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NW Fishletter #320, July 18, 2013

[2] Feds OK Lower Columbia Recovery Plan; Estimated Cost $2 Billion

NOAA Fisheries has finally approved a **plan** to recover stocks in the lower Columbia region, where Chinook, coho and chum salmon are listed for ESA protection. The recovery plan has been in the works for years, with much of the heavy lifting performed by state and local agencies along with other stakeholders.

A plan for the Washington side, led by the Lower Columbia Salmon Recovery Board, had been under construction since 2005, and completed in 2010, with the addition of new information on coho. The state of Oregon, led by ODFW, got a later start, but also completed its plan in 2010.

NOAA has spliced some of its own work into the huge document, including a recovery plan for the White Salmon subbasin completed with help from the Yakama Nation, Klickitat County and WDFW. The plan also sports the 2011 NMFS estuary ESA recovery module completed in 2011, and a 2008 ESA recovery plan module that focused on hydro projects.

The estimated cost of recovery actions for the four threatened species in the lower Columbia is pegged at approximately $2.1 billion over the next 25 years, with $614 million "expected to be needed in the first 5 years." More than half a billion dollars is slated for estuary actions designed to benefit all ESA-listed ESUs in the basin over that 25-year time frame.

The cost estimates include funding for implementation of both capital and non-capital projects by local, tribal, state, and federal governments, private business, and other expenditures for supervision and coordination. The plan estimates that $738 million will be spent on the Washington side, $758 million on the Oregon side, with another $16 million in the White Salmon subbasin.

Implementation of the recovery actions is completely voluntary, but will be helped by the required actions contained in the 2008 BiOp and its 2010 supplement. Every few years, the entities in charge of the major recovery

regions, ODFW, the lower Columbia Fish Recovery Board, and NMFS, will take stock of the plan's progress toward the recovery goals guided by NOAA's viable population analyses of the ESA-listed populations.

"There are various ways to refer to extinction risk: as viability, persistence probability, extinction risk, or--at the population level--population status," says the plan's executive summary. "This recovery plan frequently uses the terms "persistence probability" and "population status." Only populations with a persistence probability of 95 percent or higher over a 100-year time frame are considered viable."

These fish populations will have to pass a number of significant milestones before they are considered "recovered." The region's Willamette-Lower Columbia Technical Review Team developed biological criteria and methodologies at three different levels: ESU, stratum, and population.

Here are the key points:

- Every stratum that historically existed should have a high probability of persistence. (NOAA has defined strata as independent populations that are organized into larger groups. "Stratum designation is based on the combination of ecological zone and life history strategy (indicated by the time of year when adults return to fresh water to spawn).
- Within each stratum, there should be at least two populations that have at least a 95-percent probability of persisting over a 100-year time frame.
- Within each stratum, the average viability of the populations should be 2.25 or higher, using the WLC TRT's scoring system. Functionally, this is equivalent to about half of the populations in the stratum being viable; a viable population is one whose persistence probability is high or very high.
- Populations targeted for viability should include those within the ESU that historically were the most productive ("core" populations) and that best represent the historical genetic diversity of the ESU ("genetic legacy" populations). In addition, viable populations should be geographically dispersed in a way that protects against the effects of catastrophic events.
- Viable populations should meet specific criteria for abundance, productivity, spatial structure and diversity.

Chinook: Fish populations in the plan include the Lower Columbia River Chinook salmon ESU, which historically consisted of a total of 32 independent populations: 21 fall populations, two late-fall populations, and nine spring populations. Today only two--the North Fork Lewis and Sandy late-fall populations--are considered viable. The plan says most populations (26 of 32) have a very low probability of persistence over the next 100 years, and some are gone or nearly so. About 20 hatchery stocks are included in this ESU.

The plan says five of the six "strata" in the ESU fall significantly short of the WLC [Willamette-Lower Columbia] TRT [Technical Review Team] criteria for viability, and one stratum--Cascade late-fall--meets the WLC TRT criteria.

Chum: Historically, the Columbia River chum salmon ESU consisted of 17 independent populations, but the plan says 15 populations in this ESU are so depleted that either their baseline probability of persistence is very low or they are extirpated or nearly so. "Currently, almost all natural production occurs in just two populations: the Grays/Chinook and the Lower Gorge. Three hatchery programs are included in this ESU. All three strata in the ESU fall significantly short of the WLC TRT criteria for viability.

Steelhead: Historically, there were 23 independent populations of steelhead in the lower river, 17 winter-run populations and six summer-run populations, but the plan says 16 of the 23 lower Columbia River steelhead populations have a low or very low probability of persisting over the next 100 years, and six populations have a moderate probability of persistence. "Only the summer-run Wind population is considered viable. There are eight hatchery programs in this ESU. All three strata in the ESU fall significantly short of the WLC TRT criteria for viability.

Coho: As for coho, the lower river once was home to 24 independent populations, but 21 are considered to have a very low probability of persisting over the next 100 years, and none is considered viable. All four strata in the ESU fall significantly short of the WLC TRT criteria. There are about eight hatchery programs in this ESU. ***-B. R.***

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Lower Columbia River Recovery Plan for Salmon & Steelhead

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NW Fishletter is produced by Energy NewsData.
Publisher: Cyrus Noë, *Editor:* Bill Rudolph
Phone: (206) 285-4848 Fax: (206) 281-8035

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