

Rivals come together amid water debate

WATER

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finding common ground.

The plan faces its first test in early March, when the federal government restarts the plant for a 90-day, low-power test run. Officially, the test will help determine whether the desalter still works, how much operating it full time would cost and how it would affect the wetland known as the Cienega de Santa Clara, a critical habitat for migratory birds.

But the test will provide more than just technical data. It also will bring together the West's water buffaloes — the use-it-up gang — and the increasingly influential conservation movement for a grand experiment in the management and the politics of water.

"The Colorado River is absolutely a finite resource, and we have to be careful in how we manage it," said Jennifer Pitt, a senior resource analyst for the advocacy group Environmental Defense who was part of that first campfire conversation. "But the truth is there's a lot of water there. We've seen time and time again that the law of the river can be flexible enough to meet the needs of water users in the basin. There can be benefits for everybody."

The history

Standing on the main floor of the Yuma Desalination Plant, surrounded by long rows of fiberglass membranes stacked more than 7 feet high, Jim Cherry can't help but smile.

"These are exciting times here," said Cherry, Yuma area manager for the U.S. Bureau of Reclamation, which operates the desalter. "Crews are busy checking pipes, checking pumps, checking for leaks. People have been working here 15 years or more, and we've never really operated the plant."

The desalter's original purpose was to help the United States meet the terms of a water-quality treaty with Mexico, which protested the increasing levels of salt and other nutrients in the Colorado River by the time it reached the border. The bureau decided to divert water drained from farm fields in the nearby Wellton-Mohawk Valley, remove the salt and send it down the river.

After floods washed away one of the diversion canals in 1992, the bureau mothballed the plant, just nine months after turning it on. A series of wet years rendered it unnecessary. Since then, Cherry has presided over a group of caretakers, who kept the plant in working condition, and a group of scientists who developed a water-treatment research center using a one-hundredth scale version of the plant.

Cherry said the researchers used the time well. They increased the plant's efficiency from a 73 percent recovery rate, when 10 gallons of raw water produced slightly more than seven gallons of treated water, to about 85 percent. They also tried desalting local groundwater to see if the plant could produce drinking water someday for small communities on either side of the border. "The plant was authorized to do one thing," Cherry said, "but we can study whether we could do other things."

