



2016 Review of Essential Fish Habitat in NPFMC FMPs

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Many stock assessment authors and reviewers

Outline

- Regulations and history
- Approach to 2016 Review
- Model-based EFH
- Fishing Effects
- Non-fishing Effects
- Stock Author Recommendations
- Next Steps
- Conclusions

EFH Regulations

- 1996 provisions to Sustainable Fisheries Act required Councils to identify EFH
- Waters and substrate necessary for spawning, breeding, feeding, or growth
- Minimize impacts, conservation & enhancement
- Consultation with NMFS

Magnuson-Stevens Act

16 U.S.C. 1855 MSA Sec. 305 104-297

(b)(1)(A) The Secretary shall **set forth a schedule** for the amendment of fishery management plans to include the identification of essential fish habitat and for the **review and the updating** of such identifications based upon **new scientific evidence or other relevant information**.

(b)(2)(B) The Secretary, in consultation with participants in the fishery, shall **provide each Council with recommendations and information** regarding each fishery under that Council's authority to assist in the **identification of essential fish habitat, the adverse impacts on habitat, and the actions that should be considered to ensure the conservation and enhancement** of that habitat.

Using Best Science and Level of Detail

50 CFR 600.815 (a)(1)(ii)(B).

FMPs must demonstrate that the best scientific information available was used in the description and identification of EFH, consistent with national standard 2.

50 CFR 600.815 (a)(1)(iii)(B)

Councils should strive to describe habitat based on the highest level of detail (i.e., Level 4).

Fishing Effects on EFH Evaluation

50 CFR 600.815 (a)(2)(i)

Each FMP must contain an evaluation of the potential adverse effects of fishing on EFH designated under the FMP, including effects of each fishing activity regulated under the FMP or other Federal FMPs. This evaluation should consider the effects of each fishing activity on each type of habitat found within EFH.

National Standard 2 and 6

NS2 - Conservation and management measures shall be **based upon the best scientific information available.**

NS6 – Conservation and management measures shall take into account and **allow for variations among,** and contingencies in fisheries, **fishery resources,** and catches.

EFH Final Rule

[50 CFR 600.815 (a)(10)]

Councils and NMFS should periodically review the EFH provisions of FMPs and revise or amend EFH provisions as warranted based on available information.

A complete review of all EFH information should be conducted as recommended by the Secretary, but at least once every 5 years.

EFH FMP Review Components

1. EFH description and identification
2. Fishing activities that may affect EFH
3. Non-MSA fishing activities
4. Non-fishing activities
5. Cumulative impacts
6. EFH conservation recommendations
7. Prey species and locations
8. HAPC identification
9. Research and information needs
10. Review

