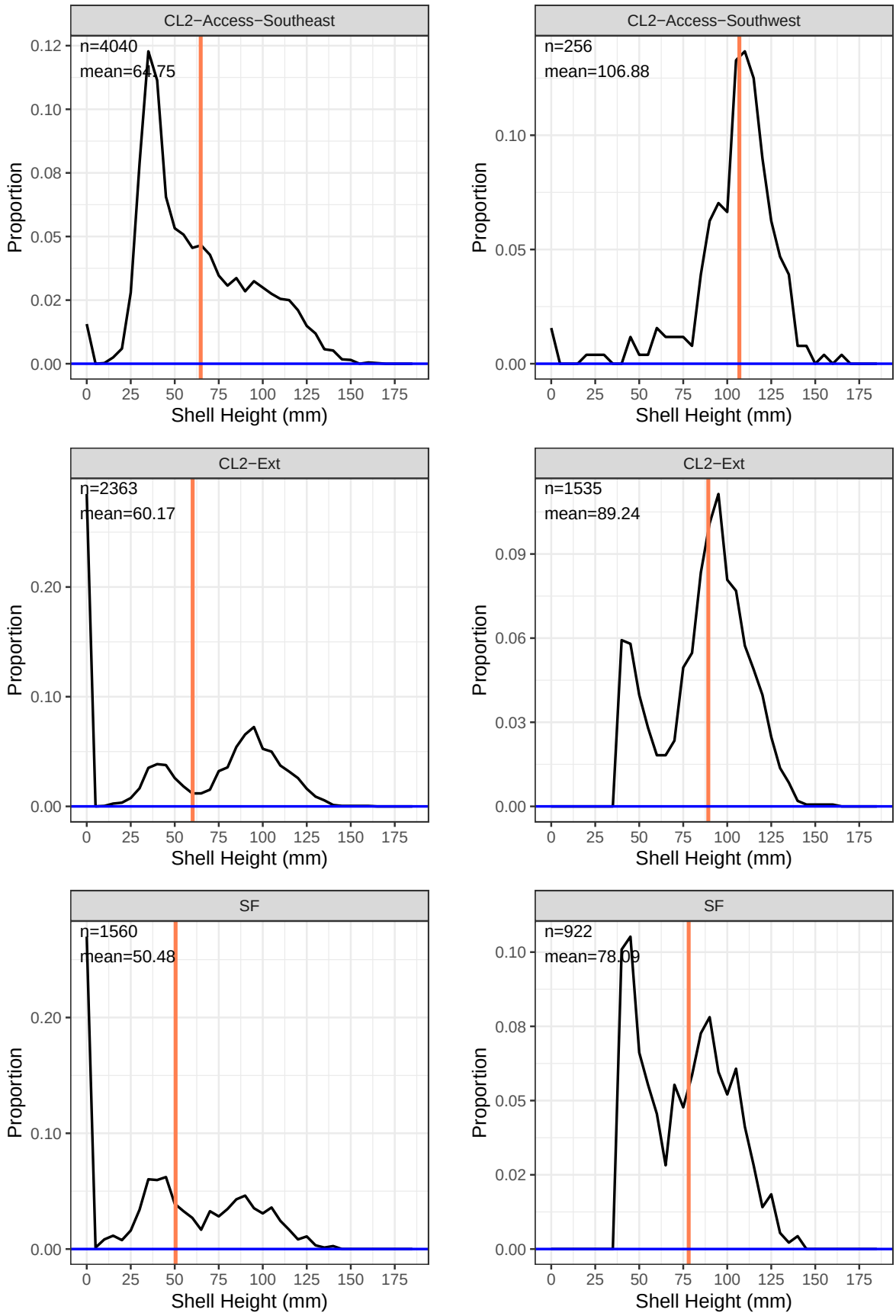

Figure 3.1. Continued.

