October 4, 2023

***Via Electronic Mail***

Mr. Peter Hughes, Chair
Surfclam and Ocean Quahog Committee
c/o Mid-Atlantic Fisheries Management Council
800 North State Street, Suite 201
Dover, DE 19901

**RE: Support for Exempted Fishing Permit for Habitat Research in the Great South Channel Habitat Management Area**

Dear Mr. Hughes:

I am writing as a participant in the Atlantic Surfclam and Ocean Quahog (SCOQ) fishery and member of the SCOQ Advisory Panel (AP). As you are well aware, for many years, up to and including its most recent meeting, the SCOQ AP has raised concerns about the increasing loss of access to fishing grounds generally and to those in the Great South Channel Habitat Management Area (GSC HMA) in particular. My business and others located in the New England region have been particularly harmed by this closure. As this loss of access was the result of action by the New England Fisheries Management Council, it has been this Council's position that it has no power to facilitate a process to restore access and achieve its chief duty of achieving optimum yield in this fishery under its jurisdiction.

While we do not necessarily agree with this position, the Mid-Atlantic Council can help the participants in this fishery by supporting cooperative research projects that, hopefully, will convince the New England Council that the surfclam fishery's impacts on essential fish habitat with the GSC HMA are not adverse within the meaning of the Magnuson-Stevens Act. The Nantucket Sound Seafood Inc. and Stellwagen Bank Fisheries Corp. have partnered with the Coonamessett Farm Foundation Inc. (CFF) to undertake an industry-funded project to map areas of the historic fishing area known as Davis Bank East and collect other information deemed necessary by the New England Council in order to make this showing.

As I informed the SCOQ Committee and AP at its last meeting, the National Marine Fisheries Service's Greater Atlantic Regional Fisheries Office (GARFO) has rejected at least three previous applications for exempted fishing permits (EFP) submitted by the industry and CFF. (attached.) On September 26, 2023, we submitted another application that was directly responsive to GARFO's concerns when it rejected the prior proposal, a copy of which is attached. I am simply asking the Council to provide a letter in support of this research project, and to encourage GARFO to help facilitate cooperative research projects it feels necessary to help the New England surfclammers regain reasonable access to historic fishing grounds in the region. I am happy to answer any questions about this project.

Sincerely,
Monte Rome

ENCLOSURES

**Conducting scientific research projects that support sustainable fisheries, aquaculture, and agriculture**

September 26, 2023

Mr. Michael Pentony, Regional Administrator
NOAA Fisheries Service
Greater Atlantic Regional Fisheries Office
Regional Directorate Office
55 Great Republic Drive
Gloucester, MA 01930

Dear Mr. Pentony,

Coonamessett Farm Foundation Inc., Nantucket Sound Seafood Inc., and Stellwagen Bank Fisheries Corp. request an Exempted Fishing Permit (EFP) to conduct an industry-funded benthic habitat survey within the Davis Bank East research area of the Great South Channel Habitat Management Area (HMA). With consideration of the reviewer comments from prior EFP applications, we propose to use multibeam sonar and drop cameras to map seafloor features and document benthic community assemblages in one 30 $km^2$ area and designate a separate 30 $km^2$ area for compensation trips in which only Atlantic surfclam (*Spisula solidissima*) catch and fishery bycatch data will be recorded. This will provide the New England Fishery Management Council (Council) with information about the habitats present within the Davis Bank East area of the HMA; including surfclam distribution and catch-per-unit-effort.

The proposed work builds upon an 18-month study conducted under EFP #19066, and two subsequent industry-funded multibeam surveys in the Rose and Crown, intended to coordinate with members of the surfclam fishing industry and the Council to develop an approach to study the habitats and fisheries interactions of the HMA. In its letter of August 14, 2023, GARFO found that the research objectives outlined in the CFF's April 7, 2023 EFP application "would directly address research priorities set by the Council." The current proposal employs the same multibeam mapping strategy to assess a portion of the Davis Bank East area and assess seasonal trends, if any. The current proposal differs from the April application in that this application proposes to use a drop camera array rather than the towed optical array and the baited remote underwater video (BRUV) system for purposes of characterizing the benthic communities associated with various habitats in the Davis Bank East. This change was done to simplify and streamline our data sources and to cover a larger area, as camera drops can be accomplished more efficiently.