NPFMC EFH History

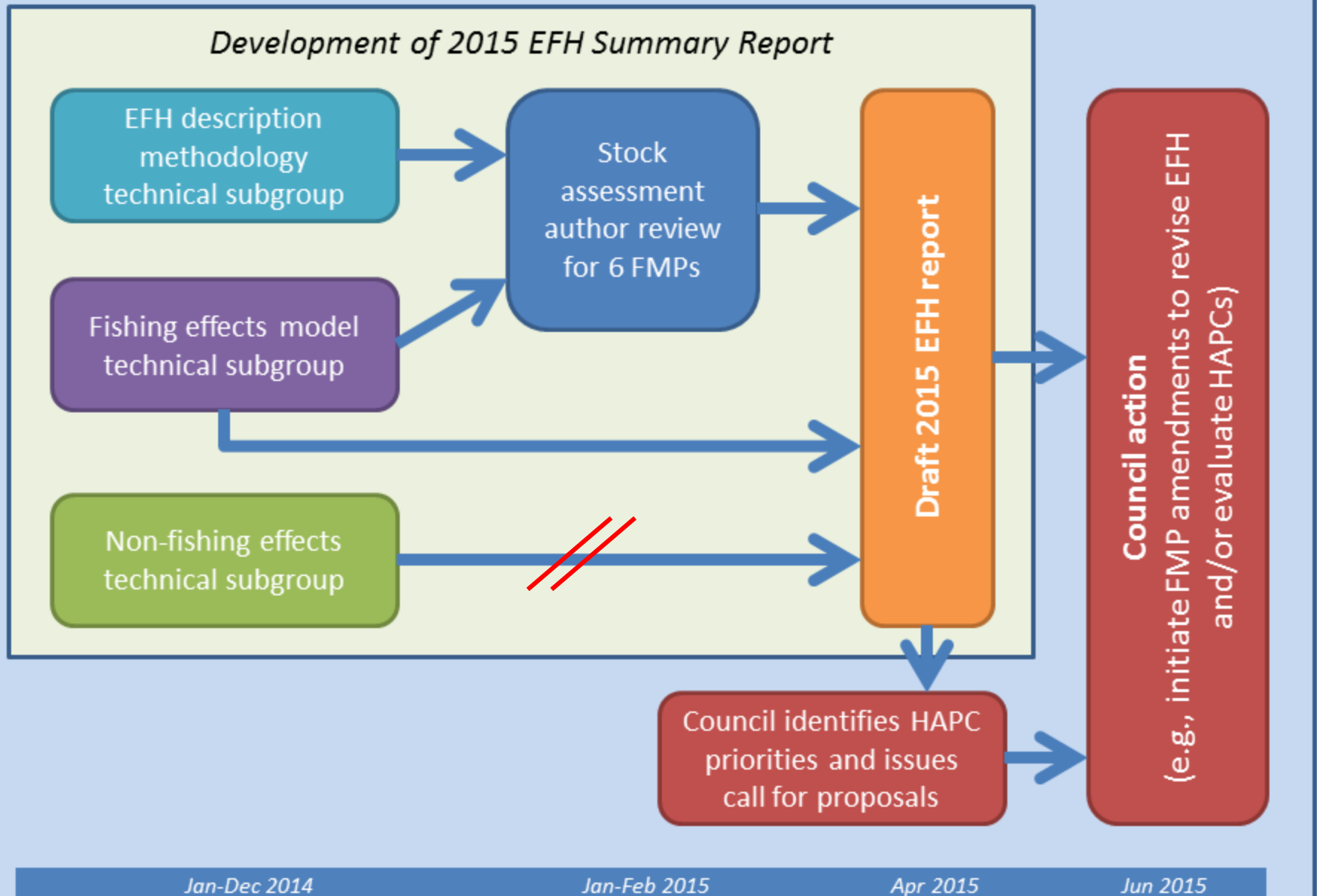
- FMPs amended in 2005 to address EFH requirements
 - Included HAPCs: Seamounts, Bowers Ridge, GOA Coral, GOA slope
- First review of EFH in 2010
- Omnibus amendment to revise EFH adopted in 2012
- Skate nursery area HAPC

Approach to 2016 Review

- Compile and evaluate new information
 - Develop model-based EFH definitions (GAMs)
 - Fishing Effects
 - Non-fishing effects
- Review model outputs and new EFH descriptions
 - Stock assessment authors
 - SSC, ECO, AP
- Compile comments and recommendations from stock authors

