



Environmental Flows Bulletin

December 2012

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Director's Note

By Denise Fort

The severity of the current drought is evident across the state, in both published data and our daily experiences. My backyard birds cluster around the water that I put out for them—water which is so inexpensive for us and precious to them. And it seems as though the statement on everyone's lips lately is the same one that Ken Burns featured in *The Dust Bowl*: "if it rains."

As a state, we are ill-prepared for a prolonged drought, and nowhere more so than in terms of protecting our natural systems. This issue of the Bulletin has meaty articles from New Mexico's hot spots, and a substantive talk with Estevan López, the director of the Interstate Stream Commission, who is one of the people with the best overall perspective on the state's water. If there ever were a time that calls for a reorientation in our perspective toward the natural environment, this is it. Please keep us informed of developments in your region and let's work towards healthy rivers in New Mexico.

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Dry Times on the Rio Grande: Minnow Numbers Hit Historic Lows

From mid-June through the end of October, the Rio Grande south of Albuquerque showed stark signs of drought. The river's worst day was August 14, when a total of 53 miles in two different stretches were dry.

Of course, it's no surprise water supplies are tight. "Last year, the water year that ended last September, was the driest observed," says National Weather Service forecaster Kerry Jones. "This year has been even drier, making it the two consecutive water years the driest on record." Those records, he notes, stretch back to before the drought of the 1950s.



Photo Credit - Mark Watson, NM Dept. of Game and Fish

The drought has put pressure on everyone in the valley—cities, farmers, water managers, and the U.S. Fish and Wildlife Service. That agency, mandated to enforce the Endangered Species Act, is getting ready to release its ten-year Biological Opinion for the Rio Grande Silvery Minnow.

The Biological Opinion was supposed to have been issued in mid-November, but two days before deadline, Fish and Wildlife Service sent a letter to the U.S. Bureau of Reclamation and the U.S. Army Corps of Engineers saying it needed additional information.

Minnow flows

Historically, the silvery minnow inhabited nearly the entire length of the Rio Grande and the Pecos River, too. Now, its entire habitat in the Middle Rio Grande consists of a 157-mile stretch. (The fish is no longer present in the Pecos River. And within the past few years, the Fish and Wildlife Service has begun reintroducing the fish to the Big Bend reach of the lower Rio Grande.)

And while most of the fish's critical habitat can legally run dry during irrigation season—when water from the river is diverted into irrigation canals—under the Endangered Species Act, a certain amount of water must continue flowing through Albuquerque.

This year wasn't the first time that the Middle Rio Grande dried. And thanks to some mitigation measures in the southern stretch of the Middle Rio Grande, 2012 wasn't even the worst year. In 2003, 60 miles dried, and in 2004, almost 70 miles. And this won't be the last year stretches of the river dry. Even if climate change weren't a factor to consider, storage is down on the Rio Grande's reservoirs, and it would likely take at least two good water years to boost reserves again.

The drought has put pressure on everyone in the valley—cities, farmers, water

Whatever the Fish and Wildlife Service decides within its 2013 Biological Opinion, there is sure to be controversy. The stakes are high for farmers, cities, and water managers—and also for endangered species, wildlife, and the Rio Grande itself. Environmentalists point out that compliance with the Endangered Species Act is all that kept some water flowing through the Middle Rio Grande during this year’s driest times. While the river south of Albuquerque was allowed to dry during irrigation season, the 2003 Biological Opinion requires a minimum flow through the Albuquerque reach.

John Horning, executive director of WildEarth Guardians, recalls the high-profile legal battles of the late 1990s and early 21st century that led up to the 2003 Biological Opinion. He’s afraid that the new framework will not address the Rio Grande’s needs for flows—and will also ignore climate change.

“It’s hard to believe it given the science, but we weren’t talking about climate change at all ten years ago—but it’s here,” he says. “Our snowpack is diminished, our flows are diminished. Ask any water manager who’s paying attention to the hydrological numbers and it’s shouting out at us, it’s staring us in the face.”

Since 2003, demands on the river’s waters have increased, says Horning, and cities have begun buying even more water from agricultural users. “The other thing, unfortunately, is a lot of the institutions that manage the river have become complacent,” he says. “And the river advocacy community has not been as vocal as we need to be—and therefore the institutions that control the river and its water think everything’s okay.”

Horning also worries that there’s a more cynical approach to river management than in the past: “And without passionate courageous leadership that says ‘This river is important, it’s important in its own right,’ I fear that the worst could become the future of the Rio Grande—and that’s a dry river.”

Fears of a dry river aside, the endangered silvery minnow did not fare well in 2012. Despite propagation and salvage efforts by biologists (and the release of supplemental water into the river by the U.S. Bureau of Reclamation), the endangered fish’s numbers were at a historic low when the Fish and Wildlife Service updated the executive committee at the October Middle Rio Grande Endangered Species Act Collaborative Program.

