

**4(d) Rule Limit 6  
Proposed Evaluation and Pending Determination**

**Title:** Skagit River Steelhead Fishery Resource Management Plan

**Plan Submitted by:** Sauk-Suiattle Indian Tribe  
Swinomish Indian Tribal Community  
Upper Skagit Indian Tribe  
Washington Department of Fish and Wildlife

**ESU/DPS:** Puget Sound Steelhead Distinct Population Segment

**4(d) Rule Limit:** ESA 4(d) Rule Limit 6

**NMFS Tracking Number:** WCRO-2021-03137

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## 1. Evaluation

NOAA's National Marine Fisheries Service (NMFS) issued a final Endangered Species Act (ESA) 4(d) rule adopting regulations (50 CFR 223.203) to conserve listed salmon and steelhead (70 FR 37160 and 73 FR 55451) (NMFS 2005; NMFS and NOAA 2008). The 4(d) Rules identify 13 programs (Limits), with specific criteria for development and review of future programs that, when met, would mean that it is not necessary or advisable to impose ESA section 9(a)(1) take prohibitions because they contribute to conserving the evolutionarily significant unit (ESU) or distinct population segment (DPS).

Under Limit 6 of the 4(d) rule, ESA section 9 take prohibitions for listed species do not apply to fishery activities described in a Resource Management Plan (RMP) developed jointly by the Tribes and the States of Washington, Oregon, and/or Idaho, provided that:

- The Secretary of Commerce has determined pursuant to 50 CFR 223.209(b), and the government-to-government processes therein, that implementing and enforcing the RMP would not appreciably reduce the likelihood of survival and recovery of listed salmon and steelhead
- The joint plan [RMP] will be implemented and enforced within the parameters set forth in *U.S. v. Washington (U.S. v. Washington 1979)* or *U.S. v. Oregon (U.S. v. Oregon 2009)*
- The Secretary of Commerce has taken comment on how any RMP addresses the 4(d) rule Limit 4 criteria<sup>1</sup> (§223.203(b)(4))

On July 10, 2000, NMFS adopted a 4(d) Rule (65 FR 42422) to protect 14 ESUs of salmon and steelhead listed as “threatened” under the ESA. While NMFS issued separate proposed 4(d) rules for salmon and steelhead in December 1999 and January 2000, respectively, the final rule combines the two proposed rules into one final rule. The 4(d) Rule was amended in 2005 (70 FR 37160) to describe the final listing determinations for 16 ESUs. ESA section 9(a)(1) take prohibitions would not apply to threatened salmon and steelhead if a fishery RMP was found not to appreciably reduce the likelihood of the survival and recovery of listed species.

The Puget Sound Steelhead (*Oncorhynchus mykiss*) DPS was listed as a threatened species under the ESA in 2007 (72 FR 26722). Since then, periodic NMFS reviews of the species' status have determined that the threatened classification remained appropriate (Ford 2022). The Skagit River steelhead populations (Skagit River summer and winter run, Nookachamps Creek winter run, Sauk River summer and winter run, and Baker River summer and winter run) are included in the Puget Sound Steelhead DPS.

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<sup>1</sup> Limit 4 of the NMFS' 4(d) Rule for salmon and steelhead contains the criteria specific to harvest RMPs.

The Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, and Washington Department of Fish and Wildlife (WDFW), collectively the co-managers of the fisheries resource under *U.S. v. Washington (1979)*, provided NMFS with a ten-year Skagit River steelhead fishery RMP for review under Limit 6 of NMFS' ESA Section 4(d) Rule for salmon and steelhead (Sauk-Suiattle Indian Tribe et al. 2021).

## 1.1 Background

### Skagit River Steelhead Fishery Resource Management Plan

Under the proposed RMP, the co-managers propose to manage fisheries affecting steelhead in Marine Area 8 (Skagit Bay) and the Skagit River, referred to as the Skagit Terminal Area (Figure 3) under a harvest management strategy specific to the Skagit Terminal Area (Sauk-Suiattle Indian Tribe et al. 2021). This strategy builds on the previously approved 2016 resource management plan. This background section briefly summarizes the currently proposed RMP in addition to how it relates to the previous 2016 RMP.

Prior to this evaluation, a previous RMP (Sauk-Suiattle Indian Tribe et al. 2016) with a duration of five years (fishery years 2018-2022) was submitted by the co-managers and approved by NMFS in 2018 (NMFS 2018). The 2021 RMP is similar in scope to the 2016 RMP, however it proposes to manage Skagit steelhead fisheries for a period of ten years rather than five years (proposed for steelhead management years 2022-2023 to 2031-2032). Both the prior 2016 RMP (Sauk-Suiattle et al. 2016) and the co-managers' current proposed 2021 RMP (Sauk-Suiattle et al. 2021) cover fishery management activities affecting steelhead in the Skagit Terminal Area (Figure 3). Like the 2016 RMP, the proposed 2021 RMP does not govern management of other terminal area fisheries that may also result in mortality of Puget Sound steelhead (e.g., fisheries in the coastal marine waters of Washington, fisheries in freshwater areas in the Puget Sound region for steelhead, trout, and warmwater species, or marine fisheries in Puget Sound for halibut, rockfish, or other non-salmonid species).

The fisheries managed under the 2021 RMP encompass tribal ceremonial and subsistence (C&S) and commercial steelhead fisheries; and recreational catch-and-release steelhead fisheries. The overall annual impact limits, described in the RMP, apply to these steelhead-directed fisheries, as well as any incidental mortality of steelhead, occurring in fisheries directed at other salmon species; the 2021 RMP accounts for all sources of landed and non-landed Skagit steelhead (i.e., directed and incidental) mortality.

The 2021 RMP proposes to continue fisheries managed by the co-managers under the recently expired RMP that was in place from 2018-2022, for a ten-year period. The 2021 RMP also proposes to continue the use of a tiered harvest-rate regime based upon annual forecasted run size for adult steelhead abundance in the Skagit Terminal Area (Sauk-Suiattle Indian Tribe et al. 2021). The allowable harvest impact rates vary from 4 percent to 25 percent of the annual forecasted Skagit River steelhead abundance (Sauk-Suiattle Indian Tribe et al. 2021).

Additionally, the 2021 RMP proposes to develop and utilize an in-season update fishery during the ten-year management period based on the long-standing tangle-net test fishery. These updates would further inform annual harvest management by making appropriate adjustments, in season, to the allowable impact rate accordingly during the fishing season (Sauk-Suiattle Indian Tribe et al. 2022).

Should new information become available that would indicate a deviation from the steelhead fishery management regime described in the Skagit RMP or substantial changes come to light, the co-managers would consult with NOAA Fisheries and determine an appropriate course of action (Sauk-Suiattle Indian Tribe et al. 2021).

NMFS consulted with the applicants during the development of the 2021 RMP through technical work group meetings with the co-managers to provide technical assistance, to exchange information, to discuss what would be needed to conserve listed species, and to be consistent with legally enforceable tribal rights and the Secretary's trust responsibilities<sup>2</sup>. The 2021 RMP was submitted by the Skagit fishery co-managers on December 8, 2021. It was reviewed and NMFS determined that it was sufficient for NMFS to proceed with its evaluation under Limit 6 of the 4(d) Rule for salmon and steelhead (Jording 2021).

### **Skagit River Steelhead Status**

The steelhead in the Skagit River are part of the greater Puget Sound steelhead DPS. This DPS was originally listed as a threatened species under the ESA in 2007 (72 FR 26722). Since then, periodic NMFS reviews of the species' status, including the most recent effort in 2017, have determined that the threatened classification remained appropriate (NMFS 2017).

