

# 2022 Scallop Survey Short Report

## Gulf of Maine

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## 1.0 2022 SURVEY BIOMASS ESTIMATES

**Table 1.** Total biomass estimates from the 2022 SMAST drop camera survey. Stations were 1 km apart. Meat weights were estimated for Ipswich, Jeffreys and Platts following the Hart 2020 shell height-meat weight equation. Meat weights for NGOM Stellwagen, Stellwagen South and the WGOM Closure were estimated using the DMR 2021 GLM derived equation. A second set of estimates for the two Stellwagen regions were made using the SMAST 2022 equation and are provided in the additional analyses section.

SMAST drop camera							
Size cutoff for estimates is 40mm							
GOM	NumMil	BmsMT	SE	MeanWt (g)	Avg. Size (mm)	Scallop density (per m <sup>2</sup> )	# Stations (four drops per station)
Platts Bank	6	123	33	20.8	115.7	0.07	90
Ipswich Bank	10	162	34	16.8	92.6	0.10	93
Jeffreys Ledge	9	189	31	21.5	104.9	0.04	215
NGOM Stellwagen Bank (AOI from 2021)	66	1,387	436	21.1	101.2	0.38	171
NGOM TOTAL	91	1,861					569
Non-NGOM Stellwagen Bank (Stellwagen South)	29	349	40	12.2	74.9	0.10	295
Non-NGOM WGOM Closure	62	2,056	387	33.4	118.0	0.99	62
Non-NGOM Ipswich Bay (MA State Waters)	2	26	7	29.7	82.4	0.08	26

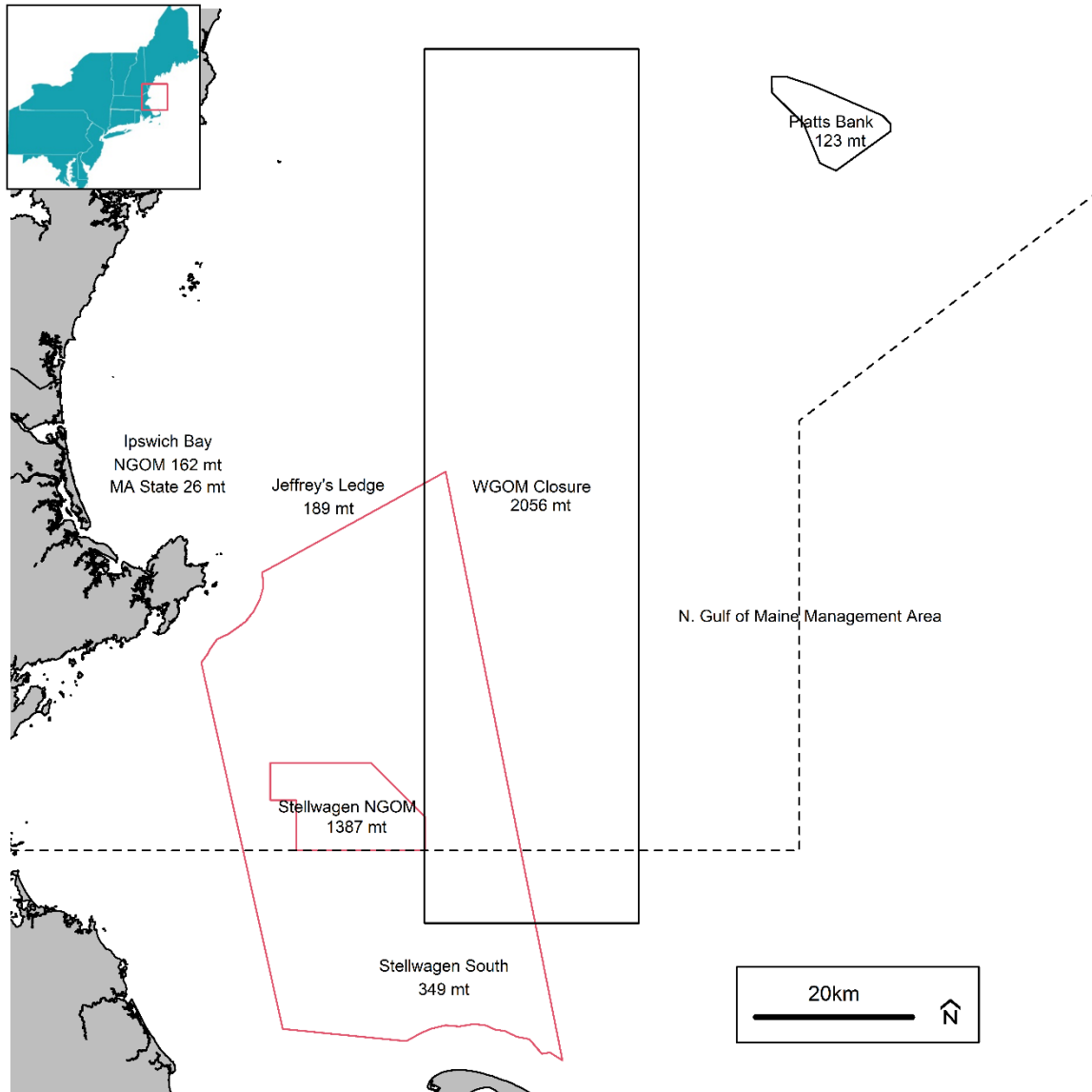


Figure 1. 2022 SMAST Drop Camera survey biomass estimates for scallops  $\geq 40$  mm shell height, in metric tons, on Gulf of Maine.

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## 2.0 FIGURES OF SURVEY COVERAGE

