Maine DMR 2025 Gulf of Maine Scallop Dredge Survey

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Maine DMR

August 28th 2025
Scallop PDT Meeting Bourne MA

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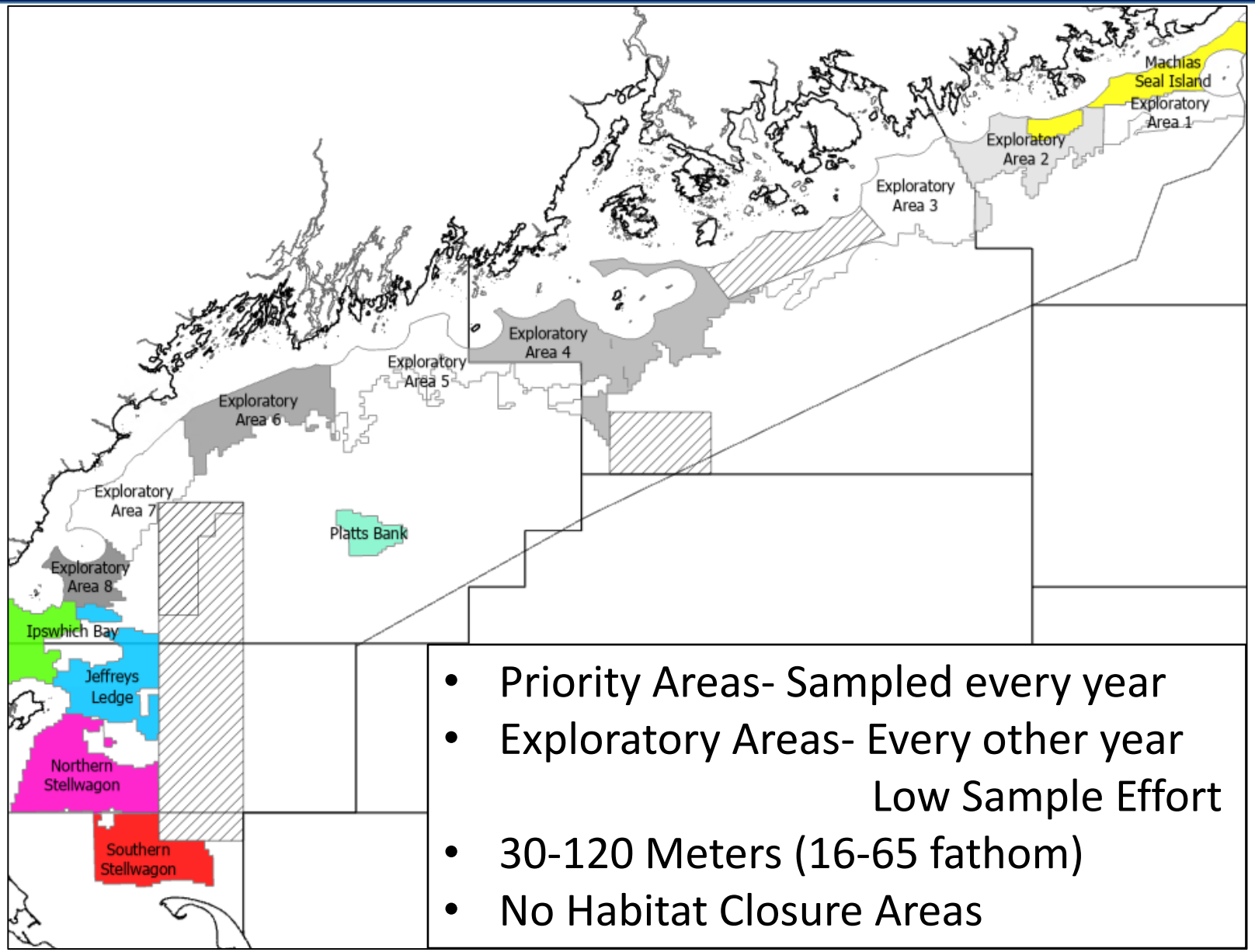
Preliminary-PDT use only

Survey Design-Survey Domain



- Priority Areas- Sampled every year
- Exploratory Areas- Every other year
  Low Sample Effort
- 30-120 Meters (16-65 fathom)
- No Habitat Closure Areas

Survey Design-Density Stratified Random Grid

Survey Grid

1 km overlaid across the domain

VTR/Fleet Interviews/Updated with survey

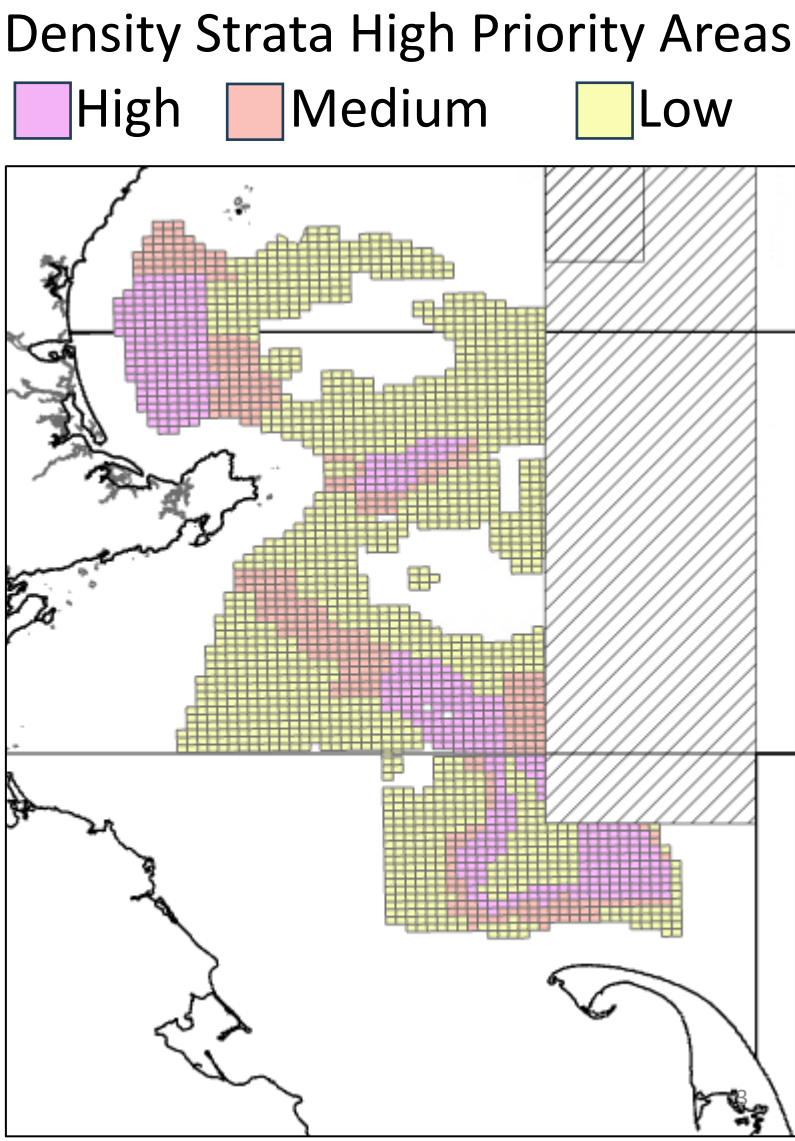
Station selection

50% of the stations randomly selected

50% of the stations allocated by strata

using Neyman allocation

(25% Number, 25% Biomass)



Sampling Methods: Gear Specs & Tow Parameters

- Standard survey 7 foot dredge
  - 2 inch rings-No liner
  - 5 Inch Twine top
  - 1200 Lbs
- 5-minute straight line tow (Average 4:45)
- 3.5 knots (Average 3.7)
- Average tow distance 548 m
- Tow data collected on Ipad with custom iForm
- Tow start/end position collected with built in GPS
- Backup handheld recording position constantly
- Dominate substrate type estimated
- DST tilt logger mounted on head bale (15 seconds interval)

Catch Processing

Scallops: Count, whole shell weight, bushel volume of entire catch

- Subsample for shell height 10% or 100
  - Subsample 8/tow for meat weight & quality

Clappers: Count and volume of the entire catch

- Subsample for shell height 10% or 100

Fish & Lobsters: Count, weight, and volume of entire catch

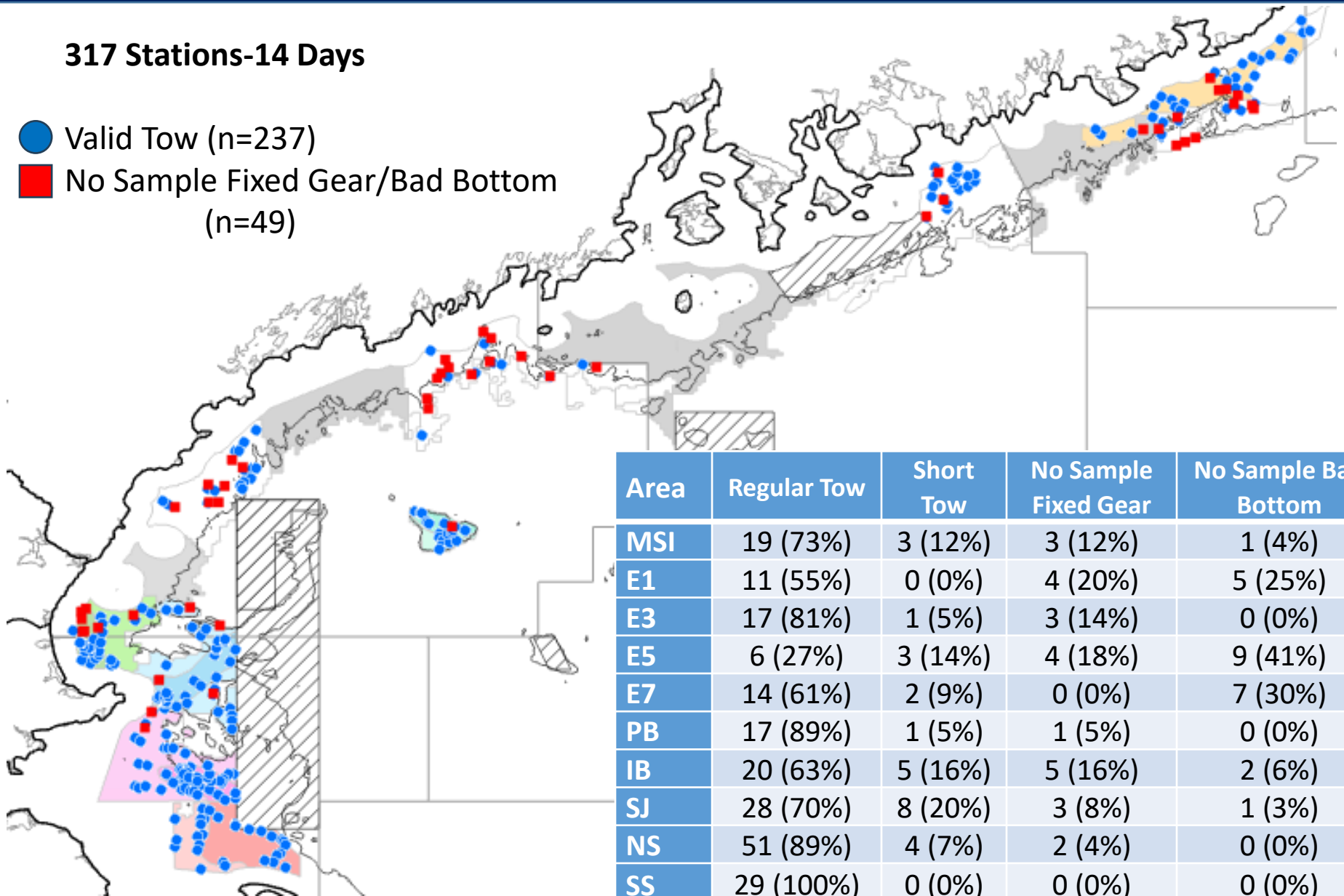
Other Bycatch: Estimate volume of all other catch by type

