

Oregon Lower Columbia River Recovery Plan Annual Report Card: 2018

This annual report card is an abbreviated status report that reviews the most recent research, monitoring and evaluation data for Lower Columbia River Salmon and Steelhead. Viable salmonid population (VSP) metrics, where they exist, are used to compare against the populations status at the time the Plan was implemented to determine whether status has improved, remained the same or declined. The annual report card also documents formal adaptive management decisions, recommendations and actions in regards to achieving plan goals under the delisting scenarios in the plan. Detailed information regarding VSP metrics and yearly plan goals are found at <http://www.odfwrecoverytracker.org/>.

Coho: (ESU wide)

Wild adult coho spawner abundance decreased across the Evolutionarily Significant Unit (ESU) compared to 2017. All independent populations, with the exception of Upper Gorge/Hood River population decreased in spawner abundance. Lower Columbia River coho were affected by a moderate marine survival rate. The ESU realized a 64% decline in spawner abundance compared to the previous year and nearly all populations (that were monitored) showed steep declines that varied from 54% in the Scappoose to 96% in the Clatskanie. Adult returns in the Clatskanie dropped to an estimated 25 spawners. The ESU declines in spawner abundance were similar to the decline in Columbia River “up river” coho, which saw a decline of 46%, but not similar to Oregon Coast Coho which saw an 18% increase in spawner abundance.

Under the interim measurable criteria for biological viability, the Scappoose, Clatskanie, Sandy and UG/Hood populations will not pass the abundance/productivity goals. The Clatskanie, Scappoose, Clackamas, Sandy and UG/Hood populations will not pass the spatial structure goals (percent occupancy of habitat) and the Clatskanie, Lower Gorge and Hood will not pass the diversity goals (pHOS). Examination of average Coho abundance pre and post plan (2002-2009 v. 2010-2018) shows all primary populations increasing. Due to sampling difficulties, we were unable to accurately detect trends in the Lower Gorge and UG/Hood populations.

The 2018 LCR coho harvest for ocean and Columbia River fisheries (11.1%) remained below the NOAA harvest guidelines of 18% for all populations that are subject to the interim evaluation criteria. Combined ocean and Columbia River harvest has remained below the Lower Columbia Coho harvest matrix for 8 of 9 years.

Fall Chinook: (ESU wide)

Abundance based surveys began for Clatskanie, Scappoose, Sandy and Clackamas populations in 2012. Index counts go back further in the Clatskanie and Sandy populations. Yearly abundance goals have not yet been produced where interim measurable criteria for biological viability can be assessed. Current trends from 2013-2018 remain similar amongst the years and are at extremely low levels. The Big Creek

and Young's Bay populations continue to return at low numbers (34-116). The Clatskanie and Scappoose populations continue to have abundance levels near zero. The Clackamas population has varied from 34-700 adults and spawning is typically limited by temperature and flow until October. Currently, Sandy River fish abundance estimates are problematic because spring, fall and late-fall Chinook spawners overlap spatially and temporally. Staff have collected otoliths and genetic material from carcasses on the spawning ground to proportion spawners between the different runs, and funding was secured in 2018 to process these samples. There are no current estimates of abundance for Sandy fall Chinook populations until the results of the genetic sampling are applied. ODFW is not producing VSP estimates for gorge strata populations.

Under the interim measurable criteria for biological viability, the Clatskanie is the only population that has abundance/productivity (A/P) goals and is failing. No A/P goals for other populations have been produced, but given the fact that, most of the populations have abundance levels near zero there should be a strong concern for meeting future A/P goals. The Clatskanie is the only population that will not be able to attain PHOS goals under the diversity metric.

Harvest data for LCR fall chinook was estimated at the ESU level for ocean and mainstem Columbia River fisheries (below Bonneville Dam). The ESU is subject to a yearly harvest rate under a harvest matrix referred to as "abundance based management". The harvest rate, at the ESU level, was calculated for ocean and Columbia River fisheries (34.5%) and was below the allowable 2018 harvest rate of 38% for all populations, with the possible exception of gorge strata stocks. Harvest upstream of Bonneville Dam is not calculated and the total harvest rate is unknown for gorge strata populations. Since 2010, the yearly harvest rate has been exceeded twice. The recovery plan evaluation thresholds for harvest related metrics allows exceedance of the yearly harvest thresholds only once in a 10 year period. Since the estimate is at the ESU level, all populations (except the UG/Hood) have failed the diversity (harvest) metric.