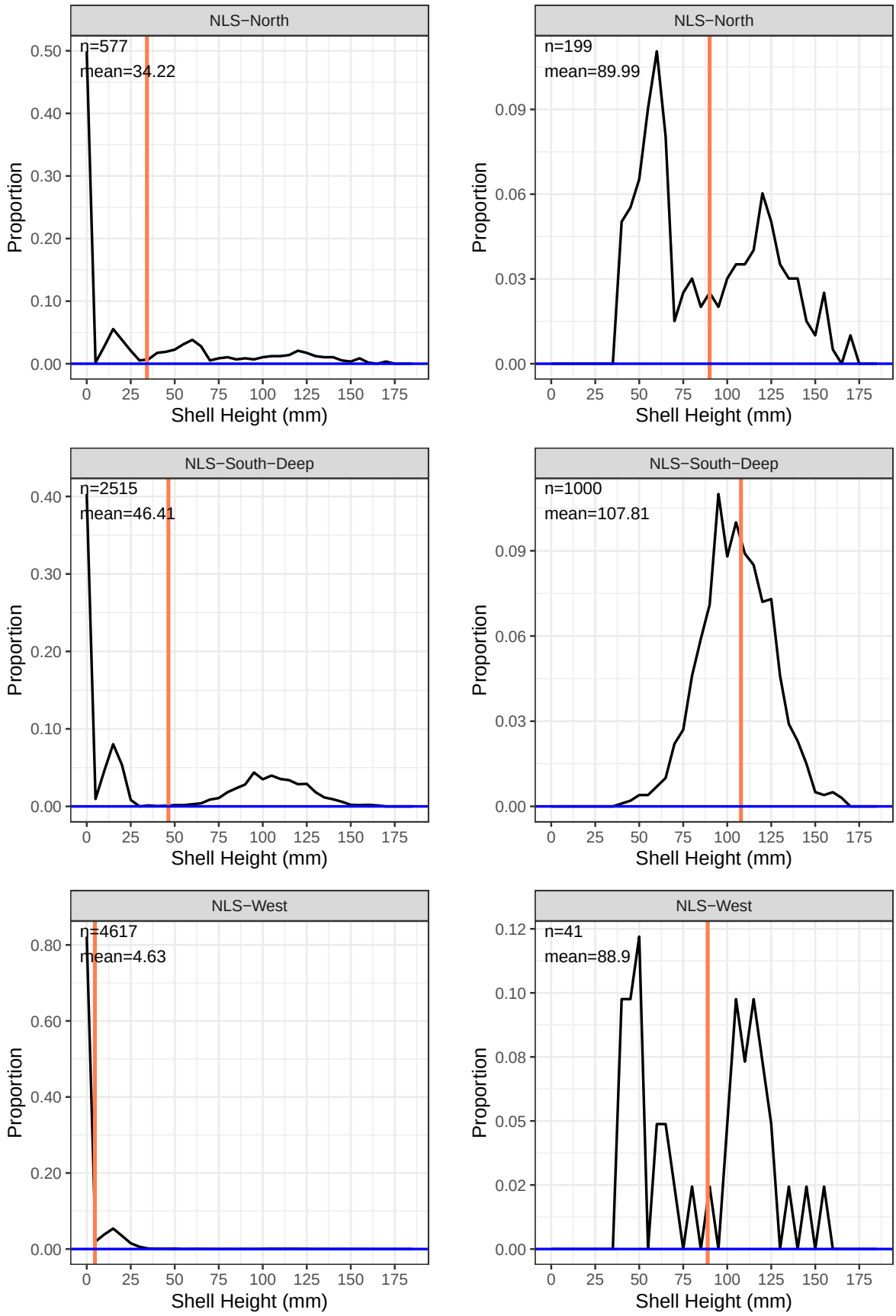

Figure 3.1. Continued.

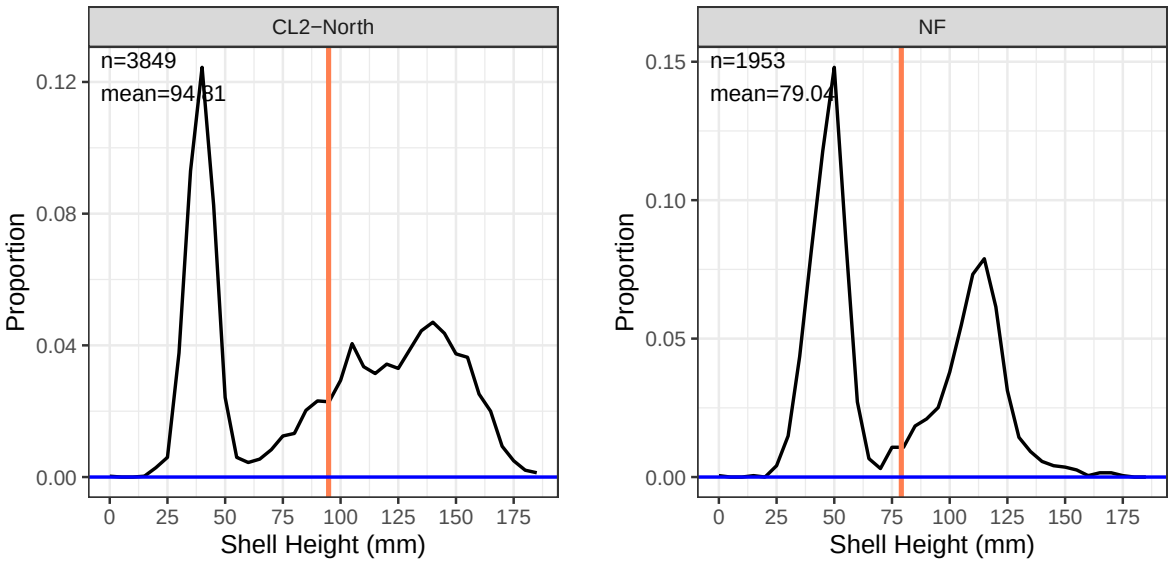

Figure 3.1. Continued.

