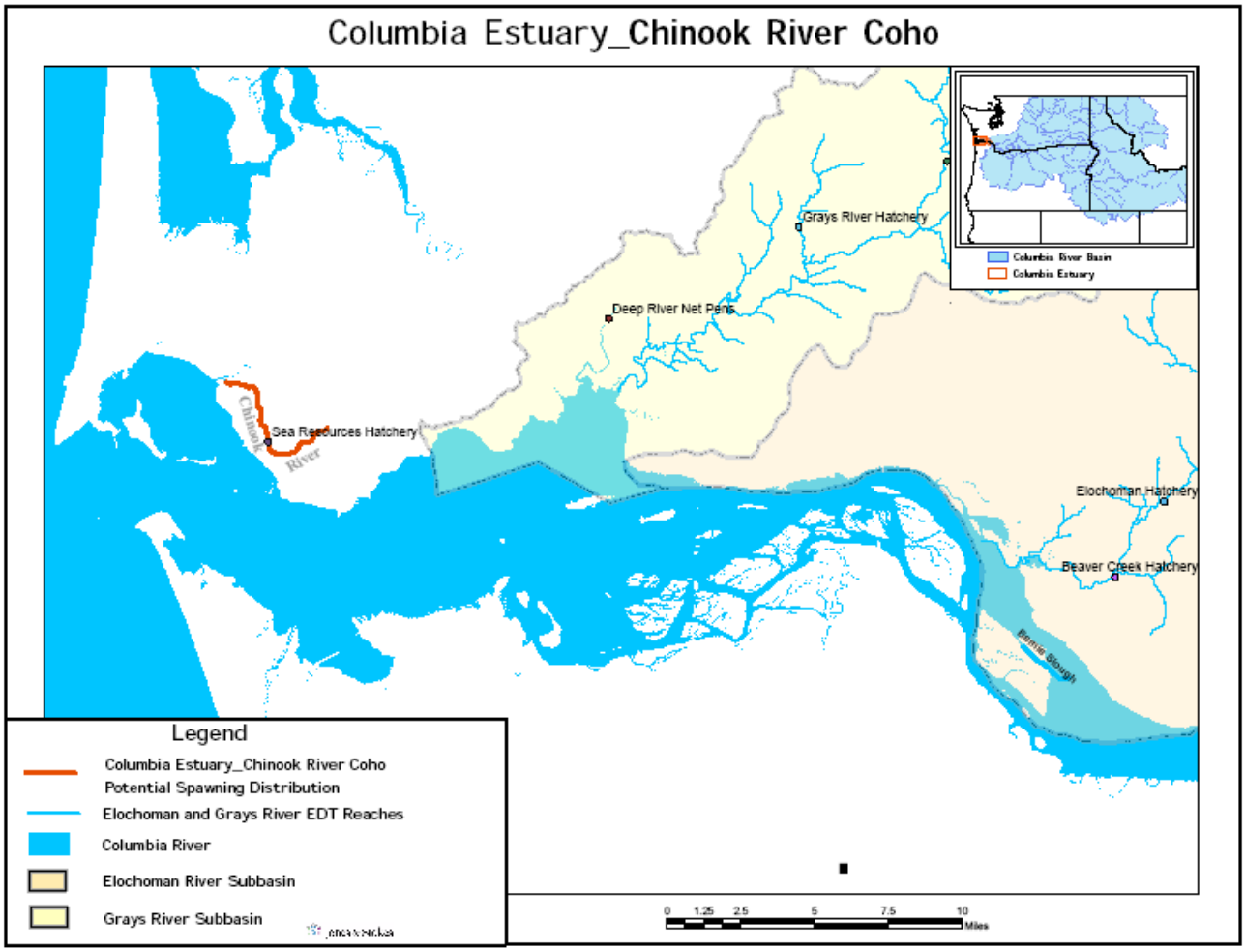
Hatchery Scientific Review Group
Review and Recommendations

Chinook River Coho
Population and Related Hatchery Programs

January 31, 2009



1 Chinook River Coho

Chinook River coho naturally spawn during the period of early November through January in the mainstem Chinook River and tributaries upstream of the WDFW fish weir (RKm 7.7). While this population is described in the Lower Columbia Fish Recovery Board Recovery Plan as Grays/Chinook coho, no status for the Chinook River component is provided.

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: unknown
- Population Description: Chinook River coho are included with the Grays River population and together are a Primary population.
- Recovery Goal for Abundance: See Grays River coho
- Productivity Improvement Expectation: N/A
- Habitat Productivity and Capacity (e.g., from EDT): Productivity:3.7; Capacity: 100

2.2 Current Hatchery Programs Affecting this Population

- No hatchery programs are operating in this watershed.

Estimated number of hatchery strays affecting this program:

- Hatchery strays from in-basin integrated hatchery program: NA
- Hatchery strays from in-basin segregated and out-of-basin hatchery programs: 94 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). (Including strays from other hatchery programs). Our analysis estimated Adjusted Productivity (with harvest and fitness factor effects from AHA) would increase from 1.5 to 3.0. Average abundance of natural-origin spawners (NOS) would increase from 48 to 59. Harvest contribution of the natural and hatchery populations would go from 11 to 14.

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 rate).

3.3 HSRG Observations/Recommendations

Observations

No observations were made for this population.

Recommendations

The HSRG has no specific recommendations for this population.

Table 1. Results of HSRG analysis of current condition and HSRG Solution for Chinook River 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%	61%	0.00	48	1.5	11	0
No Hatchery	None None	-	0%	0%	0%	1.00	59	3.0	14	-
HSRG Solution	None None	-	0%	0%	65%	0.00	49	1.5	12	0
HSRG Solution w/ Improved Habitat	None None	-	0%	0%	63%	0.00	55	1.6	13	0