In mid-June, when the river first dried, biologists worked 25 miles of riverbed—finding and rescuing almost 2,000 minnows. By September 19, when they checked pools on 17 miles, biologists found *no* minnows. That’s according to Jason Davis, Supervisory Fish Biologist with the New Mexico Fish and Wildlife Conservation Office. “The latest results in September 2012 indicate the lowest numbers of silvery minnow since 1993,” he told the assembled water managers, lawyers, scientists, and stakeholders. He also pointed out that the numbers are similar to those in that dry year of 2003.

From the audience, Steven Platania of American Southwest Ichthyological Research (ASIR) weighed in at Davis’s request. For two decades, his crews have monitored the fish’s numbers at

20 different sites in the river. While monitoring in October, Platania said, they found not one silvery minnow in the Middle Rio Grande. In almost 20 years, he said, that's a first.

Shifting programs

For ten years now—and at a cost of more than \$150 million—the Middle Rio Grande Endangered Species Act Collaborative Program has tried to figure out how cities, farmers, and Texas can get their water and not run afoul of the Endangered Species Act.

Now, as the Fish and Wildlife Service prepares to release its draft Biological Opinion, the Collaborative Program is readying for a change—and will soon transition to a Recovery Implementation Program (RIP).

Although the Fish and Wildlife Service had initially proposed leading that team (as it does on the San Juan River; see the summer issue of EFB), that job is now going to a third party contractor.

At the October meeting of the Collaborative Program's Executive Committee, New Mexico's Assistant Attorney General Stephen Farris presented notes from meetings related to the transition. The executive committee plans to hire an executive director and contract with a financial management entity (FME). As Farris explained, the FME will contract with the director selected by the executive committee.

According to Farris, the executive director will carry out the wishes of the Executive Committee, be responsible for hiring and firing supervisory staff and contractors, coordinate meetings and documents, coordinate committee activities and public outreach, and provide administrative support for an independent science panel. Members of that science panel will provide advice on how to move forward with the RIP.

Based on preliminary discussions and figures, the committee plans to have an FME in place by February or March and hire the executive director in March. But some members of the committee expressed doubts about both the timeline and the budget. Presumably, discussions will continue at the November meeting.

The Role of Reclamation and Storage

During discussions of the minnow's low numbers at the October meeting, Rolf Schmidt-Peterson, the Interstate Stream Commission's Rio Grande Basin Manager, said that the Rio Grande would have been even drier this year had it not been for releases and diversions from upstream reservoirs.

As Schmidt-Peterson explained in a follow-up email: The direct natural flows of the Rio Grande were supplemented by storage releases, beginning in June, to provide water to the Middle Rio Grande Conservancy District (MRGCD), allow for diversion at the Albuquerque Bernalillo County Water Utility Authority surface water diversion dam, and, later, to meet the 2003 Biological Opinion flow target at Albuquerque.

(It's worth pointing out that despite the efficacy of upstream storage in moving water through the Middle Rio Grande during times of scarcity, biologists say is the presence of dams and

diversions in the river that prevents the movement of silvery minnows beyond their critical habitat. When the river dries there, fish cannot move into a stretch of the river still flowing—something they did prior to the construction of dams and diversions throughout the Middle Rio Grande.)

“By mid-July, the direct natural flows entering the middle Rio Grande had dropped to about 200 cfs,” writes Schmidt-Peterson. “That amount of water would have only made it in the river to near Albuquerque even if no one was diverting surface water. There would have been short stretches downstream that remained wet near drain outfalls and where groundwater discharges to the river but, overall, the river would have been drier than it actually was.”

He adds that storage releases by MRGCD in late June, July, and early August were responsible for keeping water in the river downstream of Albuquerque. And between mid-August and October, storage releases from the Bureau of Reclamation kept the Albuquerque stretch from drying.

But regardless of *how* the Albuquerque reach stayed wet during the year’s driest times, it’s clear *why* the river kept flowing, slow and low as it was: The Bureau of Reclamation was complying with the Fish and Wildlife Service’s 2003 Biological Opinion.

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The State of Forbearance

Across the western United States, many different models of forbearance—freeing up agricultural water for other uses—are working out on the ground. Farmers in southern California can take advantage of dry-option agreements for those years when they fallow their fields. In Oregon’s Mattole River watershed, farmers are compensated for reducing their water withdrawals during the dry season and helping improve summer conditions for coho salmon and steelhead trout in the upper stretches of the river.

It’s even happening here in New Mexico. On the Pecos River, the U.S. Bureau of Reclamation has been purchasing water from farmers for the benefit of the threatened Pecos bluntnose shiner, and the Interstate Stream Commission has bought water to meet compact requirements and make downstream deliveries to Texas.

