

Industry Funded Transplanting Update

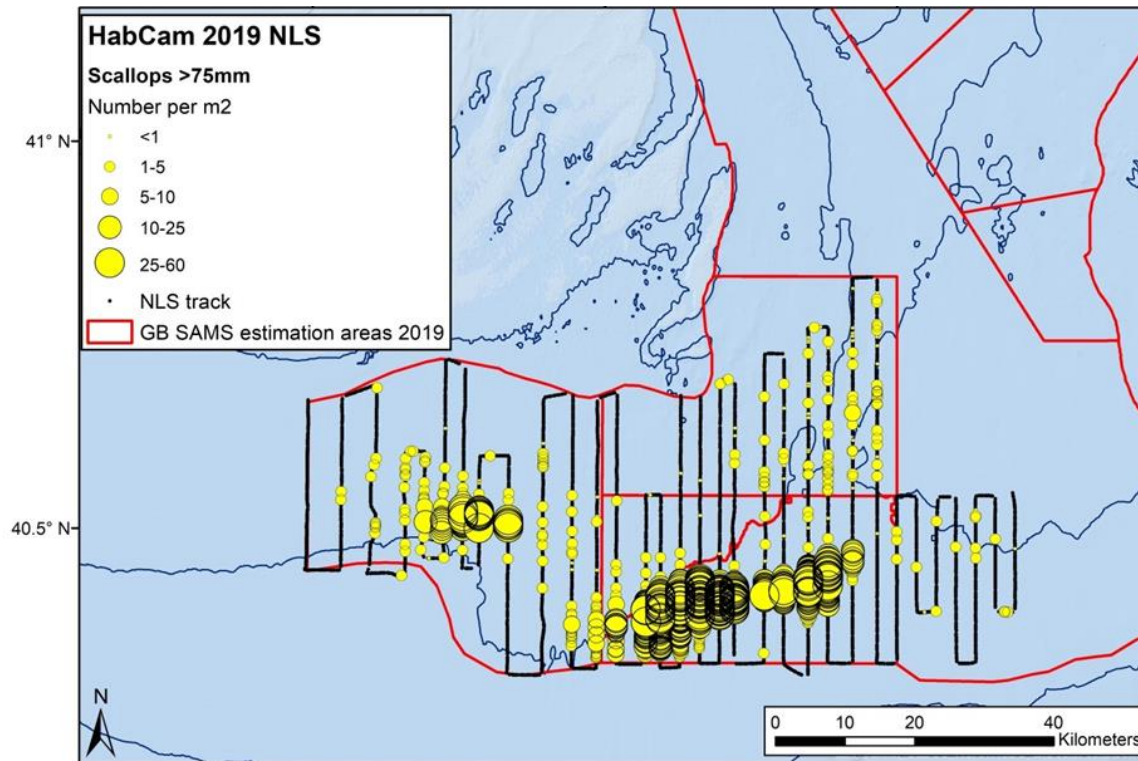


Presentation Overview

- **Background**
- **Phase I**
 - Identify a trawl that maximizes efficiency and survival of transplanted sea scallops
- **Phase II**
 - Evaluate the efficiency and survival of a dredge relative to the two-panel box net
 - Release tagged scallops



