



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: American Lobster Management Board
FROM: American Lobster Technical Committee
DATE: January 17, 2024
SUBJECT: Board Task on Lobster Information for the Northern Edge of Georges Bank

At the Board's October 2023 meeting, it tasked the Technical Committee (TC) with compiling information on the lobster resource and fishery in and around the Northern Edge of Georges Bank. This task is in response to a potential action at the New England Fishery Management Council (NEFMC) that is considering scallop fishery access on the Northern Edge of Georges Bank (see Figure 1). The Board requested information that could help characterize potential impacts on the lobster population and fishery in the area.

The TC met on December 8th, 2023 to discuss this task and identify available information relevant to the Board's request. Below are data sources that may be valuable in assessing the potential impacts of scallop fishery access in the Northern Edge area; they are organized by the topic areas included in the Board task. The TC did not have adequate time to perform analysis of these data, but where possible, preliminary conclusions are included. In addition, links to previous documents addressing concerns related to opening Closed Area II to mobile gear are included at the end of this memo, as the information contained within remains relevant.

1. Information on the presence and abundance of lobsters, including ovigerous lobsters, in and around the Northern Edge by month/season

- Data on lobster catch rates in scallop dredges by month in the area surrounding the potential scallop fishery access areas are available from the Coonammesset Farm Foundation's (CFF) seasonal bycatch scallop dredge survey. This work documented little seasonal variation in the catch of male lobsters, but a rapid increase in female lobsters in June that remained high until November; these lobsters were skewed to the larger sizes (C. Huntsberger, personal communication).
- The Commercial Fisheries Research Foundation (CFRF) has some fishery-dependent data for the areas north and south of the Northern Edge area (by statistical area) from their Lobster and Jonah Crab Research Fleet. Data include sex and size specific information, but can only be used to characterize the lobster catch, not to estimate relative abundance (the program is not designed to estimate CPUE or abundance). Data from inside the area of interest are not available. Data will need to be summarized to avoid confidentiality issues.
- New Hampshire Fish and Game (NHF&G) and Atlantic Offshore Lobstermen's Association (AOLA) can provide data from commercial logbooks collected in 2015, including spatial data on egg-bearing lobsters.
- Spatially explicit data are available from the Northeast Fisheries Science Center (NEFSC) federal trawl survey are sparse but can inform the distribution of lobsters (including large females) in May and October.

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- Tagging data are available from a recent collaborative study (AOLA, NHF& G and Maine Department of Marine Resources (MEDMR). The TC can assess the utility of these data for better understanding movement patterns on Georges Bank.
- Some federal observer data exists for the northern portion of the proposed area, which can be used to characterize lobster catch (catch rates, size, sex ratios, presence of egg-bearing females). Most of the data from this region were collected between 2013 and 2015 with 2015 being the most recent available data.
- It is possible that limited seasonal mobile gear access may be timed to avoid aggregations of reproductive female lobsters but further analysis on seasonal movement patterns is needed.

2. Lobster fishery effort in and around the Northern Edge by month/season

- Addendum XXIX requires federally-permitted lobster vessels to install tracking devices that capture the vessel's location once per minute. The only state that has implemented vessel trackers currently is Massachusetts. Using the limited data that have been received and processed by ACCSP (only since May 2023) from Massachusetts vessels only, a preliminary analysis was performed to assess fishing activity in the area. The analysis searched for trip records inside the eight 10-minute squares that encompass the Closed Area II Habitat Management Area. The results, summarized below, indicate that fishing activity has been occurring in or near the Closed Area II Habitat Management Area. It should be noted that numbers below represent an absolute minimum of fishing activity and only account for the few vessels that have installed tracking devices that had delivered the data successfully as of January 12, 2024.
 - 5 *identifiable* vessels were operating in the target area from May 2023 – January 12, 2024.
 - 34 trips, that could be matched by ACCSP, were taken in the target area from May 2023- January 12, 2024. More trips may have occurred over the time period.
 - Over 50,000 locations were sent to ACCSP where the vessel speed is calculated to be less than or equal to 5 knots. This is a proxy for when vessels are hauling or setting gear. This number does not equate to any number of traps or hauls.
- Data on the spatial distribution of fishing effort and catch rates in lobster traps are available through federal trip reports with vessels reporting one set of spatial coordinates per trip. Fishing effort is highly seasonal and a portion of the effort is reported inside the bounds of the proposed closure. Details of this data cannot be released at this time due to confidentiality but may be released with permission in the future.
- Seasonal effort location can be examined via Vessel Trip Report (VTR) data and more recent 10-minute square harvester reporting data. This will necessitate a data request to NMFS to include all available data (mostly NH & MA boats). Data display will likely be problematic due to confidentiality issues, but a general summary of patterns in the area should be possible.
 - New Hampshire has VTR data aggregated in over a 10-year period that can inform fishing effort in the Northern Edge area. Some of these data are likely to be confidential.
- Addendum XX to the Lobster FMP prohibits lobster gear in a portion of Closed Area II from November 1 to June 15 annually based on an agreement with the groundfish sector to prevent gear conflicts. This prohibited area is south of the Habitat Management Area where scallop

access is currently being considered. Opening access to mobile gear in the Habitat Management Area may cause additional trap gear displacement.

