

Reviving a river

A \$626 million, 50-year conservation plan for the Colorado River tries to balance needs of native habitat with people's demand for water

By Mike Lee
STAFF WRITER

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SEARCHLIGHT, Nev. – Framed by the distant glow of Las Vegas lights, federal fish biologist Tom Burke cut the engines on his research boat and glided toward the ragged eastern edge of the Colorado River.

Amid the stillness of night, he slipped a light bulb into the water and let his eyes adjust to the greenish glare. The shallows teemed with endangered razorback suckers spawning on the cobbles.

"Look at all the fish. Ain't that slick," Burke exclaimed as razorback larvae gathered around his illuminated boat.

He scooped them up with a net and shook them into a tub. The larvae will be raised in hatcheries and released back into the river once they're big enough to fend for themselves.

Without Burke's intervention, non-native fish would continue devouring the razorbacks' eggs and young, pushing the species closer to extinction. Carp – along with catfish, bass and other predatory sport fish – began thriving in the river after a series of dams were built.

The concrete plugs provide water and power to 20 million people across the Southwest, including more than 2 million in San Diego County. But they also disrupt the river system that native animal species have relied on for eons.

On April 4, a coalition of government agencies and water and power suppliers plans to hold a ceremony at Hoover Dam in Nevada to unveil a \$626 million, 50-year conservation blueprint. One major objective is to improve survival chances for razorbacks and 25 other species in the lower Colorado River.



JOHN GIBBINS / Union-Tribune
Biologist Tom Burke culled razorback sucker larvae fish from Lake Mohave so they can be raised in hatcheries.

But the project doesn't focus just on ecological preservation.

The blueprint's supporters share an overriding goal: to keep drawing as much or more water from the river as they're doing now. They're trying to prevent the kind of Endangered Species Act enforcement that has disrupted water deliveries elsewhere in efforts to protect endangered fish.

The U.S. Bureau of Reclamation, which will oversee the project, said the pact should enable cities such as San Diego, Tucson and Los Angeles to keep tapping the river for water and power during the next half-century. The agency touts the agreement as the largest attempt of its kind to balance the needs of native habitat with demands for water.

"Instead of a piecemeal approach, this multispecies program proactively addresses endangered species issues that threaten water supplies throughout the West," said Wes Bannister, chairman of the Metropolitan Water District, which supplies most of Southern California's drinking water.

Is plan enough?

No one claims the strategy is a cure-all. In fact, the plan is designed to change over time as biologists discover what works and what doesn't.

But critics already question the project's chances at succeeding. They describe it more as a benefit to water providers – by keeping the water flowing – than to the river's plants and animals.

In the late 1990s, environmental groups dropped off the steering committee for the blueprint partly because the plan doesn't address about 100 miles of the river in Mexico. Conservationists have also worried that the promises of preservation would be forgotten well before the agreement runs its course.

Today, these organizations still can't agree on whether the pact is a solid start or a fundamentally flawed strategy. Some have even said it's vulnerable to a lawsuit.

"It is basically taking sort of a Band-Aid approach to habitat creation," said Jennifer Pitt, a scientist with Environmental Defense in Boulder, Colo. "I have characterized it as setting up little mini-zoos."

Regions lifeblood

The heavily dammed Colorado River is the main water and power source for 20 million people in the Southwest, but the dams suppress the river's erratic flows, leading to habitat loss in and along the river.



SOURCE: U.S. Bureau of Reclamation

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She wants to see the river allowed to run more like it used to, when seasonal flooding created a diverse set of habitats. Now, the river's flow is highly regulated to optimize power and water deliveries.

Pitt isn't calling for a return to the pre-development West, but she figures that some of the river's natural functions could be restored through water releases from the dams.

Others are more hopeful about the blueprint's prospects.

"It's better than nothing," said Myra Wilensky, the San Diego representative for the National Wildlife Federation and a longtime observer of the project. "It provides funding to do some really great restoration work which would not be available otherwise."

Pools replaced rapids

The Colorado River was engineered in an era when government officials gave little consideration to environmental concerns. Its major dams and reservoirs – built by the bureau starting in the early 1900s – provide water and power to help sustain the region's economy. But they also created impassable barriers for fish and suppressed erratic flows that once sustained a complex web of habitats in and along the river.

By transforming a series of whitewater rapids into a succession of placid pools, the dams also encourage growth of algae and small bottom-dwelling animals that feed an expanding population of non-native fish such as carp.

Twenty-six species are covered by what's formally called the Lower Colorado River Multi-Species Conservation Plan. That's about one-quarter of the number established when the project was conceived nearly a decade ago.

Bureau officials said some species were removed because the agency's operations didn't have any effect on them, while others were dropped because there wasn't enough information about them.

The agreement calls for planting more than 8,000 acres of cottonwood and willow trees, plus marsh vegetation for native birds and other riverside species. It will also pay for the bureau to raise as many as 660,000 young razorback suckers and 620,000 bonytail chub in expanded hatcheries and ponds, where they would be safe from predators.