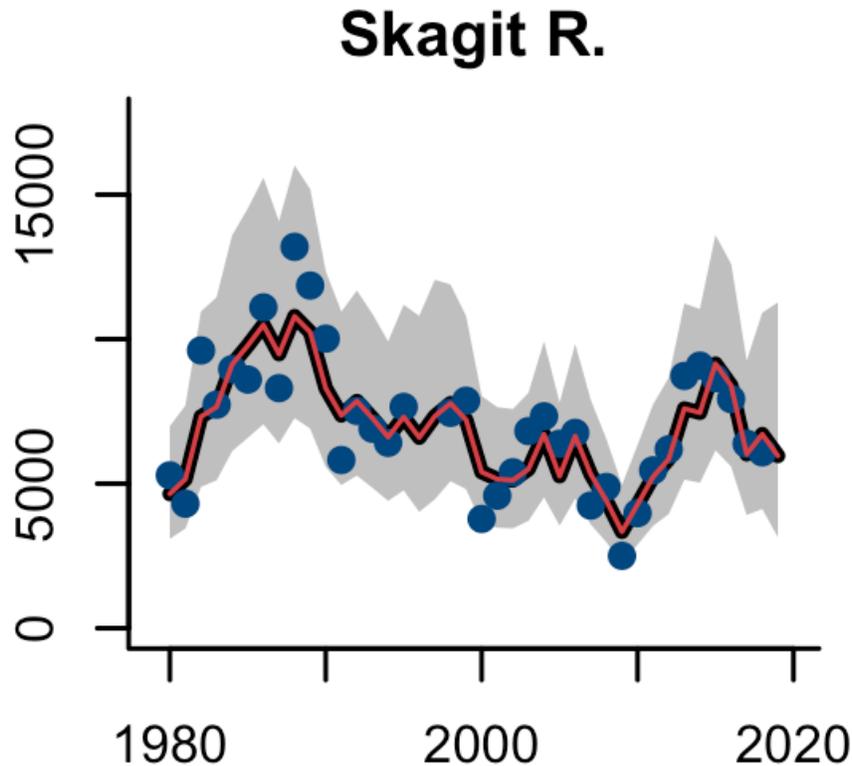
Within the Puget Sound steelhead DPS, the Skagit Basin has maintained the largest natural-origin steelhead abundance, and has been one of the most productive steelhead basins in the (Busby et al. 1996; Hard et al. 2007; Ford 2022). While populations in many Puget Sound geographic regions were approaching functional extinction at the time of early status reviews, the Skagit Basin was the only basin identified as containing large enough steelhead populations to resist adverse environmental or compensatory forces (Hard et al. 2007). Skagit River steelhead continue to maintain abundances well above the critical thresholds to be considered at "very low risk" of extinction in 100 years (McElhany et al. 2007; Sauk-Suiattle Indian Tribe et al. 2021).

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<sup>2</sup> Executive Order (E.O.) 13175. Consultation and Coordination with Indian Tribal Governments, <https://www.govinfo.gov/content/pkg/FR-2000-11-09/pdf/00-29003.pdf>. November 6, 2000.

Secretarial Order 3206. American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act, [https://www.doi.gov/sites/doi.gov/files/elips/documents/3206\\_-\\_american\\_indian\\_tribal\\_rights\\_federal-tribal\\_trust\\_responsibilities\\_and\\_the\\_endangered\\_species\\_act.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/3206_-_american_indian_tribal_rights_federal-tribal_trust_responsibilities_and_the_endangered_species_act.pdf). June 5, 1997.

Skagit River steelhead comprises about 38% of the total return of natural-origin winter steelhead to Puget Sound (NWFSC 2015; NMFS 2019). The range of spawner abundance in the Skagit River has remained consistent over the last 30 years (1990-2020) of available data (Figure 1; Ford et al. (2022)). NOAA Fisheries developed a Puget Sound steelhead recovery plan with federal, state, tribal, local, and private partners. The final recovery plan was completed in 2019 (NMFS 2019).<sup>3</sup>

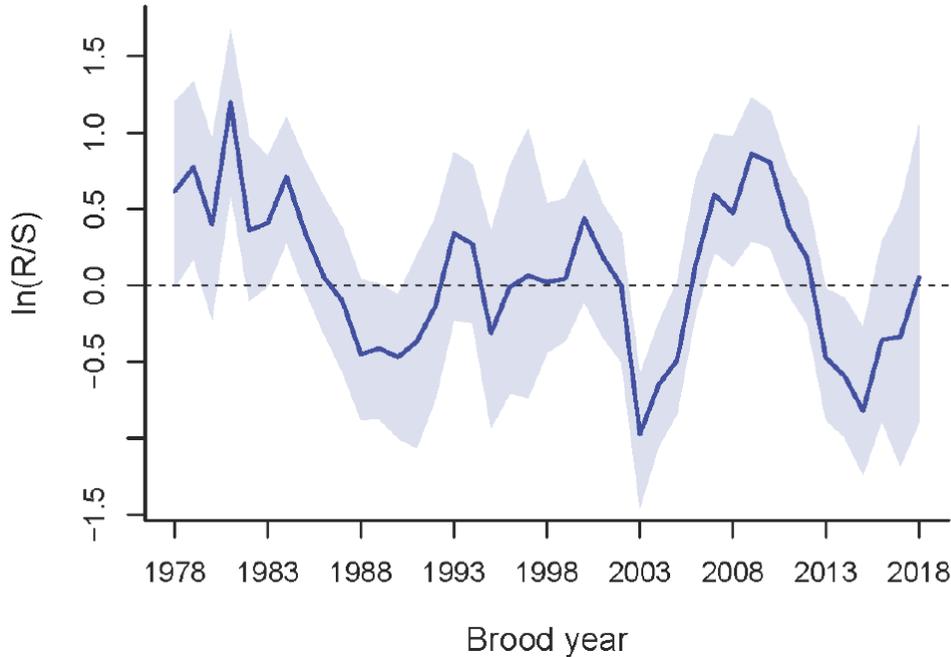


**Figure 1.** Smoothed trend in estimated total (line, with 95% confidence interval in gray) population spawning abundance. Points show the annual raw spawning abundance estimates. For some trends, the smoothed estimate may be influenced by earlier data points not included in the plot. Note: For this DPS, all abundance data are only for natural-origin spawners. No information on hatchery fraction is available (excerpt from Figure 95, Ford (2022)).

The productivity of Skagit River steelhead, in the form of recruits per spawner, has fluctuated over the available data series, with observed lows in the early 2000s and early 2010s lower than in the period prior to mid-1990s. Generally, in last two decades the productivity of Skagit River

<sup>3</sup> For more information on Puget Sound steelhead, please visit NOAA Fisheries' webpage at: <https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/puget-sound-steelhead>

steelhead has seen a more pronounced phase shifting between higher and lower productivity and, compared to the earlier portion of the available series, more brood years of negative productivity (Figure 2) (Sauk-Suiattle Indian Tribe et al. 2021).



**Figure 2.** Annual, median Skagit steelhead productivity (1978-2018), estimated as the log of recruits produced per spawner. The blue line represents the median estimate and the shaded area is the 95% credible interval (Sauk-Suiattle Indian Tribe et al. 2021).

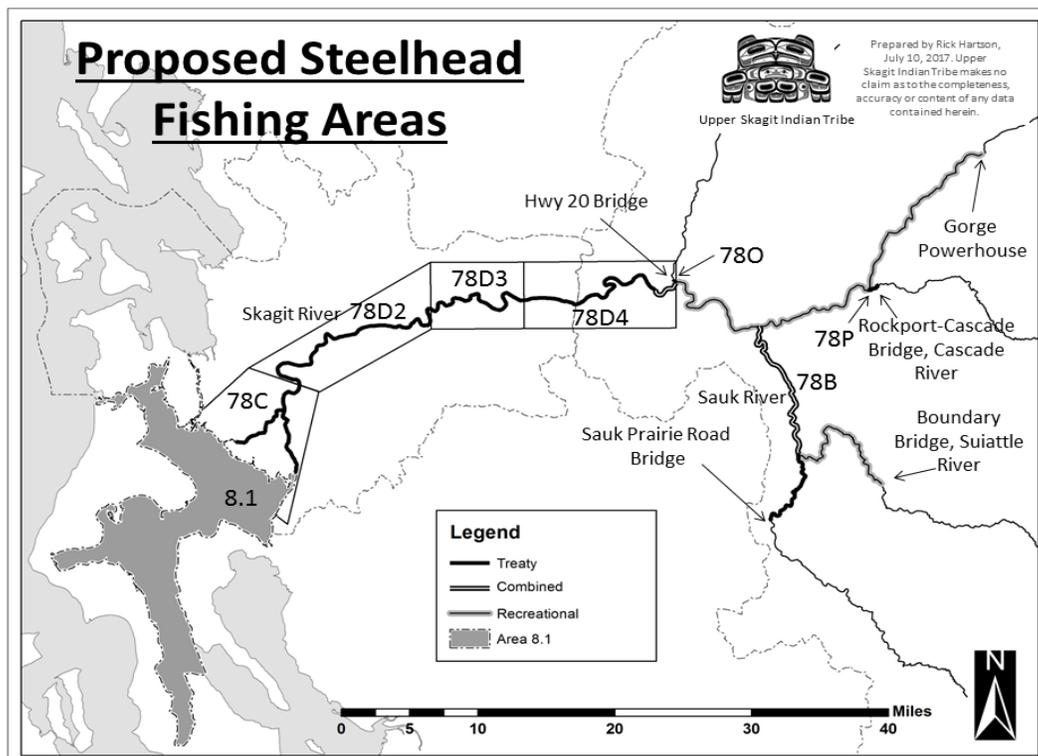
The co-managers recognize that substantial improvements in the productivity of the species and protection of its habitat are necessary to ensure the long-term viability of Skagit Basin steelhead populations, but their assessments indicate that a low level of fishery mortality is consistent with the survival and recovery of the Puget Sound Steelhead DPS (Sauk-Suiattle Indian Tribe et al. 2021).