- CFRF Research Fleet data may provide some insight; however, the data cannot fully characterize effort, only indicate that there is some activity when/where Fleet sampling sessions occur.
- CFF data indicate higher levels of lobster bycatch (mostly female) in the scallop surveys immediately south and west of the area of interest occurred in late summer and early fall (the surveys were excluded from the actual area of interest). Anecdotal reports from former CFF staff (C. Huntsberger, personal communication) observed higher density of lobster gear in the area of interest in late summer.

3. Potential impacts of mobile gear on the lobster population in this area

- Data generated by the CFF scallop surveys in a nearby portion of Closed Area II indicate that lobsters retained in commercial scallop dredges are vulnerable to significant damage, with 34% of 783 observed lobsters experiencing lethal damage (Garcia et al. 2017). An additional 27% experienced moderate (likely sub-lethal) damage. The probability of lobsters experiencing moderate or lethal damage is partially linked to shell hardness, and thus the seasonality of the molt cycling. Therefore, lobster mortality may be partially mediated by seasonal restrictions in dredging activities.
- Addendum XX included a report from the TC on “Assessment of Trawl-Induced Damage to American Lobster” (Appendix A in Addendum XX). A study referenced in the TC report suggested that damage from scallop dredges was minimal, but the TC report highlighted that the lobster sampled in the study cited were on average much smaller than lobster in the population around Georges Bank. The TC noted that lobster size can affect damage rates as well as retention rates in the gear so these results may not apply to the area being considered.
- Analysis of environmental impacts of spatial management alternatives on the lobster population was included in the NEFMC Omnibus Essential Fish Habitat Amendment 2 approved in 2018.

4. Information on the habitat type and depth preference of lobsters which could inform our understanding of lobsters on the Northern Edge if there are limitations in the data

- Several studies have shown that adult lobsters tend to exhibit seasonal movement patterns, migrating to deeper water in the colder months and to shoal waters in the warmer months (Cooper and Uzmann 1971; Krouse 1973; Campbell and Stasko 1986; Campbell 1986). These directed movements may increase the rate of egg development, by increasing the degree-days they accumulate, and certain areas appear to be more attractive to reproductive females than others. Aggregations of egg-bearing lobsters have been documented on GBK (Campbell and Pezzack 1986; Henninger and Carloni 2016) as well as other offshore shoals in close proximity to deeper basins (Campbell 1990; Carloni and Watson 2018).
- The TC can examine existing Federal observer, CFRF Research Fleet, and NEFSC trawl survey data to evaluate whether the datasets could be used to characterize habitat associated with lobster catch (e.g., depth) in nearby areas accessible to these programs.
- The TC can request data from CFF and CFRF to further examine depth related patterns in size frequency, sex ratio, and reproductive status of the lobster catch.

5. Whether current reporting by Area 3 vessels is representative, or an underestimate, of lobster effort in the Northern Edge area and how future requirements will impact the data availability

- VTR data can be analyzed to gain some understanding of the seasonality of the lobster fishery effort in the Northern Edge area. The spatial resolution of the VTR data is limited because vessels report only a single latitude/longitude location instead of the coordinates for each trawl. However, virtually all vessels fishing this region since 2013 have been submitting federal VTRs, so estimates of total effort should be representative.
- Federal eVTRs will become required for all Federal American lobster permit holders beginning on April 1, 2024 which will improve the coverage of effort reporting for the Area 3 fleet and may improve data quality.
- Full implementation of vessel trackers on federally-permitted lobster vessels will greatly enhance our ability to address several of the questions raised. Note that because the area of interest is a small area, it is likely that effort data will be confidential at certain scales.

The TC will continue to evaluate data relative to this task as it becomes available, and can provide the Board with a more detailed report at the May meeting. In the meantime, the TC encourages the Board and NEFMC to revisit past documents relevant to mobile gear access to portions of Closed Area II which are linked below, and continue to exchange information with partners to avoid negative impacts to the lobster resource relative to the development of the NEFMC action. If NEFMC moves forward with allowing seasonal access to mobile gear in the Northern Edge area, the TC recommends it also implement observer requirements to document and characterize lobster bycatch. This will allow improved identification and evaluation of any potential lobster-related bycatch concerns within the currently closed area.

