Northeast Trawl Advisory Panel

Overview

The Northeast Fisheries Science Center's (NEFSC) fisheries research surveys are crucial to understanding the overall status of our fishery stocks and predicting how these may change over time. To ensure that these surveys provide the best available science we look for ways to collaborate with other experts from the region including industry members and other stakeholders.

The Northeast Trawl Advisory Panel (NTAP), an industry advisory panel set up by the New England and Mid-Atlantic Fishery Management Councils, plays a crucial role in current collaborative efforts. In addition to the science center the panel includes experienced commercial fishermen, gear experts from academia as well as industry, leaders of other regional surveys, and scientists from other agencies. NTAP aims to bring this diverse set of minds together to identify concerns about regional research survey performance and data, to identify methods to address or mitigate these concerns, and to promote mutual understanding and acceptance of NEFSC surveys.

The NEFSC's multispecies bottom trawl survey is the current focus of the NTAP. This includes investigating how the NEFSC bottom trawl configuration (sweep, doors, and net width) affects catch rates, survey indices, and stock assessments in general. Planning and conducting collaborative field research to better understand the potential effects of bottom trawl gear configuration on catch rates is a key component of this work. The NEFSC will continue to work through this group and within the larger advisory panel to evaluate and improve the bottom trawl survey and use of the survey data in fisheries stock assessments.

Our Team

To work effectively with the Northeast Trawl Advisory Panel, the NEFSC has formed an internal team. Team members come from our survey, stock assessment, cooperative research, and leadership groups. This team works directly with the larger panel, provides a vital communication link with others in our science center, ensures we are getting the right information to the advisory panel, and takes the lead on any center activities required to put advisory panel ideas to work.

NEFSC NTAP Advisors: Kathryn Ford (Chief, PEMAD), Anna Mercer (Chief, Cooperative Research Branch), Philip Politis (Bottom Trawl Program Lead, Ecosystem Survey Branch), Timothy Miller (Research Fishery Biologist, Population Dynamics Branch)

NEFSC NTAP Contact: Katie Burchard (Cooperative Research Branch), katie.burchard@noaa.gov

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Industry and Science NTAP Advisors are listed on the MAFMC NTAP Website: http://www.mafmc.org/ntap.

NOAA FISHERIES
National Marine Fisheries Service
Northeast Fisheries Science Center

Recent NTAP Projects

Rock Hopper Catchability Experiments: From 2015-2017, the NEFSC worked closely with the NTAP to conduct a series of experiments aboard the twin-trawl F/V Karen Elizabeth to investigate the efficiency of the rock hopper sweep used on the NEFSC's bottom trawl survey. Results indicated that the rock hopper sweep is up to several orders of magnitude less efficient than a chain sweep, with efficiency variable by species. These results have been incorporated in several stock assessments, as described in the next section.

Flume Tank Demonstrations: In July 2019, a model of the NOAA Ship Henry Bigelow bottom trawl survey net was deployed in the flume tank at Memorial University in Newfoundland. The goal was to better understand how the net's wingspread affects gear performance. Flume tank operators measured and recorded wing-spread, headrope height, and water flow across a range of configurations, and captured photographs to get paired measurements and visualizations.

Net Spread Experiment: The NEFSC chartered the F/V Karen Elizabeth for 14 days in September 2019 to evaluate catch efficiency of the NEFSC survey trawl at various net spreads and tow depths. The objectives were to quantify species and length of fish caught, and to compare catch at various net spreads in shallow and in deep water. The experiment was modeled after the chain-sweep catchability study conducted by NTAP from 2015-2017.

Door Trials on Henry Bigelow: The NEFSC is working in close consultation with the NTAP to investigate methods to achieve consistent net spread of the survey's bottom trawl gear. The goal is to find a door that achieves an optimal net spread without needing extreme amounts of wire, and which provides consistent performance over the range of depths sampled during the NEFSC's bottom trawl survey. NTAP members sailed on NOAA Ship Henry Bigelow to assist with eight days of door testing in August 2019.

NTAP Work Feeds Into Stock Assessments

Understanding stock assessment model accuracy: In 2017, NEFSC stock assessment scientists used the results of the rock hopper catchability experiments to investigate the accuracy of the bottom trawl survey biomass estimates for flatfish species. In 2019, assessment scientists used the experimental results to adjust bottom-trawl survey biomass estimates for yellowtail flounder, winter flounder, and American plaice.

Setting catch advice when models are not enough: Sometimes analytical models do not provide a clear enough picture of stock status to develop catch advice, so scientists must develop alternative methods. The rock hopper catchability estimates have been used in alternative models for window-pane and witch flounder.

Direct input to an assessment model: NTAP's chain sweep efficiency research conducted on the F/V Karen Elizabeth in 2015-2017 identified significant differences in catch efficiency of flatfish, red hake, and skates between chain-sweep and rock hopper gear. In 2018 assessment scientists used results from this research directly in analytic models to convert catch data from the bottom-trawl survey into a population estimate for summer flounder.