

PACIFIC SALMON FISHERY MANAGEMENT PLAN AMENDMENT 24  
PROPOSED REVISION TO SECTION 6.6.8

*The following text is intended to replace the text in the Pacific Salmon Fishery Management Plan (FMP) on page 70 under Section 6.6.8. The original text proposed for ‘strike-out’ is provided on page two of this document.*

#### 6.6.8 Southern Resident Killer Whale Management Measures

The management measures described in this section are intended to limit impacts of the Council-managed ocean salmon fisheries on Southern Resident Killer Whales (SRKW) by limiting the extent to which they reduce Chinook salmon prey availability for SRKW. A Chinook abundance threshold (threshold) has been established and if preseason projections of abundance in a given year are less than the threshold, then a list of actions (described below) will be implemented through the management measures for ocean salmon fisheries that year.

The threshold is determined based on the October 1 projections of Chinook abundance in the area north of Cape Falcon, Oregon<sup>1</sup> prior to fisheries occurring in the Exclusive Economic Zone (EEZ). This is referred to as time step 1 (TS1). The threshold is derived from the relationship between Chinook abundance and SRKW demographics (such as survival, fecundity, etc.) during the reference period of 1992-2016. Specifically, it is defined as the arithmetic mean of TS1 Chinook abundance north of Cape Falcon in the years 1994-1996, 1998-2000 and 2007. These particular years were chosen because they were years of low Chinook abundance with a mix of SRKW demographic status and include two periods of consecutive years of low Chinook abundance (1995-1996, 1998-2000). By including these years, the risks associated with consecutive years of low abundance are considered, as they can have both short and long-term effects on SRKW reproduction at various reproductive stages, as well as changes in inter-birth interval (calving interval), affecting lifetime reproductive success (National Marine Fisheries Service [NMFS] 2021).

Chinook abundance estimates in TS1 are calculated using two models (as described in the Council’s Ad Hoc SRKW Workgroup report ([PFMC 2020](#)) – the Fishery Regulation Assessment Model ([FRAM](#)) and a spatial distribution model whose initial development is described in Shelton et al. ([Shelton 2019](#)), which are both periodically updated. Updates to the FRAM will be reported by the Salmon Technical Team (STT) and updates to the Shelton et al. model will be reported by the NMFS West Coast Region (WCR). Some updates to these models may require a methodology review consistent with the provisions of Council’s Operating Procedures. If these models are updated, then the numerical value of the threshold will be recalculated by the STT. Model updates should be provided well in advance of the November meeting to allow sufficient time for review and use in recalculating the threshold value.

The recalculated threshold value along with a description of the new technical information used to update the model(s) will be provided by the STT to the Council for consideration, preferably no

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<sup>1</sup> defined in Section 5.2.1.4 of this document

later than the November Council meeting. If there is insufficient time to review new or expanded information prior to the March meeting, the Council may reject their use if they have not been approved the preceding November. The Council may adopt an updated value for the threshold, which will be reported and used in the upcoming preseason process without the need for an FMP amendment.

The annual projected TS1 Chinook abundance will be reported by the STT in the preseason process. If the projected Chinook abundance is below the threshold, then the Council will implement the following actions through the annual management measures for ocean salmon fisheries:

#### Literature Cited

- NMFS. 2021. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Conference Opinion Biological Opinion on the Authorization of the West Coast Ocean Salmon Fisheries Through Approval of the Pacific Salmon Fishery Management Plan Including Amendment 21 and Promulgation of Regulations Implementing the Plan for Southern Resident Killer Whales and their Current and Proposed Critical Habitat NMFS Consultation Number: WCRO-2019-04074. April 21, 2021. 190 p. Available at: <https://repository.library.noaa.gov/view/noaa/29545>
- PFMC. 2020. Pacific Fishery Management Council Salmon Fishery Management Plan Impacts to Southern Resident Killer Whales – Risk Assessment. PFMC Portland, Oregon. 165 p. Available at [www.pcouncil.org](http://www.pcouncil.org).
- Shelton, A.O., W.H. Satterthwaite, E.J. Ward, B.E. Feist, and B. Burke. 2019. Using hierarchical models to estimate stock-specific and seasonal variation in ocean distribution, survivorship, and aggregate abundance of fall run Chinook salmon. *Can. J. Fish. Aquat. Sci.* 76:95-108. [dx.doi.org/10.1139/cjfas-2017-0204](https://doi.org/10.1139/cjfas-2017-0204)

#### **Proposed ‘strike-out’ text from page 70 of the current FMP:**

The following management measures are intended to limit impacts of the Council-managed salmon fisheries on Southern Resident Killer Whales (SRKW) by limiting the extent to which they reduce Chinook salmon prey availability for SRKW.

Below a defined threshold for pre-fishing Chinook salmon abundance in the north of Cape Falcon area (defined in Section 5.2.1.4), management actions will be implemented through the annual management measures for the fishery. The threshold is defined as the arithmetic mean of the seven lowest years (specifically, 1994 – 1996, 1998 –2000 and 2007) of October 1 projections of Chinook salmon abundance in the NOF area prior to fisheries occurring in the EEZ (referred to as time step 1 (TS1)) during the reference time period of 1992-2016. Based on the best scientific information available in 2021, the threshold is 966,000 Chinook. If a technical review of the best scientific information available provides evidence that, in the view of the STT, SSC, and the Council, a modification of the estimated value of the TS1 starting abundance estimates for the seven lowest years is necessary to be consistent with the best available scientific information, the Council may adopt an updated value for the threshold, which will be reported in the preseason

process. The annual projected TS1 Chinook abundance will be reported by the STT in the preseason process to determine if projected abundance is below the threshold.

PFMC  
10/02/23