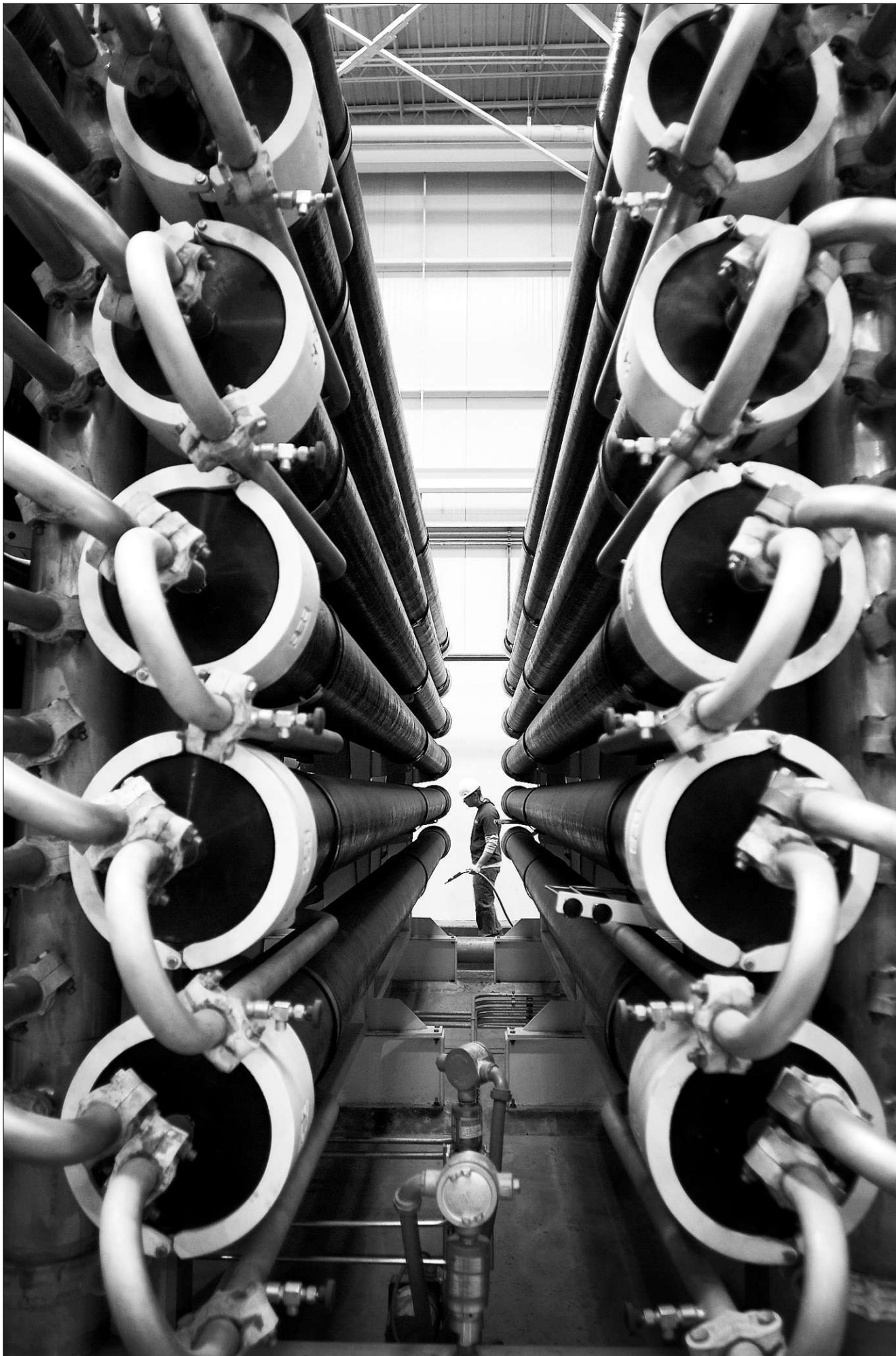
It's the one thing — stretching the over-allocated Colorado River — that stuck in the minds of Arizona water managers. When drought struck the river in the early years of this decade, lowering reservoir storage by half, state officials brought up the idea of restarting the desalination plant.

To meet the Mexican treaty terms without the desalter, the bureau had been drawing water from Lake Mead at the rate of about 100,000 acre-feet a year, more than 32 billion gallons. From the day the plant stopped running in 1992, water continued to flow over the border down the delivery channels, which meant, on paper, Mexico was receiving more than its share of river water.

The solution, Arizona officials argued, was clear: Turn the desalter back on. That is when the birds flew into the picture.

The conflict

All that water flowing past the desalter into Sonora didn't just vanish into the desert. It collected in a geo-



MARK HENLE/THE ARIZONA REPUBLIC

John Stewart cleans the floor at the Yuma Desalination Plant. After nearly 15 years of inactivity, the plant will be restarted in March for a 90-day test run. The \$280 million plant was mothballed in 1992, nine months after it was turned on.



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Luis Padilla checks the level of ferric sulfate in a silo at the plant. A mix of ferric sulfate and lime is used to clean the water, which comes from agriculture runoff.

logical depression formed by a branch of the San Andreas Fault and revived a wetland that had nearly dried up.

Inside of a decade, the marshy area grew from a few hundred acres, derisively called the Santa Clara Slough, to the 40,000-acre Cienega de Santa Clara, a wetland that harbors some of the rarest species in the hemisphere.

"It's the most biologically significant wetland in the Sonoran Desert," said Karl Flessa, a University of Arizona geosciences professor. "It is a remnant wetland of what was once an enormous complex of wetlands that

were either converted to ag land or have simply dried up. The idea here is we better hang on to what we've got. It's the last stand for wetlands on the Mexican side."