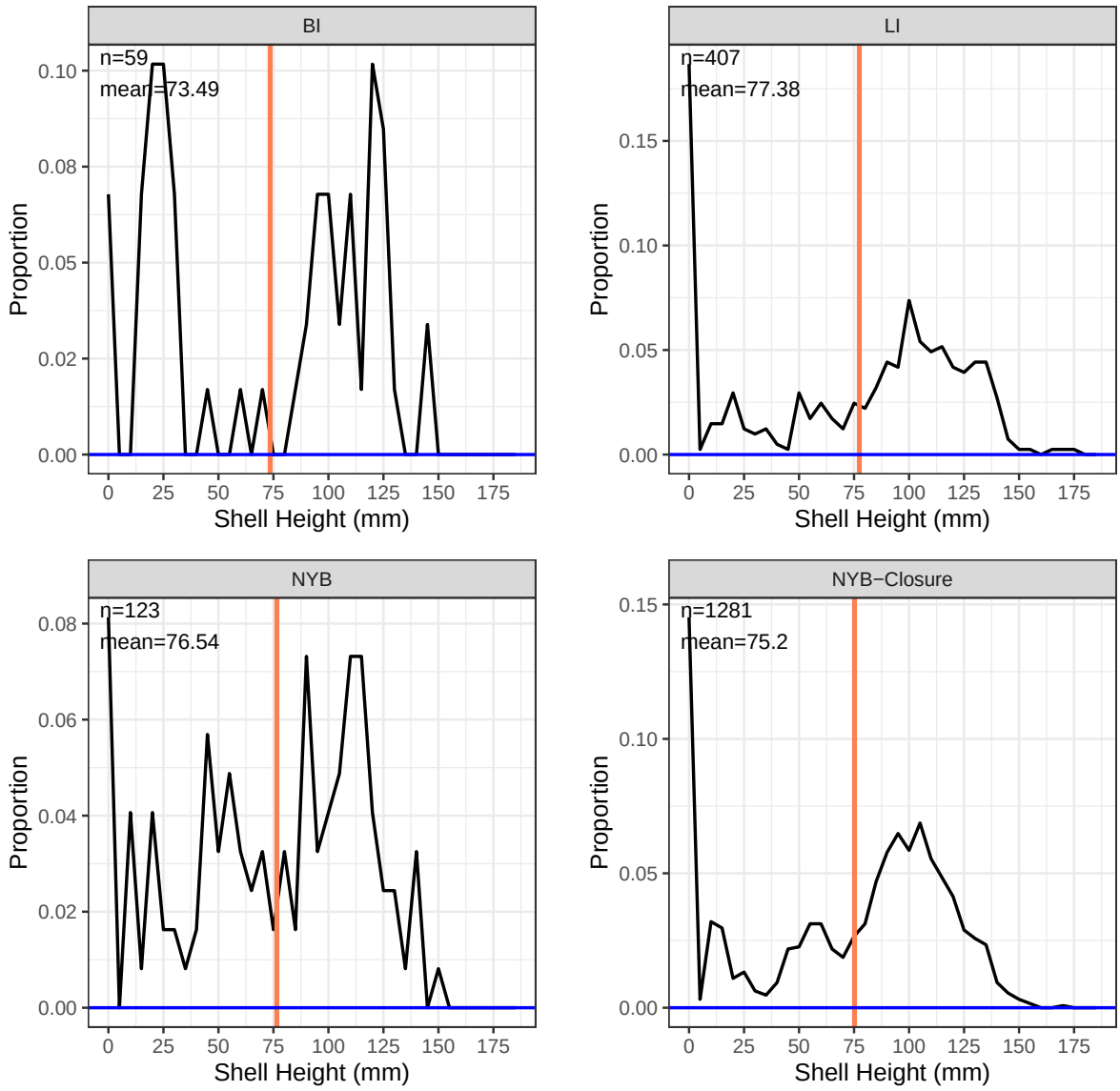

Figure 3.2. The 2022 Habcam size frequencies, mean shell height, and its sample size by SAMS area for 0+ mm scallops using combined data from NEFSC and CFF surveys for Mid-Atlantic.