Sections 1.2 through 1.13 of this PEPD describe NMFS' evaluation of whether the 2021 RMP fully addresses the criteria in section 223.203(b)(4) of the 4(d) Rule for salmon and steelhead and thus would qualify under the 4(d) Rule.

**1.2 4(i) NMFS will approve a fishery management plan only if it clearly defines its intended scope and area of impact, and sets forth the management objectives and performance indicators for the plan.**

The 2021 RMP clearly defines the co-managers' intended scope and area of impact. The 2021 RMP (Section 1.0, Scope of the Plan) addresses direct and incidental impacts on adult steelhead from salmon and steelhead fisheries. The area of impact includes the Skagit River Basin, as well as the marine area of Puget Sound directly outside the mouth of the Skagit River (i.e., marine Area 8, collectively referred to as the Skagit Terminal Area) (McClure 2017) (see Figure 3). The fisheries include tribal C&S and commercial fisheries, as well as non-tribal recreational catch-and-release steelhead fisheries conducted within the Skagit River Basin. The 2021 RMP accounts for all sources of landed and non-landed natural-origin steelhead mortalities in the Skagit Terminal Area.

The RMP does not include management of other fisheries outside the area of impact that may also affect Skagit River steelhead, such as coastal marine water fisheries, freshwater fisheries in Puget Sound for trout or warmwater species, or marine fisheries for halibut, rockfish, or other non-salmonid species.



**Figure 3.** Map of Skagit River Steelhead RMP proposed fishing areas (Hartson 2017 in McClure 2017).

The 2021 RMP includes management objectives that build on the objectives from the previous RMP (Sauk-Suiattle Indian Tribe et al. 2016; Sauk-Suiattle Indian Tribe et al. 2021). The management objectives of the 2021 RMP, described in Section 2.0, Objectives and Principles, are to:

- 1) acknowledge Skagit-origin steelhead as an independently managed component of the Puget Sound Steelhead Distinct Population Segment (DPS), for harvest management purposes, and;
- 2) conduct Skagit River Terminal Area fisheries, pursuant to *U.S. v. Washington*<sup>4</sup>, in a manner which would not appreciably reduce the likelihood of survival and recovery of ESA-listed Puget Sound steelhead.

Performance indicators for the 2021 RMP, listed in Section 9.1, Performance Indicators, are intended to annually evaluate the effectiveness of management at achieving these management objectives (Sauk-Suiattle Indian Tribe et al. 2021). The performance indicators include a combination of spawning escapement estimates and landed catch reports. For the duration of the 2021 RMP, annual accounting of recreational encounters, all landed catch, estimates of non-landed mortalities, and estimation of spawning escapement would provide the basic information needed to monitor population abundance trends and assesses management performance relevant to the management objectives.

The performance indicators for evaluating the RMP focus on the following questions:

- 1) Is the pre-season forecast accurately predicting the abundance of returning adults?
- 2) The accuracy and precision of the forecast method would be evaluated each year and the error of the pre-season forecast evaluated.
- 3) Are the fisheries managed consistent with the allowable impact rates? Post-season estimates of impact rates would be compared with the allowable rates for treaty and non-treaty fisheries identified during the pre-season planning process (Table 3).
- 4) Are the number of spawners consistent with expectations? The estimated number of spawners would be compared with the range as predicted in the risk assessment simulations and forecasts.

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<sup>4</sup> Pursuant to *U.S. v. Washington*, the RMP recognizes the importance of the exercise of Indian treaty rights, within the usual and accustomed fishing areas legally defined for each tribe.

- 5) Is the range of spawn-timing maintained or increased? Spawn-timing information would be collected to assess long-term changes.

The Skagit River co-managers have methods in place to monitor fisheries and observe spawning timing and frequency so to assess natural escapement of steelhead (Section 9.1, Performance Indicators; Sauk-Suiattle Indian Tribe et al. 2021). These methods would be reviewed, evaluated, and where necessary modified, to enhance resulting data quantity and quality.

**1.3 4(i)(A) The RMP clearly defines the populations within the affected listed ESUs, taking into account spatial and temporal distribution, genetic and phenotypic diversity, and other appropriate identifiable unique biological and life history traits. Populations may be aggregated for management purposes when dictated by information scarcity, if consistent with the survival and recovery of the listed ESU/DPS, if the plan describes the reasons for using such units in lieu of population units and describes how the management units are defined, given biological and life history traits, so as to maximize consideration of the important biological diversity contained within the listed ESU/DPS, and help ensure consistent treatment of listed salmonids across a diverse geographic and jurisdictional range.**

In Section 3.0, Management Unit & Population Structure, the 2021 RMP clearly defines the affected populations of steelhead in the Skagit River, taking into account spatial and temporal distribution, genetic and phenotypic diversity, and other appropriate identifiable, unique biological and life history traits. The Skagit SMU comprises four demographically independent populations (DIPs) (Myers et al. 2015) as delineated by NOAA (NMFS 2019), which have been identified as:

- 1) Skagit River Summer and Winter Run;
- 2) Nookachamps Creek Winter Run;
- 3) Sauk River Summer and Winter Run; and
- 4) Baker River Summer and Winter Run<sup>5</sup>.

Consistent with available abundance estimates, interim recovery objectives, and data utilized in the Puget Sound steelhead recovery plan (NMFS 2019; Ford 2022), the co-managers would continue to manage Skagit Basin steelhead in aggregate as the Skagit steelhead management unit

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<sup>5</sup> Myers et al. (2015) noted that many of the Puget Sound Technical Recovery Team (PSTRT) members and reviewers considered the Baker River Summer and Winter Run steelhead to have been extirpated; however, genetic analysis suggests that the Baker River *O. mykiss* are similar to Skagit River steelhead (Myers et al. 2015; Sauk-Suiattle Indian Tribe et al. 2021).

(SMU). The 2021 RMP states that fisheries will be managed at the SMU level, rather than the DIP level because population-specific data are currently insufficient to manage at the population (i.e., DIP) level for steelhead in the Skagit River Basin (NMFS 2019). Population-specific information was used, where available, in the development of steelhead management objectives listed in Section 11.0, Data Gaps (Sauk-Suiattle Indian Tribe et al. 2021).

**1.4 4(i)(B) The RMP utilizes the concepts of “viable” and “critical” salmonid population thresholds, consistent with the concepts contained in the technical document entitled “Viable Salmonid Populations (NMFS, 2000)”. Proposed management actions must recognize the significant differences in risk associated with viable and critical population threshold states and respond accordingly to minimize the long-term risks to population persistence. For populations with a high degree of confidence to be above critical levels but not appreciably slow the population’s achievement of viable function.**

In Section 5.0, Critical and Viable Thresholds, the 2021 RMP utilizes the concepts of viable and critical salmonid population thresholds consistent with McElhany et al. (2000) to establish population thresholds. Relying upon the concepts contained within McElhany et al. (2000), three different methods were evaluated by the co-managers to establish a critical threshold for the Skagit SMU:

*1) Method 1- Depensation*

Peterman (1977; 1987) provided a rationale for depensation and suggested relating the escapement level at which depensation occurs to the size of the population in the absence of fishing (equilibrium escapement level). Based on Peterman’s work, the comanagers established the critical level equal to 5% of the equilibrium spawner size (8,949), or 447 spawners for the Skagit SMU.

