

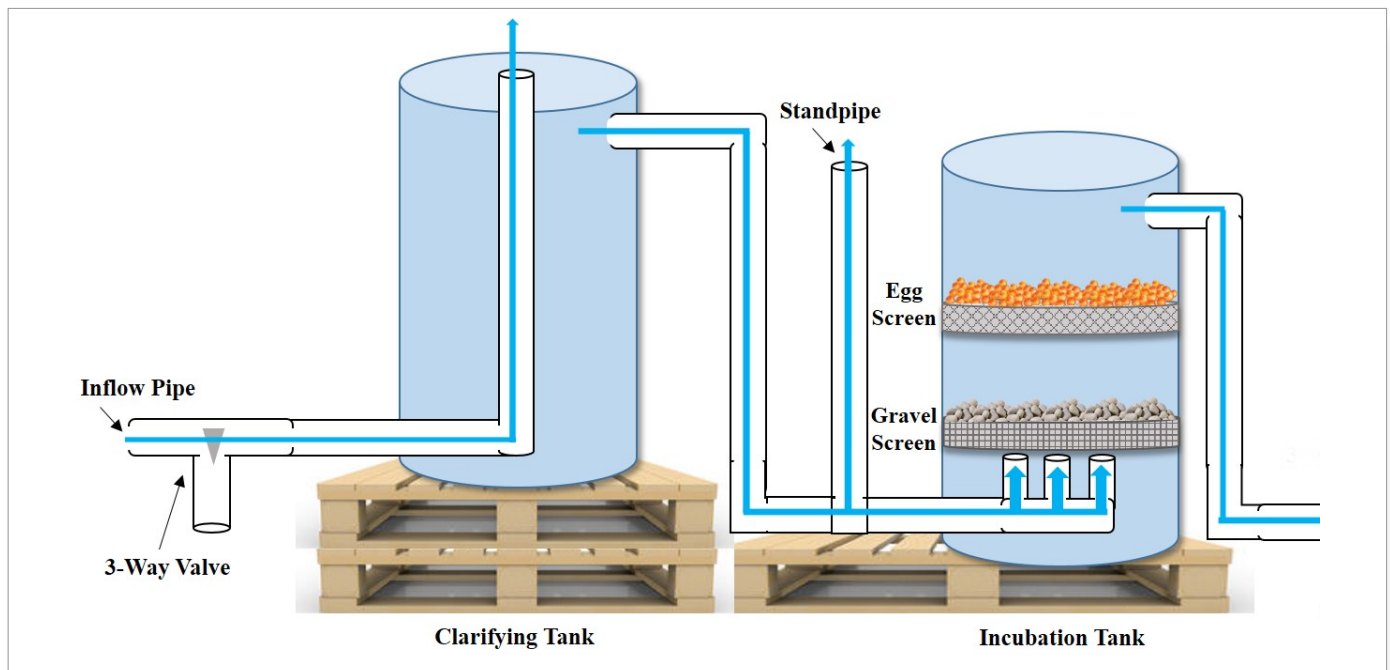
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Partners Return Endangered Winter-Run Chinook Eggs to Their Original Habitat in Response to Drought



NOAA Fisheries, the California Department of Fish and Wildlife (CDFW), Winnemem Wintu Tribe, and other partners are preparing to move eggs of endangered winter-run Chinook salmon into cold-water habitat where the species once spawned in the mountains upstream of Shasta Reservoir. This is an urgent response to reduce the extinction risk to the one remaining population during a third year of severe drought and is not a species reintroduction program. It will also help biologists learn how the species may use its historical habitat. Cold water

from the spring-fed McCloud River will circulate through the roughly 50,000 eggs in specialized incubators along the river. Once the eggs hatch, salmon fry will swim into the river for the first time since Shasta Dam blocked the migration of adult salmon back to the same mountain waters in the 1940s. Rotary screw traps in the river will collect the salmon fry, which will then be transported downstream of Shasta Dam and released into the Sacramento River to migrate to the Pacific Ocean.



A remote site incubator will hold winter-run Chinook eggs along the McCloud River upstream of Shasta Reservoir. Water from the river will circulate passively through the eggs as they grow.

Egg Transfer Offers Insight

The effort will help biologists understand how to advance a longer-term proposal to reestablish a spawning population of this endangered species in the McCloud River, one of a few Northern California rivers where winter-run Chinook salmon originally spawned. When Shasta Dam blocked access to the McCloud River, the fish started spawning instead in the less-suitable habitat of the Sacramento River on the valley floor near Redding. Rising water temperatures, especially during drought years, now kill many of the eggs, threatening the species with extinction. The NOAA Fisheries [recovery plan](#) for winter-run Chinook salmon emphasizes the importance of reestablishing populations in their original spawning habitat at higher elevations, upstream of dams, where reliably cold water will keep their eggs alive.

Returning Winter-Run Chinook Eggs to Native Habitat



Biologists will place eggs of endangered winter-run Chinook salmon in incubators along the cold McCloud River, where the species once spawned naturally. After Shasta Dam blocked access to the McCloud, the species resorted to spawning in the Sacramento River, where the fish are vulnerable to drought and climate change.

Tribe and Agencies Support Research

The Winnemem Wintu Tribe is an important partner in this urgent response that will return the species to the tribe's ancestral homeland in the McCloud River. The tribe brings traditional ecological knowledge to the efforts to protect winter-run Chinook. Additional expertise comes from CDFW, which also protects winter-run Chinook under California's own Endangered Species Act. The U.S. Fish and Wildlife Service will provide about 50,000 winter-run eggs from Livingston Stone National Fish Hatchery, which maintains the broodstock of this very endangered species. NOAA Fisheries' Southwest Fisheries Science Center is providing research support. The agencies are coordinating the effort with the U.S. Forest Service and private landowners in the area to address questions and concerns.

Second Broodstock Secures Species

At the same time, NOAA Fisheries is working with the U.S. Fish and Wildlife Service to establish a second winter-run broodstock population at UC Davis. Currently the only captive winter-run salmon are held at the Livingston Stone National Fish Hatchery at the base of Shasta Dam. A catastrophic event such as power loss, pump failure, or wildfire could lead to the loss of the 2022 year-class in the absence of natural reproduction. A second hatchery population will provide a much needed backup to ensure the species survives.

While the challenges facing endangered winter-run Chinook salmon have never been greater, there has never been more support for saving this native California species.



Juvenile winter-run Chinook salmon. Credit: California Department of Fish and Wildlife.



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FOR MORE INFORMATION

[River Temperatures and Winter-Run Chinook Survival](#)

[Species in the Spotlight: Sacramento River Winter-Run Chinook Salmon](#)