

Project Title: MSE for Salmon Fisheries in the Kuskokwim River

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Project Period: **July 1, 2021 – June 30, 2023**

Study Location: Kuskokwim River Watershed

Abstract: The Kuskokwim River is facing a time of transition with large observed changes in its salmon populations and the freshwater and marine ecosystems they inhabit. Home to one of the largest Chinook salmon stocks in the world, it supported vibrant commercial and subsistence fisheries until the 1990s when abundances declined to the point where only subsistence fisheries have persisted. Abrupt change in abundance and demographics of these stocks have fostered concern over the future sustainability of Kuskokwim salmon fisheries.

Scientific understanding of the reasons for changes in Kuskokwim Chinook salmon stocks remains weak in this remote and vast watershed, where biological and environmental data are scarce and highly uncertain. In particular, how future climate change will affect the stock productivity remains unknown. Concomitant declines in the ages and body sizes of spawners also remain largely unexplained but highlight changes to the demographic potential of this stock in terms of declining fecundity and egg size.

This combination of declining socio-economic performance in the fisheries, poor understanding of its causes, and cognizance of ongoing climate change has focused scrutiny on whether current management approaches provide the most effective basis for achieving sustainability. Further, it is unclear whether the diverse range of values held by the variety of stakeholders of this resource are satisfied equally by different management approaches. We propose to engage stakeholders, resource managers, and scientists in a formal collaborative assessment process known as Management Strategy Evaluation (MSE) to co-develop a common understanding of trade-offs among alternative management strategies for satisfying diverse objectives, given the inevitable uncertainties about the future conditions in the ecosystem and how these will impact Kuskokwim River salmon populations.