## SUPPLEMENTAL ECOSYSTEM ADVISORY SUBPANEL REPORT ON THE CLIMATE AND COMMUNITIES INITIATIVE UPDATE

The Ecosystem Advisory Subpanel (EAS) agrees that climate change will affect sustainable West Coast fisheries. We support Council action through the Communities Initiative to better understand and address such effects. The EAS recommends exploring strategies to meet the goal of increasing the health of the California Current ecosystem. This includes advancing our understanding of climate change and variability and the anticipated effects on target species and the environment. The EAS offers the following discussion points as the Council considers next steps in the Climate and Communities Initiative:

*Understanding climate change across geographic scales.* While the Council is a regional-scale body, the impacts of climate change may be felt differently in specific sub-regions or communities. It is important that as the Council further refines the initiative and explores solutions, there is recognition of the value of sub-regional and/or community input. We recommend that a mechanism or forum to include this input should be developed. Collaborations with researchers studying vulnerability and adaptation, local community groups, tribes, ports, or Sea Grant may facilitate this engagement.

*Maintain management structures already in place that support resilience.* The Council should prioritize and maintain its existing goals and actions that promote resilience. For example: protecting habitat including EFH, setting precautionary catch limits and avoiding overfishing, and protecting food web integrity through actions such as the prohibition of krill harvest.

*Emphasize the utility of the IEA annual ecosystem report.* The Integrated Ecosystem Assessment (IEA) annual ecosystem report is a remarkable accomplishment and has broad utility to management, especially under climate change. The EAS notes the value of the information contained in the report and the even larger role it could play in educating Council constituents about the relationship of climate science to fisheries management. The use of the IEA ecosystem report in decision-making could be elevated, and the Council and NMFS should consider if and how wider distribution would be beneficial.

*Carefully consider "flexibility" in the management system.* The EAS suggests that the concept represented by the word "flexibility" in the EWG report 1 and the TNC Workshop report could better be represented by the word "adaptability." The term "flexibility" carries different interpretations and has multiple meanings. Conceptually, the EAS supports the Council's interest in supporting the economic viability of fisheries during increasingly rapid environmental change. The EAS encourages the Council to be cautious in considering both costs and benefits of any proposal to modify management measures for this purpose.

*Climate information vs. ecosystem information.* The EAS notes that information concerning climate variation and change is not synonymous with ecosystem information. While there are conceptual similarities between the two, and they often are considered simultaneously in Council processes, the two are not identical. Information from both domains is important to consider.

*Scenario planning*. The EAS supports EWG recommendation 2 to scope scenario planning. Scenario planning can be used in combination with quantitative modeling as a means of meeting the Council's goals and objectives with respect to climate variability and climate change. Should scenario planning move forward, the EAS requests to participate in the scoping with the EWG.

*EWG recommendations*. The EAS supports the suite of recommendations made in EWG Report 1 and offers its help and consultation as needed.

Other EAS recommendations:

- Improve the applicability of Exempted Fishing Permits to support fisheries innovation and adaptability by making the process for approval less burdensome and time consuming. For example, the Council could reduce permit processing time while still ensuring conservation objectives and requirements are met.
- Identify and articulate a clear process for bringing climate knowledge into the Council process.
- Improve our ecosystem-level models and our ability to apply these models regionally.
- Address geographically shifting stocks, in both the short-term and long-term, and the risks and opportunities associated with spatial shifts.
- Explore how temperature changes are likely to be expressed over the California Current System, and what their impacts on target and ecosystem species are likely to be, noting that fisheries-independent data are helpful in understanding system dynamics.

In conclusion, the EAS notes that the impacts of climate change on fisheries is complicated and lacks historical precedent, and that addressing this issue is important and timely.

PFMC 09/07/18