

ECOSYSTEM WORKGROUP REPORT ON CALIFORNIA CURRENT AND INTEGRATED ECOSYSTEM ASSESSMENT REPORT AND SCIENCE REVIEW TOPICS

Dr. Chris Harvey of the Northwest Fisheries Science Center (NWFSC) and Dr. Toby Garfield of the Southwest Fishery Science Center (SWFSC) presented the 2018 California Current Ecosystem Status Report to a joint meeting of the Ecosystem Workgroup (EWG), the Ecosystem Advisory Subpanel, and the Habitat Committee. The EWG was impressed with this year's report and we appreciate the Centers' responsiveness to the many suggestions and comments from the Council and its advisory bodies received through the second ecosystem initiative (see 2018 report Appendix C).

We offer the following minor points for the Centers' consideration for future ecosystem status reports:

- We note that Section 4.3 of the 2018 ecosystem status report includes a variety of indicators for Chinook and coho salmon in the spotlight Table 4.3.1. We are curious whether incorporating trends in marine mammal abundance and in Chinook hatchery production may also be useful indicators for Chinook. We understand that the Centers may be conducting a workshop in 2018 to review freshwater indicators of salmon abundance, such as snowpack, which should also be useful in enhancing the salmon portion of this report.
- The aragonite indicator is important for providing updates on ocean acidification concerns; however, the EWG wondered how representative the Newport line is for the Southern California Bight. Since more information on the concerns over ocean acidification are identified in the Agenda Item F.1.a NMFS Report 3, Research Recommendations, this would seem to be a reasonable and essential addition to the report. We would request that the IEA team consider adding an additional aragonite indicator to more broadly cover the CCE.

Agenda item F.1.a, NMFS Report 3, *Ecosystem Science Topics Proposed for Scientific and Statistical Committee Review in 2018* provides suggestions for future ecosystem science work that may enhance future ecosystem status reports. We support the existing suggestions in that report and note that:

- The research proposed by Dr. Michael Jacox on upwelling indices, and by Dr. Isaac Kaplan and Dr. Samantha Siedlecki on modeling seasonal forecasts of upper ocean properties both appear to have potential for informing future ecosystem status reports.
- We were pleased to see the inclusion of highly migratory species (HMS) in the ecosystem status report, and note that Dr. Barbara Muhling's suggestion for future work on *Drivers of Albacore Distribution and Availability to Fisheries in the California Current* should be useful in future HMS topics within the annual ecosystem status report.
- We are supportive of Dr. Jim Thorson's proposal to use more and different datasets to build groundfish indicators for the ecosystem status report. However, there are 90+ species in the groundfish fishery management plan; therefore, we recommend an initial narrowing of the range of potential subject species before diving farther into the project.

- We support Dr. Andrew Thompson's recommendation to refine current forage indicators in the ecosystem status report. We are particularly supportive of the Centers' efforts to harmonize data across surveys and methodologies, and hope that this project may inform future projects to harmonize data across surveys coastwide.

With regard to the SSC Ecosystem Subcommittee process to review new ecosystem science, we noted that the 2017 review was particularly burdensome for the SSC because it coincided with the SSC's odd-year groundfish stock assessment reviews. Going forward, we suggest that the SSC Ecosystem Subcommittee consider reviewing new ecosystem science only in Septembers of even-numbered years, like 2018 and 2020. We believe that the annual ecosystem status report has matured to the point where biennial science reviews should be sufficient.

PFMC
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