

Oregon Lower Columbia River Recovery Plan Annual Report Card: 2015

The 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 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.

Coho: (ESU wide)

Wild adult coho abundance was down across the ESU and affected by a low marine survival rate. At the population level, abundance varied from 1%-45% of the abundance goals. For two consecutive years, the Upper Gorge /Hood River (UG/HR) population has likely not trended as other populations in the ESU and remained at low/very low levels during periods of high and low marine survival rates (2014 & 2015 respectively). Monitoring results show the UG/HR population generally performs well below abundance goals, and was further impacted by the poor 2015 return year.

Coho harvest is estimated at the Evolutionary Significant Unit (ESU) level and is subject to the Lower Columbia River (LCR) Coho Harvest Matrix which contains harvest rates (HR) for ocean and in river fisheries. From 2008-2014 the National Marine Fisheries Services (NMFS) biological opinion (BO) limited the HR to ocean fisheries only. Oregon and Washington requested a review of the BO in light of new data and incorporated "weak stock management" into the matrix. NMFS produced a new BO, and in 2014 allowed the full allocation of ocean and in river HR's. This added harvest (4% and 11% in 2014 and 2015 respectively) in addition to an unknown HR on UG/HR coho in zone 6 fisheries coincides with and may be further contributing to extremely low UG/HR coho abundance and spatial structure.

Fall Chinook: (ESU wide)

The first reportable abundance based estimates for Clatskanie, Scappoose, Sandy and Clackamas populations were in 2013 (since plan adoption). Index counts go back further in the Clatskanie and Sandy populations. To date there is not enough return years to determine abundance goals, but should be available by 2018. Current trends from 2013-2015 remain similar amongst the years and are at extremely low levels. The Clatskanie and Scappoose populations continue to have abundance levels near 0. The Clackamas population has varied from 150-300 adults and spawning is limited by temperature and flow until October. Currently, Sandy River fish abundance estimates are problematic. There is no current methodology to separate the spatial and temporal overlap of fall chinook, spring chinook and late-fall chinook, so there are no current estimates of abundance at this time.

Harvest data for fall chinook is estimated at the ESU level and is subject to a yearly harvest rate under a harvest matrix referred to as "abundance based management". The HR at the ESU level was below the

allowable 2015 HR value of 41% for all populations with the possible exception of Hood River stocks, which are not estimated due to an unknown HR in zone 6 fisheries.

Late-Fall Chinook: (Sandy)

No data are reported for any of the recommended metrics, nor is harvest estimated. 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)

2015 adult counts for the Clackamas and Sandy have been and continue to trend well above the abundance goal for these two populations. For the Hood River population, 2015 marks the first year since the removal of Powerdale Dam (2010) that a natural origin abundance estimate has been made at the population level. Recovery Plan abundance goals have not been made at this time for the Hood River population.

Harvest data for LCR spring chinook are not estimated but limited by upriver spring chinook run size in both the Columbia and Willamette Rivers. The Clackamas, Sandy, and Hood populations are subject to sport, commercial and tribal fisheries in the ocean, Columbia & Willamette Rivers and their respective tributaries. It is unknown if the 25% harvest impact goal was exceeded in any year since plan adoption.

Winter Steelhead: (Clackamas, Sandy, Hood)

Adult abundance in the Clackamas and Hood River populations have continued to increase over the last 2 years. The Sandy population also shows increasing abundance every year since plan adoption. The Sandy population far exceeds abundance goals and it is hypothesized the growth is attributed to improved survival of juvenile fish after Marmot Dam removal, in combination with the extensive restoration work that has been ongoing in the Sandy basin over the past few years on Salmon and Still Creek. Hood River proportion of hatchery spawners on the spawning grounds (pHOS) is averaging 60% over a 6 year period with a goal of 10%. Low flows helped with weir capture and in-river fisheries exploitation in 2015 but cannot be counted on a yearly basis.

Summer Steelhead: (Hood)

2015 marks the first year since the removal of Powerdale Dam that abundance estimates were made. Multiple years of returns are needed to develop abundance goals.

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 and when or if met, all implementers are encouraged to continue to implement

additional projects until the biological listing factors for each population are fully met. Figure 1 lists habitat restoration accomplishments by population for 2015.

