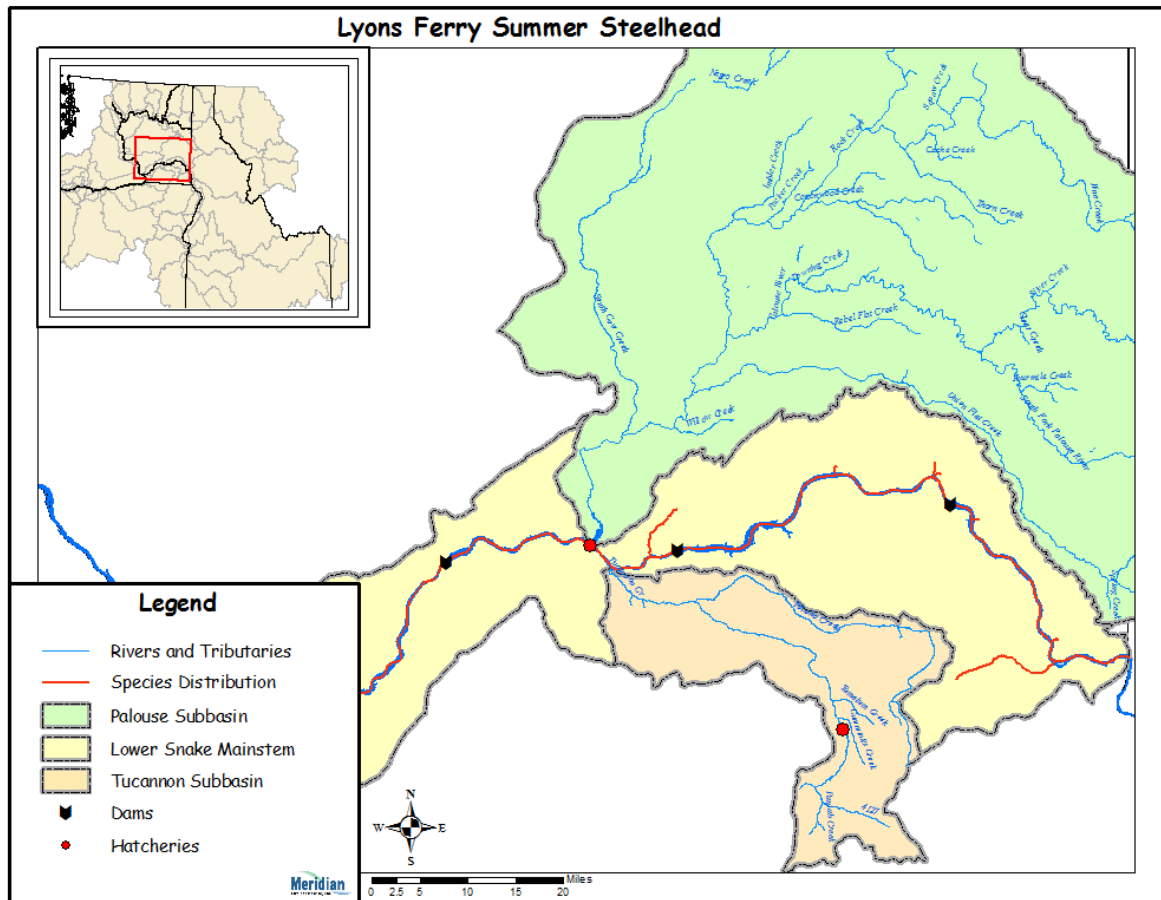


Hatchery Scientific Review Group Review and Recommendations

Lyons Ferry Summer Steelhead (A-run) Population and Related Hatchery Programs

January 31, 2009



1 Lyons Ferry Summer Steelhead (A-run)

This is a segregated hatchery program that is not associated with a natural population. The hatchery stock is not listed under ESA.

2 Current Conditions

Summer steelhead are reared at Lyons Ferry Hatchery located along the lower Snake River in Franklin County, Washington (RM 58). The program goal is to produce and release 60,000 smolts directly to the mainstem Snake River to provide harvest opportunities and broodstock for the Lyons Ferry Hatchery stock programs in the Walla Walla, Tucannon and Touchet rivers. All juvenile steelhead released are adipose fin-clipped. Approximately 20,000 also have a left-ventral clip and coded wire-tag. In recent years a portion has been PIT-tagged. Broodstock for the program is collected at Lyons Ferry Hatchery. Only hatchery-origin fish are used as broodstock. The program was initiated with broodstock from Wells Hatchery and Wallowa Hatchery. All adult holding, egg incubation and rearing occurs at Lyons Ferry. The SAR to the lower Snake River (based on coded wire-tag data) has averaged 1.7% since 1982. The SAR to the Columbia River for the juvenile releases has averaged 2.0%. The AHA model assumes an R/S value of 10.6. Based on the 1989 to 2002 Brood Year average, the program has had an R/S value of 17.3.

2.1 Current Population Status and Goals

This section describes the current population, status, and goals for the natural population.

