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CORRESPONDENCE

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole Laboratory
166 Water Street
Woods Hole, MA 02543

16 September 2019

Mr. Thomas Nies
New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950
tnies@nefmc.org

Dear Mr. Nies,

At the last New England Fishery Management Council meeting the Northeast Fisheries Science Center (NEFSC) stated that we would review the Summary Report of the Review of Sea Scallop Survey Methodologies and Their Integration for Stock Assessment and Fishery Management. A Table is included here with the recommendations from the review and the actions taken in response.

This is a NEFSC perspective and we want the Council to be aware that partners in the Scallop Research Set Aside Program have also been responsive to the recommendations. Thus, the attached table is not comprehensive for the region and represents actions taken by the NEFSC or that the NEFSC has been involved in. We would be happy to provide additional detail on any of the actions taken or underway by NEFSC.

From our perspective, there are three big takeaways.

1) Most of the review recommendations have been addressed. Some research is ongoing, but in general the recommendations were used to improve scallop surveys. The one exception is the recommendation to *"devise an optimal and integrated statistical survey design"*.

2) The Research Set Aside program for Scallops has been critical in addressing elements of the survey program review. This reiterates the RSA Review conclusion that *"Research Set Aside programs [are] performing well, and generally regarded as highly successful, especially the Scallop RSA program."*

3) Both the Survey Program Review and the RSA Program Review called for development of an integrated scallop survey design.

Thus, as we address the RSA Program review, we should also work to address this remaining recommendation from the Scallop Survey Review: *"devise an optimal and integrated statistical survey design"*.

The NEFSC is interested and willing to work with the NEFMC on developing an integrated statistical survey design.

Sincerely,

Jonathan Hare
Science and Research Director

Summary recommendations taken from both summary report and overview presentation

Link to Summery Report

Recommendation Number	Location	section	sub-topic	Recommendation	Text	Responses	References		
1	Page 7, Paragraph 2	2	measurement error	Continued development of HABCAM 4.	The review panel considers that the HABCAM 4 imaging processing procedures are more advanced and encourages further research in this area.	NEFSC is continuing to develop its image calibration and processing procedures (see recommendation 2).			
2	Page 7, Paragraph 6	3	Bio Sampling aspects	Further develop automatic image processing.	The review panel encourages further development of automatic image processing capabilities. The review panel concludes that HabCam V4 with side scan sonar system is the only sampling procedure reviewed that could be used to detect the physical impacts of fishing gear and use this to study the effects of fishing at a very fine scale.	NEFSC is actively working on this as part of the NOAA-wide AIASI/VIAME initiative (Chang et al. 2016). Two RSA projects developing automated image analysis were funded as part of the 2019 Scallop RSA awards. A scallop RSA funded study evaluating the effects of dredging on scallop incidental mortality using an AUV was also recently published (Ferraro et al. 2017).	Chang et al 2016	Richards et al. 2019	Ferraro et al. 2017
3	Page 7, Paragraph 8	3	Bio Sampling aspects	Further investigation to reduce the "statistical noise" of optical surveys	While the optical surveys have higher delectability of scallops < 20 mm than the dredge surveys, and therefore provide better information on recruitment, they provide less accurate information on the exploitable (i.e. 40mm+) size composition because the optical sampling and analytical procedures introduce statistical noise.	This is taken into account by modeling the measurement error in the CASA stock assessment model.			
4	Page 7, Paragraph 9	3	Bio Sampling aspects	Develop a statistical design for subsampling meat weights	Subsampling for meat weights is currently done by selecting 5 meats per NEFSC dredge survey station. A statistical sampling design should be developed and applied.	At random dredge stations, the NEFSC now takes meat weights from 0-6 scallops, depending on the number of scallops caught at the station. For example, if catch is 10-25 scallops, 2 meat weights are taken; if catch is 200+ scallops, 6 meat weights are taken. By including "station" as a random effect, we believe our procedures are statistically sound.			
5	Page 8, Paragraph 1	3	Bio Sampling aspects	Recording more of available data.	The review panel recommends that the total number of baskets and fraction sampled be recorded on dredge surveys, and that the between basket variation in scallop counts (for subsamples) be recorded. This could provide useful information on this source of variation.	With the implementation of FSCS 2.0, the NEFSC records how many baskets were caught, how many baskets were subsampled, and how many scallops (with lengths) were in each subsampled basket.			
6	Page 8, Paragraph 7	4	Surv data to estimate abundance	Further investigation to improve procedures for simulating methodology (model or design based)	The review panel concludes that the geostatistical modelling approach seems reasonable but that biomass variance estimates are likely underestimated because degrees of freedom were not adjusted for and model uncertainty is an unaccounted source of variation in the biomass and abundance estimates. The review panel encourages further research to improve these procedures.	A study evaluating a number of different geostatstical methods has been completed (Chang et al. 2017). We are currently working with partners developing Baysian geostatstical methods which may give more fair variance estimates.	Chang et al. 2017		

