PROJECTING CLIMATE CHANGE IMPACTS ON FISH AND FISHERIES

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SUBTHEME: Incorporating ecological, environmental, and climate variability in stock assessment and ecosystem based fishery management

BIO

Dr. Anne Hollowed is a Senior Scientist with the National Marine Fisheries Service's Alaska Fisheries Science Center. She received a B.A. in Geology and Biology from Lawrence University, a M.S. in Oceanography from Old Dominion University and a PhD in Fisheries from the University of Washington. She is an Affiliate Professor with the School of Aquatic and Fisheries Sciences at the University of Washington. Dr. Hollowed conducts research on the effects of climate and ecosystem change on fish and fisheries and leads the Status of Stocks and Multispecies Assessment (SSMA) program (http://www.afsc.noaa.gov/REFM/Stocks/default.php). She has served on the NPFMC SSC for 13 years. Her research is focused on issues related to the intersection of fisheries oceanography and fisheries management. She has been an active participant in the design and implementation of several national and international multi-investigator, interdisciplinary research programs. Dr. Hollowed was a lead author of Chapter 28 of the Working Group II contribution to the 5th Assessment Report of the Intergovernmental Panel on Climate Change. She co-chairs an ICES/PICES Strategic Initiative on Climate Change Effects on Marine Ecosystems which is tasked with projecting climate change impacts on fish and fisheries. She has published over 80 papers in the peer-reviewed literature.

ABSTRACT

The proliferation of modelling improvements and global projections creates a dilemma for regional ocean modellers and fisheries scientists as the number of possible permutations that could be explored rapidly can become too large to manage. Identifying a reasonable range of representative futures (with sufficient contrast in scenarios) and biological models is needed to allow analysts to compare projections and report on the relationship between model complexity, efficiency, and the computational costs of increased ecological realism in models. This talk describe international strategies to develop quantitative projections of future responses of fish and fisheries to expected changes by 2019. To move beyond qualitative projections of future impacts scientists are striving to extend regional models to include projections of climate impacts on the distribution and abundance of commercial

fish and fisheries. A case study for the Bering Sea is used as an example of the proposed multi-model approach to climate change projections. Strategies for Fisheries Management Council action to engage stakeholders in the development of the suite of representative fishing scenarios is discussed.