*2) Method 2- Effective Population Size*

The number of effective breeders per year, rather than the annual spawner abundance, determines the genetic stability of a salmonid population over time. Based on Waples (2004), the co-managers established an annual effective size, or number of successful breeders, for each population within the Skagit SMU. A critical threshold value for annual spawning escapement was chosen such that, for each potential population within the Skagit SMU, the annual effective size or number of successful breeders, would not be lower than 50 if the ratio of effective breeders to spawners is at least 0.40. For the Skagit SMU, with three extant populations, the critical threshold under these specifications equates to 375 spawners.

*3) Method 3 - Quasi-extinction threshold (QET)*

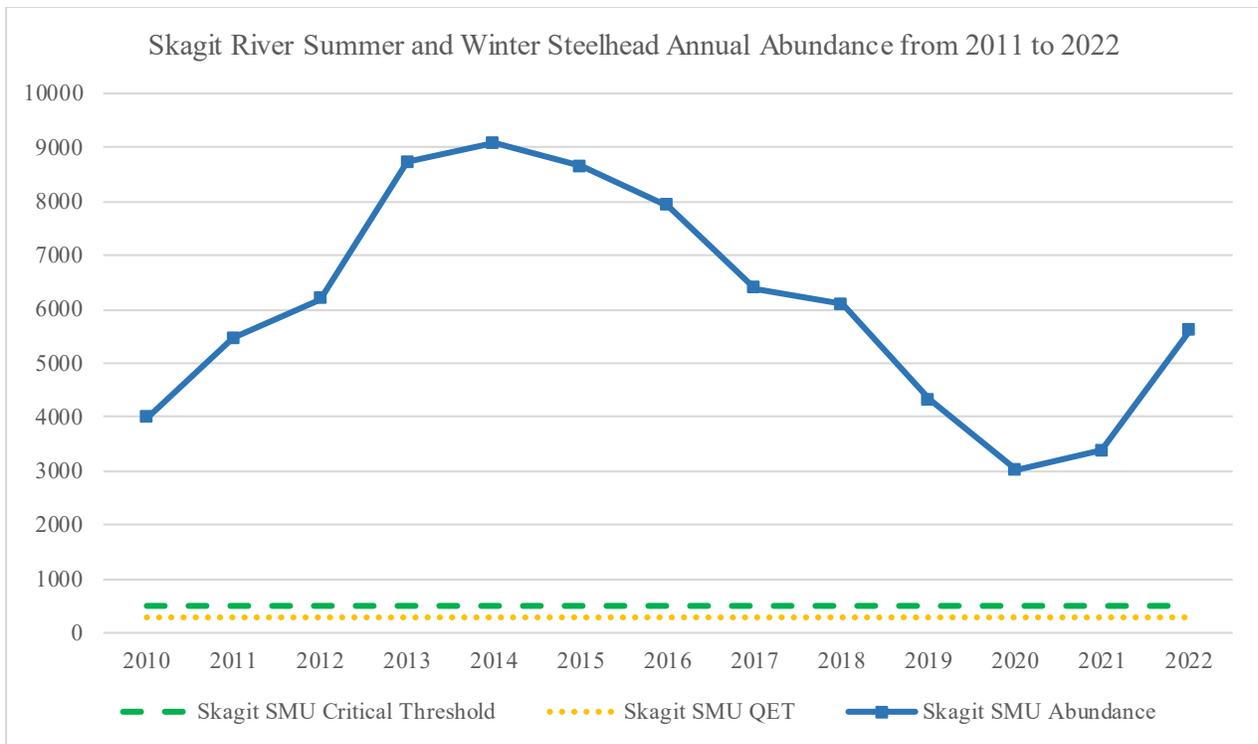
Based on Hard et al. (2015) regarding quasi-extinction thresholds for Skagit Basin populations, the co-managers established a QET of greater than 287. This is the total of all the predicted QET values for each DIP within the Skagit SMU (see Table 1).

**Table 1.** Hard et al. (2015) summary of QETs and preliminary recommendations for viable abundance thresholds for populations of steelhead in the Skagit River (Sauk-Suiattle Indian Tribe et al. 2021).

<b>Population</b>	<b>QET</b>	<b>Viable</b>
Nookachamps Creek Winter	27	616
Sauk River Summer & Winter	103	11,615
Skagit River Summer & Winter	157	32,388
<b>Total</b>	<b>287</b>	<b>44,619</b>

Upon consideration of the above methods, the co-managers selected a relatively conservative critical threshold of 500 spawners for the Skagit SMU for use in the RMP, higher than any value suggested by any of the methods (see Table 2)(Sauk-Suiattle Indian Tribe et al. 2021). The RMP states in Section 8.3, Risk Analysis of Proposed Fishing Regime, that the projected frequency of spawners compared to the critical threshold is an important consideration in the evaluation of the proposed management regime.

For populations with a high degree of confidence to be above critical levels but not yet at viable levels, such as the Skagit River steelhead populations (see Figure 4), harvest actions must not appreciably slow the population’s achievement of viable function. Because data are not available at the DIP level, based on the sum of the population viable thresholds (Hard et al. 2015), the co-managers selected a viable threshold equal to 44,619 adult steelhead for the total Skagit SMU (see Table 1)(Sauk-Suiattle Indian Tribe et al. 2021); though the 2021 RMP recognizes that that substantial improvements in habitat capacity and productivity would be needed before the Skagit SMU can approach this level of improvement. Until that time, the co-managers propose that harvest management objectives should be based on quantitative understanding of current population productivity, as defined by current habitat function (Sauk-Suiattle Indian Tribe et al. 2021).



**Figure 4.** Skagit SMU annual population abundance from 2010 to 2022 (WDFW 2022a) as well as the Skagit River QET (287 steelhead represented by the dotted line) established by Hard et al. (2015) and the Skagit SMU critical threshold (500 steelhead represented by the dashed line) proposed by the co-managers.

Consistent with these concepts, the co-managers identified two additional reference points for use in their risk analysis, which simulates the implementation the RMP’s management framework:

$R_{MSY}$  – Rebuilding threshold equal to the spawner level that would maximize the long-term yield under current habitat conditions. A similar reference point has been used in previous NMFS and co-manager analyses.

$R_{60}$  – Rebuilding threshold equal to 60% of the point on the spawner-recruit function where less than one recruit is produced per spawner (e.g., equilibrium point on spawner-recruit function). The intent of assessing the proposed management regime relative to this threshold is to ensure that the habitat productivity and capacity are “probed” on a regular basis and that sufficient spawners are provided to recolonize underutilized habitat.

The additional reference points of  $R_{MSY}$  and  $R_{60}$  are used as an interim measure to track progress of the Skagit SMU. Monitoring these reference points helps to ensure that habitat productivity

and capacity are examined on a regular basis, and that sufficient spawners are available to recolonize underutilized habitat so as to not appreciably slow the Skagit SMU’s achievement of viable function (Sauk-Suiattle Indian Tribe et al. 2021). Table 2 provides an overview of the critical, viable, and rebuilding reference points used in the harvest risk analysis described in the RMP.

**Table 2.** Summarization of the critical, viable, and rebuilding reference points described in the Skagit River Steelhead RMP for the Skagit SMU (Sauk-Suiattle Indian Tribe et al. 2021).

Reference Point	Spawner-Recruit Function	
	Ricker	Beverton-Holt
Critical (C)	500 steelhead	
Viable (V)	44,619 steelhead <sup>6</sup>	
Rebuilding - MSY ( $R_{MSY}$ )	3,912 steelhead	2,127 steelhead
Rebuilding – 60% Equilibrium ( $R_{60}$ )	5,370 steelhead	4,844 steelhead

The co-managers recognize the potential for long-term habitat degradation resulting in the possible reduction of Skagit SMU steelhead productivity due to changing marine and freshwater environments. The proposed steelhead fisheries described in the 2021 RMP address this uncertainty through a conservative, tiered harvest rate that is linked to abundance, monitoring, and adaptive management of Skagit SMU steelhead throughout the proposed ten-year duration of the plan.