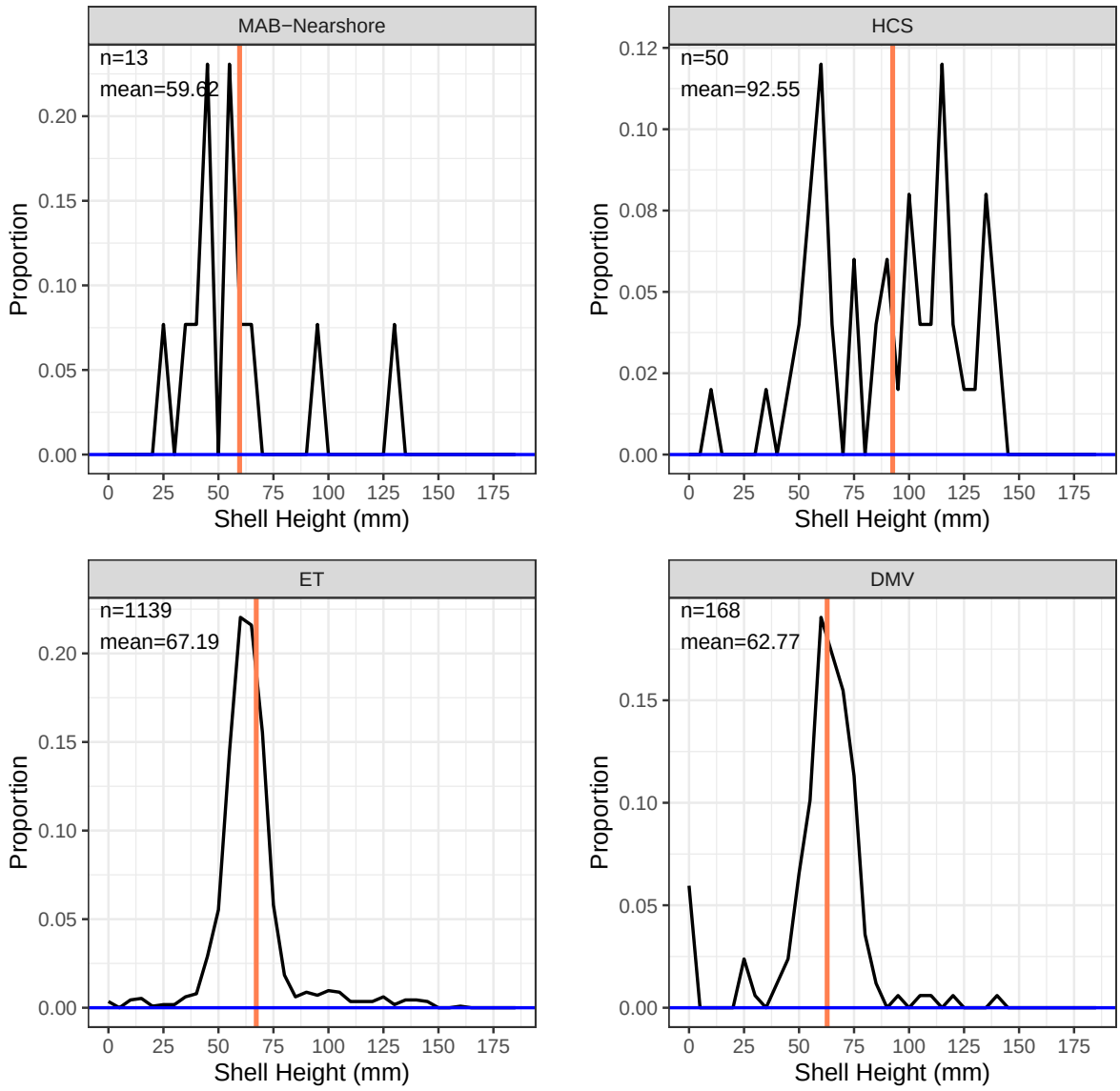

Figure 3.2. Continued.

4 ADDITIONAL ANALYSES

4.1 Comparison of NLS-South biomass estimates

Table 4.1. Comparison of 2022 Habcam biomass estimates (40+ mm) using VIMS 2016-2022 and SARC 65 SH-MW equations for NLS-South. Percent difference was calculated using biomass estimates (SARC 65 - VIMS)/(SARC 65).

SAMS Area	BmsMT (SARC 65)	BmsMT (VIMS16-22)	%Diff
NLS-South	2517	2043	18.84

5 SPECIAL COMMENTS

5.1 2022 Habcam survey spatial count observations and estimates for recruits

The 2022 Habcam survey observed scallop recruits (30 mm to the shell height of one year growth from 30 mm, shell height varied by location) throughout the resource, primarily in GSC, CL1-Sliver, NF, CA2-North, CA2-Southeast, CA2-Ext, SF, and ET (Figures 5.1 and 5.2). The models estimated a little over 3.6 billion of recruits from the NEFSC and CFF Habcam survey data (Table 5.1).

Table 5.1. Summary of 2022 Habcam count estimates for recruits (shell height: 30 mm to the shell height of one year growth from 30 mm).

SAMS Area	NumMill	NumMillSE	#PerM^2
Georges Bank			
CL1-Access	2.9	1.9	0.00
CL1-Sliver	453.4	28.0	0.56
CL1-South	0.0	0.1	0.00
CL2-North	244.6	5.9	0.55
CL2-Southeast	768.3	54.7	0.31
CL2-Southwest	9.0	5.9	0.01
CL2-Ext	185.7	26.9	0.13
NLS-North	46.3	1.5	0.03
NLS-South	23.7	0.8	0.04
NLS-West	21.7	0.8	0.01
GSC	502.5	34.3	0.11
NF	192.2	8.1	0.11
SF	316.3	35.1	0.07
Mid-Atlantic			
BI	10.2	0.6	0.01
LI	51.2	0.9	0.00
NYB	17.0	0.5	0.01
NYB-Closure	71.3	1.0	0.01
MAB-Nearshore	17.6	0.7	0.01
HCS	18.0	0.5	0.01
ET	624.8	5.3	0.14
DMV	81.1	1.3	0.02