CFF staff feel this EFP application is consistent with Council's HMA research program. The Rose and Crown and Davis Bank East areas were "prioritized for research" and the research objectives were established to "allow the Council to prioritize sections of the HMA for mobile bottom-tending gear closure vs. dredge exemptions, contingent upon assessments of habitat vulnerability and function vs. utility as fishing grounds" (NEFMC 2019). The proposed mapping

will help identify hard bottom habitats and, perhaps more importantly, areas of stability versus unstable areas where presumably the impacts of dredging are more likely to be temporary. Image data will likewise assist the Council in achieving its goals by identifying epifauna and benthos potentially vulnerable to fishery impacts, as well as gravel and cobble habitats lacking attached epibionts upon which dredge impacts are expected to be minimal.

Compensation fishing to fund this research is both a necessity anticipated by the Council and also a necessary element of the research priorities in that it helps identify areas containing substantial concentrations of surfclams, and thus candidate areas for future fishery access areas. In the former regard, "Council's intent was that both fishermen and scientists will work toward obtaining better information to define where Atlantic surfclams and mussels can be harvested without impacting sensitive fish habitat in those areas" (NEFMC 2019). To this end, the HMA Research Planning Document, noted that the Council, in the 2018 Surfclam Framework specified "that clam and mussel dredges could be used in these areas under an approved EFP" and that such use was "consistent with underlying Council policy established via Omnibus Habitat Amendment 2 (OHA2) recommending that habitat-related research using fishing gear be allowed within HMAs." The document concludes by noting that "this policy was adopted through OHA2 in response to a general concern that it has been difficult to obtain permits to conduct research inside HMAs, even if that research was habitat-focused," and the policy was developed to help facilitate approval of such research (NEFMC 2019).

The current proposal is responsive to both Council policy and GARFO's concerns by limiting compensation to a small area within Davis Bank East. Steps have been taken to ensure that such compensation fishing does not compromise the objectives of the HMA. CFF staff conferred with members of the surfclam industry with long experience fishing within Davis Bank East. The area selected contains fishing grounds that have historically been highly productive. As surfclams inhabit sandy substrates, this first selection criteria assures that the substrate is at least underlain with sand. CFF researchers reviewed data from SMAST and benthic sled data to confirm the areas identified by fishermen. Finally, the research design incorporates an initial single-beam sonar survey of the area to confirm that the areas to be accessed for compensation fishing contain softer substrates.

Thank you,

Natalie Jennings
Research Biologist
Coonamessett Farm Foundation, Inc.
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East Falmouth, MA 02536
njennings@cfarm.org

**Proposed Application Period**
November 1, 2023 – September 30, 2024

**Principal Investigator Point of Contact**
Natalie Jennings
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Co-Principal Investigators:
Luisa Garcia, Farrell Davis, and Ryan Munnelly

**Objectives**

The primary goal of this fisheries-independent study is to identify habitats and species associations throughout the Great South Channel Habitat Management Area (HMA) and gauge their vulnerability to fishing in order to fill an urgent data gap and inform management decisions. The specific objectives of this study are:

1) Map benthic features within the Davis Bank Easy fishery exemption area of the HMA
2) Assess seasonal trends within the Davis Bank East fishery exemption area using multibeam sonar survey ground-truthed with drop camera deployments
3) Survey the benthic community associated with various habitats in the Davis Bank East exemption area using drop camera deployments

**Exemptions Requested**

Coonamessett Farm Foundation Inc. (CFF) requests the following exemptions:

i. Temporary possession of fish with exemption from possession limits and minimum size requirements in 50 CFR 648 subsections B and D through O.
ii. Select samples will be returned to land for additional sampling following our research plan.
iii. An exemption from 50 CFR 648.370(h), which defines this HMA.

**Table 1. Participating Vessel Information**

| Vessel Name | Permit # | Hull# | Operator | Owner | Owner Phone |
|---|---|---|---|---|---|
| F/V *Tom Slaughter* | 320695 | 603558 | Matt Gregory | Monte Rome | 978-815-2361 |
| F/V *Tom Slaughter III* | 310993 | 686249 | Ray Hartley | Monte Rome | 978-815-2361 |
| F/V *Seafox* | 321114 | 1107736 | Steve Wood | Allen Rencurrel | 508-951-3137 |

## Methods

### Research Trips

Using single-beam data acquired from the F/V *Tom Slaughter* over several years before the HMA closure (**Figure 1**), a 60 km$^2$ portion of from Davis Bank East was selected for a multibeam and drop camera survey and compensation fishing (**Figure 1**). This area is representative of the variation in benthic features of Davis Bank East, such as flat seafloor, sand waves, and abrupt depth transitions to deep holes or shallow shoals with a depth range of 10 to 30 meters. A multibeam survey of the entire area will proceed research and compensation fishing trips begin. Half of the 60 km$^2$ area will be designated for compensation fishing following the initial survey.

