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New England Fishery Management Council
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John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: May 16, 2018

TO: Tom Nies, Executive Director

FROM: Chris Kellogg, Deputy Executive Director

SUBJECT: Scientific and Statistical Committee (SSC) Sub-panel review of information in Science Center for Marine Fisheries surf clam dredge survey reports for identifying areas containing surf clams and complex habitat in the Great South Channel Habitat Management Area

A sub-panel of the Council's Scientific and Statistical Committee (SSC) held a webinar on March 30, 2018 at 1:30 p.m. to review the following two reports from surf clam dredge surveys:

- Powell, Eric N., Kelsey Kuykendall, and Paula Moreno. Analysis of ancillary survey data and surfclam fishery tow data for the Georges Shoals Habitat Management Area on Georges Bank and the Great South Channel Habitat Management Area. Science Center for Marine Fisheries, August 2016. 29p.
- Powell, Eric N., Roger Mann, Kelsey M. Kuykendall, M. Chase Long, and Jeremy Timbs. The "East of Nantucket" Survey. Science Center for Marine Fisheries, February 2018. 33p.

The review panel members were Dr. Collie, Dr. Chen and Dr. Grabowski. Also participating on the call were Dr. Powell, Ms. Bachman and Mr. Kellogg. The terms of reference for the review and a summary of the panels conclusions with respect to each term of reference is provided below.

1. *Comment on the appropriateness of the survey gear (hydraulic dredge) for:*

   a. *Characterization of habitat complexity and distribution with within the survey areas*

      The Habitat Plan Development Team (PDT) has delineated these habitat areas with the Swept Area Seabed Impact (SASI) Model, which incorporated image-based data from the SMAST survey. This is a heterogenous area comprising complex habitat, boulders, mussel beds and mobile sand. The hydraulic dredge that was used in the two surveys, by itself, is insufficient for characterizing habitat complexity. A complete characterization requires additional sampling, e.g. multibeam sonar data and sea-floor images.

   b. *Data collection and characterization of surfclam distribution and abundance within the survey areas*

      The hydraulic dredge is well-suited and appropriate for characterizing surfclam distribution and abundance. The 2017 survey was well designed and conducted.

2. *Identify any sources of uncertainty and important considerations in using this information.*

   The habitat information from the earlier surfclam surveys is qualitative. Data-collection methods were inconsistent among cruises on which collection of habitat-related data was incidental to data on the target clam species. As a result, some data have had to be binned in categories and standardized among cruises. Data ceased to be collected in 2011 because of lack of scientific berthing.

3. *Are there better or more informative ways to compile and present the spatial data provided?*

   Treatment of the survey data as point data is appropriate. Given the high degree of spatial heterogeneity, interpolation between the point samples would not be justified.

4. *Are the data collected and the author's conclusions from the surveys informative for use to identify areas where clam dredges could operate without impacting complex habitat within the Great South Channel Habitat Management Area? If yes, which data and which conclusions?*

   The conclusions of these studies are not spatially explicit apart from broad distinctions between shallow and deep areas. Within the shallower areas there are two habitat types: surfclams with hydroids, and mussel (*Mytilus edulis)* beds. Given the heterogeneity of this habitat, it is not possible to identify specific areas where clam dredges could operate without impacting complex habitat. A finer-scale survey would be required to determine whether clam dredges could operate without impacting complex habitat within this area. Because the hydraulic dredge that was used in the two surveys, by itself, is insufficient for characterizing habitat complexity and because treatment of the survey data as point data is appropriate given the high degree of spatial heterogeneity, interpolation between the point samples would not be justified. Therefore, the surveys are not informative for identifying areas where clam dredges could operate without impacting complex habitat.