ECOSYSTEM ADVISORY SUBPANEL REPORT ON RESEARCH AND DATA NEEDS DOCUMENT – FINAL ADOPTION

The Ecosystem Advisory Subpanel (EAS) agrees that ecosystem science and research are highly valuable and relevant to the goals and objectives of the Pacific Fishery Management Council (Council). The EAS reviewed and endorses the Research and Data Needs document (document) and supports its use and on-going refinement. Issues such as ocean acidification, harmful algal blooms, impacts of climate change on fisheries and fishing communities, trophic interactions across the food web, and habitat conservation are pertinent to fisheries management, and improving our understanding of them through science is important. The document provides a useful platform to collate these topics, communicate them to multiple audiences, and increase opportunities to leverage external support. The EAS recognizes the excellent work of the NOAA Integrated Ecosystem Assessment program, and its contribution to the development of ecosystem-related science.

Procedurally, the document may be most useful as a "living" document that is updated on a continual basis. The Council, management teams, and advisory panels could then suggest research and data needs as they arise. As a living document, science to address emerging issues can be added and prioritized. Reconsidering the document's structure at five year intervals may continue to be beneficial, and summarizing progress on high-priority issues is helpful in communicating advances made.

Structurally, we support the use of concise language while maintaining utility as a reference document with sufficient detail to continue to guide but not constrain the research community.

The EAS noted the following "New Highest Priority Issues" from Chapter 2 as areas of particular interest with the caveat that some need further clarification:

- Better connect ecosystem indices to assessments and biologically or socially meaningful reference points.
- Investigate how viability and resilience of coastal communities are affected by changes in ecosystem structure and function, including short- and long-term climate shifts.
- Strategic evaluation of ecosystem monitoring programs: To ensure that limited resources are used most effectively, a systematic assessment of data collections and monitoring programs should be undertaken. The assessment should evaluate the consequences of losing or scaling back specific programs and opportunities for adapting or replacing programs with more cost-effective alternatives. The review should also explore opportunities to support robust management decisions in the event that some data collection efforts are curtailed, ideally using a management strategy evaluation approach. Since most monitoring programs support fishery management plan (FMP) specific management decisions, this priority may be reflected in other sections of this document, but many data collection and monitoring programs have broader cross-FMP value and it will be important to maintain a broader ecosystem perspective when evaluating specific

programs to account of the value of programs beyond their FMP specific uses and to identify opportunities to meet needs of multiple FMPs with single program.

The EAS suggests s the following topics as potential additions to Chapter 2:

- Development of a new observing line off of the Washington coast, comparable to those that exist in Oregon and California (similar to the "Newport Line").
- Additional research to elucidate trophic interactions among species.
- The development of tools to evaluate tradeoffs among the ecosystem services provided by fisheries.

Beyond specific research recommendations, the EAS recognizes the importance of institutional processes for applying ecosystem science. Strategic convening of Council bodies, stakeholders, and community members adds value to the development and prioritization of ecosystem science

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