

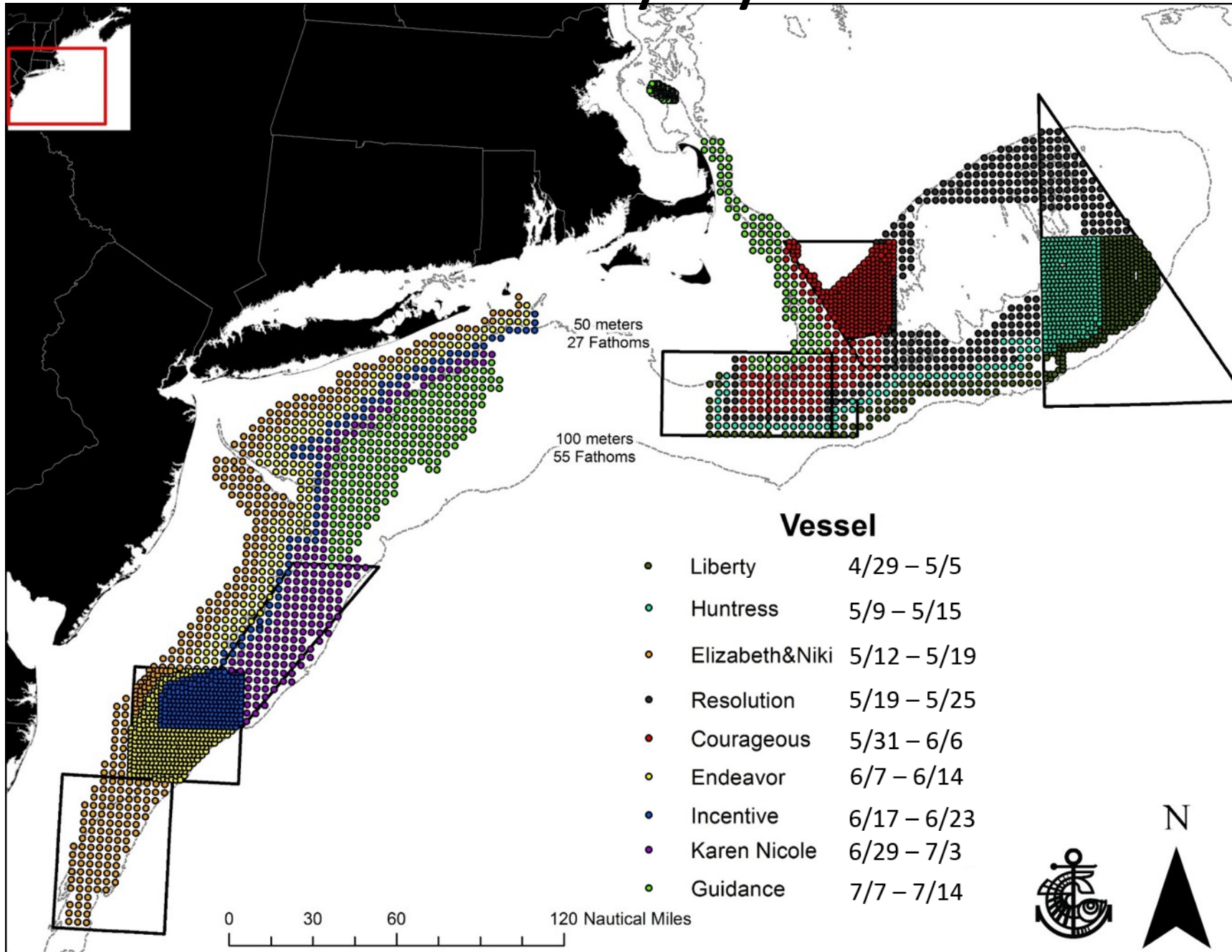
# 2017 SMAST Drop Camera Survey Results

Scallop PDT Meeting  
August 29-30, 2017

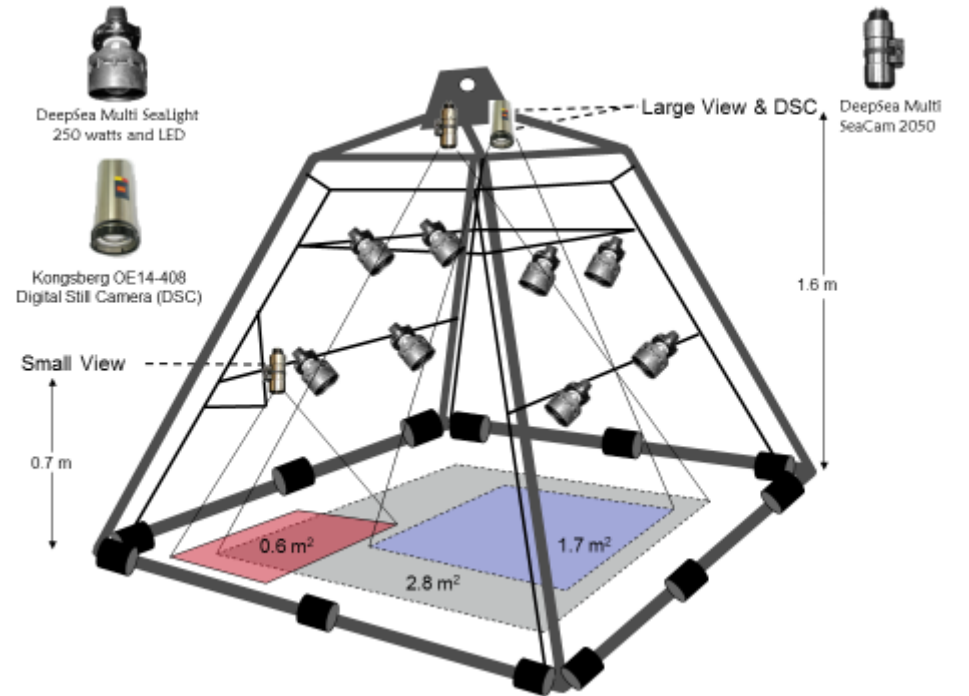
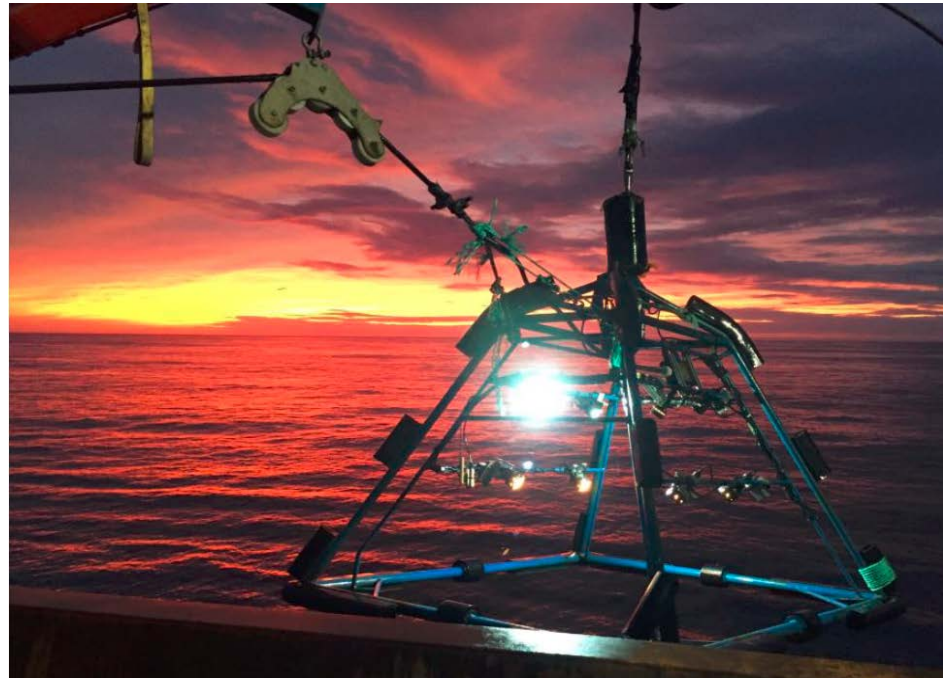


**University of Massachusetts Dartmouth  
School for Marine Science and Technology**

# 2017 Survey by Vessel



# Drop Camera Pyramid – Kongsberg Digital Still



Large View (2.8 m<sup>2</sup>)

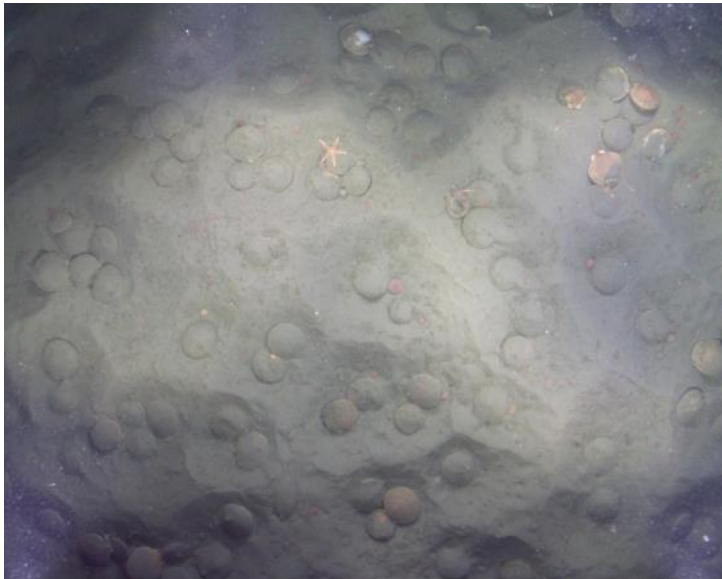
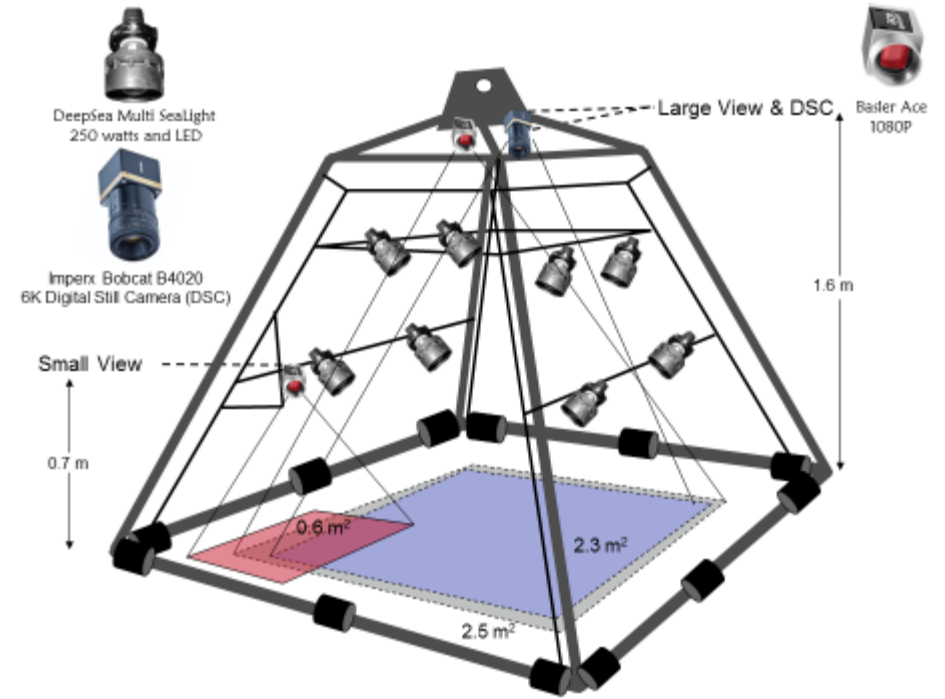


Small View (0.6 m<sup>2</sup>)



Digital Still Camera (1.7 m<sup>2</sup>)

# Drop Camera Pyramid – Imperx Digital Still



Large View (2.5 m<sup>2</sup>)

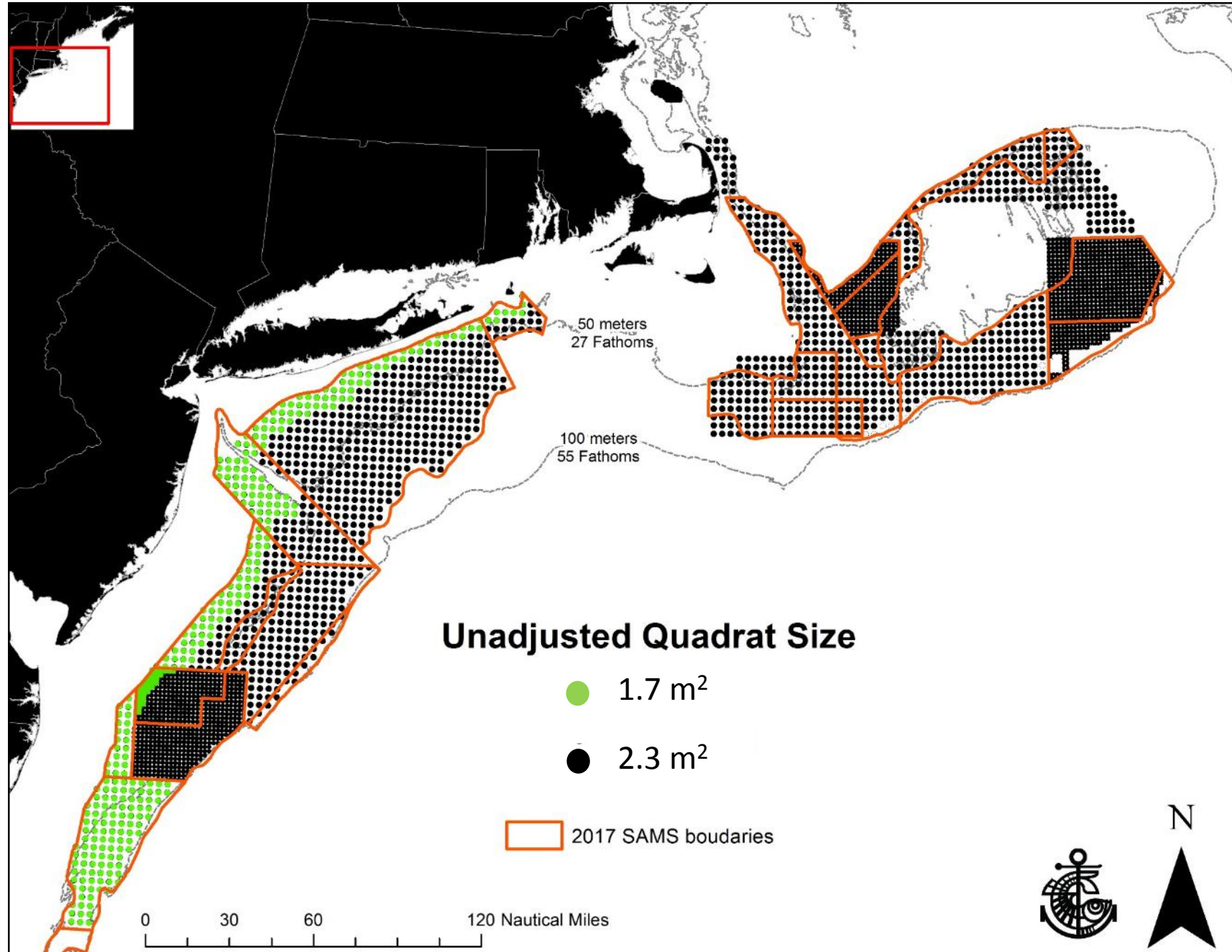


Small View (0.6 m<sup>2</sup>)



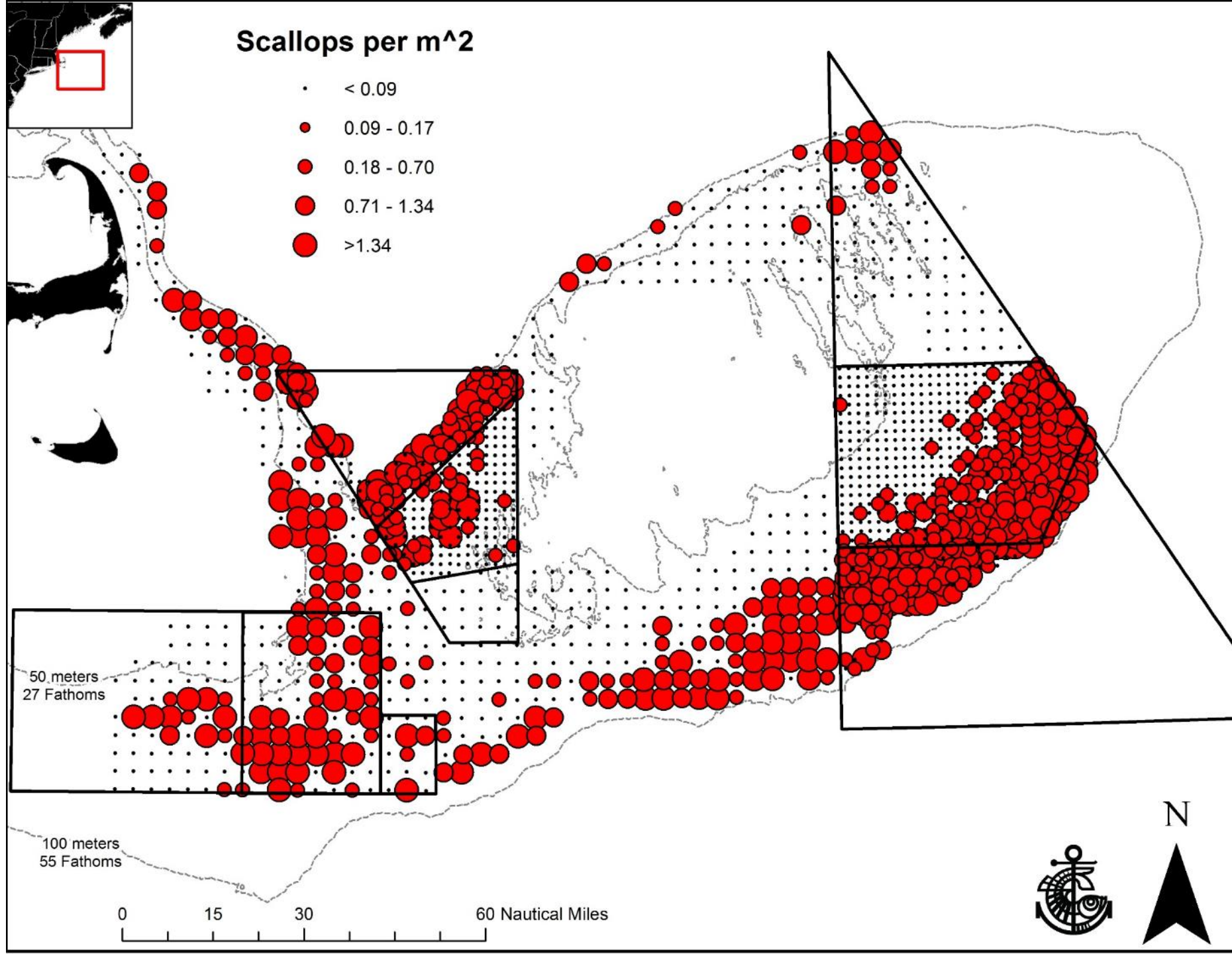
Digital Still Camera (2.3 m<sup>2</sup>)

