New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John F. Quinn, J.D., Ph.D, *Chairman* | Thomas A. Nies, *Executive Director*

MEETING SUMMARY

Scallop PDT Meeting

September 4, 2019
Waypoint Event Center, New Bedford, MA

The Scallop PDT met in New Bedford, MA on September 4, 2019 to: 1) review biological and fishery information related to the small scallops in the NLS-S-deep; 2) develop options for harvest of small scallops in the NLS-S-deep; 3) review 2019 scallop survey results and decide final data treatments; and, 4) discuss other business.

MEETING ATTENDANCE: Jonathon Peros (PDT Chair), Sam Asci, Dr. Naresh Pradhan, Dr. David Rudders, Dr. Bill DuPaul, Dr. Dave Bethoney, Travis Ford, Ben Galuardi, Dr. Dvora Hart, Dr. Cate O'Keefe, and Tim Cardiasmenos. Vincent Balzano, Scallop Committee Chair, was in attendance along with approximately 25 members of the public.

The meeting began at 9:42 am. Following roll call, Council staff briefly reviewed the agenda and provided the PDT with a list of upcoming meetings. The purpose of the meeting was to discuss options and approaches for harvesting the small, slow-growing scallops in the Nantucket Lightship South-Deep area through Framework 32. These animals have been tracked closely since 2015 through intensive survey efforts as well as surveys focused on their biology and life history. Recent survey information related to the NLS-S-deep was reviewed by the PDT and is summarized in the following sections.

Density Dependent RSA Project in Nantucket Lightship South Area

Sally Roman (VIMS) presented an overview of an on-going survey focusing on the small scallops of the NLS-S-deep area (see Doc.4).

Questions and Discussion Points:

- Meat quality has not appeared to be an issue in the NLS-S-deep. Meats are smaller than expected relative to shell size, but meats are not watery and do not show signs of disease. Also, not many clappers were observed in the NLS-S-deep.
- It was noted that a drop in density was observed between 2017 and 2018, but remained stable between 2018 and 2019. A member of the PDT suggested that this can be typical of very high density areas in that biomass seems to decline from the edges of the aggregation initially.

2019 SMAST Drop Camera Predator Prey Information

Dr. Dave Bethoney presented an overview of recent SMAST drop camera surveys of the NLS-S-deep, including information related to the distribution of scallops and scallop predators in this area (see Doc.5). The SMAST drop camera observed a drop in density between 2017 and 2018 by roughly half, but appeared to stabilize between 2018 and 2019. Between 2018 and 2019, density appeared stable while biomass seemed to increase—this is likely due to meat sizes increasing over time (though meats are smaller than expected for a given shell size).

Very few clappers were observed in the NLS-West and NLS-S-deep in 2019. There was very little overlap between observed sea stars and higher densities of scallops in the NLS-West and NLS-S-deep in 2019. Generally, sea star presence did not seem overwhelming across the NLS survey area.

The SMAST drop camera does not observe crabs in the NLS very often, though 2019 numbers show a large spike in crabs—after reviewing relevant literature Dr. Bethoney hypothesized that this is likely due to the timing of the 2019 NLS survey having overlap with a seasonal migration of crabs. Despite this, no images reviewed suggested that predation events were occurring (i.e. crabs eating scallops).

Questions and Discussion Points:

- Surfclam and quahog shell debris was observed in the deeper water of the NLS-West and NLS-S-deep. The PDT noted that this is typical for deeper water on the southern flank of Georges Bank and that surfclam/quahog shell debris can provide structure for scallop larvae settlement.
- It was noted that aquaculture literature from the 1980's suggested that starfish were effective scallop predators and that crabs were ineffective scallop predators. In the case of the NLS-S-deep, it was suggested that maybe crabs are more effective predators when targeting smaller scallops.

