THE SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

Integration of Revised Food Webs and Connectivity Policy Information into EFH designations and Policy Update issues

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Integrating Prey information into EFH Definitions

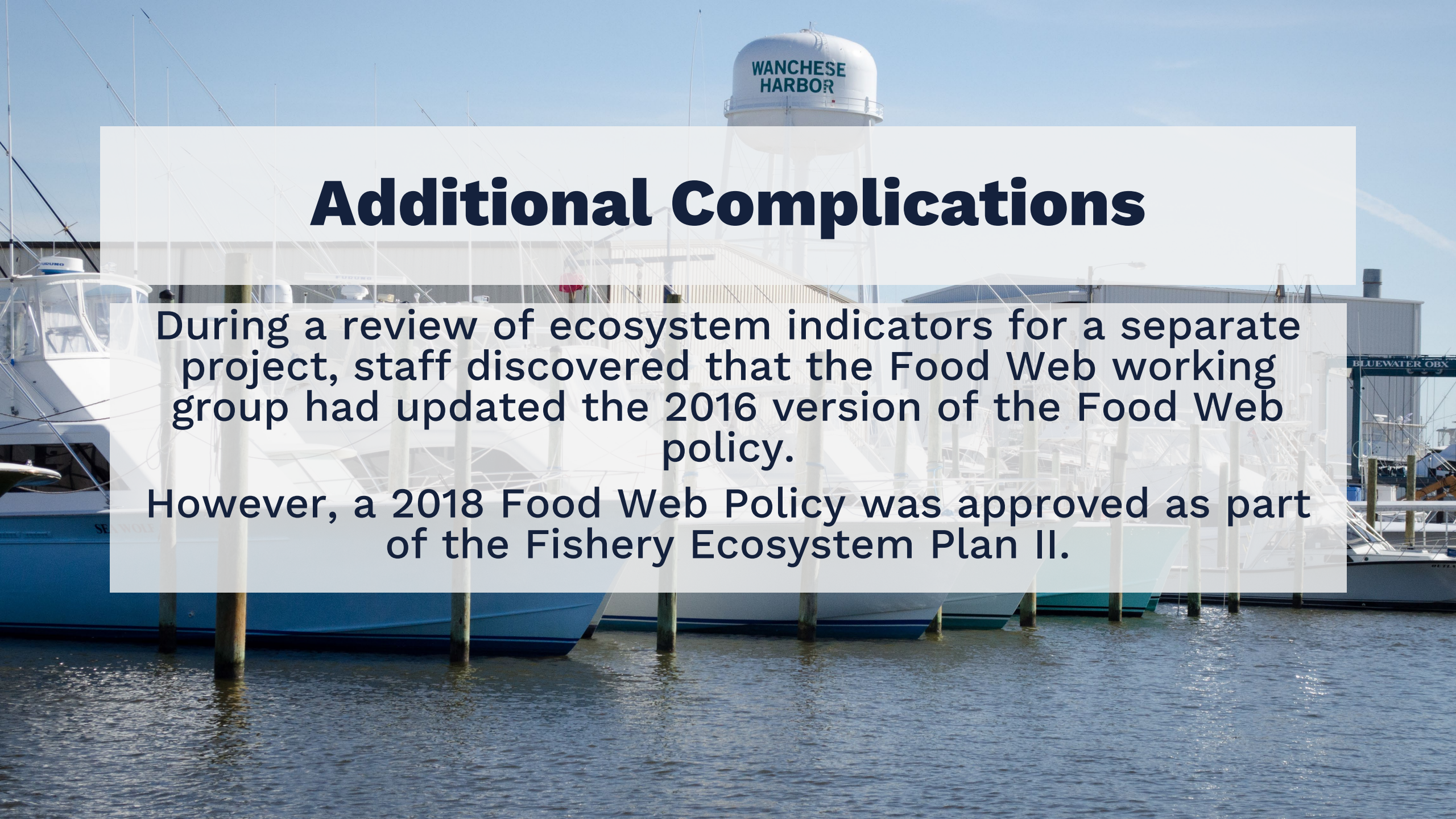
- Identify very different (life history wise) species
- Identify information of importance
  - Top prey by species
  - Habitat use of prey by life stage
  - Habitat use by predator by life stage
  - Identify areas that are different from the current definition
  - Draft a prey dependency paragraph for each
- Develop best practices/lessons learned