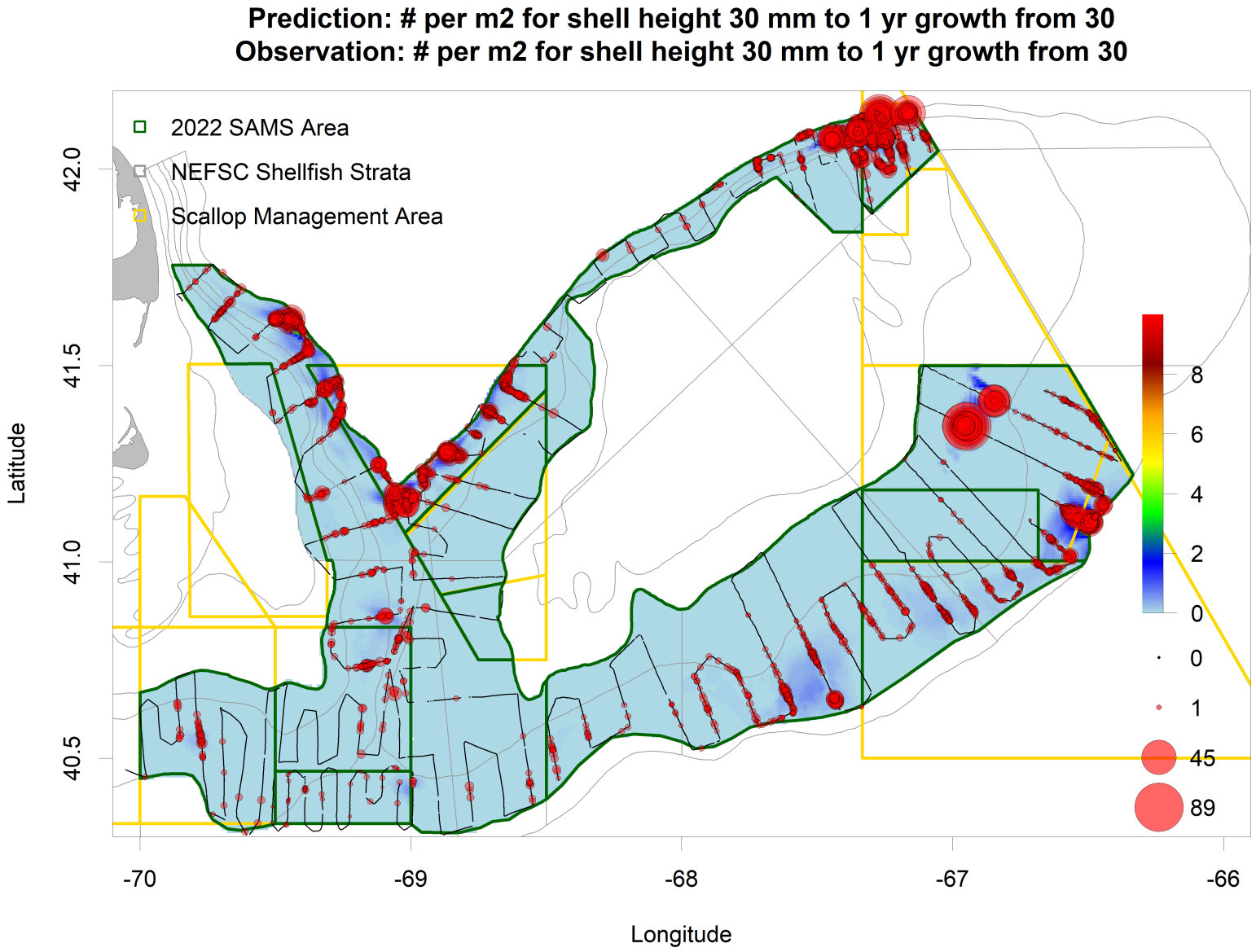

Figure 5.1. The number of recruits observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam count estimates for the recruits for Georges Bank.

