

# Diving back in time: Extending Historical Baselines for Yelloweye Rockfish with Indigenous Knowledge

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## Abstract

1. Ocean systems, and the culturally and commercially important fishes that inhabit them, face growing threats. Increasingly, unconventional data sources are being used to inform fisheries research and management for data-poor species.
2. Listed as a species of special concern in Canada, yelloweye rockfish (*Sebastes ruberrimus*) are vulnerable to exploitation, and have historical and cultural value to Indigenous people. In this study, Indigenous fishers of British Columbia, Canada, were interviewed and asked about observed changes to the body sizes (length) and abundance of this species over the last ~60 years, and the factors driving these changes. Their current and historical estimates of size and abundance were compared to current biological survey data.
3. Forty-two semi-directed interviews were carried out. Eighty-nine percent of respondents observed a decrease in yelloweye rockfish body sizes since the 1980s. The median historical (1950s-1980s) length was 84 cm, compared to the median modern (2010-2015) length of 46 cm. All but one respondent reported substantial decrease in yelloweye rockfish abundance since their earliest fishing experiences (1950s to 1980s, depending on participant's age), with a third suggesting the change was most evident in the early 2000s, followed by the 1980s (21%) and 1990s (17%).
4. Sizes of modern yelloweye rockfish estimated by participants resembled estimates derived from ecological data recorded concurrently at the study region.
5. This study illustrates a repeatable method for using traditional and local knowledge to extend baselines for data-poor species, and highlights the value of integrating Indigenous knowledge into fisheries research and management.