

In 2006-2007, the Pacific Fishery Management Council (Council) discussed exploring ecosystem-based management planning efforts for U.S. waters off the West Coast, the California Current ecosystem. During that time, the Council decided to not move forward with any planning efforts until it had received funds specified for that effort, which it has now received. Since the Council last discussed ecosystem-based planning for Council-managed fisheries, the U.S. as a whole and several other fishery management councils (FMCs) have made new commitments to and advances in ecosystem-based management. This briefing document is intended to provide the Council with information and examples from these management processes to help Council members and the public think about next steps for California Current ecosystem-based management planning.

Ecosystem-Based Management Policy at the National Level

On June 12, 2009, President Obama issued his Proclamation on a National Policy for the Oceans, Our Coasts and the Great Lakes, stating that “the United States needs to act within a unifying framework under a clear national policy, including a comprehensive, ecosystem-based framework for the long-term conservation and use of our resources.” The proclamation established an Interagency Ocean Policy Task Force, which issued its first report on September 10, 2009. That interim report suggested nine priority objectives for a national policy, the first of which is to “Adopt ecosystem-based management as a foundational principle for the comprehensive management of our oceans, our coasts, and the Great Lakes.”

This recent national-level work of the Task Force builds on existing regional and state-level trends, on the West Coast and elsewhere in the country, in moving marine resource management from its species-by-species management focus to an ecosystem-based management focus. FMCs have given more thought to ecosystem-based management in recent years, particularly since the 1996 passage of the Sustainable Fisheries Act. Although definitions of the term ecosystem-based management vary in their specifics, most have grown out of R.E. Grumbine’s 1994 paper, *What Is Ecosystem Management?*:

Ecosystem management integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term.

Fisheries Management Approaches to Planning Processes and Documents

FMCs have used a variety of strategies to help themselves and their publics think about where and how fisheries management fits within their larger marine and coastal ecosystems. The three consistent FMC strategies for starting a public discussion on EBM for fisheries resources have been:

- Inviting scientists to educate FMC process participants on the current state of scientific knowledge about the ecosystem(s) under FMC authority;

- Opening public scoping processes to hear from the members of the public about their ideas for long-term management needs in the marine ecosystem;
- Organizing science review or advisory plan development committees.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) authorizes FMCs to create fishery management plans (FMPs) and provides both required and discretionary FMP provisions. When Congress reauthorized the MSA in 2006, it included a new finding at §2(a)(11) that:

A number of the Fishery Management Councils have demonstrated significant progress in integrating ecosystem considerations in fisheries management using the existing authorities provided under this act.

Three FMCs (North Pacific, Western Pacific, and South Atlantic) have created fishery ecosystem plans (FEPs) for one or more of the ecosystems under their respective authorities. Each FMC has taken a different approach to the framing of and philosophy behind their FEPs. However, each FMC has also ensured that they have addressed their managed species under the MSA framework for FMP requirements.

Fishery Ecosystem Plan Development by FMCs	
North Pacific FMC	<p>Aleutian Islands FEP (2007): <i>“The goal of this FEP is to provide enhanced scientific information and measurable indicators to evaluate and promote ecosystem health, sustainable fisheries, and vibrant communities in the Aleutian Islands region.”</i></p> <p><i>“...the FEP was developed to provide the Council with an understanding of important relationships among ecosystem components, which are not always considered together by managers. The FEP also identifies areas of uncertainty, describes how the Council may currently be addressing the associated risk, and provides suggestions for other tools the Council may wish to consider.”</i></p> <p>The FEP provides background information and analyses on the Aleutian Islands ecosystem by:</p> <ul style="list-style-type: none"> • describes and synthesizes the Aleutian Islands ecosystem processes and interactions, • delineates the regulatory and bio-physical boundaries of the Aleutian Islands, • conducts a qualitative risk assessment of AI interactions, • uses management objectives of Aleutian Islands fisheries to identify Council priorities for the FEP, • identifies ecological indicators appropriate to monitor key ecosystem interactions, • identifies knowledge gaps and research needs, • provides a framework by which ecosystem considerations identified herein could be implemented within the current Council structure and management practice. <p>In addition to this FEP, the National Marine Fisheries Service’s Alaska Fisheries Science Center produces an annual section of the Stock Assessment and Fishery Evaluation (SAFE) that addresses ecosystem considerations. The ecosystem considerations SAFE chapter takes an extensive and detailed look at trends in climate and the physical environment effects on the ecosystems under FMC authority, and at the trends in the effects of fishing on those ecosystems and their components.</p>