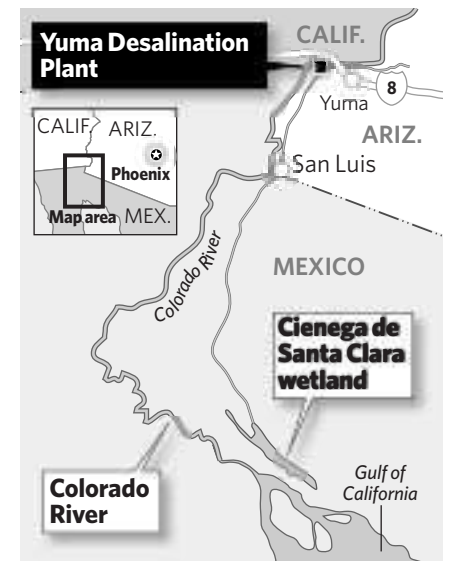
Conservation groups rallied against restarting the desalter because, as designed, it would take most of the water feeding the wetland and return only the sludge left from the desalination process. Environmentalists attacked the desalter as a waste of money, a white elephant that would trample a delicate slice of desert life.

For many activists the wetland also

A threatened wildlife habitat

The Cienega de Santa Clara, what scientists call a "remnant wetland" about 90 miles south of Yuma in Sonora, harbors some of the rarest bird and fish species in the Sonoran Desert. Among its permanent and migratory residents:

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|--------------------------------|------------------------|
| Birds | American white pelican |
| Yuma clapper rail | Snowy egret |
| Snow goose | Fish |
| Spotted sandpiper | Desert pupfish |
| Western sandpiper | Tilapia |
| Black tern | Carp |
| Southwestern willow flycatcher | Catfish |
| Great blue heron | Bass |



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group of water managers, environmentalists and journalists on a rafting trip on the Colorado, hoping to spark conversations about the river's future.

Among the rafters were Pitt, the Environmental Defense analyst who wanted the desalter kept silent, and Sid Wilson, general manager of the Central Arizona Project, who was leading the charge to restart the plant. Pitt had recently signed a letter to Gov. Janet Napolitano, asking her to block the desalter's operation, and everyone on the trip knew it.

For Wilson, the issue was basic: In the event of a shortage on the Colorado, the CAP canal, which delivers river water to Phoenix and Tucson, takes the first and biggest hit. Anything to keep water in Lake Mead could forestall a shortage.

"When we started talking about it, the U.S. position was that it cost too much," Wilson said. "The governor had letters from the environmental organizations opposing it."

Pitt and Wilson continued talking after the trip, and inside of a few months, they hatched an idea to organize a working study group. That group produced a plan to operate the desalter in a way that could still protect the Cienega de Santa Clara.

"I'd invested a lot of energy in simply trying to tell the world what a problem the plant would be," Pitt said. "That didn't put me in a space where it made sense to think about how it could operate without harming the cienega."

The group proposed a series of ideas, most based on finding other water sources to meet the treaty terms and still support the wetlands. The other sources could include groundwater or runoff from other farm fields. The group also proposed expanding the mission of the plant so it could offer the desalted water to communities in short supply.

Both water managers and environmental groups see a broader picture in this debate. Arizona considers the plant critical to the success of a seven-state Colorado River drought plan, a document that relies on augmenting the river's flow. Conservationists say the Santa Clara's continued health will boost efforts to restore wider swaths of the river delta.

"A little bit of water goes a long way," UA's Flessa said. "The whole Colorado River is a story of using and reusing water. This is an example of where at the grass-roots level, these agencies and the other groups got together and said, 'Let's see what we can do.' And with a remarkably small amount of money, they got this thing going. I think it's very impressive."

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azcentral.com

Watch a video about the preparations under way at the water desalination plant and see a slide show from the Cienega de Santa Clara wetland at news.azcentral.com. Reporter Shaun McKinnon writes more about the story at waterblogged.azcentral.com.

helped support arguments for restoring water to the larger Colorado River Delta, a 1.9 million acre expanse from the U.S.-Mexican border to the Gulf of California, the river's historic endpoint. The river rarely reaches the delta anymore, its flow sucked dry by dams, canals and other diversion points along its final miles.