# 2017 Survey by Quadrat Size



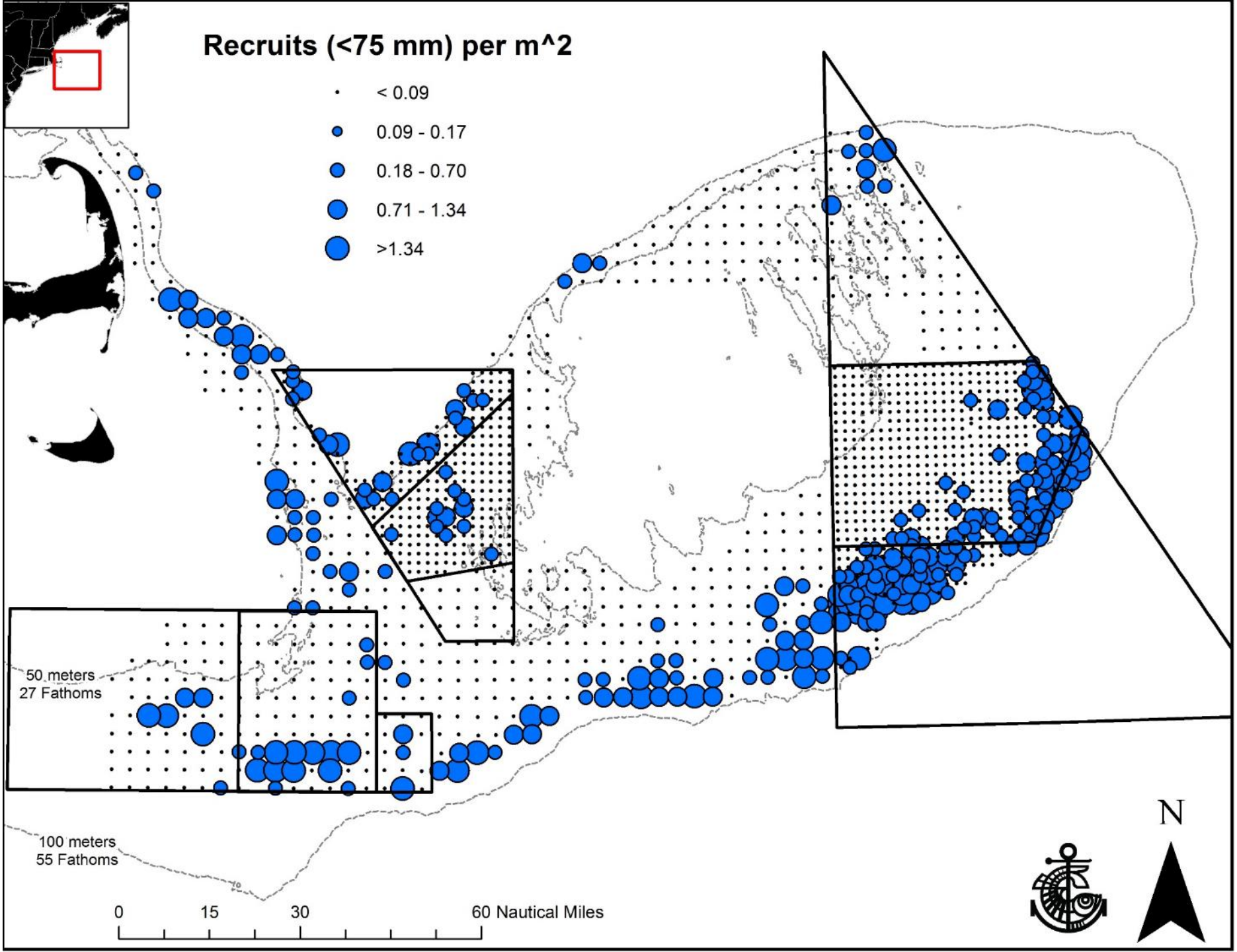
# Scallops per m<sup>2</sup>

- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34



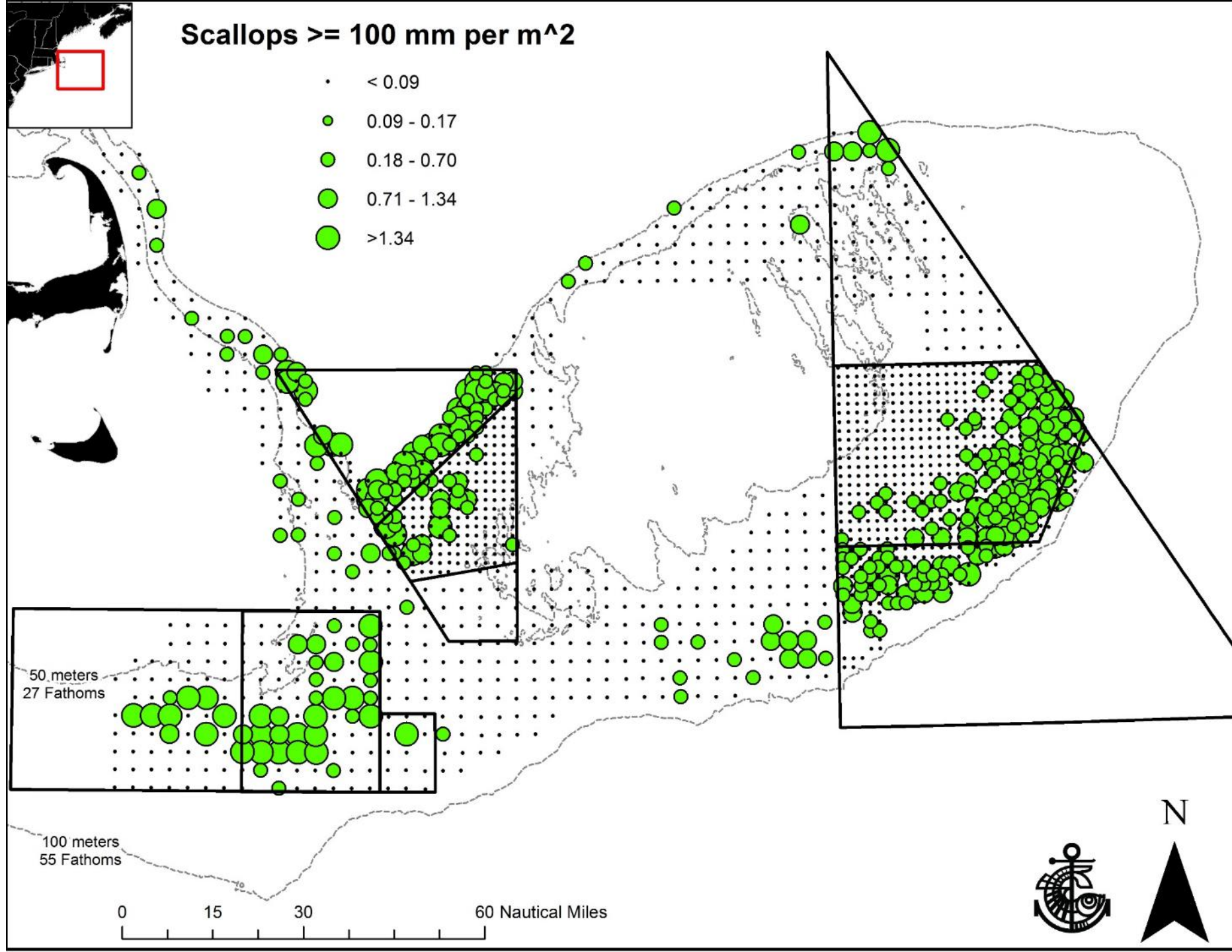
# Recruits (<75 mm) per m<sup>2</sup>

- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34



# Scallops $\geq 100$ mm per $m^2$

- $< 0.09$
- $0.09 - 0.17$
- $0.18 - 0.70$
- $0.71 - 1.34$
- $> 1.34$





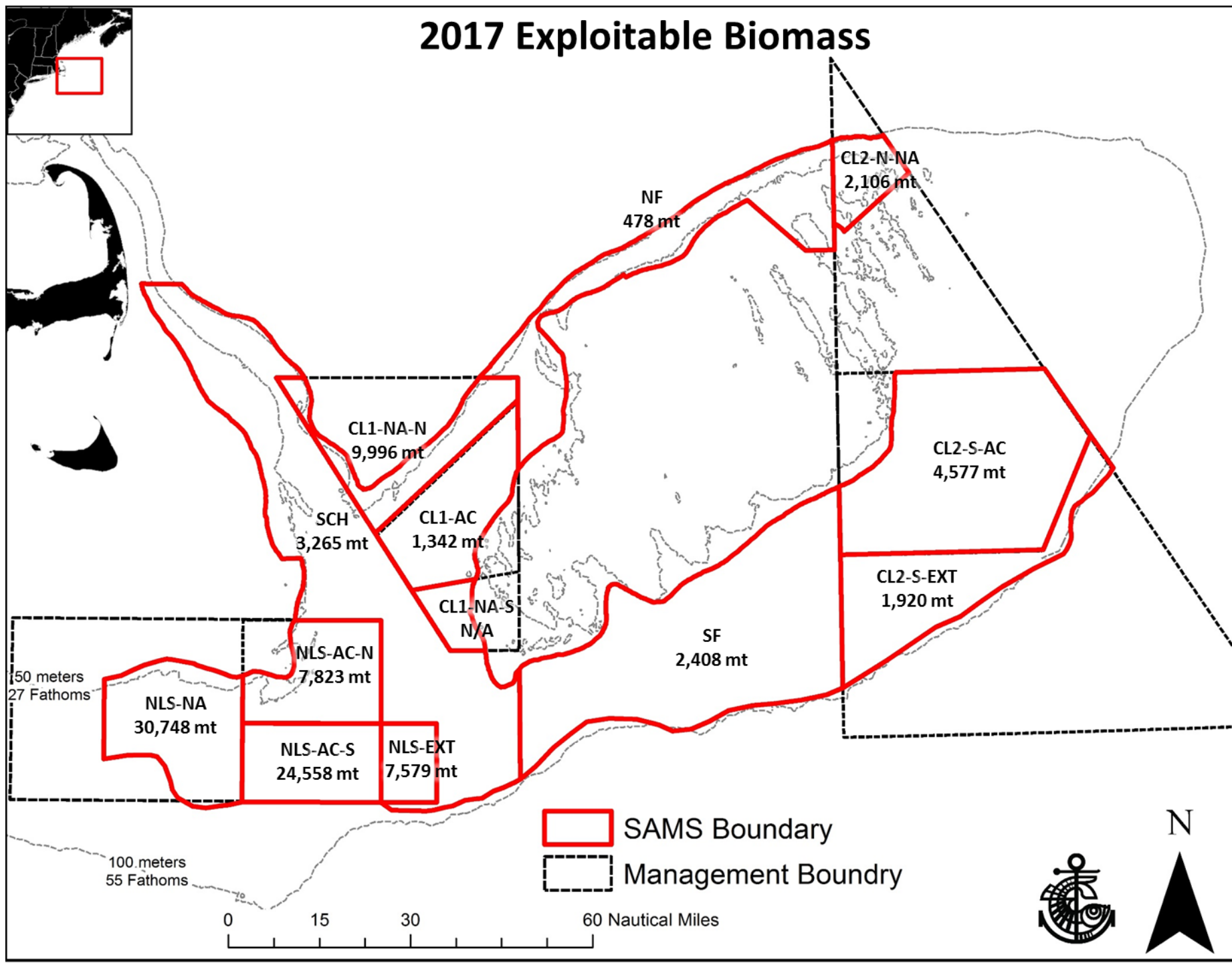
# Summary of Georges Bank estimates by SAMS zone

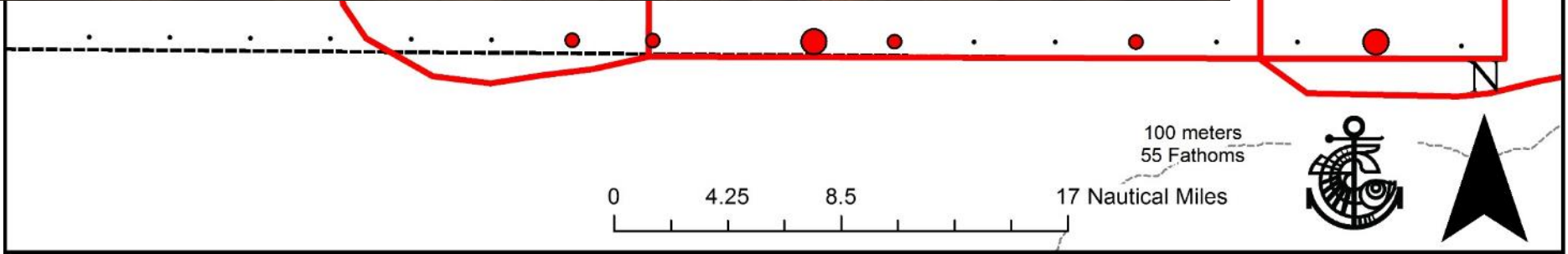
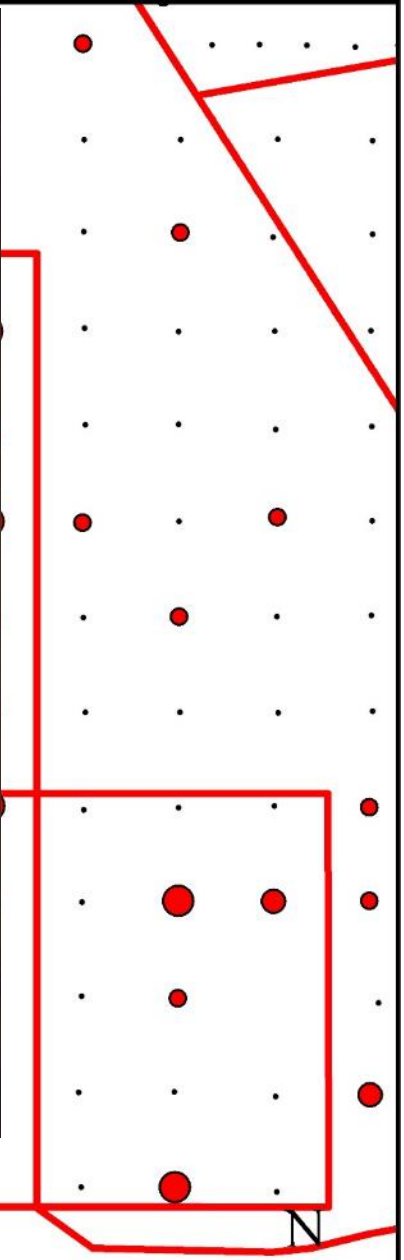
## SH-MWT 50<sup>th</sup> SAW

Area	QuadratArea	meanSH	NumberMeasured	ScallopDensity	StationCount	SE	CV%	ScallopAbundance	WeightedLatitude	WeightedDepth	MeanMTWT
CL1-AC 1.5 nmi	2.62	105.89	81	0.06	155	0.01	21.72	66,223,296	41.09	74.02	24.87
CL1-NA-N 1.5 nmi	2.62	104.54	858	0.98	101	0.29	29.53	760,648,644	41.29	103.93	18.28
CL1-NA-S 3 nmi	NaN	NaN	0	<0.02	7	NaN	NaN	NaN	NaN	NaN	NaN
CL2-N-NA 3 nmi	2.56	87	58	0.43	16	0.2	46.68	214,025,536	42.1	64.59	14.89
CL2-S-AC 1.5 nmi	2.58	93.65	556	0.14	435	0.01	9.3	464,804,951	41.18	84.89	15.84
CL2-S-EXT 1.5 nmi	2.53	77.62	660	0.48	147	0.04	8.53	544,563,081	40.96	89.1	9.46
NF 3 nmi	2.56	87.97	13	0.02	54	0.01	40.99	39,139,458	41.85	82.52	16.26
NLS-AC-N 3 nmi	2.67	120.12	72	0.27	31	0.1	38.18	260,219,017	40.66	72.44	34.15
NLS-AC-S 3 nmi	2.51	72.65	2718	9.7	39	3.09	31.88	11,676,371,867	40.42	77.42	8.49
NLS-EXT 3 nmi	2.59	95.1	170	2.24	14	2.16	96.38	966,692,504	40.49	76.03	16.73
NLS-NA 3 nmi	2.6	99.1	696	2	42	0.83	41.62	2,597,481,145	40.54	66.67	20.4
SCH 3 nmi	2.51	71.28	138	0.15	137	0.03	19.06	630,520,998	41.1	66.02	10.45
SF 3 nmi	2.52	74.4	219	0.19	126	0.03	15.89	747,469,804	40.7	85.86	9.1

