This document summarizes the discussions of the Northeast Trawl Advisory Panel that was convened on December 17, 2018 at NOAA’s Northeast Fisheries Science Center- Narragansett Laboratory, Narragansett, RI from 9 am to 4 pm. A summary of Panel recommendations, and key discussion points, and meeting agenda are presented below. This summary does not capture every individual comment or discussion point and included individual comments may not represent consensus.

**Meeting Participants** (NTAP, NTAP WG members, and public):

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**Summary Panel Recommendations:**

1. NEFSC shall review the body of cooperative survey gear research results, e.g., sweep study results, and analytical products completed for recent assessments applying these results; and apply new information to the upcoming 2019 groundfish assessments utilizing the flexibility and opportunities provided in the new assessment process. NEFSC Stock leads would consider new information and would provide a justification for its use or non-use in the upcoming assessments.
2. NEFSC should work with NTAP/NTAP Working Group to help prioritize species targeted for incorporating new information, recognizing that there would be a higher level of review for these assessments as per the new process. Prioritization of efforts could be made based on a number of factors, including adequate new data, and type of assessment model used for a particular stock.


4. Panel supports scheduling flume tank experiments/visualizations for Winter 2019 with a potential target date in February. Phil Politis will work with SMAST and Memorial University to set up the experiment, develop gear scenarios, and schedule webinar and in-person NTAP meeting at SMAST. If NTAP members have more thoughts on flume tank experiment share these ideas with Phil Politis.

5. Fixed gear interactions in the Gulf of Maine with the Federal Survey continue to impact station productivity and access to survey strata-particularly in the Eastern Gulf of Maine. NEFSC to continue to work with the Atlantic Offshore Lobstermen’s Association and the State of Maine to address this issue. In addition, potential efforts to reduce and eliminate derelict fixed gear could be pursued.

6. NTAP is interested in continuing to be updated on the 2018 Climate and Groundfish Research Program funded project entitled “Using Fishermen’s Ecological Knowledge to identify climate driven distribution shifts in flatfish and investigate their potential impact on population assessments.” As this project matures further and future industry workshops scheduled, NTAP members would like to be involved.

7. NTAP approves of further developing a 2019 Research Plan that would better describe the following elements: door testing, flume tank experiments, gear performance twin trawl experiment, analytical work to apply previous NTAP cooperative survey gear research into upcoming 2019/2020 assessments. This research plan, e.g., or Road Map, would clarify how this body of research meets specific objectives, decision-making, and joint goals of NTAP and NEFSC.

8. Both Councils to post applications for vacant seats on NTAP in the beginning of 2019.

9. NTAP communications have been bolstered by continued email status updates from NEFSC and this remains the preferable mode of communication. In addition, NTAP website will continue to be updated. NEFSC will provide additional information specific to how NOAA Fisheries is utilizing NTAP sponsored research to improve their science via a new website. NEFSC will ensure appropriate linkages between Council website and NOAA are made to avoid duplication and assure user needs are met.

10. Next NTAP Meeting to be schedule in February to conduct Flume Tank Experiment, discuss preliminary feedback on 2019 groundfish assessments, and logistics for upcoming Spring/Summer door testing.

11. NTAP recommends holding off development of interim new gear performance protocols until completion of the NTAP joint research plan. However, 13 meters remains the target wingspread for the survey. For the purposes of pursuing door testing experiments, wingspread tolerances between 11.6 and 14.5 meters could be used as
target thresholds for performance experiments. Once this work is completed, NEFSC to review results with NTAP and discuss options moving forward.

12. NTAP acknowledges that federal survey operations across Southern New England and the Mid-Atlantic region will be negatively impacted by proposed wind farm developments which has the potential to decrease the accuracy and precision of NOAA stock assessments and consequent negative impacts on setting quotas through the management process. NTAP recommends that the Councils and NOAA consider the following recommendations in forthcoming comments and input into BOEM permitting processes: The impacts to all federal surveys (and impacts to assessments) should be assessed; alternative survey methods be developed, tested, and calibrated against exist survey operations, prior to the construction of any projects. Based on the current proposed wind energy areas, the Federal Bottom Trawl Survey stratification scheme will need to be changed. NTAP recommends that NOAA explore how this will be accomplished and address this need based on the timing of future construction activities.

Summary Discussion Points by Agenda Topic

I. Introductions, adoption of agenda

II. Review results of NTAP Working Group

Industry members communicated their frustration to make more effective use of the joint research we have already completed, and the group discussed how the new assessment process can address this problem.