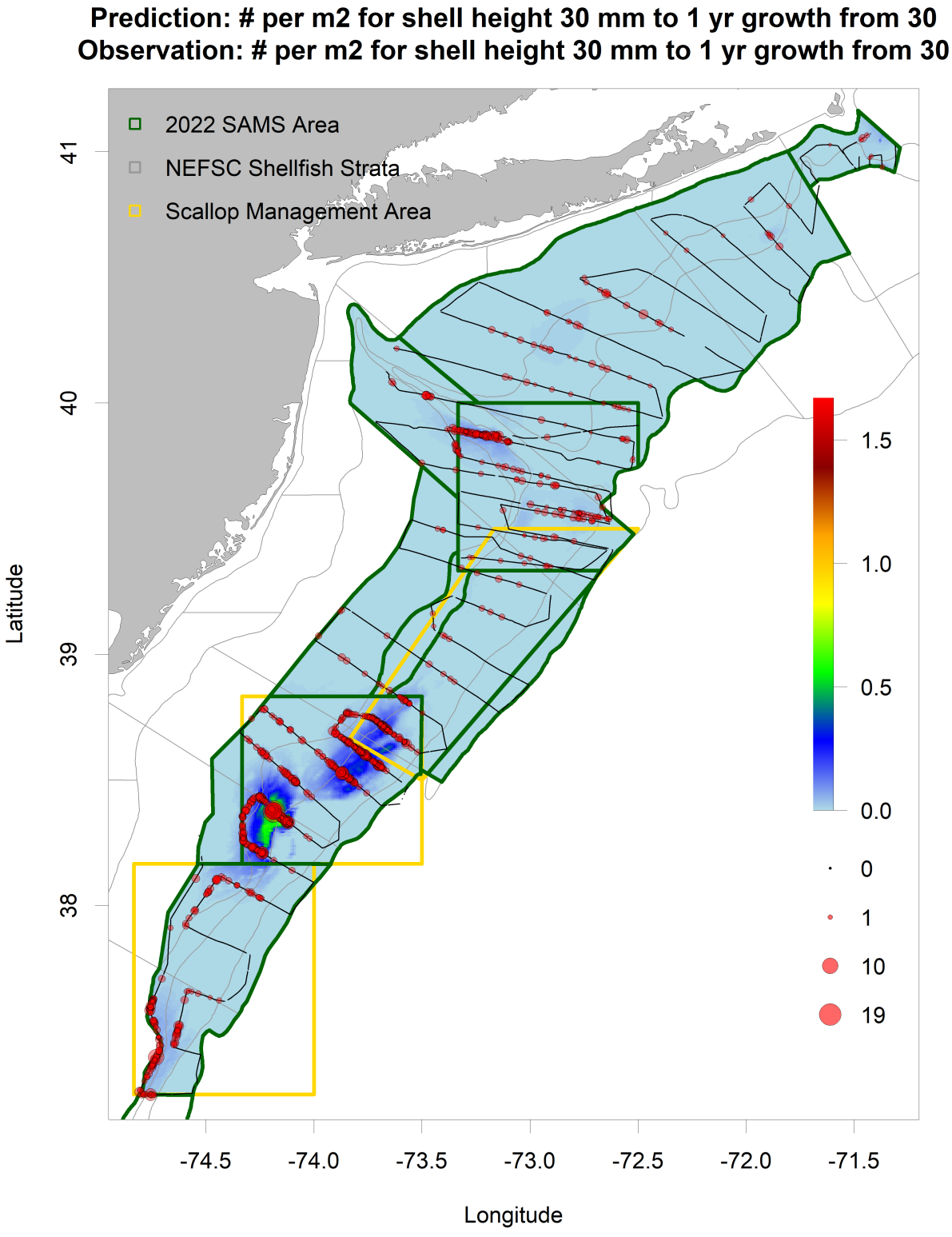

Figure 5.2. The number of recruits observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam count estimates for the recruits for Mid-Atlantic.

5.2 2022 Habcam survey clapper distribution in GB

The 2022 NEFSC Habcam survey observed a localized recruit size clapper concentration in between the areas where high density of scallop recruits were observed in GSC (Figure 5.3). The extent of this event is small but highly concentrated. Its implication for the recruits in GSC is unknown.