Survey Stations

317 Stations-14 Days

Valid Tow (n=237)

No Sample Fixed Gear/Bad Bottom (n=49)



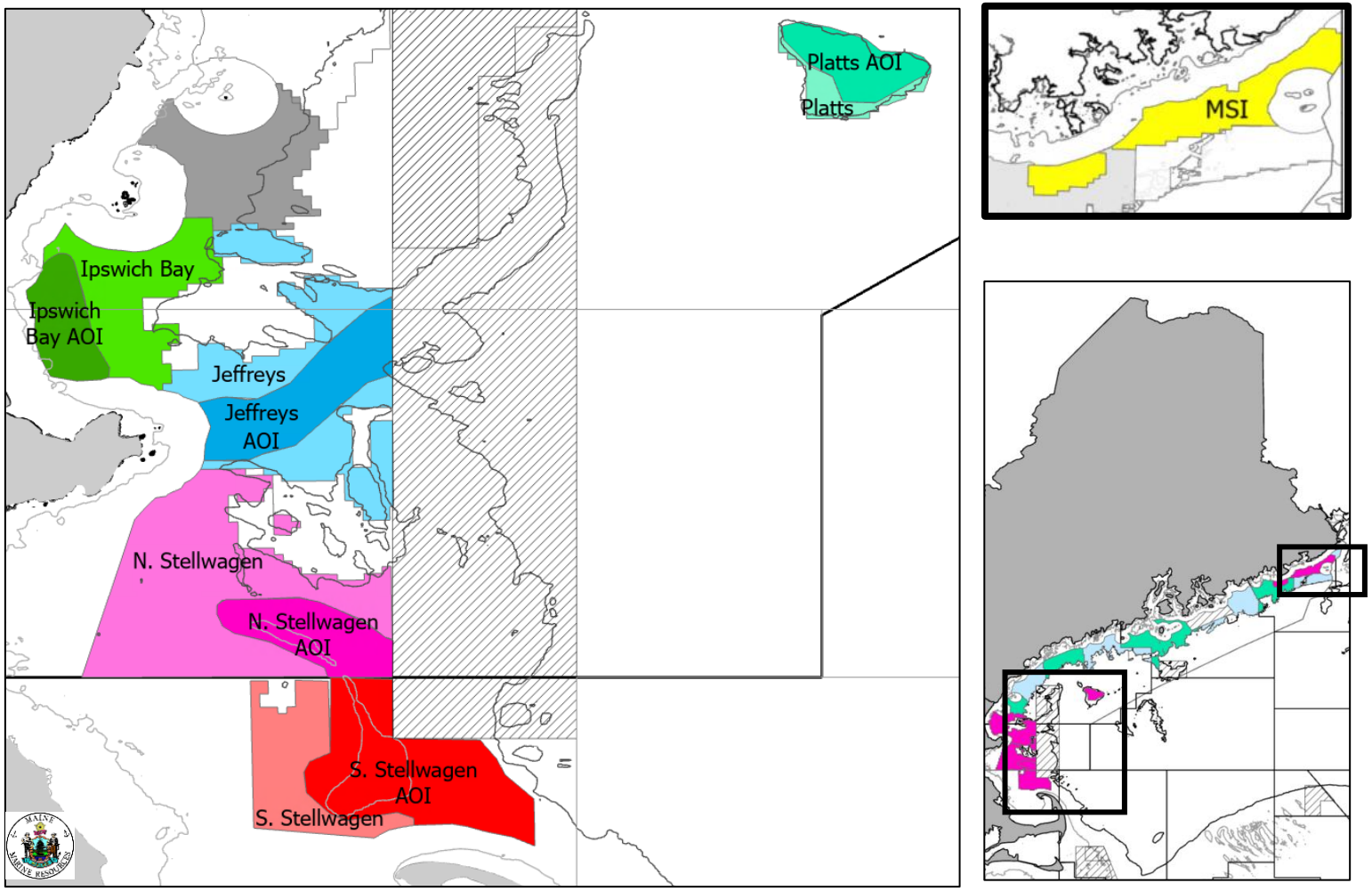
Area	Regular Tow	Short Tow	No Sample Fixed Gear	No Sample Bad Bottom
MSI	19 (73%)	3 (12%)	3 (12%)	1 (4%)
E1	11 (55%)	0 (0%)	4 (20%)	5 (25%)
E3	17 (81%)	1 (5%)	3 (14%)	0 (0%)
E5	6 (27%)	3 (14%)	4 (18%)	9 (41%)
E7	14 (61%)	2 (9%)	0 (0%)	7 (30%)
PB	17 (89%)	1 (5%)	1 (5%)	0 (0%)
IB	20 (63%)	5 (16%)	5 (16%)	2 (6%)
SJ	28 (70%)	8 (20%)	3 (8%)	1 (3%)
NS	51 (89%)	4 (7%)	2 (4%)	0 (0%)
SS	29 (100%)	0 (0%)	0 (0%)	0 (0%)

Data Analysis-Tow Parameters

- Tow Times QCed by Star Oddi Tilt Logger data and handheld GPS
- Tow positions corrected by matching timestamps to the logged data from a Garmin handheld GPS
- Tow distance by sum of the distance between logged points (Haversine Equation)