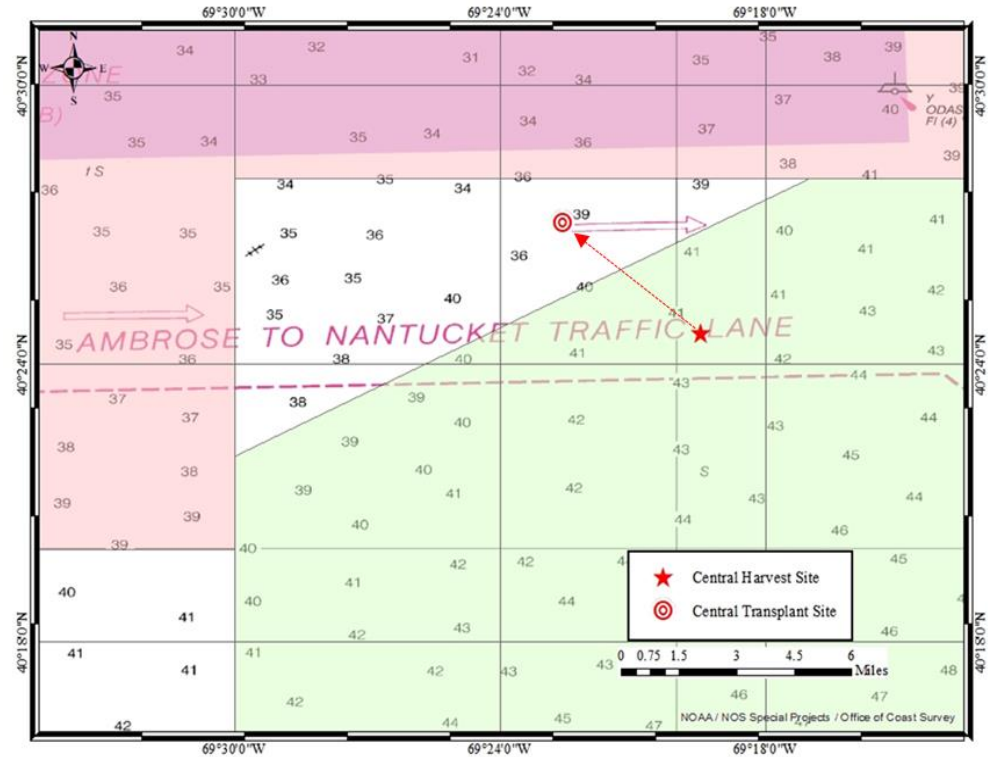
Background



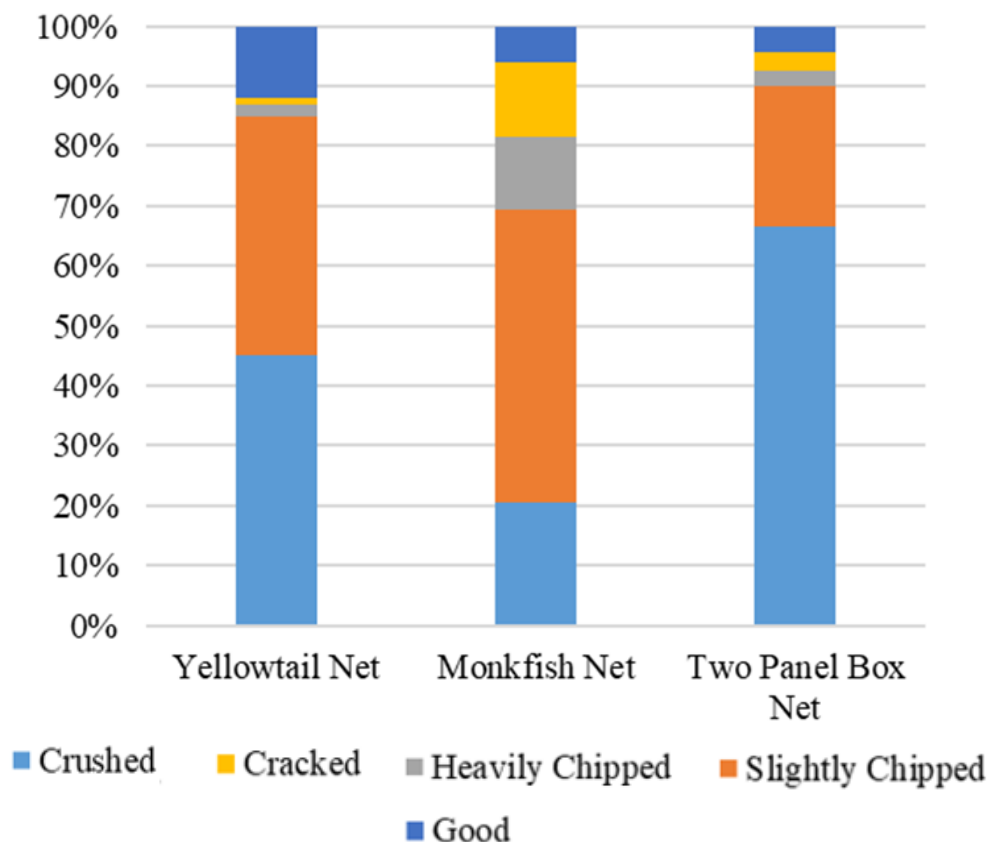
- Phenomenal recruitment in the NLS-South Deep resulted in dense aggregations of sea scallops
- “Peter Pan” scallops grow slower and have relatively fragile shells
- Concerned industry members sought to evaluate the viability of transplanting “Peter Pan” scallops to shallower region where they were hypothesized to grow better.