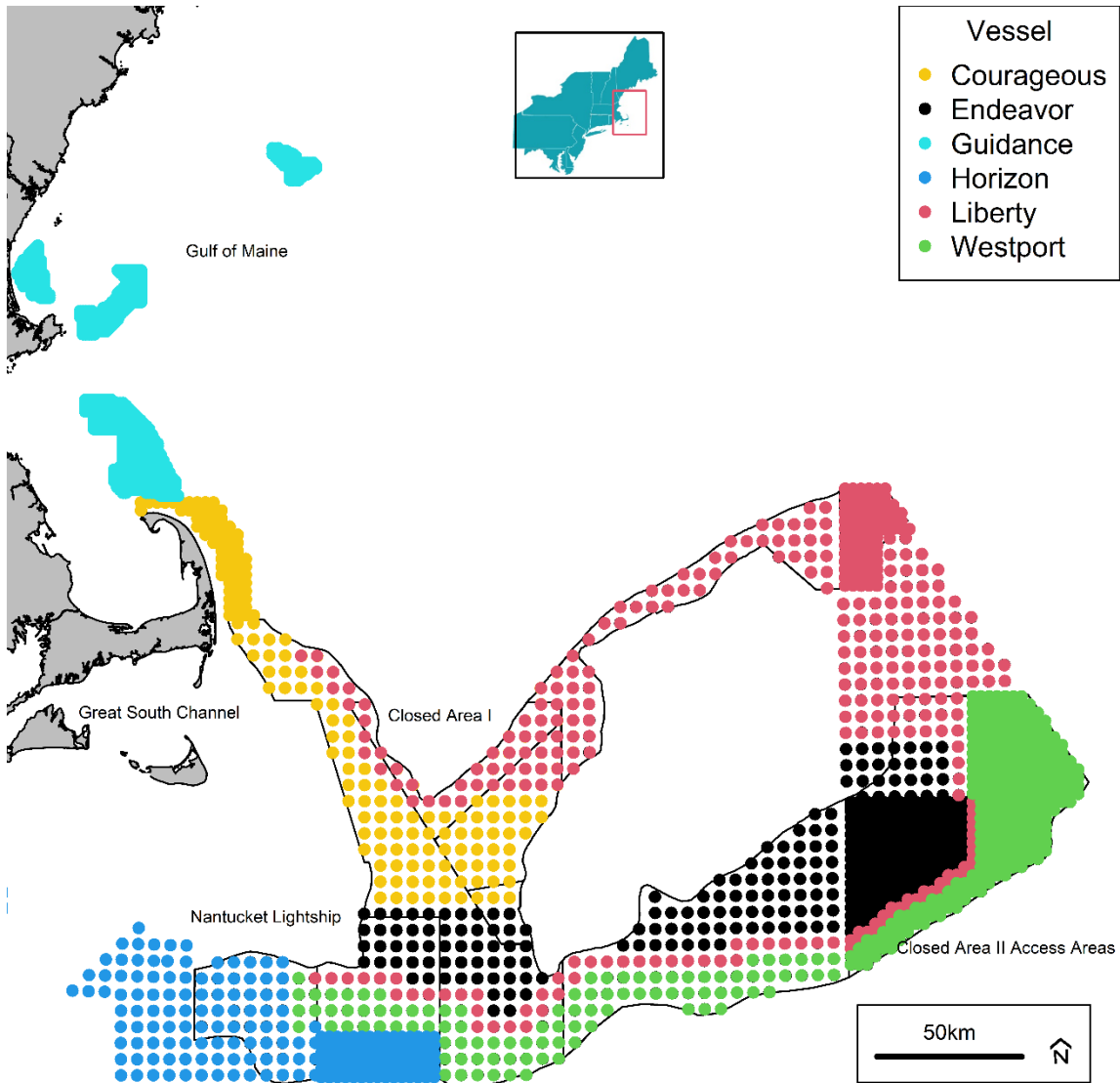


Figure 2. 2022 SMAST Drop Camera survey locations by vessel where Gulf of Maine survey stations were 1 km apart.

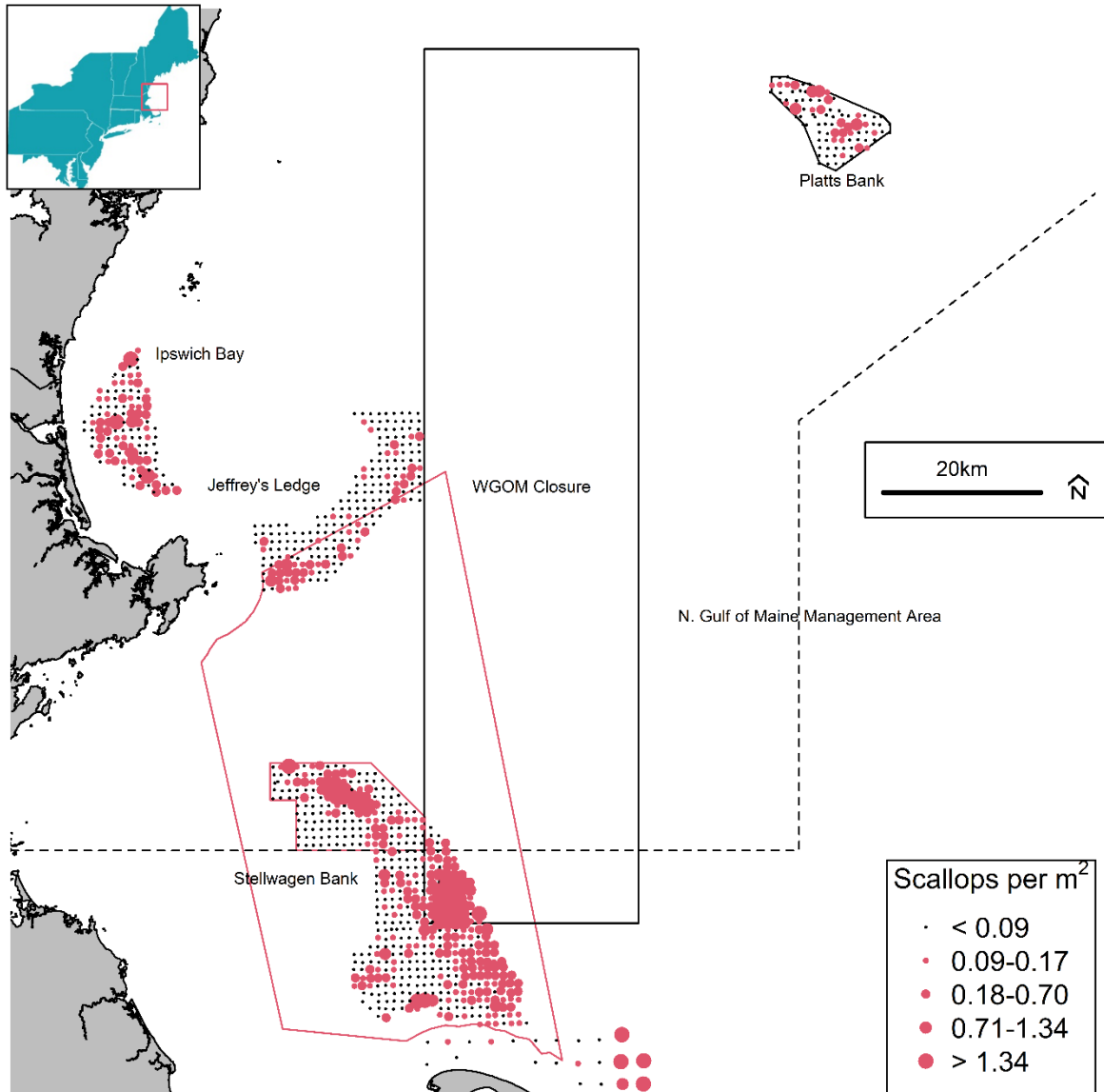


Figure 3. Mean scallop density (all sizes, including less than 40 mm shell height) at each station from the 2022 SMAST Drop Camera survey.