Survey Areas-For Biomass Calculations

Biomass calculated for areas overlapping and outside of SMAST survey

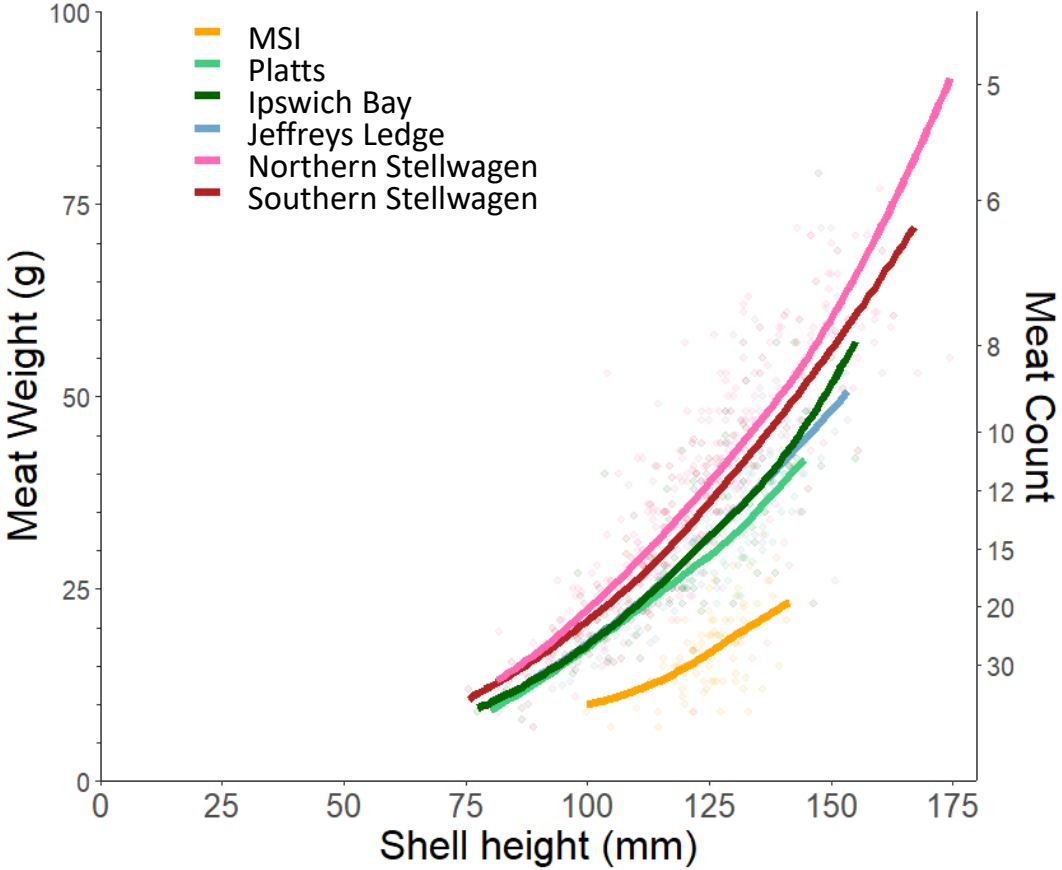


Data Analysis- Meat Weight Estimates

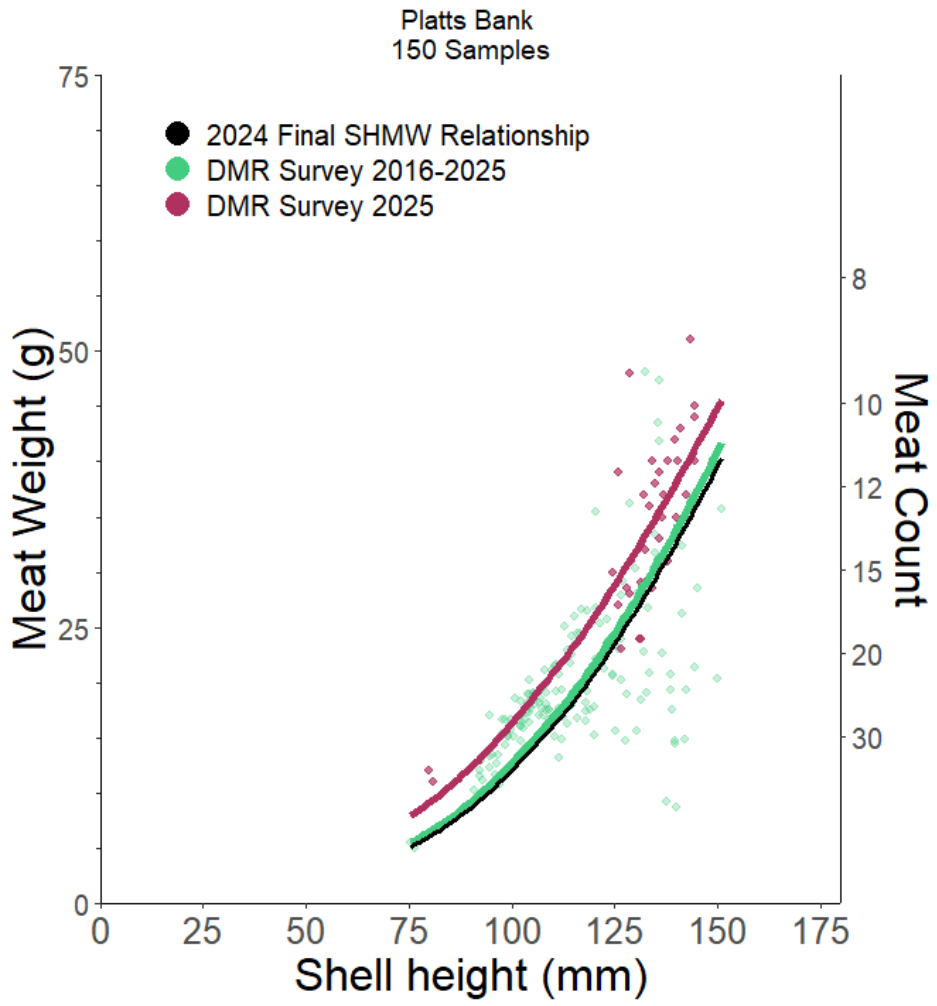
- 791 Samples collected for SHMW/Quality grading
- GLMM: SH + Depth + Latitude + Area
  - Stations as random effect
- MSI Notably lower than other areas

Equations for Biomass

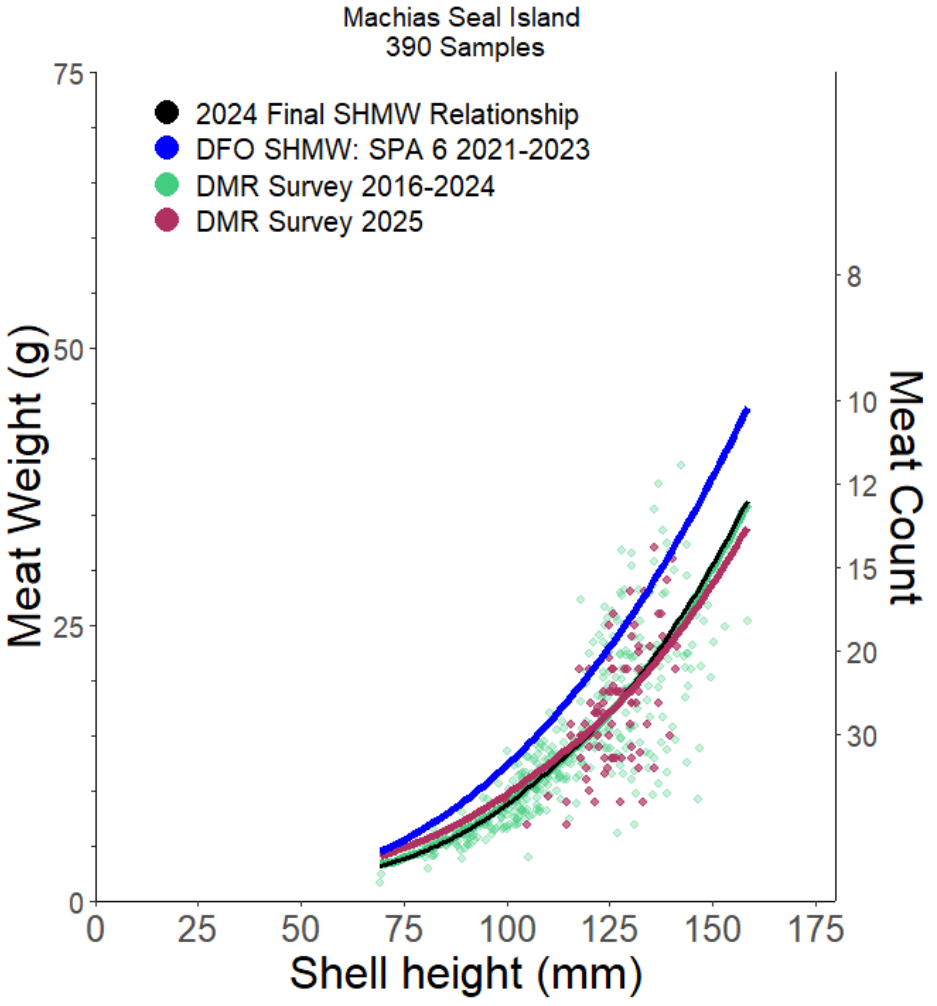
- Stellwagen, Ipswich & Jefferies Combined SMAST DMR Data 2016-2025
- Platts Bank and MSI DMR 2016-2025



DMR Only SHMW Relationships

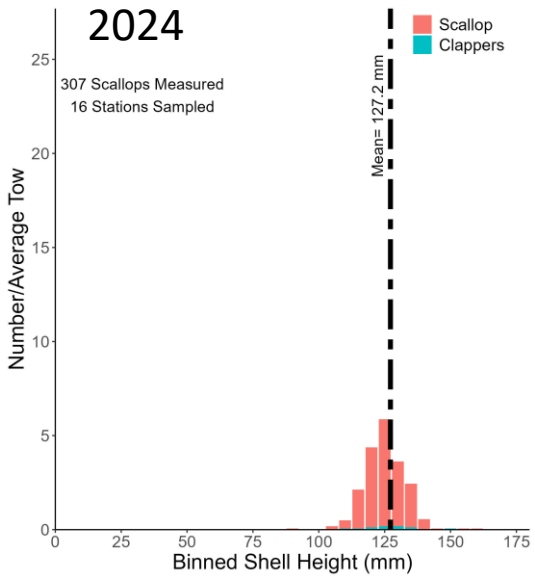


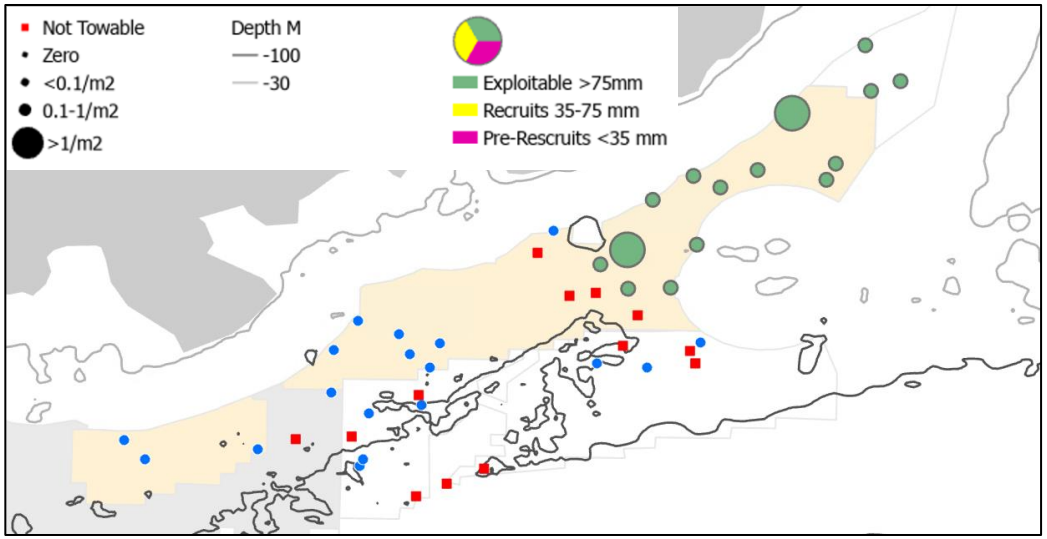
MW=Exp(182.0968 + 2.942*ln(SH) -4.3775*LatDD -0.015176*ln(DepthM))

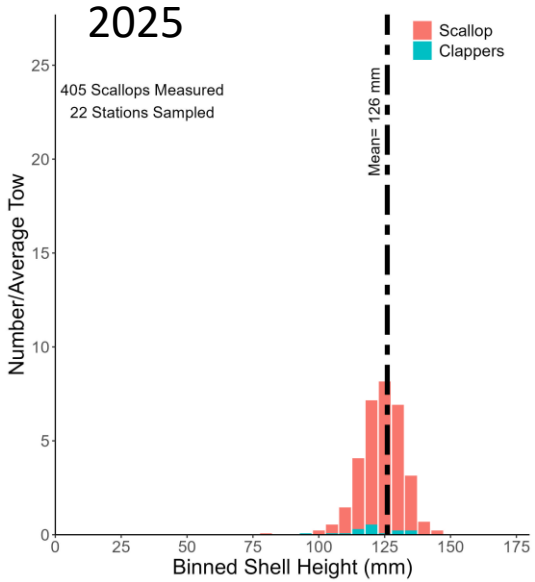


MW=exp(-14.694 + 2.652*ln(SH) + 0.1024*LatDD + 0.0361*ln(DepthM))

