Recommendations for Wild Steelhead Gene Banks in the Lower Columbia River

Washington Department of Fish and Wildlife – Region 5 Fish Program
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Submit a comment

WDFW is accepting public comments on these recommendations through Dec. 13, 2013 at TeamVancouver@dfw.wa.gov.

Introduction

Since early 2011, the Washington Department of Fish and Wildlife has been working to develop regional steelhead management plans for watersheds in the lower Columbia River. These plans are designed to reflect the goals and strategies expressed in the Statewide Steelhead Management Plan (SSMP), addressing such issues as hatchery production, natural production, fishing regulations, habitat conditions, enforcement and other key management considerations.

An important component of the regional management plans is the identification of steelhead gene banks, where wild steelhead stocks are largely protected from the effects of hatchery programs. As stated in the SSMP, "at least one wild stock gene bank will be established for each major population group in each steelhead Distinct Population Segment (DPS)," including those populations that fall within the regional planning area on the lower Columbia River.

During a scientific review, the Department determined which river in the planning meet the criteria established for steelhead gene banks under the SSMP. Working in conjunction with three citizen advisory groups, fishery managers then identified three rivers as candidates for designation as gene banks in the LCR. Following public review, those recommendations will receive consideration for inclusion in the regional steelhead management plans for the lower Columbia River, scheduled for completion by mid-2015.

The Department also plans to include those recommendations in consultations with NOAA Fisheries on several steelhead hatchery programs, currently under review for compliance with the Endangered Species Act (ESA). The Department believes the recommendations to establish gene banks in the three rivers identified as part of the regional planning process will further protect and enhance wild steelhead populations in these key watersheds, while still providing a diversity of fishing options.

Steelhead Management Planning Workgroup Process

The membership of the three advisory groups has included sport fishing organizations, conservation organizations and government agencies. In appointing members, WDFW

considered individuals' knowledge of fisheries management and their personal commitment to the public process, while also seeking to achieve a wide range of public opinion.

Two of the advisory groups have completed their recommendations for all aspects of regional steelhead management plans, and the third has provided recommendations for wild steelhead gene banks. The Department is providing an opportunity for additional comment from the public on the gene bank recommendations provided by the workgroups prior to incorporating these into the proposals submitted to NOAA Fisheries for consultation under the ESA.

Gene bank strategy and definition

The Department's SSMP (pg. 6) describes a strategy for establishing a network of wild stock gene banks throughout the state. The following excerpt from the SSMP outlines the strategy requirements and gene bank characteristics.

> ***Establish Network of Wild Stock Gene Banks****.* Establish a network of wild stock gene banks across the state where wild stocks are largely protected from the effects of hatchery programs. At least one wild stock gene bank will be established for each major population group in each steelhead Distinct Population Segment (DPS). Each gene bank established will have the following characteristics and management:
>
> - Each stock selected for inclusion in the gene bank must be sufficiently abundant and productive to be self-sustaining in the future.
>
> - No releases of hatchery-origin steelhead will occur in streams where spawning of the stock occurs, or in streams used exclusively by that stock for rearing.
>
> - Fisheries can be conducted if wild steelhead management objectives are met as well as any necessary federal ESA determinations.

Gene bank options for the LCR steelhead DPS

Objective: Establish at least one gene bank per major population group within the LCR steelhead DPS with geographic spread between them.

- The LCR steelhead DPS is comprised of the steelhead populations from the Cowlitz River to the Wind River (inclusive) and is divided into two strata – the Cascade and the Gorge. Steelhead populations in this DPS display two distinct life-history forms – summer-run and winter-run.

- These groupings create four major population groups (MPG) within the DPS: Cascade summer-run, Cascade winter-run, Gorge summer-run and Gorge winter-run.

- Options for gene bank consideration focused on several criteria for the population.

    - Sufficiently abundant and productive (SSMP criteria).
    - Population must be designated as a "primary" population, as defined in the LCR Recovery Plan for Salmon and Steelhead – Washington Management Unit plan (Chapter 4 – pg. 21).

      This action will focus risk reduction on "primary" populations (NOAA Fisheries criteria).

Table 1. Gene bank options for "primary" populations considered by management planning workgroups.