Late-Fall Chinook: (Sandy)

No data are reported for any of the recommended metrics, nor is harvest estimated. As noted above, estimating abundance for Sandy late fall-Chinook will depend on further research to proportion spawner estimates among spring, fall, and late-fall Chinook. This population is listed as a low risk of extinction, but no methodology is finalized to assess risks (see explanation under Sandy Fall Chinook).

Spring Chinook: (Clackamas, Sandy and Hood)

Clackamas and Sandy spring Chinook populations decreased in abundance between 2017 and 2018. While no A/P goals have yet been made for these two populations in 2018, both still remain above the CATAS 100 year average delisting goals and are the healthiest populations within the entire ESU. Model estimates of naturally produced Hood River spring Chinook escapement were not available for the 2018 run year due to data limitations. A total of 49 adults and 2 jacks were captured at adult collection facilities in the Hood, which doubles the count from the previous year (n=20 adults, 4 jacks). Hood River abundance estimates for 2012-2017 are now included in the recovery tracker. Currently, there are no

yearly abundance goals against which interim measurable criteria for biological viability could be assessed for Hood spring Chinook.

Harvest data for LCR spring Chinook is estimated at the ESU level for ocean, mainstem Columbia River and tributaries. The ESU is subject to a yearly combined ocean and freshwater harvest rate of 25%. The harvest rate, at the ESU level, was calculated and below the allowable harvest rate for years 2010-2016. Clackamas spring Chinook are part of the Upper Willamette ESU and harvest remains below the evaluation threshold of 15% for freshwater fisheries (5.12%).

Winter Steelhead: (Clatskanie, Scappoose, Clackamas, Sandy, Hood)

Adult abundance in the Clackamas and Sandy decreased from 2017 abundance levels at 49% and 68% respectively, while the Hood population increased from 2017-2018 by 27%. The Sandy population is still above long-term delisting goals. Under the interim measurable criteria for biological viability, the Hood River population will not meet the diversity goal (pHOS) but pHOS has decreased for three consecutive years.

The Clatskanie and Scappoose populations are within the SW Washington Distinct Population Segment (DPS). This is an unlisted DPS that has only broad sense recovery goals. Both populations had modeled abundances in the 2,000-3,500 fish range during the writing of the recovery plan, but average returns from 2012-2018 are less than 1,000 fish for the Clatskanie and less than 200 for the Scappoose. For the last two years, adult returns in the Scappoose have been under 50 spawners.

Summer Steelhead: (Hood)

Adult returns of summer steelhead followed the same pattern as winter steelhead and increased in the Hood population during 2018 by 22%. Currently, there are not enough yearly abundance estimates to produce yearly abundance goals against which interim measurable criteria for biological viability can be assessed.

Chum Salmon: ESU

Lower Columbia River chum populations on the Oregon side of the river exist at a fraction of their historical abundance, with eight of nine populations considered functionally extirpated. Returns to Oregon populations are consistently under 200 adults. Some of these fish may be locally produced, some stray from Washington, and some are returns from the Big Creek Hatchery (BCH) broodstock program.

The broodstock program began in 2010 with collections of adults in the Grays River located in SW Washington. Grays River adults were collected from 2010-2014. In 2015 – 2017, returns to Big Creek Hatchery were used to sustain the broodstock collection. Returns in 2017 were insufficient to meet the collection goal of 100,000 eggs, and in 2018, 50,000 eggs were transferred to Big Creek from the Grays River to supplement returns to BCH. The number of hatchery fry released from BCH increased from 2017 to 2018, but remained below the goal of 100,000 fry released. Fall returns to BCH of our broodstock fish increased from eight in 2017 to 39 in 2018. Although returns of marked fish increased in 2018, it was

substantially below the expected return of 400 adults and the required return of 88 adults to achieve a collection of 100,000 eggs.

