

Fish Food on Floodplain Farm Fields

Boosting Imperiled Salmon Populations using California's Ricelands

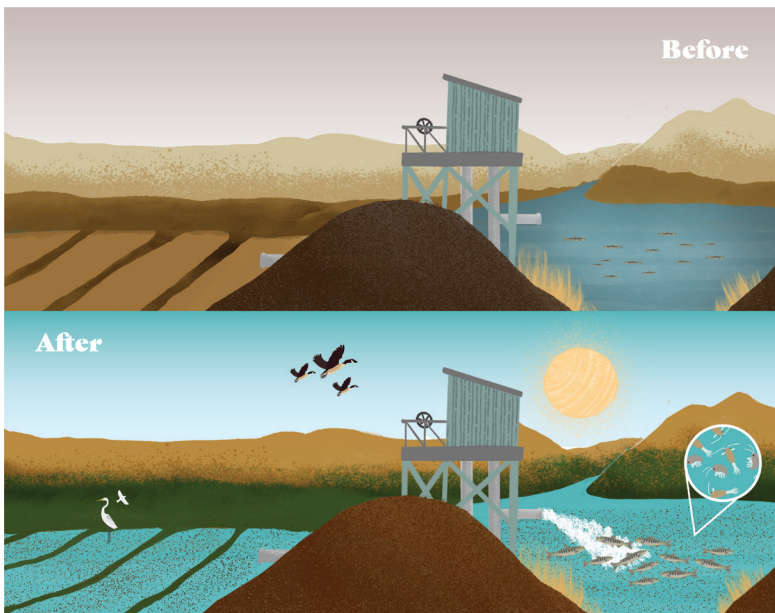
The Fish Food on Floodplain Farm Fields is a collaborative project with farmers, conservationists, universities, and state and federal agencies and is proving that we can help **produce 40 times more food for salmon.**

This leads to salmon growing five times faster and increasing their ability to complete their journey to the Pacific Ocean. Which, ultimately has the potential to **dramatically boost salmon populations in California.**



The Challenge:

Today, 95% of the Central Valley's historical floodplains are cut off from the river by levees. Built in the early 1900s to combat devastating floods, levees and bypasses were constructed to corral mighty rivers and push water quickly through the system. Even before invasive species, large rim dams, and Delta water export facilities were introduced into the system, salmon populations started to dramatically decline with the construction of the levees. Simply put, the primary food source was no longer accessible.



Reconnecting the Fish to the Food:

To address the problem of access, an unlikely group of government agencies, conservation groups, growers and water suppliers came together to dream big. Their task: reconnect the fish with the food.

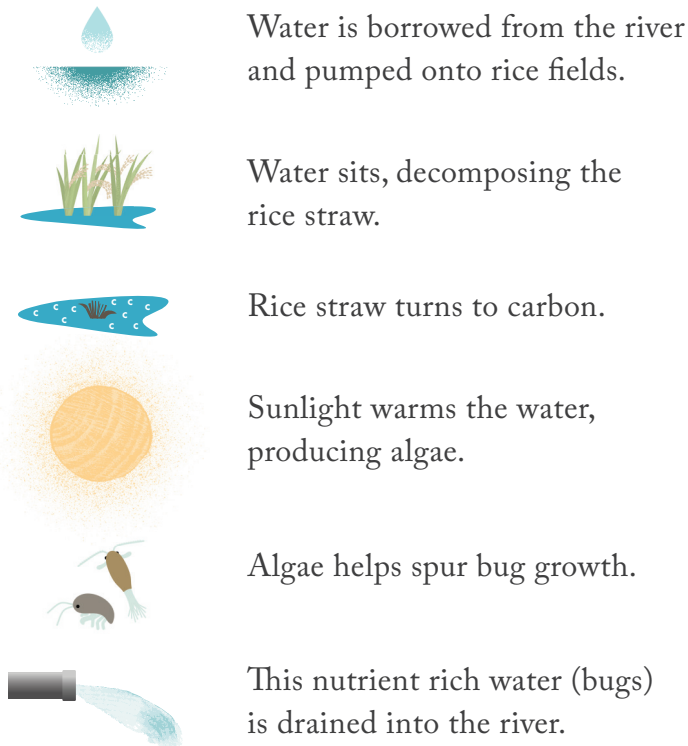
The Fish Food on Floodplain Farm Fields experiment was born.

