

ECOSYSTEM WORKGROUP REPORT ON THE REVIEW OF
FISHERY ECOSYSTEM PLAN INITIATIVES

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Introduction

The FEP Appendix¹ suggests a series of potential initiatives for Council consideration, most based on the Magnuson-Stevens Fishery Conservation and Management Act’s national standards (MSA at §301). The FEP Appendix was last updated in March 2015 to incorporate a summary of completed Initiative 1 at Section A.1, and to include the Council’s revisions to Section A.2.8, the potential initiative on the cross-FMP effects of climate shift. The Council’s consideration at this meeting is not limited to the ideas listed in the appendix and may include adding new potential initiatives, or updating existing initiatives, even if work is not planned for those new ideas in this cycle.

The Ecosystem Workgroup (EWG) met via webinar on January 10, 2017, to review the FEP appendix and its potential initiatives in preparation for this March 2017 Council meeting. We also reviewed March 2015 comments on the FEP initiatives from the Council, its advisory bodies, and public.² This report reviews each of the initiatives in the appendix, with suggestions for updates and prioritization intended to take into account the Council family’s significant ecosystem-based fishery management efforts over the last four years.

In reviewing and discussing the appendix, the EWG noted that some of the initiatives are potentially expansive in scope and that the tasks and outcomes associated with the initiatives may not be adequately described for management team and Council consideration. Initiative A.2.8 on effects of near-term climate shift and long-term climate change, for example, could involve a wide range of analyses and areas of focus. Those analyses and areas of focus could depend on budget and staff resources and the state of the science or other issues needing some dialogue beyond this meeting. The Council’s current Year at a Glance planning calendar includes an FEP initiatives update in September 2017, similar to the March-September process the Council followed in 2015

¹ The FEP, the FEP appendix, and the first two ecosystem initiatives are available at the Council’s Ecosystem-Based Management website: <http://www.pcouncil.org/ecosystem-based-management/fep/>.

² March 2015 PFMC meeting documents: <http://www.pcouncil.org/resources/archives/briefing-books/march-2015-briefing-book/#ecoMar2015>.

for Initiative 2 (Coordinated Ecosystem Indicator Review). If the Council provides preliminary guidance on its preferred third initiative at this March 2017 meeting, the EWG could then develop a more detailed background and process for that initiative over the coming spring and summer for Council consideration in September.

Section A.1 of the FEP's appendix provides brief summaries of the Council's completed ecosystem initiatives. Section A.2 of the appendix suggests future ecosystem initiatives the Council might consider for work across its FMPs. In this report, we comment on each of the potential initiatives in A.2., then recommend revisions to the appendix to update A.1 with a summary of the Council's recently completed FEP Initiative 2, the coordinated review of ecosystem indicators in the NOAA Fisheries Science Centers' annual California Current Ecosystem Status Report. As discussed in more detail below, the initiatives that we believe are most ready for near-term consideration by the Council are:

- A combined initiative on the socio-economic effects of fisheries management practices on fishing communities (A.2.7) and on human recruitment to the fisheries (A.2.6); and
- An initiative on the effects of near-term climate shift and long-term climate change on our fish, fisheries, and fishing communities (A.2.8).

Existing FEP Initiatives

A.2.1 Initiative on the Potential Long-Term Effects of Council Harvest Policies on Age- and Size-Distribution in Managed Stocks.

Both the Ecosystem Advisory Subpanel (EAS) and Scientific and Statistical Committee (SSC) favored this initiative in their March 2015 reports. This initiative would be science-intensive, but could provide the Council and the public with a more clear long-term view of the status of our managed stocks and their roles within our ecosystem. This topic may become more relevant to Council practices as climate-related stresses increasingly affect our managed stocks. Consideration of this issue may be more of a multi-year scientific project than a near-term initiative, although an initiative process could spur scientific collaboration on the issue.

A.2.2 Bio-Geographic Region Identification and Assessment Initiative.

