

## ECOSYSTEM ADVISORY SUBPANEL REPORT ON THE ECOSYSTEM AND CLIMATE INFORMATION INITIATIVE – PROGRESS REPORT

The Ecosystem Advisory Subpanel (EAS) met to discuss the progress reports provided by the Ecosystem Workgroup ((EWG) [Agenda Item F.1.a, EWG Report 1, September 2023](#) and [Agenda Item F.1.a, Supplemental EWG Report 2, September 2023](#)) on the status of the Ecosystem and Climate Information Initiative (Initiative 4). We commend the EWG for providing a path forward to better link environmental drivers and the socioeconomic success of our coastal fishing communities, including climate sensitive species, and would like to offer the following comments.

In general, we felt there were two concepts being conflated: 1) setting informed harvest limits based on environmental drivers; and 2) identifying those stocks where nimble management could increase fish stock and fishery success. These two points have different response time frames with (1) being part of the normal cycle of stock assessments and (2) being on a shorter time scale than the current assessment cycle; inclusion of risk tables via the proposed framework may be too slow to adapt to rapid environmental change.

Overall, the EAS felt that a key outcome of Initiative 4 should be using the California Current Ecosystem science to inform Pacific Fishery Management Council (Council) fishery management decisions for the species/stocks/species complexes that are more vulnerable or more likely to be impacted by oceanographic forecasts. Related indicators would benefit from additional monitoring by Council advisory bodies throughout the year, including when there are opportunities for potential management adjustments, as appropriate. The analyses in the annual Ecosystem Status Report (ESR) increasingly links fisheries to the socio-economic livelihood of our coastal communities, which are an integral component of Council decision making. We recommend the Council use Initiative 4 to pilot approaches that improve the nimbleness of the Council to respond to interannual variability and long-term climate trends.

### **Species Selection Criteria and Risk Tables**

The EWG asked for input from advisory bodies on the selection criteria for species that would be a focus for providing ecosystem and climate information within associated management processes. The EAS felt that the two key driving criteria in the selection methodology are the Ecological Considerations and Social & Economic Considerations. Council Authority seems like a prerequisite for choosing any species rather than a selection criterion for choosing a particular species. We also note the following concerns:

- By choosing only species/stocks for which we have the most scientific knowledge (the Scientific Considerations criterion), climate sensitive stocks with limited data could be overlooked.
- An over-ambitious and complicated risk table development and review process could result in a crushing workload; conversely, only examining a low number of species could be insufficient to encompass climate sensitive taxa.
- It is possible that some risk assessments could result in continuous effort and risk table generation (e.g., a hamster wheel) creating infinite work and focus on one species.

## **Risk Table Application**

It is our understanding that risk tables are intended to inform harvest setting or management measures with relevant and timely species- or stock-specific environmental trend information. However, there are trade-offs associated with inclusion of additional data or information that introduces or increases uncertainty, and it should be noted that including climate and ecosystem information (e.g., through a risk table) is no exception. The EAS also emphasizes the value of fisherman’s “on the water” information and experience and the possible role of risk tables as an opportunity to incorporate that firsthand knowledge or other qualitative information into this process.

Describing how use of the risk table could influence socioeconomic outcomes (within the actual risk tables) could help the Council understand the trade-offs of using the risk tables. The annual ESR presents a number of fishing community-related metrics that could support a more proactive approach in the risk assessment context and inform the equitable distribution of positive and negative outcomes across communities and stakeholders.

Recognizing there is inherent risk associated with employing the methodology, the EAS suggests the Council use of SSC-endorsed petrale and sablefish risk tables as a pilot process as part of the 2025-2026 Harvest Specifications. The idea is to test the use of risk tables through the existing process to facilitate a discussion about how they could be used and may be modified or improved, and identify the kinds of information that would be most helpful for Council decision-making. The intent is that the tables would be informative but not affect harvest setting or management measures unless and until the Council decides whether and how they would like to use them in future management cycles. Additionally, using historical (hindcast) approaches to identify when a risk table action would have occurred would allow the Council to evaluate how such tools can support climate-robust fishery management.

## **Inflation Reduction Act (IRA) Funding**

With the availability of IRA funding, there is a significant opportunity to develop this initiative and increase dedicated capacity. In particular, funding could be used to develop a Council Operating Procedure (COP) and terms of reference (TOR), and third party review (e.g., 1-day STAR or SSC ES). Additional funding could build and convene the multidisciplinary team required and outlined in the EWG F.1.a supplemental report, composed of ecologists, survey scientists, ecosystem modelers, stock assessors, and physiologists.

## **Conclusion**

To address the concerns expressed in this report, we propose:

- (1) Taxa could be grouped by niche and/or climate/oceanographic sensitivities as part of an initial evaluation to identify on-ramps for multiple species in one analysis and reduce the number of risk assessments needed.
- (2) The EWG’s proposed groundfish and coastal pelagic species selection process could be made more efficient by integrating it into the existing stock assessment prioritization process, rather than creating a new process.

- (3) Risk tables could be considered intermediaries that lead to (a) inclusion in stock assessments, if appropriate, and (b) be used to identify what environmental drivers would be considered triggers to evaluate whether mid-year management modifications may be necessary.
- (4) IRA funds are sought and leveraged to (a) develop a Council Operating Procedure (COP) focused on increasing the climate resilience of Council managed species/stocks and (b) convening and building an interdisciplinary team dedicated to the risk assessment process.
- (5) Petrale sole and sablefish are used as test cases to evaluate the efficacy of the Risk Tables, potentially coupled with hindcast analysis of these or other species/stocks.
- (6) A risk-reward approach is embraced to explicitly link Risk Table approaches to socioeconomic impacts, including benefits to coastal economies and people.

The above suggestions could be an outcome of a risk assessment, existing stock assessment, part of the on-ramping approach, and/or a topic for the Nature Conservancy workshops. This integration would reduce the workload while generating a product that will eventually link all stocks evaluated to variables within the ESR.

Finally, the EAS is encouraged that the Council is leading the effort to increasingly incorporate environmental drivers into management, and improving our nimbleness and responsiveness to climate change. This provides the mechanism to take the amazing work presented in the annual ESR into more healthy and resilient fishing stocks, fishing communities, and coastal economies.

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