2019 HabCam Survey of the NLS

Jason Claremont (CFF) presented findings from the recent HabCam surveys of the NLS, focusing primarily on the smaller scallops in the NLS-S-deep. In the NLS, there were no observations of high densities of incoming year classes. The majority of recruit-size scallops were observed in the NLS-S-deep SAMS area, though it was acknowledged that these are the slow growing 7-year-old animals that have been tracked, not actually recruits. Larger scallops (> 75 mm SH) were observed across the survey domain, though the highest densities in the NLS-West appear to be retracting over time. Scallops between 75 and 100 mm SH were highly concentrated in the NLS-West and NLS-S-deep, while > 100 mm SH animals were distributed widely across the NLS-N. A comparison of L-F in the NLS-S-deep between 2018 and 2019 suggests that some growth had occurred. Similar to other survey findings, a substantial decrease in biomass was observed between 2018 and 2019 in the NLS-West while an increase was estimated for the NLS-S-deep.

The 2019 survey did not observe a high rate of clappers in either the NLS-S-deep or NLS-West. The clappers that were observed appeared to follow the same length frequency distribution as the live scallops observed.

Related to predator prevalence, a large bump in sea stars was observed in the NLS-North but not in other parts of the NLS. Crab density across the NLS appeared to have increased slightly

between 2018 and 2019, with similar spatial distribution for both years. HabCam does not measure crab size; however, those observed appeared to be roughly the same size as the scallops in the NLS-S-deep. Moonsnails appeared to be fairly dense in the NLS-West.

Questions and Discussion Points:

- An industry member reported making a tow along the 40-fathom contour east of Nantucket Lightship during mid-July that was all crabs—they did the same tow on the next trip and caught almost no crabs. It was suggested that this supports the theory of higher crab observations being driven by a seasonal migration.
- Neither the HabCam or drop camera quantify swimming scallops or their spatial distribution. A member of the PDT felt it was unlikely that scallops swimming be the cause for a change or shift in density in the NLS-West or NLS-S-deep.

General Questions and Discussion Points:

- Staff noted that part of the goal for the meeting is to figure out how data will be combined and used in the SAMS model, including specifying L_∞ for the NLS-S-deep and determining an appropriate selectivity curve if fishing were to occur in this area.
- It was suggested that having a biomass projection for 2020 would be informative for the industry and Scallop Committee when discussing harvest options for this area—for example, should another bump in growth be expected between 2019 and 2020.
- A member of the PDT highlighted the age of the scallops in the NLS-S-deep—currently 7 years old, and will be 8 years old before they might be accessed by the fishery. Once scallops reach 10 or 11 years, a downturn is typically seen as they become more susceptible to mortality. Thus far, data reviewed paint a picture of what is happening in the NLS-S-deep: the area doesn't appear to have much water movement which means the scallops do not get a lot of food. This translates to observations of annual growth or non-growth, in that when food is available a burst of growth may be seen (like between 2018 and 2019), and when food is not available, little to no growth is seen (like between 2017 and 2018). It is difficult to predict whether any growth will occur in the future considering the level of food availability in the future is unknown.
- It was recommended that any harvest of the scallops in the NLS-S-deep be managed as a multiyear opportunity (i.e. not just FY2020).
- The PDT agreed that predation does not seem to be driving mortality in the NLS-West or have the potential to drive higher mortality in the NLS-S-deep in the future.

Discussion on Potential Ways to Harvest in the NLS-S-Deep

Travis Ford (NMFS, GARFO) provided an overview of straight-forward harvest approaches for the NLS-S-deep that could be considered in FW32, as well as those that could potentially delay implementation of FW32 or require an additional action to address (see Doc.3). For the purposes of discussion, a strawman approach of harvest solutions was offered that included: 1) maintaining the current dredge regulations (i.e. 4" ring) because commercial dredges appear capable of catching the small scallops without trouble, 2) increase the crew size limit to 9 people to give extra help with processing at sea while potentially avoiding higher discard mortality, 3) allocate an overall TAC to the area and allow access to all vessels with scallop permits—once the TAC is reached, the area closes to all, and 4) review socio-economic aspects of smaller scallops on the market in 2020 related to ex-vessel price, and assess whether it is economically feasible to continue harvesting the small scallops in 2021.