Half of the project's cost is to be paid by water and power providers in California, Nevada and Arizona. The rest is to come from the federal government.

"Nobody should think that this plan is going to bring these species back to the point where they are self-sustaining, but it is a big step in that direction," said Larry Purcell, water resources manager for the San Diego County Water Authority. The agency gets the majority of its water from the Colorado River for delivery countywide.

Removing dams?

Like other heavily developed rivers in the West, the Colorado has been the subject of numerous attempts to reverse declines in once-thriving species.

Last fall, for instance, river managers released a flood of water from Arizona's Glen Canyon Dam on Lake Powell in the hope that it would redistribute the river's sand and create additional habitat for the endangered humpback chub. Instead, the young chubs appear to have declined by more than 60 percent, and scientists are struggling to understand why.

"(River managers) spent nearly a decade tinkering with Glen Canyon Dam's operations while the ecology of (the) Grand Canyon continues to collapse," David Haskell, policy director for the environmental group Living Rivers, said in early March.

Living Rivers, based in Moab, Utah, urges removal of the massive Glen Canyon Dam. It and about 200 other environmental groups have asked the federal government to assess this option.

Downriver, water and power agencies hope the blueprint will prove that ecological preservation can be accomplished without dam removal.

Besides its \$626 million budget, the multispecies project is significant because it provides a long-term framework and federal commitment to continue habitat restoration programs.

Also, the plan emphasizes an "adaptive management" approach that will allow the bureau to alter programs – including the fish hatcheries' operations – as it determines which ones are most effective.

"Nobody is certain what will happen when more native fish are put in the river," said Paul Cylinder, lead conservation plan consultant with Jones & Stokes, an environmental planning company in Sacramento. "One purpose for putting them in is to learn more about these species so that we can adapt our management in the future."

It's a complex and time-consuming job. Many of the targeted fish and birds are secretive creatures. Few are attractive or economically important enough to gain much attention outside of a handful of environmentalists and biologists.

The razorbacks are a good example.

When it comes to generating public support, these large, dark-skinned fish with humped backs and spiny fins are no match for creatures such as salmon and pandas.

"They are not on anyone's radar screen," said Burke, the boater who is biology group manager for the reclamation bureau's office in Boulder City, Nev.

Nearly two decades after Burke noticed a precipitous decline in the razorback population in Lake Mohave, a dam-formed reservoir south of Las Vegas, the fish still hold mystery.

"The more we looked, the more amazing things we were finding," he said.

Encouraging signs

That prospect of discovery brings Burke's crew to the river's edge every spring when the razorbacks spawn. By studying the fish's movements, scientists have learned why the population is being jeopardized.

Clues are clear in the night water, where aggressive carp vacuum up razorback eggs almost as fast as female suckers release them.

There's no practical way to get rid of all the carp in the lower river's 450 miles or even in Lake Mohave, home of the waterway's largest remaining razorback population. Even if that were possible, the problem simply would be repeated by catfish, bass and other species introduced to the river system during the past 150 years.

Environmentalists such as Wilensky, of the National Wildlife Federation, have criticized the multispecies plan for not aggressively targeting non-native fish, which are economically valuable to riverside towns and the anglers they service each weekend.

For the past decade, bureau officials have tried another approach: On spring evenings, Burke's crews spread across Lake Mohave, capturing thousands of the shimmering razorbacks. They intend to gather 65,000 larvae this year.

They take these razorbacks to the U.S. Fish and Wildlife Service hatchery upriver near Hoover Dam, a trout facility that has been modified to nurture razorbacks.

When the fish grow to about 14 inches, some will go directly to the river and some will be raised in riverside ponds that the bureau and a handful of other agencies have built to afford a predator-free environment.

Burke helped start an informal razorback recovery program, the Lake Mohave Native Fish Work Group, in the late 1980s. At the time, biologists discovered that predators such as carp and bass were eating virtually all the young razorbacks.

The lake's razorback population consisted mostly of scarred and weary 40-year-old fish. Biologists worried that the gene pool was getting too thin.

In 1987, Lake Mohave contained about 60,000 mature adult razorbacks. Currently, Burke estimates that fewer than 500 of them remain. However, these adults are bolstered by new generations of 3-to 13-year old fish, reared by biologists, that are showing up at the spawning grounds in large numbers.

Partly funded by money from the multispecies project, Burke aims to have at least 15,000 young adults living in Lake Mohave by the end of 2006. He hopes the number will more than triple by 2010.

"We have increased the quantity and quality of the fish," Burke said. "For me, who has seen all of it, it's really encouraging."

Now, the challenge is to replicate those steady gains for other little-known species up and down the lower reach of the Colorado River.

"No one really cared about these species and observed what went wrong," Burke said. "(This plan) gives us the opportunity to unravel some of these mysteries."

Mike Lee, San Diego Union Tribune