Council's EFH Review and HAPC process

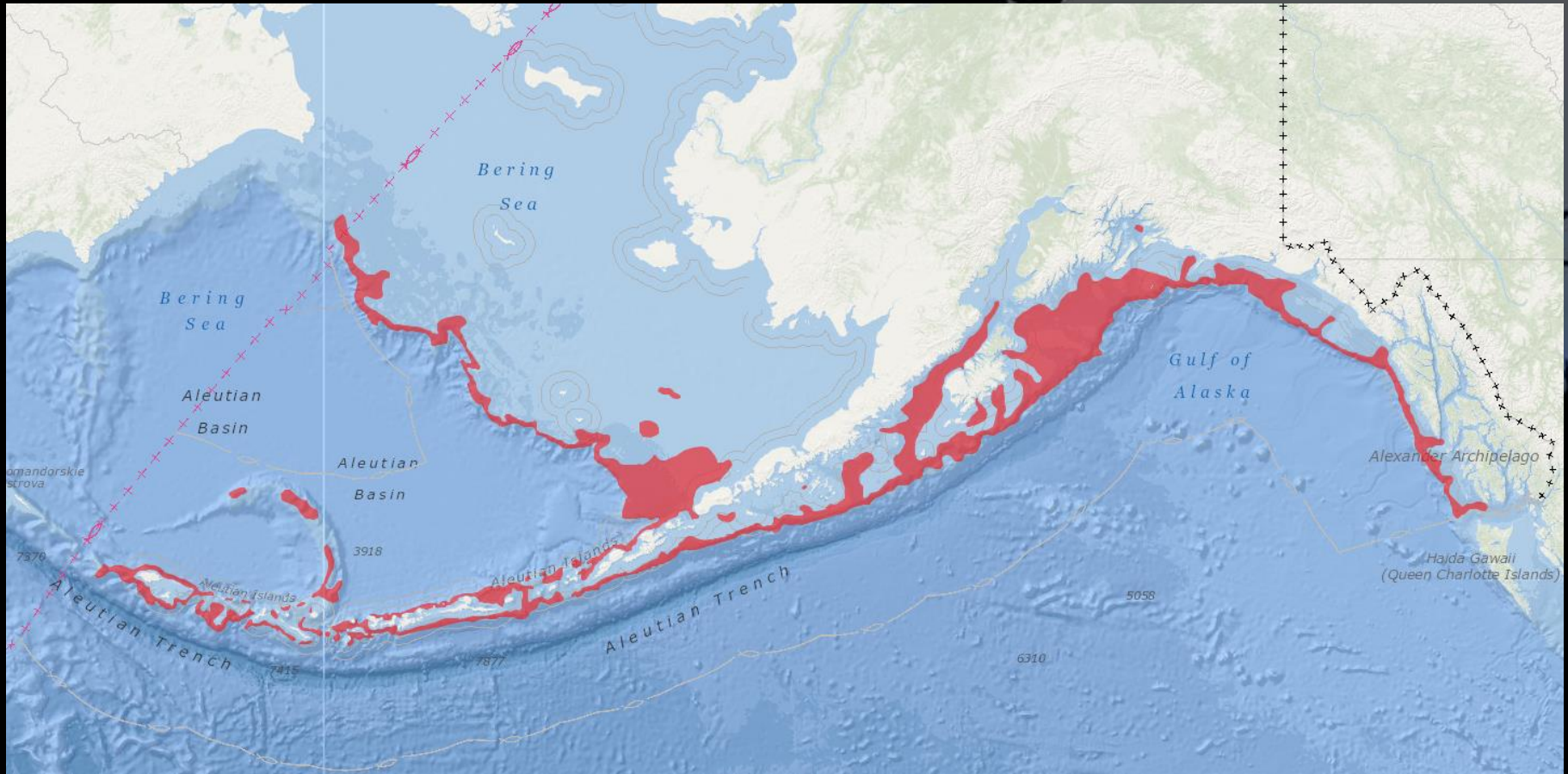
Development of 2015 EFH Summary Report

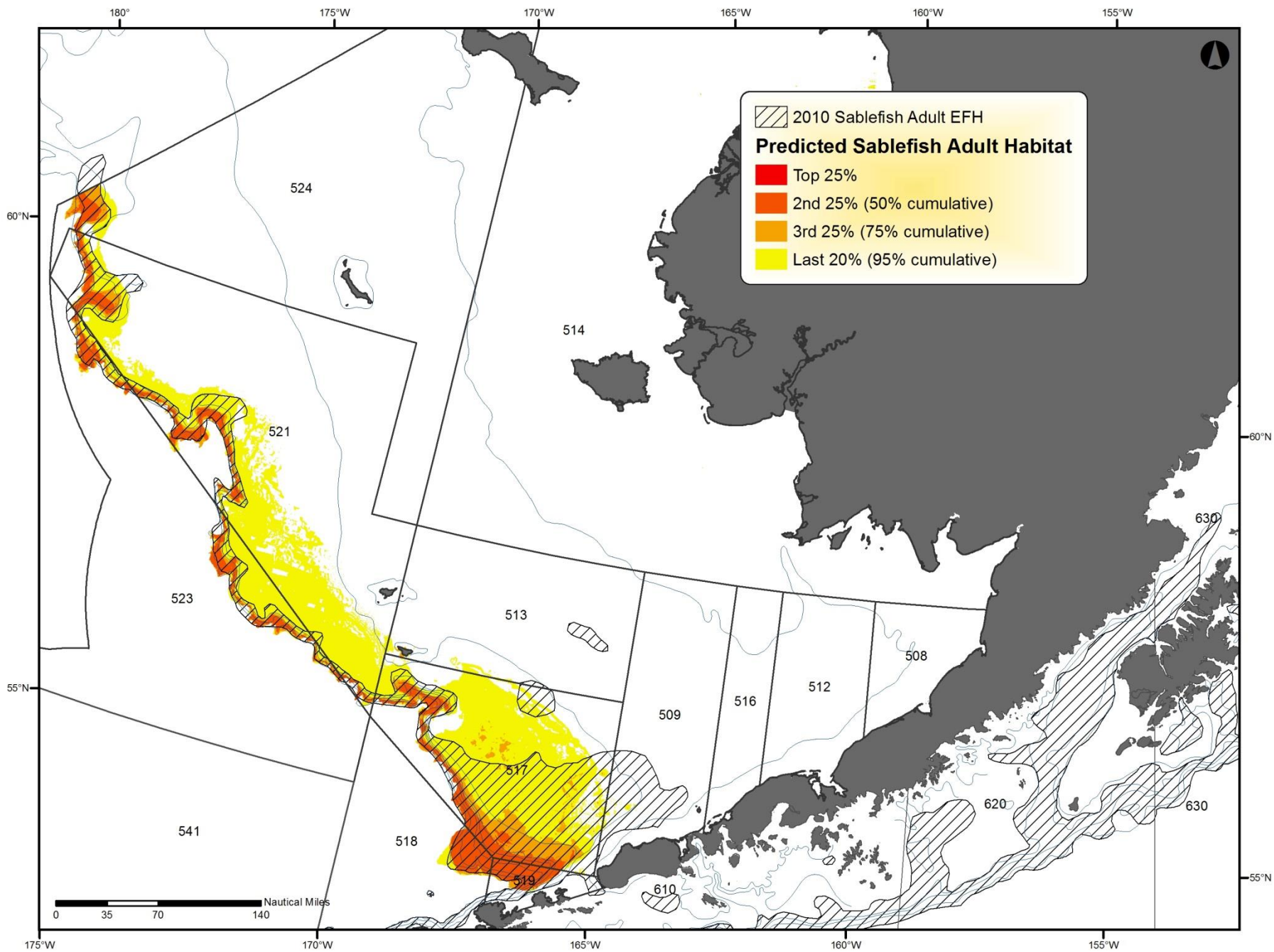


Model-Based EFH Definitions

The background of the slide features a dark blue gradient sky with the silhouettes of various trees and branches, creating a natural, outdoor setting.

BSAI and GOA Sablefish EFH (mature)





Non-Fishing Effects on EFH

New Sections

