American Lobster

Stock assessment progress update

American Lobster Management Board
April 30, 2024

Assessment Subcommittee

- Kathleen Reardon, ME DMR
- Josh Carloni, NH F&G
- Dr. Tracy Pugh, MA DMF (Chair)
- Dr. Burton Shank, NMFS, NEFSC
- Dr. Conor McManus, RI DEM
- Jeff Kipp, ASMFC

Additional support from:

- Dr. Theresa Burnham, University of Maine
- Dr. Geneviève Nesslage, University of Maryland

Progress & timeline

- *Data workshop – February 2024 (3 days)*
- *Modelers are having bi-weekly calls to discuss progress and issues arising during early stages of model work*
- *SAS webinar April 19th*
- SAS webinar June 3rd
- SAS multi-day meeting July 22-24 (New Bedford, MA)
- SAS multi-day meeting (TBD – fall 2024)
- Draft report for TC review – February 2025
- Peer Review Workshop – May 2025
- Final presented to the Board – August 2025

Questions?

American Lobster

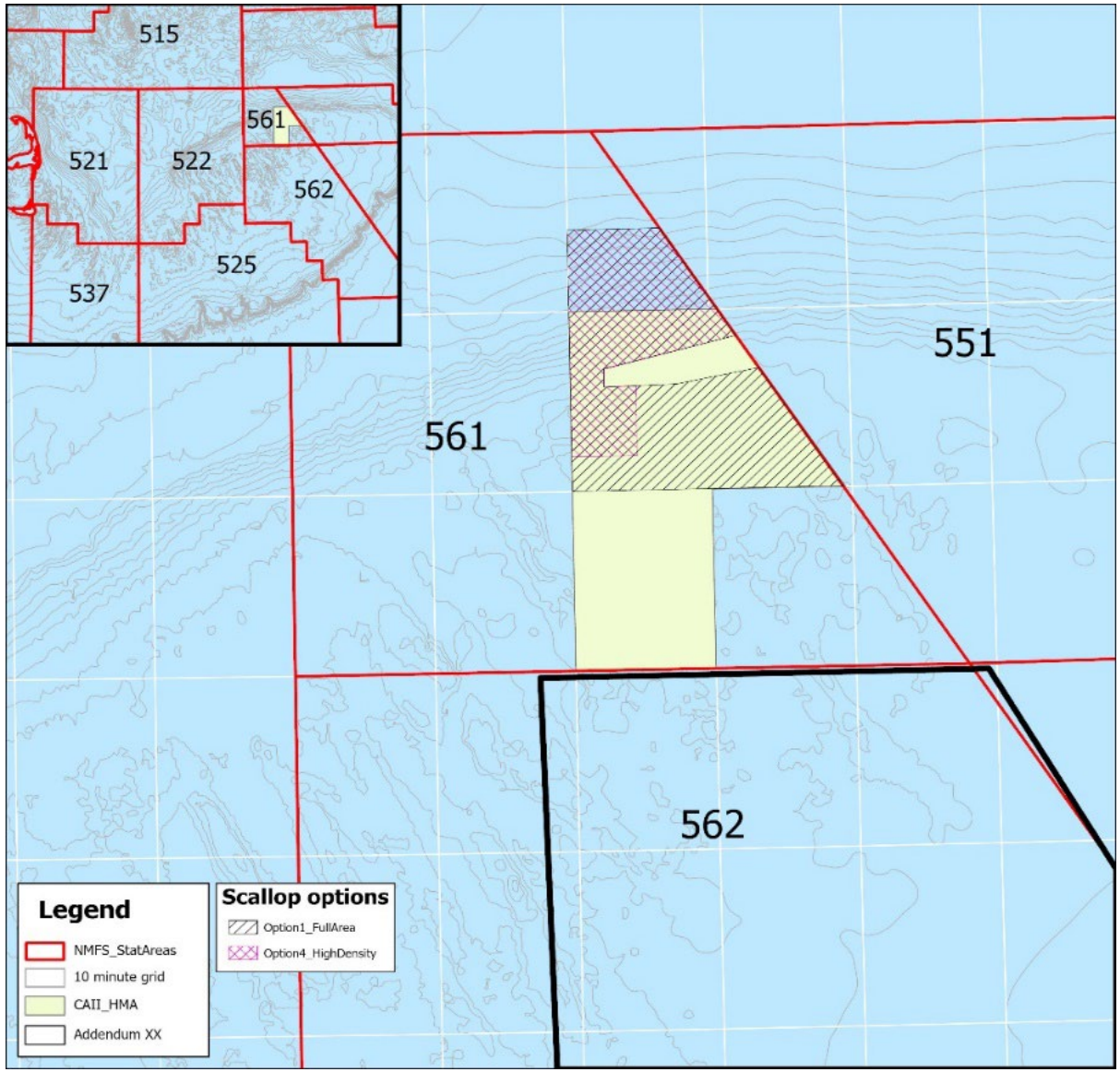
Report on the lobster resource & fishery on the northern edge of Georges Bank

American Lobster Management Board
April 30, 2024

Background

- New England Fisheries Management Council potential action
  - Considering scallop access to a portion of closed Area II
  - Specific area of interest is within a currently closed Habitat Management Area

Area of interest & Council timing



- 4 areas under consideration
  - Reduced to 2 as of last Council meeting (options 2 & 4)
- Council updated in late June
- Council potential action late Sept

Task

- Lobster Board asked the TC to:
  - Characterize potential impacts to lobster population and fishery
    - Presence & abundance, particularly ovigerous females
    - Fishery effort
- Preliminary information/update to the Board at the January meeting
- Final report (meeting materials) summarized here