Area	TotalBiomassMillLbs	TotalBiomassMT	SEofTotalBiomassMT	ExploitableMeanMTWT	ExploitableBiomassMillLbs	ExploitableBiomassMT	SEofExploitableBiomassMT
CL1-AC 1.5 nmi	3.6	1,647	358	33.72	3	1,342	292
CL1-NA-N 1.5 nmi	30.7	13,904	4,106	23.85	22	9,996	2,952
CL1-NA-S 3 nmi	NaN	NaN	NaN	NaN	NaN	NaN	NaN
CL2-N-NA 3 nmi	7	3,187	1,488	26.51	4.6	2,106	983
CL2-S-AC 1.5 nmi	16.2	7,361	684	23.47	10.1	4,577	426
CL2-S-EXT 1.5 nmi	11.4	5,153	439	17.1	4.2	1,920	164
NF 3 nmi	1.4	636	261	27.59	1.1	478	196
NLS-AC-N 3 nmi	19.6	8,888	3,393	38.02	17.2	7,823	2,987
NLS-AC-S 3 nmi	218.5	99,104	31,594	16.88	54.1	24,558	7,829
NLS-EXT 3 nmi	35.7	16,175	15,589	19.54	16.7	7,579	7,305
NLS-NA 3 nmi	116.8	52,983	22,051	25.13	67.8	30,748	12,797
SCH 3 nmi	14.5	6,590	1,256	24.65	7.2	3,265	622
SF 3 nmi	15	6,799	1,080	17.33	5.3	2,408	383

# 2017 Exploitable Biomass





100 meters  
55 Fathoms

0 4.25 8.5 17 Nautical Miles

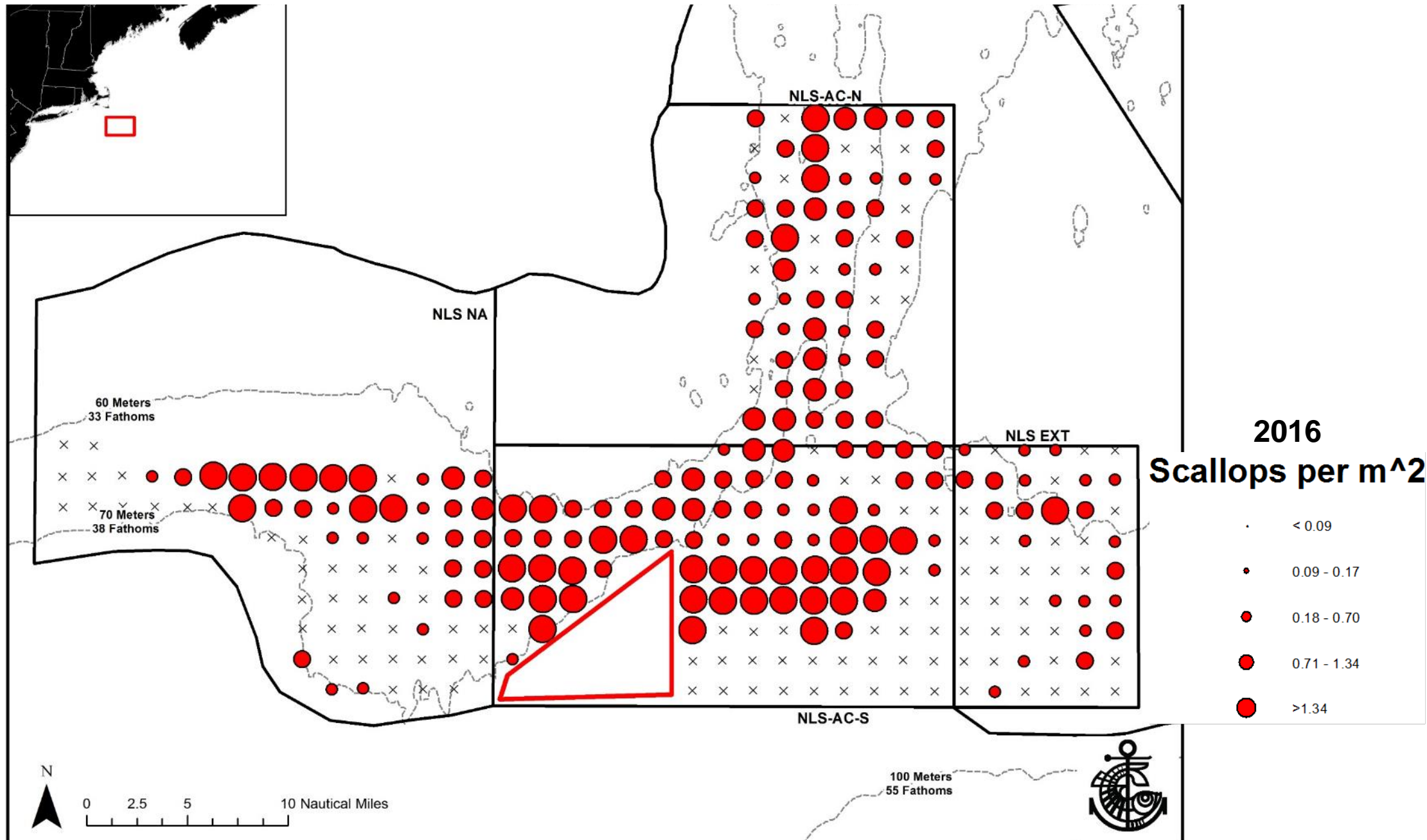


# NLS SAMS Zones

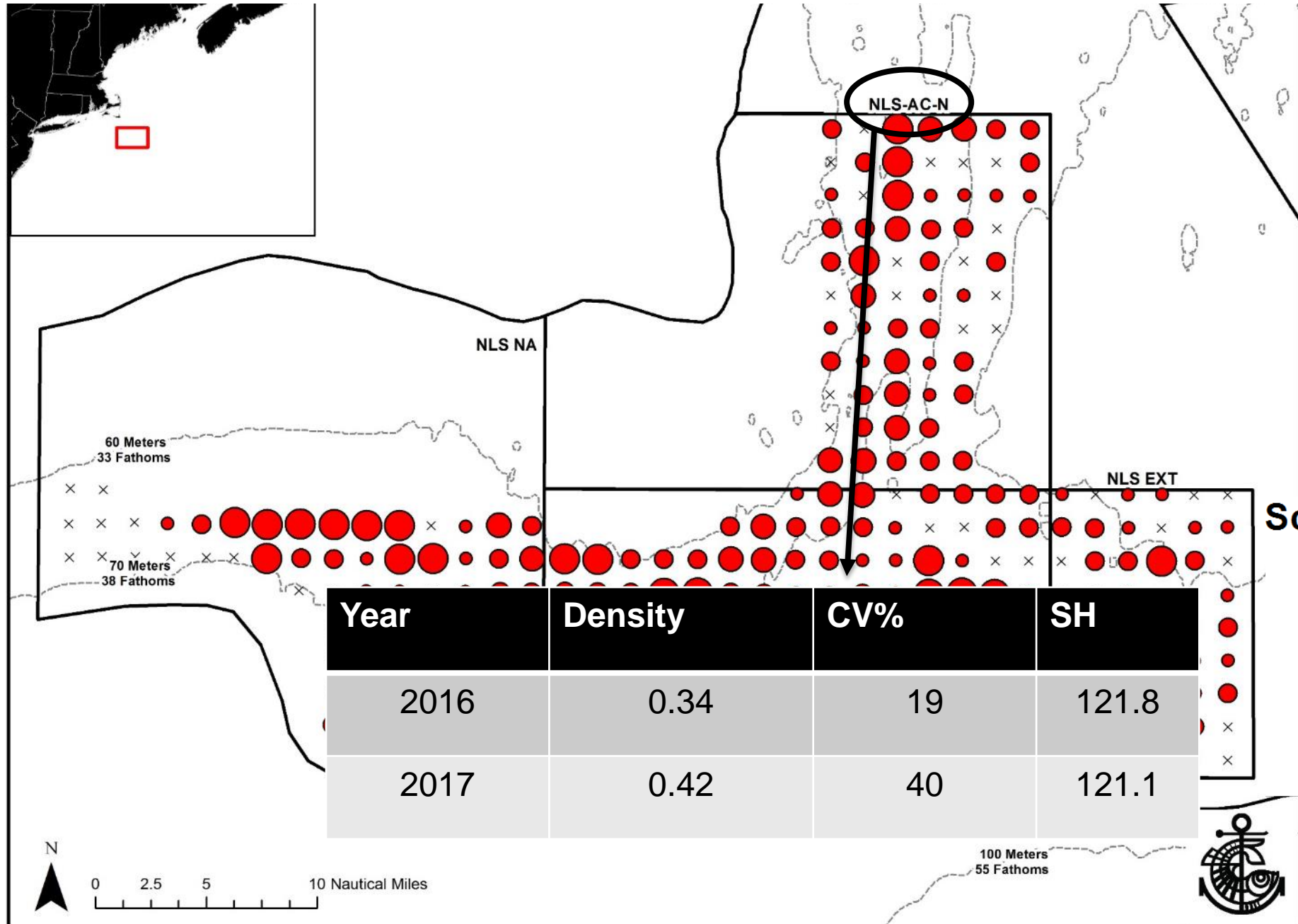
## SH-MWT 50<sup>th</sup> SAW and VIMS 2016-2017

Area	MeanMTWT	TotalBiomassMT	SEofTotalBiomassMT	ExploitablemeanMTWT	ExploitableBiomassMT	SEofExploitableBiomassMT
NLS-EXT 3 nmi 2016_17 VIMS SH-MWT	18.77	18,141	17,484	21.69	8,413	8,108
NLS-EXT 3 nmi	16.73	16,175	15,589	19.54	7,579	7,305
<b>Difference</b>	<b>2.04</b>	<b>1,966</b>		<b>2.15</b>	<b>834</b>	
NLS-AC-S 3 nmi 2016_17 VIMS SH-MWT	8.92	104,136	33,199	16.77	24,388	7,775
NLS-AC-S 3 nmi	8.49	99,104	31,594	16.88	24,558	7,829
<b>Difference</b>	<b>0.43</b>	<b>5,032</b>		<b>-0.11</b>	<b>-170</b>	
NLS-NA 3 nmi 2016_17 VIMS SH-MWT	22.25	57,781	24,048	27.08	33,130	13,788
NLS-NA 3 nmi	20.4	52,983	22,051	25.13	30,748	12,797
<b>Difference</b>	<b>1.85</b>	<b>4,798</b>		<b>1.95</b>	<b>2,382</b>	

# NLSA Comparison using 2016 survey footprint and 50<sup>th</sup> SAW SH-MWT



# NLSA Comparison using 2016 survey footprint and 50<sup>th</sup> SAW SH-MWT



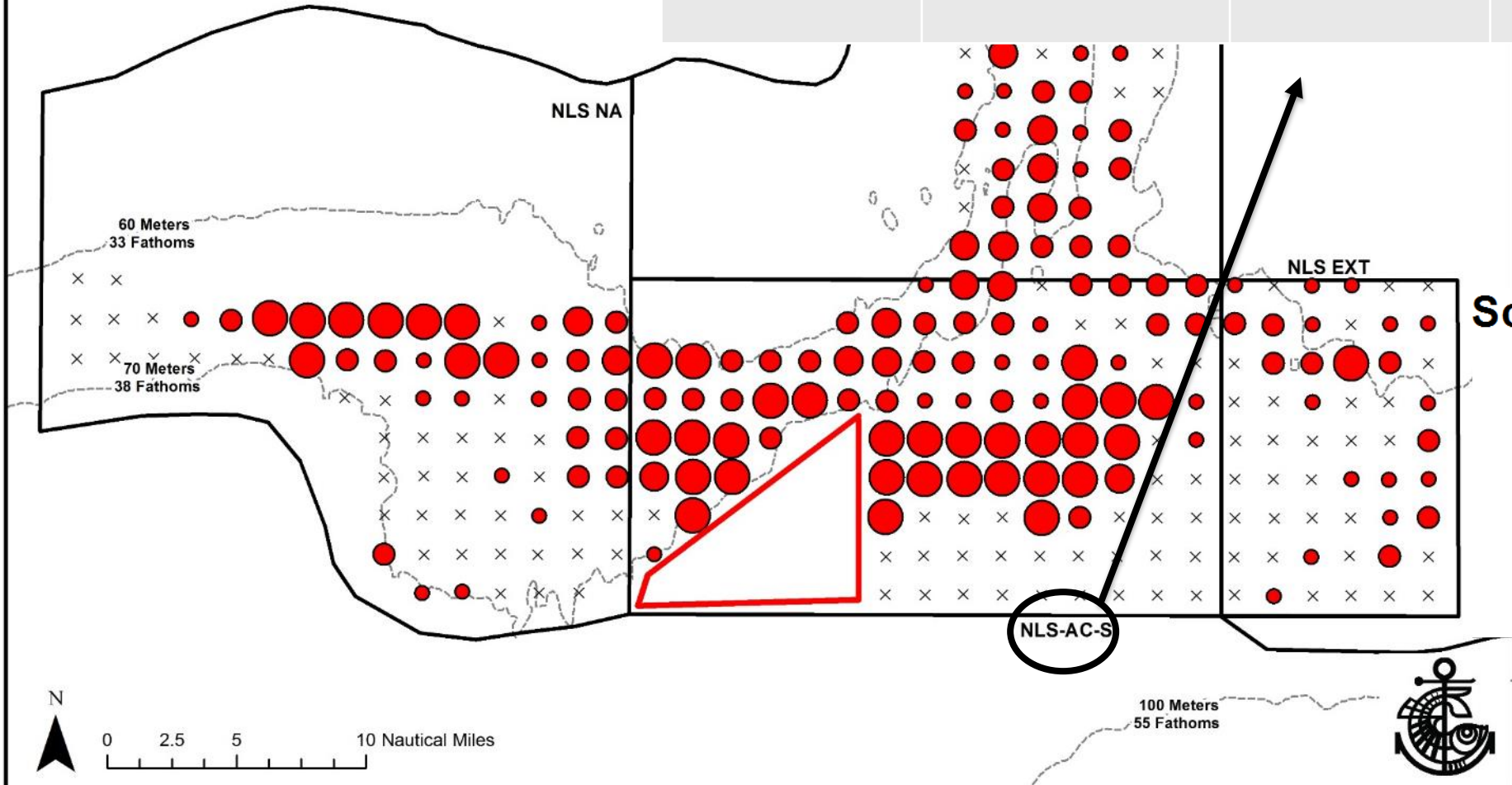
**2016**  
**Scallops per m<sup>2</sup>**

- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34

# NLSA Comparison using 2016 survey footprint

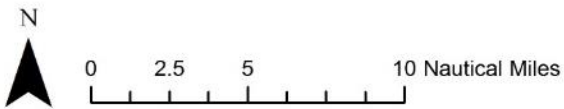


Year	Density	CV%	SH
2016	9.56	25	67.9
2017	9.42	34	74.1



**2016**  
Scallops per m<sup>2</sup>

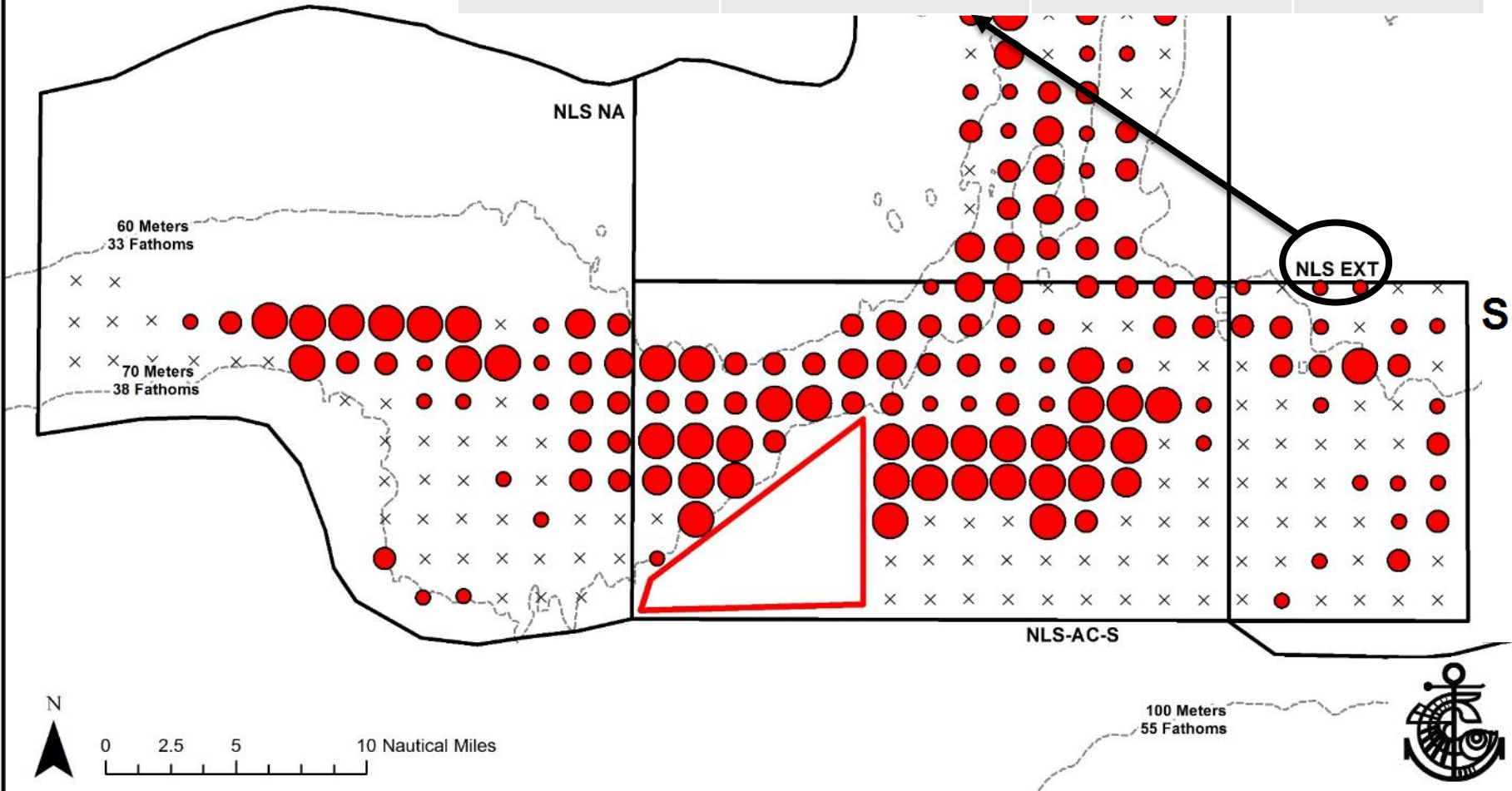
- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34



