



# NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

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## Action Memo

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**Agenda Date**10/3/2016

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**Dan Hull, Chairman**  
**Chris Oliver, Executive Director**

**SUBJECT:**

EFH Descriptions - Review and Identify EFH

**STAFF CONTACT:** Steve MacLean

**ACTION REQUIRED:**

Review status report; determine whether to update EFH in Council's FMPs.

**BACKGROUND:**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires regional Fishery Management Councils to describe and identify Essential Fish Habitat (EFH) for all fisheries, and to minimize to the extent practicable the adverse effects of fishing on EFH. The MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". The National Marine Fisheries Service and Councils must describe EFH in Fishery Management Plans (FMP), minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH. Federal agencies that authorize, fund, or undertake actions that may adversely affect EFH must consult with NMFS, and NMFS must provide conservation recommendations to Federal and state agencies regarding actions that could adversely affect EFH. Councils also have the authority to comment on Federal or state agency actions that could adversely affect habitat, including EFH, of managed species.

The EFH Final Rule requires that EFH is reviewed and revised, as necessary, every 5 years. The EFH Final Rule states that reviews should evaluate: (1) published scientific literature, (2) unpublished scientific reports, (3) information solicited from interested parties, and 4) previously unavailable or inaccessible data. The NPFMC reviewed EFH components and EFH provision in 2010, this review is the second required review. Based on the information provided in the Final Status Report, the Council will determine whether revisions to EFH or reevaluations of EFH management measurements are necessary for any or all of the Council's FMPs. If the Council determines that revisions are necessary, FMP amendments will be prepared and presented to the Council at a future Council meeting. If the Council concludes that amendments are not necessary for one or more FMPs, existing definitions of EFH would remain as the legal descriptions.

EFH Identification

Essential Fish Habitat descriptions consist of text descriptions and maps. For this review, scientists at NMFS Alaska Region, the Alaska Fisheries Science Center, and academic researchers produced species distribution models of EFH for all major species of groundfish and invertebrates in the eastern Bering Sea, Aleutian Islands, and Gulf of Alaska (Appendices A, B, C). Maps of EFH were generated for each species where data exists for egg, larval, juvenile, and adult life history stages in four seasons. The models and map outputs were reviewed and approved by stock assessment authors in January - February 2016. Revisions to EFH text were recommended by nearly all stock assessment authors, and all stock assessment authors recommended use of new maps to describe EFH.

The models and map outputs were reviewed the Council in April 2016. At the initial review the Council requested a single, comprehensive map of EFH for each life history stage, rather than the seasonal maps presented. Single, comprehensive maps were created (Appendices D-I) and reviewed by stock assessment authors in May 2016. At that time, all assessment authors approved the use of the single, comprehensive map with some suggested edits. Although the single, comprehensive maps were initially approved by the stock assessment authors, stock assessment authors and the Groundfish and Crab Plan Teams have expressed concerns with combining outputs of the seasonal maps to create a single, annual map of EFH. Specifically, each Plan Team was concerned that the population abundance estimates from the GAMs and habitat availability from the MaxEnt models were being inappropriately merged. The recommendation from the joint Groundfish Plan Teams and the Crab Plan Team is to convert the summer EFH model to MaxEnt and merge similar outputs if a single map is necessary, otherwise use the original, seasonal maps to describe EFH.

As reported in April 2016, all Bering Sea and Aleutian Island stock assessment authors recommended changes to either the text descriptions or maps of EFH for their species of concern. A summary of the responses from the BSAI stock assessment authors is provided in section 5 of the summary report. Proposed maps of EFH in the BS and AI are shown in Appendices D and E.

Nearly all Gulf of Alaska stock assessment authors recommended changes to either text description or maps of EFH for their species of concern; sculpins were the only species in the GOA for which no changes were recommended. A summary of the responses from GOA stock assessment authors is provided in section 6 of the summary report. Proposed maps of EFH in the GOA are shown in Appendix F.

Stock assessment authors for BSAI King and tanner crab species recommended changes to the text descriptions and maps of EFH. Proposed maps of King and tanner crab species are shown in Appendix F.

No changes to EFH text or maps were recommended for scallop species in Alaska. Existing maps of scallop EFH are shown in Appendix G.

The salmon EFH review team recommended changes to both the text and map descriptions of marine EFH. Proposed maps of salmon marine EFH are shown in Appendix H.

Stock assessment authors for species managed under the Arctic FMP recommended changes to the text descriptions for some life stages of some species, but did not recommend changes to maps of EFH. Existing maps of EFH for Arctic species are shown in Appendix I.

#### Fishing Effects

Along with a determination of whether to update EFH definitions in any or all FMPs, the Council is required to determine whether to update the assessment of the effects of commercial fishing on EFH. Previous fishing effects analyses have employed a numerical model that provided spatial distributions of an index of fishing on several classes of habitat features. Termed the Long-term Effect Index (LEI), this index estimated the eventual proportion of reduced habitat features from a theoretical unaffected habitat state, assuming that current fishing patterns occurred indefinitely. For this EFH review, the Council requested updates to the LEI model to make input parameters more intuitive and to draw upon the latest data. The Fishing Effects (FE) model was developed to respond to these requests and updates the LEI model in several ways: (1) the FE model is cast in a discrete time framework allowing impact and recovery rates to be used to estimate proportion of impacted habitat, (2) the FE model implements sub-annual tracking to allow estimates of habitat disturbance for any month from January 2003, (3) the FE model utilizes the Catch-In-Areas (CIA) database to provide the best available spatial data of fishing locations, (4) the FE model incorporates a global literature review built into the SASI model developed at the NEFMC, continually updated with global and Alaskan literature.

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In April 2016, the SSC requested, and the Council authorized a subcommittee of the SSC to develop new methods to evaluate the effects of fishing on EFH to take advantage of the data and modeling methods available since the 2010 review. A discussion paper describing the new methods will be presented to the Council at the December 2016 Council meeting.

Next Steps

An analysis of the effects of non-fishing activities on EFH is also required by MSA. A draft analysis of non-fishing effects will be presented to the Ecosystem Committee in October 2016, the final report will be presented to the Council in December 2016.

This summary report presents the results of the 2016 review of EFH in the Council's FMPs and satisfies the Council's legal requirement to review EFH. At this point, the Council's primary decision is to determine whether, based on the information presented in this report and public comment, revision to any of the Council's FMPs are warranted. Any revisions would require FMP amendments and the requisite analysis to comply with NEPA and RFA requirements and EO 12866. The Council could also, at this or a later point, consider whether to initiate a new HAPC proposal cycle by identifying priorities and initiating a call for proposals for specific sites for HAPC nomination. Information about both the effects of commercial fishing, and the effects of non-fishing activities on EFH will be presented to the Council in December 2016.