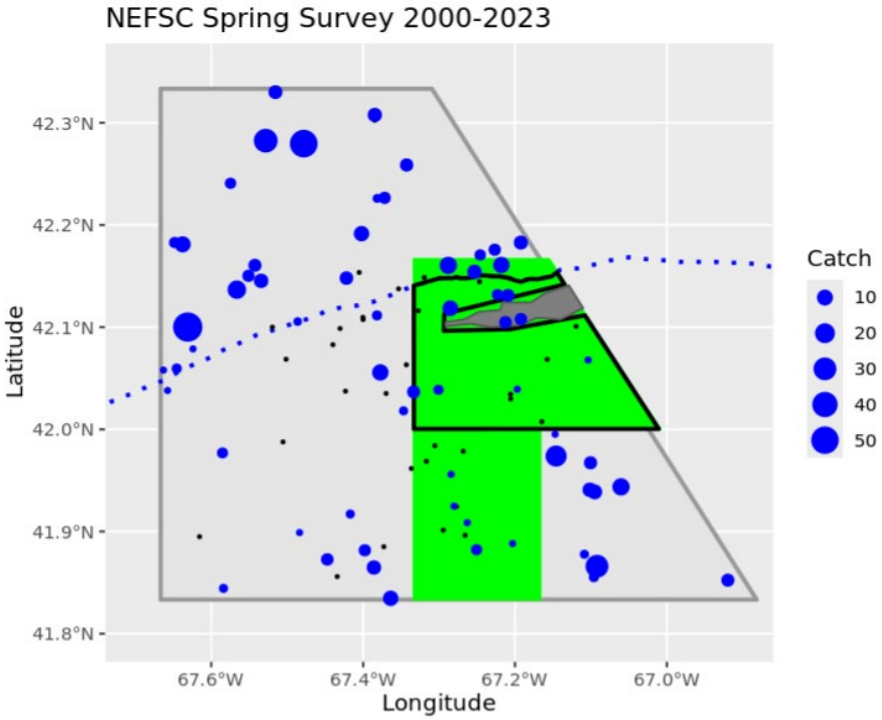
Data sources & uses

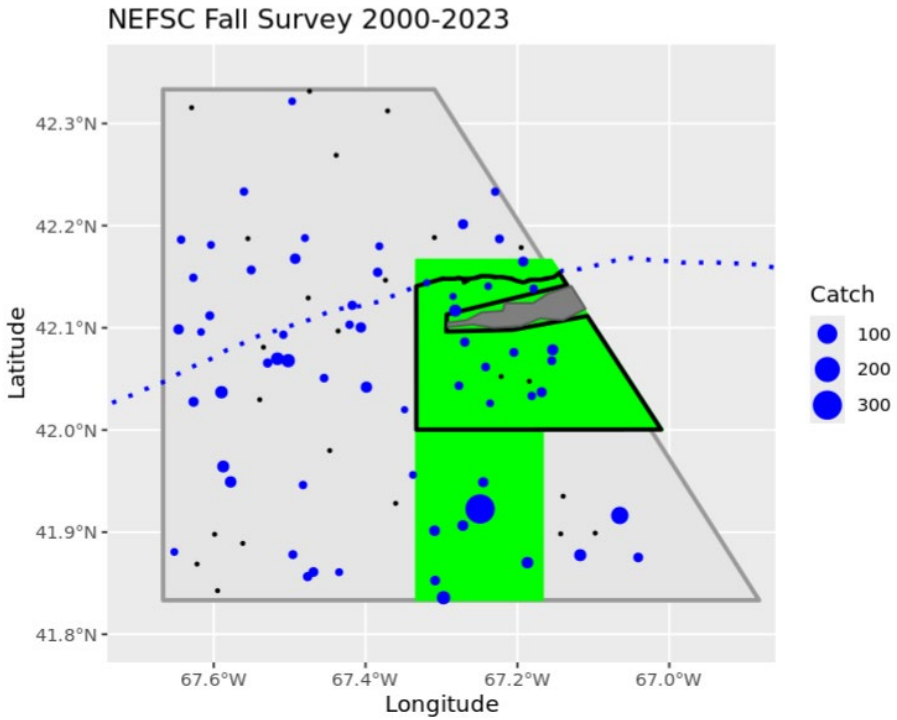
- Fishery-independent surveys - relative abundance & population characteristics
  - Northeast Fishery Science Center (NEFSC) trawl surveys (spring & fall, 2000 - 2023)
    - Station-specific survey catch at locations on & off Bank
  - Coonamessett Farm Foundation (CFF) seasonal scallop dredge bycatch survey (2012 – 2023)
    - Data for survey catch and timing constrained to on Bank sampling locations, and to time period with sufficient sampling resolution to characterize seasonality (2017-2019)
- Fishery-dependent - catch characterization (size, sex ratio, & reproductive status)
  - Commercial Fisheries Research Foundation (CFRF) lobster & Jonah crab study fleet (2013 – 2023)
    - Data presented were constrained to locations within the proposed access areas
  - NOAA's Northeast Observer Program (NEFOP, 2013 - 2015)
    - Most available data were from locations off Bank

Data sources & uses

- Fishery-dependent - distribution of egg-bearing females
  - Harvester logbook program (AOLA, NHF&G, 2015)
    - Multiple NMFS Stat Areas surrounding northern edge
- Fishery-dependent - lobster movement around GB
  - Tagging study (AOLA, NHF&G, MEDMR 2015-2020)
    - Release & recaptures in and around northern edge region
- Fishery-dependent - fishing effort & landings
  - Federal VTR data (2013 – 2023)
    - Monthly activity and landings NMFS Area 561, on & off Bank
    - Landings by 10 minute square
- Impacts of scallop dredge gear on lobsters
  - Coonamessett Farm Foundation (CFF) seasonal scallop bycatch survey (2012 – 2023)
    - Complete dataset

Seasonality & abundance

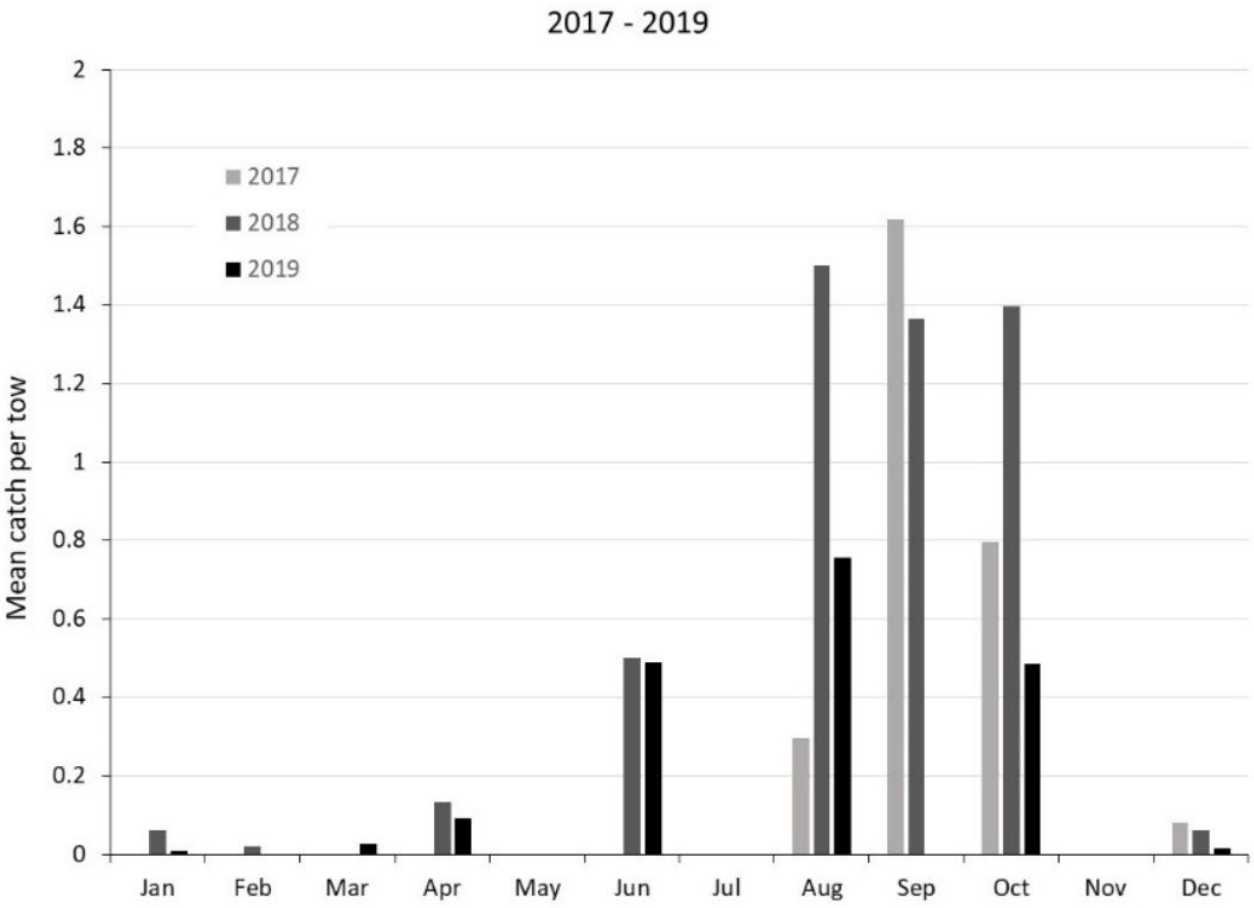




- Overall catch is lower in spring, and more off the Bank
- Fall catch higher, and on average more on the Bank
  - Highest catch in the fall (or spring) was within the HMA

