



## New England Fishery Management Council

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### MEETING SUMMARY

#### Scallop PDT

Mariners House, Boston, MA

July 18<sup>th</sup>, 2017

The Scallop PDT met on July 18<sup>th</sup>, 2017 in Boston, MA to: (1) discuss progress on Scallop Framework 29 work items including the development of flatfish accountability measures (AMs) and management measures for the Northern Gulf of Maine management area (NGOM), (2) receive an update on SMAST drop camera video survey technology, (3) discuss results of the LAGC IFQ program review, (4) provide input on potential work priorities for 2018, regulations, and scallop research questions, (5) discuss scheduling and expectations for the August PDT meeting, and (6) discuss other business.

**MEETING ATTENDANCE:** Jonathon Peros (PDT Chair), David Rudders, Dvora Hart, Demet Haksever, Bill DuPaul, Danielle Palmer, Cate O'Keefe, Tim Cardiasmenos, Chad Keith, Kevin Kelly, Travis Ford, Trisha Cheney, Benjamin Galuardi, Dave Bethoney, and Sam Asci. Mary Beth Tooley, Chair of the Scallop Committee was present in the audience, along with 5 other members of the public.

**SUPPORTING DOCUMENTATION:** Discussions were aided by the following documents and presentations: (1. Flatfish Accountability Measures) 1a) [Draft Appendix for FW9](#), 1b) [Flatfish Consistency Options \(from June 27, 2017 call\)](#), 1c) [Staff presentation on AMs](#), 1d) [d/K analysis presentation \(Sam Asci\)](#), 1e) Catch accounting considerations (Ben Galuardi), 2) [NGOM TAC Considerations](#), 3) [Update on SMAST Drop Cam Technology \(Dave Bethoney\)](#), 4) [LAGC IFQ Program Review](#), 5) [Potential 2018 scallop work priorities](#), 6) [Draft agenda for August 29/30 PDT meeting](#), and 7) [PDT meeting summary \(June 27, 2017\)](#).

#### **KEY OUTCOMES:**

- *Flatfish AMs:* The PDT refined an initial scope for the development of accountability measures and addressed caveats associated with calculating 'bycatch savings'.
- *Northern Gulf of Maine Management:* The PDT identified the methods it plans to use estimate biomass in the NGOM management area for 2018, and discussed NGOM fishery data.
- The PDT discussed potential work priorities for 2018 and provided input on agenda items for the two-day meeting in August.

The meeting began at 10:10 am. Council staff welcomed the PDT and members of the audience to the meeting.

### ***Flatfish Accountability Measures***

National Standard 1 Guidance defines the use of accountability measures (AMs) as management controls to prevent ACLs, including sector-ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur. AMs should address and minimize both the frequency and magnitude of overages and correct the problems that caused the overage in as short a time as possible. NMFS identifies two categories of AMs, in-season AMs (proactive) and AMs for when the ACL is exceeded (reactive). At this time, the Council had not prescribed a target bycatch savings for AM development through Framework 28 to the Scallop FMP. Council staff described the overall goal of AM development for FW29 as developing a response in the event that an AM is triggered; this means developing a mandatory reactive AM for Northern windowpane and consider making the current AMs for Georges Bank yellowtail and Southern New England yellowtail consistent, and develop an optional proactive AM which could help prevent exceeding flatfish sub-ACLs.

Georges Bank (GB) yellowtail flounder was assessed at the 2017 Transboundary Resources Assessment Committee (TRAC) meeting. Discussion at this meeting suggested the upper limit of catch advice for GB yellowtail could be approximately 300 mt, 71% of which would be allocated to the US and 29% to Canada. Though no decisions have been made regarding the actual US ABC for GB yellowtail for 2018, this preliminary discussion suggests that the GB yellowtail sub-ACL for the scallop fishery would not exceed 32 mt.

