

Drought doesn't stop nation's most ambitious salmon revival in San Joaquin River

By Mark Grossi

- *Drought has choked off restoration water flows.*
- *The salmon revival continues with water released for riverside use.*
- *Even in this drought, scientists are learning a lot about the San Joaquin River.*

Young salmon glide through shallow riffles in the San Joaquin River, not far from busy shopping centers, swift Fresno traffic and a golf course.

The southernmost salmon stream in North America might seem like an afterthought in city life here, but don't let that fool you. The San Joaquin is home to the nation's most ambitious salmon-river restoration — bringing back both fish and a river six decades after they died.

Nobody has brought back a salmon run in a 350-mile river that dried up for 60 miles. It's a controversial project with a price tag that could climb to several billion dollars, And it's already in motion.

Now in its sixth year, the revival won't stop even for California's dire drought.

Federal biologists say they can't lose this season's young salmon, known as parr. This fragile salmon run must keep going so science can collect more facts about a river with little or no past data on salmon.

"We learned a lot last year about this river in a drought," said fish biologist Don Portz of the [U.S. Bureau of Reclamation](#). "We know a lot more about where the fish are in the river and what they need to survive in this river."

The restoration has never been popular among the east San Joaquin Valley farmers who grudgingly agreed to give up water for it because they were losing an environmental lawsuit.

Farmers now say the project should be changed due to a lack of funding and the warming climate. Salmon need cold water. Why not just return the river flow and allow warm-water species of fish?

But environmentalists say there's no evidence climate change will stop a salmon run here. The Southern Sierra is the highest part of the mountain range, making it less susceptible to loss of snowpack for the San Joaquin.

"The goal is to work together to restore a swimmable and fishable river that flows past farms and communities," said senior scientist Monty Schmitt of the [Natural Resources Defense Council](#), which represented the plaintiffs in the environmental lawsuit.

Bass feeding on young salmon

One of the biggest revelations this year: It has been a deadly time for young fall-run salmon, says Portz and his biologist colleagues, Chuck Hueth and Shawn Root. Bass in the San Joaquin have been feasting on the young.

Last year, Portz trapped 2,393 young salmon. Near the end of the trapping season now, he has captured only 561 so far.

“The bass have just hammered salmon,” he says.

The biologists capture the young, carefully load them in a tank and drive them by truck to the confluence of the Merced River on the Valley’s west side. The fish are released and begin their perilous swim to the Sacramento-San Joaquin River Delta and out to the Pacific Ocean.

The parents of these fish were captured beyond the intersection of the San Joaquin and Merced river. They were moved by truck last year upstream near Fresno where they spawned.

Portz and biologists from the California Department of Fish and Wildlife took tissue samples from the adults. Using DNA identification from the salmon offspring, the biologists located which fish nests, or redds, were used in successful spawning.

Now scientists know places in the river where gravel size, temperature, depth and dissolved oxygen are working for spawning.

Passive integrated transponders, called PIT tags, have been delicately inserted into the offspring so their progress through the river can be tracked as they move toward the Pacific. The PIT tags are detected at electronic monitoring stations along the river. The location, time and identity number of the fish are loaded into a database.

The youngsters are contending with a low flow of water and warming conditions. The restoration program has not used water from Millerton Lake in more than a year because of the drought.

But in an odd twist, the drought brought more water into the river last year for a different reason.

The U.S. Bureau of Reclamation released several times more water than normal from Millerton into the river last year — not for fish or east-side farmers, though. The water was sent to west Valley growers who have historic rights to the San Joaquin. Usually, the west-siders would get water from the delta, but it was not available.

So there was an unaccustomed whoosh from Millerton Lake down the San Joaquin.

“A few people might have thought it was for fish,” Portz says. “It wasn’t.”

A boon to nature

Hundreds of millions of dollars will have to be invested in bypass channels, channel rebuilding and other engineering fixes so salmon can swim back and forth to the Pacific Ocean. Farm criticism mounts. Critics point to a lack of funding and delay.

NRDC’s Schmitt says the restoration has been fully funded thus far, and the program’s own assessment says there are funding sources to complete critical projects.

Most of the money will be spent on rebuilding aging water supply and flood control infrastructure and high groundwater seepage protection for landowners – a problem that existed for landowners “before the river was illegally dried up in the 1940s,” he says.

Schmitt says the reward is well worth the investment.

“Having a living river will be a benefit to the entire region,” he says. “It’s a quality-of-life issue for the public. Agriculture will benefit with better flood control and groundwater replenishment.”

It will be a boon to nature, as well, he says. Whenever a 30-pound salmon swims upstream, spawns and dies, it releases a bloom of nutrients that supports the health of the river and nearby ecosystems. The bloom of nutrients feeds insects that in turn feed future salmon, birds and other wildlife.

“The upper San Joaquin River has been without this dimension for a long time,” he says. “The river is more than a water supply.”

Loss of farmland

The cost of this revival will likely be the loss of at least 300,000 acres of farmland, says east-side farmer Kole Upton, who sits on the board of the [Chowchilla Water District](#).

“If society values a few salmon over that much agriculture, I guess that’s what we have to live with,” he says. “But it will be a huge cost to the Valley, not to mention billions of dollars to complete this project. Is that reasonable?”

Upton was among the negotiators who wrangled [a settlement to the environmental lawsuit](#) over Friant Dam a decade ago. He saw no other alternative at the time.

But he says environmentalists have not held up their end of the deal to help east-side farmers replace water they lost in the restoration. It’s clear to him, he says, that farms will be lost in this process.

Upton says he still does not oppose restoring the river. Climate change, he says, might not allow cold-water fish, such as salmon, to exist this far south in the future.

“Why not just reconnect the river to the ocean and live with a warm-water fishery?” he asks. “We can have a project that we can all be proud of.”

Catching young salmon

The young salmon are swimming in a small flow of water released by the U.S. Bureau of Reclamation from Friant Dam. The water flow is not intended to support the restoration or the fish — it’s for riverside water users, such as farmers.

To capture fish, Portz, Hueth and Root are using a temporary v-shaped weir to funnel fish into a trap. They installed a gate in the wooden structure this year to let boaters pass through easily.

In years with higher flow, such a weir won’t be effective. Biologists will need a heavy-duty setup, involving the use of steel and concrete. But, for water running about 18 to 20 inches deep, wood works fine.

Though the trap is for the young salmon, it has caught far more of the many other types of fish in the river — such as, bass, bluegill and sunfish. These other captured fish number in the thousands, Portz says. They’re released. They won’t be making the trip to the Merced confluence, east of Newman in Stanislaus County. That’s a ride only for young salmon.

“We will know in a few years how many come back to spawn,” Portz says.

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