- ESA Status: Not listed
- Population Description: Segregated hatchery population
- Recovery Goal for Abundance: NA
- Productivity Improvement Expectation: NA
- Habitat Productivity and Capacity: Productivity: NA; Capacity: NA

2.2 Current Hatchery Programs Affecting this Population

Estimated number of hatchery strays affecting this population:

- Hatchery strays from integrated in-basin programs: NA
- Hatchery strays from in-basin segregated and out-of-basin hatchery programs: NA

3 HSRG Review

The HSRG has developed guidelines for minimal conditions that must be met for each type of program as a function of the biological significance of the natural populations they affect. For populations of the highest biological significance, referred to as Primary, the proportion of effective hatchery-origin spawners (pHOS) should be less than 5% of the naturally spawning population, unless the hatchery population is integrated with the natural population. For integrated populations, the proportion of natural-origin adults in the broodstock should exceed pHOS by at least a factor of two, corresponding to a proportionate natural influence (PNI) value of 0.67 or greater. For Contributing populations, the corresponding guidelines are: pHOS less than 10% or PNI greater than 0.5. It is important to note that these represent minimal conditions, not targets. For

example, the potential for fitness loss when effective pHOS is 5% is significantly greater than it would be at 3%. For Stabilizing populations, we assume the current pHOS or PNI would be maintained.

The HSRG analyzed the current condition and a range of hatchery management options for this population, including the effect of removing all hatchery influence, and arrived at one or more proposed solutions intended to address the manager's goals consistent with the HSRG guidelines for Primary, Contributing, and Stabilizing populations. The solution included in the cumulative analysis is the last option described in the Observations and Recommendation box below.

In order to highlight the importance of the environmental context, two habitat scenarios were considered: current conditions and a hypothetical 10% habitat quality improvement.

See HSRG Observations and Recommendations in the box below for more information.

3.1 Effect on Population of Removing Hatchery

The No Hatchery scenario is intended to look at the potential of the natural population absent all hatchery effects with projected improved fish passage survival in the Snake and Columbia mainstem (FCRPS Biological Opinion May 5, 2008).

This is a segregated hatchery program that is not associated with a natural population.

3.2 HSRG Observations/Recommendations

In the Observation and Recommendation box below we describe elements of the current situation (Observations) that were important to evaluate the natural population and where applicable, the hatchery program(s) affecting that population. We also describe a solution (Recommendations) that appeared to be consistent with manager's goals; however, this is not the only solution. In some cases more than one solution is described.

Summary results of this analysis are presented in Table 1. The adjusted productivity values reported for each alternative incorporates all factors affecting productivity (i.e., habitat quality, hatchery fitness effects, and harvest rates).

Observations

Lyons Ferry Hatchery (LFH) and Tucannon Fish Hatchery (TFH) were built/modified under the Lower Snake River Fish and Wildlife Compensation Plan to compensate for the annual loss of summer steelhead caused by hydroelectric projects on the Snake River.

The Lyons Ferry Hatchery Complex currently uses four summer steelhead stocks to produce smolts for release into the Snake (60,000 smolts of LFH stock), Tucannon (100,000 smolts of LFH stock, 50,000 smolts of Tucannon Endemic stock), Grande Ronde (160,000 smolts of Wallowa stock), Walla Walla (100,000 smolts of LFH stock), and Touchet rivers (85,000 smolts of LFH stock, 50,000 smolts of Touchet Endemic stock) to enhance recreational opportunities for steelhead anglers and for recovery purposes. All steelhead smolts for the program are planned for a release size of 4.5 fpp (about 100 g/fish). Current releases of summer steelhead smolts are lower than originally specified by the LSRCP program. Releases have periodically been reduced through the years (in 2001 the LFH and Wallowa stock programs were reduced by 37%) in partial response to Endangered Species Act (ESA) concerns and documented smolt-to-adult (SAR) survival rates far exceeding the original SAR goal of 0.5% (USACE 1975).

(Lyons Ferry Complex Hatchery Evaluation: Summer Steelhead Annual Report 2005 Run Year June 2007)

The Lyons Ferry on-station release makes a significant contribution to the recreational harvest. This is a segregated hatchery program that currently provides broodstock for segregated programs in the Walla Walla, Touchet and Tucannon rivers. The HSRG made recommendations for each of these systems to provide local broodstock for these programs (Walla Walla and Touchet) or terminate the program (Tucannon). If these recommendations were implemented, the need for an on-station Lyons Ferry release to provide broodstock for these tributary programs no longer would be required.

The HSRG was provided no information about whether this release group is straying to natural production areas or above Lower Granite Dam.

Information from WDFW indicates that approximately 55% of adults escaping the fishery return to the hatchery, leaving 45% of the hatchery population unaccounted for and potentially straying into the nearby Tucannon and Asotin populations.

Recommendations

The HSRG recommends that managers determine the disposition of unaccounted for hatchery strays from this segregated program and ways to reduce them (i.e. leave the trap open longer at Lyons Ferry Hatchery to recover a higher proportion of hatchery returns and if necessary to meet the manager’s conservation goals, utilize temporary weirs to exclude hatchery fish from nearby natural populations).

Table 1. Results of HSRG analysis of current condition and HSRG solution for Lyons Ferry Summer Steelhead. The light green row indicates the natural population and yellow indicates the segregated hatchery population, if applicable. A 10% habitat improvement is applied to the HSRG Solution to evaluate the additional effect of improved habitat towards conservation objectives.

Alternative	Type and Purpose	Prog Size (/1000)	HOR Recapture	Additional Weir Efficiency	Effective pHOS	PNI	NOS Esc	Adj Prod	Harvest	Hatchery Surplus
Current										
	Seg Harv	60.6	55%						820	192
No Hatchery										
HSRG Solution										
	Seg Harv	60.6	85%						820	319
HSRG Solution w/ Improved Habitat										
	Seg Harv	60.6	85%						820	319