The FEP at Section 3.1.2 discusses three major bio-geographic regions within the California Current Ecosystem (CCE): a northern sub-region from Vancouver Island to the transition zone between Cape Blanco and Cape Mendocino; a central sub-region from that transition zone to Point Conception; and a southern sub-region from Point Conception to the central Baja Peninsula. The purpose of this potential initiative, as written, was to provide the Council with information in support of finer scale fisheries management actions or aid in determining whether and where those might be appropriate. The EWG is uncertain whether there is adequate scientific information to support the original vision for this initiative, but we are interested in better describing and defining sub-regions within the CCE, where possible. This initiative has the potential to help us better identify some of the more data-poor areas of our coast, which could help direct future scientific work in those areas. We are also interested in potentially nesting some of the ideas in this initiative under the climate shift initiative to ask whether and how interannual, interdecadal, and long-term

climate shifts and change might have differing effects on our ecosystem's different biogeographic regions.

A.2.3 Cross-FMP Bycatch and Catch Monitoring Policy Initiative.

Historically, there has been limited support from the Council's advisory bodies for addressing bycatch in a cross-FMP fashion, usually because the combinations of target species, gear, fishing seasons, data collection processes and other factors that lead to identification of more or less bycatch in a fishery tend to be quite fishery-specific. However, the EWG notes that NMFS recently finalized a rule that, among other things, requires that each FMP clearly describe the standardized reporting methodologies used for the fisheries managed under the FMP (82 FR 6317, January 19, 2017, effective March 21, 2017).³ In April 2016, the Council received a briefing on the agency's new National Bycatch Strategy, which is implemented in part through this rule (Agenda Item C.2., April 2016). The Council may wish to consider an initiative to address the standardized reporting methodologies requirement simultaneously for all four FMPs through a comprehensive ecosystem-based amendment process.

A.2.4 Cross-FMP Essential Fish Habitat (EFH) Initiative.

In its March 2015 report on FEP initiatives, the Habitat Committee (HC) had suggested narrowing initiative A.2.4., the Cross-FMP Essential Fish Habitat (EFH) Initiative, to just address: 1) EFH products common to all FMPs, such as looking at non-fishing threats to habitat across FMPs, and 2) connect existing databases and expand habitat tool development to help streamline EFH reviews. The EWG understands that the HC and its member agencies have been working on these very issues, incorporating ecosystem-level considerations into their EFH update work. Growing out of that HC work, the NOAA Fisheries Science Centers are developing a document on non-fishing threats to EFH that is intended to update the existing Appendix D to the Groundfish FMP, *NON-FISHING EFFECTS ON WEST COAST GROUND FISH ESSENTIAL FISH HABITAT AND RECOMMENDED CONSERVATION MEASURES*, with an expanded and cross-FMP look at the effects of non-fishing activities on multiple Council-managed species. We anticipate referencing this forthcoming cross-FMP document during the FEP update scheduled for 2018 and beyond. We also anticipate referencing the final draft of the *FISHERY SPECIFIC HABITAT OBJECTIVES – WEST COAST PILOT REPORT*, which is intended to help prioritize habitat conservation actions across multiple species and which was presented as Supplemental Informational Report 5 at the Council's November 2016 meeting.⁴

NOAA Fisheries' EBFM Roadmap⁵ states that the agency will support Council activities to consider EFH at a system level by 1) updating EFH information in FMPs or FEPs, 2) identifying habitat areas of particular concern that are known to support important ecological functions for

³ 82 FR 6317: <https://www.gpo.gov/fdsys/pkg/FR-2017-01-19/pdf/2017-00405.pdf>
82 FR 9690: <https://www.gpo.gov/fdsys/pkg/FR-2017-02-08/pdf/2017-02592.pdf>

⁴<http://www.pcouncil.org/resources/archives/briefing-books/november-2016-briefing-book/#genNov2016>

⁵ <https://www.st.nmfs.noaa.gov/ecosystems/ebfm/creating-an-ebfm-management-policy>

multiple species or species groups or may be especially vulnerable or provide essential functions in a changing climate, and 3) establishing habitat conservation objectives for those areas and indicators to measure progress in achieving those objectives. As NOAA Fisheries implements the EBFM Roadmap, the EWG suggests that the agency consider whether our Council has already completed the activities recommended in the Roadmap for EFH. We recommend retaining initiative A.2.4. in the appendix for now, but reviewing it in light of the Council's accomplishments to date as part of the Council's larger FEP review and update for 2018 and beyond.

A.2.5 Cross-FMP Safety Initiative.

