

NOAA Fisheries West Coast Region Southern Oregon/Northern California Recovery Plan

Questions & Answers

What is NOAA Fisheries releasing?

NOAA Fisheries is releasing a plan to guide the recovery of threatened coho salmon in southern Oregon and northern California. The Southern Oregon/Northern California Coast (SONCC) coho salmon is listed as a threatened species under the federal Endangered Species Act (ESA). Section 4(f) of the ESA directs NOAA Fisheries to develop and implement recovery plans for threatened and endangered species. This recovery plan serves as a resource to organize on-the-ground action to recover SONCC coho salmon. The plan provides guidance to federal, state, local, and tribal resource managers, as well as private organizations, on steps they can take to help recover coho.

Where is this species located?

SONCC coho salmon includes 40 populations of coho salmon in coastal streams from the Elk River near Cape Blanco, Oregon, through and including the Mattole River near Punta Gorda, California. Spanning Oregon and California, SONCC coho salmon can be found in 13 counties: Coos, Douglas, Curry, Josephine, Jackson, Klamath, Del Norte, Siskiyou, Humboldt, Trinity, Mendocino, Lake, and Glen.

Why is Southern Oregon/Northern California coho salmon facing extinction?

Several factors contributed to the decline of coho salmon. Development activities throughout northern California and southern Oregon have changed the landscape significantly for these fish over the last 100 years. Dams, diversions, agricultural development, and resource extraction, among other activities, reduced the amount and quality of habitat available to SONCC coho salmon, in turn impacting the health of this species. Collectively, these activities contributed to the species' decline and its 2005 listing under the Endangered Species Act.

Am I legally required to implement this recovery plan?

The recovery plan is not a regulatory document and its implementation is voluntary. The plan uses the best available scientific information to identify the actions needed to prevent the species' further decline and achieve its recovery. The plan also includes criteria NOAA Fisheries will use to determine when SONCC coho salmon are recovered and the protections of the ESA can be removed as they are no longer needed.

If the recovery plan serves as guidance, and is not a regulatory document, what does NOAA Fisheries seek to accomplish?

NOAA Fisheries intends to recover SONCC coho salmon in accordance with its ESA responsibilities. This plan serves as the road map to recovery. The plan identifies the actions needed to achieve recovery, and includes objective, measurable criteria by which we will determine when recovery has been reached. By clearly articulating under what conditions SONCC coho can be determined "recovered" and the actions needed to reach

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that point, the plan allows recovery partners to integrate actions that will promote SONCC coho salmon recovery into existing restoration programs and processes.

What types of actions are required to recover SONCC coho salmon?

The actions identified in this recovery plan are designed to restore the ecological processes that support healthy coho populations and to address various activities that harm these processes and threaten the species' survival. For example, actions call for restoring riparian forest conditions by improving timber harvest and grazing practices; restoring floodplains and channel structure by increasing the amount of large wood in streams; improving in-stream flows by changing the amount and timing of water withdrawals; restoring passage for coho salmon as they migrate to and from the ocean; and protecting and restoring estuarine habitat.

Are all recovery actions of equal importance?

All actions listed in the recovery plan are needed to recover SONCC coho salmon, but some actions provide more immediate benefit to coho salmon than others. When choosing particular recovery actions to implement, conservation partners should consider recovery action priorities. Each recovery action's priority is based on: 1) whether an action is needed to prevent extinction or a significant decline of any population; 2) the extent to which each action will address the primary stresses and threats limiting recovery; 3) whether the action will benefit coho salmon immediately; and 4) whether the action will help a population escape a high risk of extinction.

What is the timeframe for achieving coho recovery?

The plan identified two phases for recovery. Phase I will be reached when a population is large enough that it is no longer at high risk of extinction. Achievement of Phase I could occur relatively quickly if sufficient funds are available to carry out needed actions. Phase II is reached when each population is rebuilt to the size necessary, and, as such, can contribute to the recovery of the entire species. Given that habitat degradation has occurred over more than 100 years, some aspects of habitat restoration will take decades to be fully realized. For example, trees large enough to provide large wood to streams, which provides healthy instream habitat for fish, can take decades to grow to sufficient size.

Is salmon recovery possible given California's current drought conditions?