South Atlantic FMC	<p>South Atlantic FEP (2009): <i>“The FEP will serve as a source document that will, over time, present more detailed information describing the South Atlantic ecosystem and the impact of the fisheries on the environment. As a living document, the FEP will provide a greater degree of guidance on incorporation of fishery, habitat, or ecosystem considerations into management actions, such as bycatch reduction, prey-predator interactions, maintenance of biodiversity, and identification of spatial management needs.</i></p> <p>The South Atlantic FMC’s FEP grew out of their work on essential fish habitat (EFH) and a desire to have a cross-FMP source of information about biophysical ecosystem of their managed species, and about the effects of fisheries and non-fisheries activities on that ecosystem. The FEP is a multi-volume document that includes, but is not limited to:</p> <ul style="list-style-type: none"> • oceanographic and climate features of the South Atlantic Bight, • locations of South Atlantic FMC management areas, • descriptions of the species and habitats (FMC-managed and not) within the South Atlantic Bight, • the South Atlantic human and institutional environment (per the National Environmental Policy Act, the Regulatory Flexibility Act, and other laws commonly covering FMC activities) • spiny lobster economics and social environment • maps of commercial fisheries catch in the South Atlantic management area, by lat./long. blocks • perceived threats to the South Atlantic ecosystem and recommendations for addressing those threats • description of research and data needs.
Western Pacific FMC	<p>Fishery Ecosystem Plan for the American Samoa Archipelago (2009): <i>“The Magnuson-Stevens Fishery Conservation and Management Act (MSA) authorizes fishery management councils to create fishery management plans (FMP). The Western Pacific Regional Fishery Management Council developed this Fishery Ecosystem Plan (FEP) as an FMP, consistent with the MSA and the national standards for fishery conservation and management. The FEP represents the first step in an incremental and collaborative approach to implement ecosystem approaches to fishery management in American Samoa.”</i></p> <p>On October 2, 2009 (74 FR 50944), NMFS made available for public review the Western Pacific FMCs five new FEPs: American Samoa, Hawaii, Mariana Archipelago, Pacific remote island areas, and western Pacific pelagic fisheries. These FEPs all meet the MSA requirements for FMPs by grouping management of FMC species geographically, rather than by species group. The FEPs explicitly do not establish any new fishery management regulations, but are intended to provide a place from which FMCs may address ecosystem-based management principles in the future.</p>

Beyond FMC work on FEPs, the National Oceanic and Atmospheric Administration has also coordinated an FEP for the Chesapeake Bay. The 2006 Chesapeake FEP follows the recommendations of the MSA-authorized 1998 Ecosystem Principles Advisory Panel on FEP elements:

- Delineate geographic extent of ecosystem(s) under Council authority, including characterizing biological, chemical, and physical dynamics of those ecosystems, and “zone” the area for alternative uses.
- Develop a conceptual model of the food web
- Describe the habitat needs of different life history stages for all plants and animals that represent the “significant food web” and how they are considered in conservation and management measures.
- Calculate total removals – including incidental mortality – and show how they relate to standing biomass, production, optimum yields, natural mortality and trophic structure.
- Assess how uncertainty is characterized and describe the buffers against uncertainty that are included in conservation and management actions.
- Develop indices of ecosystem health as targets for management.
- Describe available long-term monitoring data and how they are used.

- Assess the ecological, human, and institutional elements of the ecosystem that most significantly affect fisheries, and are outside Council or Department of Commerce authority. Included should be a strategy to address those influences in order to achieve both FMP and FEP objectives.

To launch its work on ecosystem-based management for the fisheries of the California Current, the Council might:

- Direct its Ecosystem Plan Development Plan Team and Panel to draft a list of physical, biological, and socio-economic indicators for the California Current ecosystem and its components that will help inform the Council and the public of the current health and status, and future trends in the health and status, of the ecosystem.
- Invite scientific presentations to the Council on the current health and status of the California Current ecosystem.
- Request agency staff to work with Council staff to provide the Council and public with a schedule of required upcoming reviews of essential fish habitat for Council FMPs, and any other state, tribal, or federal policy processes that might feed into Council development of a planning document for the California Current ecosystem.

References

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