



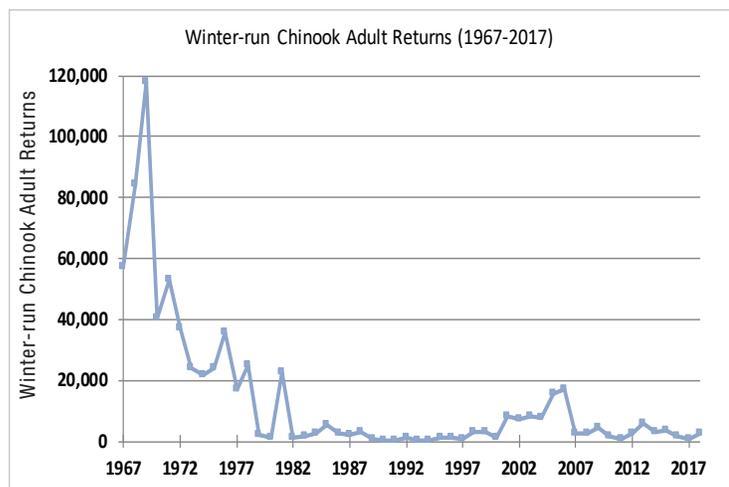
Returning Winter-Run Chinook Salmon to their Native Habitat Above Shasta Dam



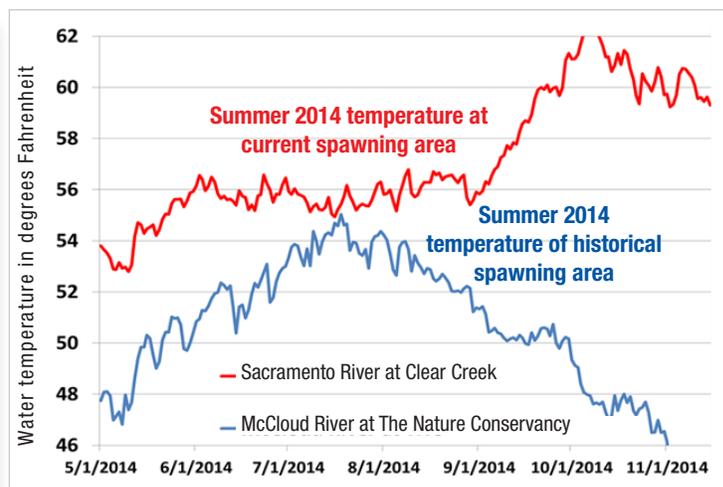
Helping fish survive and thrive can help California farmers do the same

California’s farms and California’s endangered salmon both require water to flourish, and there is a way they both can have it. NOAA Fisheries’ long-term recovery strategy for winter-run Chinook salmon is to return them to their native habitat above Shasta Dam where they can access the clear, cold streams they need to thrive. Doing so would increase overall water reliability for farms and communities where it is badly needed.

The sooner we can improve the status of winter-run Chinook salmon, the more water California’s Central Valley will have to prosper. In contrast, continuing on the current course would leave winter-run Chinook salmon sliding toward extinction, putting greater demands on the limited water that is available.



Above: Winter-run Chinook salmon adult returns plummeted in the 1970s and today are on the brink of extinction. They survive only with releases of cold water from Shasta Dam.



Above: With their historical spawning area out of reach, winter-run Chinook salmon must spawn in the warmer Sacramento River where their eggs can die from high temperatures.

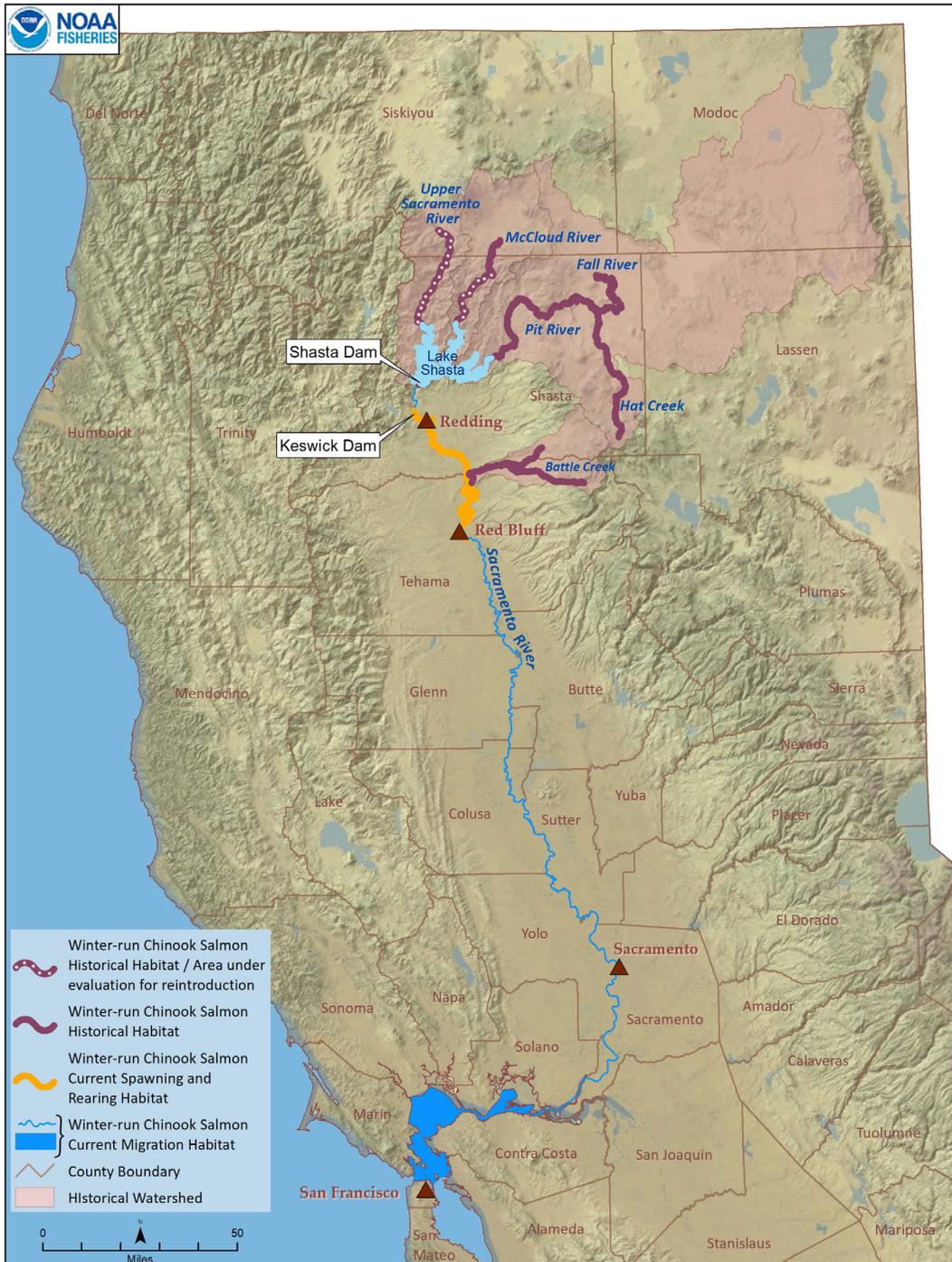
Rising risk of extinction for winter-run Chinook salmon

Winter-run Chinook salmon is the only California native salmon that cannot reach any of its historical spawning and rearing habitat. When Shasta Dam was completed in 1945, it cut the fish off from their home spawning streams high in the mountains of Northern California. Although they should have perished, they clung to persistence by spawning in poor quality habitat in the Sacramento River below Shasta Dam.

The marginal area where they now spawn is especially vulnerable to drought and climate change, already so warm in some years that the eggs that give rise to the next generation do not survive. After recent drought years, fewer than 1,000 adult winter-run Chinook salmon have returned to sustain the species (and most of these were from the Livingston Stone conservation hatchery). Drought years are when water is most precious, much of it held in reservoirs out of reach of agriculture and slowly doled out to try to keep winter-run Chinook salmon eggs from dying.

Science helps bring the fish back home

NOAA Fisheries proposes to implement a pilot program guided by science to return winter-run Chinook salmon to selected portions of their historical habitat and assess the effectiveness of the program's progress as we go. We will model the program on the success of similar efforts in the Pacific Northwest. This will give us the chance to see how the strategy works before we commit to it as the primary recovery strategy for winter-run Chinook salmon. We are prepared to move forward, and fish are now available to return to the headwaters above Shasta Dam.



The most practical option for getting the fish around Shasta Dam to their upstream habitat is in trucks. This “two-way trap and haul” approach is not ideal, but it has worked well in other places for years and is the best option we have right now, particularly during the pilot phase. Any fish returned to the headwater streams would be designated as an “experimental population” so they would not carry the same protections and regulatory liability as an endangered species typically does; local landowners would face no new restrictions.

It is true that recovering winter-run Chinook salmon could be expensive, but not as expensive as the status quo and its mounting repercussions for California’s multi-billion agricultural industry. The Endangered Species Act requires us to take steps to recover endangered salmon. Just as important, though, is the promise that recovery of winter-run Chinook salmon means a more reliable and flexible water supply for farmers, municipalities, and others in California who desperately need it.

Endangered winter-run Chinook salmon are blocked from accessing clear, cold streams where they spawned prior to Shasta Dam’s construction in 1945 and which are important for egg and juvenile survival. A new project has recently allowed winter-run Chinook salmon to access historical spawning habitat in Battle Creek. Water restrictions to provide cold water to adults and eggs spawning in the warm valley floor limit agricultural operations throughout the Central Valley.

