

# Endangered Rio Grande Minnow Swims Again

STORY & PHOTOS BY MEGAN WILDE  
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**RIGHT:** Any minnows left in the holding tank after the net & bucket transfer methods were sprayed into the Rio Grande via water jet.

**LEFT:** William Knight with a net full of Rio Grande silvery minnows at hatchery truck site in Big Bend National Park (photo courtesy of National Park Service)



After a bitter-cold overnight journey, an absence of almost 50 years, and a few tangles with near extinction, the Rio Grande silvery minnow returned to the Big Bend last month.

On a frigid mid-December day, about 445,000 of these tiny endangered fish were scooped from hatchery ponds in Albuquerque and Dexter, New Mexico, and loaded onto trucks for a red-eye trip to Texas. One truck suffered a late-night breakdown in Carlsbad, but its piscine passengers continued on, after being transferred in below-freezing darkness to other tanks bound for Big Bend.

Once here, the fish-filled trucks parked on the river's banks near Rio Grande Village and Santa Elena Canyon in Big Bend National Park, at Grassy Banks in Big Bend Ranch State Park, and on Cemex's Adams Ranch near Black Gap Wildlife Management Area. Later in the morning at Rio Grande Village, the minnows were met by a few dozen scientists and staff from nonprofits and several state and federal agencies, who have been working for many years to save the rare fish.

This welcoming committee formed a chain of hands, which escorted the min-

nnows, net by net and bucket by bucket, into mesh corrals along the river's shallow margins. When the truck's tanks had been plumbed completely with nets and buckets, a cannon-like pipe was inserted into the truck's rear, and a silver-speckled jet of water shot any remaining fish into the river. Upon landing, these seemingly stunned minnows wandered the river's edge, with the hesitant, slow movements of timid kids dropped off for their first day of school. Meanwhile, a few real kids pelted the new fish arrivals with rocks, until a bystander warned them that an endangered-minnow mortality might cost them their college fund.

Inside the net corrals, amid floating bits of plants, the other minnows spent the night decompressing from their trip and adjusting to their new environment. The nets were removed the following day, and the silvery minnows swam again in their namesake river, for the first time in several decades.

It was a remarkable homecoming for many reasons. The Rio Grande silvery minnow was once one of the most abundant residents in the Pecos River and Rio Grande, from the Texas

coast into northern New Mexico. But by the 1960s, the fish had suddenly disappeared from all but a small stretch of river near Albuquerque, about five percent of its historic range.

As Aimee Roberson, a U.S. Fish and Wildlife Service biologist in Alpine who has worked on silvery minnow recovery since 2001, explained, most of what we now know about the silvery minnow we know only from this population in New Mexico: that they prefer slow-moving water, that they hunker down in deep pools during winter, that they slurp algae and diatoms off bits of sand and gravel, that they are inclined to move up- or downstream if any section of river becomes too dry.

Some formula of a surge of snowmelt flowing through the river, rising water temperatures, and a change in daylength prompts females to drop their eggs into the water. The semi-buoyant eggs then drift downstream and ideally end up in a shallow spot to hatch. Their lives are relatively short, only a few years long, so a series of dry years can hit a population quite hard, Roberson said.

"They're obviously a very tough and resilient fish, and they did really well for a really long time," said Gary Garrett, a Texas Parks and Wildlife fish biologist involved in the minnow project. "Then they did really bad, really fast. That tells us some things went wrong."

Things went wrong around the same time for a litany of other Rio Grande fish. The silvery minnow is one of many aquatic species that have been extirpated—in other words, gone missing—from the Big Bend reach of the river. Other once-common natives have fallen on hard times and are now rare or threatened. In the past several decades, Texas rivers in general seem to have become tough places to be a fish. Garrett

said almost half the state's freshwater fish species are gone or in some degree of trouble, and many of those are in the drier, western half of the state.

"This is an indicator of a much larger problem," Garrett said. "When fish that have lived here for tens of thousands of years and were just fine, start going away, something's changed. And that's not a good sign."