On the Middle Rio Grande, however, the Rio Grande Conservancy District (MRGCD) has resisted forbearance. In 2005, the district released an irrigation forbearance feasibility report. Concluding that there are too many barriers to forbearance, the report emphasizes problems related to both delivery and storage. According to the report, the district also lacks the ability to verify that irrigators agreeing to forbear actually will. Its authors also state that large-scale forbearance may have negative impacts on riparian habitat and wildlife in the bosque, and perhaps even on the Rio Grande Silvery Minnow, the endangered fish requiring flows in the Rio Grande.

On the surface, forbearance and the sale of water rights seem like similar issues for the district to handle. But they aren't, says Subhas Shah, CEO and chief engineer of the MRGCD. When someone sells their water rights outright they dry up their land altogether, use groundwater, or buy water from the district's Water Bank. With forbearance, he explains, the district would have to move that water back to the river—which he says is impossible.

Given the system of canals and diversions on the Middle Rio Grande, forbearance would have to be done system-wide, he says. "Once the water is in the mainstem of the Rio Grande, it's impossible to get it back—it just runs down the river and that's it. Whatever's in the system, that's what you have," he says. "So forbearance seems a little tricky."

The district's hydrologist, David Gensler, believes forbearance proponents sweep some of its problems and pitfalls under the rug. "It's a real emotional thing, and it's been successful other places, so I think there's an assumption that 'Oh, if we only had forbearance here, the birds would sing, and the sky would be bluer, and everything would be great,'" he says. "But there's just some real practical problems." One problem is the river's plumbing system, he says. The other is storage: "All of our storage occurs on the Chama, which accounts for less than 25 percent of the flow of the Rio Grande, so you don't have the opportunity to capture very much water and park it in storage out of forbearance," he says. Shah adds that once the water is in the Middle Rio Grande, there are no reservoirs for storage. "Once it's in the river," he says, "if you can't capture it, you can't use it for the future."

Gensler also provides a bleak picture of the district's vision for the valley were a forbearance program implemented. "If you start to look at the amount of water you have to acquire to make it effective, to make a difference for the species, you're talking about wiping out agriculture in all of Sandoval County, or all of Valencia County—10, 20, 30 thousand acres," he says. "And once you start to do that, you start to get into the realm of forbearance really isn't voluntary anymore. Because if enough people were to volunteer for it, you'd put everyone else out of business, too. Seed suppliers would go under, and implement dealers would go out of business, storage and processing facilities...and people couldn't function anymore. And you'd probably just wipe out agriculture in the entire valley."

In the end, however, Shah says the district is not opposed to forbearance. He says someone just needs to find a better way to manage the program.

And now, perhaps that is happening. At the U.S. Bureau of Reclamation's Albuquerque Area Office, Joshua Mann and Dagmar Llewellyn are thinking about one option for a new type of forbearance program.

The program would be structured like any other, but there wouldn't be a direct one-to-one relationship between how much water a farmer would stop diverting and how much goes to the river. With this type of program, explains Mann, reservoir operations would be modified. "It's all about timing—like that Cochiti Deviation to try and get the spring pulse for the minnow to spawn," he says. "Those water rights you've leased are used to offset those increased depletions." He adds: "You lease it from here, and then it turns into just an item on a spreadsheet that offsets these depletions."

According to Mann, the Bureau of Reclamation isn't trying to manage the wet water of the irrigation district; the agency just wants to acquire those water rights and put them into the Strategic Water Reserve.

But the program wouldn't be a shell game or involve any sleight of hand, he says. When a farmer agrees to fallow land, that water would be added into the system. And while farmers who sell pre-1907 water rights sometimes lease water from the district's water bank, under a forbearance program, that practice would be prohibited—the land truly must be fallowed.

A lot of the concepts are imported from the Pecos River. “We acquire water rights on the Pecos, we have all kinds of modified reservoir operations that create these huge depletions,” he says, “and then we have a big leasing program there, and we offset these depletions.” The ideas and the benefits could certainly be brought over to the Middle Rio Grande.

Llewellyn says this type of forbearance program will meet environmental needs without dismantling agriculture in the valley. “It takes the pressure off farmers to sell water rights,” she says. Leasing their rights in a forbearance program avoids the “buy and dry” problem and gives farmers more options, especially when they might be considering selling water rights because their children lack an interest in farming.

There are challenges, of course. The lack of adjudication in the Middle Rio Grande is a factor. And even if all the kinks were hammered out, the program would require support from the irrigation district. Reclamation would require an agreement with the Interstate Stream Commission to put water into the Strategic Water Reserve. And the Office of the State Engineer would need to permit the projects and draft rules so farmers wouldn't lose their water rights when temporarily drying their irrigated lands.