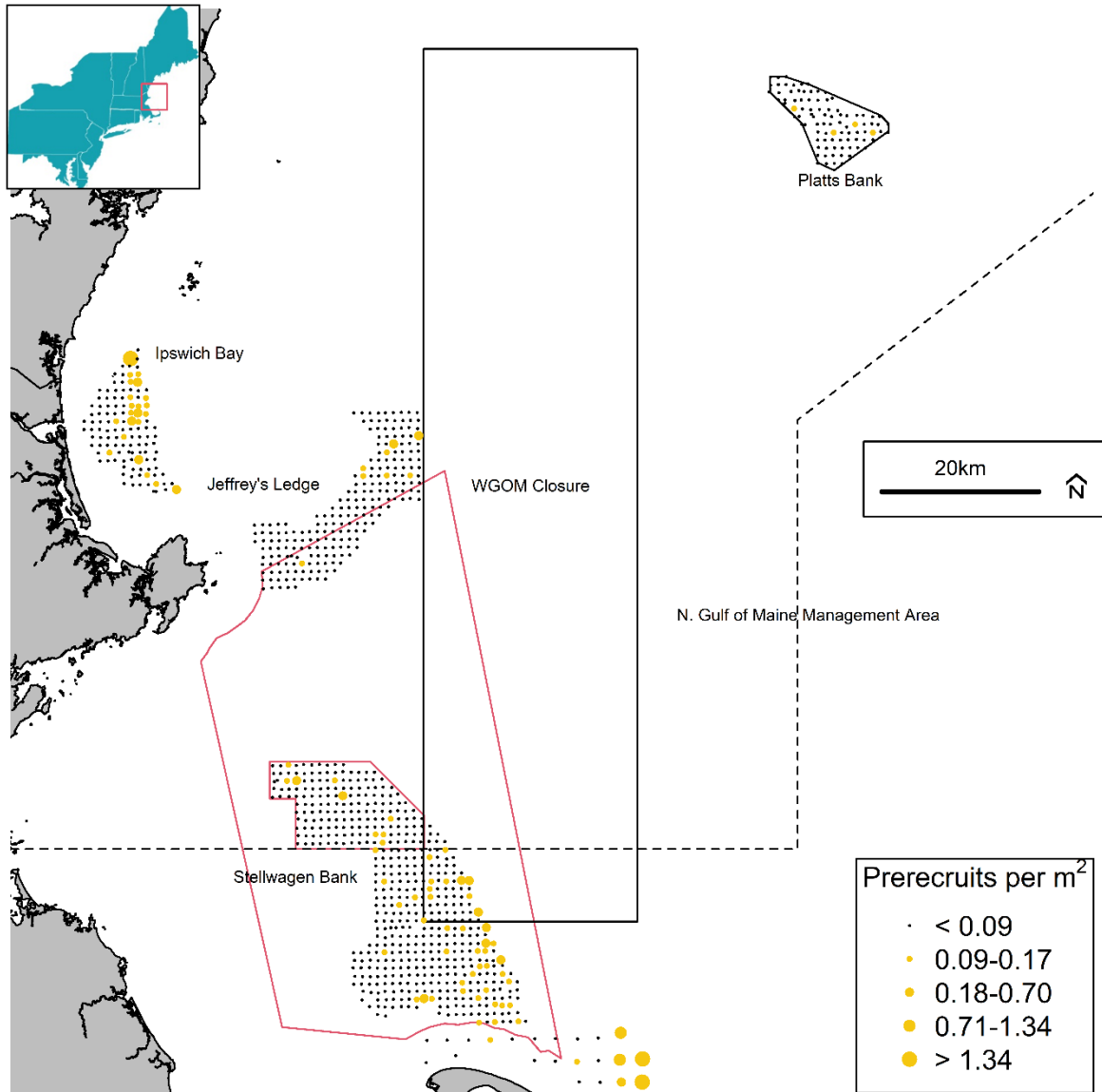


Figure 4. Average pre-recruit (< 35 mm shell height) scallop density at stations from the 2022 SMAST Drop Camera survey.



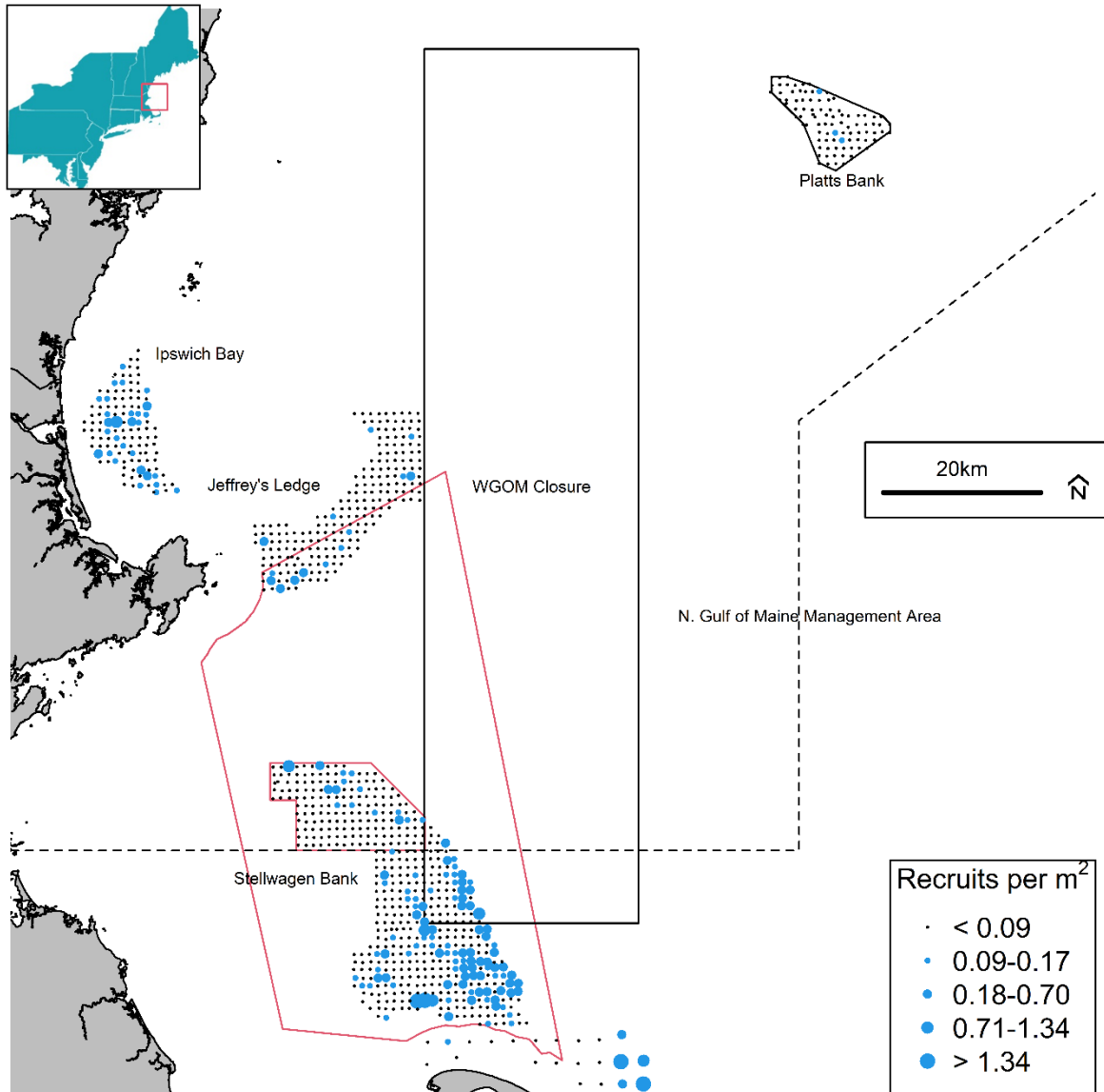


Figure 5. Average recruit (35 to 75 mm shell height) scallop density at stations from the 2022 SMAST Drop Camera survey.

