



Risk avoidance—MSE collaboration for Bering Sea Tanner crab

Authors: Madison Shipley, William Stockhausen, Ben Daly, André Punt

Abstract

Eastern Bering Sea Tanner crab (*Chionoecetes bairdi*) is one of the State of Alaska's more variable fisheries and experiences large fluctuations in annual abundance, which has led to multiple closure years since its establishment. In 2014 to 2015, Tanner crab harvest went from 20 million pounds to 0, and uncertainty surrounding the performance of the current harvest control rules (HCR) lead to interest in modifying them to better account for stock status and potentially reduce large-scale changes in catch. Management Strategy Evaluation (MSE) accounts for assessment error and process error in population dynamics, involving simulating a managed system to provide information for decision-makers tasked with selecting a management strategy for implementation. MSE performed without stakeholder input may fail to address key issues. A collaborative workshop featuring stakeholders, university affiliates, and managers was convened where MSE based on the current Tanner crab assessment model was deemed the most appropriate way to test candidate HCRs. To ensure a cooperative and transparent development process, there has been substantial communication among industry representatives, managers, and scientists. Objectives of the MSE and corresponding performance statistics were determined collaboratively to report results in terms meaningful to decision makers while considering stakeholder input on risks to the fishery and trade-offs. This project represents a case study in collaboration, highlighting how concerted interactions with industry, managers, and scientists can distill highly technical processes into coherent and tractable results.

Keywords:

management strategy evaluation, trade-offs, collaboration, Eastern Bering Sea, *Chionoecetes bairdi*

Contact Author:

Madison Shipley, University of Washington School of Aquatic and Fishery Sciences, Bering Sea Fisheries Research Foundation, Natural Resources Consultants Inc, mshipley@nrccorp.com