Climate Change &
Ocean Acidification

New Discussion

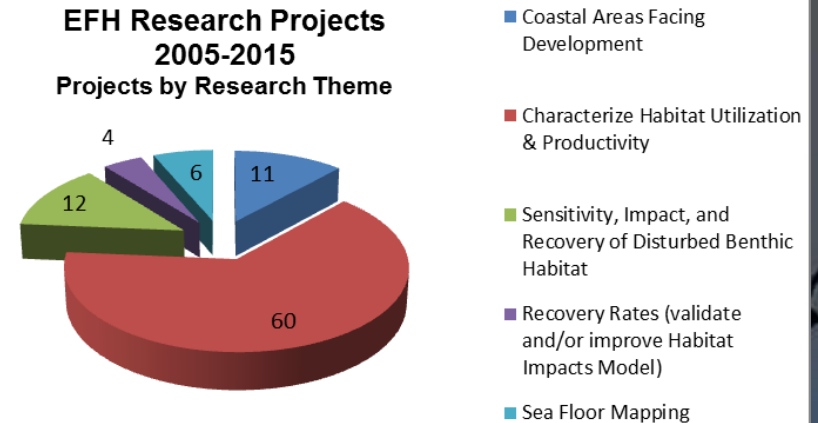
Habitat Transitions &
Water Flow



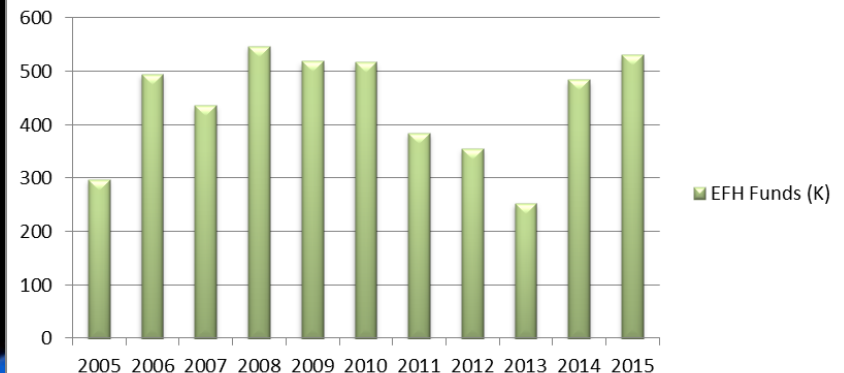
EFH Research Summary

- Since 2005, EFH research continues through close cooperation.
- To date, >90 EFH projects total in excess of \$4.8M (roughly \$400-500K per year fund 5 to 7 projects).
- Includes - general habitat, fishing effects, and EFH refinement.