The project reactivates critical farm fields to produce and deliver an abundance of zooplankton (bugs) to fish in the Sacramento River.

“Floodplains should be thought of as nature’s pantry; they are among the most productive ecosystems in nature and provide the supply of nutrients and food resources necessary to keep rivers, and the many species dependent on them, healthy.”

— Dale Hall, Director of U.S. Fish and Wildlife (Ret.)

How it Works



Roger Cornwell of River Garden Farms and Jacob Katz of California Trout with a sample of zooplankton (fish food) pulled from a rice field in Knights Landing.

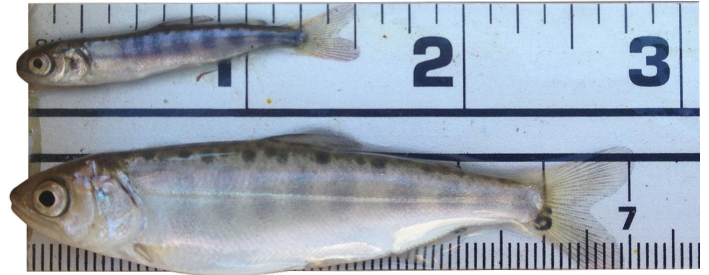
[Watch this video to see how the Fish Food on Flooded Farm Fields works.](#)

Science Shows Benefits to Fish:

The three-year study led by UC Davis Center for Watershed Sciences and California Trout reveals astonishing results:

- ▶ Zooplankton (bug) densities were **40 times higher** at the point where the drained water was discharged into the river compared to areas upstream.
- ▶ Juvenile salmon at the discharge point **grew 5 times faster** compared to fish upstream that were not exposed to the fish food discharge.

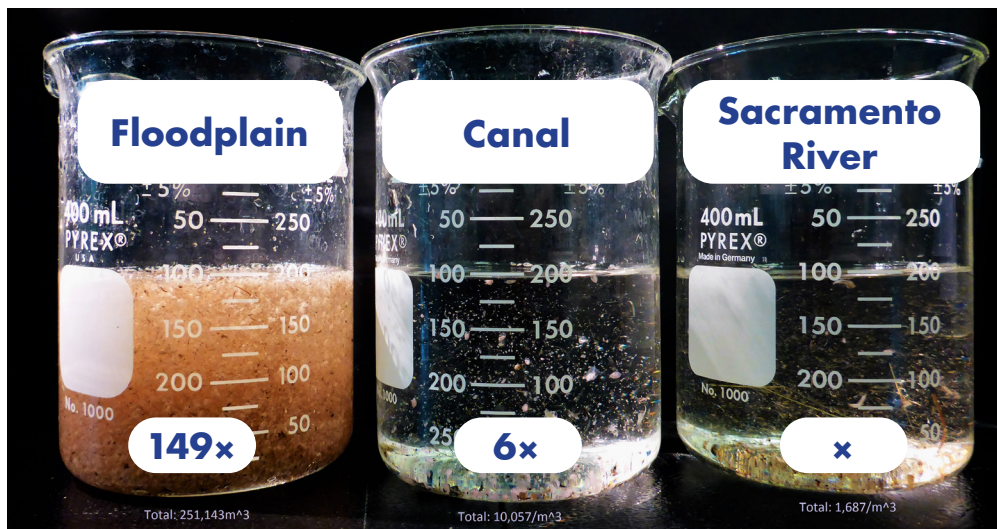
This rapid growth among juvenile salmon is vital for the salmon's overall health, ability to evade predators and the strength required for the species to reach the Pacific Ocean for the next phase of their lifecycle. The bigger and stronger they are as juveniles helps improve the chances the salmon come back to the river to spawn as adults.