Test Species for Integrating Prey Information

- Gray Triggerfish – nest builder, pelagic larval stage, hard bottom adult stage
- Red Snapper – Lots of information, general predator, not a specialist
- Dolphinfish – Large pelagic predator
- Golden Crab – Benthic predator
- Tomtate – low trophic level, hard bottom juvenile and adult stage
- Gag Grouper – estuarine larval stage, hard bottom adult stage, lots of juvenile data available

Complications

- Food Web working group met Fall 2025.
- Working group expressed concerns about standardizing the process of combining prey data across stomach content records with different units, levels of taxonomic identification, and sample sizes.
  - Level of taxonomic grouping in Ecopath/Ecosim model is too broad to capture specialist predators potentially targeting specific prey
- SAFMC and FWC staff are working on data processing.
- Process may become more time-intensive and subjective than originally planned.



Additional Complications

During a review of ecosystem indicators for a separate project, staff discovered that the Food Web working group had updated the 2016 version of the Food Web policy.

However, a 2018 Food Web Policy was approved as part of the Fishery Ecosystem Plan II.

June 2021

SAFMC EFH and EFH- Habitat Areas of Particular Concern (HAPC) Designations

EFH Users Guide PDF

SAFMC Habitat Fishery Management Plans (FMP)

- Coral FMP: https://safmc.net/fishery-management-plans-amendments/coral/
- Sargassum FMP: https://safmc.net/fishery-management-plans-amendments/sargassum-2/

SAFMC EFH Policy Statements

Considerations to Reduce or Eliminate the Impacts of Non-Fishing Activities on EFH

In addition to implementing regulations to protect habitat from degradation due to fishing activities, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council established a four-state Habitat Protection and Ecosystem Based Management Advisory Panel and adopted a comment and policy development process. Members of the Advisory Panel serve as the Council's habitat contacts and professionals in the field and have guided the Council's development of the following Policy Statements.

- EFH Policy Statement on South Atlantic Climate Variability and Fisheries (December 2016)
- EFH Policy Statement on South Atlantic Food Webs and Connectivity (December 2016)
- Protection and Restoration of EFH from Marine Aquaculture (June 2014)
- Protection and Enhancement of Marine Submerged Aquatic Vegetation (June 2014)
- Protection and Restoration of EFH from Beach Dredging and Filling, Beach Re-nourishment and Large Scale Coastal Engineering (March 2015)
- Protection and Restoration of EFH from Energy Exploration, Development, Transportation and Hydropower Re-Licensing (December 2015)
- Protection and Restoration of EFH from Alterations to Riverine, Estuarine and Nearshore Flows (June 2014)
- Policies for the Protection of South Atlantic Marine & Estuarine Ecosystems from Non-Native and Invasive Species (June 2014)
- Policy Considerations for Development of Artificial Reefs in the South Atlantic Region and Protection of Essential Fish Habitat (September 2017)

Fishery Ecosystem Plan II

- Introduction
- South Atlantic Ecosystem
- South Atlantic Habitats
- Managed Species
- Social and Economic
- Essential Fish Habitat
- SAFMC Managed Areas
- Research & Monitoring
- SAFMC Tools

SAFMC Calendar of Events

June Council Meeting
06/14/2021 - 06/18/2021 @
https://register.gotowebinar.com/register/4049457759372649999
See more details

September Council Meeting
09/13/2021 - 09/17/2021 @
Town & Country Inn and Suites, 2008 Savannah Hwy, Charleston, SC 29407, USA
See more details

June 2021

South Atlantic Fishery Management Council

Conserving and managing America's fisheries from three to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia and Florida.

