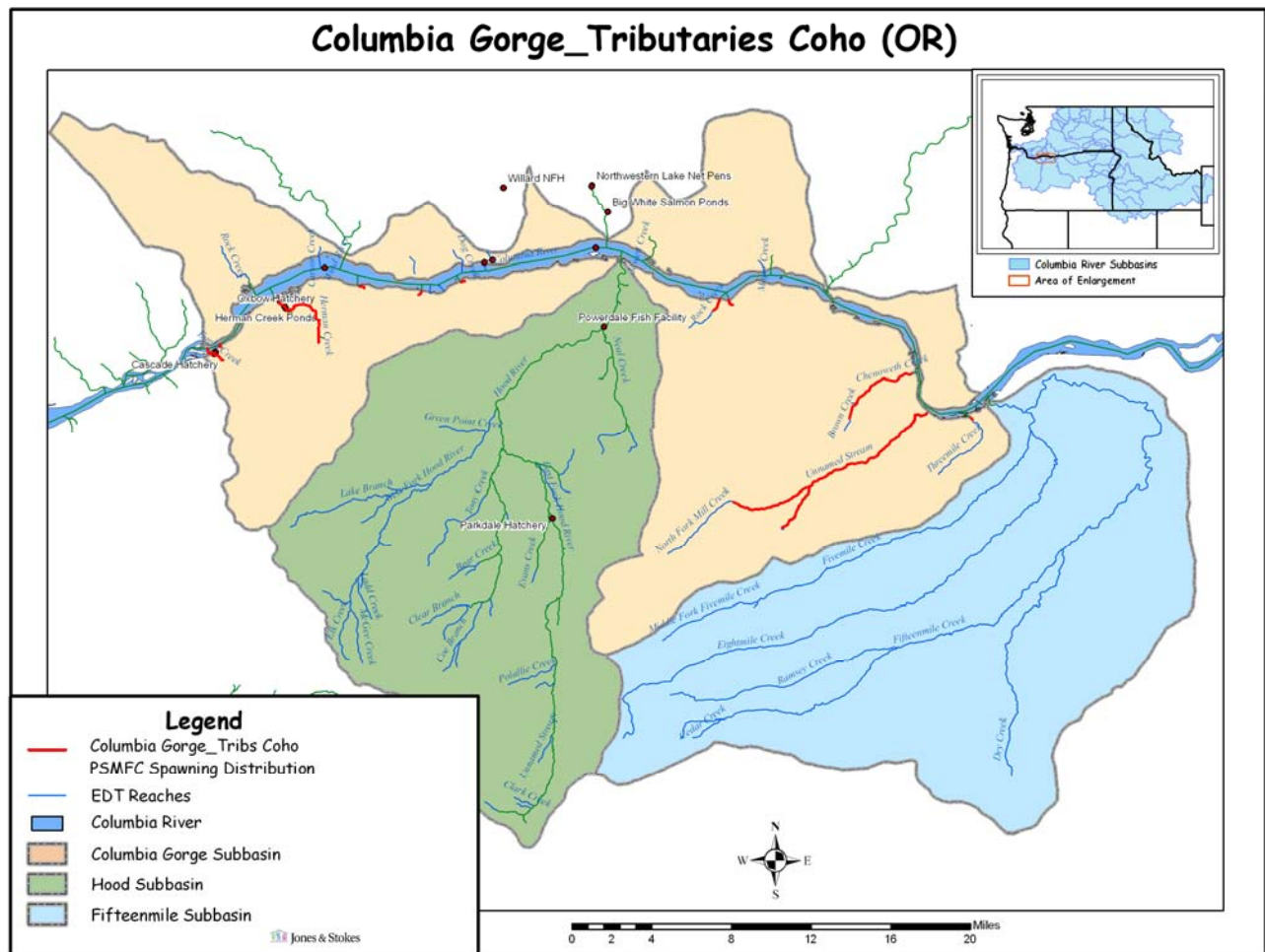


Hatchery Scientific Review Group Review and Recommendations

Lower Columbia Gorge Oregon Tributaries Coho Population and Related Hatchery Programs

January 31, 2009



1 Columbia Gorge Tributaries Coho (Oregon)

This coho population includes the Herman Creek, Gorton Creek, Viento Creek, Lindsey Creek and Phelps Creek sub-populations. Recent coho spawner surveys estimated that Gorge tributaries on the Oregon side have 11 miles of coho spawning habitat (Suring et al. 2005). This estimate does not include habitat above weirs on Eagle and Tanner creeks, nor does it include habitat that was lost by filling Bonneville Pool. Culverts along Interstate 84 also may limit current accessible habitat. Geographically, the majority of the tributaries in this area, with the exception of the Hood River, are very short and may have historically only contained a few hundred meters of usable habitat.

Estimates by Maher et al. (2005) indicate that the Oregon tributaries to the upper Gorge (excluding the Hood River) historically contained 11 km of coho spawning and rearing habitat. Based on the opinion of ODFW biologists and the absence of historical information on the abundance of coho in this area, the TRT determined that (at a minimum) a combination of upper Gorge tributaries in addition the Hood River provided sufficient habitat and geographical structure to support a demographically independent population (Hist. Pop. Structure of the Willamette and LCR 2006).

2 Current Conditions

2.1 Current Population Status and Goals

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

- ESA Status: Coho spawning in the minor tributaries to the Columbia Gorge are part of the Lower Columbia Coho ESU which was listed as Threatened under the ESA in 2005.
- Population Designation: Unknown
- Current Viability Rating: Unknown
- Recovery Goal for Abundance: Unknown
- Productivity Improvement Expectation: Unknown
- Habitat Productivity and Capacity: Productivity: 1.5; Capacity 100

2.2 Current Hatchery Programs Affecting this Population

No coho hatchery program currently operates these tributaries; however, about 100 adult coho from other programs are estimated to stray into this system annually. Under the current scenario, pHOS is estimated at 65% even though no hatchery coho are released.

Estimated number of hatchery strays affecting this population:

- Hatchery strays from in-basin segregated and out-of-basin hatchery programs: 102 fish

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).

Our analysis estimated Adjusted Productivity (with harvest and fitness factor effects from AHA) would increase from 0.8 to 1.5. Average abundance of natural-origin spawners (NOS) would decrease from approximately 45 fish to 37 fish. Harvest contribution of the natural and hatchery populations would go from approximately 12 fish to 9 fish.

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).

Recommendations

The HSRG does not have any specific recommendations for this population.

Table 1. Results of HSRG analysis of current condition and HSRG Solution for Lower Columbia Gorge Tributaries Coho. 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	None None	-	0%	0%	65%	0.00	45	0.8	12	0
No Hatchery	None None	-	0%	0%	0%	1.00	37	1.5	9	-
HSRG Solution	None None	-	0%	0%	40%	0.00	21	0.8	6	0
HSRG Solution w/ Improved Habitat	None None	-	0%	0%	37%	0.00	25	0.8	7	0