There was concern that information will not be used in assessments, which is frustrating for industry. Data were collected from hundreds of tows over 30 sea days and are ignored. Instead, this information should be used in every assessment. To improve the process in the future, the group recommended application of sweep study research results to future assessments. In addition, industry interests want to be sure that any future research designs have more participation by assessment task leads who understand the assessment process and can highlight study design issues early in the process, well ahead of execution of the research.

Population Dynamics Branch staff outlined the new process that takes effect this year and explained that our previous process had limited flexibility to incorporate new information into an operational assessment such as the 2017 Groundfish Assessments. In addition, NEFSC staff described how that information was used directly in recent assessments. The summer flounder assessment used results of gear efficiency experiments directly in assessment analyses, as did other assessments (e.g., witch flounder, Georges Bank yellowtail flounder). For the 2017 Groundfish assessments, the SAW/SARC Review Panel generally said no to changing the
assessment method and endorsed use of the sweep study data to be used as a diagnostic tool\(^1\). The new process allows us to take this information directly into the 2019 Groundfish Assessments.

Industry members also described in detail concerns when this data is not applied for stocks where there is a perceived mismatch between model results and what the industry is observing in the field. Witch flounder was discussed as an example, when comparing catch advice totals for the entire stock relative to the biomass captured as part of an 8-day field study. Industry is interested in helping to improve assessments, particularly where there are these major mismatches. (As noted above, sweep study information was used in the witch flounder stock assessment.

Industry members don’t want to spend time working with NTAP to address gear performance issues if the if the information is not going to utilized meaningfully. NEFSC shall review the body of cooperative survey gear research results, e.g., sweep study results, and analytical products completed for recent assessments applying these results; and apply new information to the upcoming 2019 groundfish assessments utilizing the flexibility and opportunities provided in the new assessment process. NEFSC stock leads would consider new information and would provide a justification for use or non-use of gear research results in the upcoming assessments.

NEFSC should work with NTAP/NTAP Working Group to help prioritize species targeted for incorporating new information, recognizing that there would be a higher level of review for these assessments as per the new process. Prioritization of efforts could be made based on a number of factors, including adequate new data, and type of assessment model used for a particular stock. Some priorities that were identified by NTAP included: CC/GOM yellowtail flounder, American plaice, witch flounder, red hake, thorny skate, southern windowpane flounder, SNE yellowtail flounder, SNE and GOM winter flounder-SNE, GOM, skates. [Check notes: GOM or GB?]

Panel supports NTAP Working Group recommendations for 2019 proposed gear efficiency twin trawl experiment with the F/V Karen Elizabeth. Additional effort by NEFSC and NTAP will continue to refine priority species lists.

\(^1\) See pages 7-8 in Reviewer Comments:Overview- Northeast Fisheries Science Center. 2017. Operational Assessment of 19 Northeast Groundfish Stocks, Updated Through 2016. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-17; 259 p. doi: [10.7289/V5/RD-NEFSC-17-17]: “The review panel was pleased to see the work coming out of the Cooperative Research Survey Program. In this review, the data were used to help validate existing model-based trends as well as provide direct input into catchability estimates for empirical approaches when no integrated model was available for use. The assessment community is encouraged to continue to use these data for such purposes. One must recognize, however, that such data are most useful when considered in the longer term. More specifically, the review panel notes that individual surveys must be viewed in the context of long-term data collection efforts and extensive integrated assessments that undergo ongoing review. One should not expect that a single experiment should overturn years of systematic analysis, but should be instrumental in providing validation and by contrast challenges to the existing methods. Such studies should also point to where additional work is needed.”
III. Update on status of flume tank experiments, Identify Skype location; find windows for scheduling jointly between Memorial, Skype location, and NTAP membership

Phil Politis provided a short update on flume tank experiments: We are looking to conduct this in February 2019 and will be doing a test run of the connection this week. Video connection and remote viewing will be at SMAST. Use of doors could be problematic due to size of tank and lack of scale doors. We can model the wingspreads, by defining spread in the tank with posts. NTAP members concurred on this approach.

Phil Politis will develop a process for what to see first and what is possible so that they can prepare scenarios. Memorial is a bit concerned about their ability to achieve overspreading conditions.

Industry members remarked that what we see will under tank conditions would be perfect conditions vs in situ. It may be possible to do some specific door scenarios—weight of wire trip door spreading etc. Memorial can change tow speed via flow, and it would be useful for people not familiar with gear behavior to see the effects of tow speed on net geometry.