Mann is also optimistic that administration of the program would not place a burden on the irrigation district. “Someone would have to drive around to all the farmers, making sure that land was dry—that could be done a couple of times in the summer,” he says, “and then that water could go into the Strategic Water Reserve.”

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One Drought from Disaster for the Rio Grande

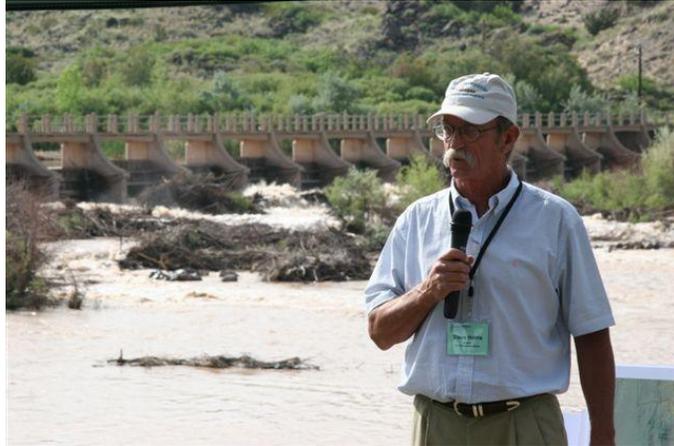
Guest column by Steve Harris, Rio Grande Restoration

Water development has had its day with the Rio Grande. As witnessed by the near-absolute depletion of flows below Brownsville - Matamoros, in the Forgotten River - Big Bend reach, at San Acacia, and even at the Colorado - New Mexico state line, it is clear that any entity desiring a piece of the Great River can no longer simply hope to claim a water right. The “big barbecue” is over and the era of imaginative re-allocation struggles to be born.

Because this is not a comforting thought for public officials charged with keeping our taps flowing, a fair amount of private political energy is expended maintaining the delusion that it is safe to ignore the pendency of the Southwestern water crisis. Despite dwindling storage in the

region's reservoirs and the testimony of experts urging us to stretch the water we can reasonably expect to have at our disposal, cynics suggest that society will not act to avert the crisis, will not act at all until the wolf is manifestly at our door.

In August, the New Mexico Water Resources Institute offered participants a chance to ponder the path ahead at its annual conference, "Hard Choices: Adapting Policy and Management to Water Scarcity." Unfortunately, to my ear, the "vision" that emerged was an unimaginative combination of new reservoirs, water importation, transfer schemes, and groundwater mining. If taken, these actions will allow 21st century New Mexico to remain committed to the 19th century water development doctrine that brought us to the brink of crisis.



Surely the current proposal to mine deep, saline aquifers to support increased growth is a red flag signal of the unsustainability of the present course. What will people do when this source is pumped dry?

A more sustainable approach—a "soft path for water"—lies in reducing the intensity of our overall water demands, embracing conservation and efficiency, and restricting future demands. Experience from neighboring jurisdictions that have embraced demand reduction suggests that success will depend upon a program that incorporates a number of steps, including: better understanding of how water flows through our economic and ecological lives, comprehensive planning, rigorous implementation, and monitoring for success. New Mexico is exploring some of these measures (though not in any systematic way). Forsaking the "hard path for water" will demand serious political commitment, a difficult achievement given the labyrinthine legal regimes that justify the status quo and the deep-seated distrust New Mexicans have of social planning.

Whatever we decide to do (or not do) I do not doubt—given the record of human ingenuity—that we will continue to have water to consume. But that water will most likely come at the expense of a diminished Rio Grande. The utter desiccation of the Los Angeles, the Gila, the Salt, and other rivers worldwide demonstrates the state toward which the Rio Grande is trending. Whether we choose the quixotic path of developing new supplies or the road to sustainability, our water path will have to accommodate the flow needs of our rivers.

Beginning to retrofit the Rio Grande water governance system will require us to fundamentally change the way we think about rivers (and the neighbors with whom we share them). The river may remain a commodity that we can own, but it also a complex life support system with its own set of needs. And we continue to ignore those at our own peril.

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The ISC's Estevan López Talks Water with *EFB*



In 2005, the New Mexico legislature authorized the Strategic Water Reserve, which allows the New Mexico Interstate Stream Commission (ISC) to acquire senior water rights and water from those who are willing to sell or lease. That water can then be used in New Mexico's rivers for compact compliance or to benefit endangered species. The reserve received \$4.8 million in initial funding in 2005-2006, then smaller pots of money in 2007 and 2008. But since then, funding has been halted—and some even “clawed back” to make up for the budget deficit in 2008.

In November, Estevan López, director of the ISC, spoke with *Environmental Flows Bulletin* about the reserve—and other work the commission does to keep water flowing in New Mexico's rivers.

Here's an excerpt of that interview.

EFB: Can you briefly explain the Strategic Water Reserve and what the Interstate Stream Commission has used it for?