Seasonality & abundance on Bank

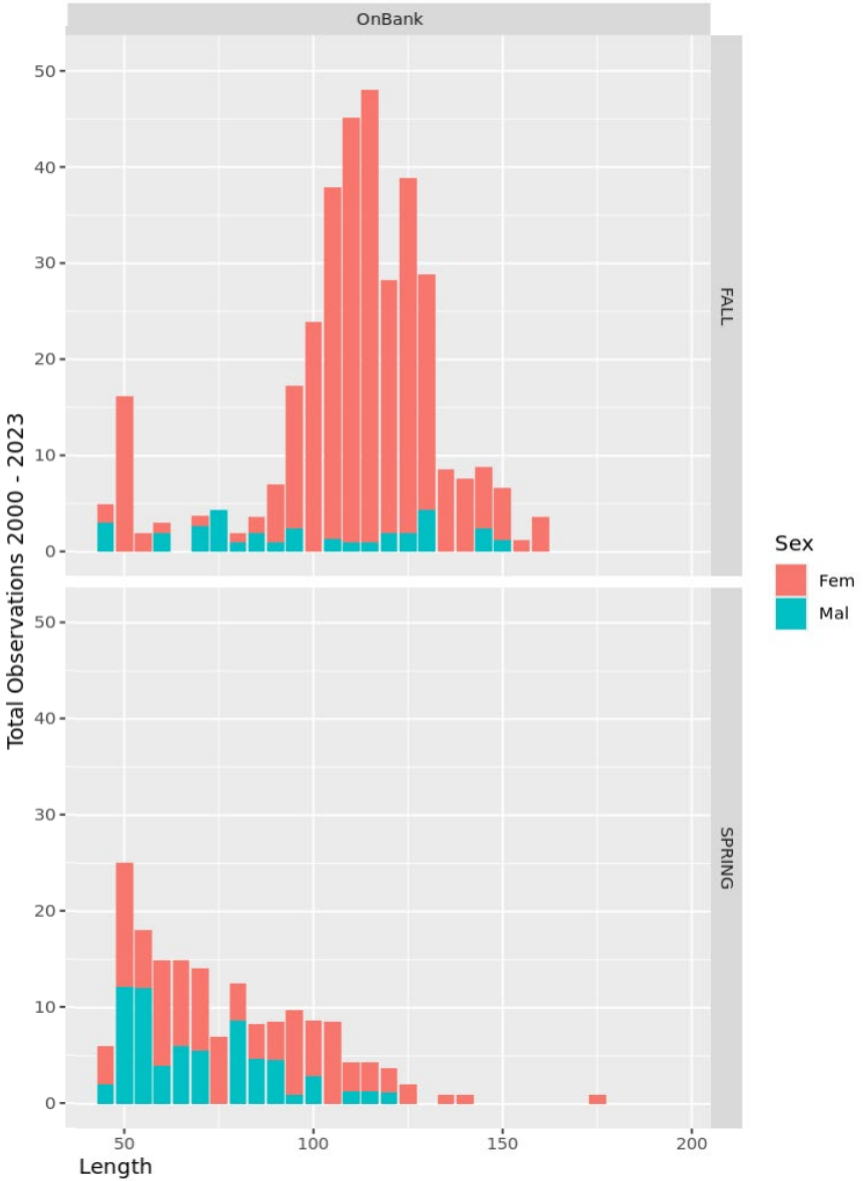
CFF survey – lobster catch on the Bank



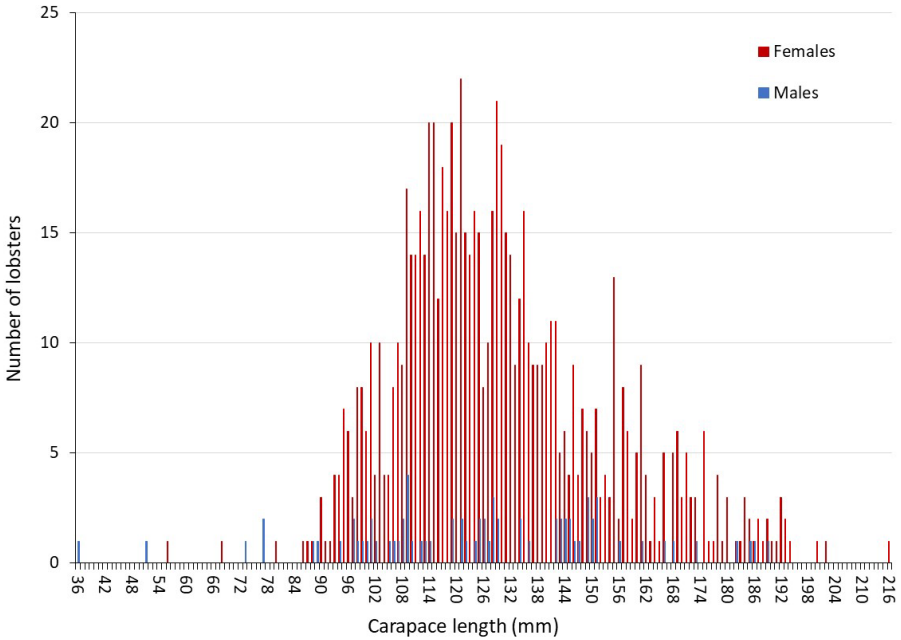
- Subset of data
  - On the Bank
  - Consecutive sampling (at least every other month)
- Consistent seasonal catch pattern
- Low during winter months
- Highest Aug - Oct

Survey sizes & sex ratio on the Bank

NEFSC trawl – On Bank



CFF scallop dredge – On Bank

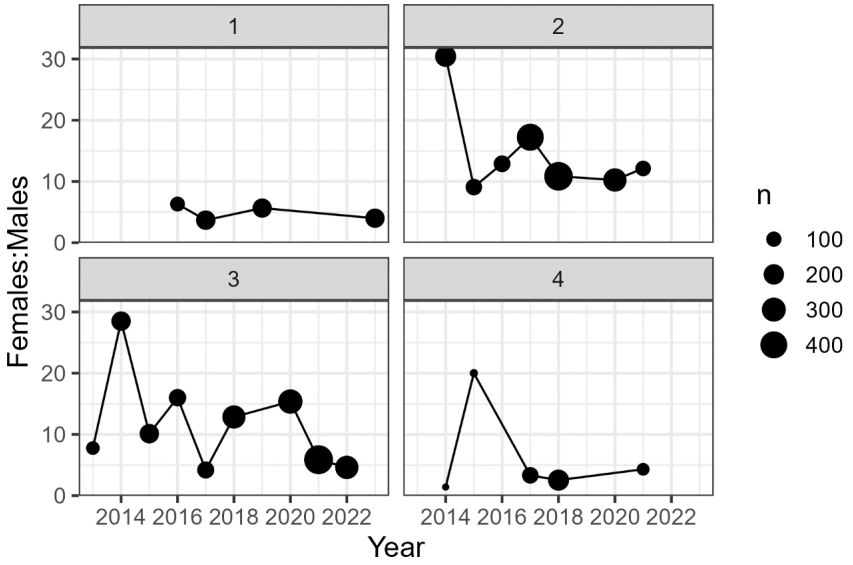


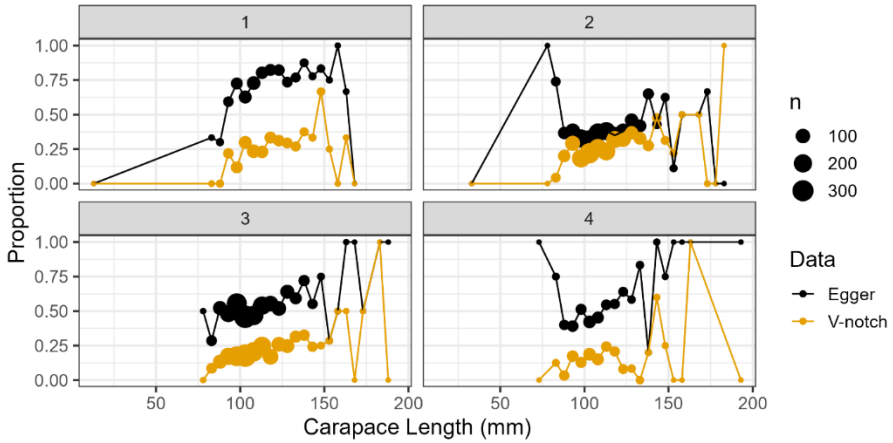
Mobile gear surveys:

- Strong female-skew sex ratio
- Predominantly larger lobsters
- CFF survey – 57% of females were egg-bearing