Figure 1. Habitat Restoration Projects Completed within the ESU During 2015

Population	Culverts Replaced (#)	Water Conserved(cfs)	Flood Plain Enhancement (acre)	LWD placed (mile)	Irrigation Improvement Projects (#)	Side Channel Creation (mile)	Alcove Creation (m2)	Riparian Planting (mile)
Young's Bay	2			1.75				0.75
Big Creek								
Clatskanie	1			0.2				0.5
Scappoose	1			1.4				
Clackamas				0.38		0.38	3058	6.79
Sandy	1			3.68		1.05	352	7.9
Lower Gorge								
Upper Gorge								
Hood		0.5	2.5	0.24	5			0.24
Total	5	0.5	2.5	7.65	5	1.43	3410	16.18

According to the plan, the schedule for completing habitat restoration is listed as within 15 years. We are now 6 years since plan adoption. If practitioners were on track to meet restoration goals over a 15 year period, then 40% of the goals should be achieved in each population. The Young's Bay and Sandy populations are on track to meet the restoration goals. The remaining populations vary from 0%-28% of the goals.

The Sandy basin is a bright spot within the ESU by meeting the restoration goals. This effort is paying off and effectiveness monitoring is showing improved habitat conditions as well as increased adult spawners and juvenile rearing in the restoration reach of Salmon River. 58 engineered log jams have been strategically placed from 2010-2016. As a result, large wood increased in constructed wood jams 2-7 fold and LWD numbers increased from 14 to 414 pieces/mile. Side-channel lengths increased from .1 to 1.0 mile/river mile. Snorkel surveys are showing these side channels are now rearing on average 10,000 coho and 3300 steelhead juveniles/year. Also, juvenile fish densities at created mainstem large woody debris jams have a 5x greater use than mainstem pools without large wood. Adult spawners are using the restored reach in increased numbers. Winter steelhead spawners within the restoration reach doubled from 2012 to 2016 (34 to 68 redds/mile). Spring Chinook spawners in the restoration reach has more than doubled over the 1996-2010 average (19 to 40 redds/mile).

While the Hood River Basin is not on track to meet habitat restoration goals, a unique primary limiting factor in the LCR ESU affecting Hood River populations is water quantity. The Hood River Watershed

Group focuses effort in developing projects aimed at improving water quantity. The Group completed a Basin Study looking at current and future water demands for all uses in the basin from irrigation and municipal needs to fish needs. This information will feed into a future basin strategy.

Adaptive management-

Under the plan's adaptive management process when monitoring shows that progress is not being made toward achieving the desired status it may be necessary to consider other approaches to obtain the improvement in survival needed. The following adaptive management strategies are recommended:

- A survey be conducted by ODFW Columbia River Management (CRM) to determine the proportion of total zone 6 coho that are harvested between Bonneville Dam and Hood River and then consider removing that proportion from the allowable harvest rate from the NMFS Coho Harvest Matrix.
- As with Hood River coho salmon, it's recommended that a survey be conducted by ODFW CRM to determine the proportion of total zone 6 fall chinook that are harvested between Bonneville Dam and Hood River and then consider removing that proportion from the allowable HR determined yearly by NOAA under abundance based management.
- ODFW Deschutes West Side District to continue exploring options for reducing winter steelhead pHOS until a downward trend towards the goal of 10% is realized.

While not adaptive management per se, monitoring and harvest estimates are critical to a yearly assessment of the effectiveness of plan actions. The following actions are recommended for implementation:

- ODFW Corvallis Research to investigate methodology for determining fall chinook from late-fall chinook and then collect the needed information during the entire run timing to obtain abundance estimates. Additionally, it's recommended for ODFW East Oregon Research to determine a methodology and begin monitoring adult abundance in the Hood River fall chinook population.
- ODFW Columbia River Management and the respective ODFW fish districts to determine spring chinook total harvest rate by population and make adjustments if the 25% harvest rate is exceeded.
- ODFW East Oregon Research to continue working with the CTWS to genotype returning adult summer and winter steelhead to better define the spatial and temporal overlap of steelhead in the Hood River basin.
- ODFW East Oregon and Corvallis Research to continue to investigate methodology to obtain Hood River coho abundance estimates.