Scallop Committee and Council have tasked the PDT with focusing development of AMs to gear restricted areas (GRAs), and have allowed the PDT to consider time/area closures. Generally, the size and duration of current flatfish AMs depend on the sub-ACL overage; for example, the SNE/MA windowpane flounder AM (est. in FW25) requires the use of a 5-row apron with 1.5:1 hanging ratio west of 71° W in certain months depending on the sub-ACL overage. The months this GRA would be in place were months where bycatch “savings” would be the greatest by using the gear modification. For GB and SNE yellowtail AMs, the size and duration of time/area closures directly correlates with incremental overages to the sub-ACL (i.e. the greater the overage, the more impactful months are closed to fishing so that the most bycatch savings are gained).

Ben Galuardi (GARFO) briefly presented details on the cumulative discard methodology review for catch cap monitoring in the scallop fishery ([working paper here](#)). The Review investigated alternate stratifications for estimating discards of catch cap species. The broad conclusions of this review were that the current stratification schemes and method (cumulative approach) used to estimate discards produced consistently low CVs for discard estimates in the scallop fishery. Alternate stratifications did not significantly improve performance. A description of the current methods used in catch cap monitoring can be seen [here](#).

Council staff briefly presented monthly d/K ratio by statistical reporting area (SRA) information ([Doc 1d](#)). Observer data from standard observer trips on LA and LAGC vessels from 2006-2016 were compiled by month and by SRA. The monthly d/K values for each SRA were calculated by dividing weight of flatfish caught for each stock (i.e. N. windowpane, GB yellowtail, SNE

yellowtail) by the dressed weight of kept scallops. The ‘stoplight’ scale for all figures was specific to individual flatfish stocks and represented the percentile range of observed d/K ratio in ascending order (green is the minimum to 25<sup>th</sup> percentile d/K observed, yellow is 50<sup>th</sup> percentile d/K observed, orange is 75<sup>th</sup> percentile d/K observed, and red is 100<sup>th</sup> percentile d/K observed). Staff noted that this scale is meant to identify months where SRAs showed high d/K values relative to the range of observed d/K values for each flatfish stock; however, high d/K values (red on scale) do not necessarily reflect months where fishing in certain SRAs would cause sub-ACLs to be met or exceeded. For example, several months showed high d/K values in SRAs where very little fishing occurred, meaning that the level of bycatch savings gained by not fishing these SRAs during this time would be very little. A member of the PDT offered several suggestions to improve d/K estimates, including normalizing observer data on an annual basis to account for changes in flatfish stock status, fishing behavior, and rotational management over the study period (2006-2016). Another PDT member noted that enforcing GRAs at the SRA level is difficult, and that focusing a GRA AM to the broad stock area level would be more beneficial to overall bycatch savings and enforceability. It was further noted that developing a GRA at the broad stock area level would align well with the Council’s request for simplicity and parity across flatfish stocks.

Several PDT members agreed that a GRA should be focused to open-area fishing, as requiring a GRA in closed area fishing may cause an increase in overall flatfish discards (i.e. if GRA reduces scallop catch, vessels would spend more time fishing to catch the trip limit and ultimately catch more flatfish). On the other hand, it was also noted that all reported GB yellowtail bycatch in FY2017 is coming from Closed Area II, and that delaying the opening of Closed Area II could greatly reduce the level of GB yellowtail discards in the future. The PDT agreed that Closed Area II fishing will have to be considered as AMs are being developed, especially in how overall discard levels may differ in years when Closed Area II is fished compared to when it is closed.

At the June 2016 meeting, the Council passed a motion that recommended all flatfish AMs be consistent with the existing SNE/MA windowpane AM. In addition to the 5-row apron with 1.5:1 hanging ration, the SNE/MA windowpane AM prohibits all LA and LAGC trawl vessels from operating west of 71° W. A member of the PDT noted that, because little to no LA vessels use trawl gear and that LA trawl gear is prohibited in the Georges Bank broad stock area, prohibiting LA trawl vessels as part of a potential gear restricted area (GRA) AM for N. windowpane and GB yellowtail would have little impact on bycatch savings.

Staff described the following objectives pertaining to flatfish AM development for the August PDT meeting (August 29<sup>th</sup>-30<sup>th</sup>, 2017):

- Complete the analysis portion of work required for flatfish AM development by this meeting.
- Discuss the parameters and impacts associated with potential AM alternatives.
- Form AM options for the Committee to consider at the September meeting (September 30<sup>th</sup>, 2017).