Think New Mexico was the primary proponent, but we got behind it and helped get it passed. It allows the ISC to acquire water, water rights, or storage space for two fundamental purposes. First, is for the benefit of endangered species or to do things that will keep additional species from being listed as endangered or threatened. The second purpose is to aid in compact compliance.

So, let me talk about that second purpose first.... [On the Pecos,] we've acquired water rights specifically to assure we can be in compact compliance. We've never put those particular rights in the reserve because there was separate specific authorizing legislation for that Pecos Settlement. ... The thought was that we might get into other similar situations where there's not a specific authorizing legislation, where we might want to acquire water rights to assure our compliance with compact obligations.

The second purpose has to do with endangered species: Obviously, there are often flow requirements or things of that nature for endangered species. Having water, storage, or water rights, or any of those, could be a very useful tool in terms of dealing with endangered species issues—making sure we have some water management tools to make sure there is the water for the fish, basically.

Probably the biggest example of that to date has been on the Pecos River, with what's known as the Vaughn Conservation Pipeline. We've acquired something on order of 1,500 acre feet of groundwater that also goes towards the implementation of the Pecos Settlement.

[Lopez explains that the ISC acquired water rights from lands not far from a stretch of the Pecos that is critical habitat for the threatened Pecos bluntnose shiner.] And we thought, 'Here's an opportunity to use these water rights and be able to deliver them into the river and keep the flows

at that critical habitat reach,' and we have been able to augment the flows at that critical habitat reach. We have used it to that end for a number of years now.

There are a couple of other key aspects to the act and how we've used [the Strategic Water Reserve.] The act says we can make these waters available, for example, to the Bureau of Reclamation. We can have them pay us for the use of those waters we've acquired for the benefit of the fish. And if we get payments for it, that revenue rolls back into the fund and is available for us to acquire other water rights, or operate a well field, things of that nature.

[Lopez explains that the ISC has an agreement with the Bureau of Reclamation, which buys water the state has acquired in Fort Sumner for the Vaughn Conservation Pipeline.] That offsets our operating costs, and it also gets us additional revenue so we can acquire other water rights. That's probably the biggest example of how we've used the Strategic Water Reserve for endangered species.

On the Rio Grande, we've acquired some groundwater rights that we've used primarily to offset habitat restoration depletions. In other words, when we've done restoration for the benefit of the Rio Grande Silvery Minnow, some of what we've done has been deemed to cause additional depletions on the river that we have to offset, and we've used some of those water rights to offset those depletions.

And then finally, we were able to lease a significant portion of water rights from the City of Los Lunas. These were water rights they had in their portfolio that they decided they didn't need in the immediate future, so we leased those to offset habitat restoration depletions. [The ISC has also wanted to use these water rights] if there was a deviation of the Cochiti Reservoir operations—say, creating a spawning spike for overbank flow—and there are additional depletions associated with that that need to be offset.

EFB: What are some of the limitations of the Strategic Water Reserve, and how might those be addressed?

There are a number of limitations—some of them that I completely agree with, some that are perhaps constraints. One thing that is a constraint right now is there's not any funding appropriated for that purpose. Basically, the only money that we have is what revenue we can generate. So that's not giving us a lot to work with, and water rights, as you know, are expensive, and so is storage space.

There are other kind of statutory limitations. I think that one limitation is we cannot acquire water rights for the Strategic Water Reserve through eminent domain, through condemnation. We cannot acquire acequia water rights for the Strategic Water Reserve. If we're acquiring from an irrigation district, we have to do it in consultation with them....

EFB: Are there other projects in the state that the ISC has undertaken that put water in rivers for environmental reasons or endangered species?

We've gotten involved in endangered species type discussions all over the state, on the San Juan, on the Canadian, on the Gila, all over the place. I don't know if we've acquired other water rights outside of the Strategic Water Reserve for those purposes, but we have done quite a lot in terms of trying to negotiate water management opportunities that would give additional water for the fish. For example, I mentioned earlier the deviation of Cochiti reservoir operations.

The authorizing legislation for Cochiti is pretty restricted; it says this it is used for a recreation pool and flood protection.... We've negotiated—and this is a big effort—with the Corps of Engineers, and states of Texas and Colorado, Cochiti Pueblo, to allow us to deviate from that operation, to allow us to store enough water for a spawning spike, or an overbank flow, in recent years.

And while we have helped offset the additional depletions, we haven't had to buy the actual storage in the reservoir; we've been instrument in the ability to do that.

On the Canadian River, downstream of Ute Reservoir, there's the endangered Arkansas River shiner. We've negotiated a habitat plan that says we will operate that reservoir to assure ourselves that at least the amount of water lost through seepage, and available downstream, will continue to be available.

We've participated a lot in the operations plans for Navajo Reservoir, to assure endangered fish flows are avail on the San Juan River, as well.