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Fishery Ecosystem Plan II – South Atlantic Ecosystem

Home / Fishery Ecosystem Plan II – South Atlantic Ecosystem

South Atlantic Food Webs and Connectivity (March 2018)

- POLICY CONSIDERATIONS FOR SOUTH ATLANTIC FOOD WEBS AND CONNECTIVITY AND ESSENTIAL FISH HABITATS (December 2016)

South Atlantic Climate Variability and Fisheries (March 2018)

- POLICY CONSIDERATIONS FOR SOUTH ATLANTIC CLIMATE VARIABILITY AND FISHERIES AND ESSENTIAL FISH HABITATS (December 2016)

SAFMC Fishery Ecosystem Plan II Implementation Plan

- Click Here

SAFMC Fishery Ecosystem Plan II Implementation Plan - Two Year Road Map

- Click Here

Ecosystem Modeling

Presentations on Ecosystem Modeling:

- Completion of the South Atlantic Ecopath with Ecosim Model and Examples of Dynamic Simulations (Tom Okey (UVic)) to SAFMC SSC April 2019 (Presentation)

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FEPII: South Atlantic Food Web and Connectivity_March 2018

Home / Uncategorized / FEPII: South Atlantic Food Web and Connectivity_March 2018

Fishery Ecosystem Plan II

South Atlantic Food Web and Connectivity

March 2018

Executive Summary

A key tenet of ecosystem-based fisheries management (EBFM) is the explicit consideration of indirect effects of fisheries, such as through food web processes, when developing harvest strategies and management plans. Examples of unintended consequences include the over exploitation of predators, an increase in abundance of their prey, and a decline of organisms two trophic levels below them, a phenomenon known as a trophic cascade (Carpenter et al. 1985). Fishing on lower trophic level species, planktivorous "forage" fishes for example, may ultimately lead to predator population declines due to food limitation (e.g. Okey et al. 2014; Walters and Martell 2004). Interspecific competition for food occurs when there are two or more species that overlap in time and space and utilize the same limited resource. Competition within a food web also has implications for management, for example when simultaneously rebuilding two competing species or when a non-native species becomes established. Changes in primary production can have noticeable effects on the food web. These "bottom-up" processes are largely driven by changes in climate or physical oceanography, particularly those that drive patterns of precipitation or upwelling and therefore nutrient input. While dynamics of lower trophic level species are more strongly tied to environmental forcing, for most species it's the combination of both fishing and environmental forcing that drive changes in population size (Chagaris and Mahmoudi 2009; Mackinson et al. 2009).

Food webs also serve to connect different components of the larger ecosystem. Seasonal and ontogenetic migrations by some species out of estuaries to coastal areas where they become prey is one mechanism that transfers energy from the inshore to offshore environments. Latitudinal (north-south) migrations provide a means to transfer energy from seasonally productive regions where prey is abundant to less productive regions at other times. Connectivity between the benthic and pelagic food webs is also important for transfer of pelagic and midwater production to seafloor communities and vice versa. Food web linkages connect pelagic forage fishes and their piscivorous predators or demersal carnivores. This connectivity between food webs over space, time, and depth creates multiple energy pathways that enhance ecosystem stability and resilience.

One way to incorporate food web processes into management is through models. Mathematical trophic-dynamic models are particularly useful because they can assist in determining the tradeoffs associated with harvesting fish from different parts of the food web while also allowing for examination of impacts resulting from changes in primary production and other bottom-up processes. Food web models are increasingly being utilized by fisheries managers as ecological prediction tools because they provide the ca-

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September Council Meeting
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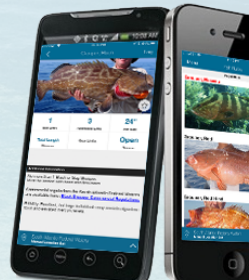
Charleston, SC 29407, USA
See more details

December Council Meeting
12/06/2021 - 12/10/2021 @
2440 Lennoxville Rd, Beaufort, NC 28516,
See more details

Fish Rules - Mobile

Recreational



October 2023

FMPs must evaluate how fishing activities may adversely affect EFH and minimize those effects to the extent practicable. FMPs must also identify actions to minimize the effect of non-fishing (e.g., coastal development) activities, discuss cumulative effects, identify prey species, recommend research and information needs for EFH, and consider identifying HAPCs.

