

Title

Dr.

Last Name of PRESENTING Author

Cross

Middle Name or initials of PRESENTING Author

N

First Name of PRESENTING Author

Jessica

Email of PRESENTING Author

jessica.cross@noaa.gov

Country of PRESENTING Author

United States

Institution, organization or general address

NOAA Pacific Marine Environmental Laboratory

Theme

Sub- Theme 3: Operating Observing Systems and Networks

Author list (in order)

Cross, Jessica*; Hurst, Thomas; Foy, Robert; Long, Chris; Dalton, Michael; Stone, Robert

Poster title (brief)

Successes and challenges of interdisciplinary Ocean Acidification research in Alaska

Abstract - text box

Arctic regions are a bellwether for ocean acidification impacts, experiencing some of the most rapid and extensive consequences of ocean acidification of coastal regions. Acidification is occurring in important habitat for commercial and subsistence fisheries, and could eventually cause cascading economic echoes around the Nation. In response to this vulnerability, the Alaska Fisheries Science Center and the Pacific Marine Environmental laboratory formed a novel partnership that combined monitoring and observations with species response studies, OA forecasting models, and human impact assessments. The results from each of these research areas actively and directly inform the others, resulting in an adaptive, efficient research portfolio that addresses emerging key stakeholder needs as understanding of Alaskan acidification evolves. This interdisciplinary scaled approach has been extremely successful in connecting acidification vulnerabilities with decision makers, enabling an extensive economic vulnerability assessment of Alaskan communities and a more focused analysis of potential population declines

and attendant economic consequences for important commercial species. We highlight these successes to show the potential of this interdisciplinary model for other observing needs, and key challenges that remain. One such challenge is represented by the size and variability of the region itself: current resources cannot cover all observational scales and species of interest. In the future, we recommend increasing the complexity of our observing and experimentation beyond basic thresholds and indicators to assess broad spatiotemporal variability, long-term population acclimation, and co-stressors. We also recommend initiating salmonid research, which stakeholders have identified as a glaring experimental gap. To meet these needs, we emphasize the power of biogeochemical models, new technologies, and creative indicators that may provide new insights and capacity.