

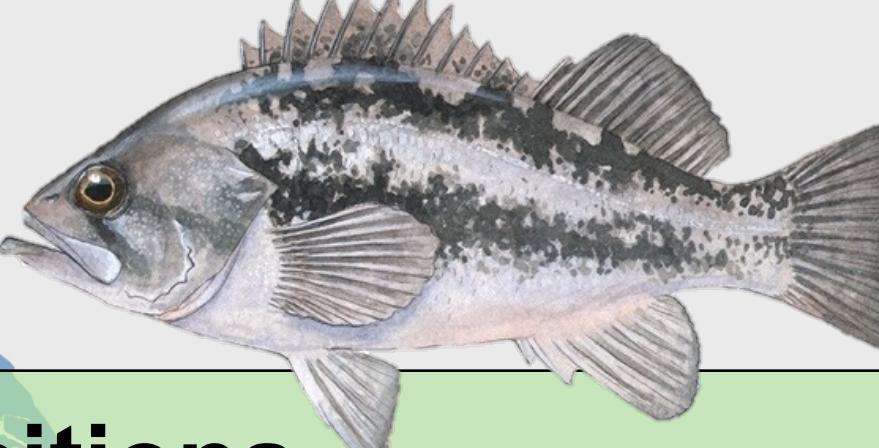
Fishing for data: black rockfish in the Gulf of Alaska and California Current

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- There are currently three stock assessments for black rockfish (*Sebastodes melanops*) off the US West Coast and three assessments underway in Alaska (Dick et al. 2023, Cope et al. 2023a, Cope et al. 2023b, Joy et al. *In prep*)
- Stock assessments rely on a multitude of fishery-dependent and -independent composition data to estimate stock-specific parameters (Fig. 1) (Cope 2024)
 - Data sources include:
 - recreational and commercial samples (e.g., PACFIN, RecFIN)
 - Logbooks, observer programs, and standardized surveys
- Here, we evaluate the representativeness of length and age data compared to those used in stock assessment models
 - Distributional overlap: 0 (completely disparate data sets) to 1 (identical data) (Hatch et al. 2023)

Stock Assessment Models

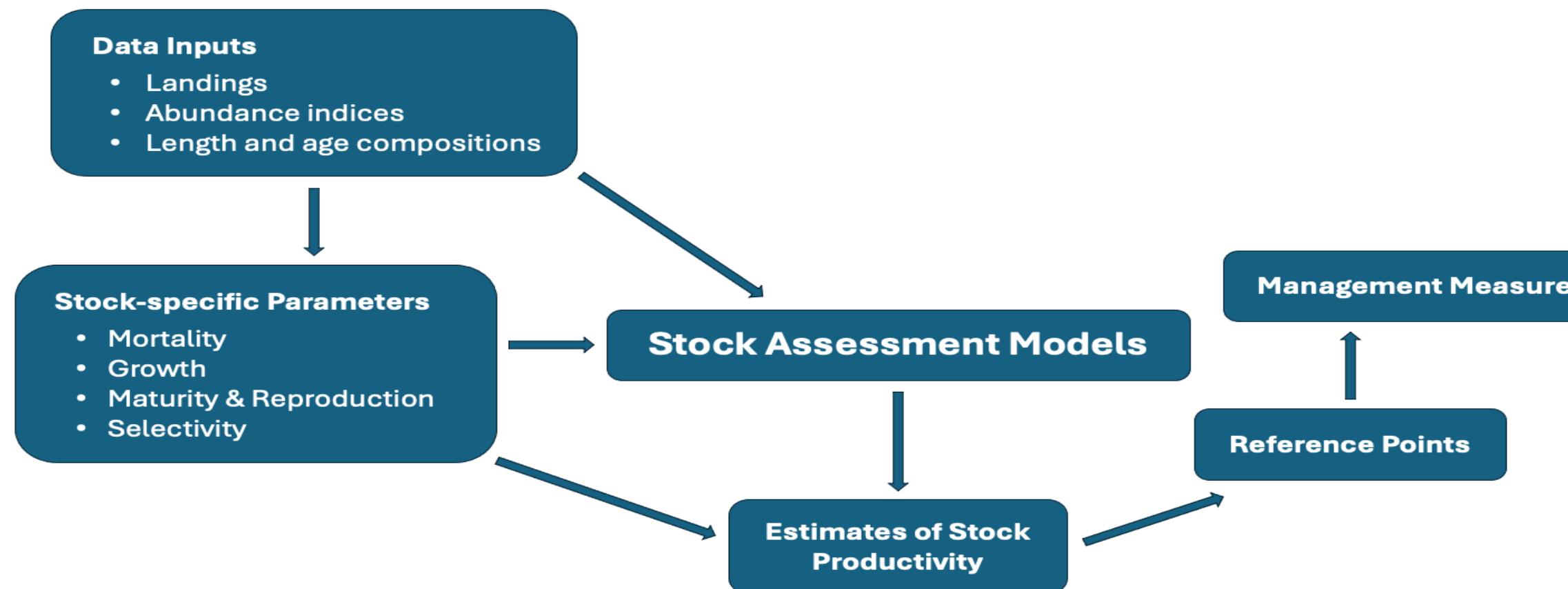


Figure 1. Diagram adapted from Cope (2024) showing the basics of a stock assessment model and the output.