# NLSA Comparison using 2016 survey footprint



Year	Density	CV%	SH
2016	0.70	90	91.4
2017	2.24	96	95.1



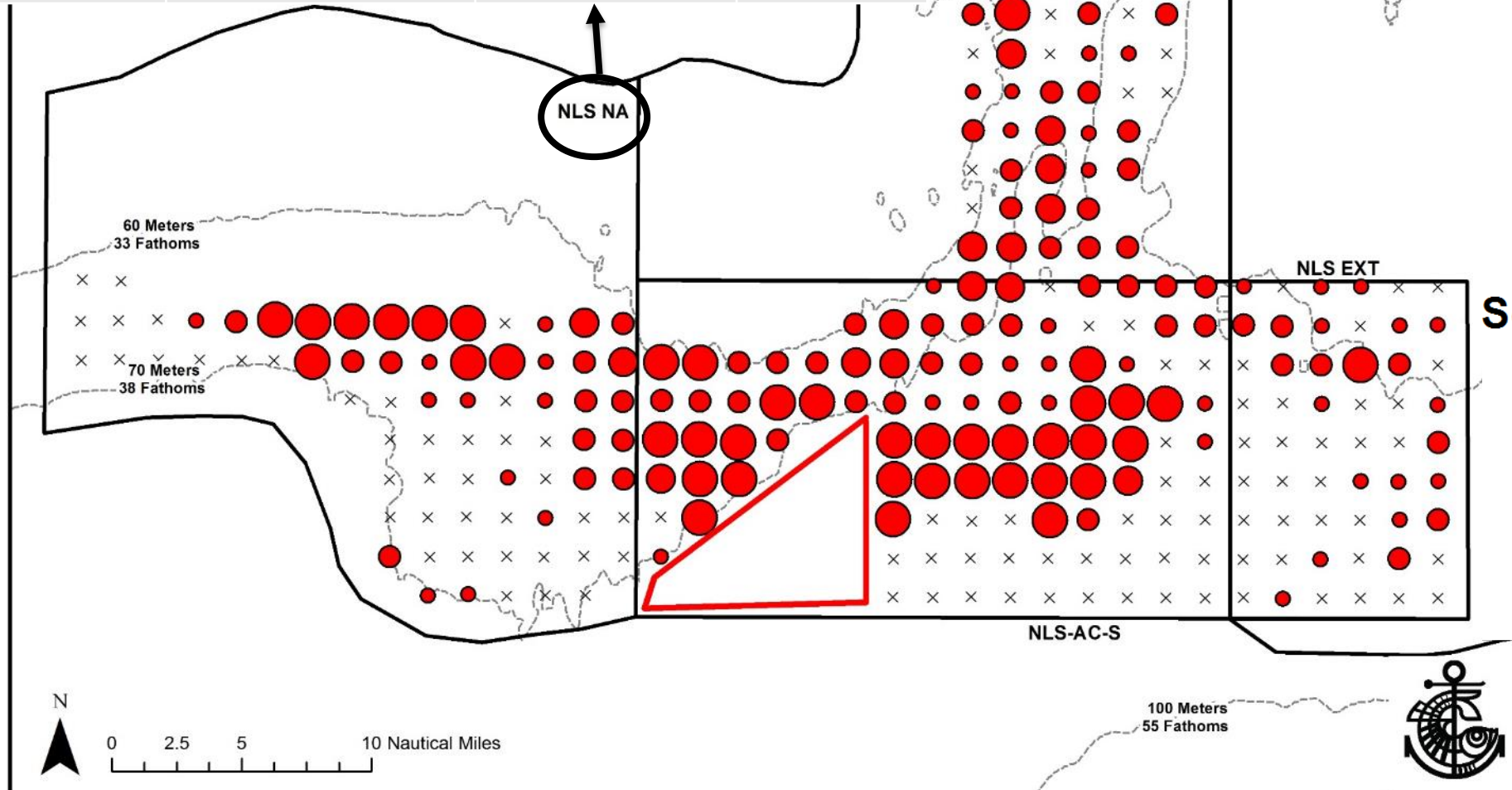
**2016**  
Scallops per m<sup>2</sup>

- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34



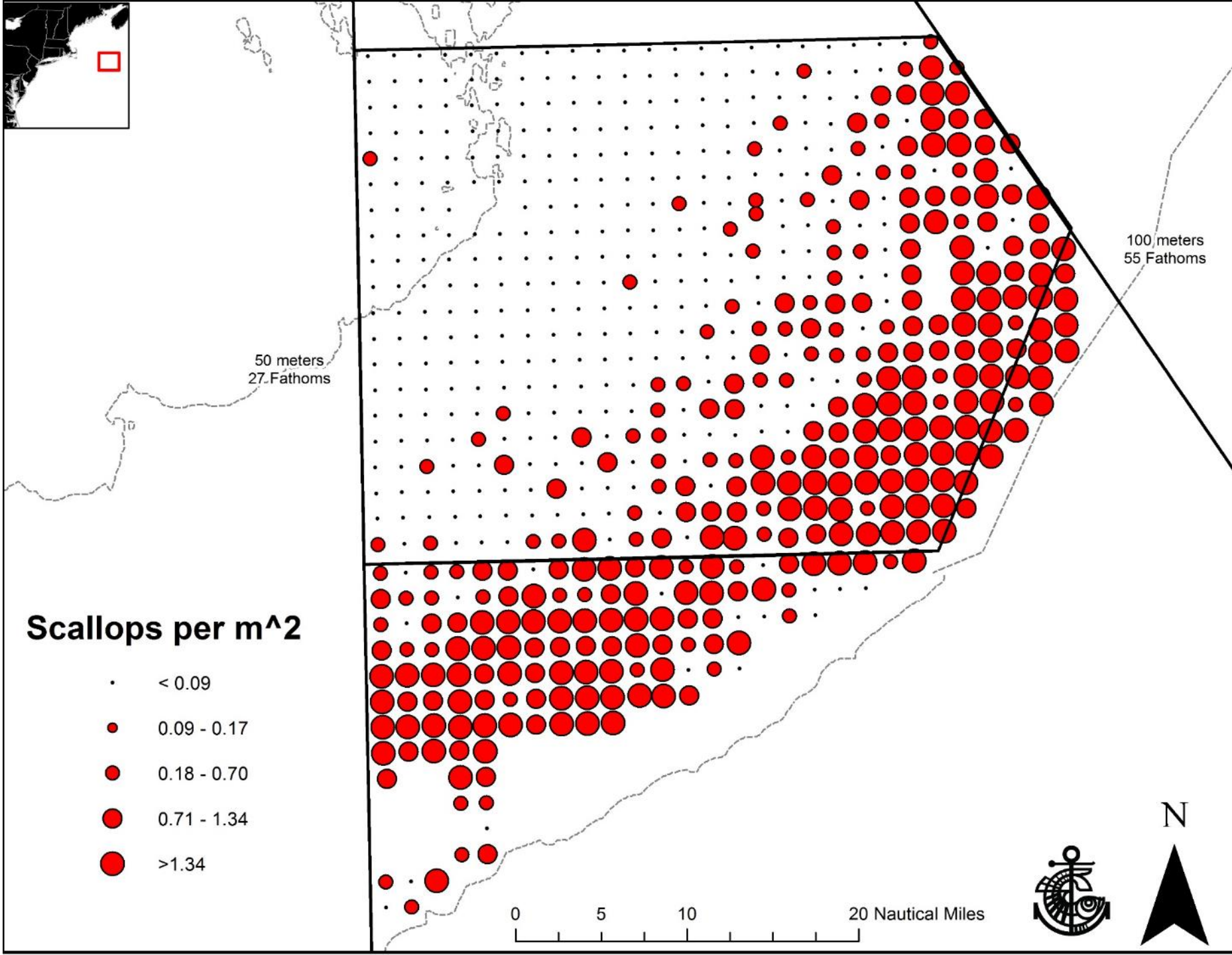
# NLSA Comparison using 2016 survey footprint

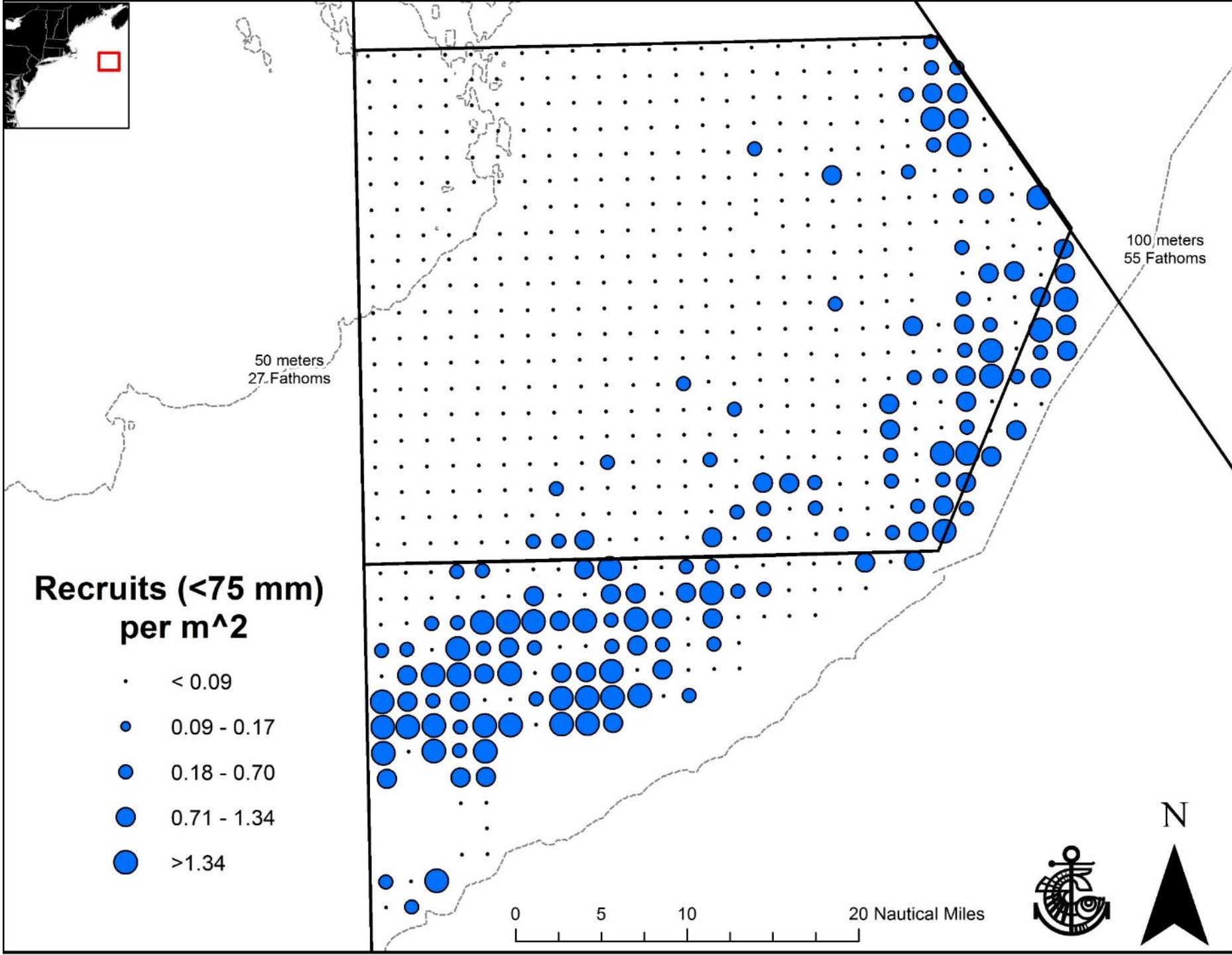
Year	Density	CV%	SH
2016	4.02	45	83.3
2017	2.76	45	96.6

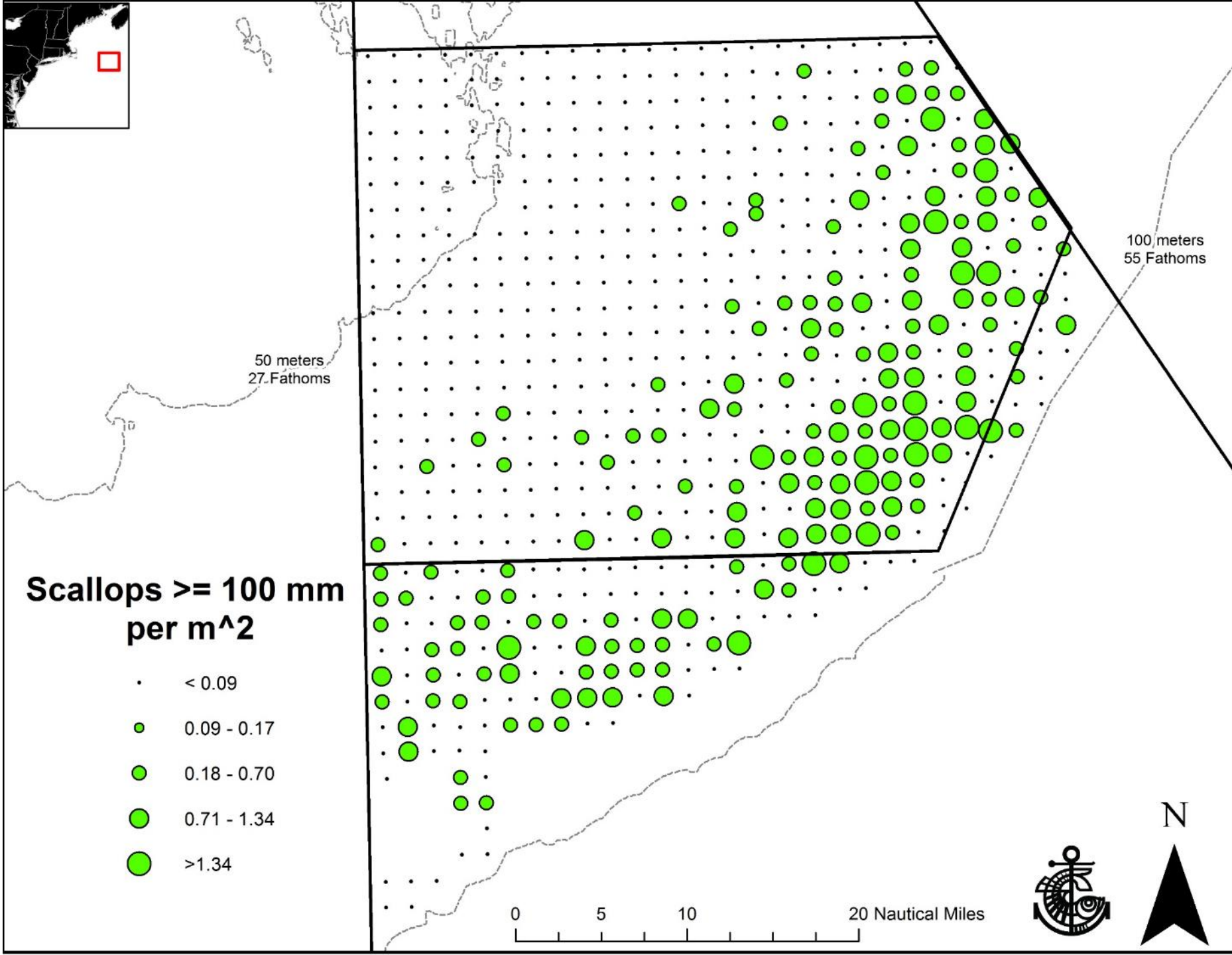


**2016**  
**Scallops per m<sup>2</sup>**

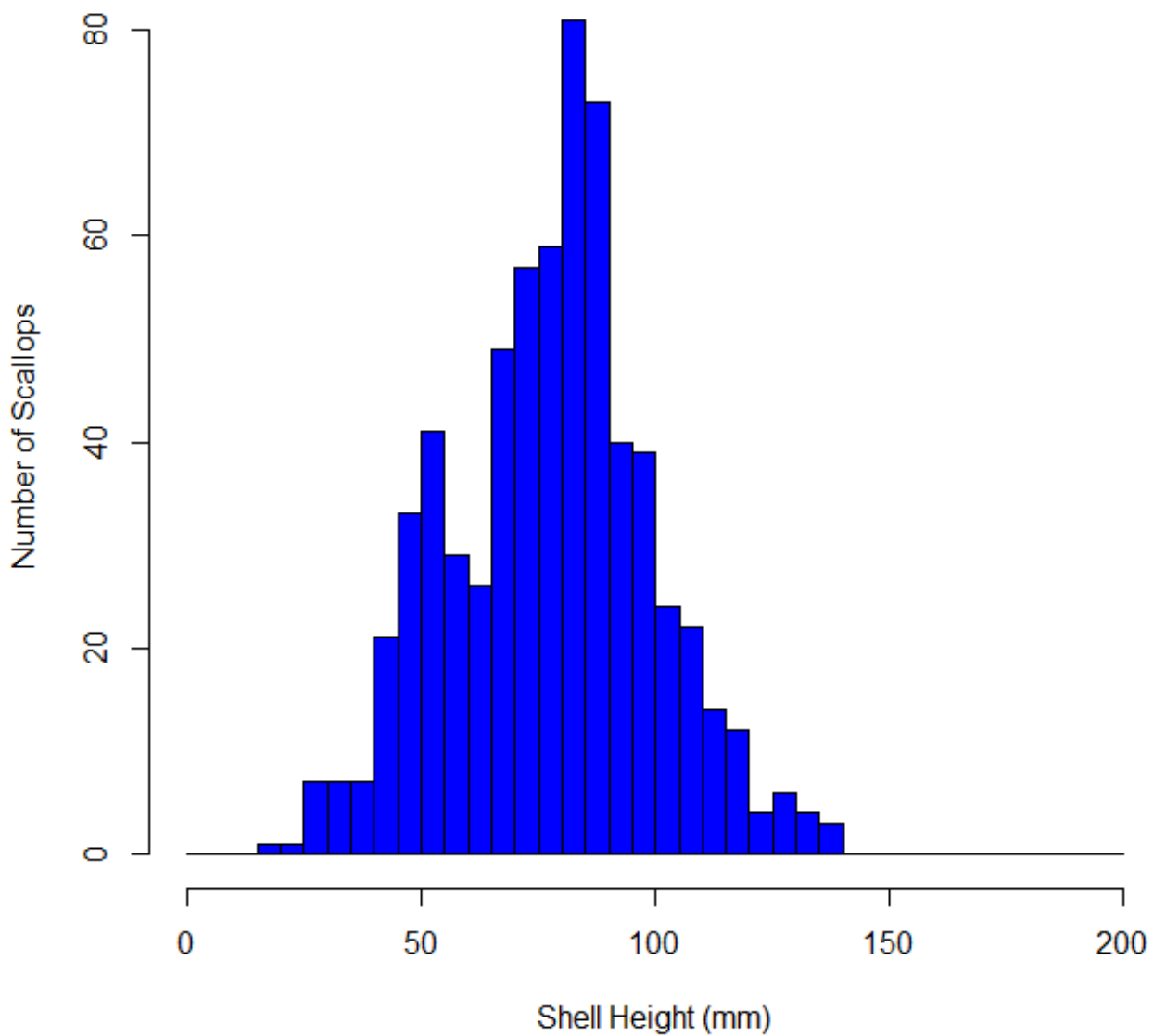
- < 0.09
- 0.09 - 0.17
- 0.18 - 0.70
- 0.71 - 1.34
- > 1.34



