ECOSYSTEM WORKGROUP REPORT ON CALIFORNIA CURRENT ECOSYSTEM STATUS REPORT INCLUDING INTEGRATED ECOSYSTEM ASSESSMENT

The Ecosystem Workgroup reviewed the California Current Ecosystem Status Report ("the Report") and its supplemental materials. We also received a presentation of the Report from Dr. Toby Garfield and Dr. Chris Harvey in a joint session with the Ecosystem Advisory Subpanel and the Habitat Committee. We would like to thank the Science Centers for their work on an interesting and informative report, and for their illuminating in-person presentation. Their expert interpretation given during the presentation added significant value to our understanding of the Report's contents.

For the Ecosystem Workgroup's report on this agenda item D.1, our comments address the contents of the 2016 Report. In reviewing the 2016 Report and its supplemental materials, we also returned to our comments on the 2015 Report to assess whether the 2016 Report addressed our 2015 comments (see Agenda Item E.1.c. EWG Report March 2015). We discuss big-picture questions and ideas for the Report in 2017 and beyond in our reports for Agenda Item D.2.

- We appreciated the focus in this year's Report on ocean temperature anomalies and support the Centers' decision to highlight these phenomena in this year's report. We also particularly appreciated the inclusion of snowmelt and streamflow data, which the Science Centers had floated with the Council last year, and which make a useful addition to the 2016 Report and its supplemental materials.
- As we commented in 2015, we would appreciate seeing more maps throughout the report, to show readers whether a particular indicator addresses the whole coast or some section of the coast.
- As we commented in 2015, the conceptual models at Figure 2.1 are probably better as reference materials, rather than as a part of the main report. Moving them to the supplemental materials or adding a link to the IEA website would allow readers to view them at a larger resolution.
- We appreciated that the Report was revised to provide both summer and winter values for several physical environmental variables, found in the main body of the Report and in its supplemental materials. We ask the Science Centers to consider whether all of those values should be presented in the main body of the Report.
- As we commented in 2015, the developmental state of forage species (i.e., larval, young of year, juvenile, or adult) should be included in figure titles.
- In Section 4.3, could Puget Sound Chinook be added to Figure 4.3.1? Are there other Chinook not presented? Are there other salmon species the Council would like to see represented in the Report?
- The "stoplight" figure for connecting indicators with salmon abundance is an excellent and useful addition to the report.
- In Section 4.4, the groundfish figure is excellent and highly detailed. So that readers can better appreciate its excellence, we think that the figure could be made much larger on the IEA website or elsewhere. We are also curious whether an electronic version of such a

figure could be animated to show changes over time, but realize this suggestion is ambitious.

- As we commented in 2015, Figure 5.1.1 represents landings by weight. The Report would benefit from a similar set of graphs for landings by value. For the "Total fisheries landings Coastwide" graph within Figure 5.1.1, it would be useful to see the landings data in a separate graph, where landings are stacked by species type, so that the reader could see the proportions that each species type contributes to the total landings. We would also like to see a graph within 5.1.1 that addresses commercial landings of Shared Ecosystem Component Species. And, we recommend more species group information on recreational fisheries activities.
- In the seafloor disturbance estimates under Human Activities, assessing disturbance by aggregating of information over gear types and habitats is less informative than providing multiple indicators that consider different gear and habitat types. We understand the IEA team is looking at additional ways of making this indicator more applicable to Council work.
- We liked the commercial fishing dependence and engagement figure at 6.1 and wonder if it could be broken out by state. It would also be helpful if the community vulnerability radar chart figures ran north to south clockwise. As we commented in 2015, the report needs recreational fisheries information and indicators. Recreational fisheries are critically important in some port areas of the West Coast. We also wonder if, in addition to radar chart diagrams, community fisheries dependence and vulnerability could be displayed on a graph's X and Y axes, respectively, similar to the Puget Sound coastal development risk assessment discussed in Webinar 5 on February 2, 2016.
- While the "Personal Use" information is an interesting concept, we are not confident in the consistency or completeness of the reporting of that information to the Pacific Fisheries Information Network. We recommend that this indicator be removed from the Report. California information in particular seems to be diluted with information from inland waters.
- We recommend that the Science Centers consider adding a brief "Research Recommendations" section to the Report or its supplemental materials, similar to that provided at the end of the *Ecosystem Status Report for the Gulf of Mexico* (Karnauskas et al., 2013, NOAA Tech Memo NMFS-SEFSC-653). Including such a section would allow the Science Centers to comment on where their future data collection and analysis work might supplement or improve the Report's indicators and analyses. We particularly noticed that some of the indicators rely on information collected in limited sections of the coast or over relatively short time spans, and were curious where the Centers might be interested in altering or increasing data collection to improve ecosystem status asssessments – understanding, of course, the lack of budget to conduct new data collection efforts.

PFMC
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