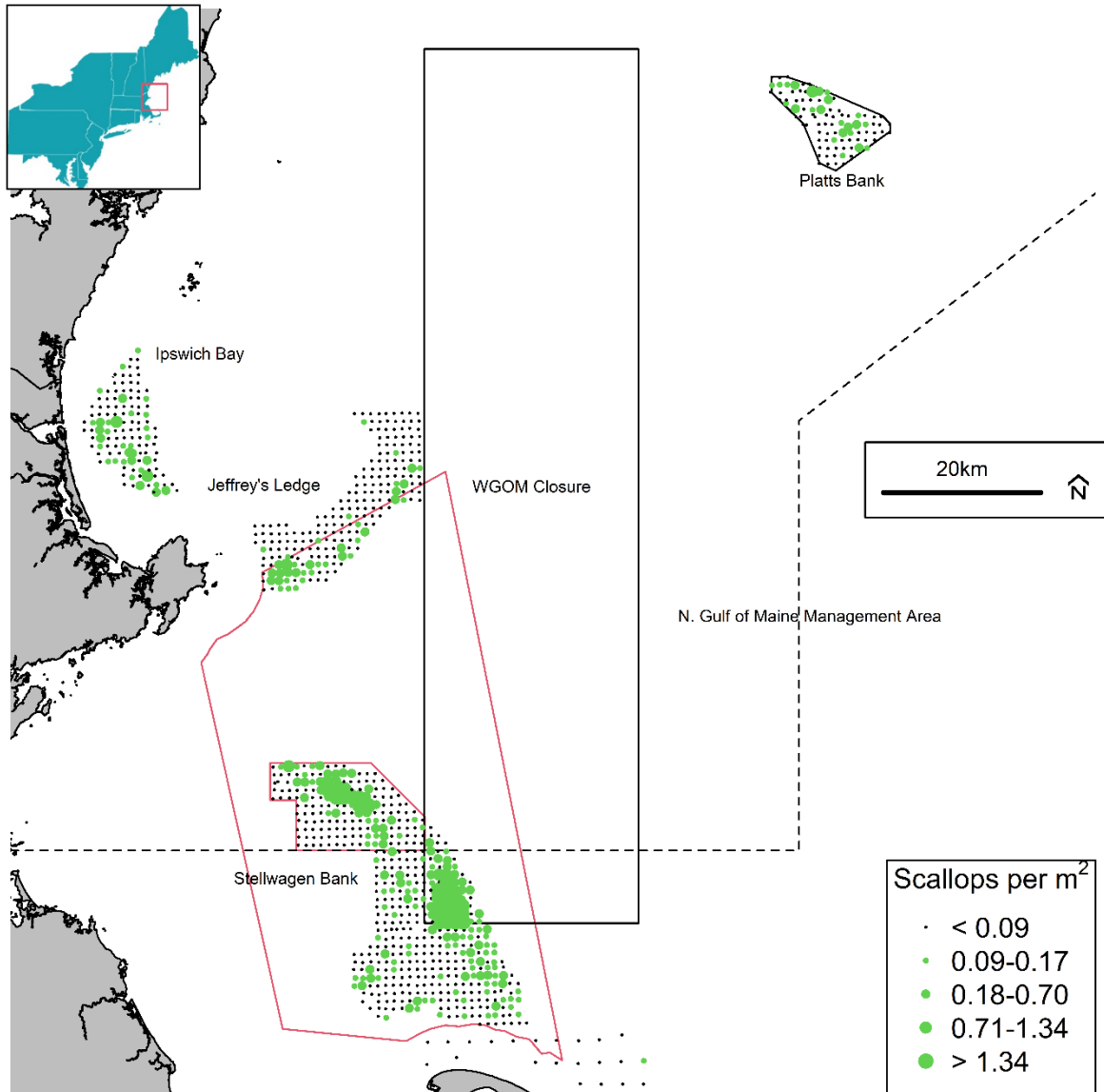


Figure 6. Average recruited scallop (> 75 mm shell height) density at stations from the 2022 SMAST Drop Camera survey.

### 3.0 LENGTH FREQUENCY PLOTS BY SAMS AREA

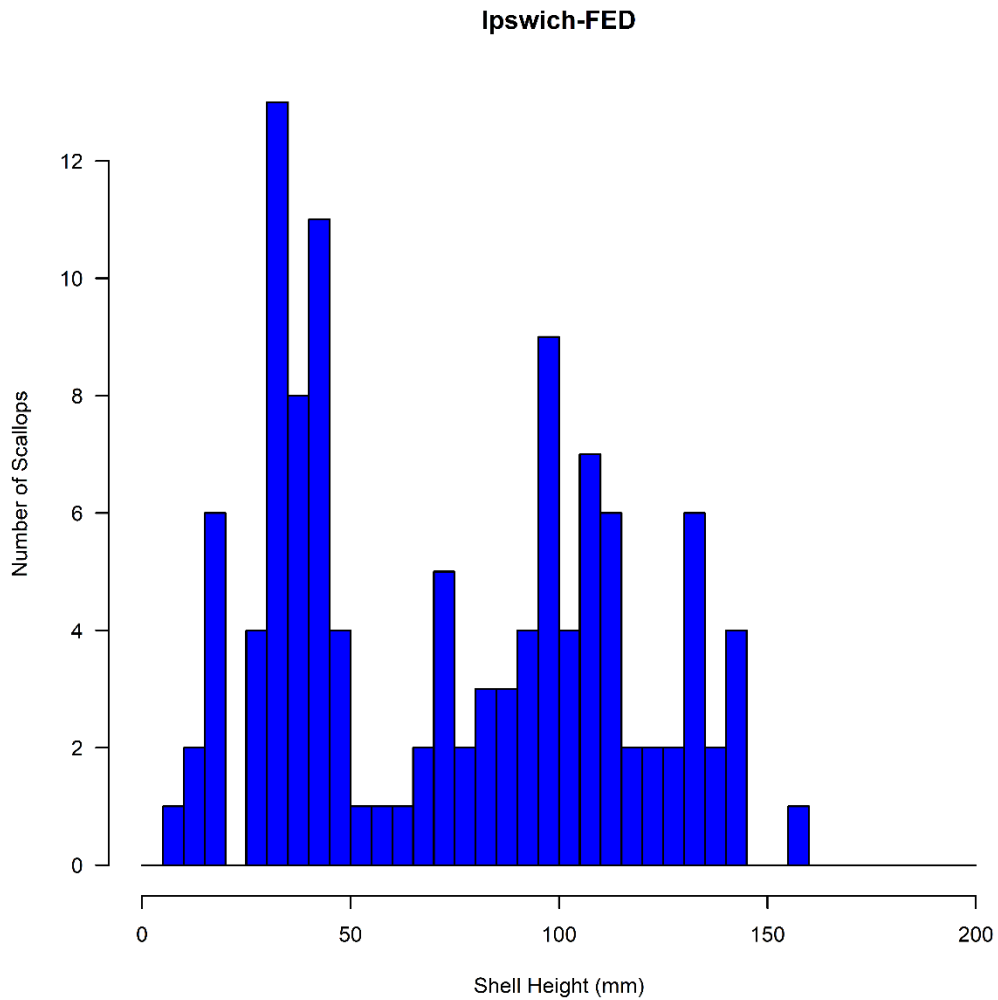


Figure 7. Shell height distribution of scallops in the NGOM Ipswich Bank zone from the SMAST Drop Camera survey. The overall average shell height was 73.9 mm with 116 scallops measured.

