

## San Joaquin fix: Money flows; not river, salmon

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### Fresno --

A year ago federal officials trucked 116 spawning salmon to the upper San Joaquin River in Central California and invited media to watch them swim free for the first time since a dam cut off the river's flow a half century ago.

The effort to see if gravel riverbeds still could sustain eggs cost \$237,000. A few months later, the offspring died.

The biologists had not figured out a reliable way to catch the smolt for a return to the sea across 60 miles of riverbed left dry when the Friant Dam began diverting water to create the richest agriculture region in the nation.

"They didn't plan ahead and say, 'How are we going to get the juveniles out?' It's that lack of planning that's frustrating," said Monty Schmitt, a scientist with the Natural Resources Defense Council, which sued the federal government decades ago to have the river and salmon populations restored.

After eight years of work, this January is the deadline for the once-mighty San Joaquin to be carrying enough water to allow spring and fall runs of chinook salmon to help revive the state's fishing industry.

But the highly ambitious river restoration has been plagued by unforeseen problems resulting in delays and increased costs. Land has subsided so much in places that engineers must figure out how to make the river run uphill. And farms, barns and roads are in the way of a river that wants to return to its marshy expanse.

After \$100 million spent so far, the dry river is just as incapable today of carrying water as it was in 2006 when a historic agreement was struck among environmental groups, fishermen, farmers and the federal government to undo damage caused by dam diversions.

### 'Long-term investment'

What had been pitched by environmental groups as a \$250 million revival now is projected to cost more than \$1 billion. And government officials say the river system may never operate without human intervention and hard-to-get federal funds, even after the 2025 estimated completion date.

"I don't see a time, at least for now, when we will completely walk away from the San Joaquin," said Alicia Forsyth, who is directing the restoration for the U.S. Bureau of Reclamation. "It is a long-term investment in the river."

The 366-mile San Joaquin starts in the Sierra Nevada east of Fresno, then drops through granite canyons to Friant Dam, forming Millerton Lake, whose waters are shared with farmers and a few municipalities. From there the San Joaquin flows only for a few miles before drying up. Further downstream it's replenished by the Merced, Tuolumne and Stanislaus rivers - all with salmon populations.

The upper San Joaquin's once-abundant salmon run began diminishing in the late 1800s because of mining, dams and other man-made diversions. The salmon faded to nearly nothing by 1967 after the last of the river's water was diverted by the dam.

The NRDC sued 25 years ago, arguing the Bureau of Reclamation violated state law when it dried up the river above its convergence with the Merced, ending the salmon runs. The settlement called for one of the most complex river restorations in North America:

The dam would release enough water to fill the dry stretch, then the Bureau would pump that water back to farmers from a point at least 100 miles downstream. The California Department of Fish and Wildlife would study the river to ensure that restoring salmon would be possible, operate hatcheries and truck fish over dry sections until at least 2020.

The goal is to generate 30,000 spring run fish by 2040 and a 10,000-salmon fall-run. By comparison, fall run alone on the Sacramento River is 350,000.

"Will the San Joaquin ever be teeming like it was historically? My gut feeling is probably not," said Forsyth.

The project includes significant channel modifications, construction of levees and fish passages.

None of the construction projects have begun. And no one is happy: The NRDC wants faster progress, farmers near the river are worried about flooded fields, and politicians against the restoration want to end funding.

### Problems and delays

Few took into account the scope of problems. The San Joaquin once was a meandering riparian river of wetlands and marshes. When federal authorities did a test run on the river's capacity a few years ago, it spread back out in braided channels across a now-developed landscape.

Corrective actions, such as installation of test wells, the purchase of farmland easements and the installation of drains to keep water out of crops, have delayed the project. And engineers will need to figure out how to get the river to run uphill in areas where over-pumping has caused the ground to subside.

"It's unfortunate that people aren't coming back to the table to say let's be honest and come up with a new strategy instead of acting like this thing is on track to work," said the river's largest landowner, farmer Cannon Michael, with 4,500 acres that would be flooded.

Government biologists say it takes time. They hope that environmental improvement projects on the river and on the delta will combine to bring salmon back to modern-day California and historic runs such as the San Joaquin.

"It's like when you have a pot simmering on the stove. Nature can simmer and persist and not be successful for a long time, but at some point there is change and the pot boils over and species thrive," said Rhonda Reed, the San Joaquin River Basin branch chief for the National Marine Fisheries Service.

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