Commercial size, sex, egg-bearing

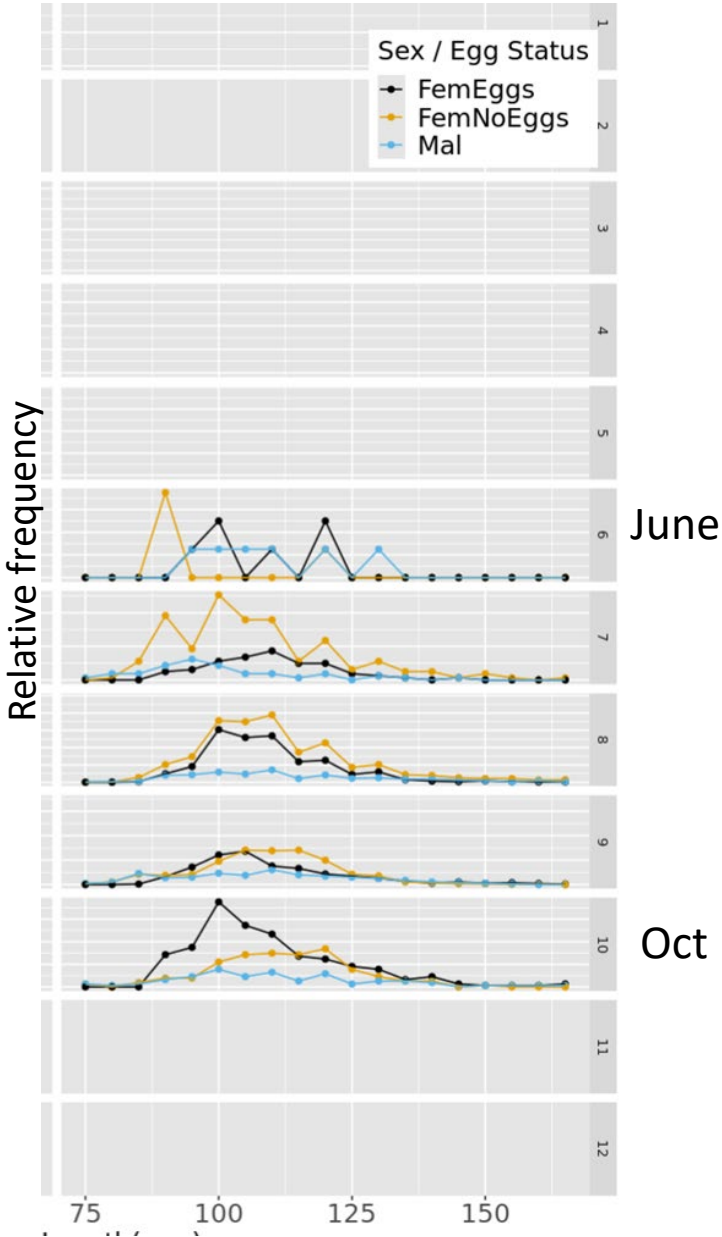
CFRF Lobster Study Fleet – within the proposed access areas





- Year-round fleet activity many years
- Large lobsters (>100 mm)
  - Females stable size distribution throughout the year
  - Males slightly larger in fall & winter than spring & summer
- Catch consistently female-skewed, all seasons
  - Particularly in spring & summer, when most lobsters were sampled
    - Q2 annually more than 10 females for every male
    - Q3 (July-Sept) several years more than 10:1 (F:M)
- Proportion of females with eggs generally increased with female size
  - Highest proportions observed in Q1 catch, but fewer overall lobsters sampled
  - Lowest proportions in Q2

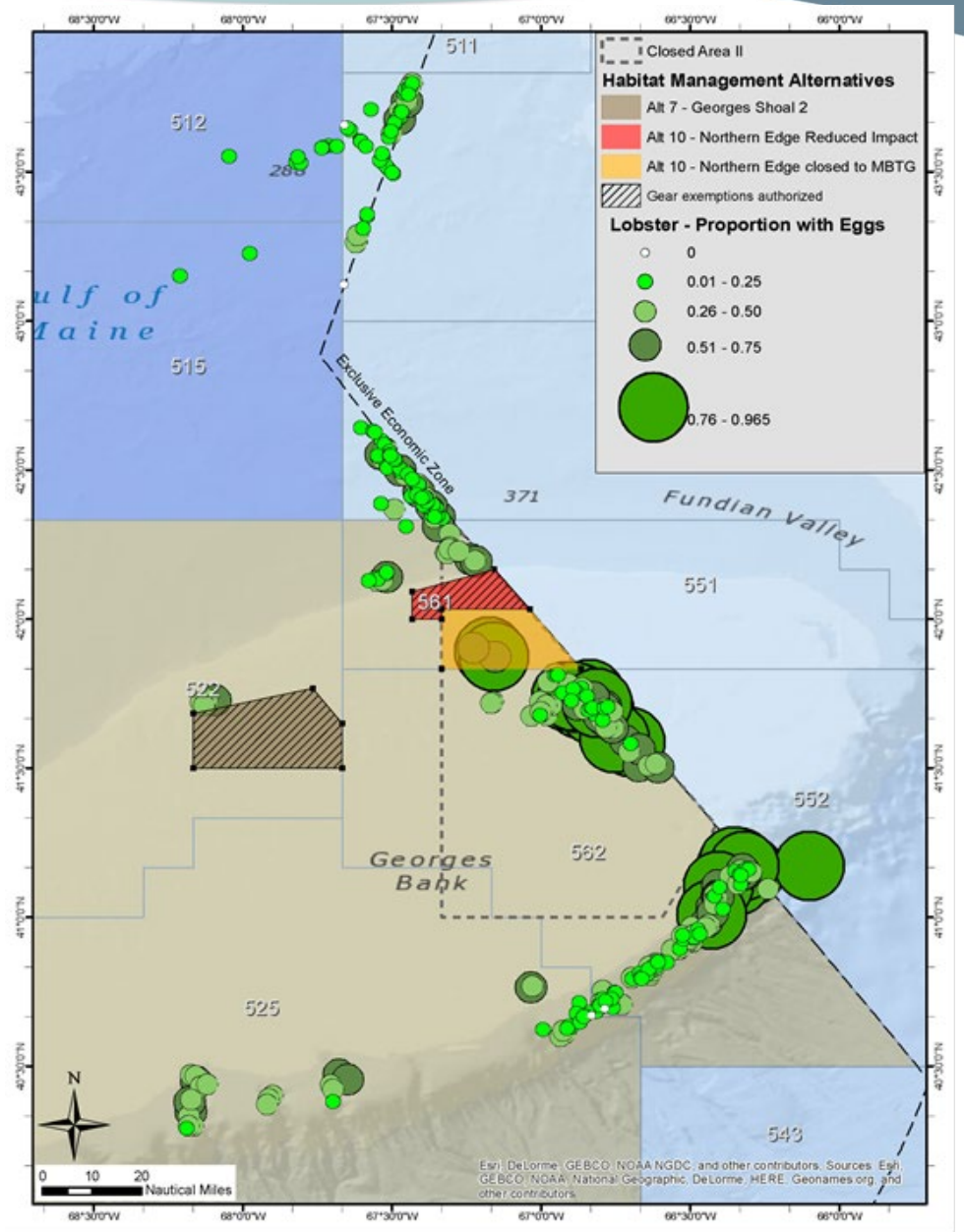
Commercial sizes & sex ratio



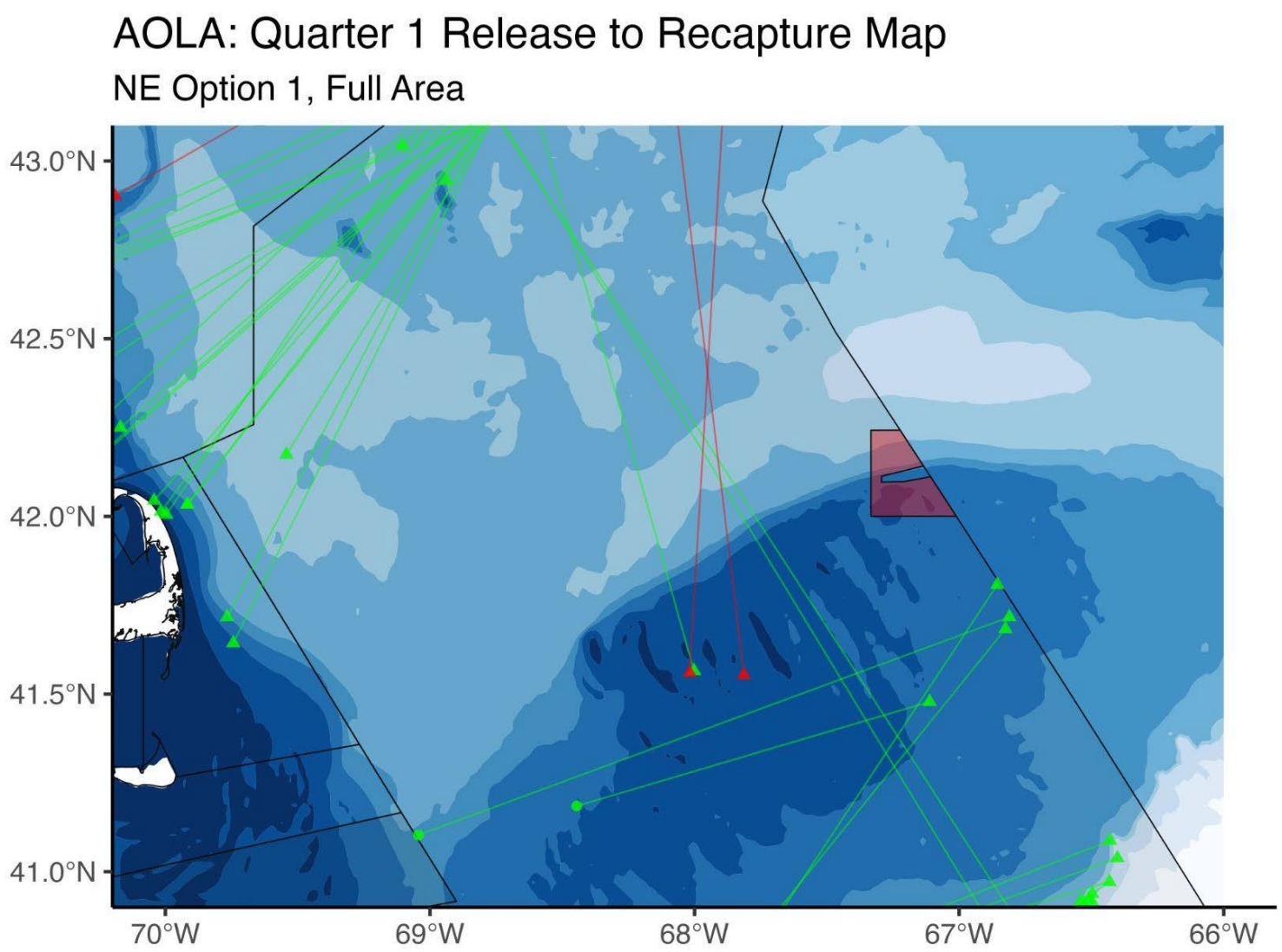
- NEFOP data – On-Bank only shown here (2013-2015)
  - Note that most of the catch observed occurred Off-Bank
- Relatively high catch rates of lobsters above 100 mm most months
  - Particularly females
- Oct catch in particular dominated by ovigerous females from ~88 mm to 110 mm