EFB: How do environmental flows benefit the ISC, or complement the mission of the ISC?

From a practical perspective, if we don't participate, the operations of the river may become so constrained we aren't able to meet our compact delivery obligations. That's been one of the primary reasons we've gotten involved in this. But then as you think about this, our statutory mission is very broad. The ISC has broad powers to do any thing and all things to investigate, protect, and conserve the waters of the state.

In terms of development of the waters of the state, there can be no additional development of the waters of the state or even continued uses of existing development if there is not viable endangered species compliance. So that's another reason we've really gotten involved with this.

In other words, we're trying to make sure that while water is taken out of the river for all of the uses people had historically [and uses they may have in the future], it's not detrimental to the environment.

EFB: Are there misperceptions of the ISC and its role in preserving the environment you'd like to address?

It seem like we're often labeled as simply interested in taking water out of the river. I think that's too narrow a vision of what it is that we do and how we do it. The broader and more correct view is how I've just described, where we were charged with assuring that water is available for development and use, but also for compact compliance. So we're trying to assure that those

things are done in a way that overall is not detrimental to the endangered species or to the river systems generally. We've done things that actually improve the environmental function of the rivers.

In public policy debates and with the public stakeholder groups, we're painted as simply wanting to dry up rivers. One instance of that is on the Gila; that's often the way we're painted. I think the ISC, on the Gila specifically, we've passed a guiding policy because we want to do things to preserve water uses and customs in the state, but we want to do it without detriment to the environment and [while] making use of the best available science.

The ISC has made great efforts at trying to use the best available science to make sure the things that we're doing are not detrimental—or ideally, are actually beneficial to the species and to the ecological function of the streams we're working in.

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Thirty Years of Uncertainty: Development on the Gila

About 30 years ago, David Propst was finishing up his Ph.D. at Colorado State University when he contacted Dr. John Hubbard at the New Mexico Department of Game and Fish. At the time, Propst was looking for work in New Mexico. Little did he realize that Hubbard's answer would affect the course of his career.

In the early 1980s, Game and Fish ended up contracting Propst and Kevin Bestgen to investigate the fish fauna of the Gila River Basin—and to pay particular attention to spikedace and loach minnow. Those two fish were candidates for protection under the Endangered Species Act.

At that time, the U.S. Bureau of Reclamation was still considering a mainstem dam on the Gila River between Mogollon and Turkey creeks as part of the push to develop the river's water under the 1964 Gila Decree (resulting from the U.S. Supreme Court decision in *Arizona v. California*, 376 US 340) and passage of the 1968 Colorado River Basin Project Act (Public Law 90-537).

Geologic studies eventually ruled out the Hooker Dam site; the Bureau of Reclamation then considered the Conner Dam site, on the downstream end of Middle Box Canyon. About this time, Propst recalls, people began paying more attention to the environmental impacts of the proposed dam—and to how much it would cost to actually build a dam on the Gila.



“A mainstem dam was going to inundate a substantial amount of spikedace and loach minnow habitat and have serious downstream impacts—and essentially, the water yield from that dam

was only going to be ten or twelve thousand acre feet a year,” he says. “The cost of the dam, reservoir, the whole project, began ratcheting up from \$250 million to half-billion dollars. And then the question began to be asked, ‘If it’s going to cost this much, how is New Mexico going to come up with its share of the money?’”

Thirty years later, that’s still a good question.

A complicated history

The story of water development on the Gila is a long one—and an extraordinarily complicated one.

In 1953, Arizona sued California and seven of its cities, irrigation and water districts over its use of Colorado River Water. The United States and Nevada intervened and both Utah and New Mexico were also joined as parties. In 1963, the Supreme Court filed an opinion on the case—and in 1964, entered a decree allocating each state its rights to Colorado River waters.

Based on demonstrated water use of lands irrigated in New Mexico each year from the Gila River, the San Francisco River, San Simon Creek and their tributaries and groundwater, the judge appropriated New Mexico its rights to those waters.

In the late 1960s, New Mexico again entered Arizona’s water business. At the time, the Arizona congressional delegation was seeking support for the Colorado River Basin Project Act, which would authorize the Central Arizona Project (or CAP), which today moves about 1.5 million acre feet of Colorado River water from Lake Havasu to southern Arizona through a 336-mile long system of aqueducts, tunnels, and pipelines.)

Rumor has it that when the Arizona congressional delegation sought support from New Mexico, then-Sen. Clinton P. Anderson, D, asked something along the lines of: “How will New Mexico benefit?” To earn support New Mexico’s support, the state was promised 18,000 acre feet of Colorado River water.

But there was a catch. The state didn’t receive that water outright. Instead, New Mexico would have to find a downstream water user in Arizona willing to exchange Gila and San Francisco river water for Colorado River water.