Phase I – Transplanting

- Three types of nets were evaluated
- ~550,388 individual sea scallops were transplanted
- Following seeding the site was surveyed using the HabCam vehicle



Phase I – Net Comparison



- A two-panel box net is the optimal net for efficiently moving “Peter Pan” scallops with the least amount of damage

	Net type	Numbers of scallops moved	Number of hauls	Per-haul average
<i>FV Justice</i>	Yellowtail flounder survey net	14,250	11	1,295
<i>FV Starbrite</i>	Monkfish net	36,840	16	2,303
<i>FV Capt Carl</i>	Two-panel box net	415,612	37	11,233
<i>FV Mariner</i>	Two-panel box net	83,686	10	8,369

Phase I – HabCam Observations

2020



2021



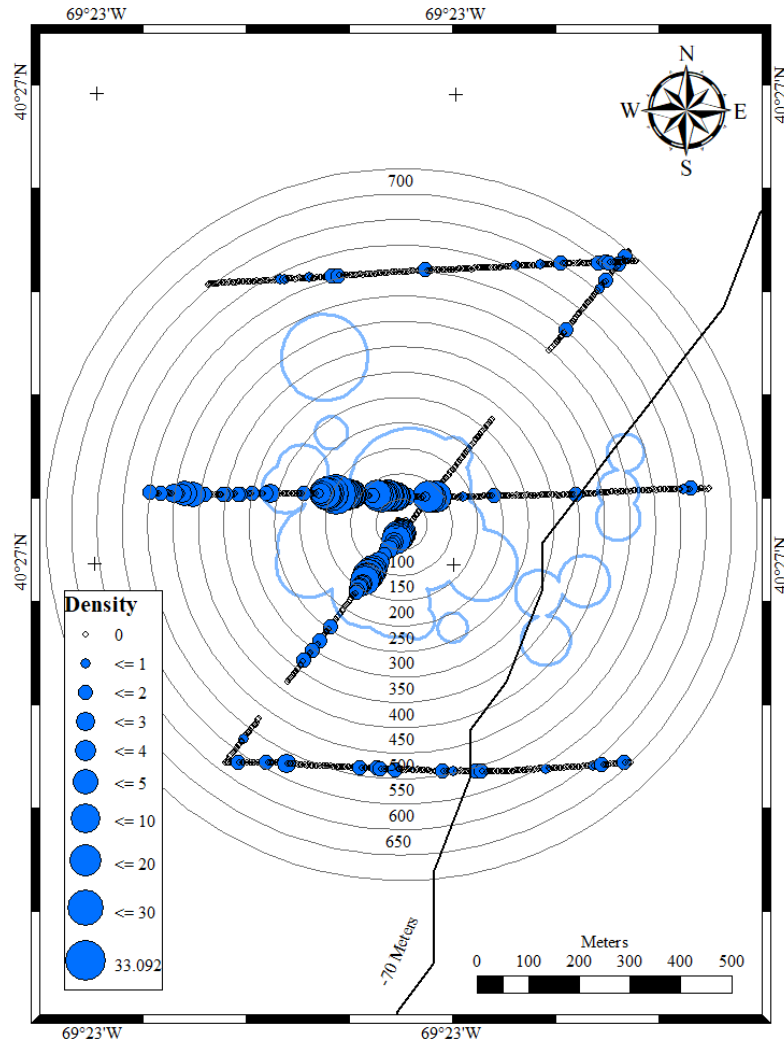
Transplanting Site Density (#/m ²)			
	2019*	2020	2021
<i>Mean</i>	0.266	0.709	0.329
<i>S.D.</i>	0.746	2.819	0.736
<i>N</i>	226	894	927

