

Gulf of Mexico Ecosystem Plan Outline October 2018

Motion: To direct staff to develop a document that outlines the component parts of an ecosystem plan.

Overview

National Ecosystem Plan

NOAA Fisheries has developed several policies addressing ecosystem based fisheries management. Most recently, a document that the Council reviewed by J. Link in October 2015 provided a national context for establishing a framework to guide and establish EBFM for fisheries decision making (<https://www.fisheries.noaa.gov/resource/document/ecosystem-based-fisheries-management-policy>). In this national policy, an ecosystem plan was defined as “*a document to describe and integrate ecosystem goals, objectives, and priorities for fisheries and ecosystem research, conservation, and management across multiple fisheries within an ecosystem. This includes: Facilitate continued participation of external federal, state (including territories), council, commission, tribal, industry, and other non-governmental partners in the EBFM process; Support and provide guidance or assistance to execute FEPs that are used as umbrella strategic planning documents to guide coordination and trade-off evaluation among FMPs, related documents, and other ecosystem components.*” The policy was later expanded into the EBFM Roadmap (<https://www.fisheries.noaa.gov/resource/document/ecosystem-based-fisheries-management-road-map>) which identifies key short-term, mid-term and long-term actions. The Council has already participated in several of the short term actions (e.g. developing an inventory of existing FEPs and Ecosystem Considerations in FMPs which was conducted at the January 2018 meeting and commented on the regional road map in June 2018). However, the EBFM Roadmap is guidance for NOAA and the Council role in each identified action is not explicit.

Regional Ecosystem Efforts

A product of this national policy was the regional ecosystem roadmap provided to the Council for regional implementation of ecosystem projects by M. Karnauskas at the June 2018 meeting in Key West (http://gulfcouncil.org/wp-content/uploads/Q-4-GulfofMexicoEBFM_RoadMapImplementationPlan-rev-6-19-18.pdf). Other ecosystem reports that have been provided to the Council for its comments include the ecosystem status reports (<http://archive.gulfcouncil.org/docs/Gulf%20of%20Mexico%20Ecosystem%20Status%20Report.pdf>).

Gulf Council Goal

It should be noted that the following is an *outline* of a potential fishery ecosystem plan-type document for the Gulf of Mexico. The outline includes all the necessary chapters which incorporate the elements necessary for a programmatic EIS should the Council choose to develop an FEP. If the Council elected to do a policy or other type document, not all of these chapters

would be necessary. While the bulleted lists within each chapter are intended to be comprehensive, it should be noted that each list is likely to change through the evolution of the document and that some items may be removed, while others are added. Below is a more than general idea of the types of items that would be addressed in each chapter.

Outline

Chapter 1: Overview

Describe Purpose and Need

- Improve management decisions based on physical, biological, and socio-economic factors
- Document sources which increase and decrease fisheries productivity
- Informational for discussion on buffers against uncertainty based on improved understanding of impacts from biophysical or socio-economic changes
- Inform the development of new and existing management measures
- Coordinate information across Fishery Management Plans
- Identify and prioritize research needs (we do this for the science center already)

Scope

- What is the geographic scope
- Discuss Gulf of Mexico Large Marine Ecosystem
 - Discuss regional differences between east and west? Effects of the Loop Current?
 - Include population densities by county
 - Recommend to have a Gulf-wide umbrella document
- Species considered in scope
 - Only species in the fishery management unit?
 - . . . and state-managed species
 - . . . and ecosystem species
 - . . . habitat
- Updated information program
 - Pacific Council discusses the California Current Ecosystem (status, trends, etc.) at *at least one* Council meeting annually
 - Includes discussion on short- and long- term climate/ocean conditions and trends
 - Trophic interactions between species
 - Discuss current food web database at center for coastal studies
 - Outlines timelines for ecosystem initiatives
 - Outlines timeline for review and update of Fishery Ecosystem Plan (FEP)
 - SAFE reports- Council staff does not do these, and only NMFS staff generate these
 - Social and Economic factors and trends
 - Increasing coastal populations
 - Recreational angling (licenses, participation, trends in effort, etc.)
 - Decreasing fleet sizes
 - Gulf wide and local studies

- Examples : surname analysis in shrimp for environmental justice

Chapter 2 provides the FEP's Objectives, a more detailed exploration of what the FEP would do to meet its Purpose and Need.

Chapter 3 provides an overview of the GOM LME from a variety of physical, biological, and socio-economic perspectives and disciplines. This is an in-depth analysis of items outlined in Chapter 1.

- Physical features
 - Different habitat types, overarching geologic features
- Loop current, and major abiotic factors
 - Hypoxic zone?
 - Hurricanes?
 - Red Tide?
- Food web discussion
 - Low trophic levels
 - Medium trophic levels
 - High trophic levels
 - Predation/competition
- Discuss research addressing each and any continuous monitoring
- Include human population densities by county
- Discuss the history of each individual fishery (rise and fall- may need to determine a time frame. This is very anthropological in nature)
- Discuss dealers, permits, and route of fish from sea to market
- Comprehensive discussion of state management programs and species managed by the states
- Comprehensive review of multi-state, multi-agency entities and roles in management (including international agreements)
- A list of each FMP goals and objectives and overlap among them

Chapter 4 discusses the cumulative effects and uncertainties of environmental shifts and human activities on the marine environment.

- Effects of fishing on fish abundance (both target and non-target species and habitat)
- Effects of non-fishing activities on fish abundance (both target and non-target species and habitat)
- Environmental effects on fish abundance (both target and non-target species and habitat)
 - In-depth discussion of climate change
 - Increasing intensity of hurricanes?
 - Forecasting of areas of interest
 - Hypoxic zone intensity over time?

Chapter 5 discusses Council ecosystem policy priorities across its FMPs, so that ocean resource management and policy processes external to the Council may be made aware of and may better take into account those priorities.

- We do this every five years and have a 5 year research and monitoring plan policy

- This would formalize certain areas that the Council deems most important
- Not- binding, but does give other entities an idea of where the Council would like information
- Could be updated and modified with each 5 year research priority list
- Could be used as a reference for researchers looking to aid the Council process

Chapter 6 broadly discusses processes for bringing ecosystem science into the Council process.

- Outlines that ecosystem considerations begin to be used in stock assessments
- Provides a mechanism for updates on ecosystem information to the Council (every year at one meeting)
- Asks for an updated report on ecosystem indicators at this meeting
- Appendix to outline a process to look at ecosystem initiatives

Appendix of Ecosystem Initiatives could be things like:

- Forage fish species (identification, ecosystem component species, management of, etc.)
- Biogeographic region and assessment (including EFH analyses)
- Human recruitment to fisheries (also can include demographic analyses)
- Climate change (biological, social, and economic effects)
- Identification of ecosystem indicators
- Follow up on ecosystem model performance over time
- Effects of hypoxia and watershed management on the fisheries of the Gulf
- Ocean acidification
- Human health impacts of red tide