Distribution of ovigerous females

- Harvester logbook program (2015)
  - 13,047 total trap hauls documented
  - 19,051 ovigerous females (48,342 total lobsters)
- Ovigerous females were a higher proportion of catch on eastern Bank

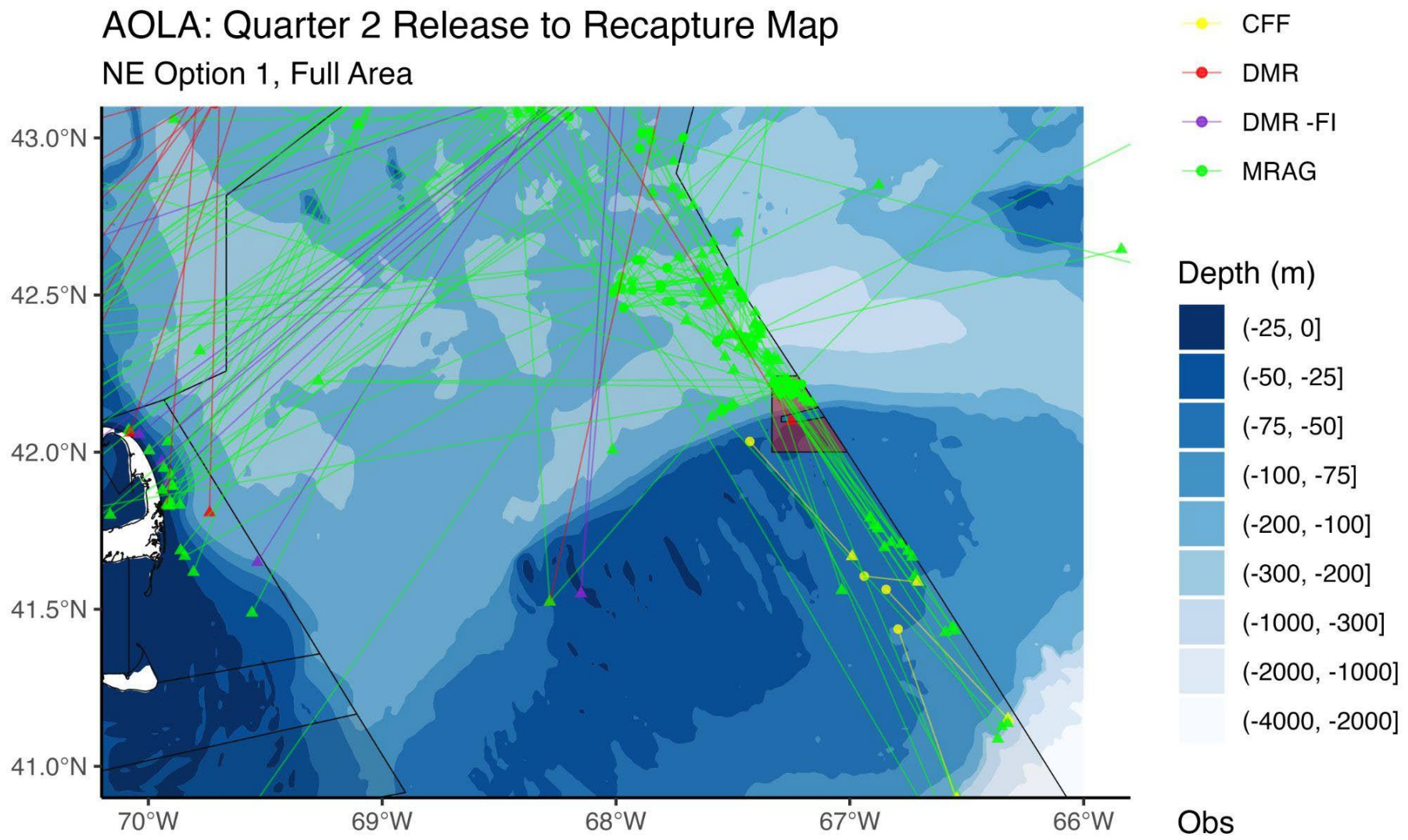


Movements



Full proposed scallop access area shown in red

Movements



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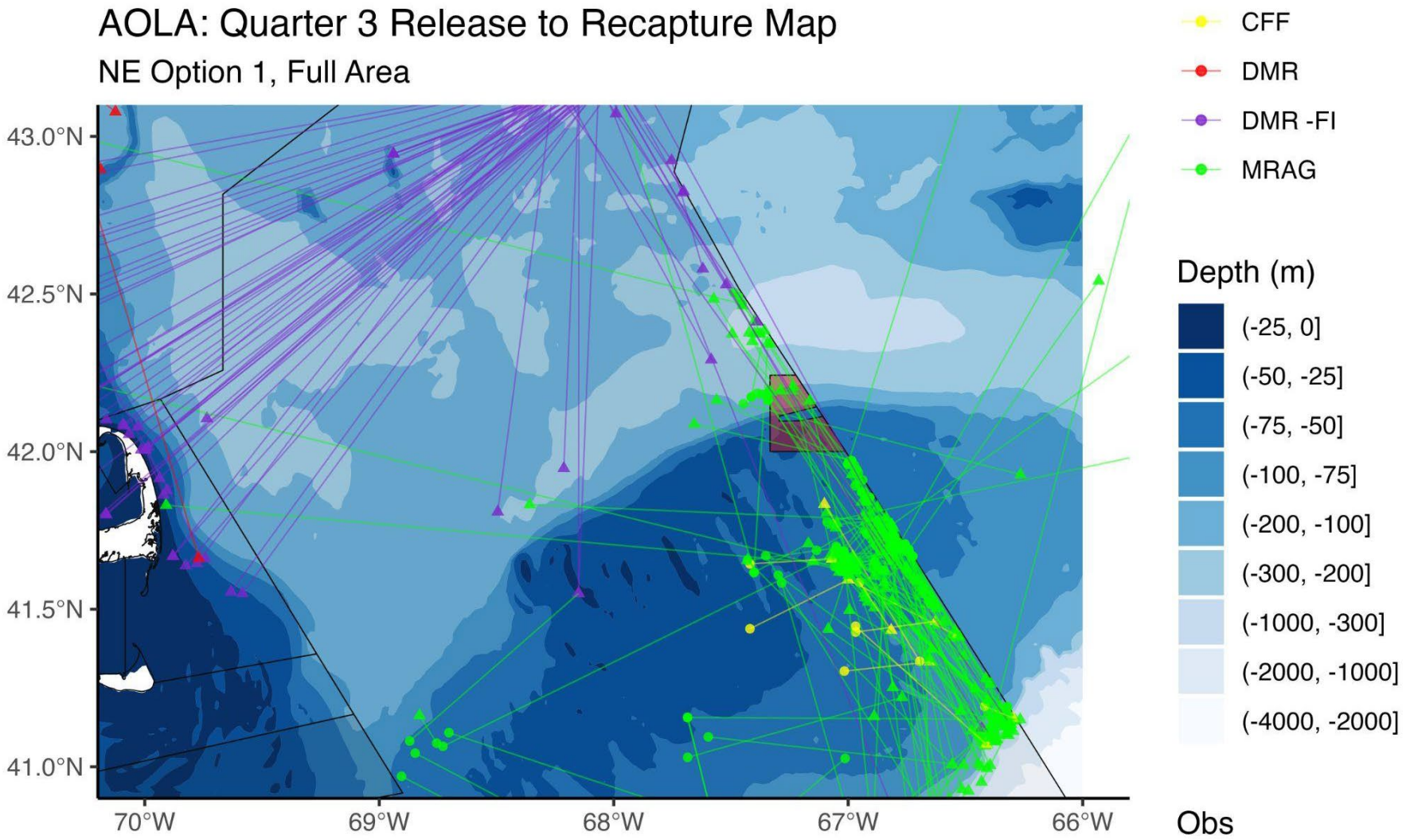

