

WHAT WE CAN DO TOGETHER



Clean Rivers

Salmon need clean water free from chemicals such as pesticides, abrasive cleaners, and fertilizers to survive and reproduce. Together we can keep rivers clean for salmon.



Water Conservation

Salmon need cool flowing water throughout the year to reproduce and to make their way into the ocean as young fish. Together we can conserve water so there is enough for fish and people.



Healthy Habitat

Native trees and plants along river banks provide shade and help stabilize streambanks, keeping the water flowing and cool in summertime. Together we can create healthy habitat.

Species in the Spotlight

http://www.nmfs.noaa.gov/stories/2015/07/spotlight_central_ca_cohosalmon.html

Central California Coast Coho Salmon Recovery Plan

<http://bit.ly/recplan>

Russian River Coho Salmon Captive Broodstock Program

<https://caseagrants.ucsd.edu/project/coho-salmon-monitoring>

Habitat Restoration

http://bit.ly/ca_habitat



Photo by Michael Carl

“As a freelance writer, photographer, and avid fisherman in California’s native streams, I began documenting the challenges to this species’ survival and recovery. While working alongside scientists at the conservation hatcheries, I witnessed the scientific process and understood firsthand that the hatcheries are the best hope for saving some of the vanishing coho runs.”

Michael Carl

“Our only hope to prevent the extinction of Central California Coast Coho salmon is to increase their numbers in the wild by rearing them in conservation hatcheries. We are also working to restore their habitat so these fish have a higher survival rate.”

Charlotte Ambrose-California Programs Coordinator,
NOAA Fisheries West Coast Region



Central California Coast coho salmon are genetically distinct populations that live in the southern-most end of the species’ range. Historically, these coho salmon occupied a much larger coastal range in California and supported a booming commercial and sport fishery. Historical fishing practices, habitat degradation, and reduced stream flows have led to a 99% decline of this species. To address these issues, the state of California closed all sport and commercial fishing in 1996, and natural resource managers have focused efforts on habitat restoration, water conservation, and conservation hatcheries.

Conservation Hatcheries Can Help Save Salmon

Central California Coast coho salmon numbers are extremely low for most of the creeks the species’ range. The low numbers puts the species at risk of inbreeding, not being able to find a mate, and slow natural recovery making them vulnerable to natural or manmade events that could wipe out the entire population. Recovering this species requires these key steps:

- 1) Using conservation hatchery programs to rebuild self-sustaining wild populations.
- 2) Monitoring to ensure that the benefits of supplementing populations do not negatively impact remaining wild stocks.
- 3) Restoring important watersheds so the fish have healthy habitat to grow and reproduce.



Central California Coast coho are one of NOAA Fisheries’ “Species in the Spotlight” — an initiative to prevent extinction for the most at-risk species.



Photo by Michael Carl

“We’re using genetic analysis to mimic what’s occurring in nature. Our goal is to avoid inbreeding of fish and rebuild healthy, genetically diverse populations that can once again thrive in the wild without intervention.”

Dr. John Carlos Garza-Geneticist, NOAA Fisheries Southwest Fisheries Science Center

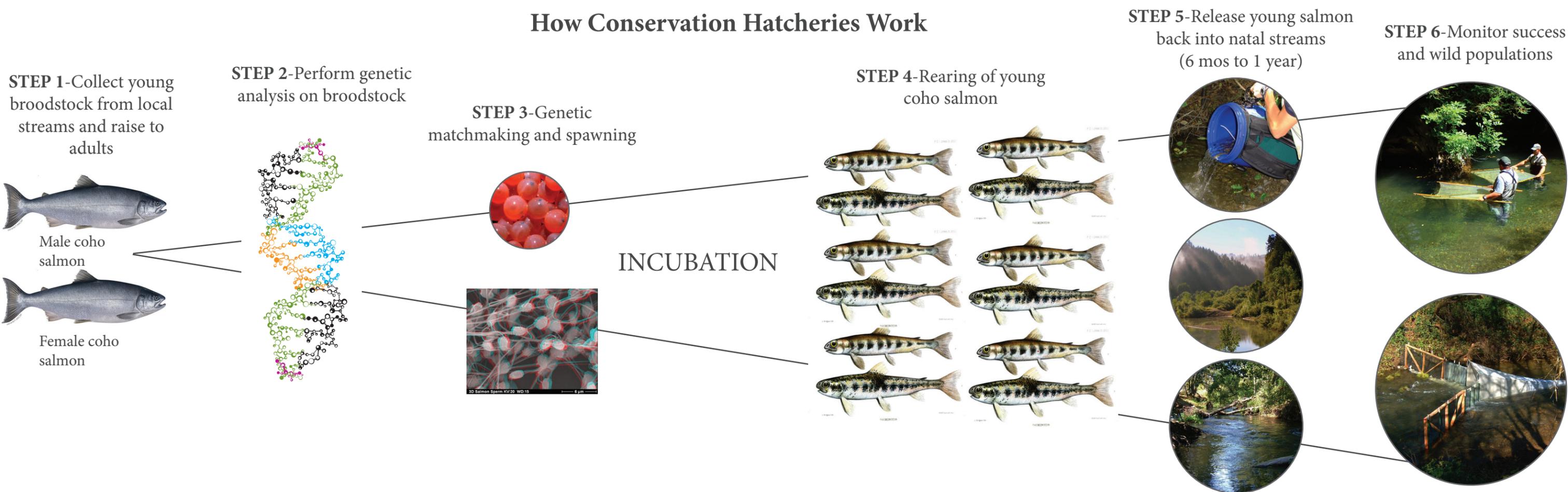
One Fish, Two Fish—Role of Hatchery Conservation Programs

Conservation hatcheries paired with habitat restoration are now the only hope for survival of Central California Coast coho salmon. Fish are collected from the wild, brought into the hatcheries, genetically tested, and spawned to maximize diversity and prevent inbreeding. Scientists are working hard to be good matchmakers keeping these populations robust and healthy for future generations.

In the hatchery, coho salmon are raised to various ages, fed krill, tagged, and released into streams throughout central California watersheds. This release strategy allows coho salmon to imprint on the stream where they are released with the goal that they will return to the same streams as adults to spawn naturally.

There are currently two conservation hatcheries supporting this effort in central California. We are pursuing plans for a new hatchery in partnership with California Department of Fish and Wildlife south of the Golden Gate Bridge.

How Conservation Hatcheries Work



Conservation Hatchery Programs for Central California Coast Coho

Don Clausen Warm Spring Hatchery—Sonoma County

On the Russian River, the number of adults returning to their release streams has increased steadily, and naturally spawned offspring have been observed in most release streams as well as streams never stocked with hatchery coho salmon. This program integrates coho salmon from other nearby watersheds, recognizing that recovery requires multiple healthy populations.

Kingfisher Flat Hatchery—Santa Cruz County

Kingfisher Flat Hatchery, located on Scott Creek, had the highest number of returning adults and naturally spawned offspring during 2014-2015 that had been observed in over a decade. This increase appears to be the result of several new hatchery spawning techniques. Scientists have modified mating strategies to incorporate broodstock from the Russian River program and have been staggering the release of juveniles across a longer timeframe. Preliminary data of the recent return of coho salmon are encouraging despite the severe drought in California and recent poor ocean conditions.