	Cascade MPG (stratum) - part of LCR ESU (DPS) - ESA listed	
Cascade Workgroup #1	Coweeman	Winter-run
	SF Toutle	Winter-run
	NF Toutle (includes Green River)	Winter-run
	Green River (sub-population of NF Toutle)	
	Kalama	Winter-run
	Kalama	Summer-run
Cascade Workgroup #2	EF Lewis	Winter-run
	EF Lewis	Summer-run
	Washougal	Summer-run
	Gorge MPG (stratum) - part of LCR ESU (DPS) - ESA listed	
Gorge Workgroup	Upper Gorge - (Includes the Wind River)	Summer-run

Note: There were no winter-run populations in the Gorge stratum that met all the criteria for gene bank consideration.

Gene Bank Recommendations

Table 2. Gene bank recommendations proposed by management planning workgroups.

	Cascade MPG (stratum) - part of LCR ESU (DPS) - ESA listed		**Recommendation**
Cascade Workgroup #1	Coweeman	Winter-run	
	SF Toutle	Winter-run	
	NF Toutle (includes Green River)	Winter-run	**X**
	Green River (sub-population of NF Toutle)		
	Kalama	Winter-run	
	Kalama	Summer-run	
Cascade Workgroup #2	EF Lewis	Winter-run	**X**
	EF Lewis	Summer-run	**X**
	Washougal	Summer-run	
	Gorge MPG (stratum) - part of LCR ESU (DPS) - ESA listed		
Gorge Workgroup	Upper Gorge - (Includes the Wind River)	Summer-run	**X**

Gene bank rationale and implementation actions required for the LCR steelhead DPS

Many pros and cons for each candidate population were discussed by the steelhead management planning workgroups and considered by Department staff. The following is a summary of key points and rationale leading to recommendation of the proposed gene bank designations and the key actions needed to implement these designations.

NF Toutle River (Including Green River) Winter-run:

- The upper NF Toutle above the Sediment Retention Structure (SRS) is already managed as a wild steelhead zone. Through the current truck and haul program, only wild steelhead and wild coho are released above the SRS.

- While the upper NF Toutle is still in a state of recovery after the eruption of Mt. Saint Helens, the Green River was less impacted and is in generally good condition.

    - The Green River supports the majority of the steelhead in the NF Toutle population.

- Limited public access compared to other streams in the Cascade MPG.

    - Public access to the upper Green River is restricted due to Weyerhaeuser gate closures during much of the summer-run fishing season – which makes it difficult to harvest hatchery steelhead that do make it above the weir.

    - NF Toutle closed to fishing above the Sediment Retention Structure (SRS).

- It was recognized that the Coweeman River also had limited public access; however, this has been addressed by changing the fishing boundaries and opening up additional area (see Management Modification section below).

- The current summer-run hatchery program on the Green River is one of two non-native summer steelhead hatchery programs on the Toutle system – the other is the SF Toutle.

  - Current program size (25,000 smolt release) is contingent on the success of an in-river weir at the hatchery intake intended to constrain returning adult hatchery steelhead and the steelhead fishery to the lower ~1.5 miles of the Green River.

    This weir has been moderately successful, but would require significant improvement to maintain the current program size.

    Without the weir or weir improvement, program size on the Green River would need to be reduced to 6,000 - 20,000 smolts.

    Termination of the Green River summer-run steelhead program would eliminate the need to operate the weir to control hatchery steelhead access upstream of the NF Toutle hatchery.

- Elimination of the Green River summer-run steelhead program reduces risk to NF Toutle wild winter steelhead population.

- The workgroup felt elimination of the hatchery program would impact fewer anglers compared to other streams in the Cascade stratum.

Implementation actions required:

- Elimination of 25,000 hatchery summer-run steelhead plant into the Green River.

EF Lewis River Summer-run:

- Current hatchery summer-run steelhead program is 15,000 smolts.

  - Program is a direct plant from Skamania Hatchery without acclimation.

  - No collection facilities exist for returning adult steelhead.

  - Lack of acclimation and adult collection does lead to higher stray rates.

- Nearly the entire upper EF Lewis watershed is in federal and state ownership. Riparian habitat is in good shape. Federal ownership may result in less logging activity than private ownership.

- Historical fish barriers (falls) that segregate summer-run and winter-run steelhead are in place.

- No hatcheries on this system.

- Less public access due to private property in key over-summering areas.

- Would meet NOAA goal of reducing risk through elimination of a segregated hatchery program.

- Elimination of steelhead hatchery plants (summers and winters) would result in the EF Lewis being a wild salmonid management zone. Exception is a short-term chum salmon reintroduction program.

Implementation actions required:

- Elimination of 15,000 hatchery summer-run steelhead plant from Skamania Hatchery into the EF Lewis.

