

1. What is the current WDFW status for the Entiat?

The Joint Fisheries Parties (e.g., State, Federal, and Tribal) have not nor is there a State or Federal regulatory requirement to formally designate the Entiat River as a reference population for natural-origin summer Steelhead. The WDFW does collect spawning and recruitment data from the natural-origin summer Steelhead population in the Entiat River. This data is evaluated to determine if it can be used for comparative purposes to hatchery supplemented rivers/streams. The primary reason why WDFW collects this data for evaluation is because the Entiat River has not been directly supplemented with hatchery – origin summer Steelhead since 1999. Additionally, for summer Steelhead recovery to occur, natural-origin escapement targets must be met (on average) over 12 years in three of the four populations (Wenatchee, Entiat, Methow, and Okanogan) within the upper Columbia River Distinct Population Segment (DPS). The Entiat River is the closest of the four population to meeting recovery criteria.

2. What is the objective?

The objective of a reference population is to provide a basis of comparison between hatchery supplemented and un-supplemented fish populations. A reference population has no or very few hatchery fish present in the reference area and is sustained by natural recruitment.

Hatchery supplementation can be used to recover or bolster depressed populations of wild fish. The goal of hatchery supplementation is to increase population abundance (especially total spawners) while not reducing natural population growth (i.e., population productivity). One method to determine success of hatchery supplementation is to compare population productivity of the supplemented population to a reference population. A reference population has similar physical and biological characteristics as the supplemented population (see #3). Reference populations within A DPS or Evolutionary Significant Unit (ESU) are always preferred to outside populations.

3. If we are a reference stream what is the criteria?

See #1 in regards to the Entiat River being classified as a reference population.

The criteria of a reference population includes, but not limited to: (a) same or similar life-history characteristics (e.g., run timing, spawn timing, migration patterns, etc.), (b) no or very few hatchery fish present in the reference area, (c) accurate abundance estimates, (d) long time series of natural-origin abundance and productivity estimates (≥ 20 years), (e) similar trends in freshwater habitat conditions, (f) similar out-of-basin effects (e.g., ocean survivals), and (g) estimates of harvest to adjust escapement estimates.

4. Where do we find the criteria?

Appendix C of the 5-year Comprehensive Monitoring and Evaluation Plan (referenced below) provides a detailed methodology for identifying reference streams. The methodology was developed for spring Chinook, but directly applies to summer Steelhead as well. This report is available from Chelan PUD.

Hillman, T., M. Miller, T. Miller, M. Tonseth, M. Hughes, A. Murdoch, J. Miller, and B. Kessee. 2011. Monitoring and evaluation of the Chelan County PUD hatchery programs: 2010 annual report. Report to the HCP Hatchery Committee, Wenatchee, WA.

5. Is the Entiat the best or correct stream for this designation?

See #1 in regards to the Entiat River being classified as a reference population.

6. Were all streams in the area being evaluated?

Not for summer Steelhead. Presently, there is really no good reference populations for summer Steelhead in the upper Columbia River. Most populations are supplemented with or under the influence of hatchery fish.

7. Who or what group made the decision and was it documented and was there public input?

See #1 in regards to the Entiat River being classified as a reference population.

8. Is this type of stream needed now?

Yes. Reference populations are still a valuable tool for evaluating rivers/streams supplemented with hatchery fish to recover depressed populations and to determine whether hatchery programs can function as a recovery tool.

9. Is this in the best interest of the Entiat fishery?

See #1 in regards to the Entiat River being classified as a reference population.

The Entiat River, along with other anadromous waters in the upper Columbia River, are continuously evaluated to determine if, what, and where any recreational fisheries can be implemented given limitations on hatchery- and natural-origin fish abundance, species specific management objectives, and limitations under ESA. Over the last 10 years, the WDFW has opened the lower portion of the Entiat River for summer Steelhead when forecasted total and natural-origin run-sizes for the upper Columbia River meet certain abundance thresholds identified in our ESA permit. Summer Chinook retention has also been opened and expanded in the Entiat River.

10. Is there opportunity for hatchery introduction if runs drop?

Hatchery supplementation on listed species, outside of mitigation requirements, is technically only an option if runs experience prolonged declines in abundance and is deemed necessary to prevent extinction. Funding and ESA authorization would need to be secured to start a hatchery supplementation program. Further, hatchery supplementation would be designed and scaled specifically to recover the natural-origin population and not for harvest augmentation.

11. Is there a level at which retention of fish could be reached if a fishery opened?

Upper Columbia River summer Steelhead are listed as threatened under the ESA. Directed fishing (retention or CNR) on natural-origin (i.e., unclipped) summer Steelhead is prohibited under federal law. Retention of hatchery-origin summer Steelhead is only permitted when forecasted total and natural-origin run-sizes meet certain abundance thresholds. Directed fishing on natural-origin Steelhead can only be entertained after delisting.

12. What are the written guidelines for fishing on this type of reach?

There are no written guidelines for fishing on reference populations.

ADDITIONAL INFORMATION:

- 1. Both hatchery- and natural-origin summer Steelhead in the upper Columbia River are listed under the ESA.**
- 2. Steelhead hatchery supplementation programs in the upper Columbia River are not the same as hatchery supplementation program in the Snake River, lower Columbia River, or Puget Sound.**
- 3. Steelhead hatchery supplementation programs are designed and scaled to prevent extinction and assist in recovering the natural-origin population. These programs have two components: (a) wild X wild adipose unclipped conservation fish and (b) one generation removed hatchery x hatchery adipose clipped safety net fish.**
- 4. Retention of adipose clipped summer Steelhead is only permitted when forecasted total and natural-origin run-sizes meet minimum abundance thresholds in our ESA permits. When abundances allow, the WDFW opens conservation fisheries to remove surplus hatchery-origin fish to manage PNI on the spawning grounds. Conservation fisheries are one of adult management tool used in conjunction with physical removal of hatchery-origin steelhead from dams, traps, and weirs.**