

NOAA Fisheries West Coast Region California Central Valley Salmon & Steelhead Recovery Plan

July 2014

Questions & Answers

Why are you issuing this plan?

Development in California's Central Valley has reduced the abundance and distribution of winter-run Chinook salmon, spring-run Chinook salmon, and steelhead such that each of these species has been listed as threatened or endangered under the federal Endangered Species Act (ESA). Section 4(f) of the ESA directs NOAA Fisheries and the U.S. Fish and Wildlife Service to develop and implement recovery plans for threatened and endangered species. We are issuing this plan to guide the recovery of winter-run Chinook salmon, spring-run Chinook salmon, and steelhead so they can be removed from the federal list of threatened and endangered species.

How is this Central Valley Recovery Plan different from NOAA Fisheries' biological opinion on the long-term operations of the Central Valley Project and State Water Project?

NOAA Fisheries issues biological opinions (BiOp) under Section 7 of the Endangered Species Act (ESA). The standard under Section 7 is to ensure that a federal agency's actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Section 7 consultations are limited to a specific federal action in a specific geographic locale, known as an action area.

In the case of the Central Valley Project (CVP) and State Water Project (SWP), NOAA Fisheries' 2009 BiOp concluded that proposed action (i.e., the long-term operations of the projects) would jeopardize the continued existence of winter-run Chinook salmon, spring-run Chinook salmon, and steelhead; and result in adverse modification to their critical habitats. This conclusion was based on analyses of the effects of CVP and SWP operations within and downstream of project-controlled streams. The BiOp identified actions, known as a reasonable and prudent alternative, to improve fish passage, provide fish-friendly flows and water temperatures, and restore habitat.

NOAA Fisheries develops recovery plans under Section 4 of the ESA. Recovery plans guide restoration of threatened and endangered species and the ecosystems on which they depend. The purpose of a recovery plan is to identify the strategies and actions that, if implemented, are expected to improve the listed species' viability and increase its size to the point where the species can be delisted. Unlike BiOps, which only examine a specific federal action, recovery plans address all threats to the species.

If this is just a guidance document, and not a regulatory document, what do you seek to accomplish?

We intend to recover winter- and spring-run Chinook salmon and steelhead. This plan serves as the road map to that end point. The plan identifies the priorities and actions to achieve recovery, and includes objective, measurable criteria to let us know when recovery has been reached. By clearly articulating what a recovered species looks like and the actions needed to reach that point, the plan allows recovery partners to integrate recovery priorities into existing restoration programs and processes.

Will this recovery plan ask for more water for fish?

Yes. In order to successfully recover Central Valley salmon and steelhead, we need more water to remain in the rivers and Delta to better mimic natural historic flows. In particular, more freshwater outflow through the Delta is needed during the winter and spring to improve the survival of juvenile salmon and steelhead as they migrate to the ocean. Since the state and federal water projects were developed in the 1950s and 1960s, far less freshwater moves through the Delta without being diverted than it did historically. This reduction in Delta outflow is one of several factors limiting salmon and steelhead survival.

How is it possible to provide more water for fish given the current drought conditions?

Providing sufficient and cool water flows for salmon in warm, critically dry years such as this is immensely difficult. Each year, federal, state, and local agencies examine water conditions, including demands, to modify water releases from reservoirs. The current drought is unprecedented, and it has resulted in minimum reservoir releases and storm runoff (runoff tends to increase turbidity as well as flow), which has resulted in in-river conditions of low, slow, and clear water – all conditions that tend to increase predation risk for fish.

Droughts are not new phenomena to California. Salmon and steelhead evolved under these conditions. However, it's true the current system has changed the historic landscape. Governor Brown's drought declaration clears the path for the U.S. Bureau of Reclamation and the state to operate their respective water systems, some of the largest in the world, with added flexibility, delivering water to where it is needed most. The first priority is meeting health and human safety needs, as well as legal requirements, while ensuring the best possible use of limited water supplies and focusing on conservation. The federal government will continue to work closely with the state to balance the water needs of people, imperiled species, agriculture, businesses, power, and the environment.