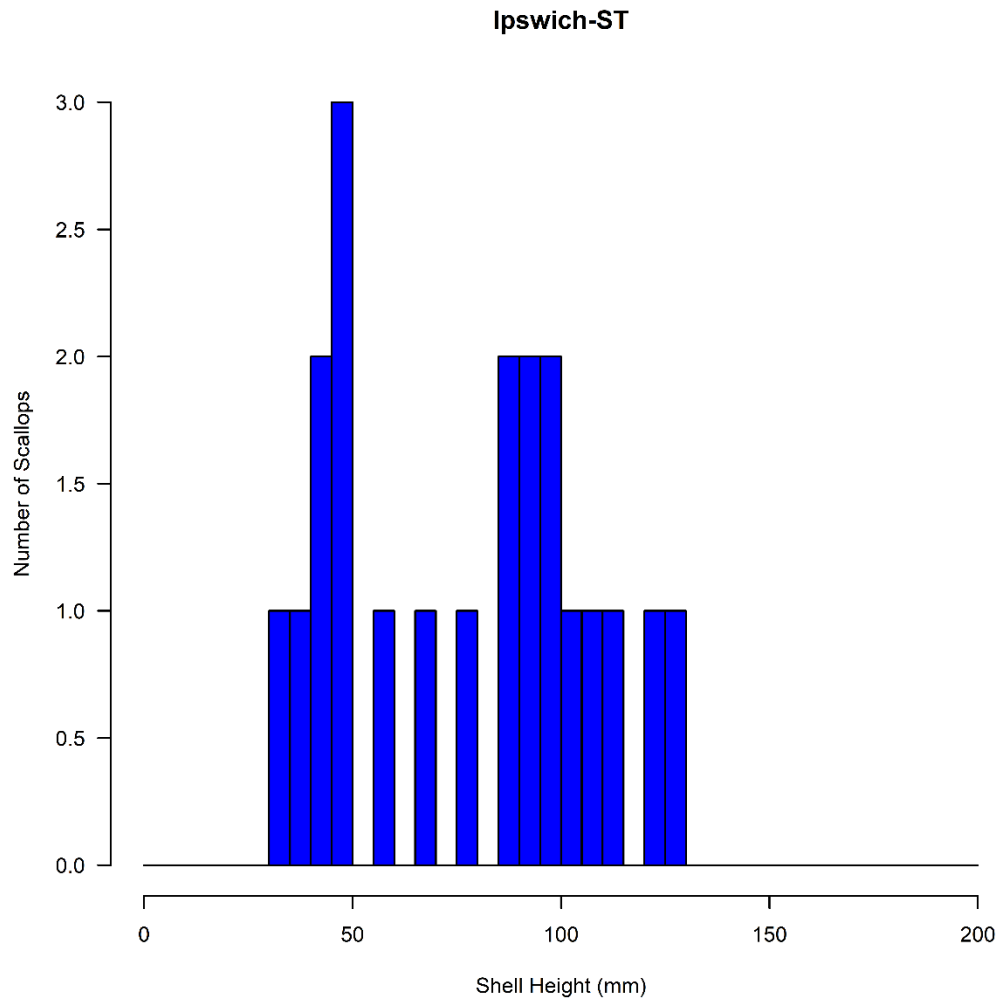


Figure 8. Shell height distribution of scallops in the Ipswich Bank zone in Massachusetts state waters from the SMAST Drop Camera survey. The overall average shell height was 78.1 mm with 21 scallops measured.

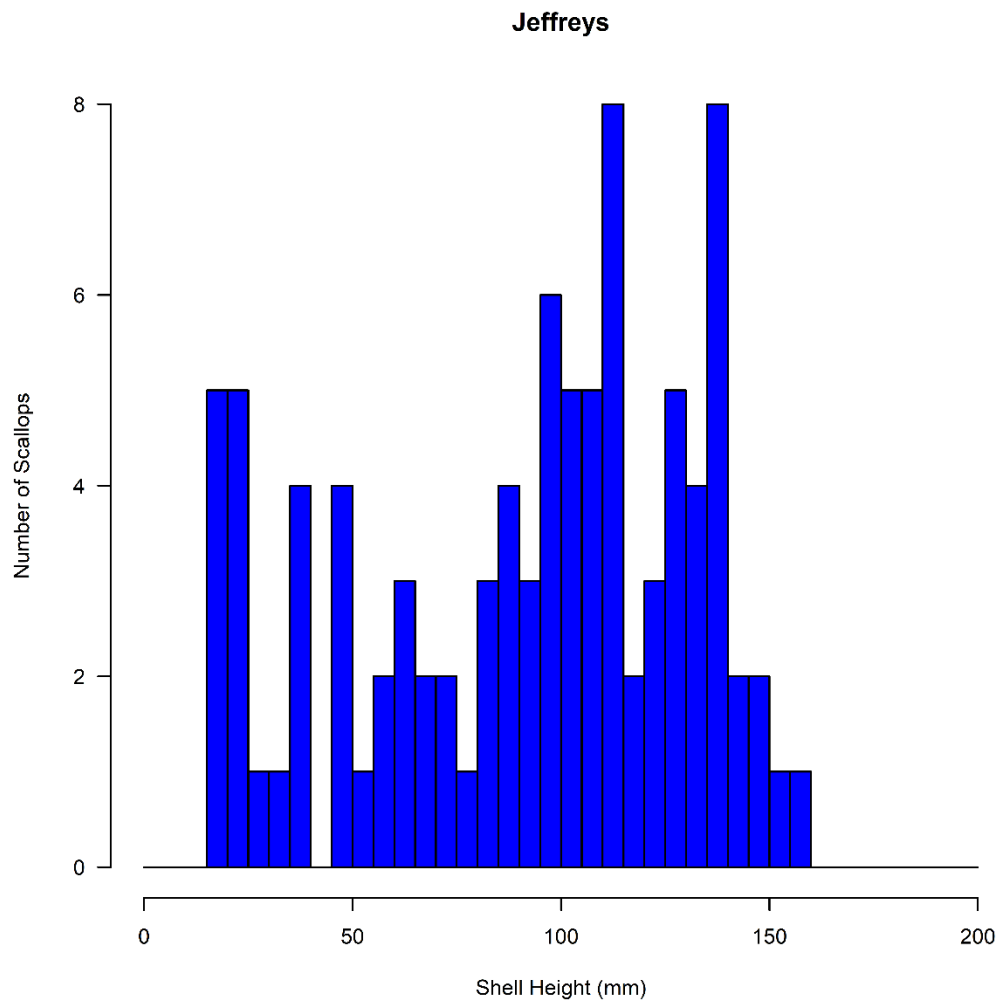


Figure 9. Shell height distribution of scallops in the Jeffrey's Ledge zone from the SMAST Drop Camera survey. The overall average shell height was 91.1 mm with 93 scallops measured.

