## ECOSYSTEM WORKGROUP REPORT ON THE CLIMATE VULNERABILITY ASSESSMENT REPORT

The Ecosystem Workgroup (EWG) thanks Dr. Michelle McClure for her presentation of the Northwest and Southwest Fisheries Science Centers' climate vulnerability assessment (CVA) work. We thank the Centers for adapting the nationwide assessment methodology to take into account particular characteristics of the California Current Ecosystem, such as the strong influence of upwelling on our stocks. We also appreciated the detailed look at individual Evolutionarily Significant Units (ESUs) for salmonid species. The EWG thinks that the CVA may prove useful in moving forward with the next Fishery Ecosystem Plan initiative.

The EWG has the following recommendations for using or amending this work going forward:

- Centers should provide a matrix that illustrates the CVA results by species and factor or attribute to show what specific sensitivity and exposure factors or attributes were important for each species this would be a key product for helping the Council better interpret and understand the results, and their potential application to management concerns.
- Centers should provide the Council, and particularly the Habitat Committee, with a map of salmon ESU vulnerabilities so that when they are considering non-fisheries activities that may affect the habitat of Council-managed species, they will have an easy reference to those ESUs with the greatest potential vulnerability to climate change.
- Nationwide, Fisheries Science Centers should collaborate on CVAs of transboundary stocks, such as our highly migratory species, so that we can better understand their vulnerability to climate change throughout their life histories and ranges.
- We are concerned about the state of knowledge on future ocean distribution of Council-managed stocks. Do we have sufficient scientific monitoring in place to document changes in distribution of Council-managed stocks?
- The EWG notes that there was no sensitivity factor that accounted for susceptibility to predators, although prey specificity was a sensitivity factor. Future assessments of species' vulnerability to climate change should consider including this factor.
- Stock status and productivity appeared to heavily influence the CVA results those species that are either listed under the Endangered Species Act or rebuilding under the Magnuson-Stevens Fishery Conservation and Management Act dominate the red and orange zones what might the scores be if these stocks were at "healthy" levels or if those factors were removed?;
- Dr. McClure mentioned that part of the process of completing the CVA provided the opportunity to identify important gaps in knowledge of these species. The EWG recommends that these gaps be captured in the CVA products with the intent to incorporate them into the next Research and Data Needs document to be developed in 2018.

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