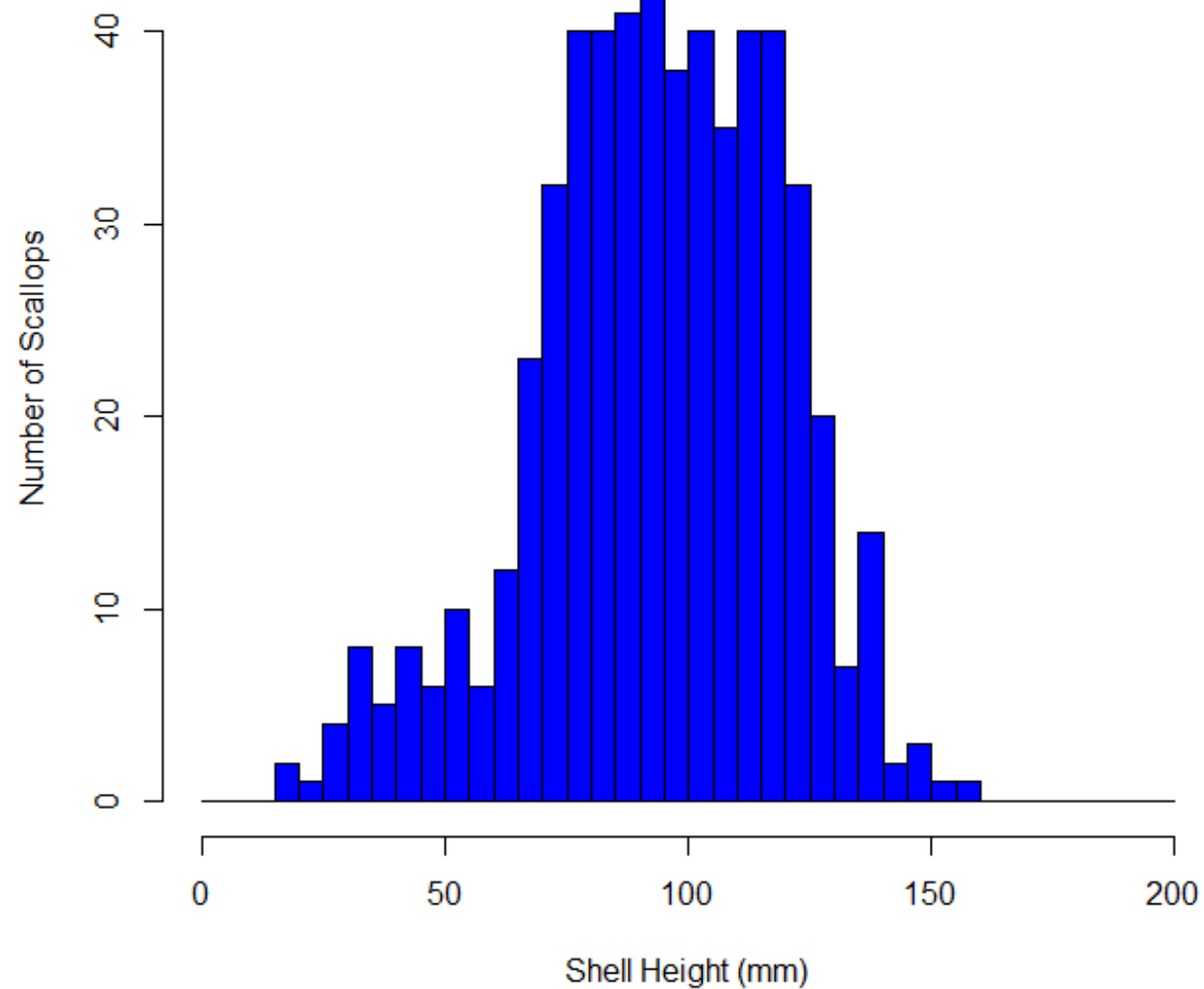


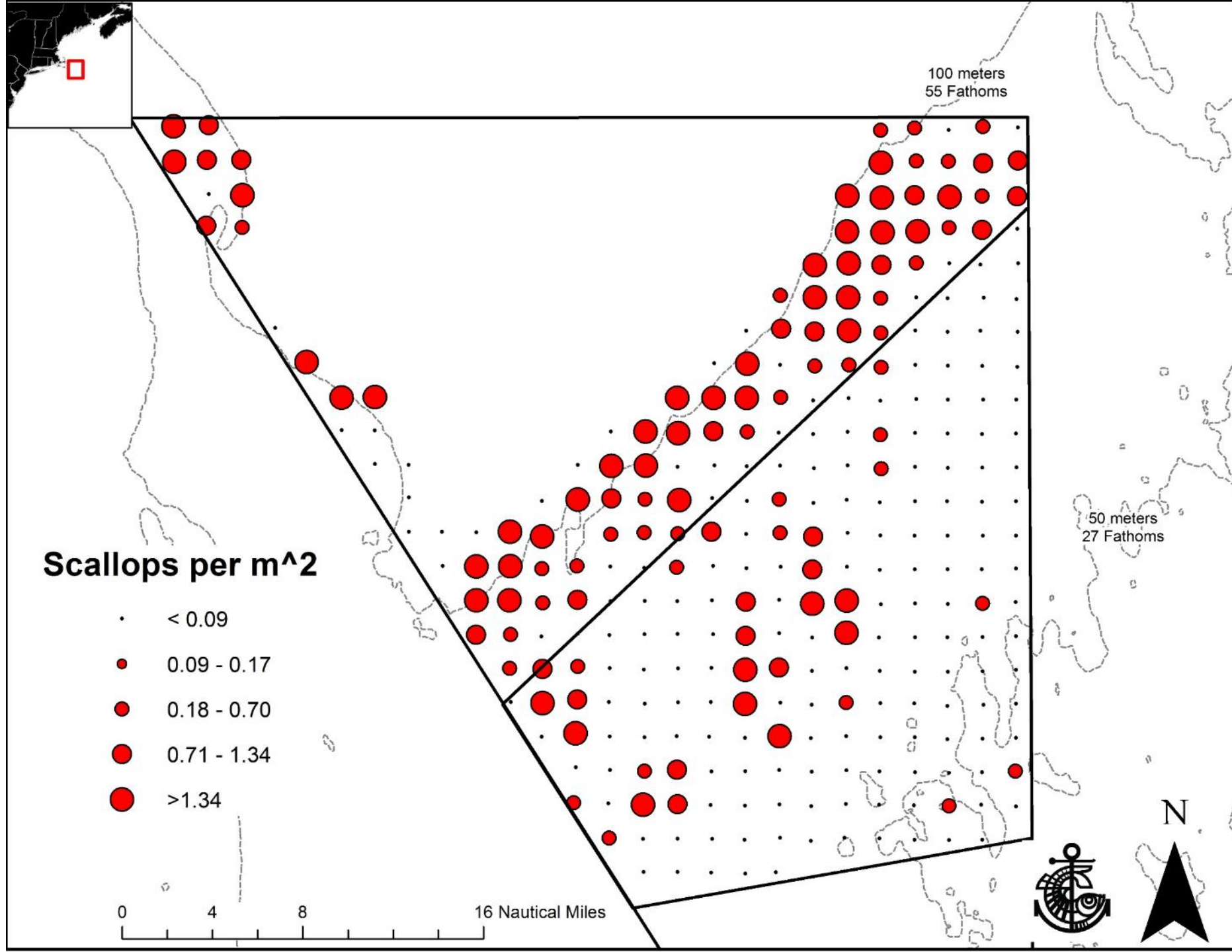


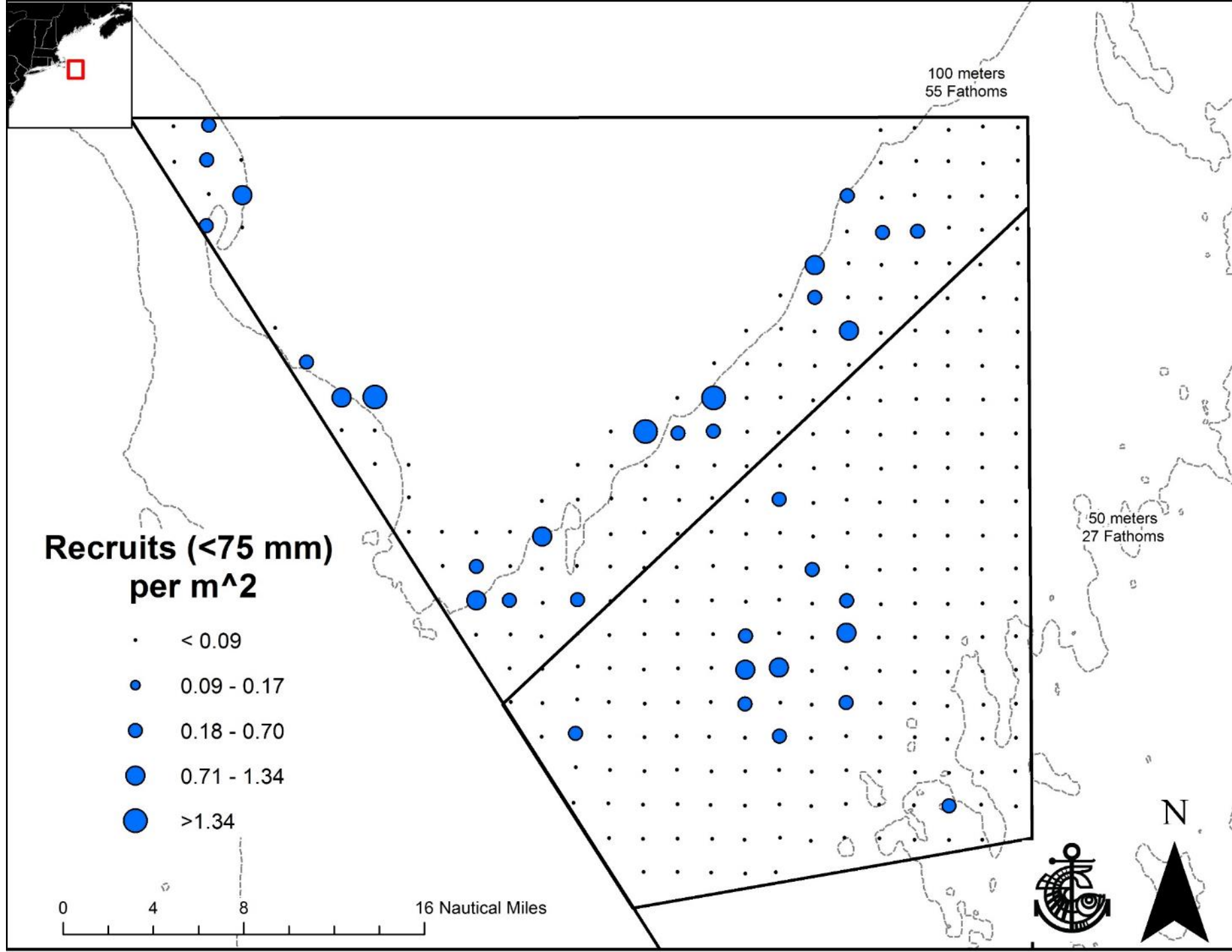
2017 CL2-S-EXT DSC

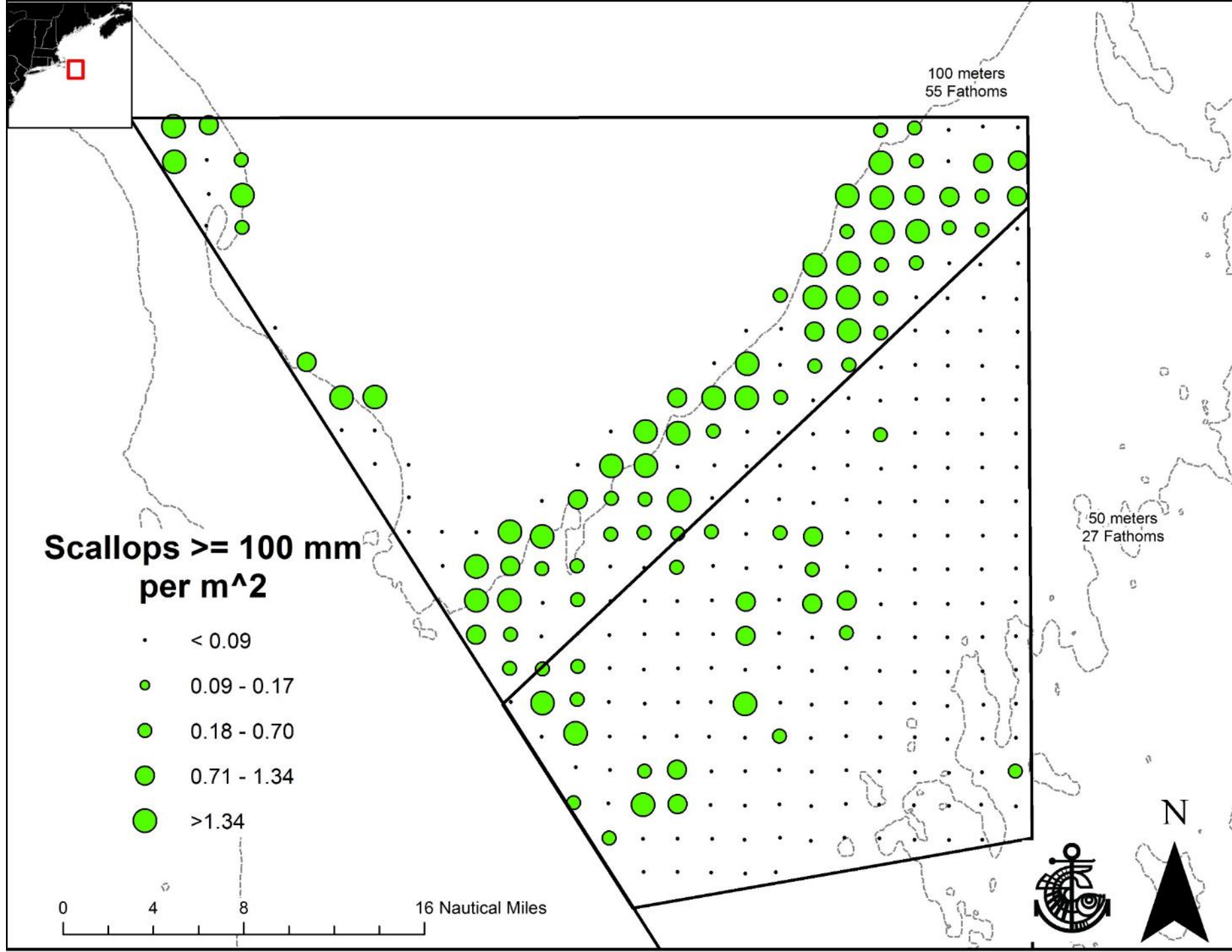


2017 CL2-S-AC DSC





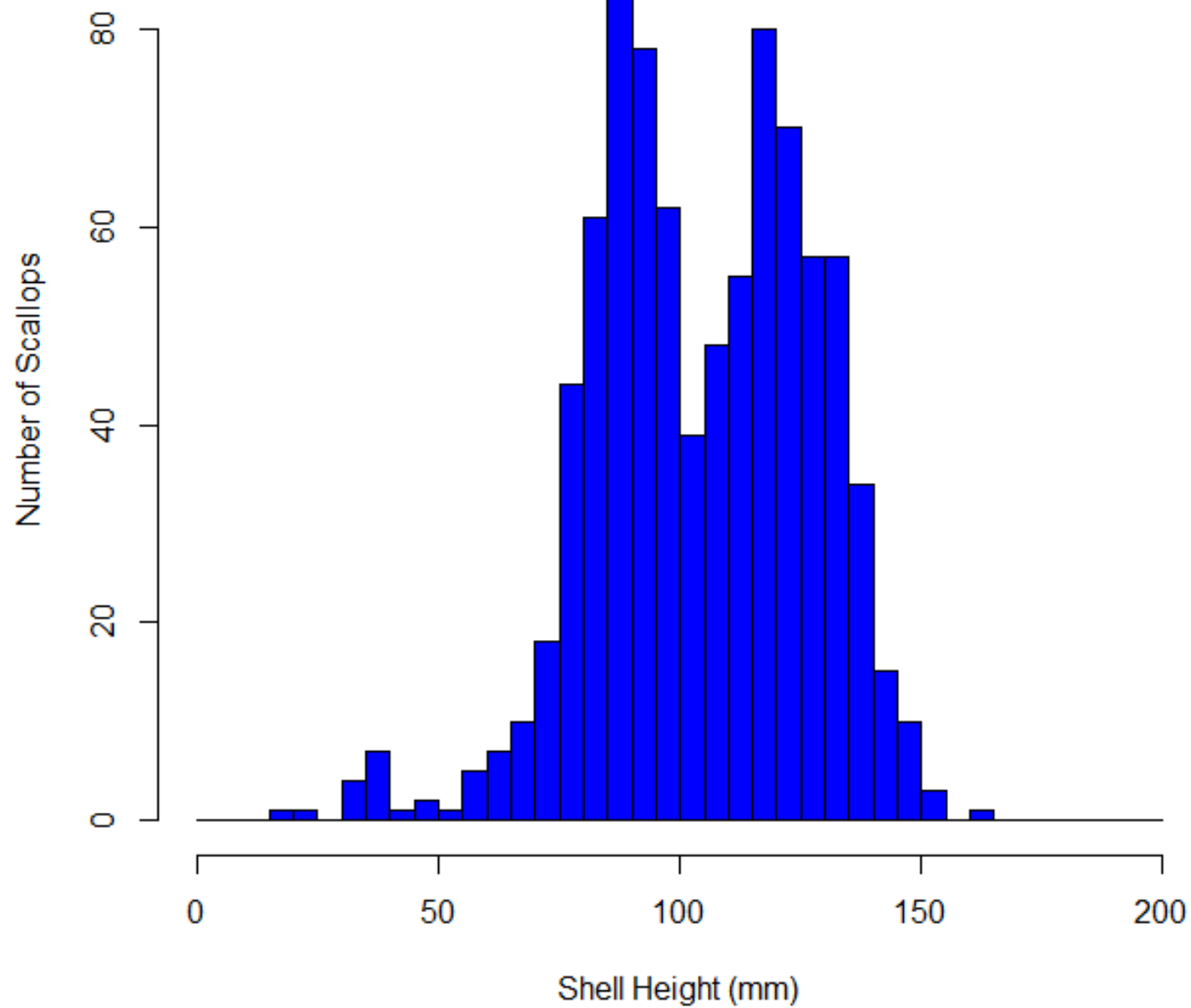


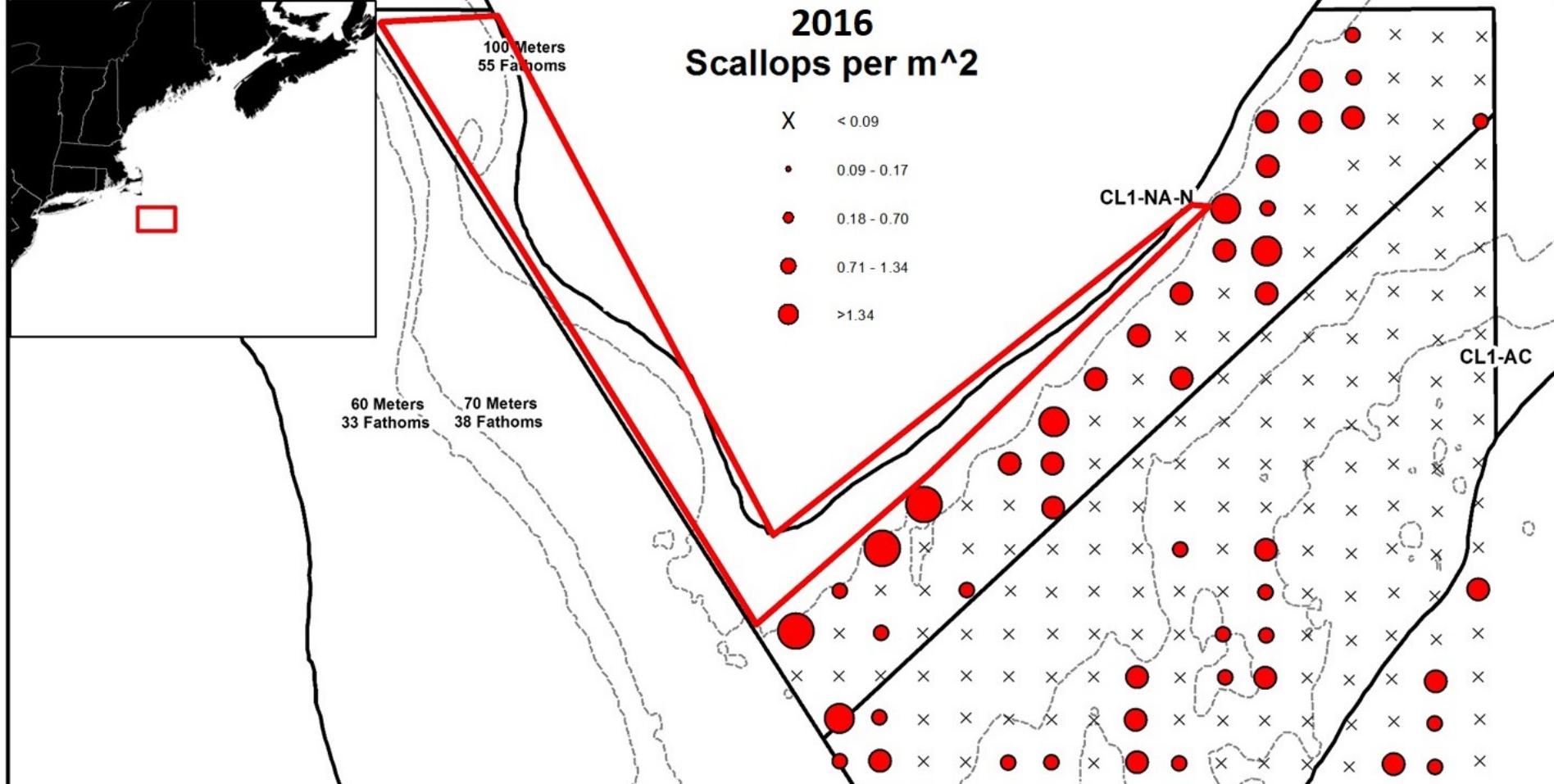