South Atlantic Fishery Management Council (Council) designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (HAPC) are presented in the SAFMC EFH User Guide and spatial representations of these and other habitat-related layers are within the Council's SAFMC Atlas. EFH designation is provided to many of the managed areas. Maps of the managed areas can be found here.

EFH Policy Statements

The Council develops EFH policy statements to address specific habitats and activities that affect habitat EFH policy statements provide detailed descriptions of habitat resources, discuss potential impacts to those resources, and identify actions that protect EFH.

The Council's EFH policy statements and recommendations provide NMFS, state agencies, other Federal and regional habitat partners guidance and rationale to conserve and protect EFH in the South Atlantic region. The Council may revise EFH policies and recommendations or develop new policies as needed to address its habitat mandates.

SAFMC EFH Policies	What is addressed
Food Webs and Connectivity Developed – Dec 2016	Assess potential threats and impacts to managed species EFH and EFH-HAPCs and the South Atlantic ecosystem associated with changes in food webs and connectivity and processes that could improve those resources or place them at risk. – Incorporate into management strategies the potential indirect effects of fisheries on food web linkages and identify unintended consequences; – Use food web models to simulate the ecosystem, understand food web linkages, inform single species assessment and management, generate reference points and ecosystem-level indicators to enhance ecosystem stability and resilience.
Climate Variability and Fisheries Developed – Dec 2016	Assess potential threats and impacts to managed species EFH and EFH-HAPCs and the South Atlantic ecosystem associated with climate variability or change and processes that could improve those resources or place them at risk. – Develop indicators to track ecological, social, and changing fisheries trends that appear to be due to changing ocean environmental conditions; – Consider tradeoffs and necessary responses to account for predicted and realized increases or decreases in productivity; – Apply the precautionary approach and careful scientific and management evaluation as new fisheries develop.
Provide guidance for marine aquaculture development in offshore and coastal waters, riverine systems, and adjacent	

Today

- Food Webs and Connectivity (Revised – Jan 2025)
- Climate Variability and Fisheries (Developed – Dec 2016)
- Marine Aquaculture (Developed- June 2014)
- Marine Submerged Aquatic Vegetation (Revised June 2014)
- Beach Dredging and Filling, Beach Renourishment and Large-Scale Coastal Engineering (Revised Sept. 2023)
- Energy Exploration, Development, Transportation and Hydropower Re-Licensing (November 2024)
- Alterations to Riverine, Estuarine and Nearshore Flows (June 2014)
- Marine & Estuarine Ecosystems from Non-Native and Invasive Species (Developed 2014)
- Artificial Reefs (Developed 2017)