**1.5 4(i)(C) Set escapement objectives or maximum exploitation rates for each management unit or population based on its status, and a harvest program that assures that those rates or objectives are not exceeded. Maximum exploitation rates must not appreciably reduce the likelihood of survival and recovery of the ESU. Management of fisheries where artificially propagated fish predominate must not compromise the management objectives for commingled naturally spawned populations.**

Section 8.0 (Conservation Management) of the 2021 RMP sets maximum allowable harvest impact rates for the Skagit SMU based on the forecasted terminal run size. Each abundance tier

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<sup>6</sup> The 2019 Puget Sound steelhead recovery plan (NMFS 2019) has set an interim recovery target for the Skagit River of an average total run abundance of 15,000 and with an intrinsic productivity at least equal to what was observed from 1978 through 2017.

and its associated maximum allowable abundance-based harvest rates are described in Table 3. The co-managers are also continuing to develop an in-season run size update based on the long-term relationship between the annual tangle net test fishery and the annual final run size estimate. The co-managers propose to continue to develop and begin utilizing this in-season update process during the term of the RMP (Sauk-Suiattle Indian Tribe et al. 2022).

**Table 3.** Stepped steelhead fishing regime used for managing steelhead fisheries in the Skagit SMU as described in the Skagit River Steelhead RMP (Sauk-Suiattle Indian Tribe et al. 2021). The Allowable Harvest Rate includes all fishing-related impacts to the Skagit steelhead SMU within the Skagit Terminal Area.

Natural Origin Steelhead Run size (pre-season forecast/in-season run update)	Allowable Harvest Impact Rate
<u>Terminal Run</u> < 4,000	4%
4,001 < <u>Terminal Run</u> ≤ 6,000	10%
6,001 < <u>Terminal Run</u> ≤ 8,000	20%
<u>Terminal Run</u> > 8,001	25%

The highest rate tier proposed in the RMP (25% at runs >8,000) is substantially lower than the harvest rates calculated by both the Ricker or Beverton-Holt models (see Appendices B and C of the 2021 RMP). Both models calculate a harvest rate of 40 percent or greater would need to be realized to be likely to drive the Skagit SMU below the critical threshold of 500 fish (see Section 8.3 of the 2021 RMP).

The tiered fishing regime described above in Table 3 would be used with an annual pre-season forecast of abundance to develop an annual harvest plan. For annual development of treaty and non-treaty Skagit steelhead fisheries, the co-managers would account for the anticipated direct and incidental steelhead impacts, from fisheries directed at steelhead and salmon, within the Skagit Terminal Area, to ensure the total Skagit adult steelhead impacts remain below the allowable harvest impact rate (Sauk-Suiattle Indian Tribe et al. 2021).

**1.6 4(i)(D) Display a biologically based rationale demonstrating the harvest management strategy will not appreciably reduce the likelihood of survival and recovery of the ESU in the wild, over the entire period of time the proposed harvest management strategy affects the population, including effects reasonably certain to occur after the proposed actions cease.**

The harvest impact analyses described in Section 8.0 of the 2021 RMP examine both the short-term and long-term<sup>7</sup> impacts of the proposed fishery regime on the abundance of Skagit Basin steelhead. The time period of the proposed harvest management strategy is ten years (2022-23 season through the 2031-2032 season). Simulations of the proposed fishery management regime described in the RMP were conducted using the following steps (Sauk-Suiattle Indian Tribe et al. 2021):

- Step 1: Initiate the simulation with the number of spawners randomly drawn from a normal distribution with mean and standard deviation estimated from the observed spawners from 1978-2007.
- Step 2: Apply the proposed harvest rate protocol (Table 3) and obtain a number of harvested fish.
- Step 3: Subtract the number of harvested fish from the number of returning mature fish to obtain a number of spawners.
- Step 4: Use the spawner recruit parameters to compute the next random number of recruits, and multiply this by a random variable representing environmental and demographic stochasticity
- Step 5: Run for 25 cycles (generations).
- Step 6: Repeat for N=1,500 simulations.

It is important to note that these analyses provide a perspective on the short- and long-term (25 cycles) effects of the 2021 RMP on the abundance of Skagit steelhead, however, the co-managers recognize that the freshwater and marine environments are dynamic, with the potential for long-term degradation resulting in a reduction of the productivity of Skagit steelhead. The 2021 RMP addresses this uncertainty through a conservative, stepped harvest rate linked to abundance, monitoring and adaptively monitoring Skagit SMU steelhead. In addition, the analysis explicitly incorporates estimation error in the simulations to address the uncertainty. Given these caveats, the results from the harvest risk analyses are summarized in Table 4.

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<sup>7</sup> Long-term effects include 25 steelhead generations (Sauk-Suiattle Indian Tribe et al. 2021).

**Table 4.** Summary of simulation results on risk expressed as the proportion of resulting escapements that meet or exceed the threshold criteria. Each criteria is provided and the metric is the probability for achieving that criterion in the 1,500 iteration model runs (Sauk-Suiattle Indian Tribe et al. 2021).

Spawner Reference Point	Ricker			Beverton-Holt		
	No Fisheries	Proposed Fishery Regime	Expected difference	No Fisheries	Proposed Fishery Regime	Expected difference
< Critical (C)	0%	0%	0% points (0.0%)	0%	0%	0% points (0.0%)
> Viable (V)	0%	0%	0% points (0.0%)	0%	0%	0% points (0.0%)
> Rebuilding ( $R_{MSY}$ )	92%	88%	-4% points (-4.3%)	99%	99%	0% points (0.0%)
> Rebuilding ( $R_{60}$ )	78%	68%	-10% points (-12.3%)	82%	75%	-7% points (-8.5%)

The risk analysis presented in the 2021 RMP’s suggests that implementation of the proposed fishery regime would affect the frequency with which the population would attain the rebuilding abundance reference points. Under the proposed fishery regime, and using the Ricker model, the spawner abundances are projected to exceed  $R_{MSY}$  88 percent of the time and would exceed  $R_{60}$  68 percent of the time. This would result in a 4.3 percent and 12.8 percent reduction in the frequency of meeting or exceeding the  $R_{MSY}$  and  $R_{60}$ , respectively, when compared to the no fishing scenario. Similarly, under the Beverton-Holt model,  $R_{MSY}$  would be exceeded 99 percent of the time (no difference), and  $R_{60}$  75 percent of the time—an 8.5 percent reduction in frequency of meeting or exceeding the  $R_{60}$  rebuilding reference, when compared to the no fishing scenario.

Puget Sound steelhead have experienced periods of relatively good and relatively poor marine survival during the last 30 years. For example, in the Skagit River, the 1987 through 2006 brood years produced about 25 percent fewer recruits than would be predicted from a longer-term dataset (1978-2007 brood years).

The resilience of the proposed management regime to reduced productivity was tested by simulating reductions in productivity of 15 to 35 percent for an entire 25-cycle period. The number of spawners remained above the critical threshold in all simulations. Even at a 35 percent reduction in average survival over 25 cycles, the frequency of cycles with spawners exceeding  $R_{MSY}$  was 75 percent for the Ricker model and 91 percent for the Beverton-Holt model as presented in Table 5. The management approach proposed in this Plan, with harvest rates stepping down to 4 percent, provide for protection of the SMU even over prolonged periods of poor survival.

**Table 5.** The effects of reductions in survival over a 25-cycle simulation on the performance of the management system (Sauk-Suiattle Indian Tribe et al. 2021).