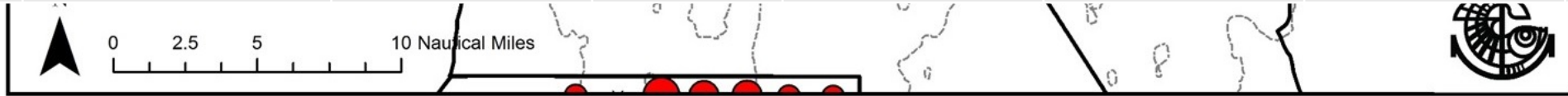


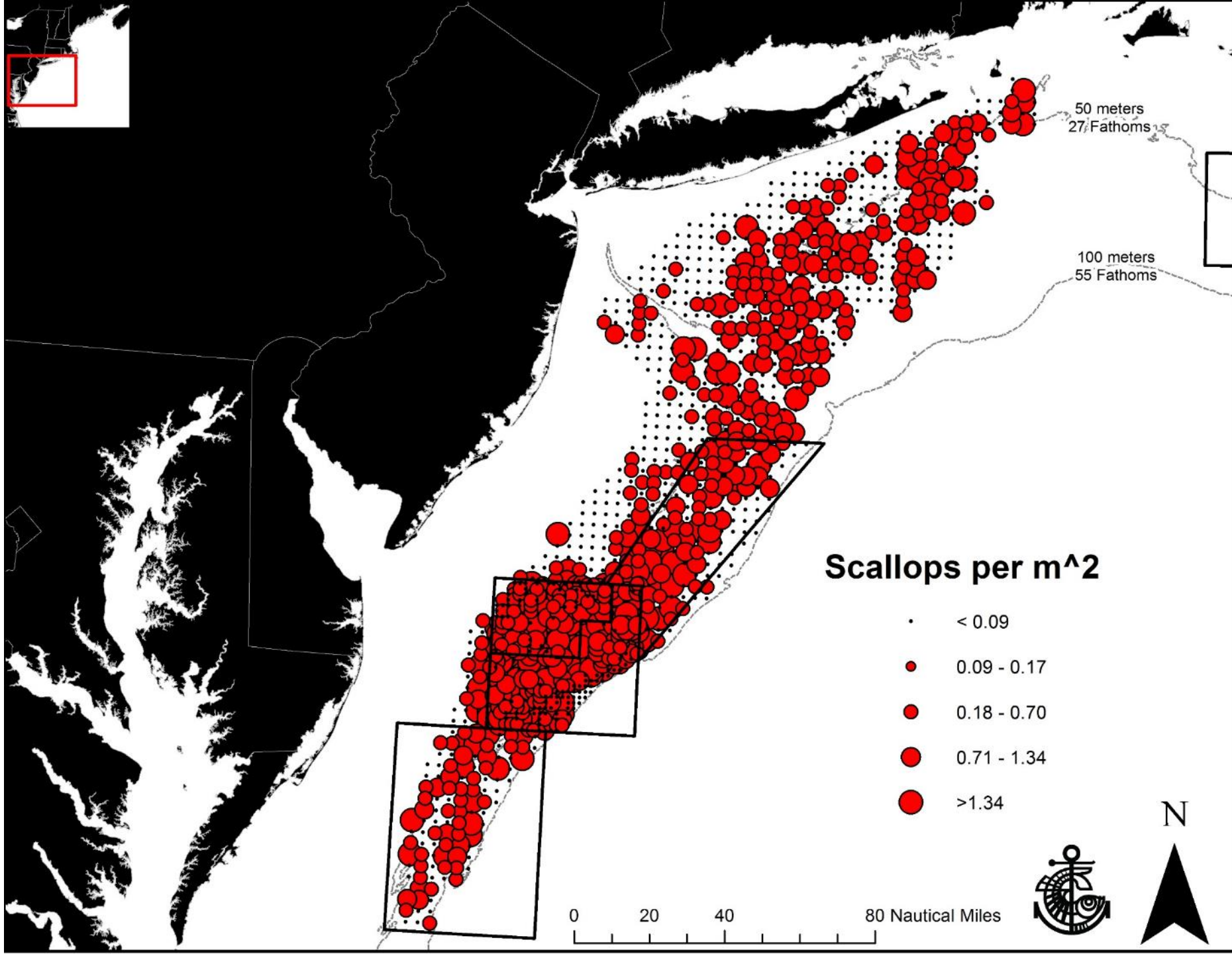
# 2017 CL1-NA-N DSC

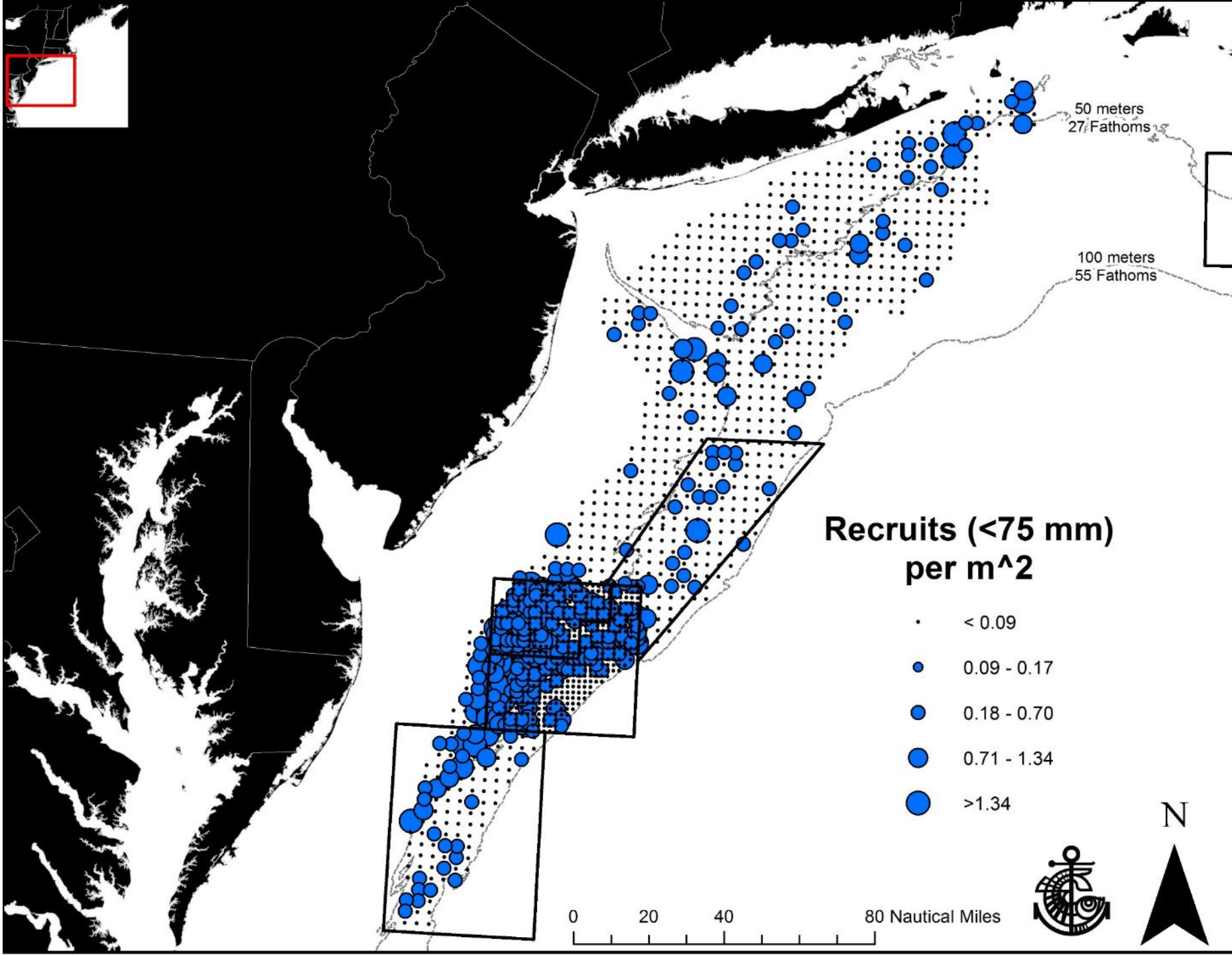


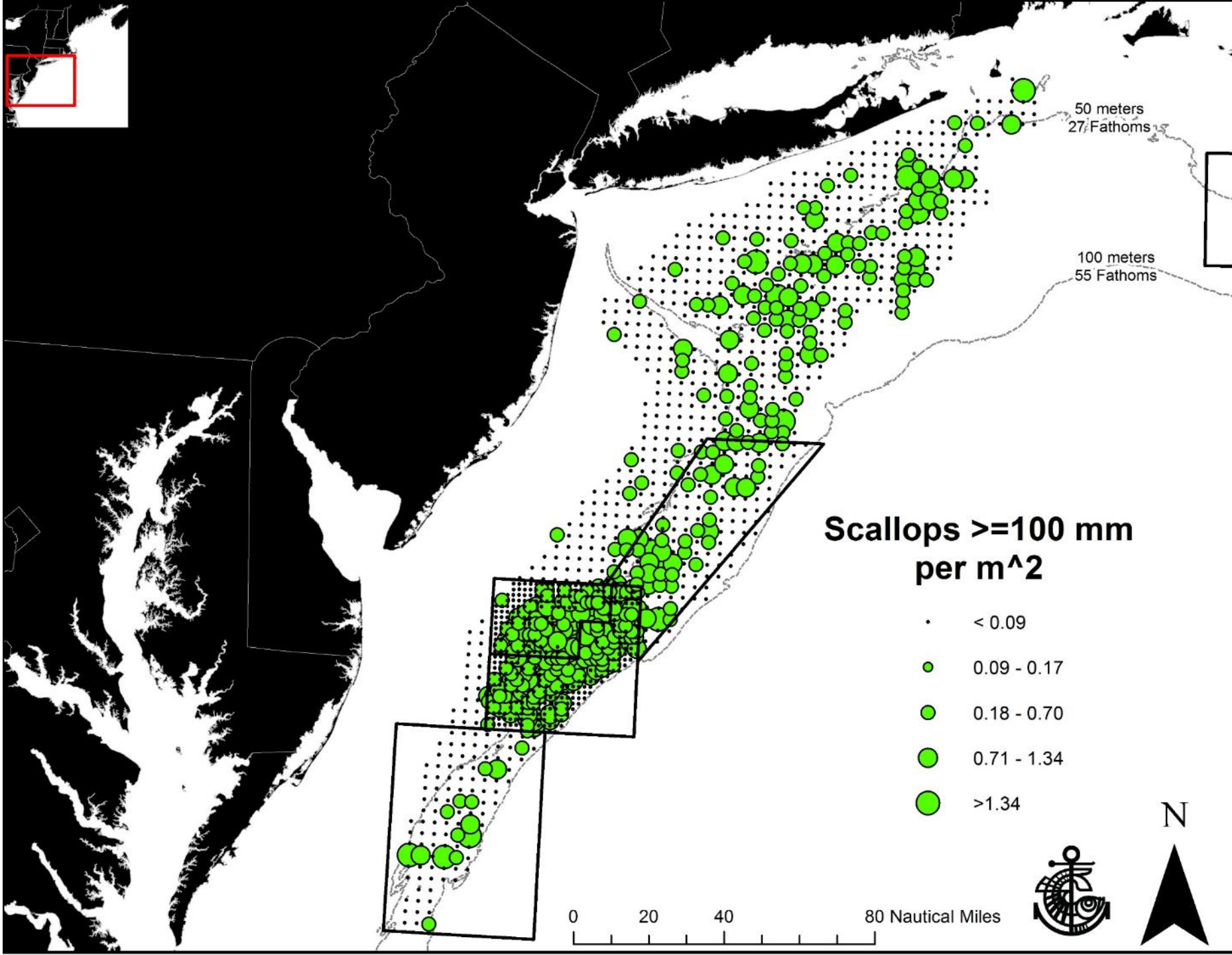


Year	Density	CV%	SH	MWT	Biomass	Ex MWT	Ex Biomass
2016	0.44	24	113.7	23.9	4,900	28.5	4,000
2017	0.67	21	114.1	23.2	7,800	26.7	6,400