There has been little past support from the Council's advisory bodies for addressing fishery safety issues across Council-managed fisheries. The Dungeness crab fishery, which is not a Council-managed fishery, is usually considered the West Coast's most dangerous commercial fishery. However, the directed commercial non-tribal Pacific halibut fishery is still managed as a derby fishery, and several recreational fisheries occur in short, intense seasons. Should the Council wish to look further into reviewing safety concerns across its fisheries, a recent NOAA Technical Memorandum provides guidance on implementing the Magnuson-Stevens Act's National Standard 10: *Guidance on Fishing Vessel Risk Assessments and Accounting for Safety at Sea in Fishery Management Design* (Lambert et al. 2015).⁶

A.2.6 Human Recruitment to the Fisheries Initiative and A.2.7 Cross-FMP Socio-Economic Effects of Fisheries Management Initiative.

The EWG is interested in advancing analyses of Council-related socio-economic issues and, based on some of the March 2015 advisory body comments, suggests combining these two initiatives for a cross-FMP look at coastwide fishing communities. CCE fisheries support, to varying degrees, the economies and social fabric of at least 125 communities in California, Oregon and Washington. As fish populations and the ecosystems that sustain them are altered in response to climate change, there are potentially profound consequences for the fisheries and the communities that they support.

The MSA's National Standards 4 and 8 require accounting for the importance of fishery resources to fishing communities, minimizing adverse economic impacts on such communities, and giving proper consideration to residents of all affected states when the Council deliberates on conservation and management measures. A cross-FMP look at both the ages of participants and the flexibility of movement between fleets could give the Council better information about the long-term viability of West Coast fleets. Council attention to long-term human recruitment to West Coast fisheries could help fishery participants and fishing communities better prepare for the future of the fishery itself. The Council itself may or may not operate at appropriate policy levels for some changes that would facilitate the entry of younger fishery professionals into the fleet; however, the Council process provides a multi-port venue for idea-sharing. For example, the Council could not require individual ports to create fishery license banking systems to lease permits to new fishery participants, but the Council could ensure that the licensing programs it

⁶ http://www.nmfs.noaa.gov/sfa/publications/technical-memos/nmfs_osf_tm2.pdf

develops allow for the possibility of such programs to exist. Background work for developing this initiative would require an analysis of available demographic data on participants in Council-managed fisheries and research into nationwide programs for supporting new fishery entrants.

A combined initiative would also look at the information the Council needs to better understand how communities may be affected by management actions across the FMPs. It would investigate the seasonality of fishing operations, temporal-spatial landings compositions, vessel displacement and mobility, and operational tradeoffs when management decisions made under different FMPs affect the same communities. It should also look at the history of West Coast fishery disaster declarations for whether future fishery management decisions can mitigate against potential disasters. Beyond assessing the economic effects of cross-FMP Council management programs, this initiative would also develop a framework for a cross-FMP social impact assessment of those programs. Ultimately, more and better information about the particular socio-economic challenges faced by fishing communities can help the Council to understand the cross-FMP effects their actions have on those communities. We would appreciate hearing comments from the Council's advisory bodies and the public on whether they would be interested in the Council embarking on an initiative focused on socio-economic issues, and if they have suggestions for the scope of such an initiative. If the Council is uninterested in pursuing an initiative focused on socio-economic issues at this time, we recommend retaining both initiatives A.2.6 and A.2.7 until they can be reviewed as part of the Council's larger FEP review and update for 2018 and beyond.

A.2.8 Cross-FMP Effects of Climate Shift Initiative.

The CCE is subject to inter-annual and inter-decadal climate variability affecting seasonal and long-term stock productivity and stock distribution. Under this initiative, the Council would assess and articulate its questions about the longer term effects of climate change on its managed species, so as to better direct efforts to provide management relevant science. The approach would be to focus on combined, long term effects of changes on multiple species across management plans. The EWG is interested in moving forward with this issue, but recognizes the need to keep the scope of the initiative within the Council's mandates and authorities. The states, tribes, and members of the public that participate in the Council process have climate information needs and interests beyond the effects of climate on fish stocks, fisheries, and fishing communities. While the Council does not have the time, funds, or authority to serve as an ocean issues coordinating body for the CCE, the Council process does facilitate interactions between people and entities with varied ocean interests and the Council process supports important discussions and other work on the effects of non-fishing activities on living marine resources. We are also interested in pursuing the concept that we discussed in our September 2015 report for agenda item D.1.a, looking at the combination of: physical effects of shifting climate on coastal communities, the effects of a changing ocean environment on Council-managed species, and the economic effects of climate shift on communities that depend on those resources that may be affected by the changing environment.⁷