**EFH Research Projects
2005-2015
Projects by Research Theme**



EFH Funds (K)



Stock Author Recommendations

- Stock assessment authors reviewed all species & complexes in FMPs
- Compared new descriptions and maps to old
- Suggested revisions to text descriptions
- Selected existing maps or new maps

BSAI Groundfish

A large, dark silhouette of a fish, likely a groundfish, is positioned in the background. The fish is facing right and its body is mostly black, with some lighter blue highlights on its fins and tail. The background is a gradient of blue, darker at the top and lighter at the bottom.

- Stock authors review EFH text, level, habitat information, literature
- Suggest changes to text and tables
- Review updated maps

Species	Text Revisions	Replace maps
Pollock	✓	✓
Pacific Cod	✓	✓
Sablefish	✓	✓
Yellowfin sole	✓	✓
Greenland turbot	✓	✓
Arrowtooth flounder	✓	✓
Kamchatka flounder	✓	✓
Northern rock sole	✓	✓
Alaska plaice	✓	✓
Rex sole	✓	✓
Dover sole	✓	✓
Flathead sole	✓	✓
Rockfish	✓	✓
Pacific Ocean perch	✓	✓
Northern rockfish	✓	✓
Shortraker rockfish	✓	✓
Blackspotted & rougheye rockfish	✓	✓
Dusky rockfish	✓	✓
Thornyhead rockfish	✓	✓
Atka mackerel	✓	✓
Squid	✓	✓
Skates	✓	✓

GOA Groundfish

- Stock authors review EFH text, level, habitat information, literature
- Suggest changes to text and tables
- Review updated maps

Species	Text Revisions	Replace maps
Pollock	✓	✓
Pacific Cod	✓	✓
Sablefish	✓	✓
Yellowfin sole	✓	✓
Northern rock sole	✓	✓
Southern rock sole	✓	✓
Alaska plaice	✓	✓
Rex sole	✓	✓
Dover sole	✓	✓
Flathead sole	✓	✓
Arrowtooth flounder	✓	✓
Pacific Ocean perch	✓	✓
Northern rockfish	✓	✓
Shortraker rockfish	✓	✓
Blackspotted & Rougheye rockfish	✓	✓
Dusky rockfish	✓	✓
Yelloweye rockfish	✓	✓
Thornyhead rockfish	✓	✓
Atka mackerel	✓	✓
Squid	✓	✓
Skates	✓	✓
Sculpin		✓

BSAI crab

Species	Text Revisions	Replace Maps
Red king crab	✓	✓
Blue king crab	✓	✓
Golden king crab	✓	✓
Tanner crab	✓	✓
Snow crab	✓	✓

Scallop

- No Changes

Salmon

Species	Text Revisions	Replace Maps
Chinook	✓	✓
Chum	✓	✓
Coho	✓	✓
Pink	✓	✓
Sockeye	✓	✓

- Summary information and maps in Echave et al. 2012 to describe marine EFH

Arctic



- First review of Arctic species EFH
- FMP adopted in 2009
- Stock authors review EFH text, level, habitat information, literature
- Suggest changes to text and tables
- Review updated maps