Machias Seal Island

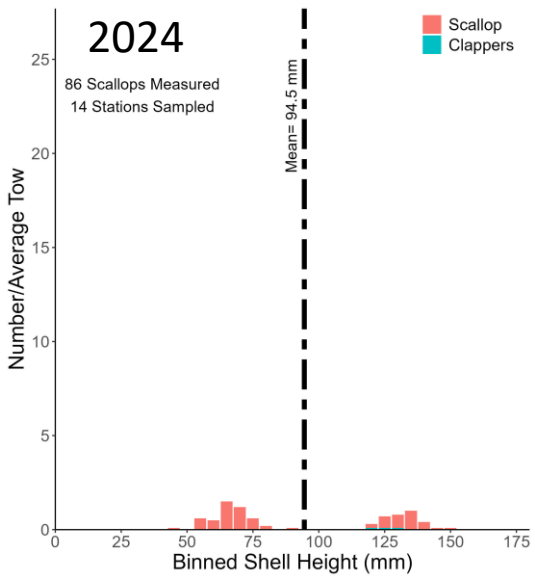


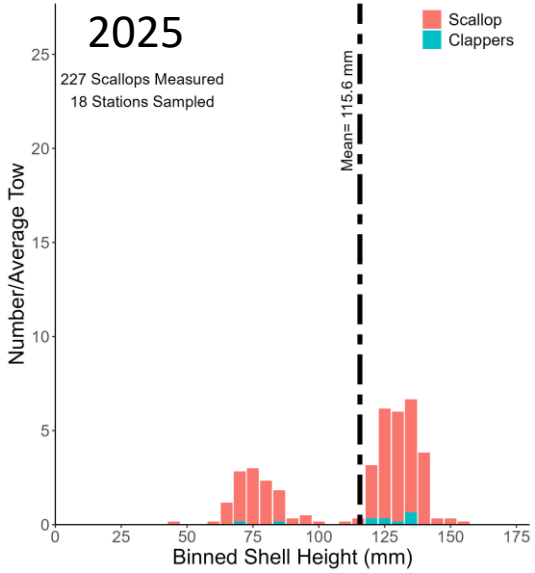


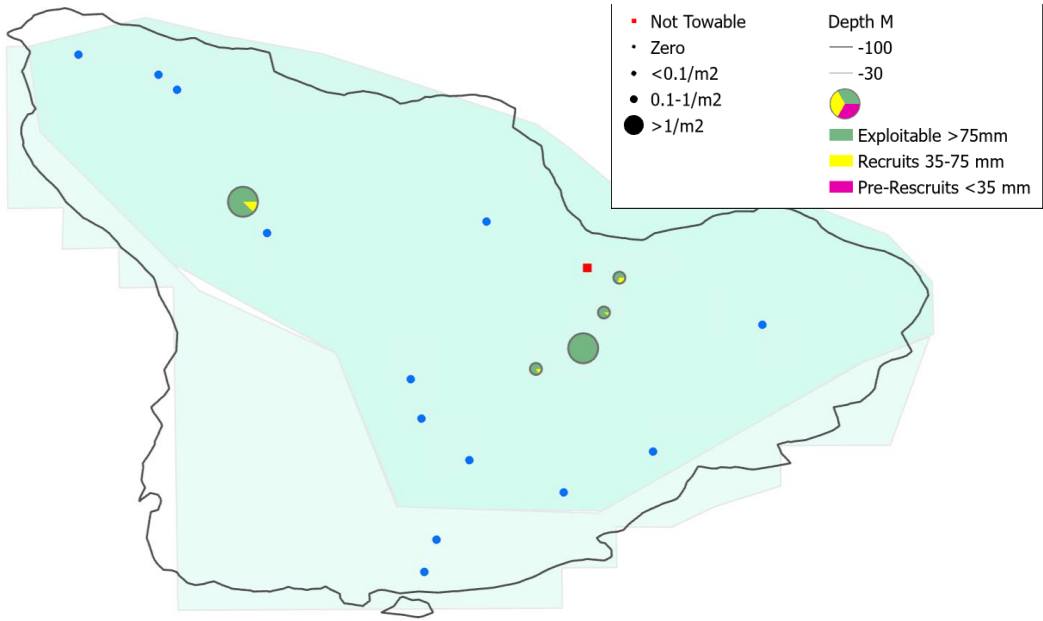


- 33% Decline in biomass compared to 2024
- No scallops <100mm
- Evidence of fishing in this area
- Fair/poor meat quality
- Estimated Biomass = 214 MT

Platts Bank

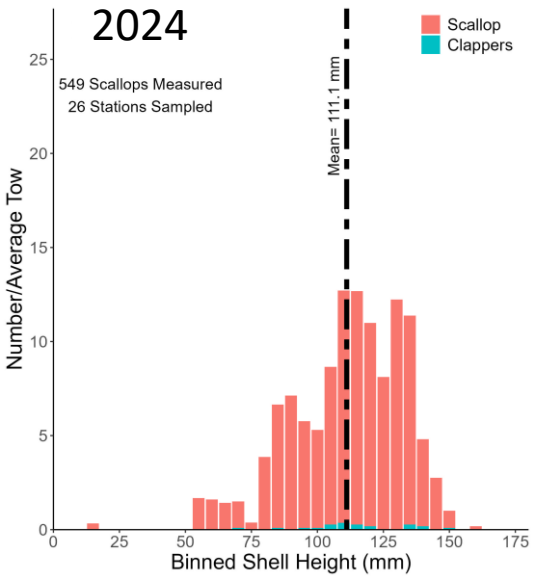


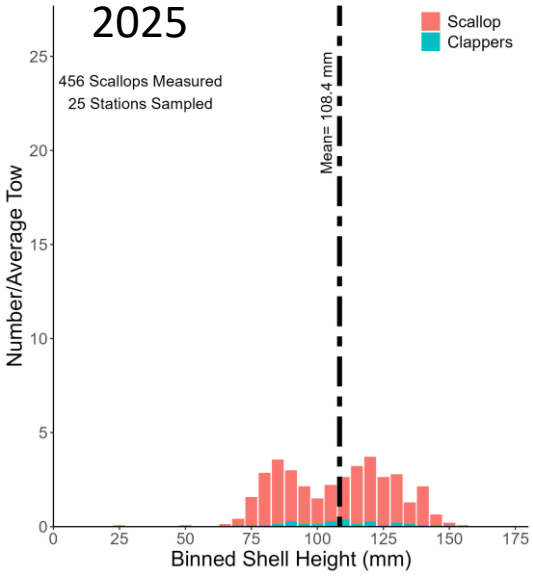


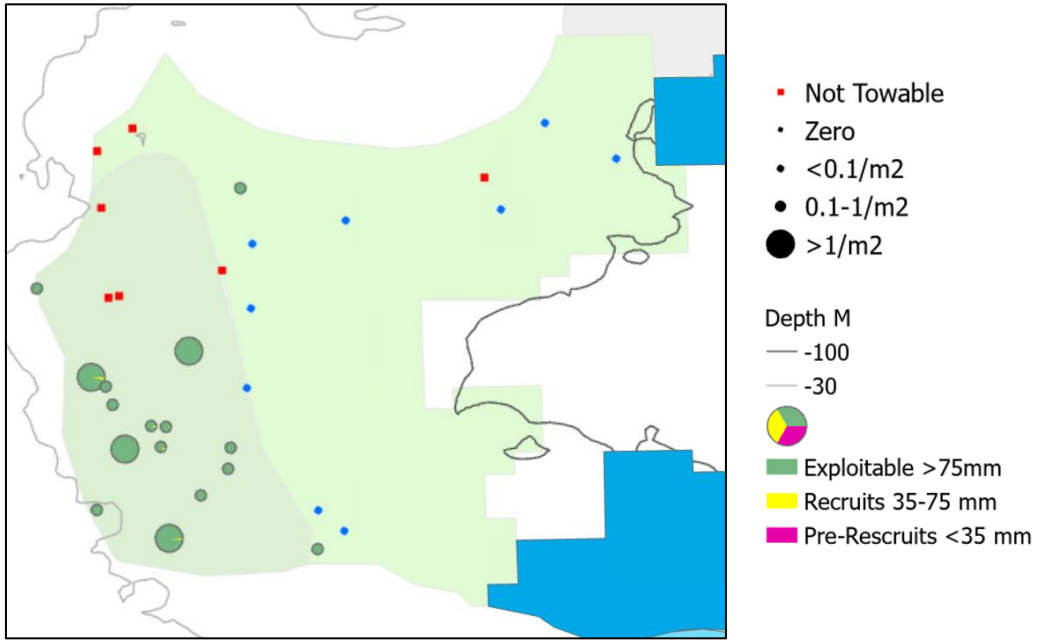


- 52% Increase in biomass compared to 2024
- Two size cohorts
- 2025 Yield higher than previous years
- Estimated Biomass = 43 MT

