

Fish Food on Floodplain Farm Fields

Re-integrating Floodplain Food Resources into the River Ecosystem

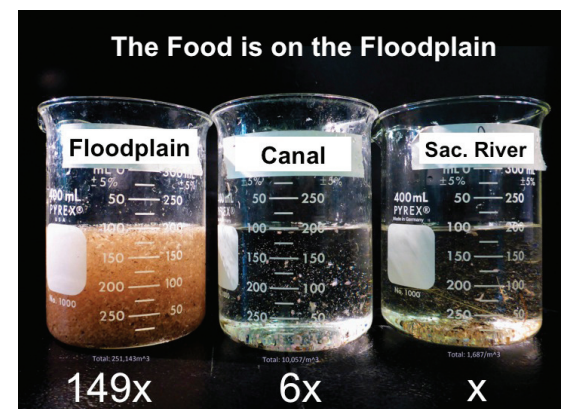
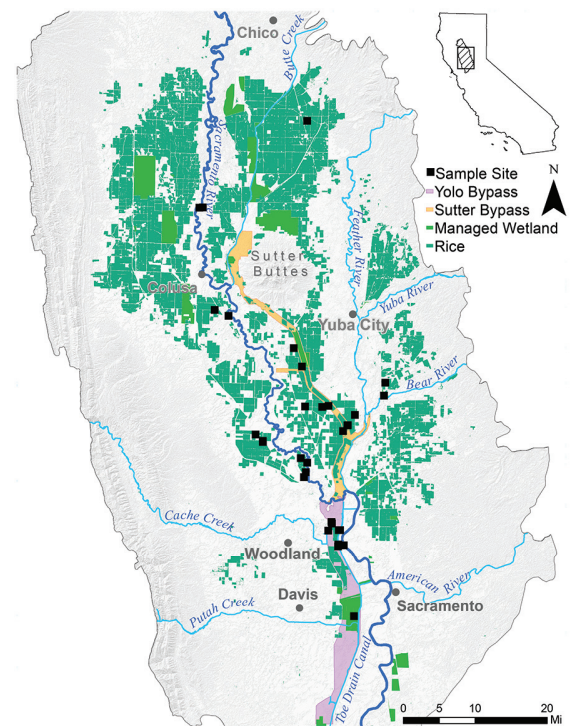
In the Central Valley, more than two thousand miles of state and federal levees, along with local flood protection projects, have cut off approximately 95% of historical floodplain wetlands from their river channels. In the 2017 pilot year, the Fish Food on Floodplain Farm Fields Project surveyed existing wetland habitat types over a broad swath of the Sacramento Valley, both inside and outside of the levees. By comparing and contrasting hydrologic conditions and aquatic food web dynamics across the spectrum of existing wetland habitat types (i.e., river channel, managed wetlands, farm fields and bypasses), the project will 1) improve understanding of aquatic food web productivity in the Sacramento Valley and 2) assess the potential for these diverse aquatic habitats, including the hundreds of thousands of acres of floodplain farmland and managed wetlands, to contribute food resources to the river ecosystem, bolster in-river and Delta food webs, and help support recovery of endangered fish populations.

Cultivating Ecological Solutions on Agricultural Lands

Floodplains are the “solar panels” that power aquatic food webs and create abundant populations of fish and wildlife in large river valleys. An explosion of life in winter-flooded floodplain wetlands generates a huge biomass of bugs and zooplankton—the foundation of the aquatic food web. Floodplains make bugs, and bugs make healthy fish. Without hydrologically reconnecting floodplain food factories to river channels, recovery of historical numbers of fish and wildlife will be impossible. But science has shown that it’s possible to mimic natural floodplain productivity by inundating floodplain farm fields in winter when they are not in use by farmers. This project will pioneer on-farm water management practices to re-integrate the flow of floodplain food resources and nutrients back to the river and Delta. Reconnecting floodplain food factories to the river and Delta will help recover historical fish and wildlife populations of California’s Central Valley.

Win-Win

Even during times of drought, California can get far more **pop per drop** from water used by putting it to work to create multiple benefits for both fish and people on its way downstream. The innovative water management pioneered in our projects demonstrated that California can have its fish and its farms, and they can work together in harmony.



Reintegrating the Floodplain

“Floodplain Fatties”

More than a hundred years ago, before the Central Valley was leveed and drained, food made on inundated floodplains supported large fish and wildlife populations in the Central Valley and downstream in the Delta. Today, rivers are cut off from their floodplain food factories by levees and thus salmon and smelt populations are starving. The goal of **Flooding Agricultural Tracts For Improved Salmon Habitat** (dubbed Operation FATFISH) is to better understand aquatic food web productivity on managed agricultural floodplains. The Sacramento Valley has more than 500,000 acres of managed agricultural floodplains on the dry side of the levees. Working with growers and water suppliers, we will develop new farm practices that reintegrate floodplain production into farm and water management. Floodplain fish food will once again

connect to the river and contribute to the recovery and resiliency of the river ecosystem, as well as the fish and wildlife populations that the aquatic food web supports.

Just like the rest of us, fish need to eat. For California’s water system to work effectively, threatened fish populations in the river must have access to the abundant food resources created when winter flood waters spread out and slow down across floodplains. By understanding food web dynamics across multiple wetland habitats on both sides of

the levees, Operation FATFISH will establish guidelines for functional integration of agricultural floodplains into the operations and management of California’s water system. Remaking and re-operating California’s floodplains will help restore salmon and smelt populations, sustain farms, recharge aquifers, improve flood safety, and help deliver water supply security to 25 million Californians.



A Cooperative Partnership

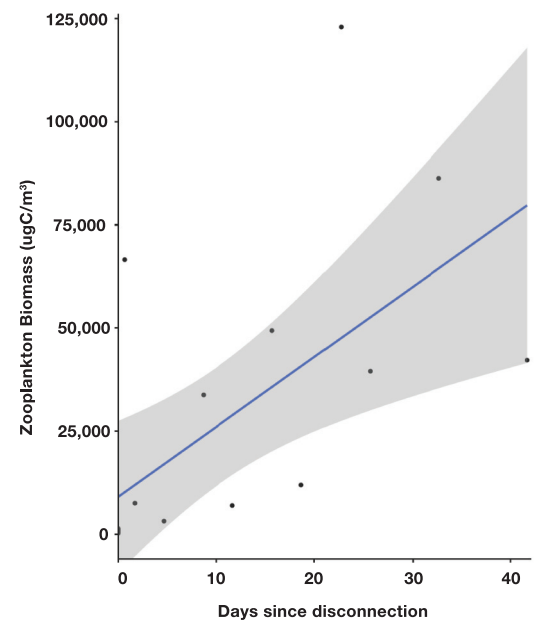
The Fish Food on Floodplain Farm Fields Project represents a private-public partnership with landowners, water districts, government agencies, NGOs, and university researchers all dedicated to finding solutions that work for water supply, agriculture, and the environment. Participants and funders include:



Knaggs Ranch

Davis Ranches

Next Generation Foods



Bug density in floodplain habitats increases with residence time of water. Longer inundation = more fish food.

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