* Images within 1000 m of drop center.

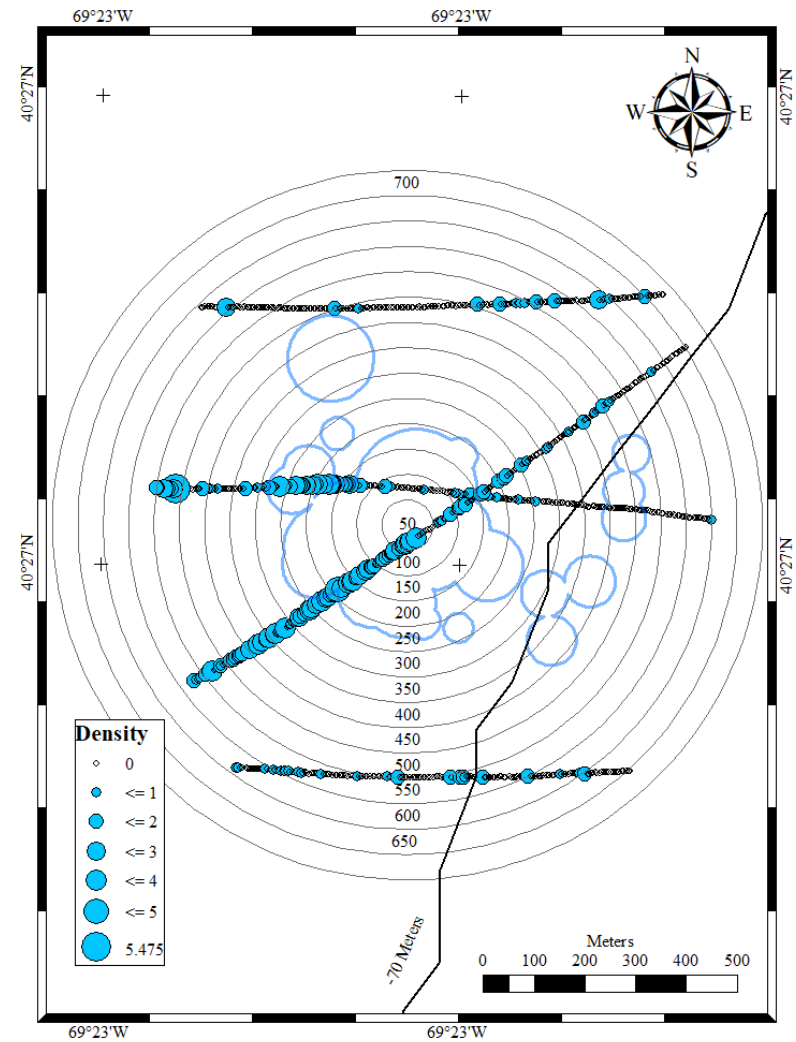
- Ambient density increased immediately following transplanting
- In 2021, scallop densities at the site remained above ambient