Recommended scope of AMs for initial development:

1. Focus on applying the 5 row apron with 1.5:1 hanging ratio as gear modification for AM.

2. Use the GRA “savings” values from the 2012 CFF study comparing 5 row apron to 8 row apron and 1.5:1 hanging ratio as upper bound of gear modification savings.
3. For Northern windowpane and GB YT, apply GRA starting with the GB YT broad stock area (SRA 522, 525, 561, 562).
4. For SNE YT, focus on areas west of 71°W (same as Southern Windowpane AMs area).
  - a. Consider the range of SNE YT – what is the southern extent of its range?
5. Focus on open area (not access area) for GRAs.
6. All bycatch of GB YT in FY 2017 is coming from CAII. Consider a delay in the opening as reactive AM (time/area closure).
7. As a starting point, consider prohibiting trawl gear in certain areas.

Next Steps:

1. Work with CFF on weigh-based analyses of bycatch from 5 row apron 1.5:1 hanging ratio gear trials, and comparison of catch between the TDD and NB style dredge (J. Peros with D. Rudders)
2. Normalize observer d:K ratios for entire stock area, and compare with different strata on annual basis (Sam Ascii).
3. Develop flatfish AMs for consideration at upcoming Committee meetings.

***Northern Gulf of Maine Management***

On June 1<sup>st</sup>, 2017, the Scallop Committee passed a motion which tasked the PDT to develop options for splitting the NGOM TAC between the LA and LAGC components of the fishery using a hybrid approach. Staff noted that one goal for the September AP and Committee meetings is to have a range of alternatives to consider which address 1) splitting the overall NGOM TAC, 2) the distribution of the NGOM TAC between fishery components, and 3) LA harvest approaches. To adhere to this timeline, the PDT will need to address each of these issues in August after survey results from the NGOM are available, and will have to develop a reasonable range of options for the Committee to consider. The goals for PDT discussion were to: 1) identify the approach the PDT will plan to use to set the TAC in the area (ex: exploitation rate, growth matrix), and 2) identify the range of potential values to begin the PDT’s August discussion with after the NGOM TAC has been considered.

Dr. Dvora Hart explained that benchmark approved *methods* from the SAMS model could be used for the NGOM in order to project exploitable biomass within the management area in FY2018. This approach would be for the strict purpose of setting the FY2018 NGOM TAC and default measures, and would not incorporate NGOM into the SAMS model used to inform spatial management for the rest of the fishery. Dr. Hart further explained that several spatially specific parameters of the model that will be needed to perform a model run; the PDT acknowledged that, because the Gulf of Maine is a data limited region, many of these parameters are unknown.

The SAMS model takes the most recent survey data and growth information to predict size frequencies for the following year. For almost all areas (excluding the GOM), growth has been calculated using shell ring analysis from animals collected on dredge surveys. Using this information, a growth transition matrix is developed to determine probabilities of growth. For example, the stochastic growth transition matrix will give the probability that a scallop that is 15

mm in 2017 will be 70 mm in 2018. By applying the growth transition matrix to the size frequencies from survey data, the model can predict size frequencies for the following year for a given area. The SAMS model also considers fishing mortality (F), natural mortality (M), and recruitment. The PDT recommended the following approaches for 2018 TAC setting and default measures:

- Growth information: A shell ring analysis is conducted for each existing SAMS area and is used to create a growth transition matrix. This growth transition matrix gives probabilities that scallops observed in a survey will grow to a certain size the following year.
  - o The PDT suggested that a reasonable initial approach would be to use growth assumptions from Georges Bank this year.
  - o If the information is available, the PDT suggested using shell height/meat weight data from Maine DMR/UMaine NGOM dredge surveys to inform growth characteristics, as well as previous studies. Sam Trusdell has supplied growth information to Dr. Hart.
  - o ME DMR/UMaine to supply Dr. Hart with a SH/MW relationship from their survey.
- Natural mortality: currently there is no estimate of scallop natural mortality for the NGOM. Dr. Hart suggested that the Georges Bank natural mortality estimate could be used instead ( $M = 0.16$  for smaller scallops,  $M = 0.24$  for plus group).
- Fishing mortality: This variable considers the impact of fishing on various size classes using a fishery selectivity curve from the last benchmark assessment. For example, given the selectivity of the dredge with a 4" ring, the fishery is likely to exert greater F on the 120 mm group than it is on the 50 mm group. Dr. Hart suggested that the selectivity curve from Georges Bank could be applied to the NGOM this year.
- Recruitment: Any recruitment observed in the NGOM would not be in fishery in 2018.
- Reference Points: There are no reference points for the Gulf of Maine or NGOM management area. Dr. Hart suggested that the GB reference point of 0.3 could serve as a reasonable estimate for  $F_{MSY}$  in the Gulf of Maine, at least in the short term. This suggestion was supported by another member of the PDT, who explained that Maine's state fishery is managed under  $F_{msy} = 0.3$  and has found it to be an accurate estimate, and this level of harvest has allowed for sustained fishing and area rotation. The PDT discussed the ephemeral nature of the NGOM fishery in recent years, and there was some discussion around whether or not a higher exploitation rate should be applied, similar to what is acceptable for fishing access areas ( $> 0.3$ ).
- Footprint of the 2017 NGOM surveys: The PDT noted that two 2017 surveys cover a small portion of the overall management area, and the 2016 survey that was conducted by ME DMR/UMaine. The group noted that the 2017 survey effort on Stellwagen Bank covered the area where the vast majority of fishing effort took place in 2017. The PDT recommended that the ME DMR/UMaine survey group could estimate biomass from the areas that are outside of the 2017 survey footprints (what percentage of the biomass estimate from the 2016 survey is inside/outside of the 2017 survey footprint). The PDT noted that there are 2016 biomass estimates from areas that were not fished in 2017, which could be accounted for. Members of the PDT also felt that a complicated approach may bog down the TAC setting process, and that a simple and reasonable approach may

be best suited for setting a one year TAC with default values. Part of this answer hinges on how much of the 2016 biomass is within the 2017 survey domains. For example, if 95% of the 2016 biomass is within the survey areas, then expanding by 5% may be a reasonable way to handle this.

- SMAST and CFF to send ME DMR survey domains. The PDT wants to know what percentage of the 2016 biomass is in the footprint of the 2017 surveys so we can have a discussion of how much things changed between 2016 and 2017.
- Combining Survey Estimates: The PDT discussed how survey estimates from CFF and SMAST will be combined. Surveys in the NGOM will be combined the same way that the PDT puts together estimates by using a mean. The PDT also discussed a sensitivity analysis using a geostatistical approach that combines all survey data into a single “grand model” approach (this approach may be discussed at 2018 benchmark).

The PDT then discussed landings from 2008 – 2017, and options for how the NGOM TAC should be split. A member of the PDT noted that the LAGC TAC of 95,000 lb in 2017 was set as a proportion of the recommended landings target (411,048 lbs). The PDT discussed how information for policy decisions could be presented to the Council, and generally felt that information from individual fishing years should be presented, and the Council can decide what information to use (see Table 1). The PDT plans to brainstorm harvest strategies in August after more information about the biomass in the NGOM is known. The PDT also discussed how to NGOM allocations would fit within the ACL flowchart and annual projected landings. The group agreed the NGOM TAC should remain outside of the ACL flowchart, but that LA landings from the NGOM be considered as part of the annual projected landings (APL) calculation. Travis Ford from GARFO SFD explained that he did not think that changes to how the IFQ operates in the NGOM area could be done in a framework action. Therefore, there would be a single general category TAC in the NGOM that is fished by both LAGC IFQ and LAGC NGOM vessels. These removals are accounted for under the OFL, but are not part of the ACL flowchart (status quo approach). However, LA removals from the NGOM would be added to that component’s 94.5% share of the APL. If this occurs, the LAGC IFQ quota would need to be increased proportionally to achieve a 94.5/5.5 split. Some concern was expressed from a biological perspective about the inability to account for the LA and LAGC IFQ allocation split within the NGOM management area (the only way to achieve a 94.5/5.5 split if LA has an allocation in the NGOM that is added to the LA APL is to add pounds for the LAGC IFQ that can be fished outside of the NGOM management area). The PDT will revisit this issue at upcoming meetings.