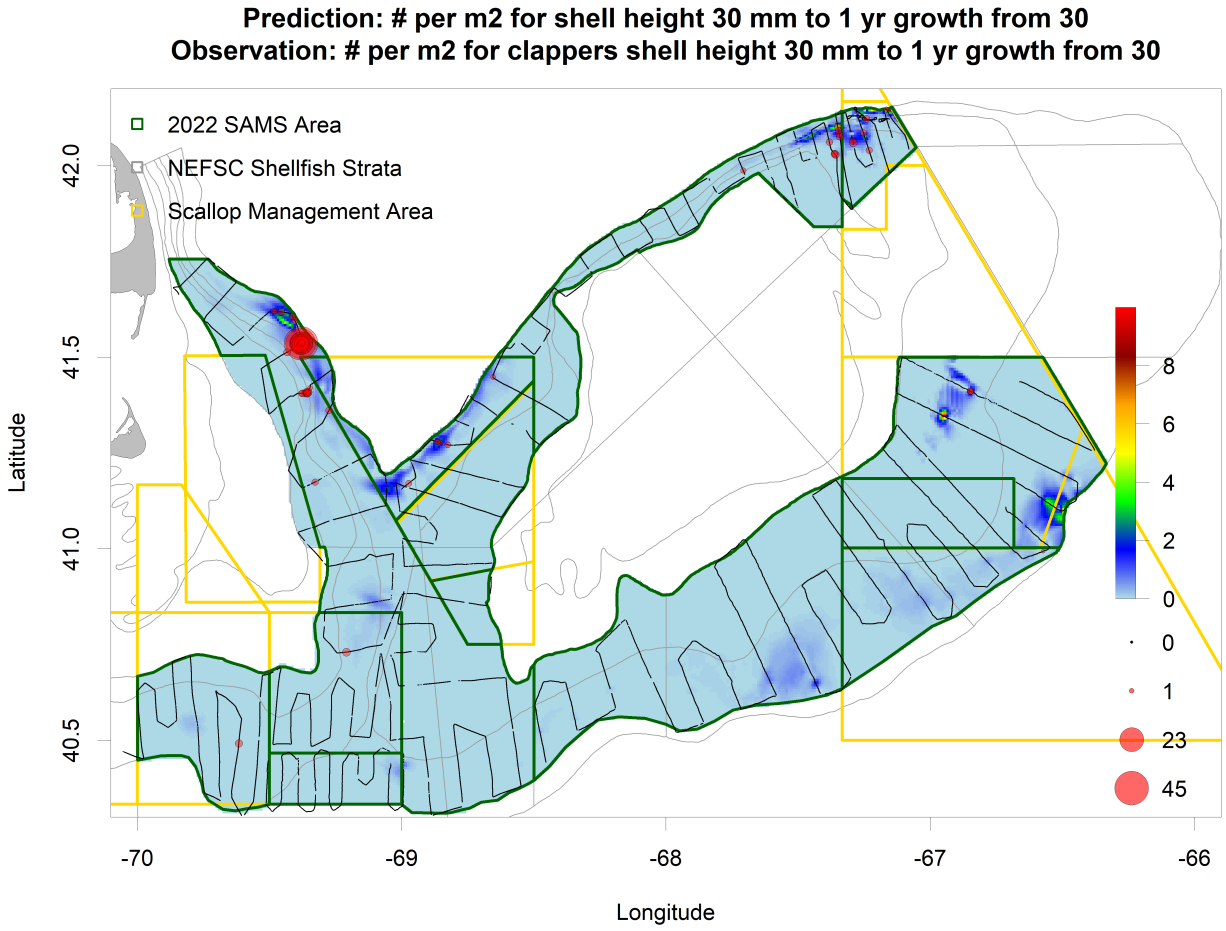

Figure 5.3. The number of recruit size clappers observed on the 2022 NEFSC and CFF Habcam surveys, along with 2022 Habcam count estimates for the recruits for Georges Bank.

5.3 2022 Habcam survey spatial count estimates for 40+ mm scallops

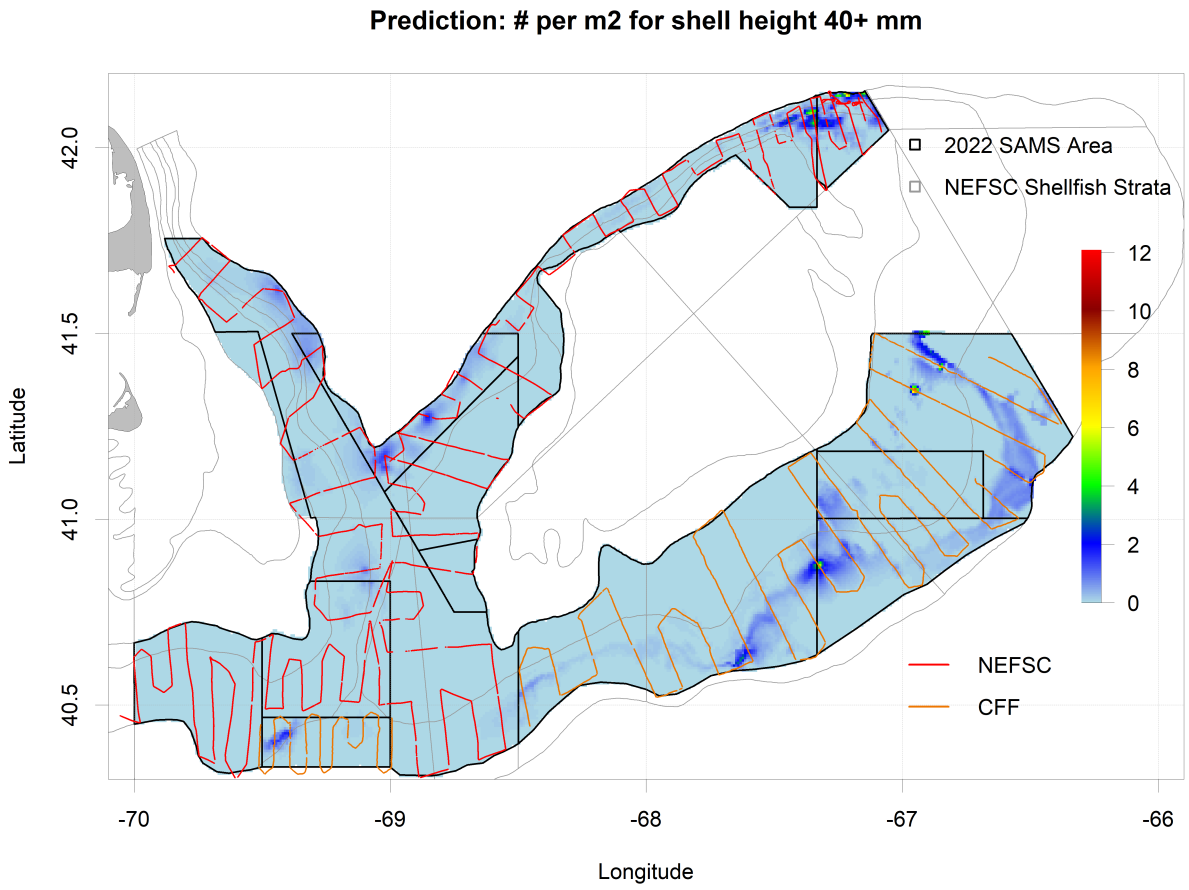

Figure 5.4. The 2022 Habcam survey tracks conducted by NEFSC and CFF, along with 2022 Habcam count estimates for 40+ mm scallops for Georges Bank.