EF Lewis River Winter-run:

- The current hatchery winter-run steelhead program has been 60,000 smolts and was proposed to be reduced to 38,000 smolts in 2014. Additional modeling done in preparation for NOAA consultation on this program indicated further reduction to 19,000 smolts is needed to meet hatchery reform guidelines.

    - Program is a direct plant from Skamania Hatchery without acclimation.

    - No collection facilities exist for returning adult steelhead.

- Genetic legacy worth protecting – historically large fish component and extensive life history diversity.

- Habitat improvement potential is high because of the stream characteristics, particularly in the lower river.

- This would protect both the summer and winter populations and should be highly acceptable to NOAA.

    - Provides largest risk reduction of all options.

Implementation actions required:

- Elimination of 38,000 hatchery winter-run steelhead plant from Skamania Hatchery into the EF Lewis.

Upper Gorge (Wind River) Summer-run:

- The Wind River is currently being managed as a wild stock gene bank for summer steelhead.
    - No hatchery steelhead releases occur in this basin. Hatchery plants were discontinued in 1997.
- A natural barrier (Shipherd Falls) separates summer-run and winter-run steelhead.
    - Few hatchery steelhead are observed above the falls during snorkel surveys.
- US Forest Service has designated the Wind River Watershed as a priority watershed for recovery and restoration.
- A significant amount of habitat restoration has already occurred in the Wind River watershed.
    - Designation as a gene bank may lead to greater potential for sustained or increased funding for fish and habitat restoration and monitoring.
- A long time series data set exists on the Wind River for annual adult and juvenile steelhead abundance.
    - Valuable for understanding population response to elimination of hatchery plants.
- Greater number of stream miles of productive steelhead spawning/rearing habitat than in Lower Gorge.
- No summer-run populations in the Lower Gorge.
- Lower Gorge winter-run steelhead – abundance is unknown for this population, but it is thought to be small – may not meet “self-sustaining” criteria from SSMP. Due to uncertainty, this population was not considered a candidate for gene bank designation.

Implementation actions required:

- Continue current management – designate the Wind River as a gene bank for summer-run steelhead.

Management modifications in response to gene bank recommendations – implemented and proposed

Strategy:

- Continue to provide fishing opportunity in gene bank watersheds as allowable.
- Re-structure hatchery program releases to minimize impact on harvest opportunity.

Cascade Strata

- SF Toutle River– increased hatchery summer-run steelhead plant from 15,000 to 20,000 smolts in 2013.
- Coweeman River – moved boundary up to Baird Creek – adding additional 8 miles to fishery and improving angler access.
- Kalama River – opened area above Kalama Falls Hatchery (KFH) to retention of hatchery steelhead within current boundaries and seasons.
- Salmon Creek – propose to increase hatchery winter-run steelhead plant from 20,000 to 40,000 smolts in 2014.
- Washougal River – propose to increase hatchery summer-run steelhead plant from 60,000 to 70,000 smolts and hatchery winter-run steelhead plant from 60,000 to 85,000 smolts in 2014.
    - Increased plants are possible due to infrastructure improvements:
        - At the Washougal Salmon Hatchery intake, which will allow for additional collection of hatchery steelhead at this facility.
        - And those planned for the Skamania Hatchery, which will improve capture of hatchery steelhead returning to this facility.
    - These improvements will allow the upper Washougal above Dougan Falls to continue to be managed as a wild summer-run steelhead sanctuary.
    - Additionally, the area above Skamania Hatchery on the WF Washougal is proposed to be managed as a wild summer-run steelhead sanctuary.
- EF Lewis, NF Toutle/Green – developing options to provide catch and release opportunity for wild steelhead when abundance allows. This may include harvest

opportunities for stray hatchery steelhead as an additional conservation measure.

Gorge Strata

- Rock Creek – creation of terminal winter steelhead fishery with an annual plant of 20,000 winter-run steelhead smolts.
    - First release was spring 2013.
    - First return will be in the winter of 2014-15.
- Maintaining catch and release fishery in the Wind River linked to wild summer-run steelhead abundance.

Additional links

Link to WDFW Statewide Steelhead Management Plan:
http://wdfw.wa.gov/conservation/fisheries/steelhead/management_plan.html

Link to NOAA Fisheries LCR DPS description:
http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/salmon_and_steelhead_listings/steelhead/lower_columbia_river/lower_columbia_river_steelhead.html

Link to NOAA Fisheries LCR Recovery Plan for Salmon and Steelhead –Washington Management Unit Plan:
http://www.lcfrb.gen.wa.us/Recovery%20Plans/RP%20Frontpage.htm