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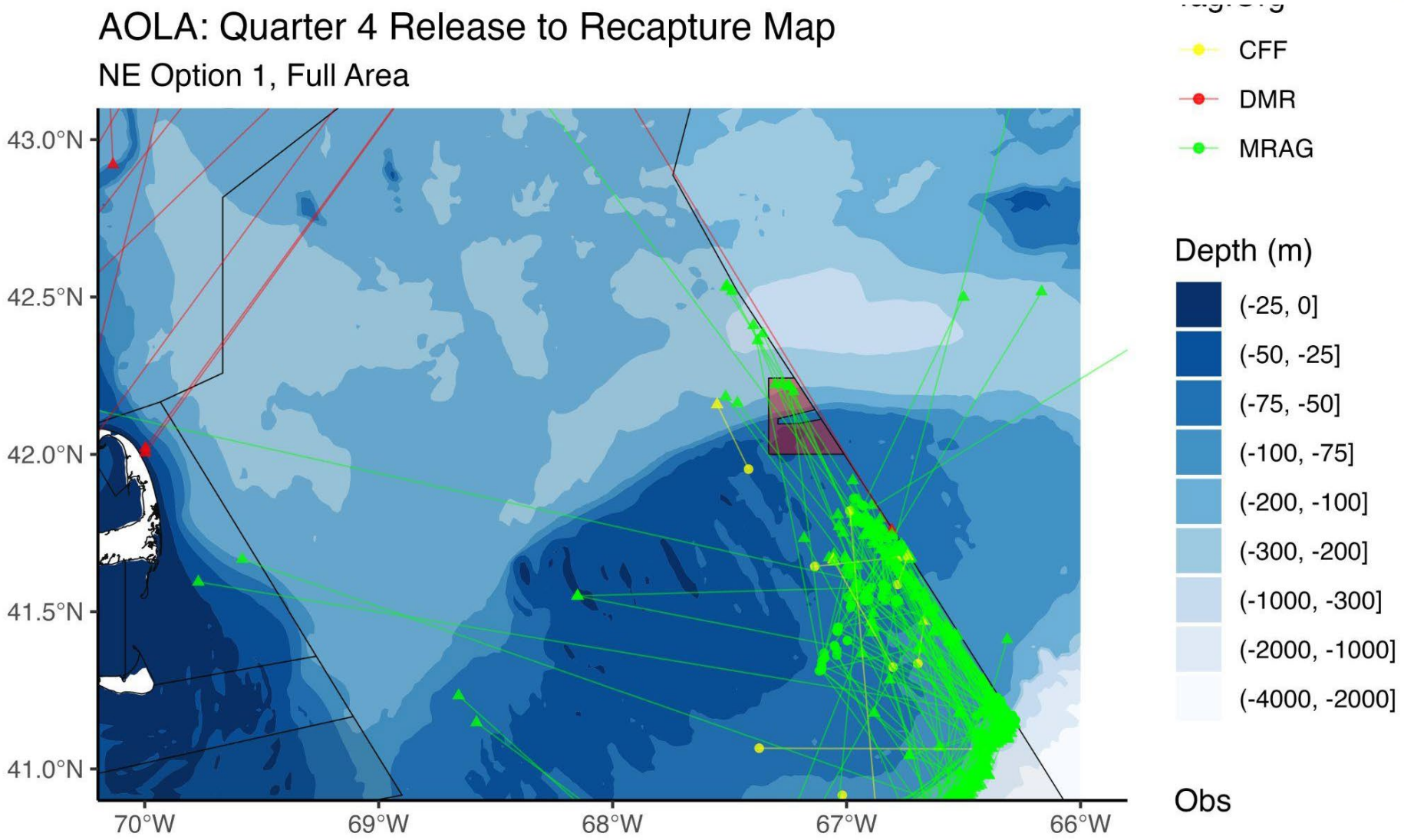
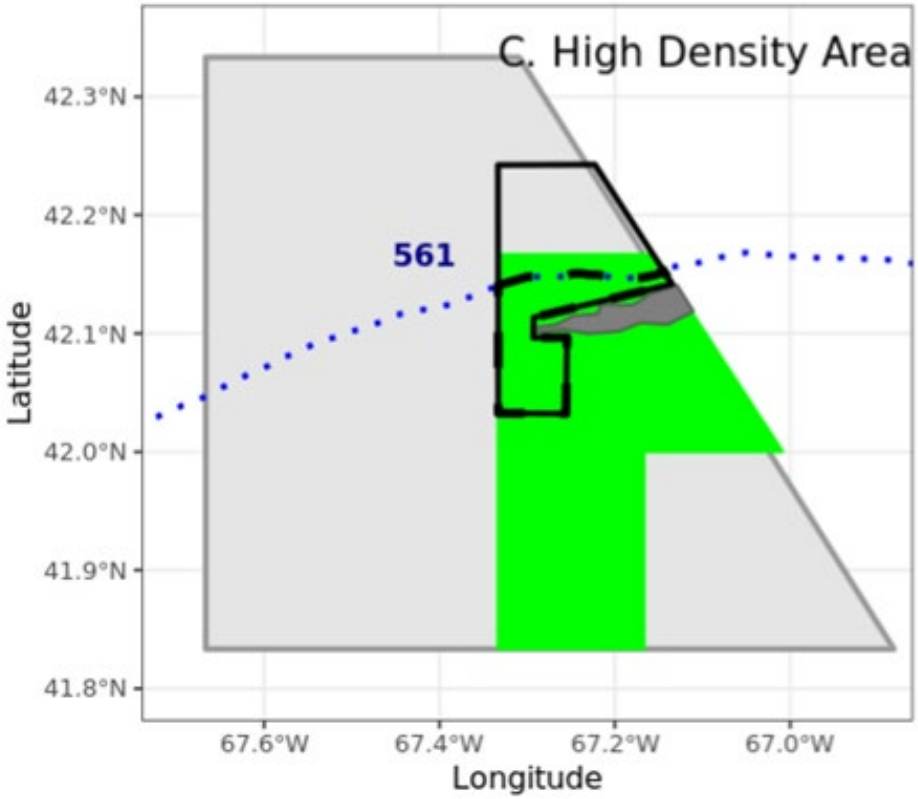