Habitat Related Amendments

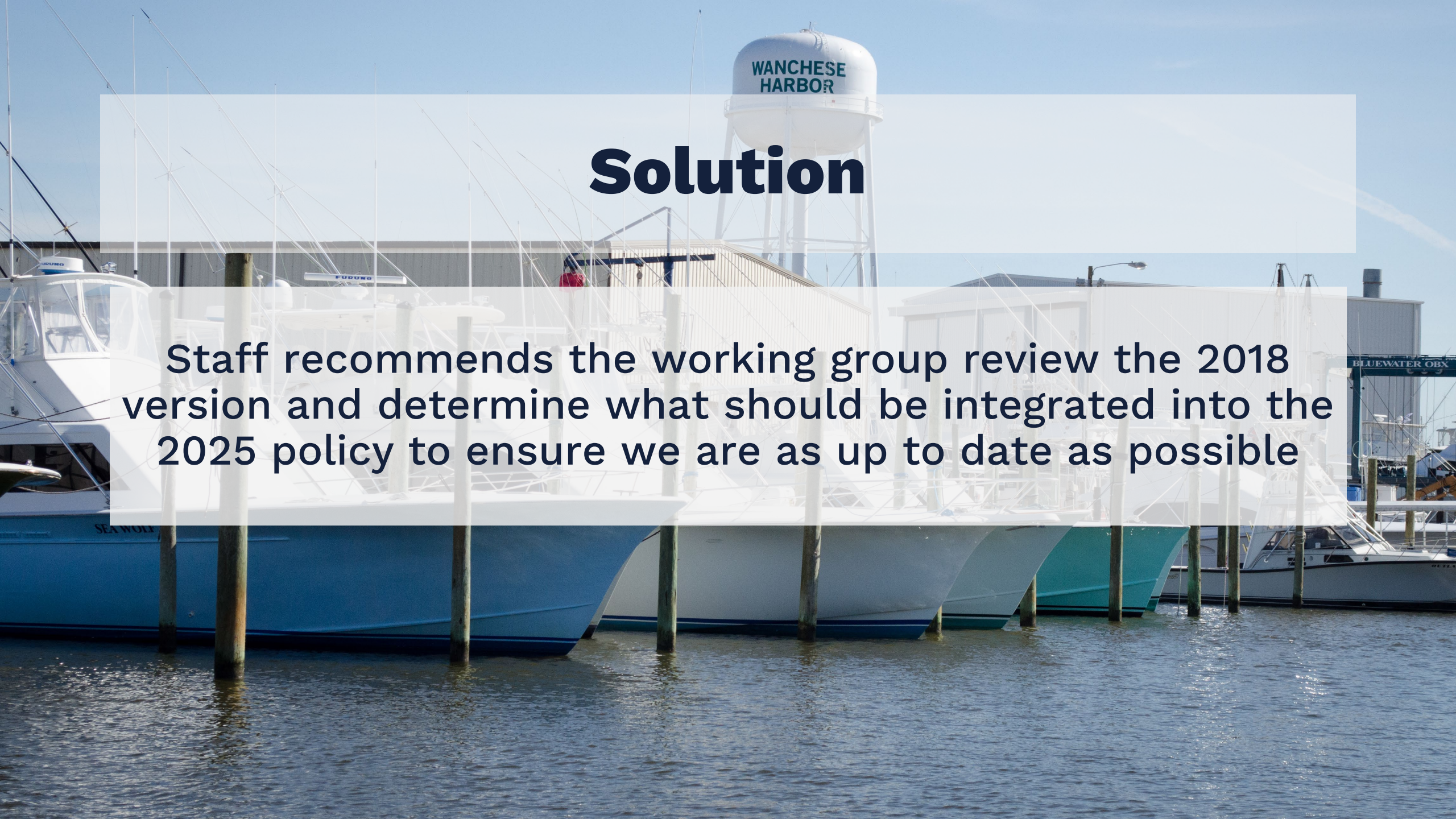
Below is a list of the fishery management plans and amendments that designated or revised EFH and HAPCs for fisheries under the jurisdiction of the SAFMC.

Habitat Related Amendments

Other Habitat Documents

The following documents were developed by the Habitat and Ecosystem Advisory Panel at the behest of the SAFMC to inform habitat and ecosystem discussions and decisions.

- Habitat Plan 1998
- Fishery Ecosystem Plan 1 (FEP I)
- Fishery Ecosystem Plan 2 (FEP II)
- Habitat Blueprint (2023)



Solution

Staff recommends the working group review the 2018 version and determine what should be integrated into the 2025 policy to ensure we are as up to date as possible

On a separate but completely related note

- There are also two Climate Variability and Fisheries Policies
- One from 2016 (on the current webpage) and another from 2018 during the FEP II development
- We haven’t updated the 2016 one or the 2018 one
- Council approved the March 2018 Climate Policy
- Staff will change the online policy to reflect the 2018 update

Timeline

Currently Working on:

- Data processing with FWC staff
- How to handle the 2018 policy

In the next 6 months to a year:

- Identify Information of importance for each test species
- Develop best practices

In the next two years:

- Create pathways to update all FMP's EFH definition with Predator prey information

By December 2029

- Integrate EFH identified via predator-prey analysis into the User Guide

Work completion goal: December 2029