Arctic

Species	Text Revisions	Replace Maps
Arctic cod	✓	
Saffron cod	✓	
Snow crab		

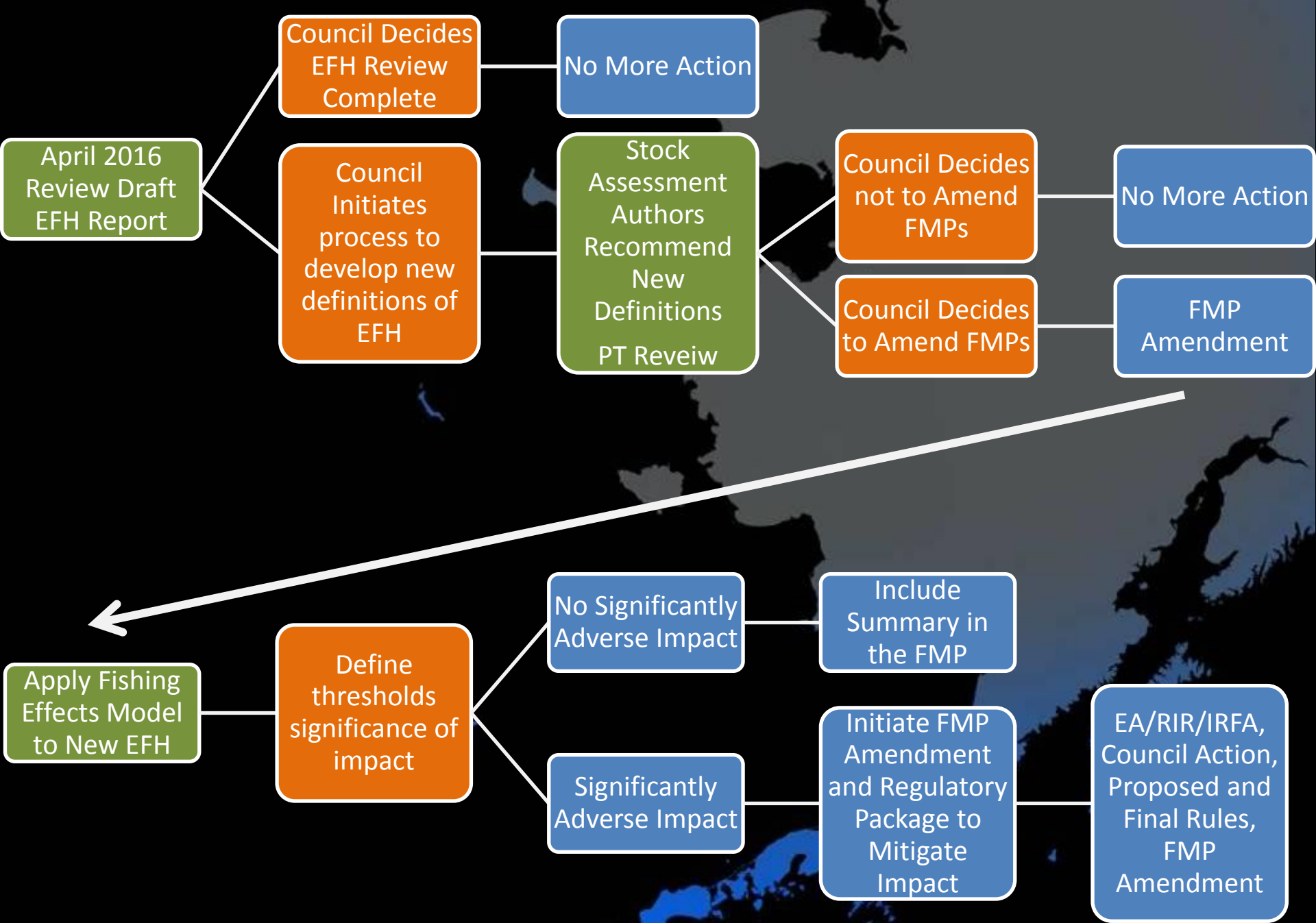
- No changes to maps
- Created habitat association tables

Next Steps in EFH review

- Report meets Council's review obligations
- Questions before the Council
 1. Are revisions to EFH in FMPs warranted?
 2. Is new FE evaluation necessary?
 3. Any new conservation measures necessary?
 4. HAPC priorities and call for proposals?
 5. New EFH research priorities?