Links to Relevant Documents

Lobster Addendum XX (2013):

https://www.asmf.org/uploads/file/amLobsterAddendumXX_May2013.pdf

Technical Committee Memo (2015):

https://www.asmf.org/uploads/file/659d587dTC_ReportOnClosedAreaII_Reopening_Jan2015.pdf

NEFMC Omnibus Essential Fish Habitat Amendment 2 (Updated 2016):

https://d23h0vhs26o6d.cloudfront.net/OA2-FEIS_Vol_5_FINAL_161208.pdf

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Garcia, L, L Siemann, C. Huntsberger, S. Inglis, D. Rudders, R. Smolowitz. 2017. Optimizing the Georges Bank Scallop Fishery by Maximizing Meat Yield and Minimizing Bycatch. Final report for the 2015 Sea Scallop Research Set aside. (NA15NMF4540059)

Henninger H.P., Carloni J.T. 2016. Improving American lobster biological & catch/effort data for Georges bank, and characterizing American lobster seasonal eggger aggregation in closed area II (Statistical areas 561 & 562). Final report.

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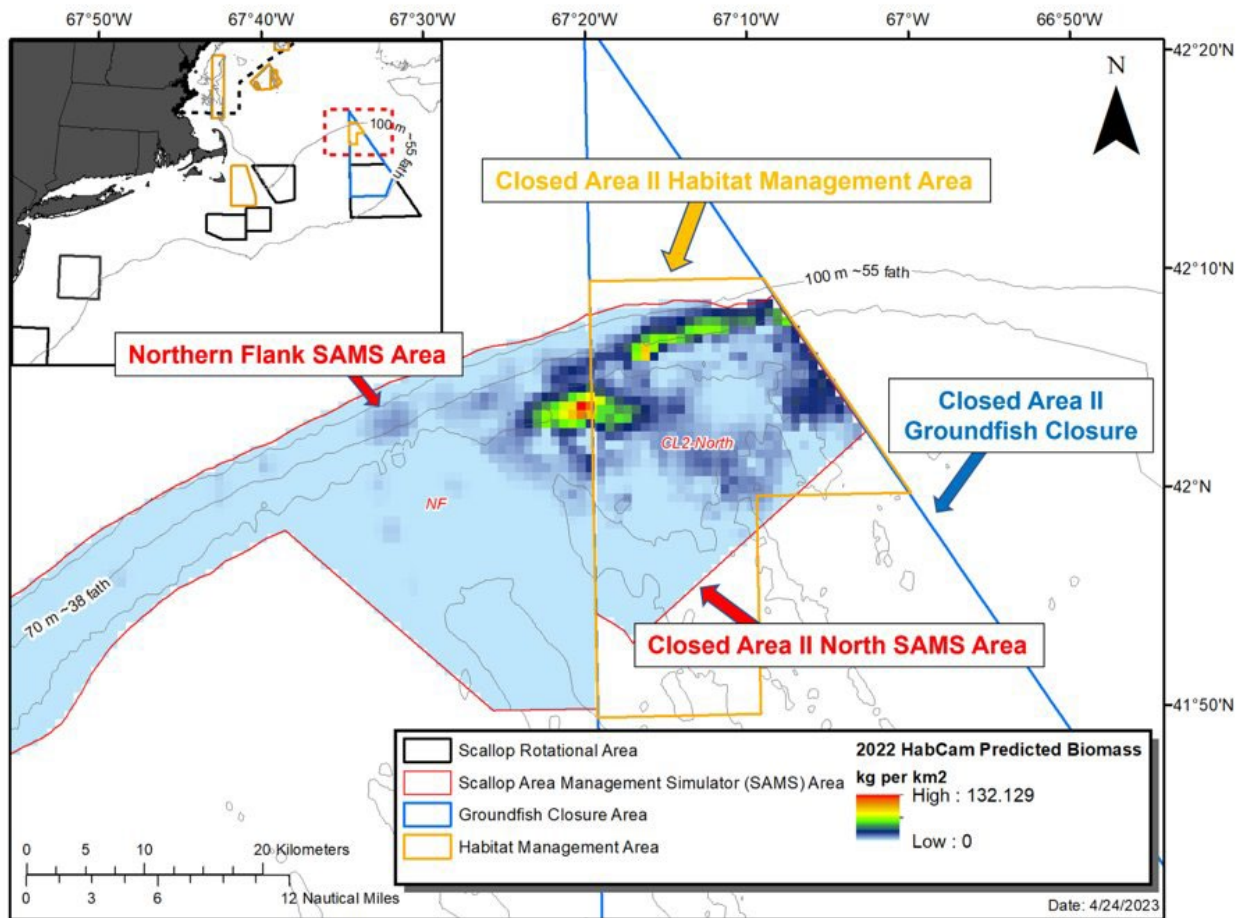


Figure 1. Closed Area II Habitat Management Area and surroundings. The Northern Edge is roughly defined as the area encompassed within the Closed Area II Habitat Management Area (HMA) and the adjacent portion of the Northern Flank of Georges Bank. Image source: New England Fishery Management Council (<https://www.nefmc.org/library/northern-edge>)