

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON SACRAMENTO RIVER FALL CHINOOK WORKGROUP - PROGRESS REPORT

Will Satterthwaite (National Marine Fisheries Service, Southwest Fisheries Science Center, Scientific and Statistical Committee [SSC], Sacramento River Fall Chinook Workgroup [WG] Chair) gave a presentation to the SSC that outlined the WG progress to date. The WG report (Agenda Item E.1.a, SRWG Report) evaluates the reference points and management measures currently in place, including S_{MSY} , F_{MSY} , minimum stock size threshold (MSST), F_{ABC} , the harvest control rule, and the conservation objective (CO). The WG report also outlines alternative approaches to improve and/or update specific components of each management measure. The WG did not identify preferred approaches for each metric, but provided a table listing the pros and cons of each approach. It also identified approaches expected to improve the Sacramento Index (SI) forecast, harvest estimation, and post-season run-reconstruction. The SSC commends the WG for producing this report in a short period of time. It can serve as the foundation to explore the alternative approaches to update the currently used management measures, improve the pre-season SI forecast, harvest estimates, post-season run-reconstruction, and the harvest planning model.

The approaches used to derive salmon harvest reference points (e.g., S_{MSY} , F_{MSY}) were developed for natural-origin salmon populations. However, the Sacramento River fall Chinook (SRFC) is managed as a composite hatchery and wild stock, and the management reference points are based on the combined hatchery- and natural-origin escapement to both hatcheries and natural areas. The SSC emphasizes the need to disentangle production and yield of natural-origin and hatchery-origin fish to reduce the risk of overharvest of the natural-origin component. The SSC encourages moving toward natural-origin reference points while acknowledging that data limitations may restrict the speed at which they can be developed. An age-based cohort re-construction for hatchery and natural fish, as is currently done for Klamath River fall Chinook, should be the goal. Reference points from a spawner-recruitment relationship for the natural-origin fish would support management and could reduce risk of listing under the Endangered Species Act.

The SSC recommends the S_{MSY} , F_{MSY} , conservation objective, and other reference points for SRFC be developed for natural-origin fish only. In the interim, some updates can be completed in a short period of time. The SSC recommends that the currently used proxy value for F_{SMY} be updated using recent data from other Chinook stocks that are representative of the SRFC stock under current conditions. The SSC also recommends that S_{MSY} and the CO be updated using one of the indirect approaches proposed by the WG.

The SSC recommends that the WG, with guidance from the Council, prioritize the topics to investigate. This prioritization would consider the cost, in terms of personnel and time, and benefits, in terms of the magnitude of improvement for SRFC assessment and management, of each approach. Once the priorities have been identified, the WG can identify preferred alternatives. In this process, the WG should also identify data gaps/needs of each alternative so programs can be implemented to provide the hatchery- and natural-origin data needed for future assessments. Some of the preferred approaches may be suitable for a salmon methodology review (<https://www.pcouncil.org/documents/2021/06/c-10-a-supplemental-ssc-report-1.pdf/>).