Ipswich Bay

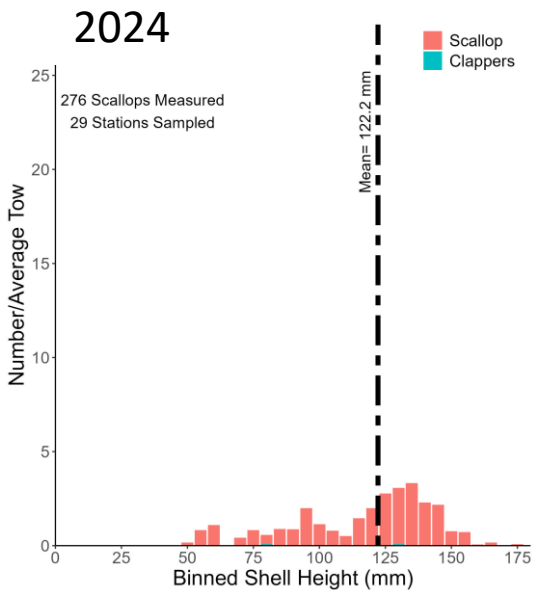


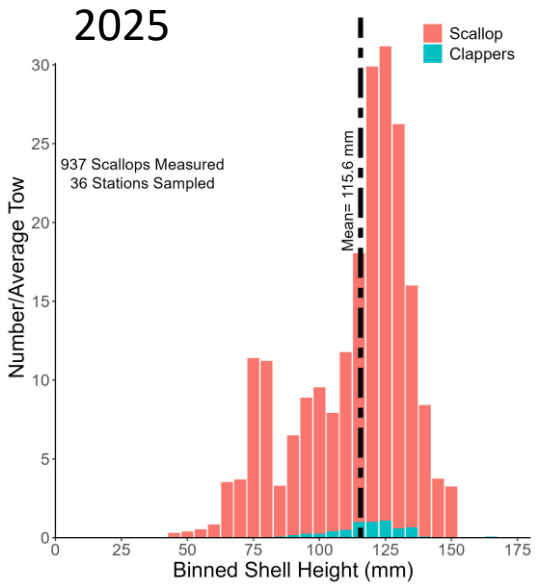


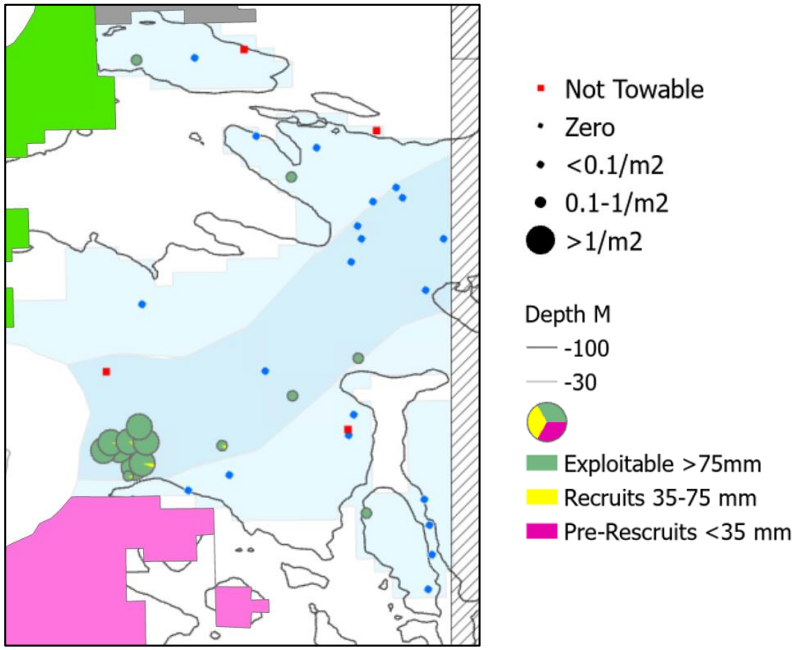


- 71% Decline in biomass compared to 2024
- Evidence of fishing around the 2024 high density sites
- Few scallops outside the SMAST survey footprint
- Estimated Biomass = 162 MT

Jeffreys Ledge

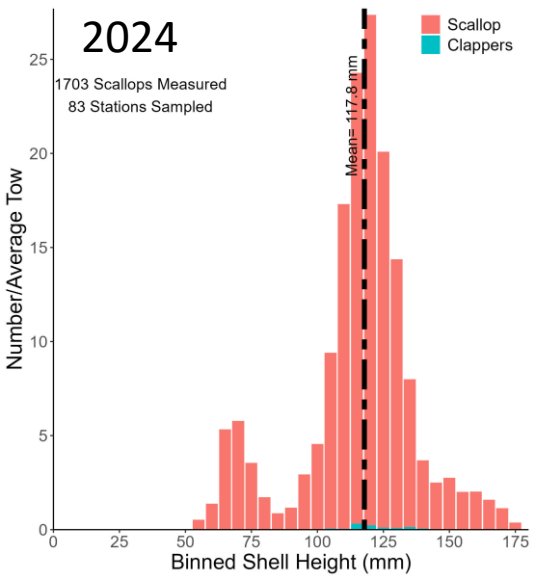


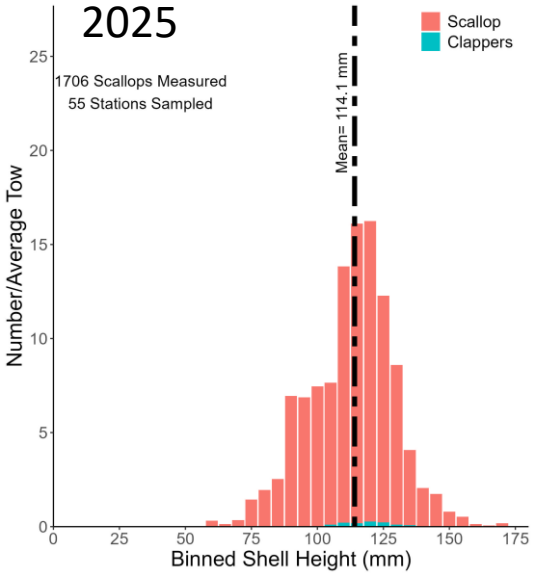


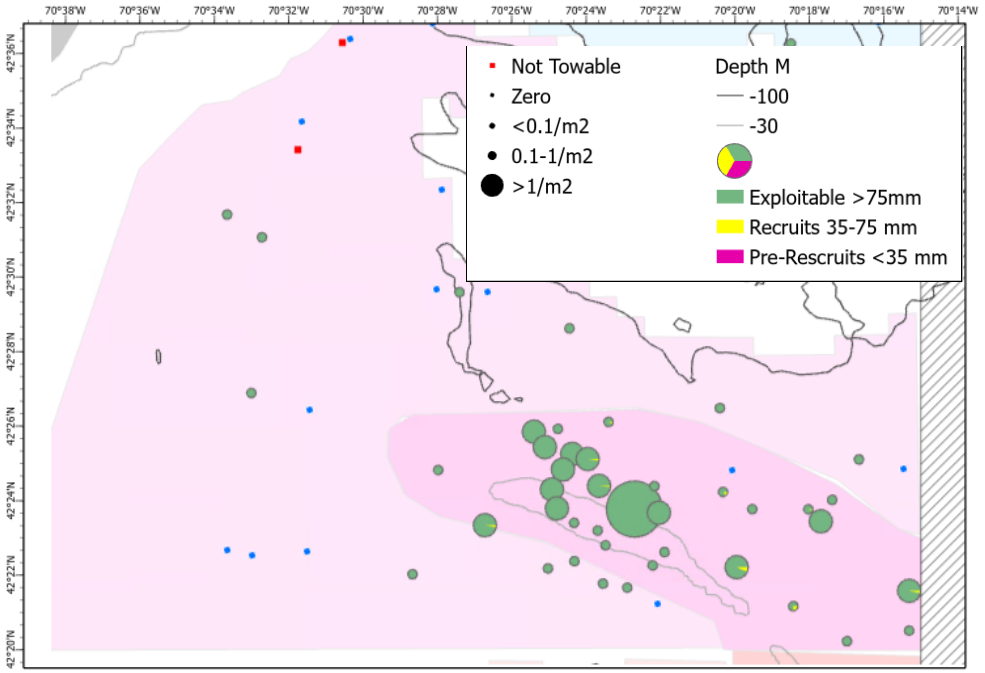


- Similar Biomass within AOI, but overall 30% decline from 2024
- Similar Size frequency to 2024
- Evidence of fishing in on Thatcher's Ledge
- Low abundance of small scallops
- Estimated Biomass = 387 MT