Yes. Providing sufficient and cool water flows for salmon in warm, critically dry years such as this one is immensely difficult, but droughts are not new phenomena to California. Salmon evolved under these conditions. Effective water management must balance human health, agricultural production, and species' conservation. To protect SONCC coho salmon during the current and future droughts, the plan recommends enforcement of unpermitted diversions, identification of in-stream flow needs for

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SONCC coho salmon, and the development of voluntary water conservation and in-stream flow agreements in certain watersheds.

In order to achieve recovery of SONCC coho salmon, it will be necessary to ensure there is sufficient water in rivers for the needed number of coho salmon to spawn and rear successfully. The recovery plan identifies high priority actions that can be used to help make tough decisions about the amount and timing of water releases and diversions. Using the recovery plan to help make these decisions will ensure that we are using the best available information to minimize the drought's impacts on coho salmon. NOAA Fisheries is working with the California State Water Resources Control Board to set flow objectives for the near- and long-term. These objectives seek to balance water demands with adequate protections for listed fish.

How will we know Southern Oregon/Northern California coho salmon have recovered?

The recovery plan establishes criteria for removing SONCC coho salmon from the federal list of threatened and endangered species. When these criteria are met, the species will be recovered. There are two types of criteria identified in the plan: biological viability criteria and stress and threat abatement criteria. The former includes goals for abundance, or the number of individuals in a population; productivity, or the growth rate of a population; spatial structure, or the geographic distribution of individuals; and diversity, which ensures the retention of the genetic, life history, and behavioral variation within a population. Stresses are factors that directly affect the fish, including insufficient water, limited large wood supply leading to inadequate instream conditions, and water which is too warm. Threats are the human activities which cause the stresses, such as water withdrawals. When stress and threat abatement criteria are met, the stresses and threats facing this species and contributing to its decline will have been sufficiently reduced to allow for coho salmon to recover to healthy numbers and survive into the future.

In addition to ESA recovery (recovery of species to the extent that it can be removed from the list of threatened and endangered species), the recovery plan includes "broad sense recovery" goals. Broad-sense recovery is the goal of having sufficiently abundant, productive, and diverse populations of wild coho salmon to provide for ecological, cultural, and economic benefits. Broad sense recovery would allow for such societal benefits, such as additional fishing opportunities, and is a goal of the states of California and Oregon.

What are the economic benefits of recovering Southern Oregon/Northern California coho salmon?

The act of implementing the recovery plan itself, together with the actual recovery of the species, will provide substantial economic benefits. The largest economic returns resulting from recovered salmon and steelhead populations are associated with sport and commercial fishing. For example, the California commercial and recreational salmon

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fisheries are estimated to generate a total of \$118-279 million¹ in income annually, and provide roughly two to three thousand jobs. These figures will increase as salmon runs increase, providing both economic gains and more commercial and recreational fishing opportunities. With a revived sport and commercial fishery, these substantial economic gains and the creation of jobs would be realized across the SONCC range, most notably for river and coastal communities.

The economy also will be stimulated through the employment of workers needed to implement recovery projects. Habitat restoration projects stimulate job creation at a level comparable to traditional infrastructure investments such as mass transit, roads, or water projects.² Every dollar invested in watershed restoration projects travels through the state's economy. Design, implementation, and maintenance of habitat restoration projects require hiring consultants, contractors, employees, and field crews; and purchasing equipment, goods and services. People hired to carry out such projects spend their wages on goods and services in their local communities. In Oregon, for example, 90% of investments in habitat restoration have been shown to stay in the state.³

Habitats restored to properly functioning conditions offer enhanced resource values and provide substantial non-monetary benefits to human communities. These benefits include: improving and protecting the quality of important surface and ground water supplies, reducing damage from flooding resulting from floodplain development, reduced expenditures on bank stabilization or flood control actions, and a reduced incidence of high severity fire. Restoring and maintaining healthy watersheds also enhances important human uses of aquatic habitats, including outdoor recreation, ecological education, field-based research, aesthetic benefits, and the preservation of tribal and cultural heritage.

¹ Employment impacts of CA salmon fishery closures in 2008 and 2009. University of the Pacific. Available at: <http://forecast.pacific.edu/BFC%20salmon%20jobs.pdf>

² The Economic Impacts of Forest and Watershed Restoration in Oregon, Available at: http://www.oregon.gov/OWEB/MONITOR/job_creation_local_economies.shtml

³ Ibid.