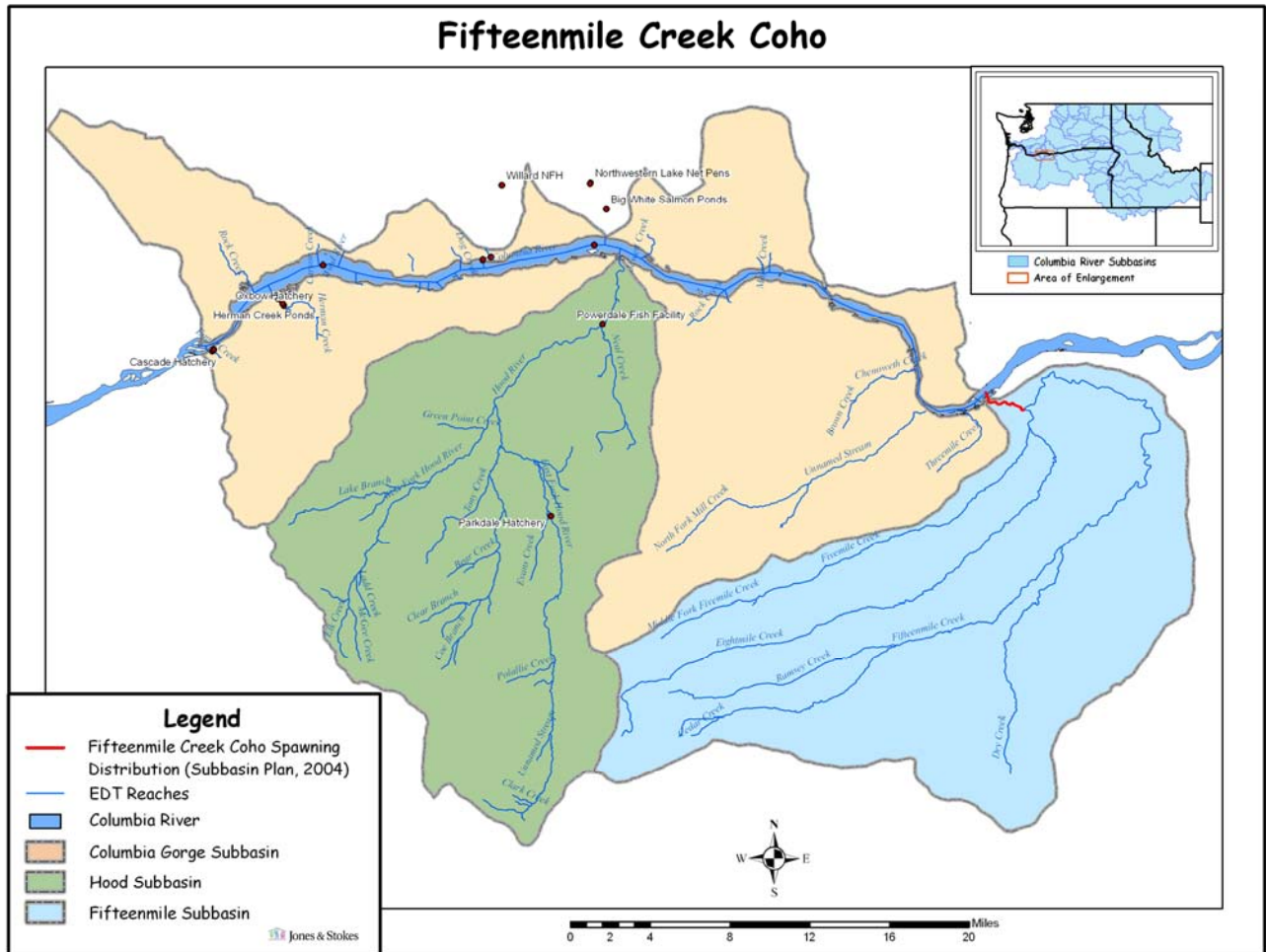


Hatchery Scientific Review Group Review and Recommendations

Fifteenmile Creek Coho Population and Related Hatchery Programs

January 31, 2009



1 Fifteenmile Creek Coho

Coho have been documented to spawn in the lower part of Fifteenmile Creek below and just above Seufert Falls. They are thought to spawn only in Mill Creek and the mouths of Fifteenmile, Threemile, Chenowith, Mosier and Rock creeks. Fifteenmile coho were not selected as a focal species by Subbasin Plan authors because the authors did not believe that the population was native to the subbasin. Coho would have difficulty completing their juvenile freshwater rearing in this portion of the stream (Fifteenmile Subbasin Plan 2004).

From 1998 to 2000, ODFW maintained a screw trap near the mouth of Fifteenmile Creek to monitor out-migrating smolts. The screw trap was operated again in 2003 jointly by US Forest Service and ODFW. Coho juvenile migrants were captured in 1998 and 2003. In each year, two juveniles were captured. In 1999 and 2000, no coho were captured at the screw trap (Fifteenmile Subbasin Plan 2004).

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: Fifteenmile coho are not included as a part of any ESU. The eastern-most portion of the Lower Columbia Coho ESU is found in the Hood River subbasin immediately to the west of the Fifteenmile Creek subbasin.
- Population Designation: Unknown
- Current Viability Rating: Unknown
- Recovery Goal for Abundance: Unknown
- Habitat Productivity and Capacity: Productivity: 1.5; Capacity: 100
- Productivity Improvement Expectation: Unknown

2.2 Current Hatchery Programs Affecting this Population

No Coho hatchery programs are currently operating in this subbasin.

Estimated number of hatchery strays affecting this population:

- Hatchery strays from in-basin segregated and out-of-basin hatchery programs: 59 fish that represent an estimated 62% of the spawning population.

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 0.6 to 1.3. Average abundance of natural-origin spawners (NOS) would decrease from approximately 29 fish to approximately 18 fish. Harvest contribution of the natural and hatchery populations would go from approximately 5 fish to approximately 3 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).

Observations

No coho hatchery programs are currently operating in this subbasin. Habitat limitations are the primary concern for this population.

Recommendations

The HSRG recommends that this population continue to be managed for natural production. Focus actions on habitat protection that will improve productivity and capacity of the system.

Monitor the contribution of hatchery strays from nearby hatchery programs.

Table 1. Results of HSRG analysis of current condition and HSRG Solution for Fifteen Mile 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%	62%	0.00	29	0.6	5	0
No Hatchery	None None	-	0%	0%	0%	1.00	18	1.3	3	-
HSRG Solution	None None	-	0%	0%	43%	0.00	12	0.6	2	0
HSRG Solution w/ Improved Habitat	None None	-	0%	0%	39%	0.00	15	0.7	3	0