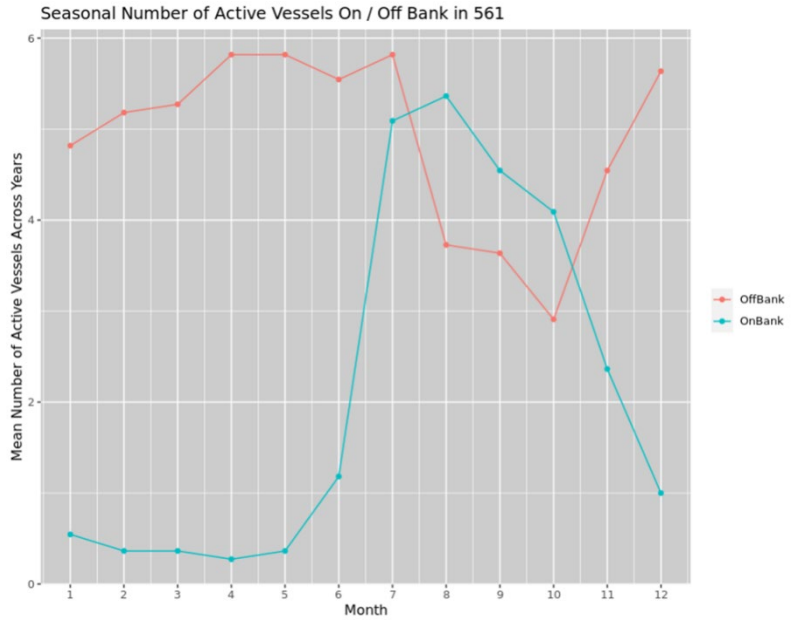
Full proposed scallop access area shown in red

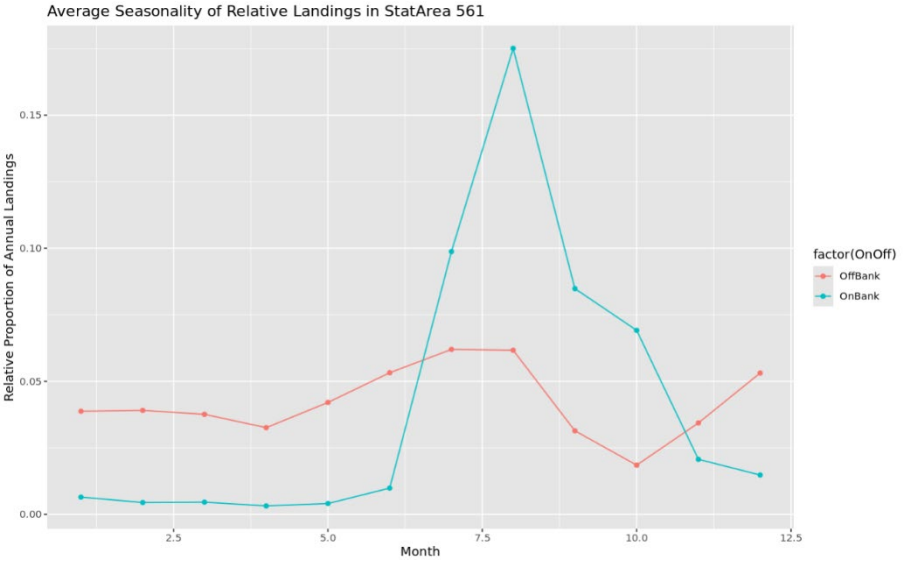
VTR analyses (2013-2023)

- VTRs were analyzed at 2 resolutions within Stat Area 561
  - On vs Off bank, all of Area 561
  - 10-minute square level
- We have more confidence in the full Area resolution than the 10-minute square resolution
  - Fishers typically provide only 1 Lat/Long per VTR
  - Likely not representative of full footprint of effort



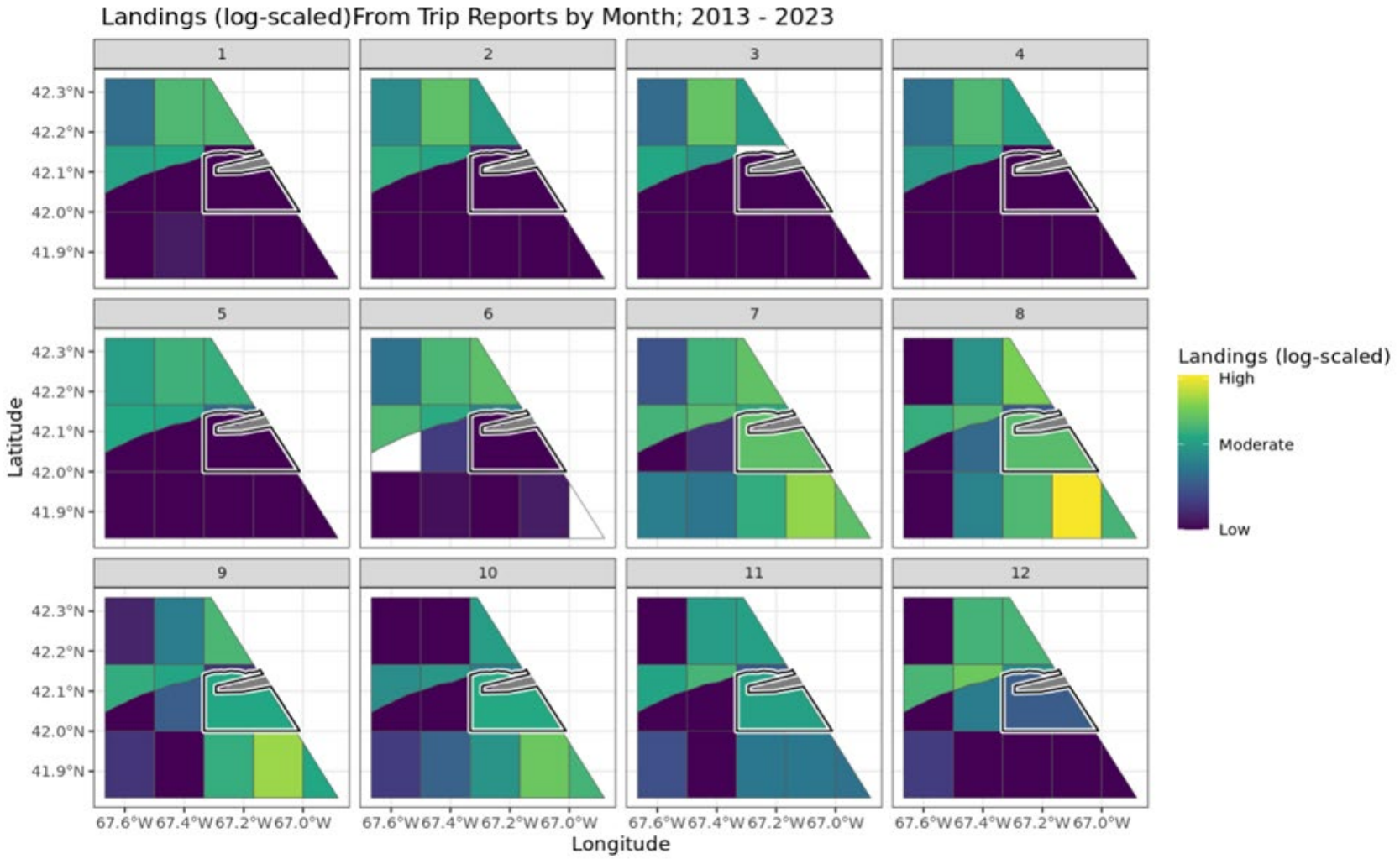
VTR analyses (2013-2023)





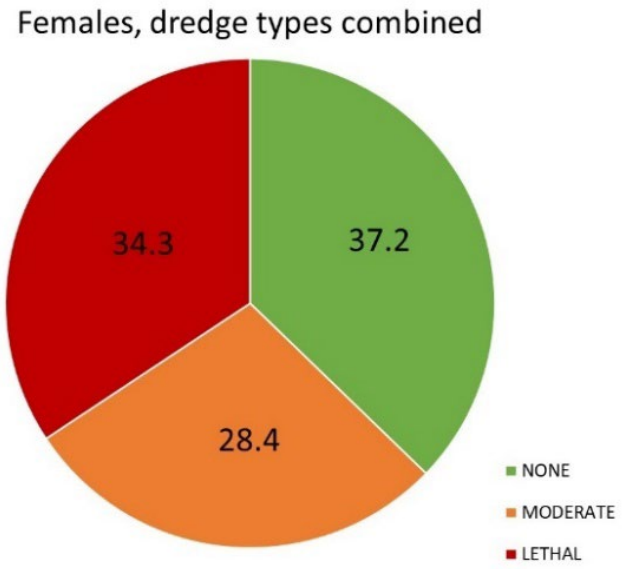
- On Bank vessel activity & landings increase in July
  - # vessels highest July – Oct
  - Landings peak Aug, high July – Oct
- Landings on the Bank account for highest proportion of annual landings in Area 561

