Where the Water Meets the Land

FOUR YEARS AGO, I found myself in an airplane above the Colorado Delta with Katie Lincoln, our board chair. From our shared vantage point, we could see miles and miles of dry and dusty river sediment and scarce vegetation. It was a stunning, vast, otherworldly landscape, painted with a thousand shades of beige.

On the ground, we saw a different story. Eleven months earlier, the United States and Mexico had released a "pulse flow" from dams on the Colorado River to mimic the historic spring floods that occurred for millennia before humans began managing the river's waters. More than 100,000 acre-feet of water—enough to meet the annual needs of more than 200,000 households—flowed south to satisfy provisions and promises that had been made between the two countries years before; for the first time in two decades, the river reached the Gulf of California.

Leading up to that event, public and civic actors from the two countries prepared an experiment to see whether the natural habitat of the delta could be restored with improved water flow. They cleared about 320 acres of land near Laguna Grande of non-native vegetation, seeded some of the land with native plants, and planted native trees in other sections. By the time Katie and I visited the site, the success of the experiment was obvious. Native flora was thriving, and it was attracting native fauna back to the site. Both migratory and non-migratory birds made their presence known with a cacophony of calls and responses. As luck would have it, two beavers had taken up residence next to the restoration site. Their dam captured return flow from groundwater and agricultural irrigation to provide a more reliable water supply.

This land use experiment, which had been invisible from the air, demonstrated clearly that native habitat could be restored in the delta. It also was clear that much more needed to be done.

At one time, the delta was the largest wetland in North America, covering some 173 million acres. After the headline-making pulse flow in 2014—which was actually a return of water due to Mexico that had been stored in Lake Mead, following a 2010 earthquake that damaged irrigation canals south of Mexicali—the United States and Mexico negotiated the release of more regular, more gradual base flows. In September 2017, they agreed on the delivery of 210,000 acre-feet of water to the delta over the next decade. Earlier this year, the Natural Resources Defense Council reported that the original restoration site at Laguna Grande had grown to more than 1,200 acres.

In many ways, the success of that little patch of land is the story of the entire Colorado River Basin. When you look at the big picture—when you peer down from an actual or figurative mile-high perspective—you see a complex system, a tangle of geography and history and culture, a limited, nearly tapped out resource that multiple states, tribes, and countries have relied on, shared, and fought over for the last century. But get down to the ground and poke around a little, and you see something else: Little patches where innovation and collaboration are blooming. Restorative partnerships and renewed commitments to confronting seemingly intractable issues. A growing understanding of the importance of recognizing the intersections of water, land, and people.

During our debrief following the tour, I asked our hosts about the end game for the delta—what would it take to restore the entire place? The pulse flow was a singular moment, produced by a constellation of events and aided by diplomatic intervention. It would take a different alignment of actors to generate a permanent solution. But which actors? Would it be possible to promote civil discourse among the river's stakeholders to conceive a collective solution to manage this precious resource? Who would convene them?

This is a hotly contested watershed. The river supplies drinking water to more than 40 million people, more than half of whom live outside the basin; irrigates more than 5.5 million acres of farmland; and produces more than 4 gigawatts of electrical power. Because the river is allocated—actually, overallocated—through a byzantine web of water rights, interstate agreements, and an international treaty, forging new agreements and practices among these stakeholders might seem to be an insurmountable task.

Just because something is hard doesn't mean it's not worth doing. We decided to find out whether and how the Lincoln Institute could contribute to better stewardship of the river.

We embarked on field research to find out who was already working on water issues in the basin and assessed our own core competencies. We wanted to see whether there was demand for our potential contributions. Could we leverage our knowledge and experience in the areas of land policy and stakeholder engagement? Should we extend our efforts at collecting, curating, and mapping new data sets? Should we adapt and advance the use of our scenario-planning tools to promote informed decision making and better civic engagement?

The Laguna Grande restoration area before, during, and six months after the Colorado River pulse flow in 2014. Today, the site is forested with native vegetation, which stands so tall that a photo taken from the same spot yields a full frame of green.
Credit: Dale Turner/The Nature Conservancy

We encountered a crowded field of researchers, advocates, technicians, and dedicated public servants. Universities and government agencies continuously study the science of the river. Policy makers and analysts cover the broad contours of basinwide policy. Various experts are producing and perfecting technical projections of demographic, drought, and development scenarios. We noted, however, that the nexus of land and water policy was a neglected but critical niche in the field. Land use decisions are often made without consideration of their impacts on water, putting the sustainability of our communities and the river at risk. We founded the Babbitt Center for Land and Water Policy to explore and nurture the critical economic and environmental connections between land and water.

We dedicated the center to Bruce Babbitt, former U.S. Secretary of Interior, governor of Arizona, and member of the Lincoln Institute's board of directors. Babbitt first codified the connection between land use planning and water management in state law when he signed the Arizona Groundwater Act of 1980. (Be sure to see our interview with him on page 10.)

The Babbitt Center primarily focuses on the Colorado River and those who depend on it, but we don't work alone. We know that effective long-term stewardship of this immense but fragile resource is a huge endeavor requiring broad collaboration. With intellectual and financial support from the Lincoln Institute, the center is leveraging the resources of others, establishing partnerships with universities, NGOs, and funders (see page 6).

We are lucky to have an incredibly knowledgeable and committed staff at the Babbitt Center headquarters in Phoenix, many of whom worked on this issue of *Land Lines*. Director Jim Holway is no stranger to western water policy negotiations, as the former assistant director of the Arizona Department of Water Resources and current vice president of the Central Arizona Water Conservation District board of directors.

He had this to say when I asked him, after he took a recent Grand Canyon rafting trip, to reflect on what's at stake in the basin:

> *Looking forward, Colorado River managers will face numerous political rapids and significant uncertainty about future climate, water supply, and water demand conditions. However, we face nothing like the dangers and hardships faced by the early explorers of the Colorado. Solutions to our challenges do exist, and we can build on John Wesley Powell's legacy of exploring the Colorado Basin, of understanding how to sustainably manage the lands and limited water resources of this arid region, and of challenging conventional thinking.*

Challenging conventional thinking. Although we launched our work in the Colorado River Basin, we know that it will have global relevance. Through the broader reach of the Lincoln Institute, we are already initiating partnerships with global partners like the OECD and the UN. According to the UN, more than 1.7 billion people around the world live in river basins where water use exceeds recharge.

This special issue of *Land Lines*—the first issue of the publication's 30th year—captures our early efforts to build a body of knowledge that articulates the important relationship between land and water. In these pages, we identify the challenges in the Colorado Basin, take a brief tour through its history, and talk with some of the smartest people we know to find out what the future holds. We also look at some innovative efforts being undertaken to better integrate land and water policies in pioneering communities. As we share this knowledge with other communities in arid and semi-arid regions throughout the world, we will do our small part to satisfy the primordial human fascination with places where land and water meet.

Map: U.S. Bureau of Reclamation