Research conducted by partners of the Chum Recovery Workgroup determined that Columbia basin chum salmon average marine survival rate was significantly less than other populations. As a result, research began in 2018 to assess other potential limiting factors. Researchers investigated the distribution and spore densities of the endemic parasite *Ceratonova Shasta*. The parasite was found in water samples from locations where chum are currently extirpated but were historically present, and was generally not found in locations where chum currently spawn. Moreover, spores were present during the time of year when Chum Salmon fry occupy habitat in the freshwater portion of the Columbia River estuary.

The Chum Love work group secured an OWEB technical assistance and landowner outreach grants to develop a strategic action plan for a prioritized list of restoration actions that deliver the highest ecological impacts for chum salmon in the Young's Bay and Big Creek watersheds.

Habitat Restoration and Effectiveness Monitoring-

ESU wide restoration goals were developed in 2014 based on best available science and modeled in threat reduction scenarios to reduce tributary habitat mortality to a level that is consistent with recovery plan mortality rates for each population, under the delisting scenario. The habitat restoration targets are useful as a starting point to visualize the relative amount and types of restoration work needed in tributaries. When or if these targets are met, all implementers are encouraged to continue to implement additional projects until the biological listing factors for each population are fully addressed. Table 1 lists habitat restoration accomplishments by population for 2018.

Table 1. Habitat Restoration Projects Completed within the ESU during 2018*

Population	Culverts Replaced (#)	Water Conserved(cfs)	LWD placed (mile)	Irrigation Improvement Projects (#)	Side Channel Creation (mile)	Alcove Creation (m2)	Riparian Planting (mile)
Young's Bay	1						
Big Creek	3				0.42		1.6
Clatskanie	1						
Scappoose	2		3.2				2.38
Clackamas	2		3.26		1.19	40,223	10.22
Sandy			4.99		2.93	32,282	1.08
Lower Gorge							
Upper Gorge							
Hood	2	0.5	0.9	6			0.08
Total	11	0.5	11.45	6	4.54	72,505	15.36

*Information from OWEB and BPA databases as well as annual and restoration practitioners reports

According to the plan, the schedule for completing habitat restoration is listed as within 15 years. Nine in-water work periods have passed since plan adoption. If practitioners were on track to meet restoration goals, under the delisting scenario, over a 15-year period, then 60% of the goals should be achieved in each population. The Young's Bay and Sandy populations are on track to meet all of the restoration goals. Riparian and off-channel habitat goals have been met in the Clackamas and Scappoose populations. The remaining populations vary from 0%-42% of the goals.

Key accomplishments from local restoration practitioners are:

- The Hood River Watershed Group and East Fork Irrigation District converted 2.2 miles of open canal to a pressurized pipe, which resulted in 0.5cfs of conserved water for instream flow.
- The City of Portland and the US Army Corps of Engineers completed the Oaks Bottom project improving access to 75 acres of Willamette River off-channel habitat.
- West Multnomah SWCD, USACE, BPA and CREST restored flow from the Columbia River to Sturgeon Lake, a 3000-acre flood plain wetland and lake.
- The Clackamas Partnership completed the OWEB Focused Investment Partnership funded Strategic Action Plan.

Adaptive management:

None at this time

Research Monitoring and Evaluations Addendums:

While not adaptive management per se, monitoring of fish populations is critical to a yearly assessment of the effectiveness of plan actions and prioritization of limited monitoring funds. The following actions are recommended for implementation:

- Sandy basin Chinook genetic samples were analyzed. Now, ODFW Research staff to take the results and proportion fall, late-fall and spring Chinook and apply to Sandy Chinook estimates to define population estimates for Sandy Chinook runs. Update the recovery tracker.
- ODFW Conservation and Recovery staff to resume annual meetings with fish districts to define district priorities for conservation plan implementation.
- Development of survival models for adult Hood River wild and hatchery steelhead is needed considering that pHOS can no longer be estimated using current methodologies given the elimination of winter steelhead sport harvest monitoring.

Current and past reports as well as presentations and a host of LCR Recovery Plan information can be found at http://www.dfw.state.or.us/fish/CRP/lower_columbia_plan.asp.

Recovery Plan Adopted: August 2010

Date Reviewed: December 2019