Phase I – Scallop Density

2020

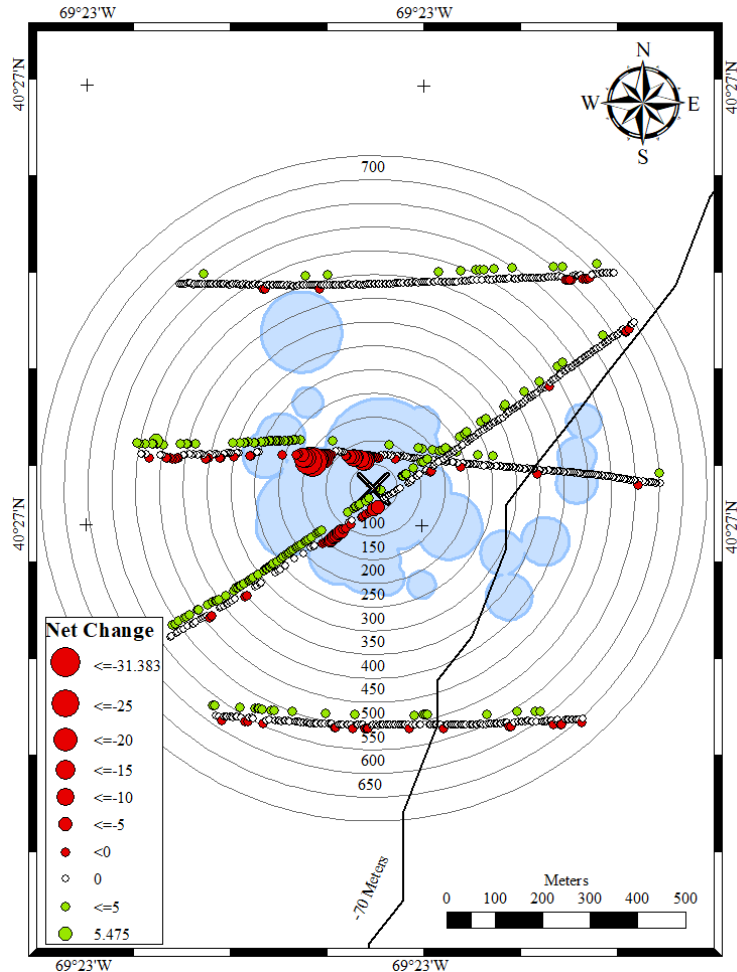


2021

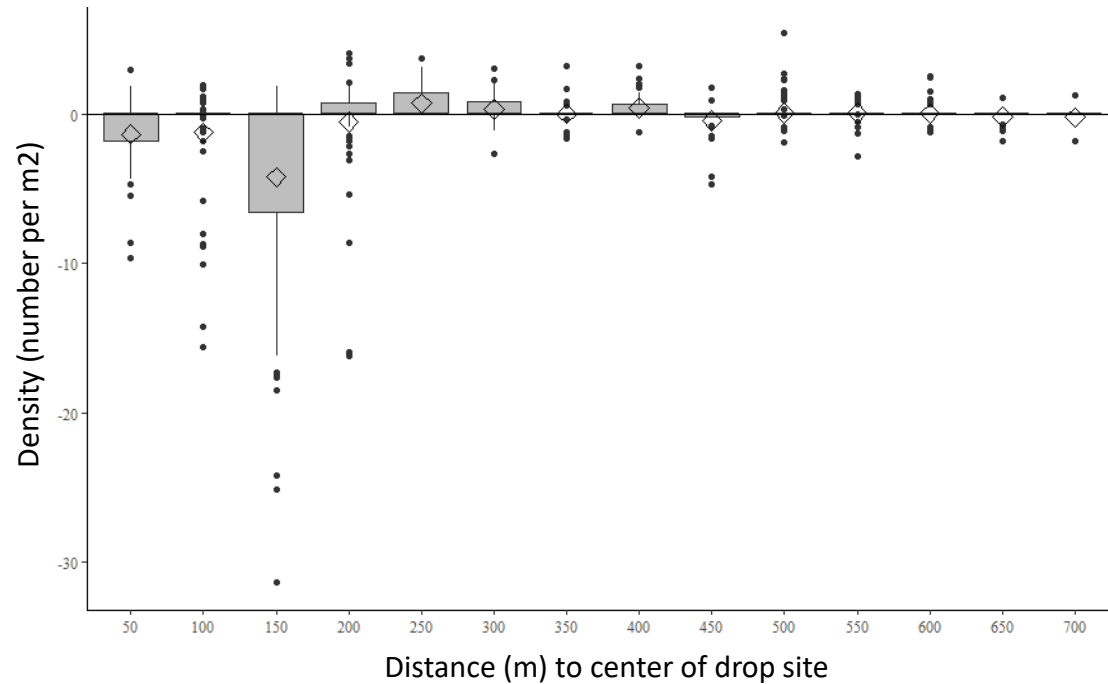


Phase I – Net Change in Density

Observed net change



Observed net change by buffer



Phase I – Displacement: 2020 - 2021

Distance (m) from Center				
2020		2021		Displacement
Mean	S.D.	Mean	S.D.	m/day