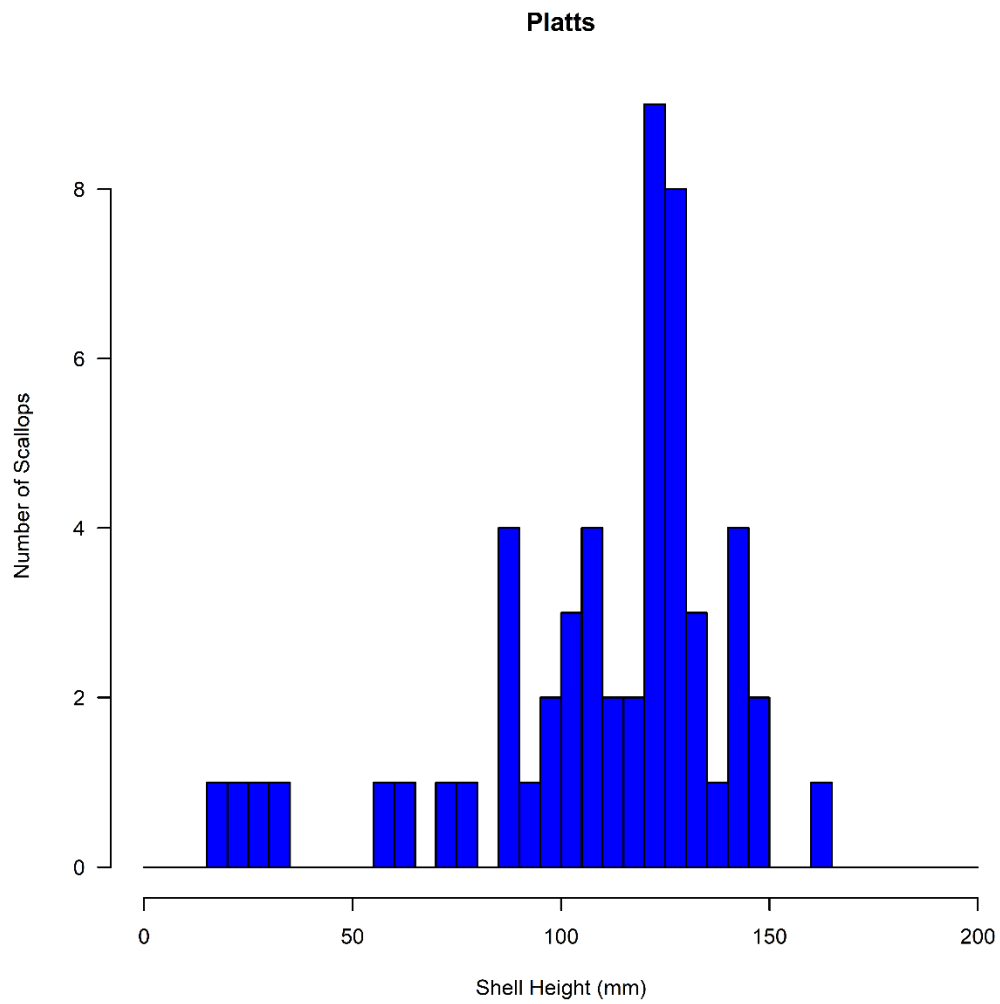


Figure 10. Shell height distribution of scallops in the Platts Bank zone from the SMAST Drop Camera survey. The overall average shell height was 108.9 mm with 54 scallops measured.

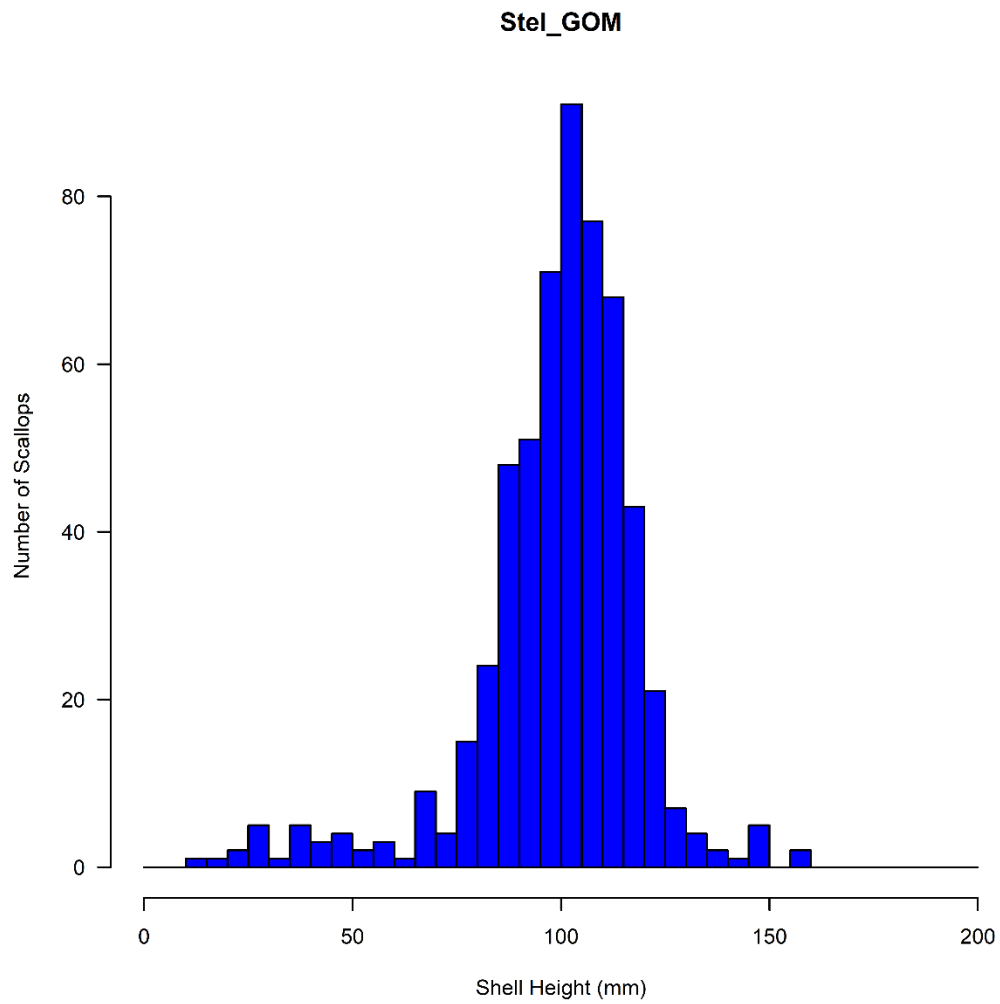


Figure 11. Shell height distribution of scallops in the Stellwagen NGOM zone from the S Mast Drop Camera survey. The overall average shell height was 99.2 mm with 571 scallops measured.