⁷<http://www.pcouncil.org/resources/archives/briefing-books/september-2015-briefing-book/#ecosysSept2015>

Several of the Council’s advisory bodies expressed support for this initiative in March 2015. New science and science planning has occurred since that time, some spurred by Council discussion of and direction on FEP Initiative 2 (Coordinated Ecosystem Indicator Review Initiative). In November 2016, the NOAA Fisheries Northwest and Southwest Fisheries Science Centers released their Western Regional Action Plan to implement NOAA Fisheries’ Climate Science Strategy.⁸ At this March 2017 meeting, the Council will hear an update on the pilot project to review the effects of the physical environment on sablefish productivity through a management strategy evaluation. NOAA Fisheries also plans to release the results of its climate vulnerability analysis for West Coast marine fish stocks in fall 2017, which should provide the Council and the public with some guidance on which species are likely to be most affected by long-term climate change. The results of that analysis may help the Council, its advisory bodies, and the public consider whether there are particular fish stocks that should be subject to management strategy evaluations to analyze the potential long-term effects of both climate and harvest policies on those fish stocks’ age and size distribution. Those stocks that are potentially most vulnerable to the effects of climate change could or should be given highest priority for a management strategy evaluation. These plans and other recent work should help the Council and the public think about how and whether climate information can better support fisheries management decision-making.

A.2.9 Indicators for Analyses of Council Actions Initiative.

This initiative is based on management decision analyses required under the National Environmental Policy Act. This Initiative would evaluate how indicators and Integrated Ecosystem Assessment (IEA) products could be incorporated into the regularly conducted analyses and reviews of Council actions required under the National Environmental Policy Act and other laws. FEP Initiative 2 was similarly focused, but more limited to the contents of the annual Ecosystem Status Report and related analyses. Indicators are meant to track social, ecological, and economic aspects of the CCE over time and may be relevant in the weighing of alternatives for Council decisions. One of the lessons learned through Initiative 2 was that progress in the use of indicators for management would require continued and regular interaction of IEA contributors with the Council and its advisory bodies. Short of taking up this initiative this cycle, the Council could encourage analytical staff to look for opportunities to collaborate with IEA analysts and use IEA products in upcoming analyses. Examples of this collaboration already exist, such as with the use of the Atlantis model in the groundfish NEPA analysis, and the use of the NWFS indicators in the review of the groundfish catch share program. We recommend keeping this potential initiative in the appendix, but do not suggest it as a priority for action at this time.

A.2.10. Coordinated Ecosystem Indicator Review.

The Council began investigating this initiative as FEP Initiative 2 in March 2015 and completed this initiative in 2016. This initiative was a review of the initiatives provided in the annual ecosystem report, new indicators under development, and potential indicators that could improve the usefulness of the annual ecosystem report to the Council in future decision-making. The EWG

⁸ <https://www.st.nmfs.noaa.gov/ecosystems/climate/rap/western-regional-action-plan>

recommends removing Section A.2.10. from the list of initiatives, and revising Section A.1. to include a new description of FEP Initiative 2, as shown below.

Other Initiatives and Issues

In the process of discussing the FEP initiatives, the EWG noted there was no initiative that specifically looks into food web connections across FMPs and between managed species and protected species. The EWG plans to discuss a potential food web initiative when it meets concurrent with the March 2017 Council meeting and may provide a more detailed initiative proposal in a supplementary report.

Finally, the EWG notes that, in addition to commenting on the initiatives in the FEP appendix in March 2015, the Council’s Groundfish Management Team (GMT) suggested that the Council consider an ecosystem initiative to provide a “comprehensive analysis across the states of how unsorted species are currently tracked on fish tickets, how additional new sampling requirements would impact existing requirements and priorities, or how the coastwide sampling could best [be] coordinated.” (Agenda Item E.2.b, Supplemental GMT Report, March 2015.) The GMT’s proposed review and analysis would be useful to Council fishery management processes, but the EWG believes that it should likely be organized and coordinated through the Pacific Coast Fisheries Data Committee of the Pacific States Marine Fisheries Commission. That Committee consists of state, federal, and tribal agencies and professionals focused on the collection of fishery-dependent statistics. We understand that discussions on this review are already underway.

Proposed Revised Language for FEP Appendix A

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A.1 Completed FEP Initiatives [New Header Section]

FEP Initiatives, or “ecosystem initiatives,” are multi-species or multi-fisheries science and policy processes to help coordinate Council policies across its FMPs and improve our understanding and management of the CCE. It is a living list that will change as some initiatives are completed and as new potential initiatives are added. This Section A.1 describes completed FEP Initiatives. Potential future initiatives are described in Section A.2.

A.1.1 FEP Initiative 1, Protection for Unfished Forage Fish

[text in this section unchanged]

A.1.2 FEP Initiative 2, Coordinated Ecosystem Indicator Review [New Section]

FEP Initiative 2 was a Council-wide review of the annual California Current Ecosystem Status Report of the NOAA Fisheries Northwest and Southwest Fisheries Science Centers (Centers). Section 1.4 of the FEP asks that the Centers provide the Council, its advisory bodies, and the public with an annual report on the state of the CCE, with a focus on Council-managed species and fisheries, and their associated fishing communities. Under this initiative, the Council facilitated a

year-long scoping process involving ecosystem scientists, fishery managers, and the public in a conversation about ecosystem science within the Council process.

The Council began FEP Initiative 2 in September 2015 and completed it in September 2016 as a suite of comments on and requests for information in the annual ecosystem status report. In its initial directions on this initiative, the Council tasked its Ecosystem Workgroup with coordinating a review of the ecosystem status report that would ask these questions:

- i. What can we reasonably expect to learn from or monitor with the existing indicators in the CCES Report?
- ii. How well do the existing indicators accomplish their intent? Are any redundant?
- iii. Are there alternate indicators (or information or analysis) that may perform better in context? Are there additional indicators that could help inform Council decision-making under each of its fishery management plans (FMPs) and consistent with the purpose of the FEP?

Through the 2015-16 winter, the Ecosystem Workgroup hosted a series of webinars to review and discuss the various sections within and scientific information behind the Centers' annual ecosystem status report. Through these public webinars, the Centers briefed listeners on: physical and oceanography indicators; biological indicators; human dimensions indicators; freshwater, estuarine and marine habitat indicators; and, risk assessments and applications of indicators to decision-making.

Through spring and summer 2016, the Council's advisory bodies and the public reviewed the annual ecosystem status report and discussed their needs and goals for future ecosystem status reports. At the Council's September 2016 meeting, the advisory bodies and the public provided the Council and the Centers with their comments on future directions for the annual ecosystem status report. Part of that direction for future reports included the suggestion that the Council and Centers consider new focal areas for future reports, so that the Centers could revise report contents over time rather than all at once. In March 2017, the Centers presented an updated and revised ecosystem status report, taking into account revisions and additions requested through this initiative process.

Although this initiative focused on the ecosystem status report, it generated discussions about a host of other science products and tools that might support future Council decision-making. The Council particularly asked that the Centers develop a pilot management strategy evaluation on the effects of changes in the physical environment on sablefish productivity. The Centers also presented the results of this sablefish-focused work in March 2017.

EWG Summary Recommendations

The EWG recommends that the Council:

- Choose a preliminary preferred next initiative and provide the EWG with guidance on what process information and analyses the Council would like to see in September 2017 to get that initiative underway;
- Provide guidance on updating and revising the FEP appendix to:

- Add introductory text to Section A.1 and move the current A.1 text to a new sub-section A.1.1 on FEP Initiative 1, Protection for Unfished Forage Fish
- Add a new sub-section A.1.2 on FEP Initiative 2, Coordinated Ecosystem Indicator Review
- Delete sub-section A.2.10, the now-completed Coordinated Ecosystem Indicator Review, moving some of that text to the new A.1.2.

The EWG anticipates discussing any further recommendations it may have for this agenda item at its March 2017 meeting in Vancouver, Washington.