274.205	210.818	297.838	168.326	0.068

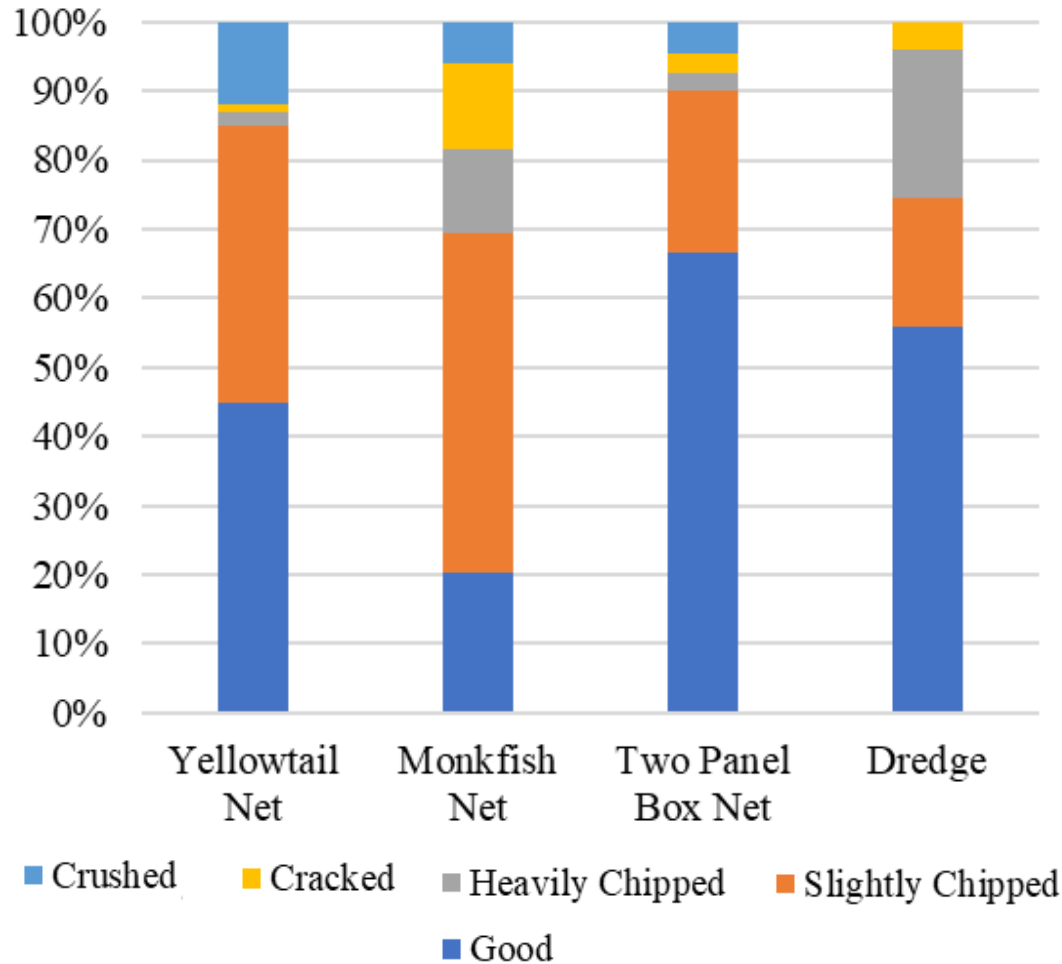
- The distance from the central release location of each image with scallops was calculated
- Displacement is the rate of movement away from the central release location
- The transplanted scallops appear to have spread away from the center and thinned themselves out