7	Page 10, Paragraph 3	5	evaluate methods for using surveys outside of Stock Assessment and	Utilize complimentary survey methods.	Complementary surveys methods provide enhanced capabilities to use data for management purposes, particularly, since no survey method has provided complete coverage of the entire stock area on a regular basis.	Complementary survey methods are supported through the NEFSC and RSA Program, and data from these surveys are combined in the stock assessment.			
8	Page 9, Paragraph 8	6	potential contribution of each survey	Develop more broad scale coverage.	Broad scale coverage is particularly useful when contributing information to ecosystem studies including changes to community composition over time. The review panel encourages further research in these areas.	There is currently an ongoing collaboration between NEFSC and Rutgers examining the effects of changes in bottom temperatures on sea scallops using the long dredge survey time series. Other recently published works of ecosystem effects using scallop survey data are Kaplan et al. (2018) and Shank et al. (2012).	Shank et al. 2012	Kaplan et al 2018	
9	Page 10, Paragraph 6	7	optimal frequency	Complete annual surveys	The review panel agrees that annual surveys are required to support the management process with fishery specification adjusted every year in addition to spatial management procedures. Yearly surveys also make it possible to detect and protect recruitment events, and avoid under- and over-harvesting of stock components.	Annual surveys continue to be supported both through NEFMC Priorities and the RSA Program, as well as by the NEFSC.			
10	Page 10, Paragraph 7	7	optimal frequency	Integrate methods to provide a standard monitoring survey.	The review panel recommends that all available information be used to devise an optimal and integrated statistical survey design (involving the use of complementary survey methods) and estimation procedure for stock size, spatial distribution, and other primary objectives. This may require simulation studies.	An integrated survey design has not been completed. Resources for simulation studies related to survey design should be sought. However, simulation studies to optimize the Habcam towed camera have been performed, and a restratification of the dredge survey is being planned. If an integrated survey design in pursued, the restratification of the NEFSC dredge survey would be consider as part of the regional plan.			
11	Page 10, Paragraph 7	7	optimal frequency	Secure the continuity of survey time-series.	The review panel recommends that survey efforts should be further integrated to provide a standard monitoring survey of the entire stock distribution; however, the optical and dredge surveys are complementary and both should be maintained and integrated. The continuity of time-series should be also be maintained to the fullest extent possible.	Emphasis has been given to continuity of the time series and operation of both the optical and dredge surveys. An integrated survey design across all surveys should be pursued. This was a proposed ToR for the 2018 Benchmark Assessment, but was not included because of concerns over workload.			
12	Page 10, Paragraph 8	7	optimal frequency	Integrate methods to provide a standard monitoring survey.	The review panel recommends that all available information be used to devise an optimal and integrated statistical survey design (involving the use of complementary survey methods) and estimation procedure for stock size, spatial distribution, and other primary objectives.	The current assessment models include data from the dredge, drop camera and habcam surveys. A next-generation spatially-explicit assessment model ("geosams") is being developed that would more closely integrate data from the various surveys.			
13	Page 10, Paragraph 11	8	identify future research	Analysis of all available information	To devise an optimal and integrated statistical survey design and estimation procedure for stock size, spatial distribution, and other primary objectives, the review panel recommends that all available information from all surveys be thoroughly analyzed, including an evaluation of the efficiency of using shorter tow durations.	An RSA-funded study that compared 10 to 15 minute tows was presented at the 2018 benchmark sea scallop assessment, and the results were equivocal. Dredge efficiency studies using paired tow experiments are ongoing (Miller et al. 2019).	Miller et al. 2019		