**Action:** If NTAP members have more thoughts on flume tank experiments, share these ideas with Phil Politis.

IV. Update on evaluation of effect of wingspread on assessment results: TRAC results, summer flounder results

[Presentation Link]

Blaylock presented and short discussion on results.

V. Update on results of 2018 fall survey

Phil Politis provided overview of Fall 2018 NEFSC bottom trawl survey. The survey left on time, reducing some sampling south of Delaware Bay to avoid impacts from Hurricane Florence and made significant progress during the first two legs. Weather on Eastern Georges Bank forced operations into Cape Cod Bay. Some stern-gate/flooding issues required repair as did an electrical supply, which combined with weather, used up the used-up remainder of Leg III. Leg IV completed Georges Bank sampling; and after a delay due to water intake repairs, sampling focused on western GOM for the remainder of the survey. The survey covered 314 stations of 377 planned. All strata were sampled except for 30, 34, 351, and 36.

There was a lengthy discussion on fixed gear interactions and discussion on whether we are seeing a sampling bias away from shallower strata. Fixed gear interactions in the Gulf of Maine with the Federal survey continue to impact station productivity and access to survey strata, particularly in the Eastern Gulf of Maine. NEFSC will continue to work with the Atlantic Offshore Lobstermen’s Association and the State of Maine to address this issue. In addition, potential
efforts to reduce and eliminate derelict fixed gear could be pursued. Phil Politis concurred that this is a big problem. Burton Shank and Phil Politis met with lobstermen last year to work out sampling availability. An initial analysis conducted by Burton did not demonstrate that we are moving deeper and there was not a clear relationship, although up north in GOM there might be a signal. However, there is a lot of bottom that is unfishable anyway. Anything north of Portland inshore is almost unfishable. Working around fixed gear is time consuming, slows the operation down and reduces productivity.

Panel Chair asked how not sampling the four strata in fall, 2018 will impact 2019 groundfish assessments. Can we identify these upfront? Chris Legault indicated that in similar situations in the past, we have made corrections for this looking at proportionality of those strata to contributing data. Overall, we do not expect a large impact. Chris Legault also discussed reasons why some assessments may not include all strata. Some strata are not consistently sampled and so may not be included in the assessment.

There was some discussion about changes in fish availability and movement to north and east. Yellowtail are moving offshore, and dabs and grey sole are now east of Jeffries Ledge. If we are not sampling those areas, we will be missing this important change. We need to have some concerted effort to sample in eastern Gulf of Maine. In the past, this area might not have contained significant amounts of fish, but that may not be the case now. This area is a graveyard of derelict gear to deal with as well.

VI. Brief status update on project to collect and evaluate fishery ecological knowledge of GOM flatfish distribution shifts and their possible impacts on the availability to fishery independent surveys.
See Pavolich presentation [Link]
Pawlovich presentation and follow up discussion:

The topic of availability engendered significant discussion. Industry members talked about spending more time avoiding choke species than targeting species. For example, Terry Alexander leased over 100K pounds of dab this year because they are so abundant. Fishing has moved offshore to avoid cod.

Taylor Pawlovich asked if landings are not a reflection of abundance and distribution, how far off are they, and how important is that to assessments? That’s where the project needs more help.

David Richardson discussed different trends in American plaice abundance between the inshore Massachusetts survey and the offshore NEFSC survey, and how to interpret these differing trends. There are often multiple surveys used to monitor the same stock, but surveys may not cover the entire stock area.

A field study would be desirable to sample areas with high concentrations of fixed gear, to determine the relative abundance of fish in towable vs. non-towable areas. David Richardson noted there may be several ways to determine what proportion of survey area is towable vs.
non-towable, for example comparing towable areas from 1970s surveys to present. For first phase of this project, it will be challenging to design and carry out an experiment on timing/availability due to schedule issues.

David Goethel observed that with a survey’s random stratified design, at some point we should pick up the fish somewhere. However, over time there are fewer dots (stations). Placement of those dots with respect to habitat may also be important and should be evaluated in the assessment process. We need to determine how station density affects our perception of stock status.

There was some discussion on BTS survey time frame. Michael Pol indicated ideally, would the survey go off the same time of year or follow the movement of fish. Survey was designed based on movement patterns 30 years ago.

There were questions on whether fisheries dependent data would be incorporated into this project. Attribution of landings data to fine geographic scales is problematic: currently, landings are attributed only to major stock areas. Alternate sources of fine scale spatial information on catch include observer data and study fleet data. Although fishery-dependent data has a huge story to tell, it needs to be tapped into in a non-biased way. The study fleet can be helpful in looking at shifts in species landing and time of year.