Northern Stellwagen

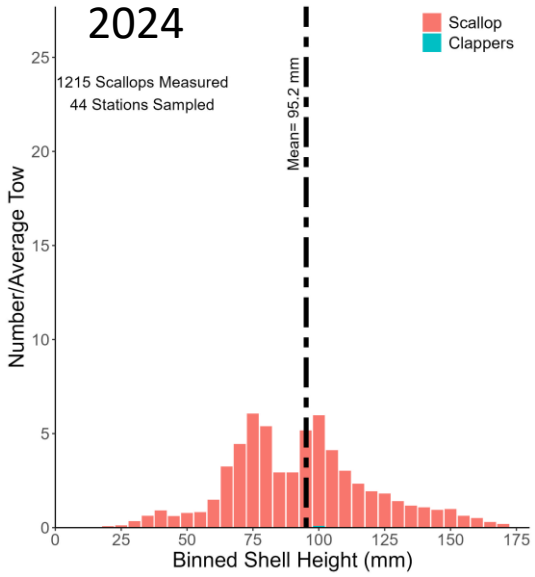


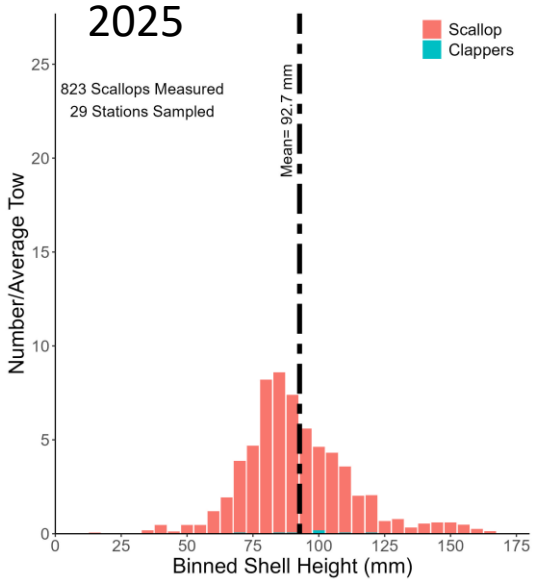


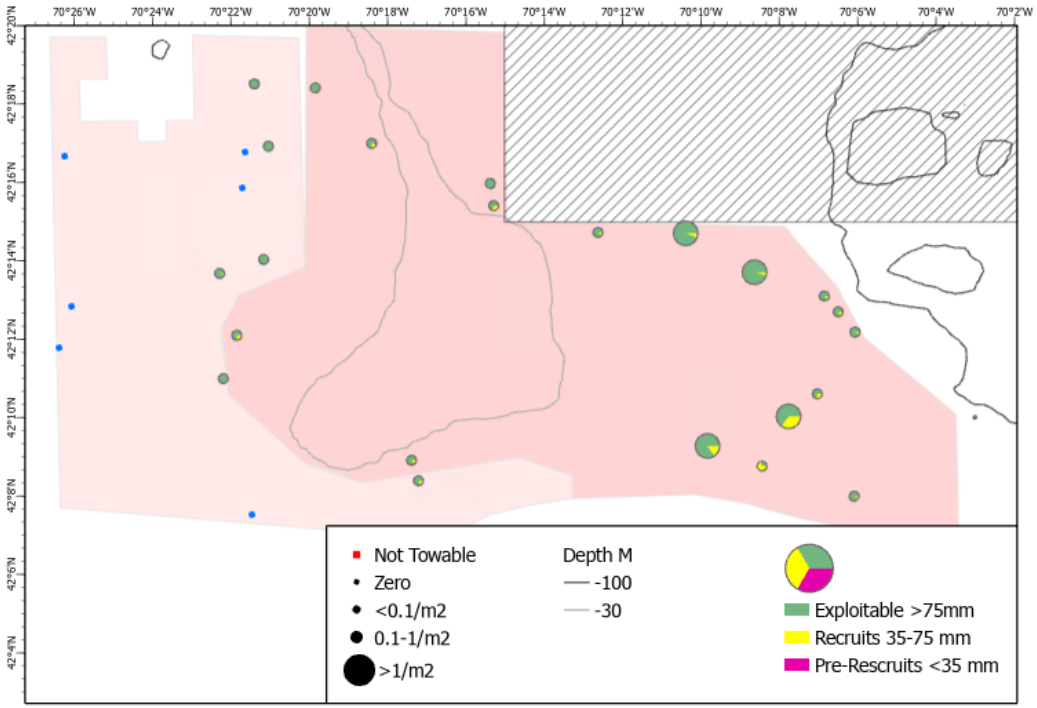


- 52% Decline in biomass compared to 2024
- No strong signal of 2-year-olds
- Few larger scallops in 2025
- No stations with a full dredge in 2025
- Estimated Biomass = 647 MT

Southern Stellwagen

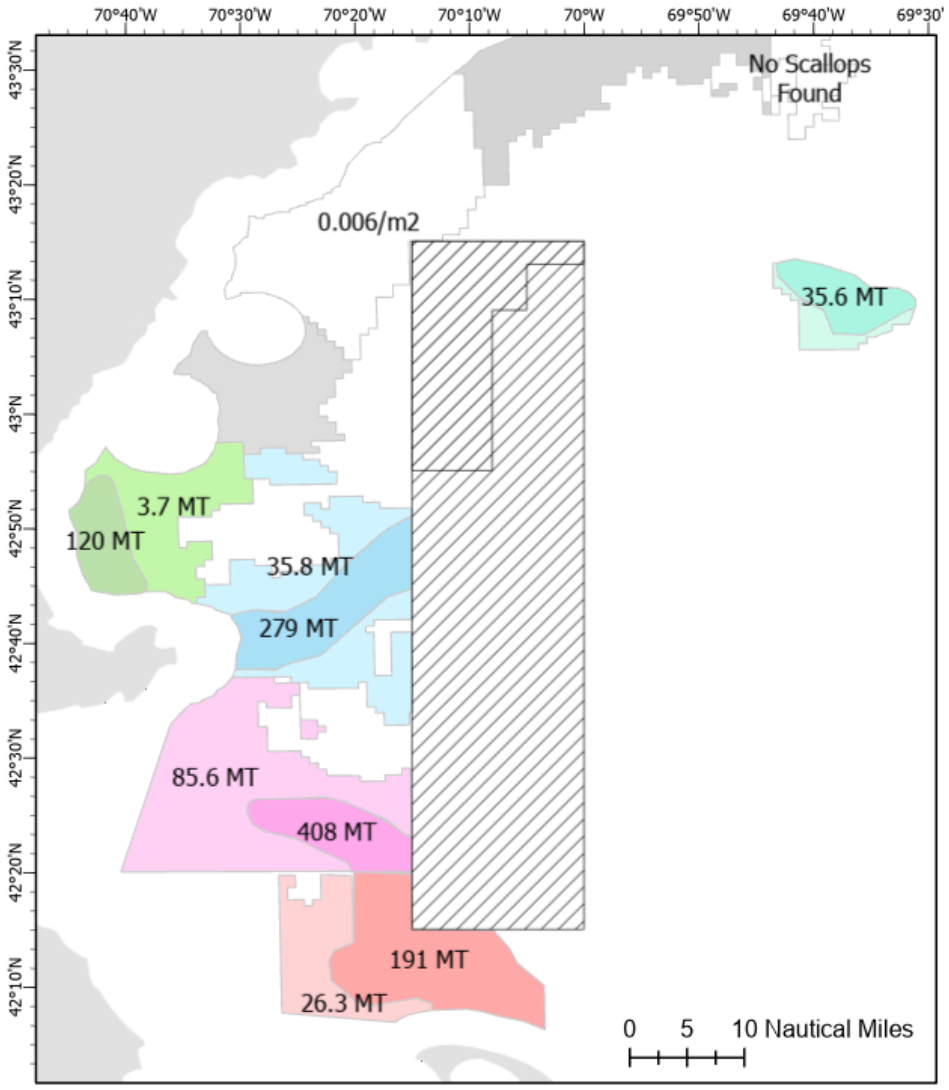


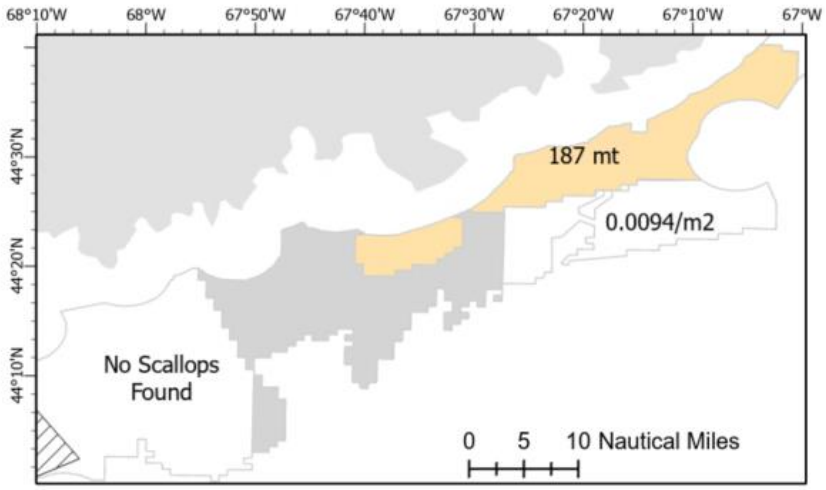


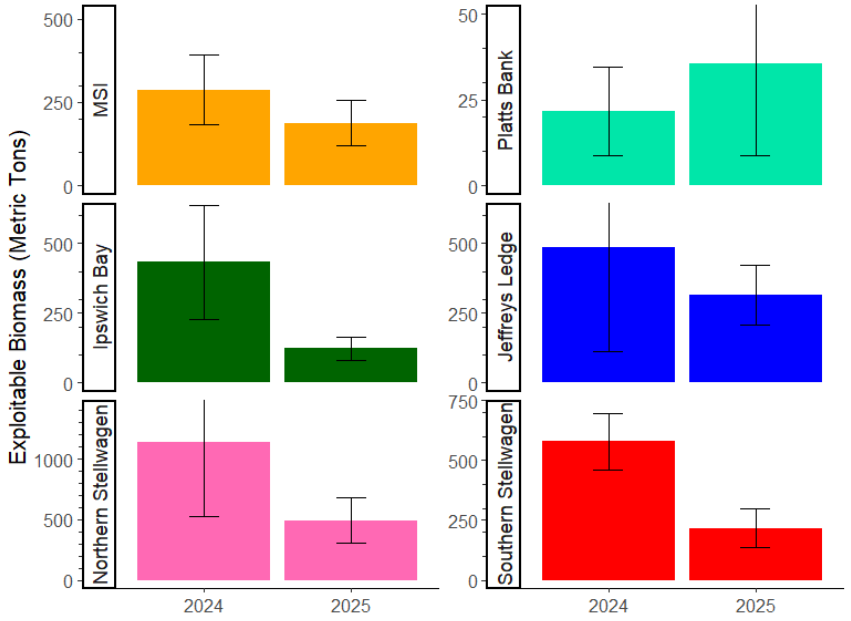


- 53% Decline in biomass compared to 2024
- High abundance of 3-year-olds
- Lower densities, but larger scallops outside AOI
- Estimated Biomass = 426 MT

Exploitable Biomass (Yochum and DuPaul 2008)

