

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON FINAL METHODOLOGY REVIEW RESULTS

The Scientific and Statistical Committee (SSC) received a report summarizing reviews of salmon methodology topics conducted by the [SSC Salmon Subcommittee \(SSC-SSC\)](#) with the Salmon Technical Team (STT) via webinar on October 4, 2024. The SSC-SSC received presentations and documents for two review topics:

- Cohort reconstruction (CR) for Sacramento River Fall Chinook (SRFC) salmon and comparison with the Sacramento index (SI) (Attachment 1).
- Updated F_{MSY} proxy and S_{MSY}/S_{MP} ratio (Attachment 2).

The SSC endorses the updated cohort reconstruction and the updated F_{MSY} proxy of 0.58 for SRFC, and finds them to be the best scientific information available. The STT briefed the SSC on the implementation challenges and schedule.

Cohort reconstruction for Sacramento River Fall Chinook salmon and comparison with the Sacramento Index

The SI and CR are intended to support management by quantifying the ocean abundance of adult (age-3+) Chinook salmon at the start of each fishing season, identifying harvest impacts on adult SRFC, and determining adult escapement predicted to occur in the absence of fishing. The results from the new CR analysis account for additional biological processes and incorporate multiple new data sources. In addition, the CR incorporates uncertainties associated with Coded Wire Tag (CWT) sampling and the scale ageing procedure to provide confidence bounds for estimates of abundance and harvest. The SSC finds that the changes introduced in the CR represent considerable improvements over the SI, and endorses its use for management decision making.

The SI calculation excludes ocean harvest north of Cape Falcon and considers harvest in only the current management year. For consistency, these limitations were also imposed on the CR in the initial comparison of the CR and SI. The authors also documented the effects of including ocean fishery impacts north of Cape Falcon and earlier in ocean residency. The SSC agrees that including harvest information from north of Cape Falcon was advisable to accurately represent ocean harvest for SRFC in both the SI and the CR. In terms of including harvest impacts earlier in ocean residency, this seems logically appropriate to do in the postseason when making status determinations (comparing cumulative exploitation rates to the maximum fishing mortality threshold), but not in the preseason when determining the year-specific exploitation rate expected to achieve an escapement target.

Updated F_{MSY} proxy and S_{MSY}/S_{MP} ratio

The Sacramento River Working Group (SRWG) developed criteria for which analyses to include in developing a new proxy, such as the use of recent data and similarity to SRFC in ocean distribution and life history traits. The SSC agrees with the decision of the SRWG to use Klamath

and Rogue Fall Chinook stocks for the new F_{MSY} proxy. The mean and median F_{MSY} and S_{MSY}/S_{MP} ratio are the same (0.58). In future cases where the mean and median are not equal, the SSC supports using the median as it is the more risk neutral measure. If the 0.58 value is adopted, the new F_{MSY} should be included in the Salmon Fishery Management Plan and in the appropriate tables and text in the stock assessment and fishery evaluation (SAFE) documents.

The SSC also recommends that F_{MSY} values be revisited for all Chinook stocks, and a similar exercise be carried out as appropriate.

PFMC

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