The Santa Clara offered on-the-ground proof that a little water could help revive the delta.

"One of the reasons the delta is so interesting is that simply adding water will get you a quick response," said Michael Cohen, a senior researcher at the Pacific Institute, an environmental research group. "In the early 1990s, floods flowed through the river and the cottonwoods and willows came back. It happened naturally, not because some manager decided to release water."

The solution

Which brings us to the campfire along the Colorado River in the bottom of the Grand Canyon. In the spring of 2004, Bennett Raley, then a deputy Interior secretary, took a

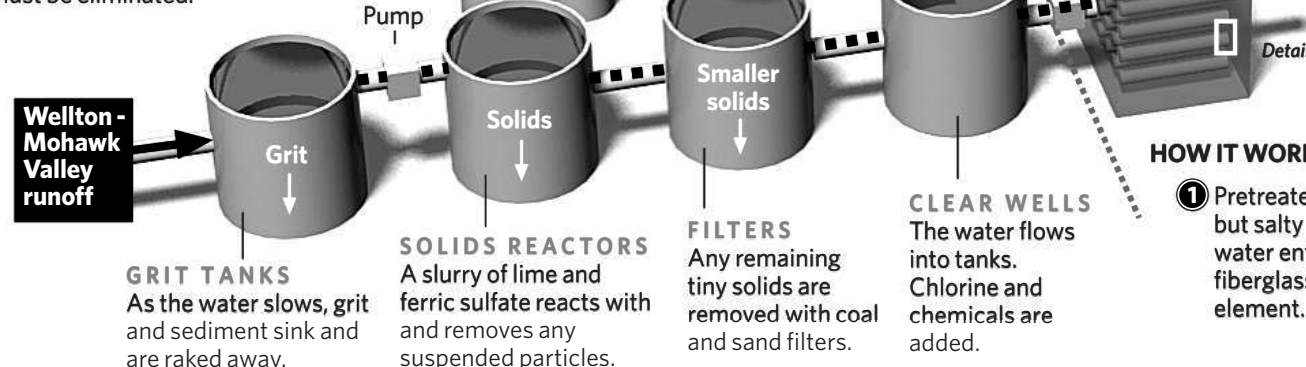
The Yuma Desalination Plant

Completed in 1992, the plant was designed to remove salt from agricultural runoff destined for Mexico. It remains the largest reverse-osmosis desalting plant in the world.

HOW THE PROCESS WORKS

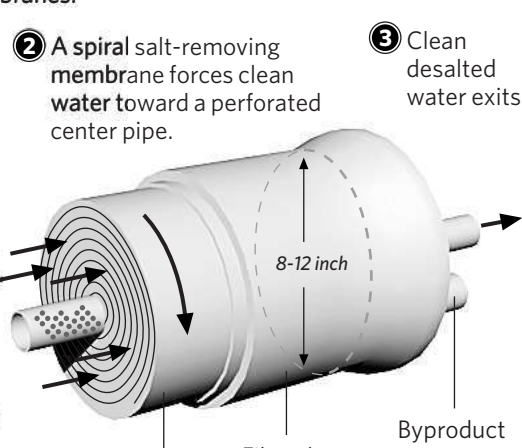
PRETREATMENT

Before the salt is removed, other solids and contaminants must be eliminated.



DESALTING

The treated water is pumped through pipes filled with salt-removing membranes.



HOW IT WORKS

BY THE NUMBERS

- Five miles west of Yuma.
- Construction began in 1975, completed in 1992.
- Cost: \$280 million.
- Plant size: 60 acres.
- Time needed to complete the process: 3-4 hours.
- Can produce:**
- 72.4 million gallons of desalted water per day.
- 837 gallons of desalted water per second.
- 102.7 million gallons of drainage water in one day.

Source: Bureau of Reclamation
ANDREW LONG/
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