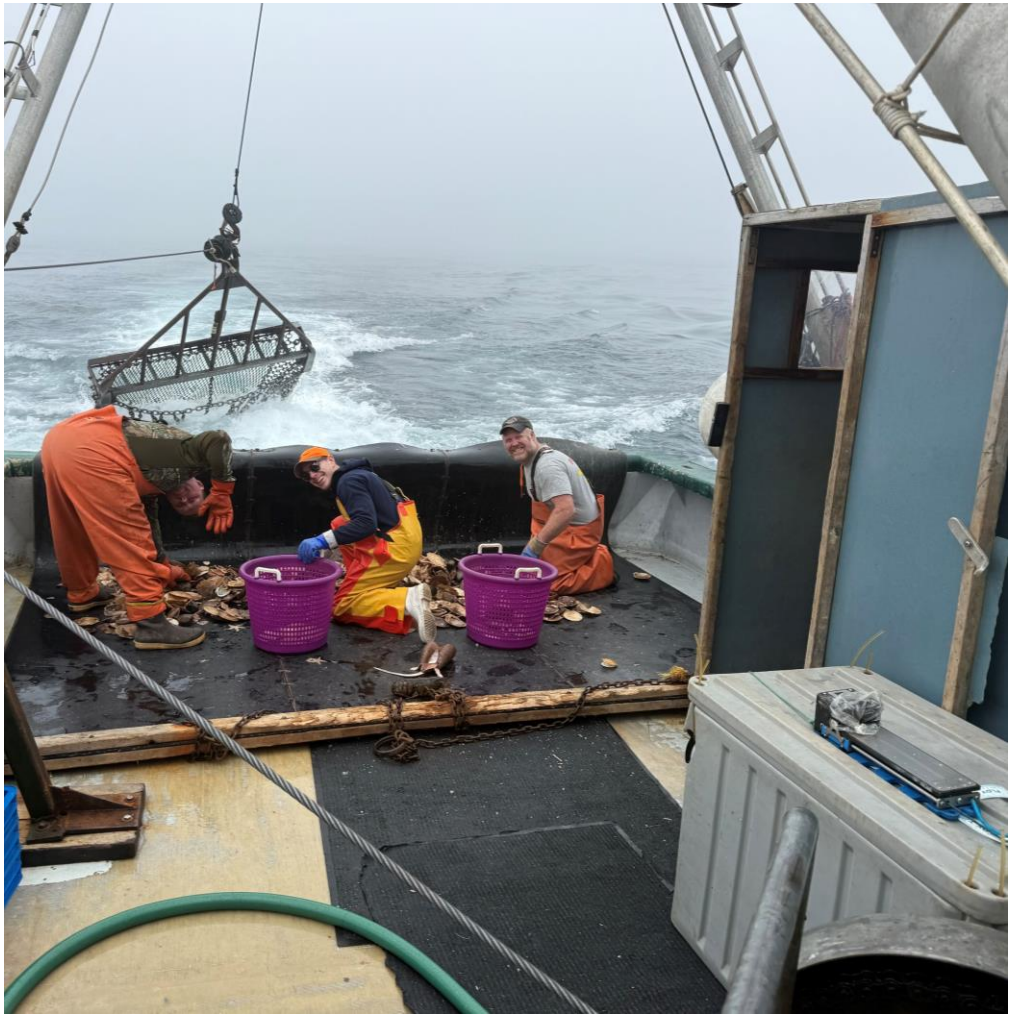






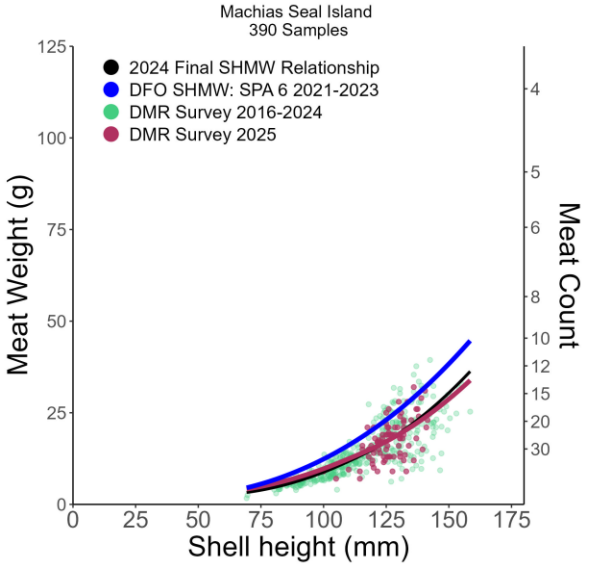
1155 total MT for NGOM

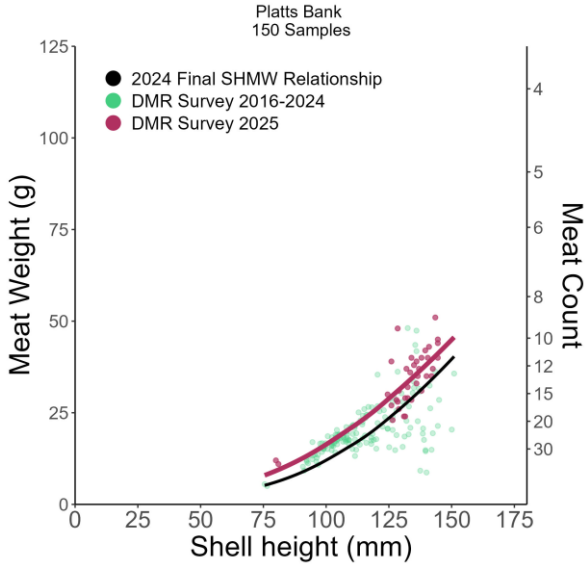
Acknowledgements

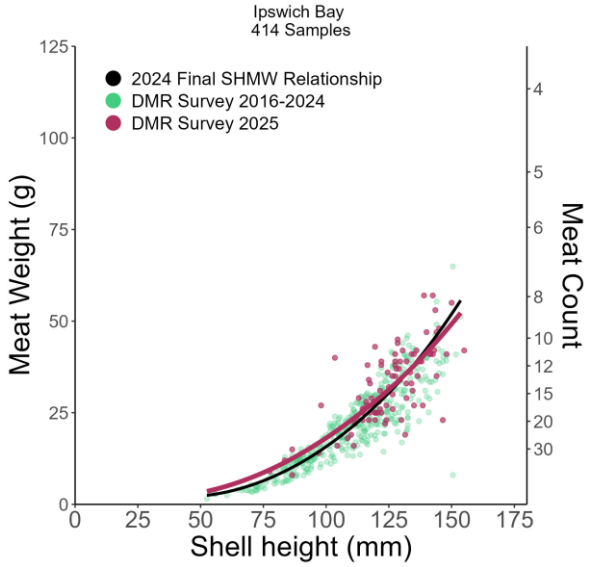


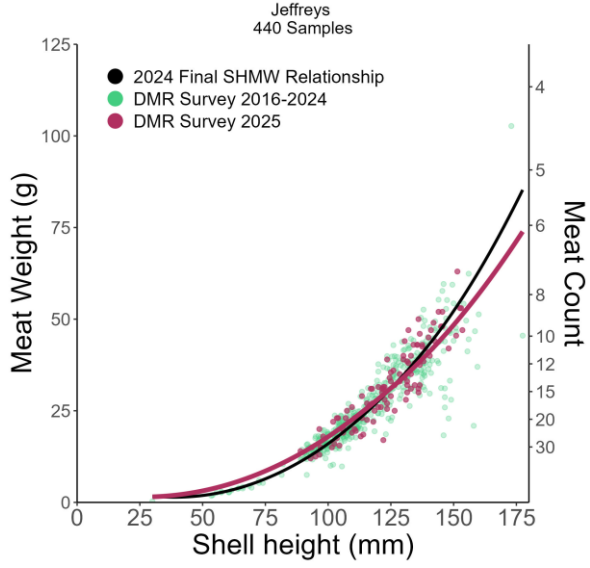
- Captains & Crew
  F/V Whitney & Ashley
  F/V First Impression II
- Sea Sampling Technicians
  - Emily Turner, Zachary May
- DMR Finance Team
- Funding though the sea scallop RSA Program