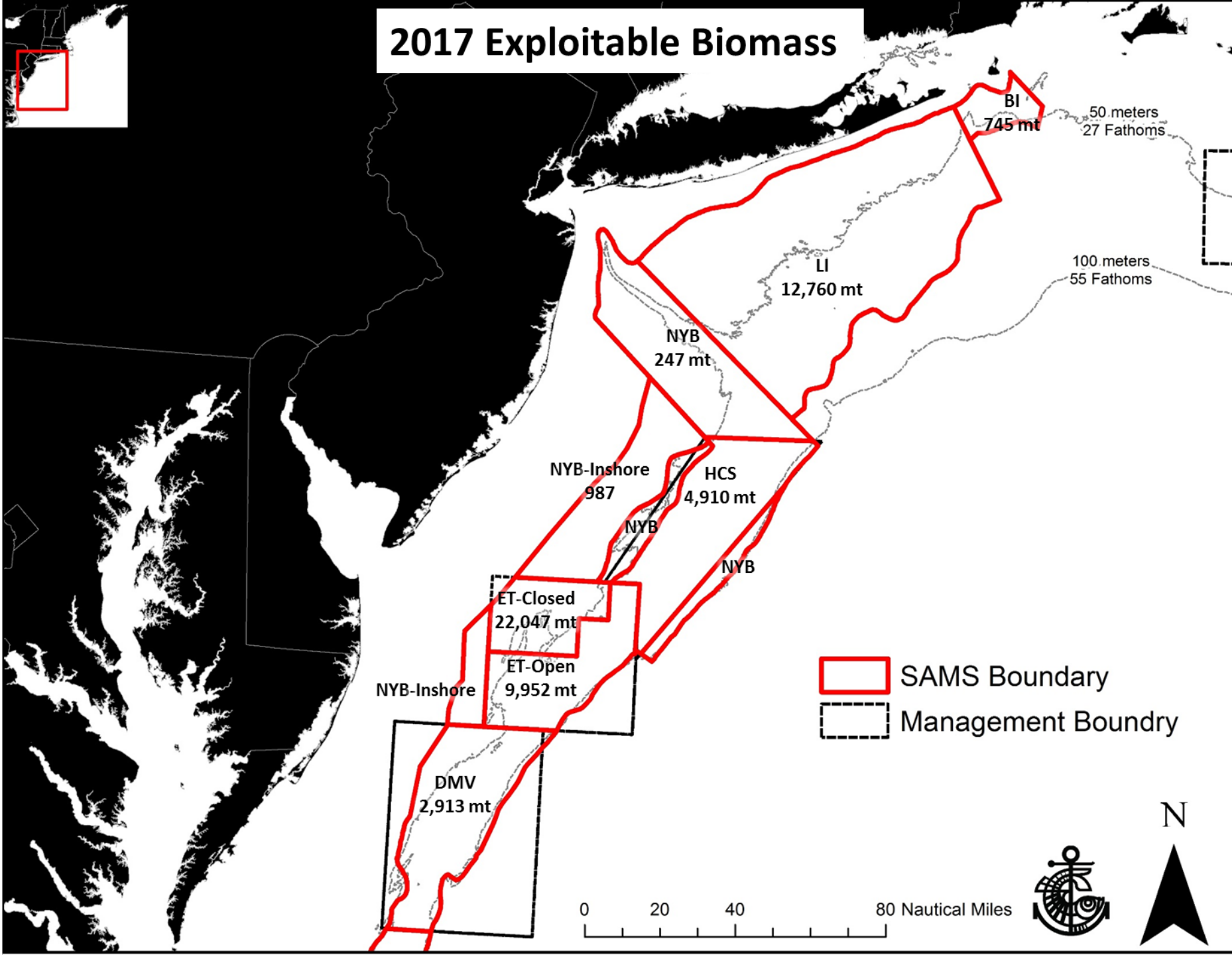
# Summary of Mid-Atlantic estimates by SAMS zone

## SH-MWT 50<sup>th</sup> SAW

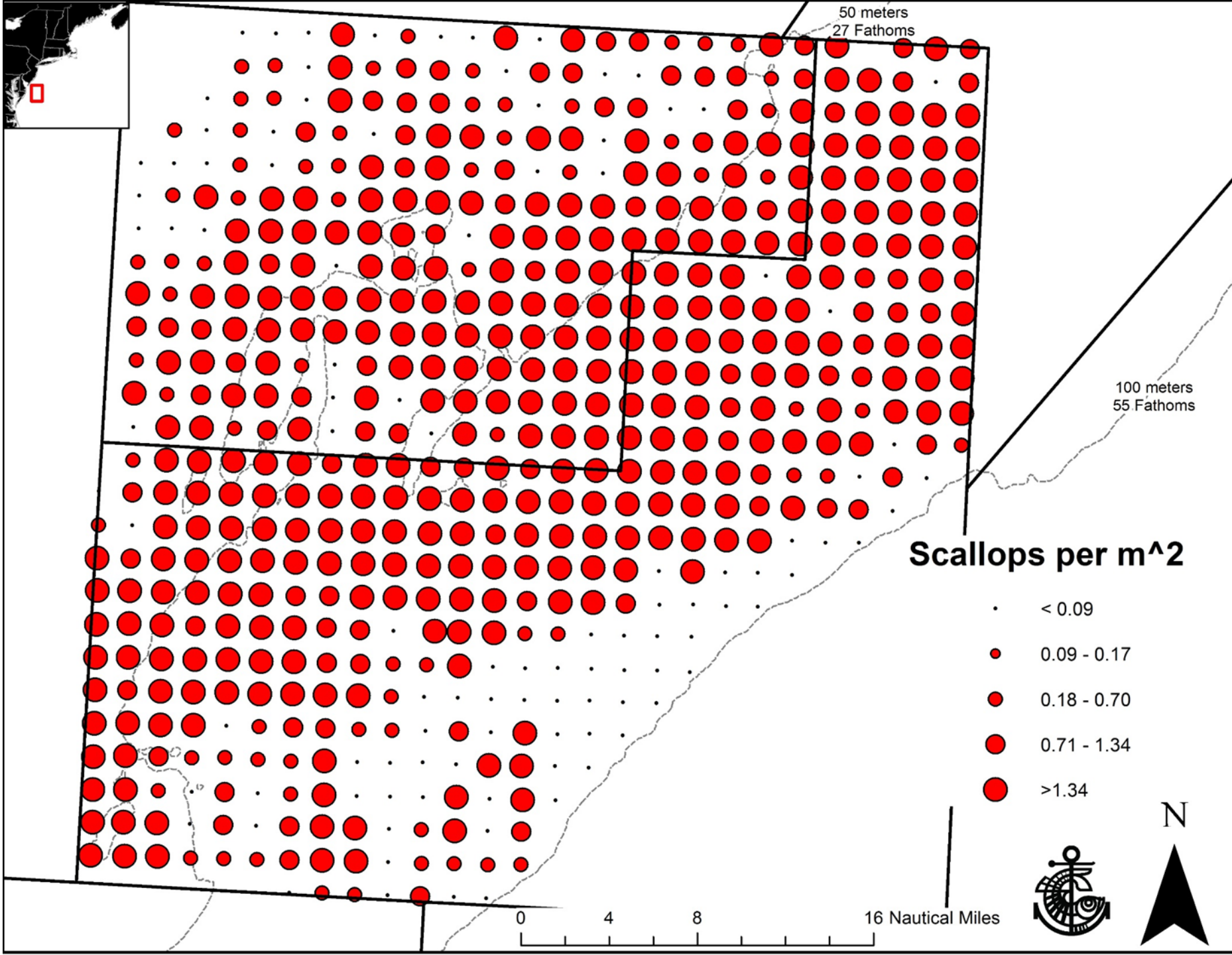
Area	QuadratArea	meanSH	NumberMeasured	ScallopDensity	StationCount	SE	CV%	ScallopAbundance	WeightedLatitude	WeightedDepth	meanMTWT
BI 3 nmi	2.29	67.01	30	0.15	25	0.06	39.04	115,488,673	46.1	41.01	10.97
DMV 3 nmi	1.89	76.89	92	0.13	108	0.02	12.7	437,898,107	37.82	57.55	11.44
ET-Closed 1.5 nmi	2.47	86.7	2419	2.06	228	0.43	20.71	3,619,809,320	38.61	52.94	13.29
ET-Open 1.5 nmi	2.51	72.84	2323	0.85	356	0.08	9.78	2,341,285,083	38.46	56.68	9.41
HCS 3 nmi	2.57	90.81	211	0.21	122	0.03	15.83	800,968,150	39.03	67.49	13.19
LI 3 nmi	2.48	93.66	256	0.09	405	0.01	14.25	1,167,757,011	40.38	54.28	17.36
NYB 3 nmi	2.32	85.43	107	0.01	140	<0.01	15.06	33,758,898	39.53	54.78	13.71
NYB-Inshore 3 nmi	2.05	58.51	36	0.05	116	0.01	22.97	174,249,610	38.78	41.58	8.94

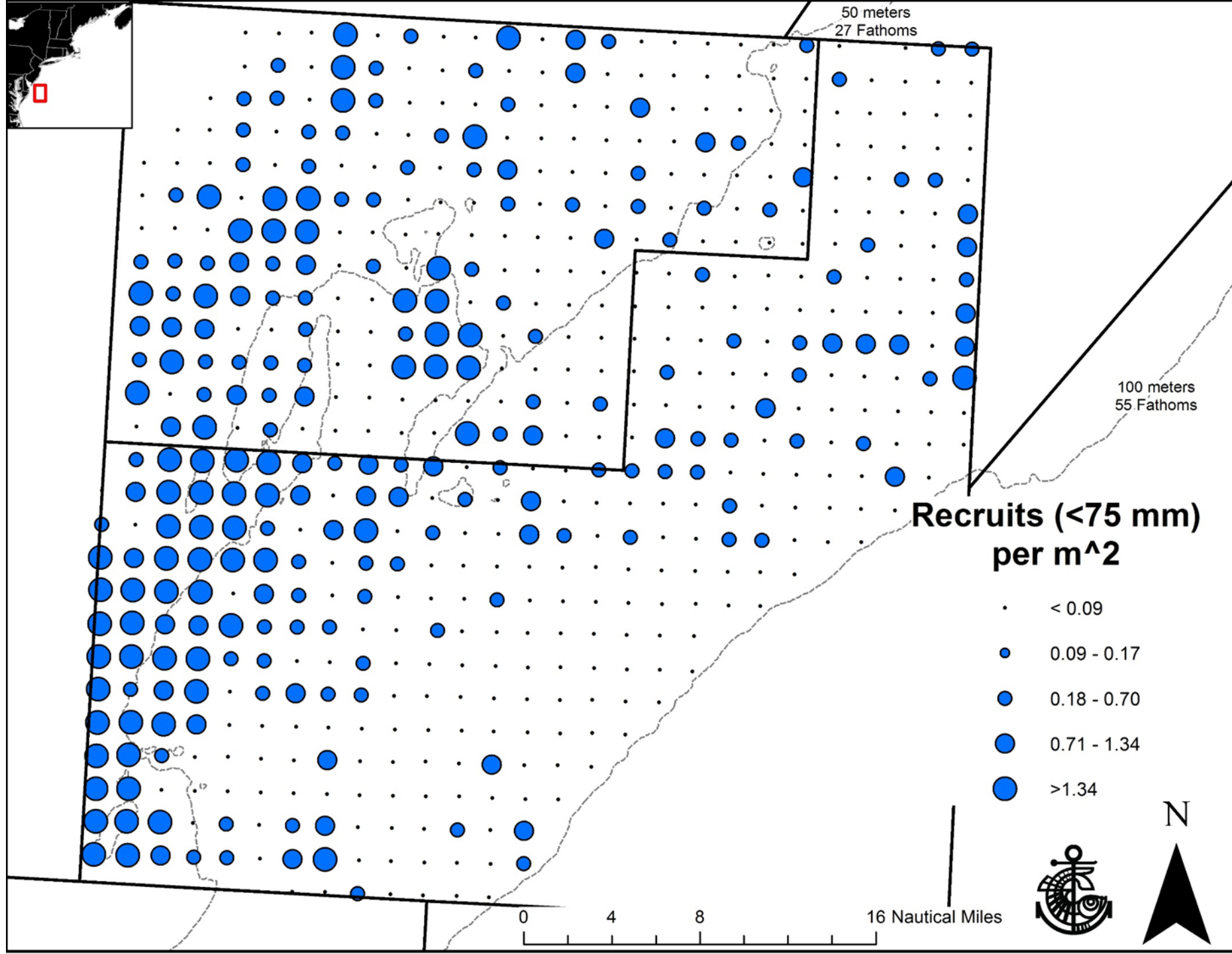
Area	TotalBiomassMillLbs	TotalBiomassMT	SEofTotalBiomassMT	ExploitablemeanMTWT	ExploitableBiomassMillLbs	ExploitableBiomassMT	SEofExploitableBiomassMT
BI 3 nmi	2.8	1,267	495	24.64	1.6	745	291
DMV 3 nmi	11	5,010	636	23.67	6.4	2,913	370
ET-Closed 1.5 nmi	106.1	48,108	9,963	19.47	48.6	22,047	4,566
ET-Open 1.5 nmi	48.6	22,023	2,153	18.65	21.9	9,952	973
HCS 3 nmi	23.3	10,562	1,671	17.16	10.8	4,910	777
LI 3 nmi	44.7	20,278	2,889	23.4	28.1	12,760	1,818
NYB 3 nmi	1	463	70	20.75	0.5	247	37
NYB-Inshore 3 nmi	3.4	1,558	358	36.2	2.2	987	227