Survival Reduction	Ricker		Beverton-Holt	
	% < Critical (C)	% > $R_{MSY}$	% < Critical (C)	% > $R_{MSY}$
0%	0%	88%	0%	99%
15%	0%	85%	0%	98%
20%	0%	83%	0%	97%
25%	0%	81%	0%	96%
30%	0%	79%	0%	94%
35%	0%	75%	0%	91%

Based on the results described above, NMFS does not expect that the abundance-based tiered harvest regime, proposed in the RMP for a period of ten years, would reduce the frequency of the Skagit steelhead attaining the calculated  $R_{MSY}$  escapement level by more than 4.3 percent, under the Ricker model and 0 percent under the Beverton-Holt model, relative to the no-fishing scenario (Table 5).. The proposed harvest regime would not affect the frequency with which the population may attain viability abundance at 41,619 (0 percent with and without harvest; Table 5). Additional information included in section 8.3 of the RMP indicates that the frequency that the Skagit steelhead would potentially meet or exceed abundances of 16,000 (slightly higher than the Puget Sound steelhead recovery plan’s interim viability objective of 15,000) would be reduced by 5.3 and 5.9 percent, respectively, for the Ricker and Beverton-Holt models.

The proposed harvest management regime is unlikely to appreciably reduce the survival and recovery of Skagit Basin steelhead populations, including effects reasonably certain to occur even after the proposed actions cease, because:

- the proposed RMP would not increase the frequency of spawner abundances that are at or below the critical threshold, which would maintain the low extinction risk to Skagit steelhead;
- the proposed RMP would have a minor effect (0-4 percentage points) on spawner abundances that meet or exceed the calculated MSY escapement, which would ensure that the population can maintain optimal productivity;
- the proposed RMP would have a low effect (7-10 percentage points) on the frequency of spawner abundances that meet or exceed 60 percent of the calculated equilibrium spawner abundances ( $R_{60}$ ), and maintain the ability of the population to continually test the capacity of the basin for expansion; and,
- the proposed RMP would have a low effect (0-5.9 percent) on the populations ability to attain viable abundances (Recovery Plan interim viability abundance: 15,000) under the current habitat conditions.

- Under assumptions of lower rates of survival for the Skagit steelhead (-15% to -35% reduction; Table 5), the RMP's proposed fishery would affect the frequency of meeting or exceeding the  $R_{MSY}$ , lowering the frequency of attainment but to a lesser degree than the assumed reduction in survival. As an example, the 25% survival reduction scenario (Table 5) would only result in a 7-percentage point and 3-percentage point reduction in exceedance frequency of the  $R_{MSY}$  under the Ricker and Beverton-Holt models, respectively, as compared to the values in Table 4.

### **Additional Fishery Management Actions implemented to reduce impacts to steelhead life-history diversity**

The co-managers have also chosen to implement additional fishery management actions that would have conservation benefits for specific populations or diversity components of the Skagit SMU (Sauk-Suiattle Indian Tribe et al. 2021). These include:

#### Protection of Kelts

In developing viability criteria for Puget Sound steelhead, the PSTRT stated that iteroparity, or repeat spawning, is an important consideration in a comprehensive evaluation of viability for steelhead. Post-spawn adult steelhead that out-migrate to the ocean are called kelts (Trammell et al. 2016; NMFS 2019). Kelts may return back to freshwater to spawn again. Repeat spawners are important in strengthening population diversity (and also for population persistence through temporal risk spreading), and can be especially influential on viability in small populations, like the Nookachamps, during periods when marine mortality varies widely (Hard et al. 2015; Myers et al. 2015).

The Puget Sound steelhead recovery plan lists working with co-managers to improve kelt abundance and survival as an action to implement to reduce harvest pressures on natural-origin populations (NMFS 2019). In support of recommendations by the Puget Sound steelhead recovery plan, the 2021 RMP provides protection for kelts by:

- 1) Closing recreational fisheries directed for adult steelhead no later than April 30 to limit mortalities on kelts;
- 2) Tribal fisheries directed at Skagit steelhead focus on the timeframe from January through April, a time when kelts are not abundant. This is confirmed by the Skagit steelhead test fishery results.
- 3) Other tribal net fisheries encounter steelhead, both pre-spawn and kelt, incidental to target species. However, steelhead are not targeted in these fisheries and some of these fisheries may be conducted as a steelhead non-retention (steelhead must be released), as a conservation measure. In this case, a steelhead mortality rate of 18.5 percent is applied to all released steelhead.

Building these actions into the 2021 RMP reduces the overall impact to kelt survival, thus improving the potential for repeat spawning in following years.

#### Protection of the Nookachamps Creek Population

The Nookachamps Creek population is the smallest extant steelhead DIP in the Skagit River and, potentially, the smaller size could increase the risk of extirpation. The Nookachamps also has only a winter run timing life history (NMFS 2019). The 2021 RMP provides additional protection for the Nookachamps Creek population by limiting recreational fisheries for adult steelhead to areas upstream of the Dalles Bridge in Concrete, WA (RM 54.1). This is 35.3 river miles upstream of the relatively small Nookachamps Creek population. In addition, since Nookachamps steelhead generally exhibit an earlier run timing (Hard et al. 2015), treaty fisheries would not concentrate on the early returns, but spread fishing effort across the entire return period and confine higher effort fisheries to the February to April timeframe (Sauk-Suiattle Indian Tribe et al. 2021).

#### Protection of Summer Run Timing Population Component

Genetic, run-timing, and spawn-timing information suggest that steelhead return to the Skagit and Sauk rivers throughout the year, including the summer months. The PSTRT concluded that “there is likely to be some population substructure that should be considered in maintaining within-population diversity” (Myers et al. 2015).

Locations where summer-timed fish have been reported include: Finney Creek, Day Creek, and the Cascade River, included in the Skagit River Summer-Run and Winter-Run DIP; the upper Sauk River, and the South Fork Sauk River, included in the Sauk River Summer-Run and Winter-Run DIP. However, despite extensive surveys by the co-managers, river miles 8.0 to 11.6 of Finney Creek is the only location where summer-timed fish are known to spawn (Sauk-Suiattle Indian Tribe et al. 2021). The summer-timed steelhead enter Finney Creek in October and November, with spawning occurring primarily from February through March. Based upon the time and area limitations for the majority of steelhead-directed fisheries identified in the RMP (i.e., February-April; mainstem Skagit and Sauk rivers), and the run- and spawn-timing of the Finney Creek summer-timed steelhead, the proposed fisheries are projected to have limited impacts on the summer-timed steelhead.

The 2021 RMP provides protection for the summer-timed component of the populations by: 1) opening recreational fisheries directed at adult steelhead no earlier than February 1 (summer steelhead are in spawning tributaries and not in mainstem at this time); and 2) not opening any tribal fisheries directed at summer-timed steelhead.

#### Protection of Early-Timed Winter Steelhead

The PSTRT identified maintenance of the historical breadth of spawn-timing as a consideration in the viability of a population, and hypothesized that the early-winter spawn-timing of the Nookachamps Creek population has been altered relative to historical conditions (Hard et al. 2015). More broadly, there are concerns that fisheries directed at the harvest of early-returning hatchery fish may have resulted in the loss of the early-winter component of wild steelhead (NMFS 2016).

Early-winter hatchery steelhead (Chambers Creek stock) have not been released in the Skagit River since 2012, and this RMP provides protection for any early winter component of the natural-origin return by not allowing any recreational fisheries directed at adult steelhead prior to February 1. Treaty fisheries would not concentrate on the early returns, but rather be designed to access steelhead across the entire return period. This would have the effect, generally, of a reduced fishery effort in the pre-February timeframe.

Although tribal net fisheries for steelhead could be conducted between December 1 and April 15, in practice (as in fishery years 2018-2022) most effort would continue to be applied between February and early April, continuing early winter steelhead protection measures outlined in NMFS (2018). Fisheries would be scheduled to access fish in designated fishing areas (i.e., Area 8, Area 78C, and Area 78D) and for durations which would be estimated to result in catches within the tribal share based on the strength of the run and consistent with the management framework. Tribal share, expected effort, and expected catch per unit of effort would be used to estimate expected harvest for each opening. Each tribe would monitor the fishery in real-time and manage the fishery appropriately to ensure that harvest rates listed in Table 3 are observed.

**1.7 4(i)(E) Include effective monitoring and evaluation programs to assess compliance, effectiveness, and parameter validation. At a minimum, harvest monitoring programs must collect catch and effort data, information on escapements, and information on biological characteristics such as age, fecundity, size, and sex data, and migration timing.**

In Section 9.0, Monitoring and Adaptive Management, the 2021 RMP includes effective monitoring and evaluation programs to assess compliance, effectiveness, and parameter validation.