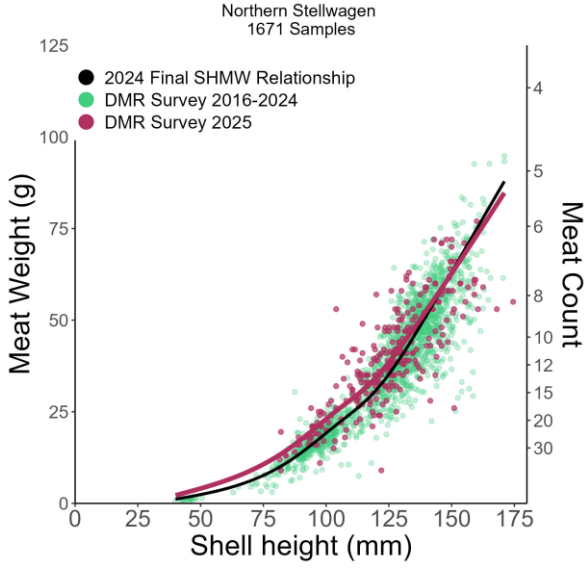
SHMW Relationships

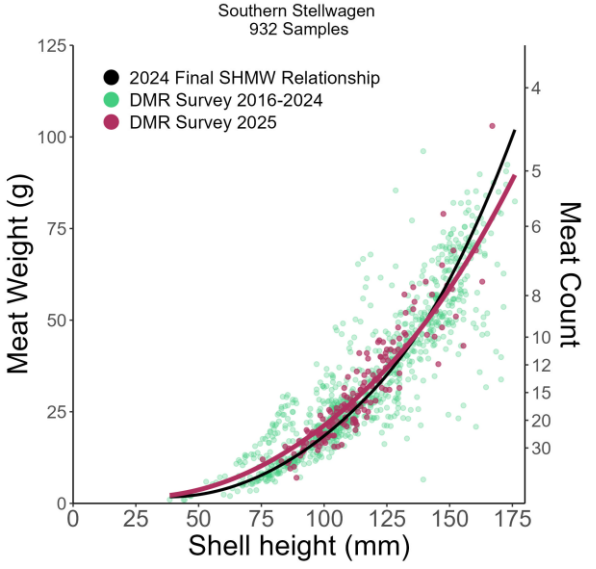


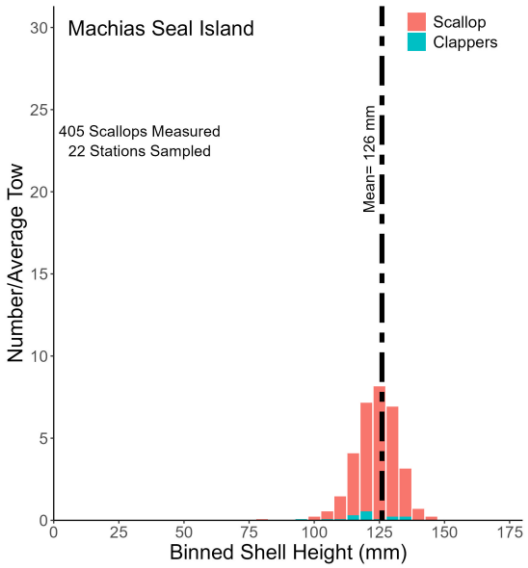


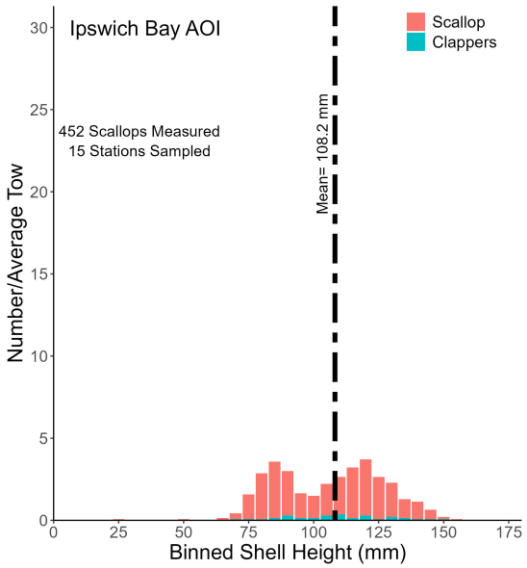


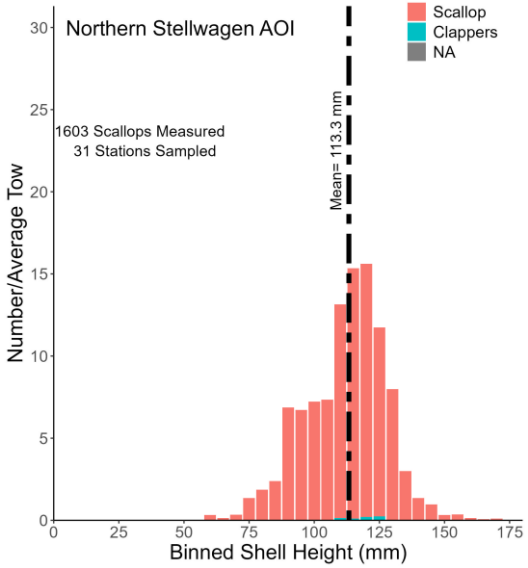


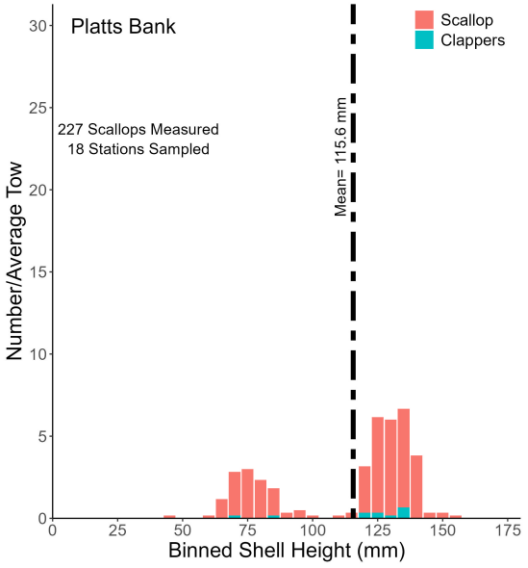


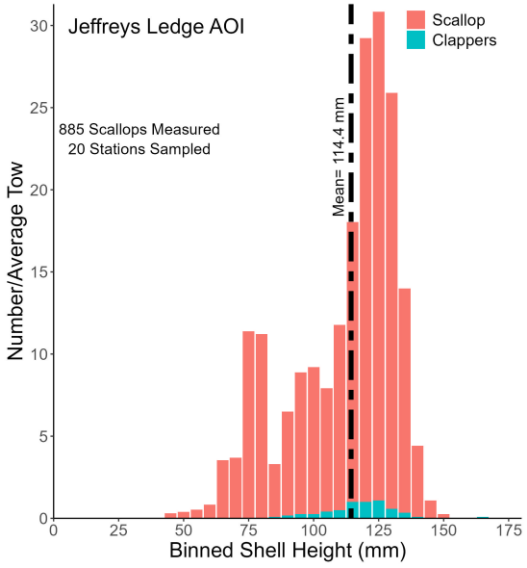


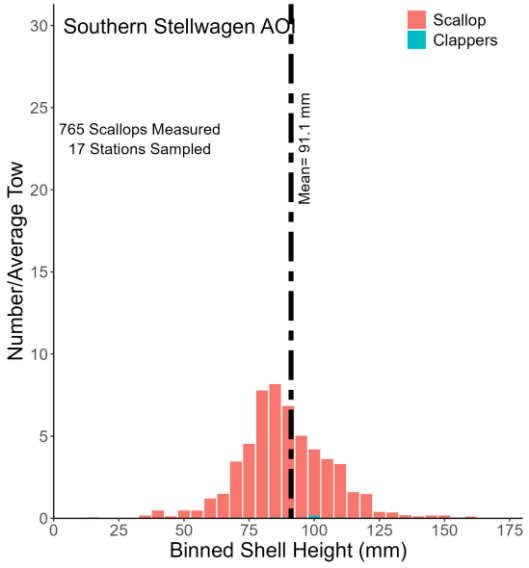

Machias Seal Island
Scallop
Clappers
405 Scallops Measured
22 Stations Sampled
Mean= 126 mm
Number/Average Tow
Binned Shell Height (mm)

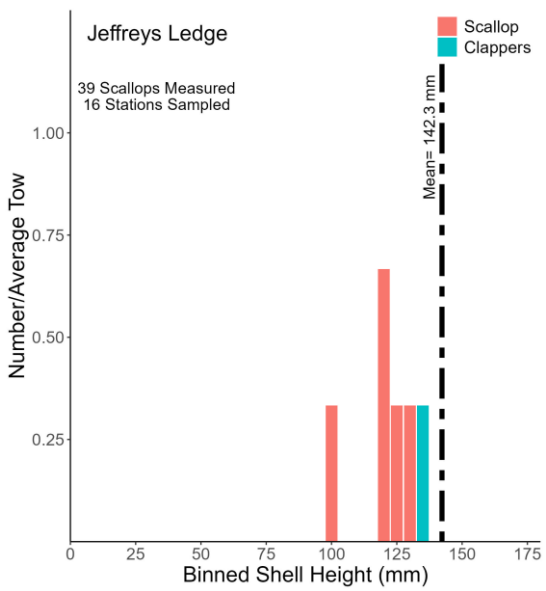

Ipswich Bay AOI
Scallop
Clappers
452 Scallops Measured
15 Stations Sampled
Mean= 108.2 mm
Number/Average Tow
Binned Shell Height (mm)

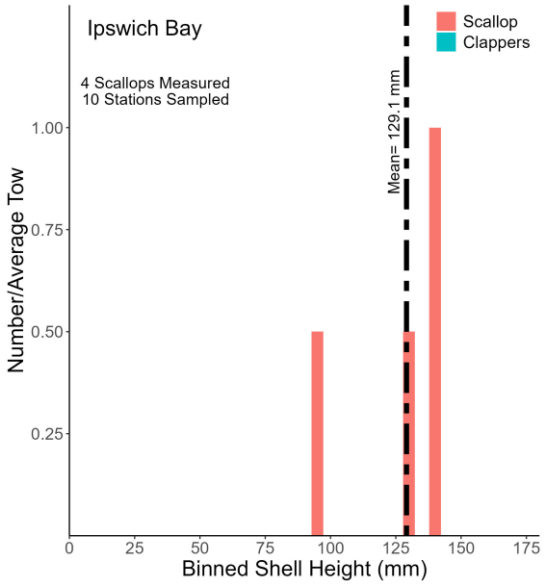

Northern Stellwagen AOI
Scallop
Clappers
NA
1603 Scallops Measured
31 Stations Sampled
Mean= 113.3 mm
Number/Average Tow
Binned Shell Height (mm)

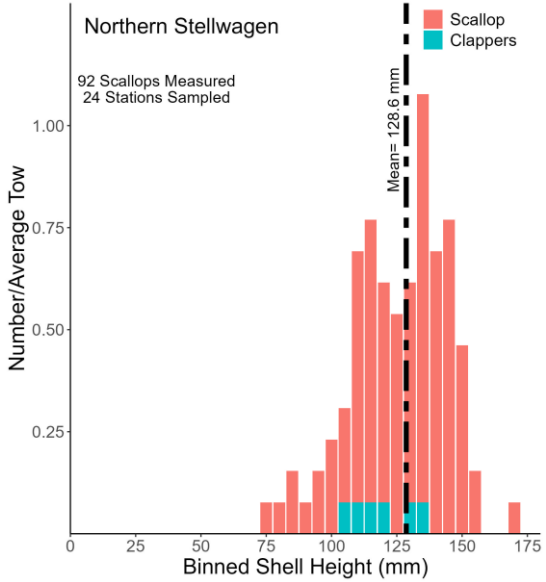

Platts Bank
Scallop
Clappers
227 Scallops Measured
18 Stations Sampled
Mean= 115.6 mm
Number/Average Tow
Binned Shell Height (mm)

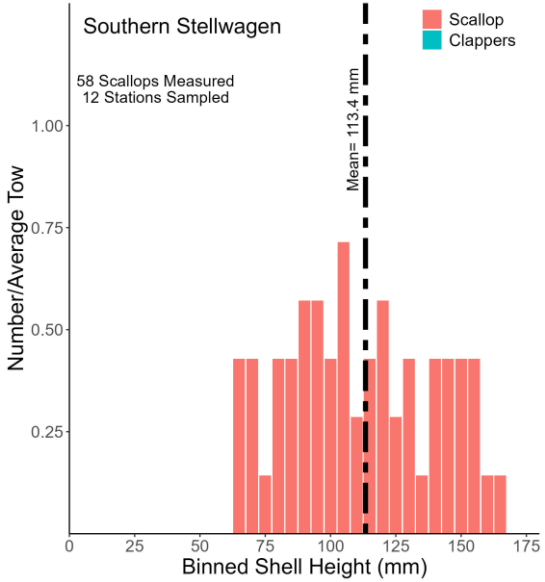

Jeffreys Ledge AOI
Scallop
Clappers
885 Scallops Measured
20 Stations Sampled
Mean= 114.4 mm
Number/Average Tow
Binned Shell Height (mm)


Southern Stellwagen AOI
Scallop
Clappers
765 Scallops Measured
17 Stations Sampled
Mean= 91.1 mm
Number/Average Tow
Binned Shell Height (mm)


Jeffreys Ledge
Scallop
Clappers
39 Scallops Measured
16 Stations Sampled
Mean= 142.3 mm
Number/Average Tow
1.00
0.75
0.50
0.25
0
25
50
75
100
125
150
175
Binned Shell Height (mm)


Ipswich Bay
Scallop
Clappers
4 Scallops Measured
10 Stations Sampled
Mean= 129.1 mm
Number/Average Tow
1.00
0.75
0.50
0.25
0
25
50
75
100
125
150
175
Binned Shell Height (mm)


Northern Stellwagen
Scallop
Clappers
92 Scallops Measured
24 Stations Sampled
Mean= 128.6 mm
Number/Average Tow
1.00
0.75
0.50
0.25
0
25
50
75
100
125
150
175
Binned Shell Height (mm)


Southern Stellwagen
Scallop
Clappers
58 Scallops Measured
12 Stations Sampled
Mean= 113.4 mm
Number/Average Tow
1.00
0.75
0.50
0.25
0
25
50
75
100
125
150
175
Binned Shell Height (mm)