Phase II – Tagging



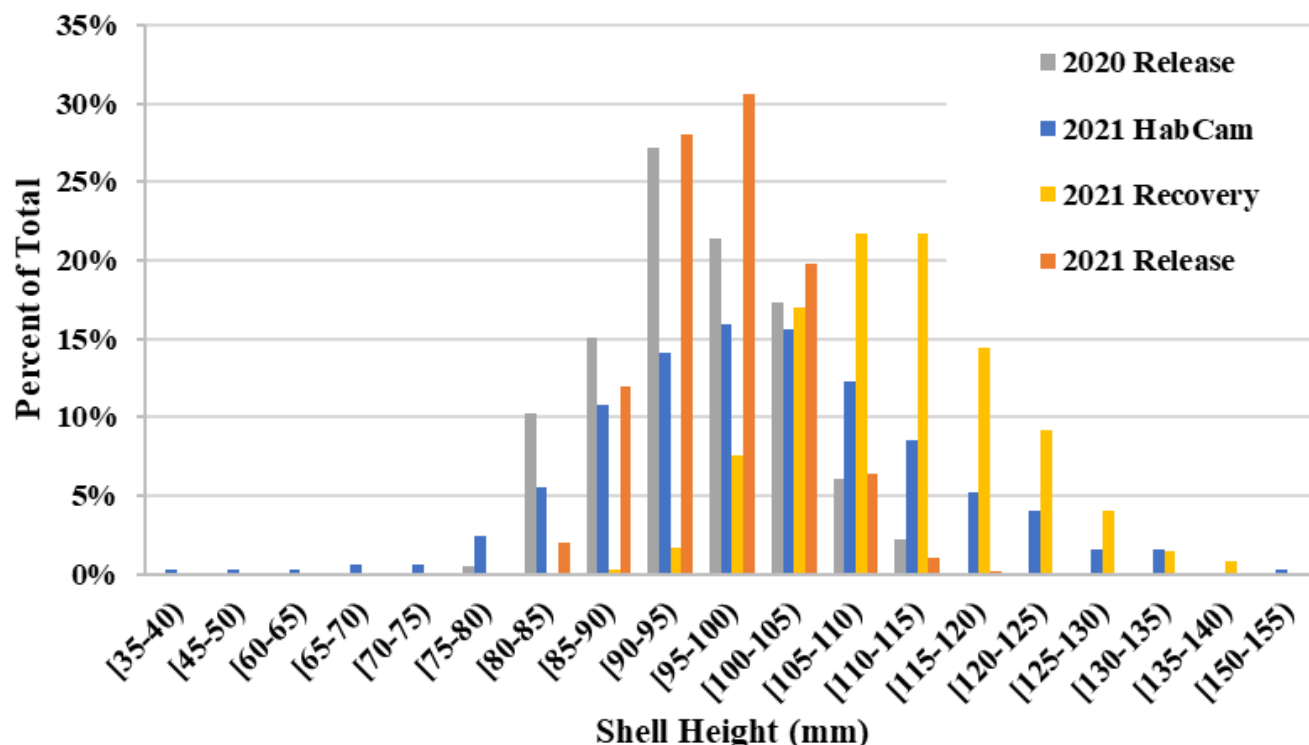
- In November 2021 and January 2022, more scallops were transplanted to the 2020 site
 - Trip 1: Two panel box net
 - 1,500 tagged from the Transplant Site
 - 1,500 tagged from the Harvest Site
 - Trip 2: Sea scallop dredge (NBD)
 - 1,000 tagged from the Transplant Site
 - 1,000 tagged from the Harvest Site
- 5,000 sea scallops were tagged
- 18 of the scallops tagged during the November 2021 trip were recaptured during the January trip.
 - All appeared to be healthy

