The Alaska Climate Change Integrated Modeling (ACLIM) Project
Presented by Kirstin Holsman, NOAA Fisheries Alaska Fisheries Science Center

ACLIM PIs: Anne Hollowed, Kirstin Holsman, Alan Haynie, Stephen Kasperski, Jim Ianelli, Kerim Aydin, Wei Cheng, Albert Hermann, Trond Kristiansen, Andre Punt

The Alaska Climate Change Integrated Modeling (ACLIM) project represents a comprehensive, collaborative effort to characterize and project climate-driven changes to the Bering Sea ecosystem, from physics to fishing communities, and to understand how different fisheries management approaches might help promote adaptation to climate-driven changes and long-term sustainability in fish and shellfish populations. To address this goal, ACLIM strives to evaluate fishery management strategies under different climate change scenarios in the Bering Sea. It connects research on scaling of climate models, climate-enhanced biological models, and socio-economic and harvest scenarios. ACLIM is a multi-year project is a collaboration between 19 physical oceanographers, ecosystem modelers, socioeconomic researchers, and fishery management analysts from NOAA AFSC, NOAA PMEL, and the University of Washington. A major focus of the project is to quantify scenario, parameter, and structural uncertainty through a multi-model projection suite which will aid in evaluating the performance of resource management strategies under different future scenarios. Projections of climate conditions are complete, and projections of catch for core species under baseline status quo fishing conditions are underway for several fish and invertebrate species from the Eastern Bering Sea (EBS), for which changes in productivity have been linked to climate variability. Results will include projections of the future ecosystem state of the Bering Sea, risk of changes in catch under different management tools, and spatial and temporal schedules of expected change. A core component of the work is to evaluate alternative management strategies to adapt to changing conditions. ACLIM would like feedback from the council and stakeholders about potential strategies and metrics to evaluate during the next phase of the project.

Primary target species (others included as available):
Walleye pollock (Gadus chalcogrammus)
Pacific cod (Gadus macrocephalus)
Arrowtooth flounder (Atheresthes stomias)
Northern rock sole (Lepidopsetta polyxystra)
Snow crab (Chionoecetes opilio)
Human fishing fleets and communities

Timeline: FY15-FY19
Funding:
- Fisheries & the Environment (FATE)
- Stock Assessment Analytical Methods (SAAM)
- Climate Regimes & Ecosystem Productivity (CREP)
- Economics and Human Dimensions Program
- NOAA Integrated Ecosystem Assessment Program (IEA)
  - NOAA Research Transition Acceleration Program (RTAP)