August 9, 2018

Mr. Phil Anderson, Chair
Pacific Fishery Management Council
7700 NE Ambassador Place, #101
Portland, OR 97220

RE: Agenda Item G.2: Research and Data Needs Document – Final Adoption

Dear Chair Anderson and Council Members:

Ocean Conservancy and Wild Oceans thank the Pacific Council for its work updating the 2013 Research and Data Needs Document. This is an important document that makes research needs clear and transparent for its partners.

Regarding the 2018 document, we recommend prioritizing research and data needs that relate to current Council management needs as closely as possible, and are cross-fishery in nature to maximize impact.[1] Recognizing the Council is developing a Climate and Communities Fishery Ecosystem Plan (FEP) initiative and scoping a 5-Year Review of the FEP, we suggest that research and data collection related to these agenda items are prioritized and identified as such throughout the document.   Prioritizing that work now will ensure any research items that are investigated can contribute to that initiative before its completion.

We recommend prioritizing research items that 1) improve our understanding of the spatio-temporal dynamics of our stocks, and 2) aim to integrate ecosystem information into management. This includes both ecosystem and FMP specific research items identified throughout the document.

Ecosystem Items:

In particular, we recommend prioritizing and identifying the following ecosystem items in sections 2.2 and 2.4:

- *Investigate how viability and resilience of coastal communities are affected by changes in ecosystem structure and function, including short- and long-term climate shifts.*

- *Develop an improved understanding of how ecosystem science (new ecosystem indices, management tools, etc.) can be used effectively in the Council process. (e.g., next*

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[1] See also EWG supplemental report for Agenda Item C.4.a June 2018 briefing book: https://www.pcouncil.org/wp-content/uploads/2018/06/C4a_Supp_EWG_Rpt1_Jun2018BB.pdf

generation ecosystem MSEs that include governance considerations)

- *Better connect ecosystem indices to assessments and biologically or socially meaningful reference points.*

- *Monitor, model, and predict changes in distribution of species related to changes in ocean conditions and climate. Identify how climate change will affect spatio-temporal ocean distributions and the overlap between predator-prey assemblages. Identify how distribution shifts will impact jurisdictions and communities.*

- *Better understand spatial structure and geographic range (meta-population structure) of managed stocks and investigate what are the most appropriate spatial scales for management.*

In addition to the ecosystem items included in the document, a targeted effort to apply the existing tools' outputs to management through scenario planning would be highly beneficial to the Council. During the Climate and Communities workshop held in May 2018, the idea of disaster, or scenario, planning was identified as a useful and proven mechanism for preparedness. We recommend moving forward with that concept. Generic worst case scenarios can be developed and used to guide and prioritize many of the research recommendation made throughout this document. The existing Atlantis studies, such as those relating to ocean acidification can also be used to develop, and test, those scenarios.

FMP specific items:

We recommend the following FMP-specific items be prioritized. Of note is that most FMP sections identify the need for inclusion of environmental considerations into stock assessments and management, as well as the need to gain a better understanding of the spatial patterns that may impact future management as stocks begin to shift under a changing climate.

1. Section 4.0 Groundfish:
   a. Section 4.11.1 *Stock Boundaries* and 4.11.2 *Spatial Models*. Understanding the distribution of species is a core component of on the climate and communities initiative. Developing objective methods to determine those stock boundaries and monitoring for potential shifts over time of recruitment, migration, and growth through a finer scale parsing of spatial dynamics will ensure management can be responsive to those change and vulnerable fisheries can be identified in advance.
   b. Section 4.11.5 *Environmental or Ecosystem Influences*. While the warm blob likely had some negative impacts on fish stock understanding the acute impacts of the warm blob will provide insights into how fish populations respond to changing ocean conditions and provide needed information to assess the cumulative impacts of recurring events moving forward.

2. Section 5.0 Salmon
   a. Section 5.2.2 *Ocean Distribution of Natural Stock* and *Forecasting Precision and Accuracy*. This item aims to better understand how environmental signals may be impacting stock distribution, migration, forecasts and fishing participation under a changing climate

3. Section 6.0 Coastal Pelagic Species
    a. 6.3.2 Identifies the need to consider spatial models of regional recruitment and biological parameters for Pacific Sardine to better represent longitudinal size at age and those regional specific interactions with the fishery
    b. Section 6.6 Ecosystem issues identifies the importance of including climate indicators in stock assessments as well as understanding the potential tradeoffs between increases/decreases in yield of CPS and the impacts of predators, potentially in a different FMP.

Although the document itself is unwieldy in length, it is useful to identify and prioritize research items for NMFS and external audiences, and provides some measure of accountability of progress towards achieving those goals. We agree with the Council discussion held in June; although now may not be the right time to adjust the research and data needs Council process, we support doing so in 2023. At that time we recommend shortening the document, sharpening the focus, and increasing its digestibility for audiences external to the Council. It would be useful to also produce a 2018 Research and Data Needs document "Follow-up Report" that could benchmark progress made on 2018 items in 2023. This could reduce the length of the document, and provide a clear accountability and communications mechanism.

We thank the Council for reviewing the document, and appreciate the Council's on-going commitment to science-based management.

Sincerely,

Corey Ridings
Ocean Conservancy

Theresa Labriola
Wild Oceans