Methods to monitor fisheries proposed in the 2021 RMP include: catch accounting such as fish tickets for tribal net fisheries and Catch Record Cards for recreational fisheries, a non-retention tangle net test fishery, and ground-based in-season creel surveys (Sauk-Suiattle Indian Tribe et al. 2021). Methods to observe spawn timing and frequency include: foot surveys, float surveys, and fixed-wing or helicopter aerial surveys, depending on stream size and visibility, to achieve a census of total redds in each index reach (Sauk-Suiattle Indian Tribe et al. 2021). Fisheries data collected by the co-managers, combined with escapement estimates, would provide the basis for catch composition, return age structure, and run reconstruction for each year (Sauk-Suiattle Indian Tribe et al. 2021).

Tribal net fisheries are monitored to assess encounters and retention of steelhead in both directed and non-directed fisheries. Depending on forecasted returns of steelhead, fisheries would be implemented to retain or not to retain steelhead. Retained steelhead for tribal commercial sales and fish taken for C&S purposes are enumerated through normal catch accounting, i.e., fish tickets, which are corroborated by tribal enforcement and/or tribal biologists. The landings documented by fish tickets are compiled in near real time into a database managed by the co-managers (Sauk-Suiattle Indian Tribe et al. 2021). Retained steelhead are assessed for hatchery:wild composition via the presence or absence of adipose clip and scanned for Passive Integrated Transponder (PIT) tags. Scales are collected from wild steelhead sufficient to estimate age composition. The tribes would also assess sex and spawning condition (pre-spawn or kelt) of landed steelhead, and tissue samples would be collected to assess isotopic chemistry, so to inform managers of the contribution of resident rainbow trout to steelhead populations (Zimmerman and Reeves 2000). Recent assessment of Skagit River resident rainbow trout contribution to steelhead production has been documented (Bodensteiner 2020).

Steelhead in non-retention fisheries are enumerated and reported by fishers or by tribal staff (i.e., Enforcement or Natural Resources), and when available information such as sex, length, and markings of non-retained steelhead would be collected. Non-retention mortality in the tribal fisheries is assessed at 18.5% for released steelhead.

The co-managers have submitted annual harvest reports and fishing plans to NOAA each year under the prior RMP (2018-2022). Descriptions of the activities summarized in the reports and plans are below as they would also be expected to continue under the implementation of the 2021 RMP.

The Upper Skagit Tribe conducts a non-retention tangle net test fishery to ensure biological information are being collected to adequately characterize sex ratios, age structure, timing, detection of out-of-basin strays (hatchery or wild), and collection of DNA material useful to better assess abundance and to provide information essential to development of the 2021 RMP. Tangle net fisheries operate starting in management week 8 (Mid-February) until management week 18 (beginning May). During tangle net fisheries, each steelhead encountered is measured for length, assessed for marks and PIT tag (and are PIT tagged if not present), sex, and a tissue sample is collected for future DNA analysis. These fish are sampled and released. Impacts from this fishery, in the form of estimated post-release mortality, are counted toward the overall, annual, allowable impact rate (see Table 3) and are estimated at 18.5 percent of approximately 100-150 fish annually encountered in the fishery.

For sport catch WDFW regulations require each license holder to record retained marked hatchery steelhead on Catch Record Cards (CRC) in both pre-terminal and terminal (e.g., Skagit basin) areas. Landed catch of hatchery steelhead in freshwater and marine catch is estimated for each management year (April thru March) from a subsample of CRCs. Estimates of landed catch are adjusted down to account for non-response bias, because successful anglers are more likely to return their CRCs (Alexandersdottir et al. 1994). The bias adjustment for 2018-19 large freshwater streams (stream with 20 or more fish reported on CRCs) is 1.02 (Eric Kraig, pers.

Comm., WDFW). There is no bias adjustment for catch estimates for small freshwater streams (stream less than 20 fish reported in CRCs). Reporting requirements would be reviewed and amended as needed to address steelhead encounters, retention, and release mortality appropriate to this RMP.

Recreational directed wild steelhead fisheries would be monitored through in-season creel surveys to ensure that impact limits are not exceeded. Creel surveys would follow the general approach described in WDFW Methods Manual-Creel Information from Sport Fisheries (Hahn et al. 1993) and summarized below.

To assess angler effort, catch, total harvest and impacts to other stocks and species WDFW would conduct a ground-based creel survey conducted by trained personnel during the steelhead fishery. During the creel interview information collected would include angler effort and catch data.

Information collected from angler interviews would include number in party, angler type (i.e., boat or shore), gear types used (conventional gear, fly), whether or not anglers have completed their trip, start and stop time, number of trailers and cars associated with the party, and the number of fish by species encountered and released or kept and any marks or tags. Because the fishery would be actively monitored and creel data entered and calculated as collected, the fishery would be managed on a daily or weekly basis. If encounter rates and thus potential mortality is greater than expected, the fishery impacts can be projected forward and the fishery would be closed with a minimum 48-hour notice to the public prior to the time the impact limit would be achieved.

Data collected by the tribes and WDFW in these fisheries and with escapement estimates provide the basis for catch composition, return age structure and overall run reconstruction that are used for population trend monitoring. The tribes and WDFW also communicate regularly and share data on run size, timing and catch to ensure appropriate management of steelhead.

#### **1.8 4(i)(F) Provide for evaluating monitoring data and make any revisions of assumptions, management strategies, or objectives that the data show are needed.**

For the ten-year duration of the 2021 RMP, annual accounting of recreational encounters, all landed catch, estimates of non-landed mortalities, and estimation of spawning escapement would be collected to provide the information needed to monitor population abundance trends and assess management performance against the harvest objectives (harvest rate ceilings and abundance thresholds) described in Section 8 of the 2021 RMP (Sauk-Suiattle Indian Tribe et al. 2021) and shown in section 1.5, above. Catch and escapement sampling to describe the age structure of populations needed are critical to developing analyses needed to improve the basis of management e.g., improving forecasting capability, quantifying recruitment, and developing escapement goals (Sauk-Suiattle Indian Tribe et al. 2021).

The co-managers propose to submit to NMFS an annual, post-season report assessing the performance of the management plan relative to the harvest objectives and resulting run size.

**1.9 4(i)(G) Provide for effective enforcement and education. Coordination among involved jurisdictions is an important element in ensuring regulatory effectiveness and coverage.**

The WDFW Law Enforcement Program enforces regulations enacted by the Fish and Wildlife Commission for non-treaty commercial and recreational fishing regulations (WDFW 2022b). These officers may assist city, county, other state, and tribal law enforcement agencies, and cooperate with the U.S. Fish and Wildlife Service, NMFS Enforcement, and the U.S. Coast Guard in fisheries enforcement.

Certain recreational fisheries may be assigned high priority for enforcement and are more intensively monitored. Officers are assigned to work during open fishing days and restricted periods, and conduct additional checks during closed periods. Officers carry out bank and boat patrols to check and assist anglers. Covert surveillance may also be conducted where reports of violations have been received.

The WDFW Law Enforcement Program would consist of vehicle, boat, foot, and launch monitoring and; assures compliance with established seasons, catch limits, gear restrictions, boat restrictions and compliance with creel surveyors, focuses protection on federally listed species, provides presence to reduce user group conflict, provides boating safety enforcement, and provides assistance to tribal enforcement or other law enforcement entities on an as need basis.

Individual tribal governments monitor and enforce their own commercial, subsistence, and ceremonial regulations for its on- and off-reservation fisheries. Tribal enforcement officers can be cross-deputized, and may cooperate with other tribal, state and federal fisheries enforcement agencies. Violations of tribal regulations involve fines or prosecution by tribal justice agencies. Officers are assigned to monitor all tribal U&A fishing areas, fisheries compliance for gear, area, and retention specifics, and other tribally imposed regulations and requirements. Officers patrol these fisheries from shore and boat, where they can also assist tribal fishers. Officers also patrol closed water for fishing out of season or in closed waters. The Skagit tribes have also provided leadership on the removal of derelict and phantom gear in the Skagit. A mandatory system of reporting lost gear (Swinomish, Sauk-Suiattle, Upper Skagit Indian Tribe) has proven effective at limiting incidental mortality. Tribal regulations state that any gear fishing outside of legally-opened fishery periods is fishing illegally. Therefore, fishers are required to report any lost or derelict gear immediately on loss or closure of the fishery. Tribal enforcement attempts to locate and remove any derelict gear in a timely manner.