14	Page 11, Paragraph 2	8	identify future research	A joint integrated survey using two vessels (one for HABCAM and one for dredge) could result in a better survey with improved coverage.	However, statistically-designed dredge sampling that includes a portion of samples that overlap with the HabCam track is still required. The designer of HabCam felt that the best usage of this technology is continuous sampling and the review panel agreed with this. A joint integrated survey using two vessels (one for HABCAM and one for dredge) could result in a better survey with improved coverage.	The NEFSC has maintained the coupled optical / dredge survey.			

Mr. Tom Nies
Executive Director
New England Fishery Management Council
50 Water Street, Mill #2
Newburyport, MA 01950

September 12, 2019

RE: 2020 Priority List

Dear Tom,

As we discussed on the phone, the East Coast Scallop Harvesters Association (ECSHA) has asked Pike Associates to assist in securing a place above the line on the 2020 Council Priorities.

Over the past several months, we have been working with members of the ECSHA on an initial design of a multi-year leasing demonstration project for the limited access scallop fishery. As you know, the Council previously approved leasing in a segment of the fishery. Our proposed demonstration project would make leasing available to the largest segment of the fishery on a trial basis.

Attached is a brief overview of what we have developed so far. We intend to discuss this issue at the upcoming Scallop Advisory Panel and Scallop Committee meetings next week. Over the coming months, we expect to work with the PDT, council staff and industry members in further refining the demonstration project.

Finally, ECSHA wants to clarify that we are not seeking to preempt or displace the ongoing work on Amendment 21. Rather, we ask that this be considered as a priority follow-on to A 21. Recognizing your staff's expertise, we believe some good progress can be made on this project during 2020.

We thank you and the Council members for considering our request.

Sincerely,

Jeffrey Pike

Attachment: Scallop Leasing Demonstration Project Outline

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Scallop Leasing Demonstration Project

September 12, 2019

The East Coast Scallop Harvesters Association (ECSHA), a collection of limited-access scallop permit holders, seeks approval from the New England Fishery Management Council (Council) to develop and implement a voluntary, multi-year leasing demonstration project. This innovative project is intended to demonstrate the benefits of leasing scallop allocations for Days at Sea (DAS) and Access Trips, with a commitment to remain conservation neutral. Leasing has already been authorized by the Council in a segment of the scallop fishery; this demonstration project would make leasing available to the largest segment of the fishery on a trial basis.

The design of the proposed demonstration project has been informed by previous efforts to allow leasing and stacking and, most recently, through a series of port meetings sponsored by the ECSHA. The core principles of the demonstration project include:

1. Ensuring a conservation-neutral project by maintaining individual permit identity and ensuring that permits are not used simultaneously.
2. Increasing the resiliency of the scallop fishery by reducing excess fishing capacity and aligning fishing capacity more closely with resource abundance.
3. Delivering operational flexibility and economic benefits broadly to the industry through leasing.
4. Increasing job security and safety for crew members.

Below is an initial outline of a proposed multi-year (using three years as a starting point for discussion) leasing demonstration project that would be available to limited-access scallop permit holders on a voluntary basis, with no vessel allowed to lease or add more than one permit allocation of DAS and access trips to an existing permitted vessel. Permits would retain their unique, individual identity. While the demonstration project would be refined through the Council process, the ECHSA proposes that it contain the following components:

- **Conservation Neutral**
  The project would keep fishing mortality constant for participating vessels.

- **Protects Non-Participants**
  The project would include specific provisions to ensure that efficiencies associated with DAS leasing do not harm non-participants, specifically in subsequent DAS allocation.

- **DAS Power Adjustment**
  To ensure that leased DAS from a smaller vessel to a larger vessel does not result in increased harvest, a power adjustment would be required. There would be no power adjustment for leasing DAS among vessels of the same upgrade restriction category; there would also be no power adjustment for leasing access trips.

- **Framework Action**
  Performance of the demonstration project would be followed closely, and changes to the DAS power adjustment could be adjusted by the Council though a framework action.