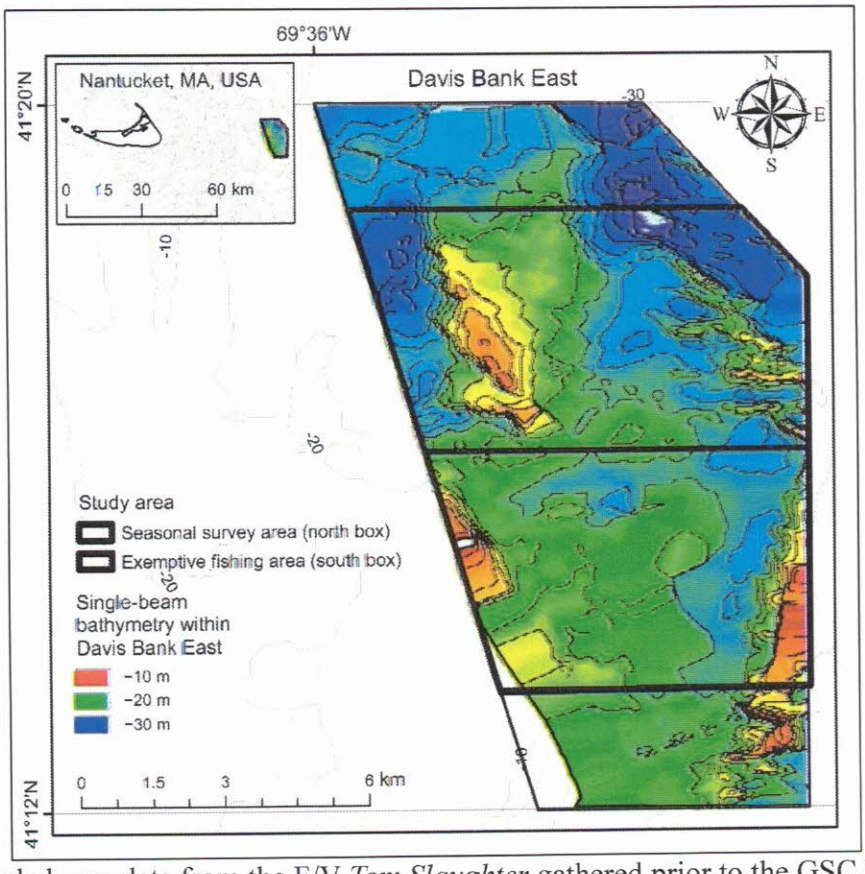


**Figure 1**. Single beam data from the F/V *Tom Slaughter* gathered prior to the GSC HMA closure. Area in Davis Bank East identified for multibeam survey with the F/V *Tom Slaughter*. The 60 km$^2$ total area will be surveyed once with multibeam, then split in half for continued multibeam and drop camera survey (northern area) and compensation fishing (southern area).

One four-day multibeam research trip will be conducted per season (16 total days) in the northern half of the survey area (**Figure 1**) on the F/V *Tom Slaughter*. One CFF scientist will accompany the captain and mate. The survey will be conducted with a 25% overlap between adjacent multibeam lines. Sonar imagery will be processed for bathymetry and backscatter using SonarWiz 7.09.01 (Chesapeake Technology 2023). Processed imagery will be exported as GeoTiff files compatible with geographic information systems.

In addition, a two-day research trip will occur seasonally (8 total days). A drop camera array will be used to a ground-truth the sonar imagery and provide benthic community biological information. The captain and two crew members of the F/V *Seafox* will be accompanied by two CFF scientists to deploy and recover the camera array and manage the data. This trip will be concurrent with the sonar survey. After the initial multibeam survey, sonar imagery will be processed and stratified drop-camera stations will be selected by depth and substrate composition inferred from backscatter. Four drops per hour will be accomplished for 12 hours for two days, with a goal of approximately 96 stations sampled per trip. Time of day, sea state and weather conditions, GPS coordinates, depth and time on bottom will be recorded at each drop camera station. The drop camera is a 4-foot-tall, four-sided pyramid outfitted with lights and a high-resolution Sony camera with a one-meter squared field of view.