New Mexico couldn’t find any willing water traders and also lacked the authority to force a trade. Essentially, the proposal was at an impasse.

Then, in the early 21st century, Arizona again needed New Mexico’s help. Arizona was seeking federal funding for the settlement of water rights related to the Gila River Indian Community—and the delegation needed help to pass what would be the Arizona Water Settlements Act of 2004 from Sens. Pete Domenici, R-NM and Jeff Bingaman, D-NM, both of whom were on the Senate Committee on Energy and Natural Resources. (Domenici chaired the committee during initial discussions of the act; Bingaman was chair when it actually passed Congress.) Among other things, that law created a new procedure by which New Mexico could use its Gila-San Francisco river water. New Mexico’s annual allocation was lowered from 18,000 to 14,000 acre

feet per year to account for consumptive use. That's 10,000 acre feet from the Gila and 4,000 acre feet from the San Francisco.

Still, the water wouldn't actually belong to New Mexico. New Mexico would pay an "exchange fee" for the Gila River water, which would allow the Gila River Indian Community in Arizona to buy Colorado River water from the Central Arizona Project.

The act also designated two different pots of money for New Mexico. The first consists of \$66 million of federal funding—spread across ten years, those funds are also adjusted for inflation—to develop projects that meet water supply demand in the state. In 2011, the New Mexico legislature passed a bill (H.B. 301) establishing the New Mexico Unit Fund, into which that money could be paid. The fund is managed by the New Mexico Interstate Stream Commission (ISC), and in January 2012, the US Bureau of Reclamation made its first payment of \$9.04 million.

Out of that payment, the legislature allocated \$150,000 toward half the salary of ISC deputy director Craig Roepke and the salaries of an engineer and a hydrologist. (That amount will be bumped to \$264,000 in FY 2013.) The ISC also budgeted \$1.5 million for contractual work in FY 2012 and FY 2013 for "engineering, hydrologic, geologic, ecologic, and economic assessment of proposals." In February 2012, ISC approved 16 project proposals for further assessment—ranging from diversion and storage projects to effluent reuse and municipal infrastructure projects—and an additional study of wetlands restoration and agricultural conservation.

The second allocation of federal cash approved within the AWSA legislation involves between \$34 million and \$62 million. That money comes to New Mexico only if the state decides to build a diversion and storage project. And in order to reap that second pot of money, the state must notify the Secretary of the U.S. Department of the Interior of its plans to build by December 31, 2014.

Meeting multiple needs

The ISC's deputy director Craig Roepke has long worked on the Gila project. And, he says, there have been some misunderstandings of the project and the ISC's involvement.

"The misperception is that New Mexico went into this with the mindset that was common 60, 80 years ago, when we were building Elephant Butte and the reservoirs on the Rio Grande and other rivers," he says. "The ISC is charged by statute to investigate, develop, (and) protect the waters of the state of New Mexico—and we take 'protect' very seriously." He adds: "Some people don't want to believe that."

Developing the AWSA water is critical for the region, he says. The amount of water—an annual average of 14,000 acre feet—may not sound like much, he says. But it represents an increase in the Gila Basin of 47 percent. "That water can be used anywhere in southwestern New Mexico. It can be used to meet environmental needs, it can be used to meet irrigators' needs, municipal needs—now and in the future," he says. "It also represents the last amount of water that New Mexico could make use of in that region."

Currently, a panel is evaluating project proposals. That panel includes representatives from the ISC; Office of the State Engineer; New Mexico Environment Department; New Mexico Department of Game and Fish; and New Mexico Energy, Minerals and Natural Resources Department. It has approved 16 proposals for further study, says Roepke, and will make a final decision, after public input, in November 2014.

Mainstem diversion and storage of the water isn't really an option, says Roepke, adding that all the diversion projects currently being considered are infiltration galleries. "All the projects we're looking at involve a diversion and a gravity feed into the offstream storage, and then the gravity feed to end users, with the exception of one, they're talking about possibly pumping it to Deming," he says. "But we're not sure if that (proposal) is going to go any farther."

Roepke acknowledges that while AWSA is a "stupendous deal" for the Gila River Indian Community, it's only a "good deal" for New Mexico. Under the law, users must pay the cost to pump Colorado River water (via the Central Arizona Project) to the tribe. (He estimates those costs are currently between \$72 and \$122 per acre foot; in the future they may be \$150 per acre foot.) Water users, he says, would contract with the Secretary of the Interior—the ISC would also have to approve the contract and contractors—and demonstrate the ability and willingness to pay for the water. "Now, when you have a project that can cost \$150 million, or up to \$200 million, and you're talking about an irrigator, they probably can't reach into their pocket and drag up that money," he says. "But there are means to bond it, and pay it off. There's possibly Reclamation repayment contracts that are extremely low interest over 30 to 50 years that would make it affordable."

