

2022 Council Member Ongoing Development Meeting

Pacific Fishery Management Council Ecosystem-Based Fishery Management Activities

The Pacific Council adopted its Pacific Fishery Ecosystem Plan (FEP) in 2013, at the conclusion of a multi-year strategic planning and document drafting process. In June 2006, the Council began considering more specific approaches to ecosystem-based fishery management (beyond measures in its fishery management plans with ecosystem-based fishery management (EBFM) elements). Prompted by a staff white paper presented in April 2007, the Council began investigating the development of an “Ecosystem Fishery Management Plan (FMP)” and in 2009, once funding (16 USC §1882(f)(2)) for plan development had been secured, established a Plan Development Team and Ecosystem Advisory Subpanel. (see [Agenda Item H.1, September 2010](#)).

In 2010-2011, the Council discussed a potential umbrella Ecosystem FMP that would help with coastwide inter-FMP scientific information, policy guidance, and research planning; create a framework for status reports on the health of west coast ecosystems; and deal with comprehensive area-based measures in a full ecosystem context. The Council reviewed then-existing ecosystem planning documents from other fishery management councils, particularly the Aleutian Islands FEP of the North Pacific, the South Atlantic FEP, and the Western Pacific’s geography-based FEPs. For the Pacific Council, the Western Pacific approach of creating an EBFM plan that would meet the requirements for FMPs described in Magnuson-Stevens Act section 303, including a pursuant regulatory element, seemed an impractical approach for our single large marine ecosystem and four existing multi-species FMPs. Ultimately, the Council asked its Plan Development Team to draft an FEP that mirrored the relative brevity of the descriptive content of the Aleutian Islands FEP, while providing the multi-FMP policy coordination functions of the South Atlantic FEP.

In concert with developing the FEP, National Marine Fisheries Service (NMFS) established the [California Current Integrated Ecosystem Assessment \(CCIEA\)](#). The CCIEA has been the platform for the creation of an annual ecosystem status report (ESR), now presented to the Council annually at its March meeting. The concept for an annual ESR was first presented to the Council in November 2012; the contents and format of the report have continually evolved since then based on regular feedback from the Council and its advisory bodies.

When adopted by the Council in 2013, the FEP had three major elements: The FEP document itself, articulating the purpose and need, objectives, and policies along with a comprehensive description of the California Current Ecosystem; an Initiatives Appendix containing concepts for operationalizing aspects of EBFM, intended to be implemented under the regulatory authority of the FMPs; and the annual ESR. Beginning in 2017 the Council embarked on a five-year review of the FEP, [adopting a substantially revised version](#) in March 2022. Unlike the FEP, the Initiatives Appendix is updated as new initiatives are chosen and completed, but the Council adopted its first substantial revision of the [Initiatives Appendix](#) in September 2022, bringing the ideas in the appendix up to date with the new ideas from the FEP itself. Upon implementation the Plan Development Team was reconstituted as the Ecosystem Workgroup. The Workgroup and the Advisory Subpanel play a central role in conducting the Council’s EBFM work and providing advice on related matters.

The current, revised FEP is organized in five chapters. The first two chapters frame the Council’s vision for the status of the California Current Ecosystem, articulated through a detailed set of goals and objectives, and processes for implementing ecosystem principals through ecosystem initiatives and the

annual ESR. The bulk of the FEP comprehensively describes the biogeography, biological components, and human systems that comprise the California Current ecosystem. Importantly, the FEP's description of the management system identifies ecosystem science and management measures in each of the four FMPs, acknowledging that not all of the Pacific Council's EBFM work occurs under the FEP. The final two chapters in the FEP describe human interactions with and impacts on the ecosystem and highlight ecosystem science priorities for furthering EBFM.

The [ecosystem initiatives](#) are mechanisms for the Council to further EBFM on an ongoing basis. The Initiatives Appendix contains what are essentially brief descriptions, or project proposals, of discrete activities. Since implementation of the FEP in 2013 the Council has completed three initiatives:

- *Protection of Unmanaged Forage Fish, 2014-2015.* This initiative resulted in amendments to each of the Council's four FMPs to include selected species and species groups as Shared Ecosystem Component species. These FMP amendments and their implementing regulations prohibited the development of new directed fishing in Federal waters on these species without the Council first evaluating the impacts of any such proposal (see MSA at 16 U.S.C. §1855(a)).
- *Coordinated Ecosystem Indicator Review, 2015-2016.* This initiative engaged the Council and its advisory bodies in a comprehensive look at the suite of ecosystem status indicators used in the annual ESR. The initiative began with a series of informational webinars hosted by the Ecosystem Work Group describing the basis for the then current suite of indicators. This was followed by discussions with Council advisory bodies about what they wanted to see in the ESR, leading to a set of recommendations for the contents of future reports. An ongoing process for the Council to make recommendations on the report contents, and review of the science underlying the contents by its Scientific and Statistical Committee (SSC), also emerged out of this initiative ((Tommasi, *et al.* 2021).
- *Climate and Communities Initiative, 2017-2021.* Through this third initiative, the Council engaged in a broad discussion about the implications of climate change for managed stocks, fisheries, and fishing communities. After preliminary discussions on this topic, the Council sponsored a climate change scenario planning process beginning in 2019 and concluding in early 2021. Scenario planning involved first developing future scenarios and then conducting a series of workshops with advisory body members and other stakeholders organized with a regional focus. Because of the global pandemic, except for the initial kickoff workshop, all workshops were conducted online. The results of the scenario planning exercise were synthesized in a [report presented to the Council in March 2021](#), which identified nine priority action areas for future work. These priorities reflected the broad range of concerns expressed by stakeholders, and not all were activities within the Council's scope of responsibility. The steering committee organized to oversee the scenario planning process took these results and identified a suite of activities that the Council and/or National Marine Fisheries Service could undertake to better respond to the effects of climate change, which was [presented in September 2021](#), closing out this initiative. While this initiative may not have fully achieved its goal ("...improving the flexibility and responsiveness of our management actions to near-term climate shift and long-term climate change, and strategies for increasing the resiliency of our managed stocks and fisheries to those changes"), it set the agenda for future Council work in this arena. Many of the report recommendations have been incorporated into a revised suite of candidate initiatives found in the Initiatives Appendix.

In September 2022, the Council identified a new initiative to begin work on, *Ecosystem and Climate Information for Species, Fisheries, and FMPs*. This initiative will explore ways to comprehensively integrate climate and ecosystem considerations across the Council's regular fishery management activities. The Council also identified two other closely related initiatives it could take up sequentially once this initiative is completed, both of which also further address the outcomes of the Climate and

Communities Initiative. (These are *Supporting Fishery and Fishing Community Resilience* and *Assess Flexibility in Fisheries Management Processes*).

The annual ecosystem status report is the third major component of the Council's EBFM program. As noted above, the ESR, prepared by the CCIEA Team at NMFS's two West Coast Science Centers, is presented to the Council every March. It provides a snapshot of current conditions in the California Current ecosystem as a context for Council decision making through its four FMPs. When developing the FEP, the Council asked that the annual ESR be limited to 20 pages, to make it a readily digestible product. To stay within this limit the CCIEA focuses on concision in the main report while providing a lengthy appendix with greater detail and background on methods; see [the 2021-2022 report](#) (Harvey, *et al.* 2022) for an example. To foster quick uptake, the first page of the report highlights key takeaways on current conditions. The heart of the report uses a series of standardized indicators organized into four categories: Climate and Ocean Drivers; Focal Components of Ecological Integrity; Fisheries Landings, Revenue, and Activity; and Human Wellbeing. As noted, over time the Council has moved to regularly providing recommendations to the CCIEA Team on the report and on areas the report should focus on going forward. As part of this feedback, peer review of methodologies underlying the indicators has evolved into a formalized process involving the Council's SSC. Coincident with presentation of the ESR in March, the [CCIEA Team identifies new methodologies they would like to be reviewed](#). Based on SSC recommendations, the Council then identifies which methods should be reviewed. The SSC's Ecosystem Subcommittee then conducts a peer review meeting the following September in advance of preparation of the next year's ESR. In 2022, [that review meeting](#) provided a comprehensive look at the ESR's portfolio of salmon indicators. Recommendations are addressed by the CCIEA Team and reported to the Council through the full SSC the following March. As an outcome of the Climate and Communities Initiative, the CCIEA Team is exploring development of indicators tracking the effects of climate change on CCE components.

The Pacific Council's EBFM efforts are continually evolving as reflected in revisions to the FEP, continual improvements to the ESR, and learning through ecosystem initiatives. Clearly, responding to and developing methods to mitigate the effects of climate change on managed stocks and dependent fishing communities will be a big part of the Pacific Council's future EBFM work.

References

- Harvey, C., T. Garfield, G. Williams, and N. Tolimieri, editors. 2022. 2021-2022 California Current Ecosystem Status Report; A report of the NOAA California Current Integrated Ecosystem Assessment Team (CCIEA) to the Pacific Fishery Management Council, March 13, 2022. Northwest and Southwest Fisheries Science Centers, NOAA.
- Tommasi, D., Y. deReynier, H. Townsend, C. J. Harvey, W. H. Satterthwaite, K. N. Marshall, and coauthors. 2021. A Case Study in Connecting Fisheries Management Challenges With Models and Analysis to Support Ecosystem-Based Management in the California Current Ecosystem. *Frontiers in Marine Science* 8:776.