Data Déjà Vu: Distributional overlap among samples

- State- and sex-specific length and age compositions between the two datasets are similar for most states (overlap > 74%), except California (overlap between 43% and 65%).
 - Data collected for the stock assessment reflect long-term collection efforts spanning multiple decades, from multiple fisheries.
 - Data collected for this project represent data collection from 2024 to 2025, from multiple fisheries, with emphasis on recreational fisheries.
- Females off Washington showed the highest overlap in length (0.940).
- Females in California showed the lowest overlap in length (0.428).
- Males off Oregon showed the highest overlap in age (0.897).
- Females off California showed the lowest overlap in age (0.580).
- These length and age compositions are largely consistent with data used to drive stock assessments, showing management relevant inference and representative sampling. California is the exception, with lower data overlap. This could be due to temporal or spatial differences in sampling effort or the effect of a small sample size.
- State-specific growth and maturity curves are underway and will serve as a baseline of information for future stock assessments along the US West Coast and in Alaska.

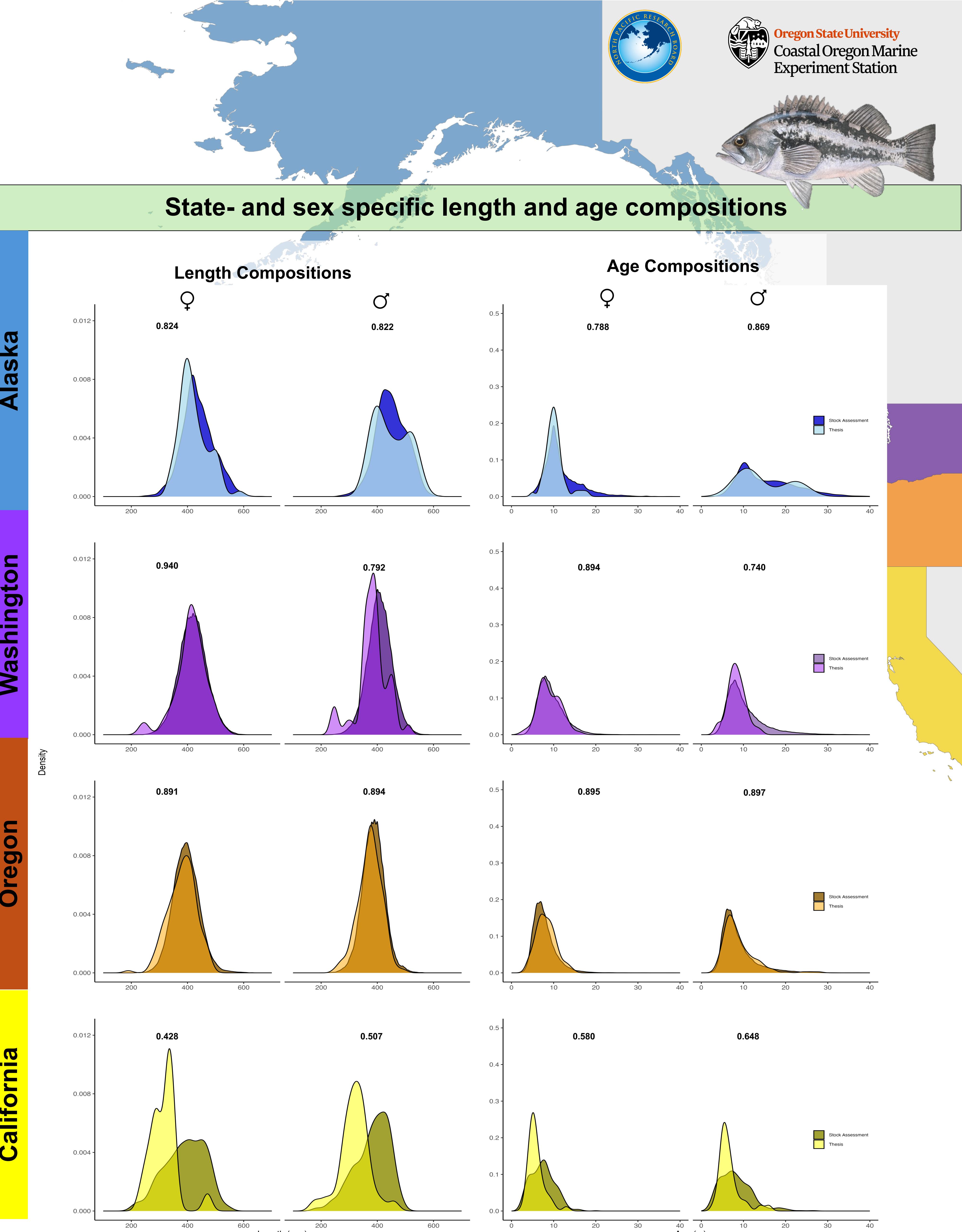


Figure 2. Age and length compositions for black rockfish (*Sebastodes melanops*) collected off Alaska, Washington, Oregon, and California. Darker colors indicate data used in the most recent stock assessment (Dick et al. 2023, Cope et al. 2023a, Cope et al. 2023b; Joy et al. *In prep*) and lighter colors indicate data collected as part of this master's thesis.

References

- Cope JM, AD Whitman, AM Berger, LK Rasmussen, and RC Rosemond. 2023a. Status of Black Rockfish (*Sebastodes melanops*) in 2023 in state and federal waters off Oregon. Pacific Fishery Management Council, Portland, Oregon. 248 pp.
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- Dick JM, CL Barnes, J Coates, N Grunich, M Monk, and T Rogers. 2023. The Status of Black Rockfish in U.S. Waters off California in 2023. Pacific Fishery Management Council, Portland, OR. 367 pp.
- Cope JM. 2024. The good practices of practical alchemy in the stock assessment continuum: Fundamentals and principles of analytical methods to support science-based fisheries management under data and resource limitations. *Fisheries Research*. 270: 18 pp.
- Hatch JM, KT Murray, S Patel, R Smolowitz, and HL Hass. 2023. Evaluating simple measures of spatial-temporal overlap as a proxy for encounter risk between a protected species and a commercial fishery. *Frontiers in Conservation Science*. 4: 10 pp.