The state is also interested, says Roepke, in using that water to meet environmental needs. Currently, irrigators are the senior water rights holders on the Gila and their diversions are not limited by environmental conditions on the river. That means, he says, segments of the river oftentimes dry, affecting critical habitat of the endangered fish. Developing AWSA water could help both farmers and fish, he believes.

"The same time that you're running water, say, out of offstream storage to a farmer, you're also keeping water in the river and providing habitat for those endangered species," says Roepke. "That's one way we're trying to find what I like to call, a synergistic project that both helps the environment and water users, whether it's irrigators, municipalities, alternative power generation, whatever. I think that's pretty easy to do, to meet those demands at the same time."

Checkered past?

Stakeholder groups have sprung up around the project, and according to the ISC, there have been more than 200 public meetings. And while plans for any projects still remain up in the air, some environmentalists have staked a position against developing the waters of the Gila and San Francisco rivers.

"It's a project with a very checkered past," says Todd Schulke, senior staff with the Center for Conservation Biology. He adds that the project is driven by "water buffalo politics" and the desire to develop water regardless of need.

According to Schulke, the project would harm not only the two endangered fish within the watershed, but also the endangered Southwestern willow flycatcher and two candidate species, the narrow-headed garter snake and the yellow-billed cuckoo.

“From a legal standpoint and a moral standpoint, those are critical issues the conservation community cares about deeply,” he says. “But there are less tangible impacts, too.” Many people are drawn to southwestern New Mexico, he says, because of the natural landscapes that have been protected from development—and because of the Gila River. “There is an intangible value that goes along with having a free flowing, natural river system,” he says.

Beyond environmental concerns, however, the economics of the project don’t add up, says Schulke. “It’s not like we’re investing in water that New Mexico has suddenly come into—we’re really renting the water, or paying the Gila River Indian Community for the privilege of using the water,” he says. “And that makes it very expensive.” The \$62 million from the federal government won’t fund an entire diversion and storage project, which means New Mexico will have to find a way to pay the difference. On top of that, New Mexico water users will have to pay an exchange cost for the water.

“We don’t actually own the water, and will have to pay a tremendous amount to develop it,” he says. “And the real crux? We don’t even need the water.” Whereas the demand for water may be rising in places such as Albuquerque, Santa Fe, or Las Cruces, that’s not the case in southwestern New Mexico. Even Silver City isn’t interested in buying the water (although the city is interested in conservation measures.) And while many in the agricultural community support the project, it’s not clear whether many would be willing to pay for the water, especially given the fact that under the agreement, New Mexico is not allowed to increase its irrigated acreage.

There are other environmental groups involved in or keeping a watch on the process, including the Gila Conservation Coalition (founded in 1984 to fight mainstem dam sites) and The Nature Conservancy. The Nature Conservancy has received several years of funding from the New Mexico Department of Game and Fish to study how surface water and groundwater interact in the Cliff-Gila Valley. Once that study has been completed, the group hopes to better describe the potential impacts of implementing a diversion. TNC has also received funding from the Bureau of Reclamation to conduct a water needs assessment for the Gila.

Within that particular proposal, TNC identifies two threats to the Gila, including additional diversion and climate change. According to the proposal:

Climate models for the southwestern US that include the Gila Basin predict a shift from a snowmelt-driven system with a relatively predictable hydrographs, to one where surface water availability tracks sporadic seasonal rainfall. A water diversion currently being proposed for the upper Gila River in New Mexico could further stress the ecosystem.

Down the road

Given how much time has passed and money spent, a diversion on the Gila or San Francisco rivers isn’t any closer to reality than it was three decades ago.

“All the studies done, all of the money spent—and it’s really hard to come up with a remotely justifiable reason for building a diversion structure. It just doesn’t add up,” says Propst, who remained involved with the project on some level from the 1980s up until his retirement from the New Mexico Department of Game and Fish in 2011. (Propst still works today on endangered fish in the Gila today.) The project will be expensive—to build and then to maintain each year—and there’s no justified demand for the water. And there will undoubtedly be environmental impacts. The Cliff – Gila Valley, he says, is arguably the most important stronghold for spikedace and loach minnows.

Propst also points out that if irrigation diversions were metered and water use monitored, river drying episodes would be limited to “all but the most extreme droughts.” He also wonders whether “turning a spigot on and off will provide sufficient water instream during a drought.” Not only that, but if the current irrigation system were modernized and operated in a more efficient manner, channel drying would be less frequent and less extensive, he adds. He also wonders how climate change will affect precipitation patterns and flow regimes in the Gila.

And when asked why anyone should care about two little fish, the characteristically forthright Propst booms out an answer. “You shouldn’t care about two little fish,” he says. “What you should care about is the integrity of the system. Then you don’t have to care about the two little fish because they’re taken care of.”



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