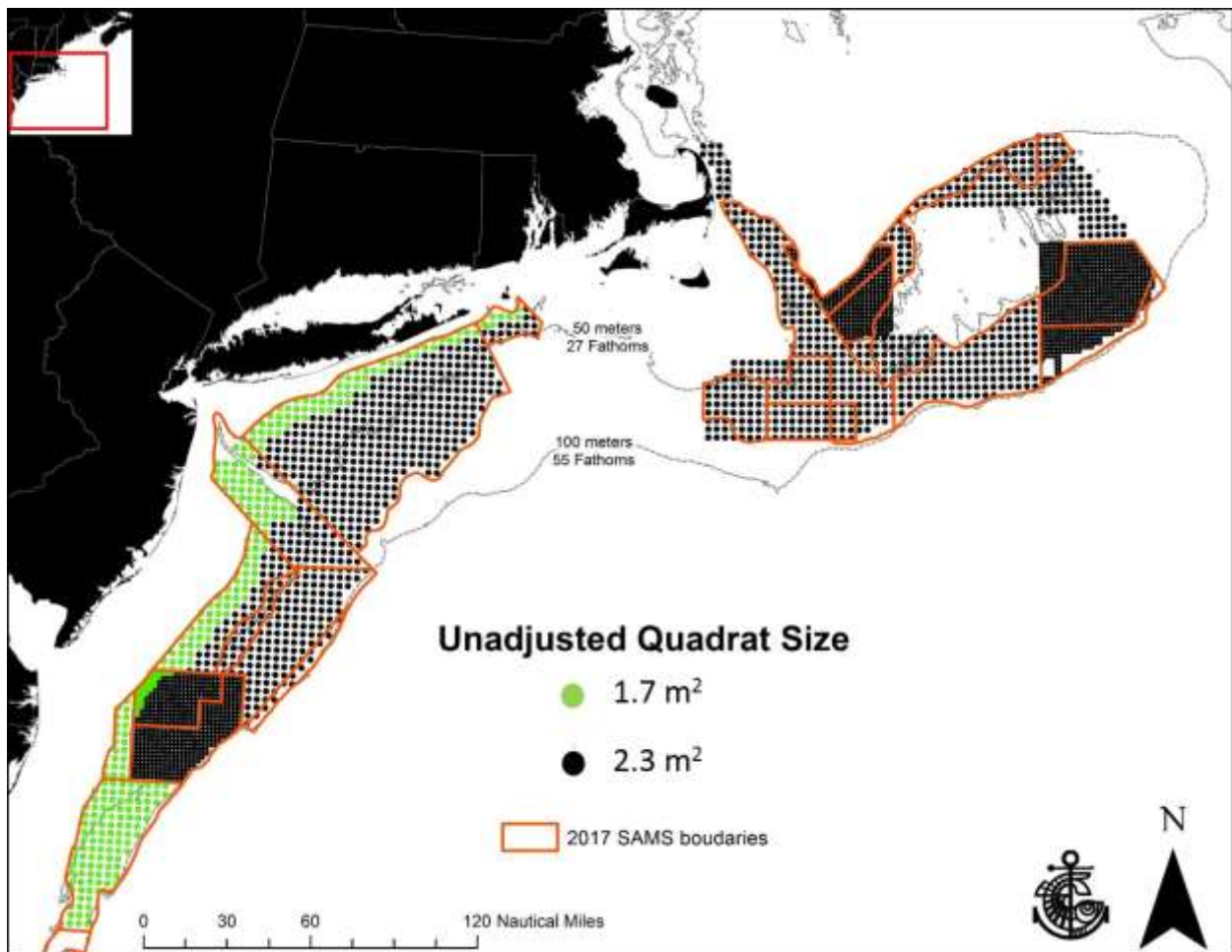
### ***Update on SMAST Drop Cam Technology***