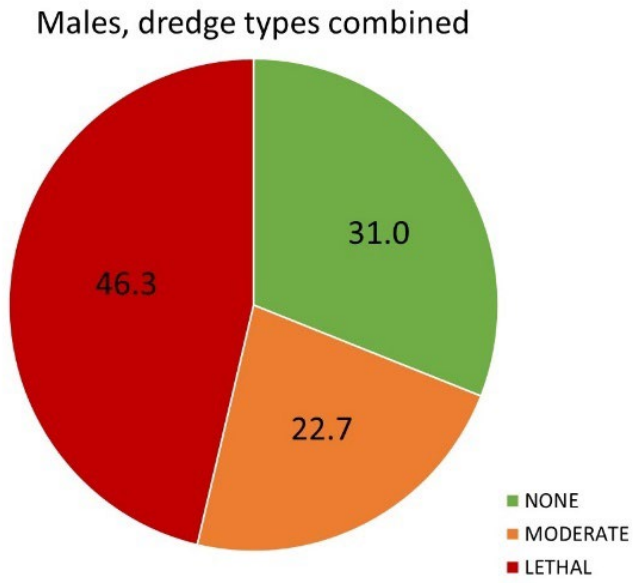
VTR analyses (2013-2023)



- On Bank landings highest in July – Oct
  - Mostly immediately south of the scallop access area under consideration
  - Landings within the access areas considered are small to moderate amount of the monthly landings

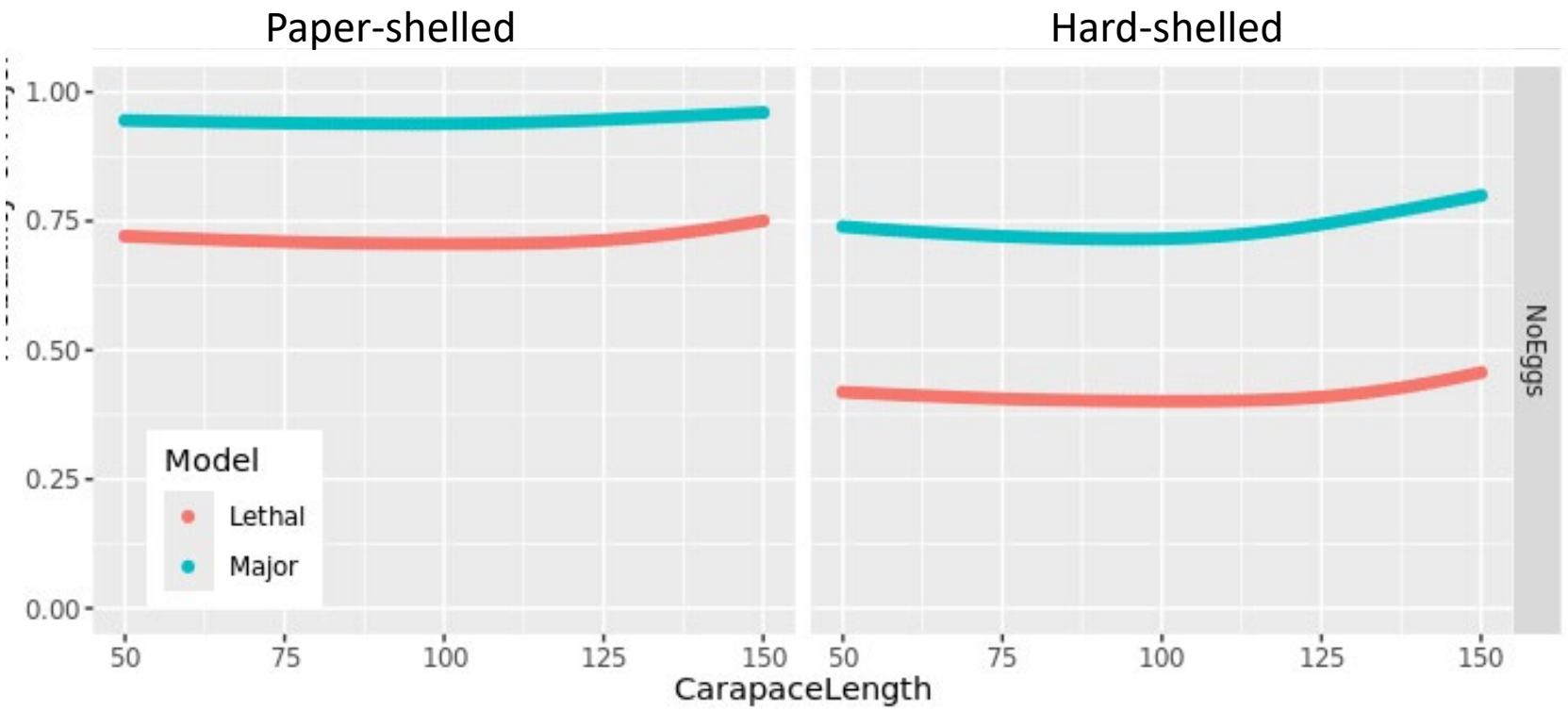
Scallop gear impact on lobsters





- Full CFF dataset (2012-2023)
  - 2,060 females
  - 216 males
- Only 37% females and 31% males were undamaged
- Eggers seemed more robust – 45% undamaged
  - Vs only 27% undamaged for non-ovigerous
  - Likely because eggers are hard-shelled
- Recently molted lobsters were particularly vulnerable
  - 73% soft/paper had lethal damage
  - 33.5% of hard shelled had lethal damage

Scallop gear impact on lobsters



- Model-predicted major damage extremely high
  - Particularly for recently molted lobsters
- Appears to be a size component also
  - Increasing predicted major damage for lobsters > 110 mm

Summary

- Lobsters are present year-round On Bank
  - Relative abundance is much higher late summer to fall
- Large aggregations of ovigerous females on top of the Bank
  - In and immediately south of the Habitat Management Area
- Lobsters are very large, mostly over 100 mm
  - Consistent across all available data sources
- Female-skewed sex ratios
  - Consistent across all available data sources
- Moderate levels of fishing activity July – Nov in the HMA
  - Appears to be at least some overlap with the scallop access areas
  - On Bank fishing contributes a relatively large portion of overall landings from NMFS SA 561
- Implementation of tracker data will *eventually* provide us with higher resolution spatial data, with better confidence, to address questions like this

Questions?

American Lobster
Plan Development Team Report

April 2024

Background

- 2023 NOAA interim final rule to implement measures from Addenda XXI and XXII (2013)
  - Aggregate ownership caps in Lobster Conservation Management Areas (LCMAs) 2 and 3
  - Maximum trap cap reduction in LCMA 3
- Measures intended to scale the Southern New England (SNE) fishery to the diminished size of the stock
- Concerns that delay in implementation allowed for significant changes in the fishery

Background

- Board Task:
  - *Move to have the Plan Development Team review the conservation measures originally set in Addenda XXI and XXII and make recommendations for alternate measures to achieve those reductions inclusive of the Lobster Conservation Management Team (LCMT) recommendations by the ASMFC Spring Meeting.*

PDT Meetings

- PDT met twice in April

- Focus on compiling data to characterize fishery changes since 2013
  - Permits issued by LCMA and maximum allocations
  - Traps fished
  - Development of the Jonah crab fishery
  - Shift of Area 3 vessels from SNE to Gulf of Maine/Georges Bank

Observations

- 42% reduction in LCMA 2 allocation between 2010 and 2023
  - not all jurisdictions had data available for this timeframe
- 38% reduction in LCMA 2 max traps fished between 2013 and 2022
- 28% reduction in LCMA 3 allocation between 2013 and 2023
- 4.3% reduction in LCMA 3 max traps fished between 2013 and 2022, but relatively steady numbers over the time period

Next Steps

- Fill data gaps:
  - All federal LCMA 3 allocation data for 2008 forward
  - Missing LCMA 2 allocation data for 2011-2015
  - LCMA 3 permit/trap data by stock area
- Look into:
  - Reductions in max traps fished
  - Ratios of max traps fished to allocations over time
  - Reductions in number of actively fished traps
  - Directed Jonah crab effort in SNE
- Consider input from LCMTs 2 and 3

Board Guidance

- How should we measure “scaling the SNE fishery to the diminished size of the SNE resource?”
- What specific objectives should possible alternative measures aim to achieve?
  - Elimination of latent effort
  - Long-term reductions in traps fished
  - Prevent increases in effort from current levels
  - Something else?

LOBSTER CONSERVATION MANAGEMENT TEAM 2 MEETING REPORT

Questions?