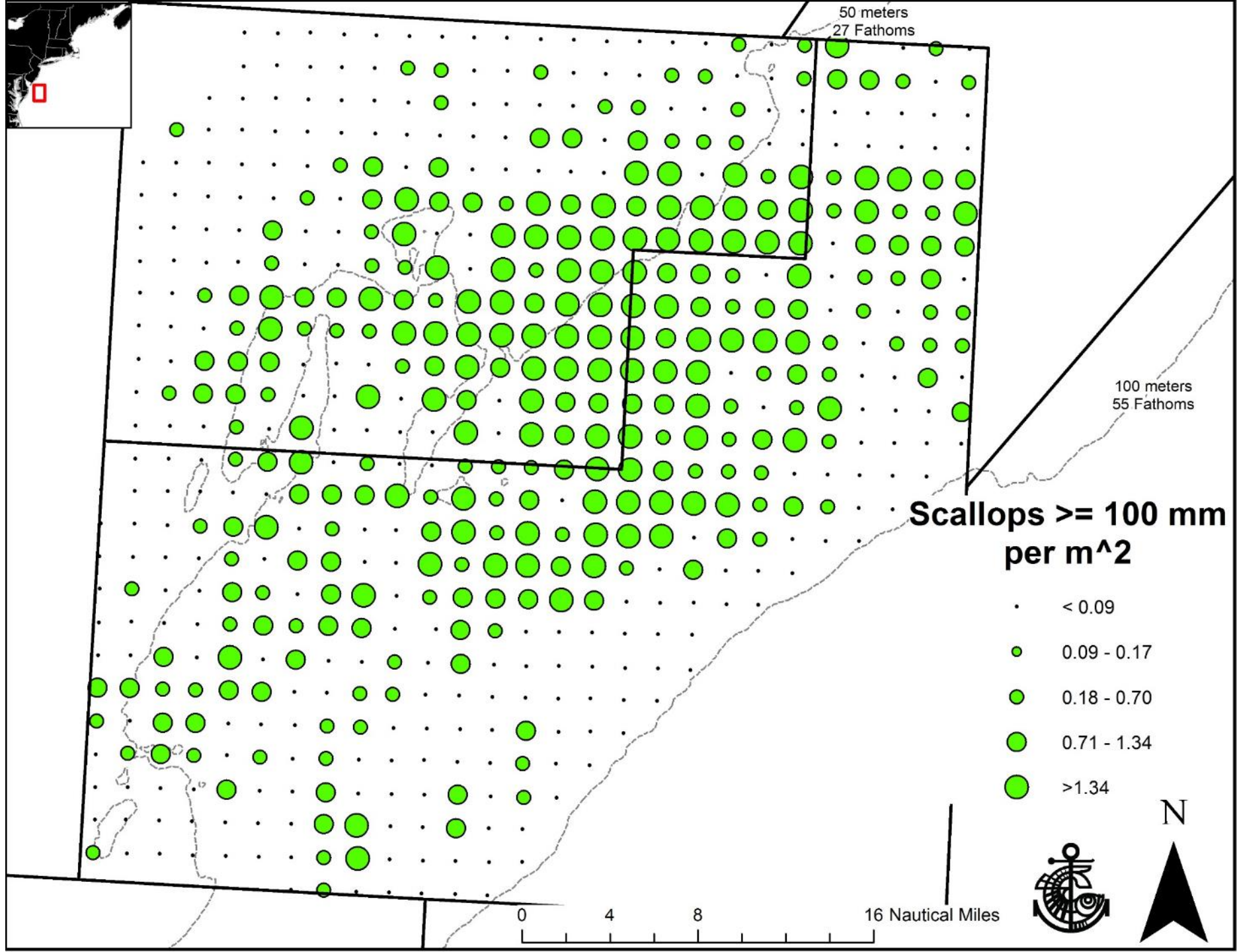
# 2017 Exploitable Biomass



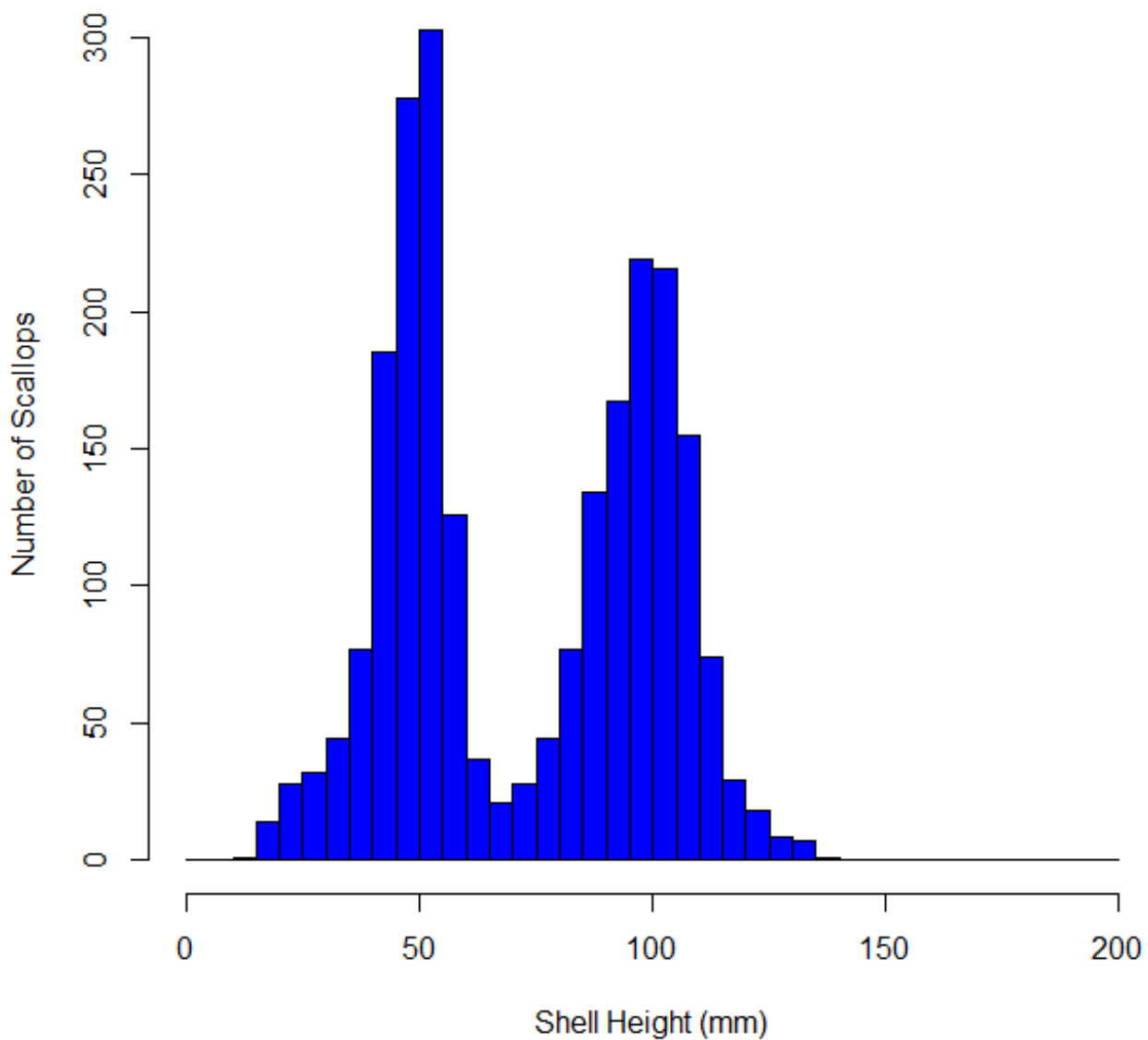




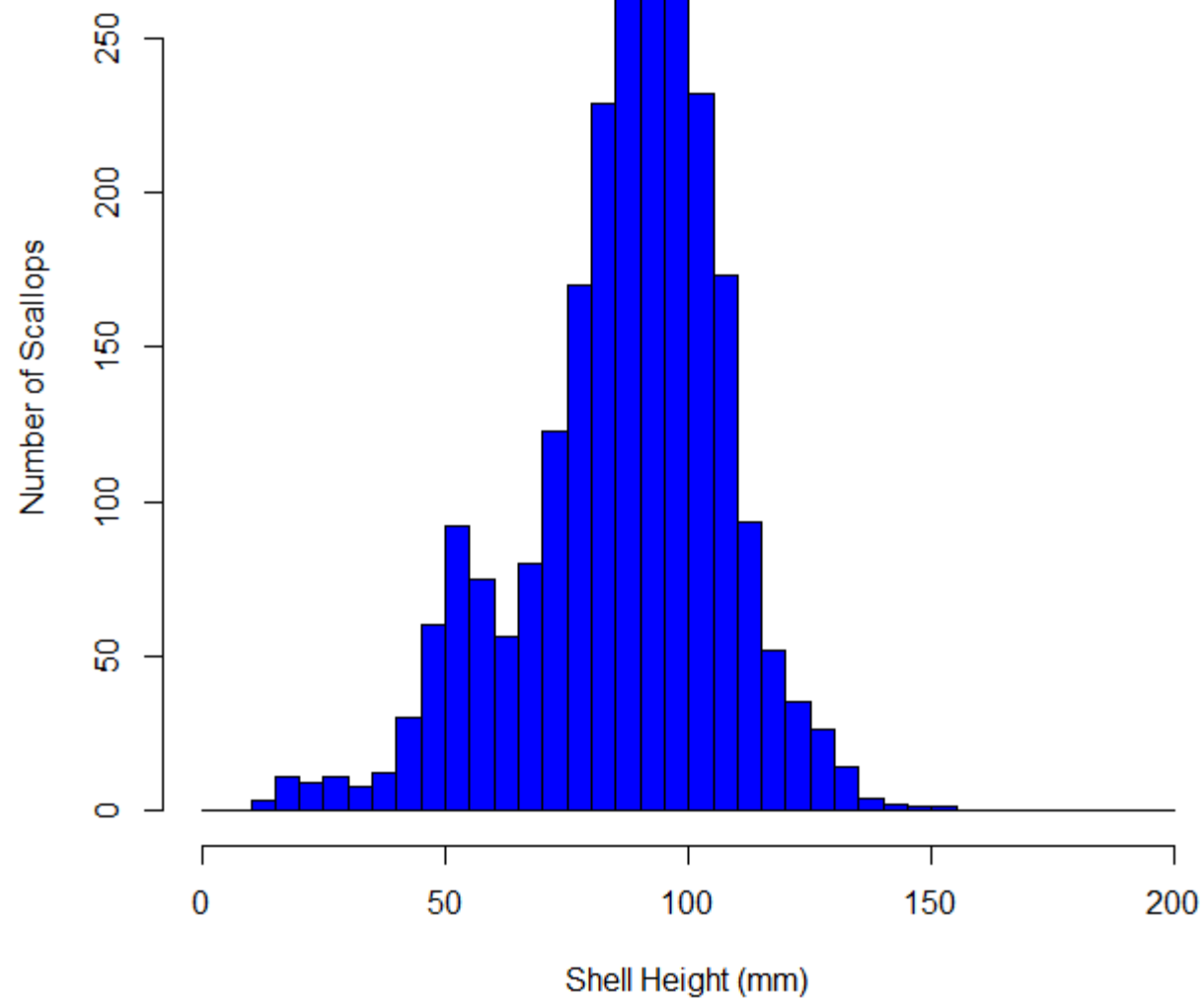




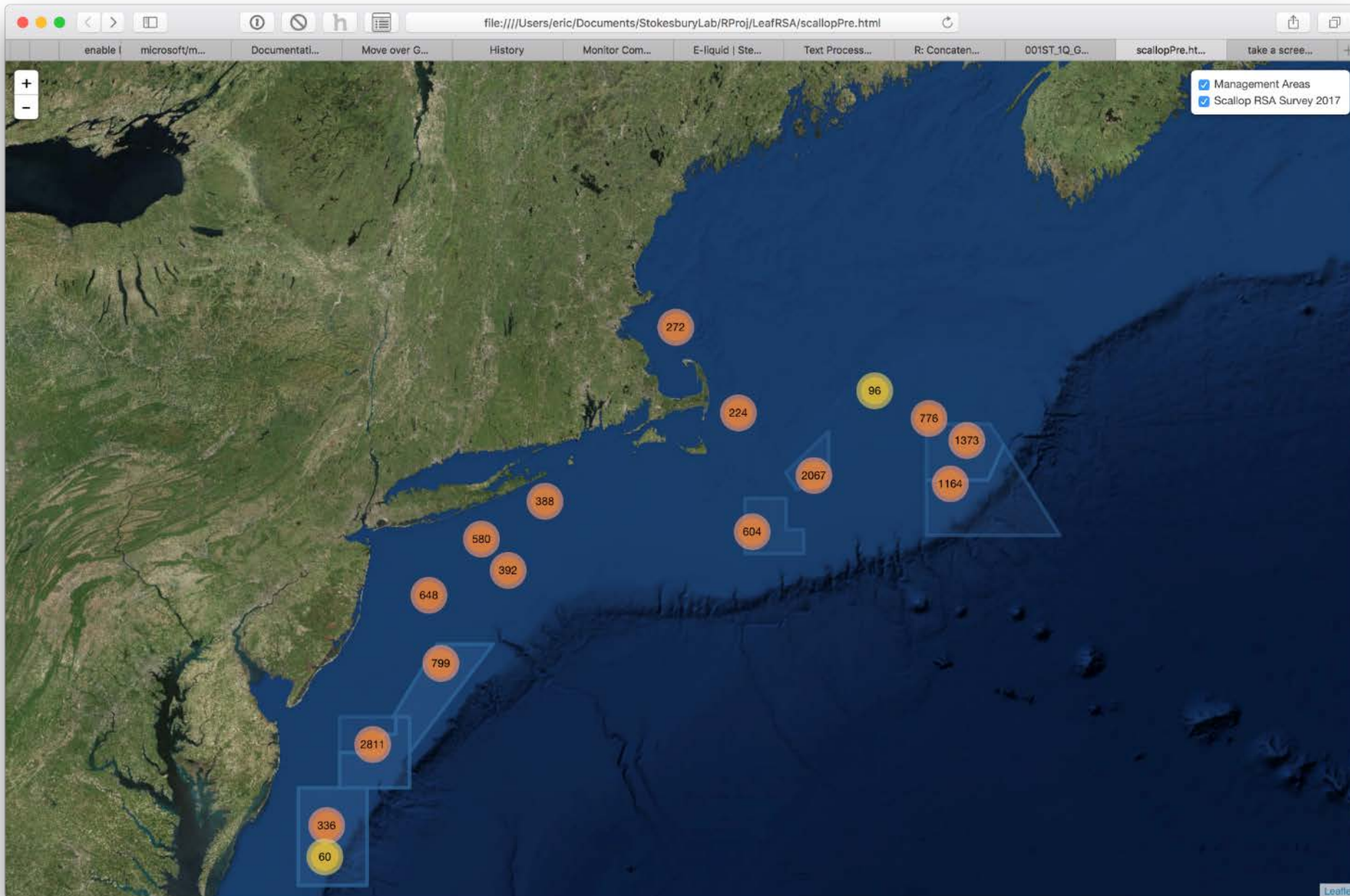
2017 ET-Open DSC



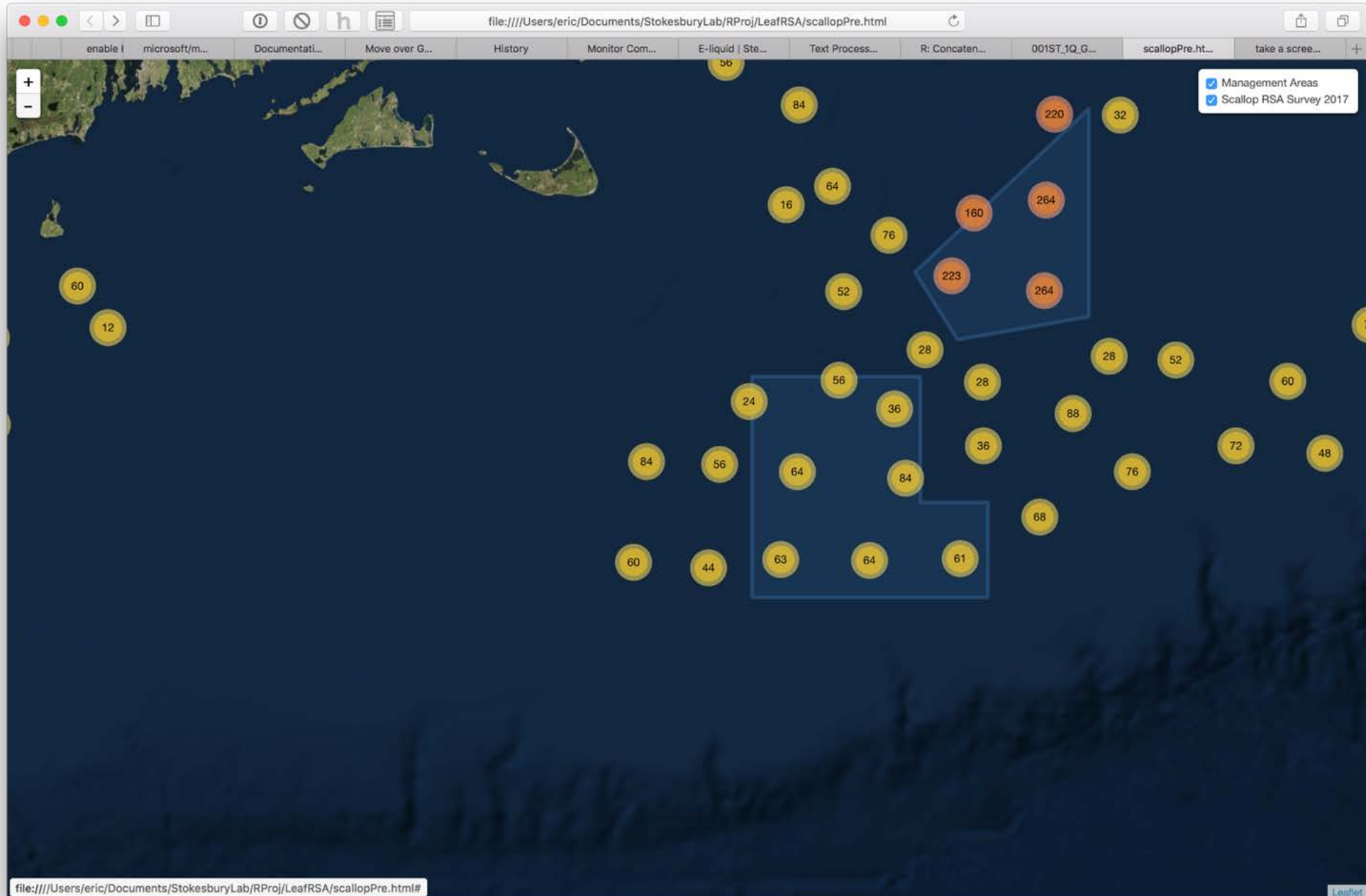
2017 ET-Close DSC



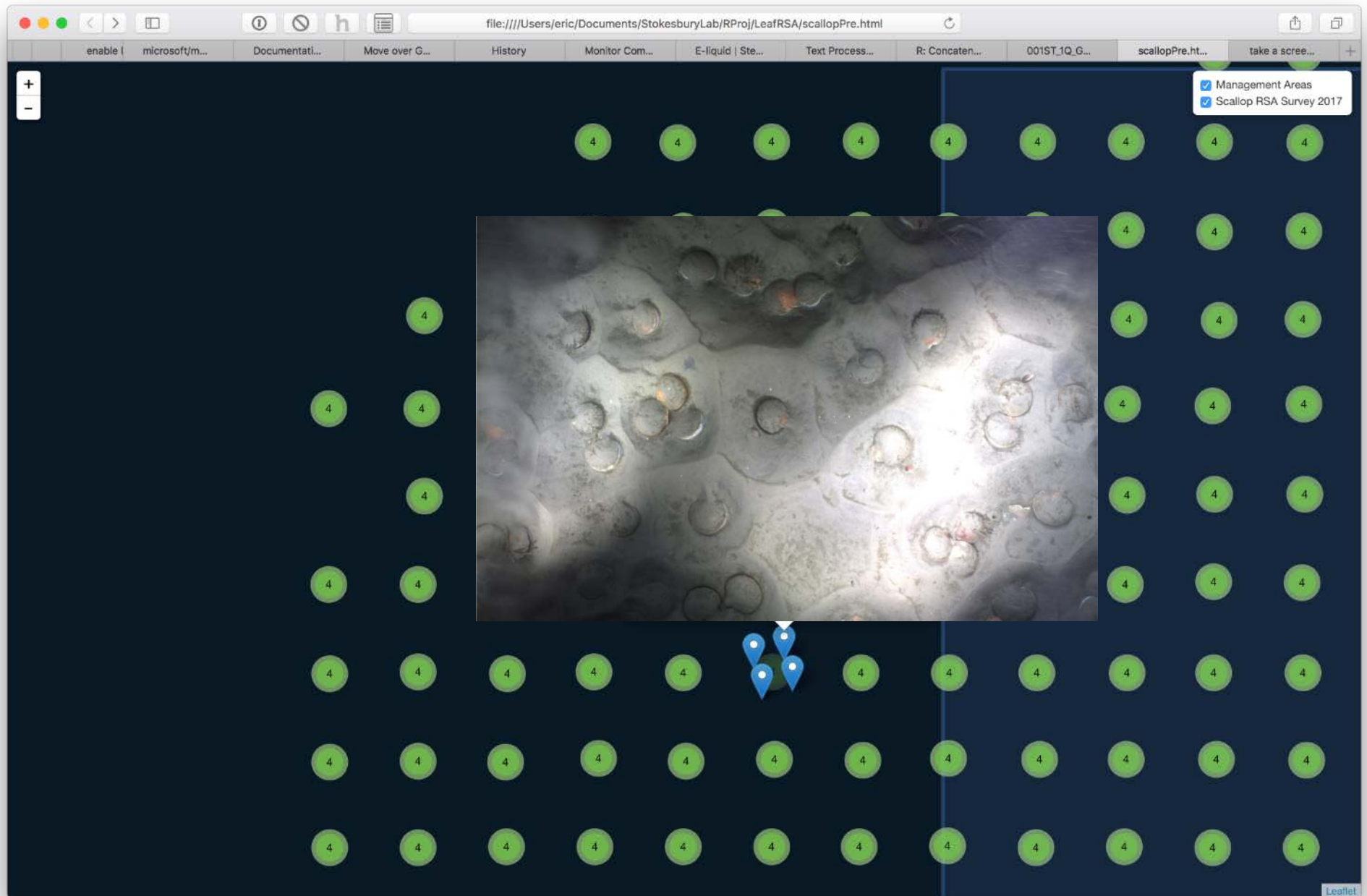
# Image Sharing



# Image Sharing



# Image Sharing



# Questions/Discussion

Thank you to all involved in SMAST Drop Camera Survey:

Students, Staff, Captains, Crew, Vessel Owners, Fuel and Food  
Donators