The recovery plan provides watershed priorities that currently are being used to help make the 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 utilizing the best available information to minimize the drought's impacts on listed salmon and steelhead. Though the plan does not quantify how much more water is needed to recover winter- and spring-run salmon and steelhead, NOAA Fisheries is providing technical assistance to the California State Water Resources Control Board in their efforts to set

flow objectives for the near- and long-term. These objectives seek to balance water demands with adequate protections for listed fish.

Over the long-term, the recovery plan calls for statewide water conservation through water use efficiency, water re-use and recycling. The recovery plan adopts the state's water conservation program calling for a 20% reduction in urban and agricultural water use by the year 2020. Through improved water conservation and efficiency, more water will be available to leave in the rivers for fish, which is especially important during droughts, like the one we are currently experiencing.

Does the Bay Delta Conservation Plan fit into the recovery process?

The goals of the Bay Delta Conservation Plan (BDCP) are to restore the Delta ecosystem and secure California water supplies. Achieving the goal of a healthy Delta ecosystem is vital for the recovery of salmon and steelhead. Sixty percent of juvenile Sacramento River salmon and 95 percent of juvenile San Joaquin River salmon entering the Delta do not make it out alive.

NOAA Fisheries is deeply engaged in providing technical assistance in the development of the BDCP and believes that the core tenets are grounded in good science. Redoing the basic Delta plumbing is necessary to improve juvenile salmon survival and secure a reliable water delivery system.

Placing new water intakes in the north Delta in an area with dominant downstream flows is essential for new fish screens to operate correctly and keep salmon on their natural downstream migration. Careful operation of these intakes can significantly reduce the negative impacts of pumping water out of the south Delta. To avoid trading the problems in the south for new ones in the north, we'll need a testing period for the new north Delta intakes and tightly managed bypass flow requirements that ensure sufficient freshwater flows throughout the Delta to support young salmon and the entire ecosystem.

BDCP depends on a significant investment in habitat restoration and clear performance objectives to help guide implementation. The plan contains these objectives and recognizes floodplain habitats as essential to the growth and survival of juvenile salmon. Yet much is unknown, so we'll need the ability to make adjustments as we learn more to help us achieve these objectives, ensure the restoration programs work as designed, and produce meaningful contributions to rebuilding a healthy Delta.

Did NOAA Fisheries engage stakeholders in developing this plan?

In 2006, NOAA Fisheries published its intent to prepare a recovery plan. Between 2007 and 2010, we held 14 workshops where stakeholders and NOAA Fisheries collaborated on the recovery planning process, identifying threats and recovery actions. In 2009, NOAA Fisheries released a draft recovery plan for public comment. Following the comment period, NOAA Fisheries directly engaged several stakeholders who provided a particularly strong interest in the recovery plan to further discuss the comments they provided. Those stakeholders included the Golden Gate Salmon Association, East Bay Municipal Utility District, Yuba County Water Agency, Pacific Gas and Electric, Cal

Trout, Allied Fishing Group, the McCloud CRMP, Northern California Water Association, and Save Auburn Ravine Salmon and Steelhead.

How much will it cost to recover these species?

Because the recovery process will likely take several decades and is filled with uncertainties regarding how fish will respond to individual actions, it is difficult to put a precise figure on recovery. Currently, we estimate that recovering Central Valley Chinook salmon and steelhead could cost between \$17 and \$37 billion over the next 50 years. To jump start the recovery effort, the California Department of Fish and Wildlife is providing \$38 million to fund high priority, fisheries and wetland restoration, recovery, and management actions. It's also important to recognize that many actions in the recovery plan will be implemented under the existing work programs of government agencies through the direction of funding within their existing budgets.

Over the long term, salmon recovery should not be viewed as a cost but an investment. For example, the California commercial and recreational salmon fisheries are estimated to generate a total of \$118-279 million in income annually, and provide roughly two to three thousand jobs for local communities. Recent data indicate that on average 17 new "green" jobs are created for each \$1 million investment in watershed restoration, which is much higher than crop agriculture and other traditional industries including coal, gas, and nuclear energy generation. These figures will increase as salmon runs increase, providing both economic gains and more recreational fishing opportunities.