While what changed for the silvery minnow is a mystery, biologists suspect their disappearance probably had something to do with years of drought, dam building, water diversion, and pollution, according to Roberson.

Even these hardy desert-adapted fish would have had a rough time coping with the combination of less water and more agricultural and mining pollutants that plagued the Rio Grande on the heels of the dry 1950s. Dams probably also restricted their movement up- and downstream and interfered with their spawning habits.

While the minnows somehow managed to survive near Albuquerque, they have haven't flourished there, Roberson said. Drought in the 1990s left many of the New Mexico minnows dead and the species just a few drying puddles from extinction.

"It became very clear that this species was in trouble," she said. And so, the die-offs sparked a series of lawsuits, political battles and water-use struggles which eventually led the federal government to list the silvery minnow as endangered in 1994.

With that protected status, the Fish and Wildlife service was given a mandate to sustain the New Mexico population and save the species. During some summers, the over-allocated Rio Grande has dried into puddles near Albuquerque, and Fish and Wildlife Service staff have

Bucket brigade transported Rio Grande silvery minnows back into their native waters.



gone in to salvage any stranded silvery minnows and move them to locations where water still runs.

“We’ve been going to some pretty Herculean efforts to try to help this fish out,” Roberson said.

Endangered status has also impelled the Fish and Wildlife Service to draft a long-term plan for the species’ recovery. A major component of that plan was last month’s minnow release in Big Bend. By reintroducing the species here—with an experimental status that gives the fish slightly less legal protection—biologists hope that some day the minnows won’t need to be on the nation’s list of endangered species. It’s also hoped some pressure—both political and natural—will be taken off the New Mexico population.

“At least if something catastrophic does happen up there, hopefully we’ll have another population in an area that’s totally separate,” Roberson said. “There may be some more certainty in their survival by having more than one population in the wild.”

There are several reasons the Big Bend region was chosen as the best place to try establishing another wild population. Dams and pollution in other parts of New Mexico and in south Texas might interfere with the minnows’ health and spawning routine, and the stretch between Presidio and El Paso was ruled out because so little water flows there.

The Big Bend reach, though, has no dams or major diversions for more than 300 miles, Roberson explained. The region’s springs, particularly in the lower canyons, flowing into the river dilute pollutants, and overall water quality here has improved since the minnow disappeared in the 1960s. Also, a few other fish species have survived in this area that have reproductive habits similar to the silvery minnow’s.

As an unexpected bonus for the minnow recovery project, this fall’s floods made the Big Bend region a particularly good place for the reintroduction. In some stretches of river here, the mighty flood cleared the banks of exotic salt cedar and giant cane, flushed out sediment, and widened the channel, creating the varied habitats silvery minnows require at different stages of their lives.

“All those things bode well for the fish,” said Raymond Skiles, chief of science and natural resources at Big Bend National Park. “So it’s hard to imagine a better circumstance for the release.”

Like the flood, the minnows may help the river system return to a more natural state, and not only by resuming

their ecological role as a prey species and algae feeder. The presence of an endangered fish in this reach of the Rio Grande will attract attention and funding for other rehabilitation and research projects here, Roberson said.

“Some of their habitat needs are produced by other things we already know need to be done, such as removal of exotic vegetation that armors the banks,” Skiles said. “Doing those other things we know are valuable, we can add to their justification now that it’s also good for the silvery minnow.”

Skiles, Roberson and Garrett expect to learn a lot more about what’s good for the silvery minnow over the next five years. The fish will be monitored closely from near Presidio down through the lower canyons. More releases will be planned depending on what’s observed, and after five years, the species’ recovery plan will be re-evaluated.

“Now’s when the real nailbiting begins. How are they going to do?” Roberson said. “That’s the fun part too, learning and being out in nature and trying to put all the pieces of the puzzle together to figure out what is going on out on the river and what we can do to improve that. I think this is going to be a pretty big piece of that puzzle.”

*Megan Wilde is a writer and Sul Ross State University biology graduate student. She also loves to tell stories about how local peaks got their names; ask her sometime! Her website is: [www.wildewildeweb.com](http://www.wildewildeweb.com).*

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