- **Sideboards**
  The demonstration project would take into consideration the diverse characteristics and needs of the fleet, so that scallop vessels that lease DAS or Access Trips do not increase effort in other fisheries. For scallop vessels that also participate in other fisheries, sideboards would be needed to allow those vessels to continue—but not increase—their participation in those fisheries.

- **Confirmation Permit History (CPH)**
  Vessel owners would be allowed to place their permits in CPH and lease the allocation associated with those permits.

- **Valid Permit Holders**
  Only valid permit/vessel owners would be eligible to lease in or lease out in the demonstration project.

These elements should help guide the development of a full project proposal. Vessel owners intend to work with other industry members, the PDT, Council staff and the Scallop Committees to craft a mature proposal in 2020.

The ECSHA will ask the Council to add the demonstration project to its priority list for 2020 as a follow-on action to Amendment 21 (A21). The members of the association believe some good progress on this project can be done in 2020, once A21 is near completion.

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

August 23, 2019

Mr. Thomas Reilly
91 Braley Hill Rd.
Rochester, MA 02770

Dear Tom:

This letter is to acknowledge receipt of correspondence to our office that you will be resigning from the Scallop Advisory Panel. On behalf of the Council, I would like to thank you for your service to the management process.

We wish you the best in your future endeavors.

Sincerely,

Thomas A. Nies

Thomas A. Nies
Executive Director

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

June 14, 2019

Dr. Jonathan Hare
Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543

Dear Jon:

On June 11, 2019 the Council discussed research priorities for the next Scallop Research Set-Aside (RSA) announcement. The attached list includes the Council's recommendations for scallop RSA research in fishing years 2020 and 2021. This year, the Council recommended resource surveys as a high priority. The Council also identified seven (7) general research areas, which are not listed in rank order and are of equal importance. The Scallop Plan Development Team, Advisory Panel, and Oversight Committee all provided input to the Council ahead of the June 2019 meeting.

Thank you for considering this input. Please contact me if you have questions.

Sincerely,

Thomas A. Nies

Thomas A. Nies
Executive Director

cc: Michael Pentony, GARFO

Attachment

SURVEYS (High Priority)

1. Survey Related Research
Survey results must be available by early August of the year in which the survey is conducted (e.g., survey results that would inform 2021 fishing effort decisions must be available by mid-August 2020). Successful projects may be asked to provide data in a standardized format.

1a. An intensive industry-based survey of each of the relevant scallop rotational areas (Closed Area II, Nantucket Lightship, Elephant Trunk and Hudson Canyon) that will provide estimates of total and exploitable biomass to be used for setting fishery catch limits under the rotational area management program.

1b. an intensive industry-based survey of areas of importance (i.e., open areas with high scallop recruitment or areas of importance to the fishery). For 2019, the priority areas are where scallop recruitment was observed during 2019 surveys, and areas of the Gulf of Maine that have recently been or are likely to be fished.

1c. a resource wide industry-based survey of scallops within Georges Bank and/or Mid-Atlantic resource areas. The survey or surveys do not need to be carried out by a single grant recipient. The primary objective of these surveys would be to provide an additional broad scale biomass index in addition to the federal survey to improve the overall precision of the scallop biomass estimate produced by the Scallop Plan Development Team.

GENERAL RESEARCH (Not in rank order, priorities 2 – 8 are of equal importance)

2. Dredge Efficiency: An evaluation and synthesis of dredge efficiency research to support scallop fishery management. Research may focus on analyses of existing data sets.

3. Research to assess the impact of offshore wind energy development on the Atlantic sea scallop resource, including, but not limited to, baseline information gathering about abundance, biomass, distribution, growth, and seasonal yield; oceanographic models to assess potential for impact on larval patterns and settlement; questions of fishability, including impact of turbine spacing and orientation on safety and gear interactions, potential time-of-year restrictions for construction activities, and potential changes to management plan to increase feasibility of fishing; economic analyses of potential impacts to fishery and individual ports; impacts of noise, vibrations, and sedimentation during construction and operations.