What funding is California Department of Fish and Wildlife providing to implement recovery actions?

This summer, the California Department of Fish and Wildlife (CDFW) will be taking significant action to restore habitat, promote recovery of at-risk populations of salmon and steelhead, and protect stocks important to the state's recreational and commercial fisheries. CDFW is providing \$38 million to fund high priority, fisheries and wetland restoration, recovery, and management actions. These dollars will contribute directly to the recovery of Central Valley's ESA-listed Chinook salmon and steelhead runs by implementing actions called for in the federal Recovery Plan.

These funds will focus activities partially on the impacts of the 2014 drought, water conservation, and enhancing wetland habitat to better prepare the state for drought, water management, and climate change. Key actions in the Central Valley that will contribute to the recovery of ESA-listed Chinook salmon and steelhead include:

- Stream restoration and fish passage improvements on Battle, Deer, and Mill creeks and other significant Sacramento River tributaries.
- Restoring habitat impacted by the drought and preparing for future droughts.
- Wetland restoration in the Sacramento-San Joaquin Delta, including Hill and Lindsey sloughs.
- Water management, wetland restoration, and conservation improvements on CDFW wildlife areas and ecological reserves.

- Enhanced protection and monitoring of winter-run and spring-run Chinook salmon in the Sacramento River.
- Expanded support of the San Joaquin River Restoration Program.
- Enhancement of salmon and steelhead hatcheries to protect fisheries resources.
- Expanded law enforcement to ensure protection of fisheries and wildlife resources made more vulnerable by the drought.

Will salmon and steelhead recovery provide economic benefits?

Recovery of listed Central Valley salmon and steelhead will provide substantial economic benefits. For example, the California commercial and recreational salmon 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 recreational fishing opportunities.

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, and water projects.²

In addition, healthy fish runs provide ongoing direct and indirect economic benefits as a resource for fishing, recreation, and tourist related activities. Dollars spent on salmon and steelhead recovery will promote local, state, federal and tribal economies, and should be viewed as an investment with both societal (clean rivers, healthy ecosystems) and economic returns.

What is the timeframe for the species' recovery?

Full recovery of listed Central Valley salmon and steelhead could take 50 to 100 years. This is in part a function of the number of uncertainties involved in predicting the course of recovery. Such uncertainties include biological and ecosystem responses to recovery actions; and environmental conditions that are beyond our direct influence, like ocean currents, productivity, and climatological patterns. However, we're already seeing improved salmon returns in many watersheds, including Butte, Battle, and Clear creeks, as a result of restoration efforts.

Was climate change factored into this recovery plan?

Yes. One chapter of the recovery plan is devoted to climate change, describing the impacts of climate change on salmon and steelhead and how to buffer those impacts. In the recovery strategy, we considered the vulnerability of habitats to climate change in order to help identify watershed priorities. Watersheds at lower elevations, which do not have cold water springs or other sources of cold water (e.g., Thomes Creek, Big Chico

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

Creek), were among the lower priority watersheds. By contrast, watersheds with cold water sources, such as streams at high elevations, springs, or releases from storage reservoirs, were considered a higher conservation priority.

What is the relationship between NOAA Fisheries' Central Valley Salmon and Steelhead Recovery Plan and the California Department of Fish and Wildlife's Ecosystem Restoration Program Conservation Strategy?

The federal and state plans share the common goal of recovering fish. They are complementary in that the state's Conservation Strategy presents a broader framework for restoring aquatic and terrestrial ecosystems throughout the Central Valley, while the federal Recovery Plan is the focused road map for recovering ESA-listed Chinook salmon and steelhead. NOAA Fisheries' comprehensive Recovery Plan was developed in close coordination with the State of California, and the state's Conservation Strategy highlights broad conservation priorities that are consistent with the federal Recovery Plan. The Conservation Strategy identifies the federal Recovery Plan as the resource to turn to for specific watershed priorities and site-specific actions that must be implemented to achieve the shared goal of salmon and steelhead recovery.