Changes in quotas from year to year may also be driving shifts. Accounting for changes in targeting and trying to document the issues driving those changes is very difficult. For example, fishery observer data are affected by changing regulatory and economic drivers rather than changing abundance and distribution. Ratios of lease costs to dealer costs may also be informative, but likely will depend on sector level lease prices. We are also talking with MADMF—mapping distribution of fixed gear may also be fruitful.

NTAP is interested in continuing to be updated on the 2018 Climate and Groundfish Research Program funded project entitled “Using Fishermen’s Ecological Knowledge to identify climate driven distribution shifts in flatfish and investigate their potential impact on population assessments.” As this project matures further and future industry workshops scheduled, NTAP members would like to be involved.

VII. Develop workplan for 2019

Gabriel Presentation Link

It was suggested that in addition to the 2019 elements identified on the presentation (flume tank experiments, door testing, twin trawl study) that we add an element to apply work completed to the FY19 assessments.
Industry members felt the timing of door experiments before twin trawl experiments was a bit backwards, because there would be no experimentally-based information on performance targets the alternative doors should meet.

The topic of gear performance thresholds, how to utilize them in the experiments, consider them in applications to the surveys was raised and revisited as a separate topic described below.

Industry had questions on whether NEFSC had pass or fail values for tows in addition to the tow performance ratings for each tow. The answer is yes, and the determination is based on a number of factors, including depth. Re-tows are performed based on station productivity and timing.

NTAP approves of further developing a 2019 Research Plan that would better describe the following elements: door testing, flume tank experiments, gear performance twin trawl experiment, and analytical work to apply previous NTAP cooperative survey gear research into upcoming 2019/2020 assessments. This research plan, e.g., or Road Map, would clarify how this body of research meets specific objectives, decision-making, and joint goals of NTAP and NEFSC. There was discussion on what role others would play in assessing cost/risk to making changes and developing guidelines.

**VIII. Plan to update NTAP Membership**
Councils will be posting an announcement for membership; early in the new year;

**IX. Preferred/available methods for communication: e-mail, website, conference calls**

There was discussion and feedback on current communication. Councils appreciate prompt and concise meeting summaries. There was recognition that NTAP communications have been bolstered by continued email status updates from NEFSC and this remains the preferable mode of communication. In addition, the NTAP website will continue to be updated. NEFSC will provide additional information specific to how NOAA Fisheries is utilizing NTAP sponsored research to improve their science via a new website. NEFSC will ensure appropriate linkages between Council website and NOAA are made to avoid duplication and assure user needs are met.

**X. Schedule next meeting(s)**

February: Panel, Working Group members and other interested public meet to view flume tank experiment and get preliminary feedback on catchability work in 2019 assessments (Schedule has since been overcome by events.)
Working group meeting will be scheduled (TBD) to develop logistics for door testing and refine twin trawl experimental design.

**XI. Offshore Wind**
Lipsky Presentation [Link]

Offshore wind will lead to a significant increase in untrawlable habitat and potential restratification of the Federal survey.

The NTAP Chair indicated that the Councils will bring up this issue in February and provide some recommendations for NTAP engagement on this topic, including consideration of NTAP’s current scope of activity.

NTAP acknowledges that federal survey operations across Southern New England and the Mid-Atlantic region would be negatively impacted by proposed wind farm developments, which have the potential to decrease the accuracy and precision of NOAA stock assessments and consequent negative impacts on setting quotas through the management process.

NTAP recommends that the Councils and NOAA consider the following recommendations in forthcoming comments and input into BOEM permitting processes: The impacts to all federal surveys (and impacts to assessments) should be assessed; and alternative survey methods be developed, tested, and calibrated against existing survey operations, prior to the construction of any projects. Based on the current proposed wind energy areas, the Federal bottom trawl Survey stratification scheme will be affected. NTAP recommends that NOAA explore how this would occur and address the need for restratification based on the timing of future construction activities.

XII. Spread tolerance discussion

There was discussion by industry on whether we should establish interim guidelines for wingspread tolerance. What do we consider optimal? This also affects the door experiment. Does 1.5 meters on either side of 13m work?

NTAP recommends holding off development of interim new gear performance protocols until completion of the NTAP joint research plan. However, 13 meters remains the target wingspread for the survey. For the purposes of pursuing door testing experiments, wingspread tolerances between 11.6 and 14.5 meters could be used as target thresholds for performance experiments. Once this work is completed, NEFSC will review results with NTAP and discuss options moving forward.