4. Research to support the investigation of turtle behavior and its potential impact on the scallop fishery in the Mid-Atlantic and Georges Bank (via satellite tagging or other means). This could include research to understand their seasonal movements, vertical habitat utilization, and the status and range of the population in response to climate change.

5. Bycatch research: Identification and evaluation of methods to reduce the impacts of the scallop fishery with respect to bycatch of small scallops and non-target species. This would include projects that determine seasonal bycatch rates of non-target species, characterize spatial and temporal distribution patterns, collect and analyze catch and bycatch data on a near-real time basis, as well as the associated discard mortality rates of key bycatch species. Research efforts

focusing on non-target bycatch should provide results that would help the scallop industry avoid pending or potential implementation of accountability measures. Projects should consider the enforceability and feasibility of regulations in the commercial fishery.

6. Scallop meat quality research: Research aimed at describing the occurrence of disease and parasites, as well as understanding the mechanisms and processes (including the life cycle, distribution and transmission, and relationship to sea turtles) that affect scallop product quality; research aimed at evaluating the impact of density dependence and the potential impacts of area rotation on scallop product quality, marketability, meat weights, and seasonal monitoring would be particularly useful.

7. Research on scallop biology, including studies aimed at understanding recruitment processes (reproduction, timing of spawning, larval and early post-settlement stages, age and growth, and yield), examination of environmental stressors on reproduction and growth, and research related to scallop spat and seeding projects. This priority also includes research on natural mortality, such as scallop predation (e.g., starfish, crab, snails, and dogfish), discard mortality, and juvenile mortality events. This priority includes research on scallop biology in the Gulf of Maine region.

8. Data collection in the Gulf of Maine: This priority includes research aimed at developing approaches for determining optimal survey coverage, frequency, and design in Gulf of Maine. This may include research that evaluates past and current approaches to survey design in the Gulf of Maine (not just the NGOM management unit). This priority may also include projects that evaluate the cost-benefits of research survey design including coverage, frequency, timing, and survey gear, and monitoring the fishery (landings and discards) relative to the net socio-economic benefits. Possible research includes, but is not limited to, evaluation of past and current approaches to survey design in the Gulf of Maine (not just the NGOM management unit) and simulation modelling.

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John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

August 13, 2019

Mr. Michael Bomster
P.O. Box 841
Stonington, CT 06378

Dear Mike:

This letter is to acknowledge receipt of correspondence to our office that you will be resigning from the Scallop Advisory Panel.

On behalf of the Council, I would like to thank you for your service to the management process. As an active fisherman you brought first-hand insight to Advisory Panel discussions and helped shape several recent Council actions. My staff appreciated your willingness to discuss on-the-water observations of the scallop fishery with scientists and managers, and candor during difficult discussions.

We wish you the best in your future endeavors.

Sincerely,

Thomas A. Nies

Thomas A. Nies
Executive Director

Greater Atlantic Region Bulletin

NOAA Fisheries, Greater Atlantic Regional Fisheries Office, 55 Great Republic Drive, Gloucester, MA 01930

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Date Issued: 6/21/2019

ATLANTIC SEA SCALLOP FISHERY

Closure of the Closed Area I Scallop Access Area for the Limited Access General Category Individual Fishing Quota Fleet

Effective Date: June 23, 2019

The Closed Area I Scallop Access Area is closed to limited access general category (LAGC) individual fishing quota (IFQ) scallop vessels effective 0001 hours, on June 23, 2019.

As of June 23, 2019, no scallop vessel fishing under LAGC IFQ regulations may fish for, possess, or land scallops in or from the Closed Area I Access Area. The scallop regulations require that we close this area once we project that the LAGC fleet has fished all of the 571 trips allocated to them in this area.

Vessels that have complied with the observer notification requirements, have declared a trip into the Closed Area I Scallop Access Area using the correct Vessel Monitoring System (VMS) code, **and** have crossed the VMS demarcation line before 0001 hr, June 23, 2019, may complete their trip and retain and land scallops caught from the Closed Area I Scallop Access Area.

For small entity compliance guides, this bulletin complies with section 212 of the Small Business Regulatory Enforcement and Fairness Act of 1996. This notice is authorized by the Regional Administrator of the National Marine Fisheries Service, Greater Atlantic Region.