Dr. Dave Bethoney presented updates made to the SMAST drop camera video survey technology prior to the 2017 surveying season. The drop cam configuration was modified by replacing the previously used large camera, small camera, and DSC with higher resolution cameras. Compared to the older system, the new system provides a “flat” image which reduces measurement error. It was also reported that the new system greatly improved image quality, consequently improving detection of smaller scallops. In the 2017 broad scale survey, the updated drop camera system was used for the majority of stations except for those in DelMarVa and along the western edge of the Mid-Atlantic. Dr. Bethoney noted that differences in quadrat size between the digital still cameras used in 2017 (2.3 m<sup>2</sup>, 1.7 m<sup>2</sup> and original camera (2.8 m<sup>2</sup>) systems employed prior to 2016 are accounted for by making density based estimates (scallops

per m<sup>2</sup>). Dr. Bethoney also explained that the map products that SMAST produces will be density based this year, while maps had been of scallops per station in past years. The density bins in 2017 maps will reflect the density of the scallops per station mapped in previous years to allow for comparison across years. There will be no change in how SMAST treats scallops along the edge of the image frame – they will continue to count all scallops in the image.

A member of the PDT made several suggestions on how to best account for the change in survey technology used, particularly how scallops inside the image frame are counted. It was acknowledged that this issue was discussed at the 2015 scallop survey peer-review, and the current process does not require optical surveys (i.e. SMAST drop cam, HabCam) to account for measurement error due to image distortion. Council staff noted that the measurement error discussion would be most beneficial to have at the upcoming benchmark assessment in 2018. The PDT agreed that estimates should be developed using the new system, where applicable, and that estimates from other areas should come from the DSC technology used in FW28 (see Figure 1). SAMS areas will remain the same between 2016 and 2017.

Figure 1- 2017 SMAST survey coverage. Black dots represent stations where the updated system, green dots represent stations where older system was used. Digital still images were captured at all stations, with the older system having a smaller image (quadrat) size.



### ***LAGC IFQ Program Review***

At their June 2017 meeting the Council passed a motion to accept the LAGC IFQ program review as final. Dr. Demet Haksever presented findings which answered the key questions embedded in the report:

Has the LAGC IFQ fishery:

1. Resulted in benefits to the nation?
  - Both producer surplus and net revenues of participants in the LAGC IFQ fishery have increased since the establishment of the program.
2. Preserved the ability for vessels to participate at different levels and prevented excessive shares?
  - Vessels have participated at different levels and across broad geographic regions. Non-qualifiers to the program have remained active in the fishery and the program supports an active lease market. There has been a slight decline in the holdings by the top 10% of affiliations.
3. Controlled capacity mortality, and promoted conservation and management?
  - There has been a reduction in the number of permits, active vessels, and has controlled landings (IFQ component has not exceeded catch limits during the program period). Also, bycatch of key stocks has either remained constant or declined.
4. Promoted safety, compliance, and enforcement?
  - The compliance with VMS requirement has improved over the program period. The total number of monitored offloads are low (~1%), however, the size and frequency of overages has declined over the program period.

The PDT discussed the appropriate baseline years for the report that were used in making determinations about fishery performance in the program review. Council staff explained that the baseline period was informed by the data that was available for the review, and the technical work group. The PDT noted that the IFQ program was phased in during 2008 and 2009. Staff explained that the LAGC IFQ program review will be discussed by the AP and Committee at their September meeting. If the Committee has any recommended changes to the IFQ program they may consider them as part of the 2018 scallop priorities.

### ***Potential Work Priorities for 2018***

Council staff began the initial PDT discussion on potential 2018 scallop work priorities, noting that the PDT will have another chance to discuss these items on August 30<sup>th</sup> before they are forwarded to the AP and Committee for review. The Council will make recommendations for 2018 priorities in December.

In September, the Committee will discuss whether there are any regulations in the Scallop FMP that could be eliminated, improved, or streamlined. Several recent Executive Orders have been issued about streamlining current regulations, and NOAA is seeking public input on the efficiency and effectiveness of current regulations and whether they can be improved.