Image annotation will include substrate particle sizes according to the Coastal and Marine Ecological Classification Standard (CMECS) for boulders, cobbles, pebbles, sand, or biogenic-origin shells (FGDC 2012). In cases where it is difficult to discern whether small particles are gravel or shell, gravel will be assigned as a default based on guidance in the CMECS documentation. Each image will be analyzed for percent cover of defined substrate characteristics. In addition, other biological elements will be recorded including mobile megafauna (crabs, hermit crabs, benthic or demersal fish), algae, encrusting organisms (sponges or corals), sand dollars, mussel beds, eelgrass, and bushy plant-like organisms that are grouped together (hydrozoans, bryozoans, branching algae); and any organisms will be annotated down to the species level. Still images from the drop cameras will be annotated with photoQuad, an open-source custom software for advanced image processing of 2D photographic quadrat samples, dedicated to ecological applications. The system was designed to integrate all major 2D base analyses used in marine biology and ecology for studying biodiversity of sessile communities through photographic sampling (Trygonis and Sini 2012).

Resulting sediment composition data derived from the imagery will be imported into ArcGIS, where the datasets will be merged. Correlations between backscatter values, sediment composition, and other seafloor features, such as boulders and mussel beds, will be determined to aid in interpretation of the backscatter and extrapolate benthic features identified in still images within the wider acoustic swath (Kostylev 2001). Raster subtraction will be used to compare seasonal changes of the seafloor within the survey area. Polygons will be drawn around areas where substantial changes in depth or sediment hardness are detected. This will be used to determine the magnitude of change that occurs seasonally due to shifting sediments coinciding with currents and storms, and will be quantified in terms of depth, backscatter, and sediment and epibiota composition metrics derived from the still imagery.

**Compensation Fishing Trips**

Each vessel will be allowed one compensation fishing trip per week in the southern half (**Figure 1**) of the area set aside for 52 weeks, or 52 trips per the one-year period (104 trips total). The southern area was determined to have abundant surfclams (personal communication with surfclam vessel captains). Both vessels will use 48-inch-wide hydraulic surfclam dredges that will be towed between 2 to 3 knots for 10 minutes per tow with a trip limit of 14 cages. Tow number per trip under the last EFP on the F/V *Seafox* per trip ranged from 11 to 51, with a mean of 31 tows, a mean tow length of 0.77 km, and 13 cage target. Total tows numbered 3,236 and

area swept was calculated to be 3.12 $km^2$. Similar values are expected under the proposed fishing plan. Atlantic surfclam catch and bycatch will be documented during each trip. One CFF scientist will accompany each fishing trip and will take a one-bushel subsample of the tow pile; sorting, counting, and weighing all contents to the nearest 0.1 kilogram. This will include Atlantic surfclams, other invertebrates, fishes, shell hash, and rock cobbles, as described in Jennings *et al.* (2022). Start and end times, GPS coordinates, depth, vessel speed and a surfclam bushel count will be recorded per tow. An agreed upon 15% from each trip surfclam landings will be set aside to pay the vessels' 20 research days and assist in covering analysis costs. The F/V *Tom Slaughter* will have the multibeam system running while operating in the compensation fishing area and this data will be collected by the CFF scientist onboard every trip.

A 13-cage profit per trip (max that the F/V *Seafox* can land) was used as a baseline to calculate the rates to cover costs from research trips and the subsequent analysis (**Table 1**). The $5,000 to be paid back to the vessels for research trips will cover the average of 400 gallons of diesel per day ($4.15 per gallon currently), maintenance and vessel supplies and covering crew costs for the four-day multibeam and two-day camera research trips. CFF staff costs for days-at-sea (DAS) are also included.

**Table 1.** Breakdown of how money will be allocated.

| | |
|---|---|
| 13 cage profit | $12,480 |
| 15% set aside to CFF | $1,872.00 |
| 104 trips | $194,688.00 |
| 24 Research DAS ($5,000 per day back to vessels) | -$120,000 |
| Remaining funds | $74,688 |
| CFF Staff DAS cost | -$34,200 |
| **TOTAL remaining funds for data analysis** | **$40,488** |

**Potential Follow-up Survey**

If there are funds remaining by the end of the research surveys, a multibeam survey of the entire 60 $km^2$ area will be done to collect sonar imagery of the areas fished and unfished.

**Literature Cited**

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Kostylev, V.E., Todd, B.J., Fader, G.B.J, Courtnry, R.C., Cameron, G.D.M., and Pickrill, R.A. 2001. Benthic habitat mapping on the Scotian Shelf based on multibeam bathymetry, surficial geology and sea floor photographs. Marine Ecology Progress Series. 219: 121-137.

NEFMC. 2019. Research Priorities for the Great South Channel Habitat Management Area. Habitat Plan Development Team working draft document. February 2019.

Trygonis, V. and M. Sini. 2012. PhotoQuad: A dedicated seabed image processing software, and a comparative error analysis of four photoquadrat methods. Journal of Experimental Marine Biology and Ecology. 424–425, 99–108.