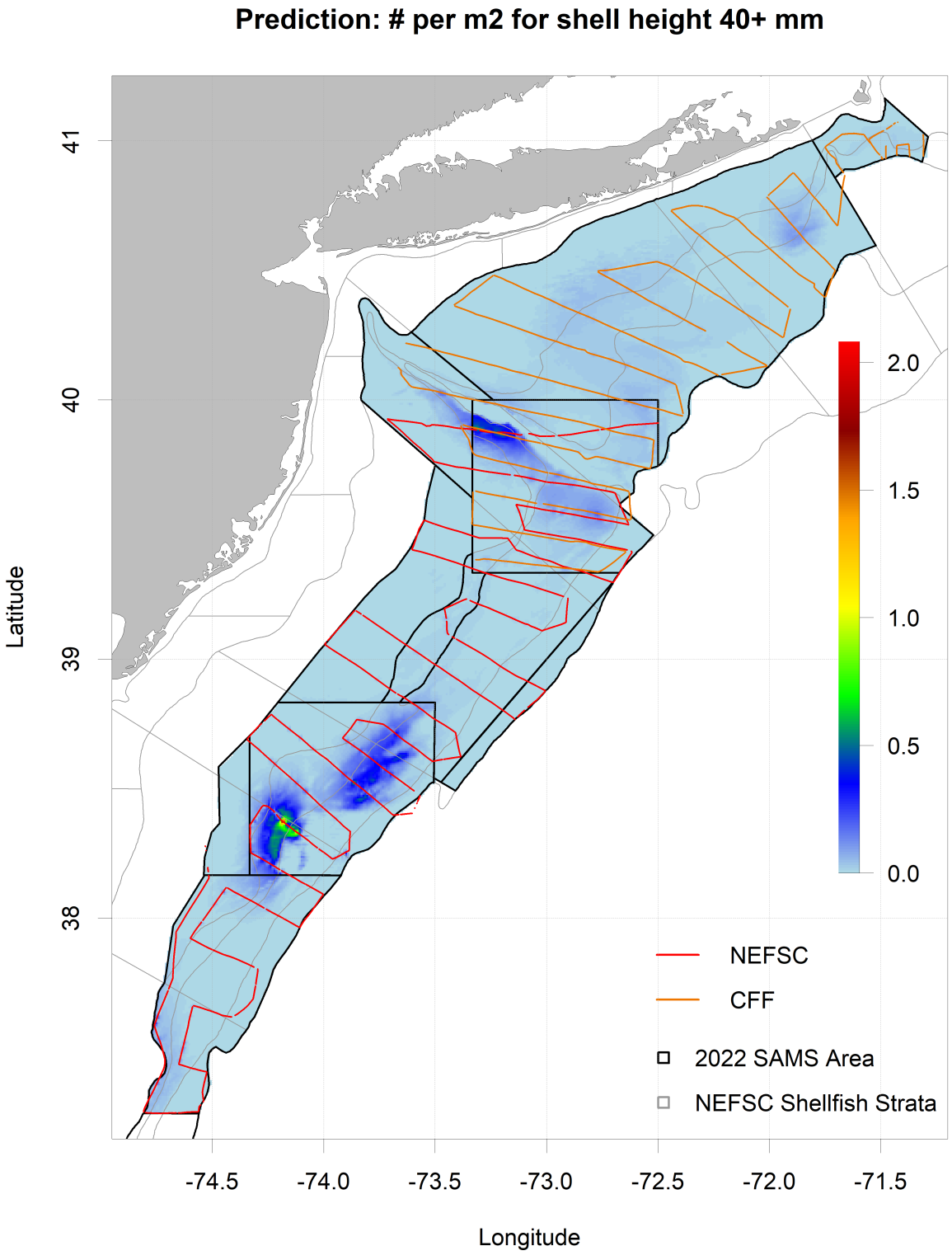

Figure 5.5. The 2022 Habcam survey tracks conducted by NEFSC and CFF, along with 2022 Habcam count estimates for 40+ mm scallops for Mid-Atlantic.

6 EXPLOITABLE BIOMASS ESTIMATES FOR 2022 (CURRENT FY)

Table 6.1. Summary of 2022 Habcam estimates for exploitable scallops using the combined data from NEFSC and CFF. SARC 65 SH-MW equations were used to estimate meat weights for all SAMS areas. Yochum and DuPaul 4-inch ring selectivity was used for exploitable cutoff.

SAMS Area	ExNumMill	ExBmsMT	ExBmsMTSE	ExMeanWt
Georges Bank				
CL1-Access	5	170	10	35.9
CL1-Sliver	35	804	17	22.7
CL1-South	0	0	0	-
CL2-North	205	6209	157	30.3
CL2-Access-Southeast	218	4369	142	20.0
CL2-Access-Southwest	105	2501	128	23.9
CL2-Ext	207	4497	150	21.7
NLS-North	27	788	32	29.5
NLS-South	75	1982	46	26.5
NLS-West	4	160	13	42.1
GSC	113	3906	32	34.5
NF	119	3300	230	27.7
SF	174	3899	61	22.4
Mid-Atlantic				
BI	8	260	8	31.0
LI	151	4636	37	30.7
NYB	24	719	24	29.9
NYB-Closure	167	4610	59	27.6
MAB-Nearshore	3	178	6	51.6
HCS	24	641	14	27.0
ET	63	1149	12	18.2
DMV	7	110	1	15.7