



D3 Species Distribution Models for EFH

June 2020 Council Meeting

Action Memo

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Action Required: Review Discussion Paper (SSC only)

BACKGROUND

For this agenda item, scientists from the Alaska Fisheries Science Center and NMFS Alaska Region Habitat Conservation Division will present a number of modeling projects that may provide information to describe Essential Fish Habitat (EFH) for some species at higher levels than the current descriptions. **The authors of the paper are seeking input from the SSC regarding study methods, progress to date, and planned products for the next EFH 5-year review.**

The 1996 provisions to the Sustainable Fisheries Act require regional Fishery Management Councils to describe and identify Essential Fish Habitat for all fisheries and to minimize to the extent practicable the adverse effects of fishing on EFH. The North Pacific Fishery Management Council described EFH for its FMPs in 1999, and with a more comprehensive EIS in 2005. Councils are required to review EFH and, if necessary, update EFH descriptions and maps at least every five years. The Council updated EFH in its FMPs in 2010, and again for five FMPs in 2017. Updates in 2017 introduced new species distribution models (SDMs) to describe EFH, developed a new Fishing Effects model, and significantly updated the evaluation of non-fishing effects on EFH. The SDMs developed for the 2017 review allowed Level 2 descriptions for some life stages of some species in the BSAI and GOA Groundfish FMPs.

Since the 2017 EFH review, additional data have been collected and new modeling methods have been developed that may provide additional information for the Council and its advisory bodies to consider during the next EFH 5-year review.

The authors will present new research from four in-progress studies that will be available to the Council and NMFS for the 2022 EFH review:

1. Lyman et al. (FY19/20) is developing new SDM information and maps for groundfish species life stages in the GOA and BSAI using an SDM approach building on the 2017 review;
2. Marsh et al. (FY 19/20) is developing new SDM information and maps for fish resources of the Arctic using an SDM approach building on the 2017 review;
3. Laurel et al. (FY 17/18/19) is a multi-year integrated study measuring and mapping habitat-related vital rates for groundfish in the GOA;
4. Shotwell et al. (FY 18/19) applies biophysical individual-based models to develop EFH information and maps for early life stages of some groundfish.

If recommended by the SSC, information from these studies will be available to the Council's advisory bodies and stock assessment authors as they consider whether new information suggests that updates to

descriptions and maps of EFH in the Council's FMPs are warranted, as part of the 2022 EFH 5-year review.

Disruptions to the Council's schedule caused by the COVID-19 pandemic precluded this agenda item occurring in April 2020, as originally scheduled. At that time, the agenda also included review of a proposed EFH 5-year review workplan by the Council and its advisory bodies. The staff discussion paper for that workplan is posted at the link below, and may be rescheduled for Council review at some time in the future.

<https://www.npfmc.org/wp-content/PDFdocuments/meetings/April2020/ApproachesToEFH2022.pdf>