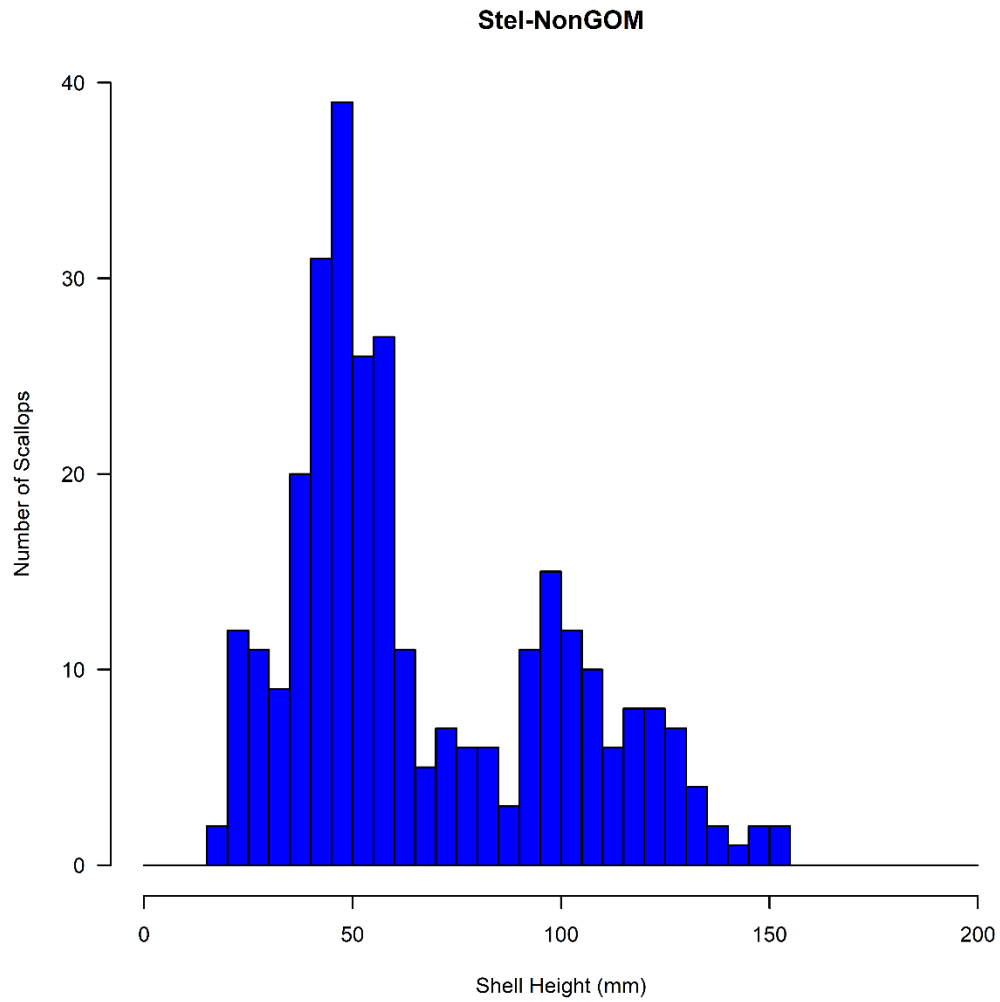


Figure 12. Shell height distribution of scallops in the Stellwagen non-NGOM zone from the S Mast Drop Camera survey. The overall average shell height was 67.0 mm with 303 scallops measured.



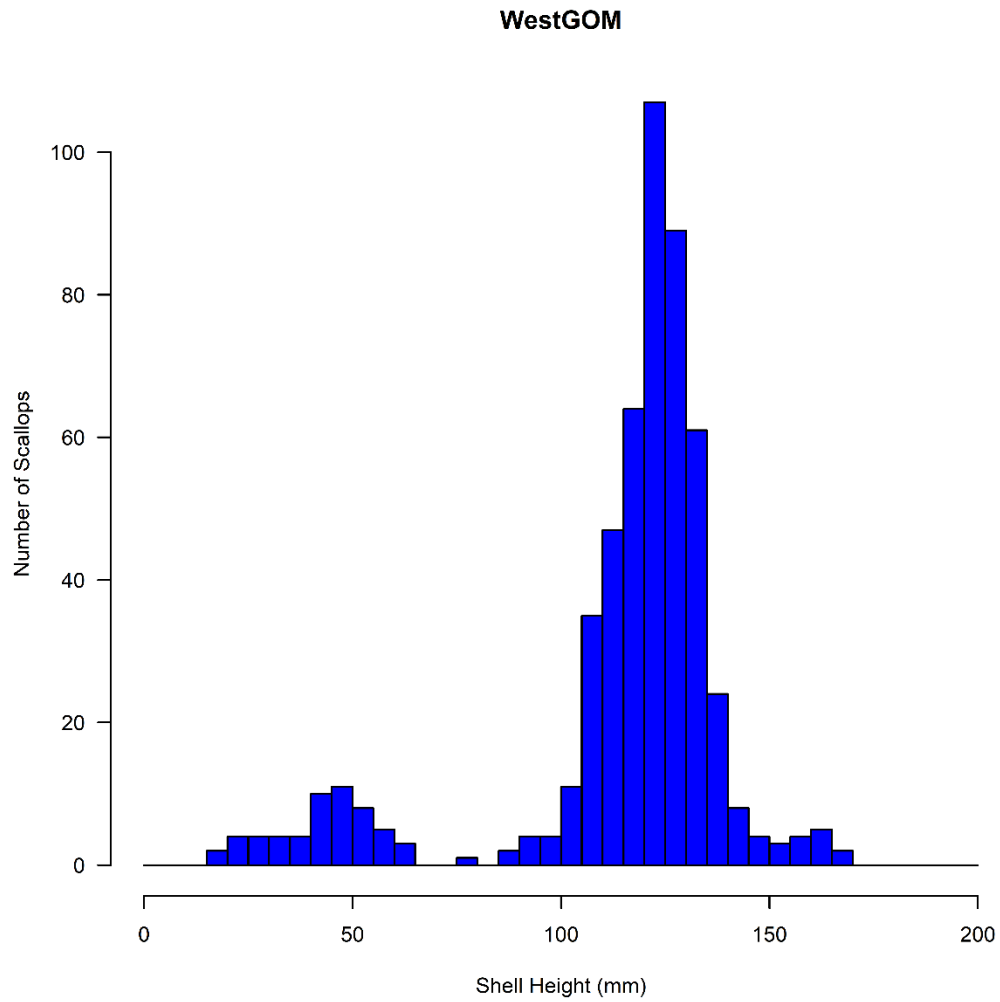


Figure 13. Shell height distribution of scallops in the Non-NGOM WGOM Closure zone from the S Mast Drop Camera survey. The overall average shell height was 115.0 mm with 530 scallops measured.