Members of the PDT identified the seemingly low number of monitored offloads, and relatively low compliance with VMS pre-land compliance in the LAGC IFQ component of the fishery (as described in the LAGC IFQ program review) as issues that could be explored by the Council in 2018. Overall, the PDT agreed that it would be pertinent to investigate the scope of these issues to better inform the amount of resources that should be used to address them. Additionally, it



was suggested that these same issues be investigated for the LA component as well, as it may be a fishery wide issue.

Dr. Bill DuPaul offered to assist with any future work on gear modifications to protect small scallops.

Another member of the PDT suggested a 2018 work priority address observer coverage protocol in the LAGC IFQ component, stating that the current protocol impacts fishing behavior (vessels fish differently when an observer is onboard vs. when there is no observer) and creates bias in observer data.

### ***Housekeeping for August PDT meeting***

Council staff presented a draft agenda for the August 29-30, 2017 PDT meeting, and requested PDT input on presentations/topics of discussion for the 2-day meeting. One member of the PDT expressed interest in seeing VMS plots for DelMarVa in FY2017 to better inform expected fishing behavior in FY2018. Ben Galuardi (GARFO) confirmed he could provide the requested VMS plots along with updated market grade information for FY2017.

Dr. Hart noted that it could be useful to discuss potential ways that the LPUE model may be improved in the future. Staff requested that Chad Keith (NEFOP) present information on observed discards to the group at the August meeting. The group briefly discussed examining data on sea surface temperature (SST), as it was a consideration in the seasonal closure of the Elephant Trunk Flex Area in FW28. The PDT is not planning on conducting any additional work with SST at this time, though the topic may be explored at the upcoming scallop benchmark assessment.

The group discussed how much survey/assessment data will be available at the two day meeting. There is interest in seeing 2018 exploitable biomass estimates as early as possible (SAMS run), though there are a series of decisions the PDT needs to weigh in on before the model configuration can be considered final. The PDT noted it may be helpful to compile a straw-man so that the PDT can walk away from the 2-day meeting with a ballpark idea of potential alternatives for FY2018. Some members of the PDT cautioned that locking in alternatives before the PDT has seen the final SAMS model output could prove to be counterproductive to the process. Staff will follow-up on timing with the PDT.

### ***Other Business***

No other business was discussed.

Table 1 – NGOM Fishery data from 2008 – 2017.

	A	B	C	D	E	F	G	H
1	Fishing Year	LAGC Landings (lbs)	LA Landings (lbs)	Total Landings (lbs)	LAGC % Landings	TAC	TAC - overages	LAGC Landings as % of TAC (F-B)
2	2008	9,936	0	9,936	100.0%	70,000	70,000	14.2%
3	2009	5,793	0	5,793	100.0%	70,000	70,000	8.3%
4	2010	8,639	0	8,639	100.0%	70,000	70,000	12.3%
5	2011	6,908	0	6,908	100.0%	70,000	70,000	9.9%
6	2012	7,440	0	7,440	100.0%	70,000	70,000	10.6%
7	2013	55,450	0	55,450	100.0%	70,000	70,000	79.2%
8	2014	57,842	0	57,842	100.0%	70,000	70,000	82.6%
9	2015	72,546	0	72,546	100.0%	70,000	70,000	103.6%
10	2016	89,083	292,517	381,600	23.3%	70,000	67,454	127.3%
11	2017	44,557	1,578,020	1,622,577	2.7%	95,000	73,371	46.9%
12	<p>Note: The 2016 TAC in the NGOM was based on historic landings data (as were all TACs from 2008-2016). The 2017 TAC was informed by the UMaine/ME DMR survey of the area. Biomass estimates were developed assuming a dredge efficiency of 0.4, and include animals &gt;88.9mm. The Council recommended setting the TAC using an exploitation rate of 0.2 (2,055,240), and selected the q 0.15 value (411,048 lbs). The LAGC TAC was set by applying the ratio of GC to LA landings from the 2016 FY (23%) – this is how the Council arrived at the 95,000 lb LAGC TAC. The LAGC exceeded its TAC in 2015 and 2016, so final TAC was reduced to account for this overage in subsequent years.</p>							