Phase II – Dredge vs. Trawl



- Relative to trawl nets a dredge causes more heavy chipping
- No crushed individuals were observed
- Comparison of transplanting efficiency was hindered by the exhaustion of the NLS South-Deep

Phase II – Changes in Shell Height



- Prior to transplanting scallops in November 2021, a tow was taken at the Transplant Site
- The scallops within the Transplant Site are significantly larger than the NLS South-Deep scallops

	Avg. Shell Height (mm)	Date	Days After Release	% change
<i>2020 Release</i>	94.12	6/9/2020	0	
<i>2021 HabCam</i>	100.09	7/13/2021	400	6%
<i>2021 Transplant Site</i>	109.54	11/17/2021	515	9%

Phase II – Meat Yield Projections

The meat yield of the scallops within the Transplant Site is almost double that of NLS South-Deep scallops

	Harvest Site <i>Shell Height (mm)</i>	Harvest Site <i>Meat Count</i>	Transplant Site <i>Shell Height (mm)</i>	Transplant Site <i>Meat Count</i>
2020	94.12	~36	94.12	~36
2021	95.96	~33	110.39	~17
% change	2%		17%	

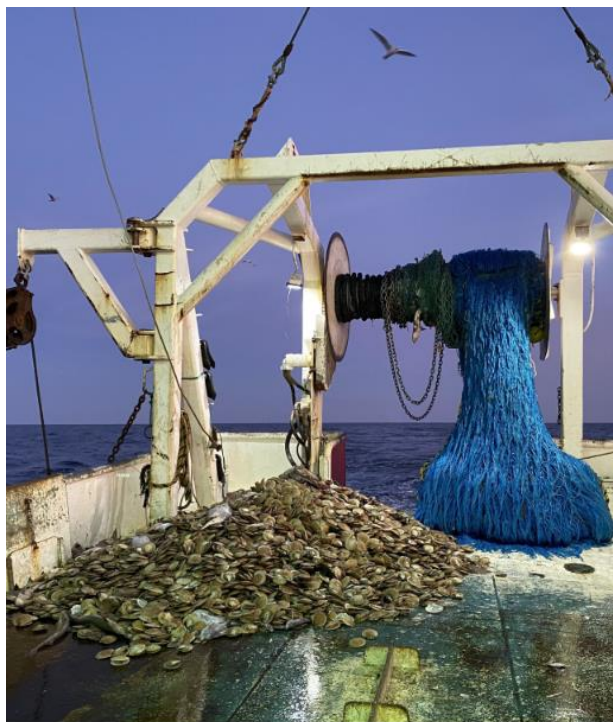


Transplant Site Parameters

# of Scallops Transplanted	415,600
Transplanting Mortality	20%
# of Remaining Scallops	332,480
Scallops/lb.	17
\$/lb. of Scallops	\$16.00
Estimated Scallop Value	\$312,922.35

Phase II – Future Plans

- Deploy remaining 2,000 tags by mid-June
- Survey the Transplanting Site with HabCam during Leg I



Special Acknowledgments to Our
Industry Donors:

Nordic Inc.

Empire Fisheries

Quinn Fisheries

Fulcher Seafoods

Viking Village

Mass Fabrication, Inc.

Questions?