Questions and Discussion Points:

- A key consideration related to the overall TAC approach is accounting for these scallops in the ACL flow chart. Staff noted that the small scallops are counted towards the OFL and ABC, and that they could be harvested without concerns of hitting the OFL/ABC, but would still need to be accounted in the ACL flow chart if allocated by the Council.
- An industry member noted that handling the small scallops through a normal access area allocation would create little incentive for LAGC IFQ vessels to fish that area—for example, it is unlikely that vessels will elect to use IFQ to fish higher count scallops in the NLS-S-deep when larger scallops can be harvested elsewhere in the resource that fetch a higher ex-vessel price. They felt that there will need to be an incentive for LAGC IFQ vessels to fish this area, such as an exemption from using IFQ allocation.
- The PDT and members of the audience generally felt that increasing crew size to 9 and maintaining 4" rings would be appropriate to consider moving forward. Based on LPUE estimates, an 8 person crew can process between 1400 and 1600 lbs per day of 20-30s.
- There was some discussion on how fishermen may not be interested in taking this trip and how it may be difficult for captains to find crew members that are willing to cut high count scallops.
- There was agreement that the NLS-S-deep should be considered as a multi-year opportunity, not just for FY2020. Consensus at the meeting was that allocating some access in FY2020 at a conservative level will provide managers with a better understanding of how this area might be fished in FY2021 and beyond.
- It was noted that ideas like shell stocking or using shucking machines would require a more involved action, such as an Amendment, which likely would not be completed by the start of FY2020. The PDT was also concerned that over complicating harvest in the NLS-S-deep in FY2020 would delay implementation of FW32, possibly until after April 1st.
- Some industry members in the room supported transplanting deep-water scallops to the shallower portion of NLS-South using nets (i.e. keeping scallops in the net while transiting to avoid damage from being put on deck).

Note that other takeaways from discussion on the NLS-S-deep can be found at: https://s3.amazonaws.com/nefmc.org/Doc.3c-Nantucket-Lightship-South-Discussion-Document.v.3.pdf

FW32 Data Treatment Follow-Up

The PDT reviewed a series of follow-up analyses to address data treatment decisions for FW32. Information presented to the PDT can be accessed at: Doc.9 VIMS Survey Data Treatment Updates, Doc.10 HabCam Data treatment analysis, and Doc.11 CFF Data treatment analysis. There was brief discussion following each of the presentations, and final data treatment decisions were made by the PDT as described in Table 1.

Other Business:

No other business was discussed. The meeting concluded at 4:38 PM.

Table 1. Final PDT decisions related to 2019 survey data treatment.

GB	SHMW equation	Treatment for SAMS run
CL1-Access	SARC 65	Use mean of survey estimates
CL1-Sliver	SARC 65	Use mean of survey estimates
CL1-South	SARC 65	Use mean of survey estimates
CL2-North	SARC 65	Use mean of survey estimates
CL2-Access	SARC 65	Use mean of survey estimates
CL2-Ext	SARC 65	Use mean of survey estimates
NLS-North	VIMS 2016-2019	Use mean of survey estimates
NLS-South-Shallow	VIMS 2016-2019	Use mean of survey estimates • Update SMAST numbers
NLS-South-Deep	VIMS 2016-2019	Decrease dredge efficiency to .13 (.4/3), use mean of survey estimates. Use GB Open selectivity curve and set L∞ to110mm.
NLS-West	VIMS 2016-2019	Decrease dredge efficiency to .13 (.4/3), use mean of survey estimates.
NF	SARC 65	Use mean of survey estimates
GSC	SARC 65	Use mean of survey estimates
SF	SARC 65	Use mean of survey estimates
MidAtlantic		
BI	SARC 65	Use mean of survey estimates
LI	SARC 65	Use mean of survey estimates
NYB	SARC 65	Use mean of survey estimates
MAB-Nearshore	SARC 65	Use mean of survey estimates
HCS	SARC 65	Use mean of survey estimates
ET Open	SARC 65	Use mean of survey estimates
ET Flex	SARC 65	Use mean of survey estimates
DMV	SARC 65	Use mean of survey estimates