#### 4.0 SENSITIVITY ANALYSES – STELLWAGEN BANK

Table 2. Comparison of biomass estimates from the 2022 SMAST Drop Camera survey in Stellwagen. Stations were 1 km apart for all areas assessed using the DMR 2021 GLM and SMAST 2022 Shell Height – Meat Weight equations for scallops greater than 40 mm.

	Biomass estimate using: DMR 2021 GLM SH/MW equation	Biomass estimate using: 2022 SMAST SH/MW equation
<b>NGOM Stellwagen Bank</b>		
Average meat weight (g)	21.9	19.3
Biomass (mt)	1,387	1,271
Standard error	436	399
Exploitable average meat weight (g)	25.1	23.2
Exploitable biomass (mt)	846	780
Exploitable standard error	266	245
<b>Non-NGOM Stellwagen Bank (Stellwagen South)</b>		
Average meat weight (g)	12.2	11.1
Biomass (mt)	349	318
Standard error	40	37
Exploitable average meat weight (g)	29.5	27.5
Exploitable biomass (mt)	210	196
Exploitable standard error	24	23
<b>Non-NGOM WGOM Closure</b>		SMAST equation not derived from this area.

## 5.0 SPECIAL COMMENTS

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## 6.0 EXPLOITABLE BIOMASS ESTIMATES FOR 2022 (CURRENT FY)

**Table 3.** Exploitable biomass estimates from the 2022 SMAST drop camera survey. Stations were 1 km apart. Meat weights were estimated for Ipswich, Jeffreys and Platts following the Hart 2020 shell height-meat weight equation. Meat weights for NGOM Stellwagen, Stellwagen South and the WGOM Closure were estimated using the DMR 2021 GLM derived equation. A second set of estimates for the two Stellwagen regions were made using the SMAST 2022 equation and are provided in the additional analyses section.

<b>SMAST drop camera</b>				
<b>GOM</b>	<b>NumMill</b>	<b>Exploitable BmsMT</b>	<b>SE</b>	<b>MeanWt (g)</b>
Platts Bank	4.2	103	27	24.3
Ipswich Bank	4.2	115	24	27.3
Jeffreys Ledge	5.0	148	24	29.8
NGOM Stellwagen Bank	33.7	846	266	25.1
NGOM TOTAL	47.1	1,212		
Non-NGOM Stellwagen Bank (Stellwagen South)	7.1	210	24	29.5
Non-NGOM WGOM Closure	48.2	1,784	336	37.0
Non-NGOM Ipswich Bay (MA State Waters)	0.7	14	4	21.7

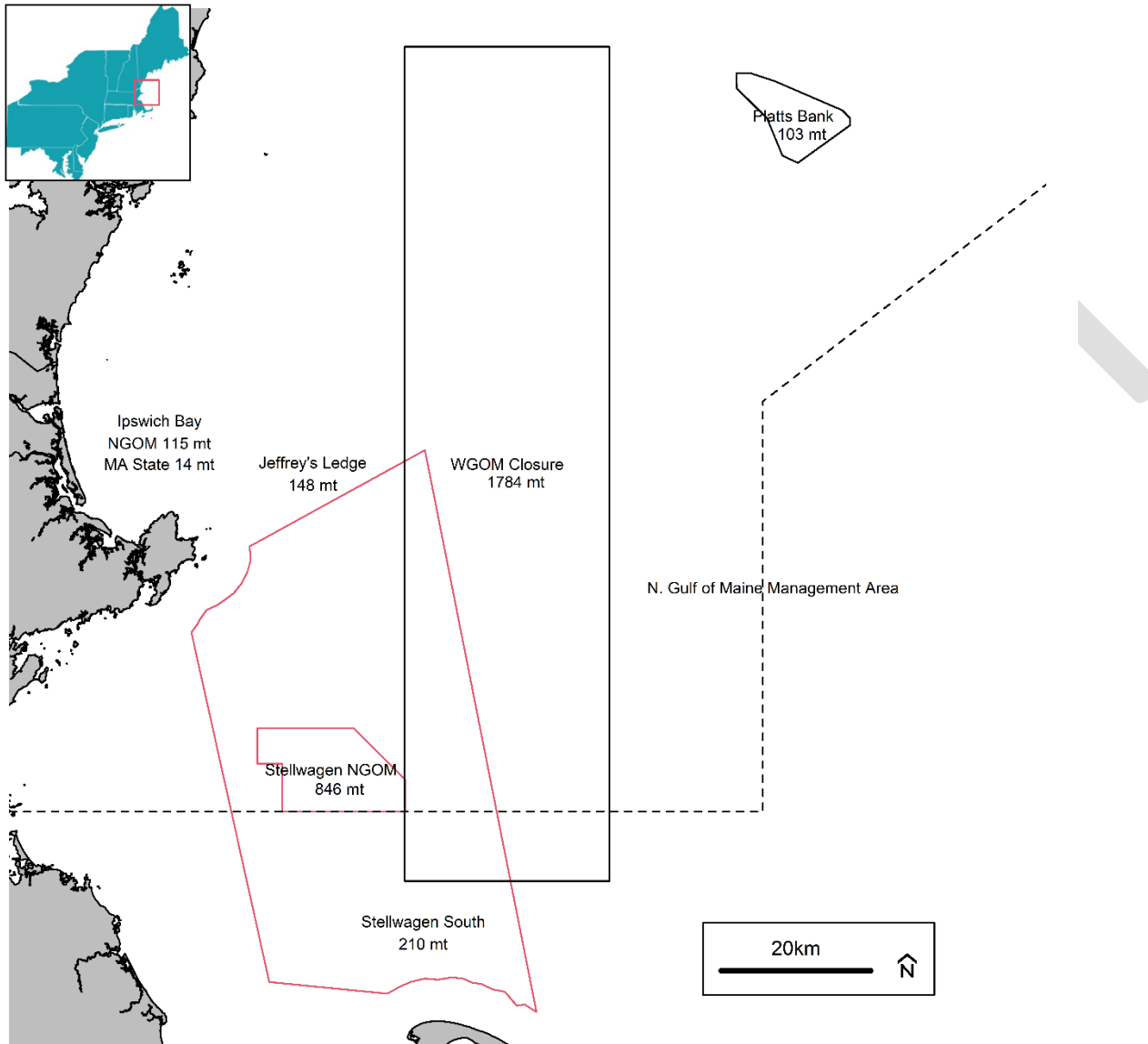


Figure 14. 2022 SMAST Drop Camera survey exploitable biomass estimates in metric tons by area in the Gulf of Maine.

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