**Fish Food Project**

Reconnecting floodplain-derived fish food to endangered salmon populations.

### Problem

The winter-run chinook salmon population continues to hover around historic lows in the Sacramento River.

1970s

25k

Today

2k

Fishing the Journey Each Winter to the Pacific Ocean from the Upper Reaches of the Sacramento River.

Fishing could go extinct without efforts to recover the species.

### Cause

The historic floodplains once served as a feasting ground for juvenile salmon. As California's Sacramento Valley was developed into cities, roads and farms, the food supply was cut off by levees and other local flood protection projects. Today, with only 5% of the historical floodplain wetlands remaining, the aquatic ecosystems no longer provide sufficient food to support fish populations.

### Solution

Growing food for fish! How? Reconnect managed farm floodplains (rice fields) where food is produced and deliver the nutrients to the fish in the river.

### Project Impact

15,000 percent more food (zooplankton and invertebrates) for fish is produced on the flood plains (rice fields) versus canals or the river. This project aims to get more of the food back into the river system.

### The Food is on the Floodplain

- **Floodplain Sample**: 149x
- **Canal Sample**: 6x
- **Sacramento River Sample**: x

### Floodplain Fatties

- **River**: 70 pounds of bugs per acre (fish food)
- **Floodplain**: 50k pounds of bugs per acre (fish food)
- **Farmers**: 12 acres (in thousands)

### partners

- UC Davis
- Cal Trout
- Northern California Water Association
- Sacramento Valley Farmers

### Collaboration

The Fish Food Project demonstrates what is possible when historically warring factions come together to help the salmon population in California. By uniting to help feed more fish, we can have a direct impact on improving population numbers and restore one of California's heritage species.

### Table: The Food is on the Floodplain vs. Canals vs. Sacramento River

<table>
<thead>
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This process occurs two to three times during the winter months when young salmon are making their journey to the Pacific Ocean.

Rice fields are flooded with water from the Sacramento River. River water is pumped onto harvested rice fields to slow down the water, let it spread out across the fields, and breakdown the standing rice stalks. How does that create fish food? Plant energy stored in the rice stalks breaks down into food for bugs. The bug populations grow fast, and bugs feed the fish. This nutrient-rich diet (“floating fillets”) helps increase the odds that young salmon will reach the ocean.

Salmon feed off floodplain bugs.

This process reconnects floodplain-derived bugs (zooplankton and invertebrates) with fish confined to the river.

Nearly 100% of the water pumped in weeks earlier is now ready to go back into the river, only now re-energized.

As water spreads out across the fields and breaks down the standing rice stalks, an abundance of life is produced including bugs that are desired by salmon in the river.

Each year salmon fry make their journey from the spawning grounds near Redding to the Pacific Ocean. The re-introduction of food on their journey is crucial to survival.

The pilot project is a partnership between UC Davis Center for Watershed Sciences, Cal Trout, Northern California Water Association and California rice farmers. The group is using existing rice fields to produce an abundance of bugs that endangered salmon like to eat.

Bonus: Shore birds, geese and ducks seek refuge on the flooded rice fields during their travels south for the fall and winter.

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