The current river system produces tens of millions of juvenile salmon every year, but these are not the 'hefty' juveniles that the historical floodplains once helped produce. These fish are the same age; the top one was raised in the Sacramento River and the other on the adjacent floodplain. The difference is easy to see.

The difference is “cloudy”... and that is a boon for California's salmon.

The zooplankton (fish food) produced out on the floodplain farm fields is 149 times greater than that produced in the Sacramento River.



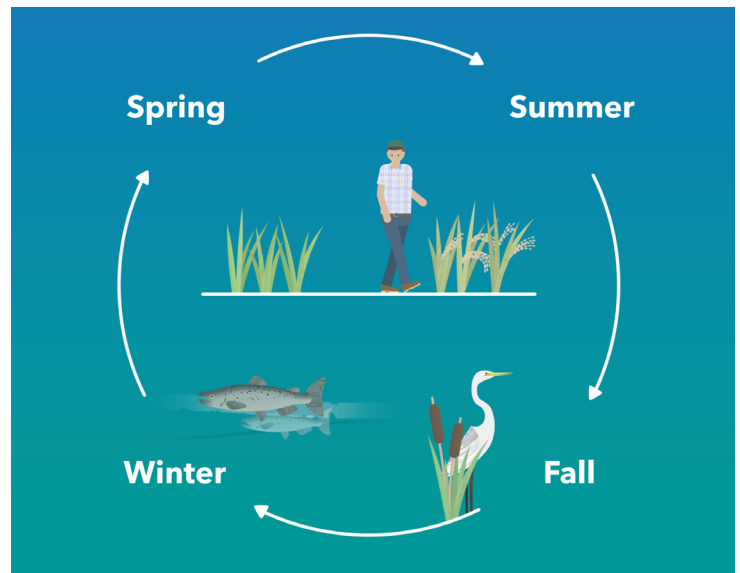
“So much of the water policy in the state (of California) can be described as conflict, fish versus farms, urban versus rural... Finding ways to reactivate the natural floodplain in the central valley is one of those win-win solutions.”

– Wade Crowfoot, Secretary of the California Natural Resources Agency

A Win-Win Solution:

More pop per drop. Farmers and natural resource managers working together to make every acre of land and every drop of water work for both people and native fish and wildlife was critical to the success of this project. The innovative water management pioneered demonstrates that California can have both robust populations of fish and wildlife and productive agriculture. Together, we are integrating a working scientific knowledge of rivers, fish and wildlife into farm and water operations.

The system in place allows for the potential **to improve the population numbers of native chinook Salmon, but further collaboration and assistance is needed if we want to expand the project.** With more than 500,000 acres of managed agricultural floodplains in the valley, we have the ability to feed more juvenile salmon before they make their journey to the Pacific Ocean.



How do we do it? The physical modifications needed to implement this vision are fairly straight-forward. Many of the current weirs are in the same locations as the historical sloughs that once allowed water and fish to flow from rivers onto and off of the floodplains. These weirs can be upgraded with operable gates that will allow managers to restore much of the frequency and duration of the historic floodplain inundation that species are adapted to without jeopardizing public safety.

It's a win for fish and people.

“We are excited about emerging opportunities to advance floodplain restoration with farmers and ranchers, which spread water across the landscape, slow it down and create habitat for salmon and birds at the same time.”

– Paul Souza, Regional Director U.S. Fish and Wildlife

Cooperative Partnership:

The Fish Food on Floodplain Farm Fields Project represents a private-public partnership with landowners, water districts, government agencies, NGOs, and university researchers all dedicated to finding solutions that work for water supply, agriculture, and the environment. Floodplain partners include:

