

ECOSYSTEM WORKGROUP REPORT ON FISHERY ECOSYSTEM PLAN INITIATIVE 2: COORDINATED ECOSYSTEM INDICATOR REVIEW FOR THE ANNUAL CALIFORNIA CURRENT ECOSYSTEM STATUS REPORT

1.0 Introduction

This Ecosystem Workgroup (EWG) report is intended to briefly summarize the EWG's recommendations for providing input on final action for this second Fishery Ecosystem Plan (FEP) initiative. This initiative has focused on coordinated review of the ecosystem indicators in the annual California Current Ecosystem (CCE) Status Report, with the intent of better tailoring indicators to the Council's conservation and management interests. Throughout the initiative process, the EWG's role has been to coordinate and facilitate conversations between ecosystem scientists, the Council and its advisory bodies, and the public.

In support of the FEP, NMFS's Northwest and Southwest Fisheries Science Centers (the Centers) provide annual ecosystem status reports to the Council at its March meetings. The most recent ecosystem status report is found at Agenda Item D.1.a., NMFS Report 1 for the March 2016 meeting: <http://www.pcouncil.org/resources/archives/briefing-books/march-2016-briefing-book/#ecoMar2016>.

Since March 2015, the Council's guiding questions for this initiative have been:

- What can we reasonably expect to learn from or monitor with the existing indicators in the CCES Report?
- How well do the existing indicators accomplish their intent? Are any redundant?
- 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?

For this agenda item, the Council will make recommendations to the Centers on revisions to the contents of the annual ecosystem status report for 2017 and beyond. The EWG does not anticipate that the Centers will be able to incorporate all of recommendations provided at this meeting and wholly revise the ecosystem status report contents by March 2017. Some indicators or analyses of interest to the Council, its advisory bodies, and the public may not be supportable by currently available data, may require more coordination beyond the Centers, or may not be possible using currently available models. We suggest that advisory bodies and the public identify both their near-term and longer-term priorities for information and analyses that they would like to see in future annual ecosystem status reports. At our September 13-14, 2016 meeting, the EWG plans to discuss an annual process for bringing Council priorities into the Centers' plans for updating and revising ecosystem status report contents.

2.0 Initiative Progress to Date and Questions for Advisory Body Consideration

In September 2015, the Council adopted an initiative process for 2015-2016 intended to provide final advice to the Centers by September 2016. The Council gave additional guidance to the Centers on a pilot project to initiate a comprehensive review of the status of the sablefish stock throughout its range, including in Canada and Alaska. Specifically, the Council sought a blending of information from stock assessments with ecosystem information, to evaluate whether there were any relationships between ecosystem changes and changes in stock trends that could help inform the next assessment and Council management. At this meeting, the Scientific and Statistical Committee's Ecosystem Subcommittee (SSCES) will review initial progress on the sablefish project.

To further the initiative, the Centers worked with Council staff and the EWG to present a series of webinars in January-February 2016. The webinars provided detailed discussions of the different sections of the ecosystem status report. Webinar presentations and recordings are available on the Council's website for this initiative: <http://www.pcouncil.org/ecosystem-based-management/coordinated-ecosystem-indicator-review-initiative/>. Summaries of the webinar presentations and public participation are provided in our [March 2016 Ecosystem Workgroup Report](#).

In March 2016, the Council received the Centers' annual ecosystem status report, and received an update from the EWG on this FEP initiative. In our March 2016 report at D.2.a (at link above,) we recommended questions and issues the Council's advisory bodies might consider to help the Council finalize this initiative. We suggested that the FMP-specific advisory bodies consider whether the information in the ecosystem status report helps us better understand:

- Total and FMP-specific fishery removals within the U.S. portion of the CCE, and the ecosystem effects of those fishery removals;
- Stock status of Council-managed fisheries
- Total and FMP-specific discard levels;
- U.S. West Coast fisheries' landings, by both volume and value;
- Metrics to assess fisheries' effects on essential fish habitat, and essential fish habitat effects on fisheries;
- Efficiency, profitability, and employment in FMP fisheries and fishing community stability;
- Metrics to assess the potential effects of near-term climate shift and long-term climate change on managed species and West Coast fisheries;
- Metrics to assess effects of major weather events on fisheries activity;
- Available forage base levels for FMP-managed, marine mammals, and species managed under the Endangered Species Act.
- Effects of non-fishery activities on Council-managed fisheries, fishing communities affected by those fisheries, and essential fish habitat.

In its March 2016 [Supplemental Report at D.1.b](#), the Habitat Committee considered the Council's habitat-related management goals and whether those could be addressed with indicators in future ecosystem status reports. The annual ecosystem status report has not historically included habitat indicators. At this meeting, the SSCES is receiving an update on possible habitat indicators that the Centers are considering including in the 2017 ecosystem status report.

Also in our March 2016 report at D.2.a., we suggested that the SSC look at whether the ecosystem status report meets any of the priorities it identified in its 2013 Research and Data Needs document:

- Identify key physical and biological indicators for prediction of salmon early ocean survival and groundfish recruitment, as well as other conditions that are directly applicable to management.
- Identify indices of ecosystem state:
 - upwelling, El Niño, Pacific Decadal Oscillation, Sea Surface Temperature, etc.;
 - abundance of key ecosystem process indicators, such as zooplankton and forage fishes;
 - larval and juvenile fish abundance;
 - total annual production and surplus production;
 - species diversity and other measures of ecological health and integrity; describe rationale underlying each;
 - a measure of ocean acidification and its associated impacts on marine resources and ecosystem structure and function.
- Estimate total catch for target and non-target species and their prey and predators.

In May 2016, the EWG met via webinar to review the Centers' draft Western Regional Action Plan on Climate Science, and to plan future work on this initiative. In June 2016, in the EWG report at F.2.b on the draft Western Regional Action Plan on Climate Science, we recommended that the Council and Centers together consider a more deliberate process for selecting Council-managed species that, like sablefish, would be subject to climate-related Management Strategy Evaluations.

3.0 Ecosystem Workgroup Plans for this Meeting

When the EWG meets over September 13-14, 2016, we anticipate that our discussion on this agenda item will address:

- Final EWG recommendations for revisions to and future directions for the indicators and analyses in the annual ecosystem status report, including recommendations on aligning focal areas for indicator development with Council decision-making needs;
- Identification of other potential products and processes that could be used to evaluate and understand the impacts of the Council's conservation and management decisions;
- An annual process, as part of the Council's evaluation of the annual ecosystem status report, for the Council, its advisory bodies, and the public to discuss ongoing revisions and updates to future ecosystem status reports;
- An annual process for the Council, its advisory bodies, and the public to receive guidance from the Centers on species that might be subject to future climate-related Management Strategy Evaluations.

During our September meeting, we plan to develop suggestions and guidance to the Council on these items in a supplemental report for this agenda item.

PFMC
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