WDFW consults with recreational angler organizations, such as their Steelhead and Cutthroat Policy Advisory Group, and other interested citizens through their Fish and Wildlife Commission hearings. In these forums, WDFW considers proposals for changes in recreational angling regulations, and discusses their rationale for annual regulation decisions. This process is

intended to demonstrate the conservative effects of steelhead fishing regulations and improve compliance.

Tribal fisheries management agencies develop fisheries regimes under the oversight of their tribal Councils or fisheries committees. For many tribes, harvest opportunity is currently limited to harvest of a relatively small number of steelhead that are used for subsistence or ceremonial purposes. Tribal fishers or their representatives participate in tribal decision-making, and are briefed by tribal management staff on the conservation measures, such as those incorporated in the 2021 RMP. Interactions among tribal fishers and management staff ensure that tribal fishing regulations are practicable and enforceable (Sauk-Suiattle Indian Tribe et al. 2021).

**1.10 4(i)(H) Include restrictions on resident and anadromous fisheries that minimize take of listed species, including time, size, gear, and area restrictions.**

In the 2021 RMP, the co-managers provide restrictions on resident and anadromous fisheries that minimize take of ESA-listed species, including time and area restrictions. Size and gear restrictions are already in place to target steelhead and limit incidental catch of non-target species. These restrictions are described in Section 1.6 above. Seasonal timing of fisheries and area restrictions minimize take of kelts, summer-run populations, early-timed winter-run populations, and Nookachamps Creek winter-run steelhead.

**1.11 4(i)(I) Be consistent with plan and conditions established within any Federal court proceeding with continuing jurisdiction over tribal harvest allocations.**

The Skagit River Steelhead RMP was developed to be consistent with the Puget Sound Salmon Management Plan (1985) and the Federal court orders under *United States v. Washington* (1974) that guide fisheries harvest management in Puget Sound (Sauk-Suiattle Indian Tribe et al. 2021).

**1.12 4(i)(ii) The co-managers monitor the amount of take of listed salmonids occurring in its fisheries and provides to NMFS on a regular basis, as defined in NOAA Fisheries' letter of concurrence for the RMP, a report summarizing this information, as well as the implementation and effectiveness of the RMP. The co-managers shall provide NMFS with access to all data and reports prepared concerning the implementation and effectiveness of the RMP.**

As described in Section 9 of the RMP, Monitoring and Adaptive Management, the co-managers would monitor the amount of take of ESA-listed salmonids occurring in RMP fisheries and

provide that information to NMFS, on a regular basis, as would be defined in NOAA Fisheries' letter of concurrence for the 2021 RMP, a Skagit SMU report summarizing this information, as well as the implementation and effectiveness of the RMP.

The Puget Sound area co-managers would provide to NOAA Fisheries an annual report ("Puget Sound Steelhead Harvest Management Report") for compliance with ESA reporting requirements for the Puget Sound salmon fisheries. The Skagit co-managers would continue to contribute to this report, but would also provide a supplemental, Skagit RMP-specific report.

The effectiveness of management in achieving the objectives stated in the 2021 RMP would be evaluated annually by the co-managers, referencing the performance indicators identified in Section 9.1 of the 2021 RMP. The Skagit SMU report would provide the observed landed catch and estimated mortality in tribal and recreational fisheries, the estimated number and age composition of natural spawners, terminal harvest rates, any information on illegal harvests, results from any genetic analysis, and other data collected that would be useful in the evaluation of this plan. Significant deviations from the pre-season agreement would be described and evaluated. As already provided for the 2016 RMP, NMFS would continue to have access to all data and reports prepared concerning the implementation and effectiveness of the 2021 RMP.

**1.13 4(i)(iii) The co-managers confer with NMFS on its fishing regulation changes affecting listed ESUs/DPSs to ensure consistency with the approved RMP. Prior to approving a new or amended RMP NMFS will publish notification in the Federal Register announcing its availability for public review and comment. Such an announcement will provide for a comment period on the draft RMP of not less than 30 days.**

The 2021 RMP, in Section 1.0, Scope of Plan, specifies that the co-managers would confer with NMFS when new information becomes available or substantial changes come to light to consider appropriate actions. In these cases, NMFS would assess any new information to ensure consistency with the 4(d) determination on the RMP. If necessary, NMFS would publish notification in the Federal Register announcing availability for public review and comment on a new or amendment of this RMP for 30 days.

**1.14 4(i)(iv) NMFS provides written concurrence of the RMP which specifies the implementation and reporting requirements. NMFS' approval of a plan shall be a written approval by NMFS' Regional Administrator. On a regular basis, NMFS will evaluate the effectiveness of the program in protecting and achieving a level of salmonid productivity commensurate with conservation of the listed salmonids. If it is not, NMFS will identify ways in which the program needs to be altered or strengthened. If the responsible agencies do not make changes to respond adequately to the new information, NMFS will publish notification in the Federal Register announcing its intention to withdraw the limit for activities associated with the RMP. Such an announcement will provide for a comment period of not less than 30 days, after which NMFS will make a final determination whether to withdraw the limit so that the prohibitions would then apply to those fishery harvest activities.**

After completion of the public review and comment period for this PEPD document, and after consulting under section 7(a)(2) of the ESA, NMFS will make a determination regarding the adequacy of the 2021 Skagit River Steelhead RMP. If NMFS determines that implementing and enforcing the RMP would not appreciably reduce the likelihood of survival and recovery of the ESA-listed species, and that the RMP addresses all of the criteria specified in Limits 4 and 6 of the 4(d) Rule, NMFS will notify the co-managers in writing and specify any necessary implementation and reporting requirements. Approval of the plan shall be made in writing by the NMFS West Coast Regional Administrator.

NMFS would continue to evaluate the effectiveness of the harvest program described in the 2021 RMP in protecting and achieving a level of salmonid productivity commensurate with the conservation of listed Puget Sound steelhead. If the harvest program did not continue to meet the 4(d) criteria, NMFS would identify ways to alter or strengthen the 2021 RMP so the co-managers could make changes to respond adequately to the new information. If those changes were not made on behalf of the co-managers, NMFS would take action by publishing notification in the Federal Register announcing its intent to withdraw the 4(d) authorization. A public comment period of at least 30 days would accompany this notification. NMFS would then make a final determination whether to withdraw the limit on fishery harvest activities described in the 2021 RMP.

## **2. Notice of Proposed Evaluation and Pending Determination**

As required by Limit 6 of the 4(d) Rule, the Secretary is seeking comment from the public on the pending determination as to whether or not the 2021 Skagit River Steelhead RMP evaluated here would appreciably reduce the likelihood of survival and recovery of the listed salmon and steelhead. As required in (6)(iv) of section 223.203 of the 4(d) Rule for salmon and steelhead,

the Secretary will publish notice of his determination together with a discussion of the biological analysis underlying that determination.

### **3. Pending Determination**

NMFS has reviewed the 2021 Skagit River Steelhead Fishery RMP and evaluated it against the requirements of the 4(d) Rule. Based on this review and evaluation, NMFS' preliminary pending determination, subject to information provided during public comment and completion of NMFS' ESA consultation, is that activities implemented as described would not appreciably reduce the likelihood of survival and recovery of ESA-listed Puget Sound steelhead. If the Regional Administrator concurs with this pending determination, take prohibitions would not apply to activities implemented in accordance with the RMP. In addition, the harvest program would operate in conjunction with on-going habitat restoration and hatchery management actions, implemented consistently with any current and future recovery plan objectives for listed species in the Skagit Basin, until natural-origin salmon populations that would sustain fisheries are restored.

### **4. Reevaluation Criteria**

NMFS would reevaluate this determination if: (1) the actions described by the RMP is modified in a way that causes an effect on the listed species that was not previously considered in NMFS' evaluation; (2) new information or monitoring reveals effects that may affect listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may affect NMFS' evaluation of the RMP.

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