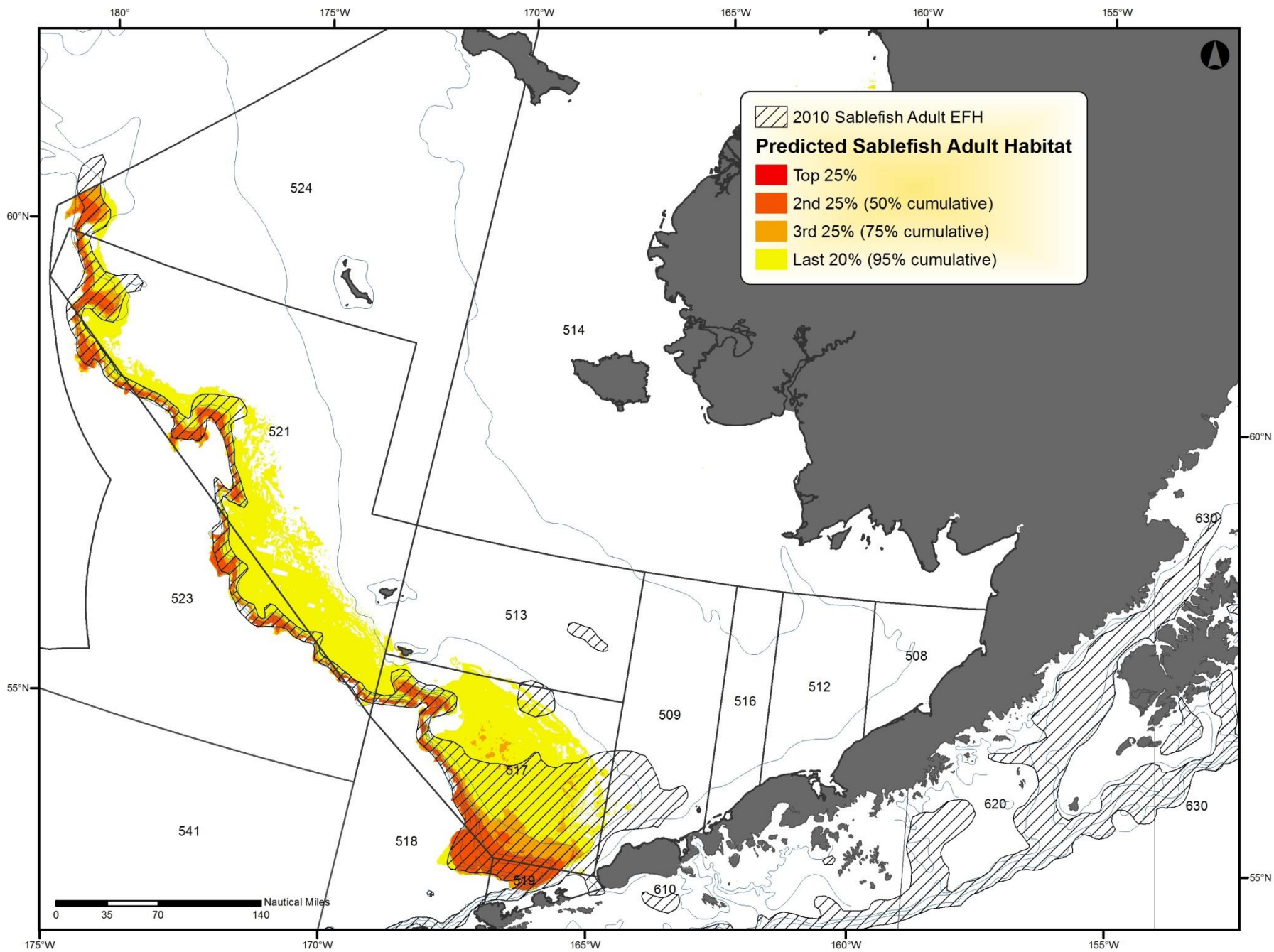
Next Steps for EFH

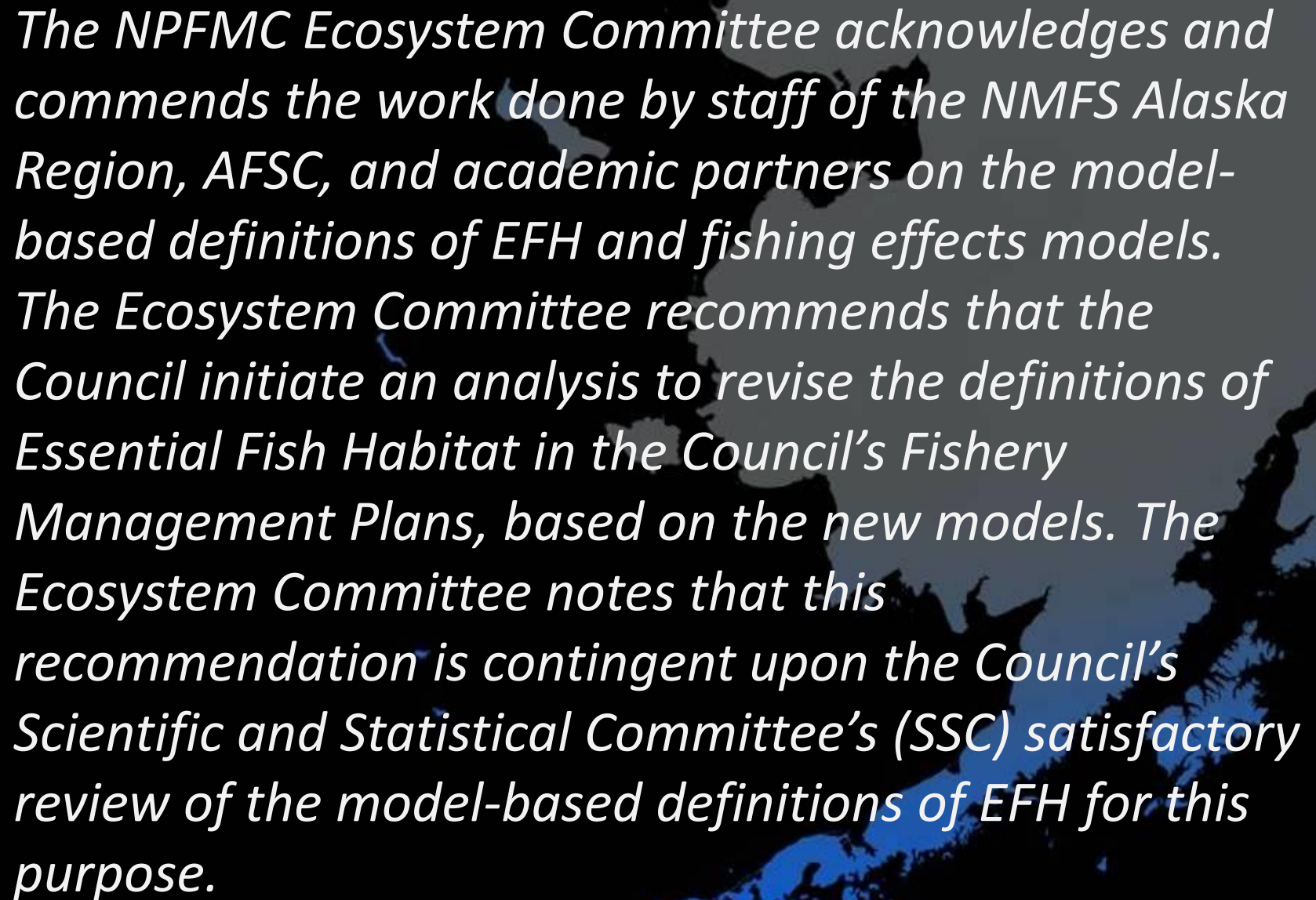
- *IF* changes to EFH are not warranted – NONE
- *IF* changes to EFH may be warranted
 - *Initiate process to redefine EFH*
 - *Stock author refinement of maps and text*
 - *Review by Plan Teams, SSC, AP, Council*
- *IF* EFH redefined
 - *Analyze effects of fishing on new EFH descriptions*
- *Regardless* of whether Council updates EFH
 - *Decide whether to initiate HAPC proposals process*
 - *Decide whether to update EFH research priorities*



Potential timeline

April 2016	Council meeting	Preliminary EFH review at ECO, SSC, AP, Council
June 2016	Council meeting	Non-fishing effects analysis available
<i>May 2016</i>		<i>Refine EFH definitions with stock authors</i>
<i>April – October 2016</i>		<i>Revise EFH report</i>
<i>September 2016</i>	<i>Joint GF PT, Crab PT</i>	<i>Plan Teams review revised EFH definitions</i>
<i>December 2016</i>	<i>Council meeting</i>	<i>Review updated EFH definitions and report</i>
<i>February 2017</i>		<i>Stock assessment authors review EFH</i>
<i>April 2017</i>	<i>Council meeting</i>	<i>Final action on FMP Amendments</i>





The NPFMC Ecosystem Committee acknowledges and commends the work done by staff of the NMFS Alaska Region, AFSC, and academic partners on the model-based definitions of EFH and fishing effects models. The Ecosystem Committee recommends that the Council initiate an analysis to revise the definitions of Essential Fish Habitat in the Council's Fishery Management Plans, based on the new models. The Ecosystem Committee notes that this recommendation is contingent upon the Council's Scientific and Statistical Committee's (SSC) satisfactory review of the model-based definitions of EFH for this purpose.