

# etched

MAGAZINE

ExperienceTheSouthwest.com



Finding Common Ground  
PRESERVATION **COLLABORATION** RECREATION



\$3.95 U.S.

#theevolutionof**elan**

# Finding Common Ground

PRESERVATION **COLLABORATION** RECREATION





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Photography By: Fred Phillips

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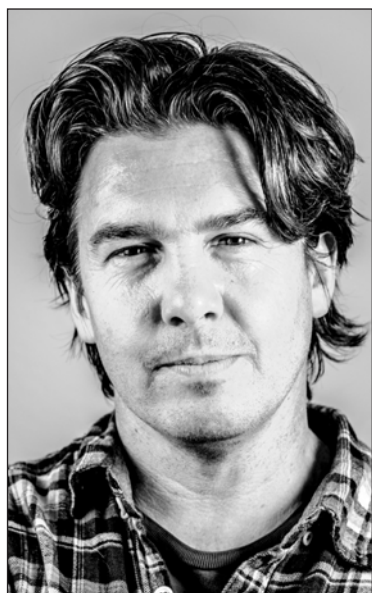
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**ROWAN JACOBSEN** writes about place and how it shapes ecosystems, cultures, cuisines, and us. His quest to capture the spirit of place and people has led him from the bayous of Louisiana to the marshes of Alaska's Yukon Delta, from the jungles of India and Burma to the rivers of Amazonia. He writes for Harper's, Orion, Mother Jones, and Outside, where he is a contributing editor. He is the author of the James Beard Award-winner *A Geography of Oysters*, *Fruitless Fall*, *The Living Shore*, *American Terroir*, *Shadows on the Gulf*, and *Apples of Uncommon Character*. He lives in Vermont.



**FRED PHILLIPS** has over 18 years of experience doing ecosystem restoration, landplanning, fundraising and landscape architecture in the southwestern United States. Over the last 18 years, Fred and his team have successfully raised over 15 million dollars in grants for the restoration and protection of rivers in the southwest. Fred has extensively boated the Colorado River from the Utah Border to the Colorado River Delta. He is also a musician, filmmaker and photographer. He resides in Flagstaff, Arizona with his wife Kellner and their daughter Faye.

## FINDING COMMON GROUND

EXPERIENCE  
ENJOY  
AWARENESS  
EDUCATE  
PRESERVE

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## ON OUR COVER

Writer Rowan Jacobson paddles into the sunset in the Colorado River Delta. The "pulse flow" of water brought the river channel back to life where it had been dry for decades. The project reconnected communities with the river, restored native plant communities for wildlife, and inspired two countries to continue restoring this international treasure-the Colorado River Delta.

For story see page 40 - Photography by: Fred Phillips



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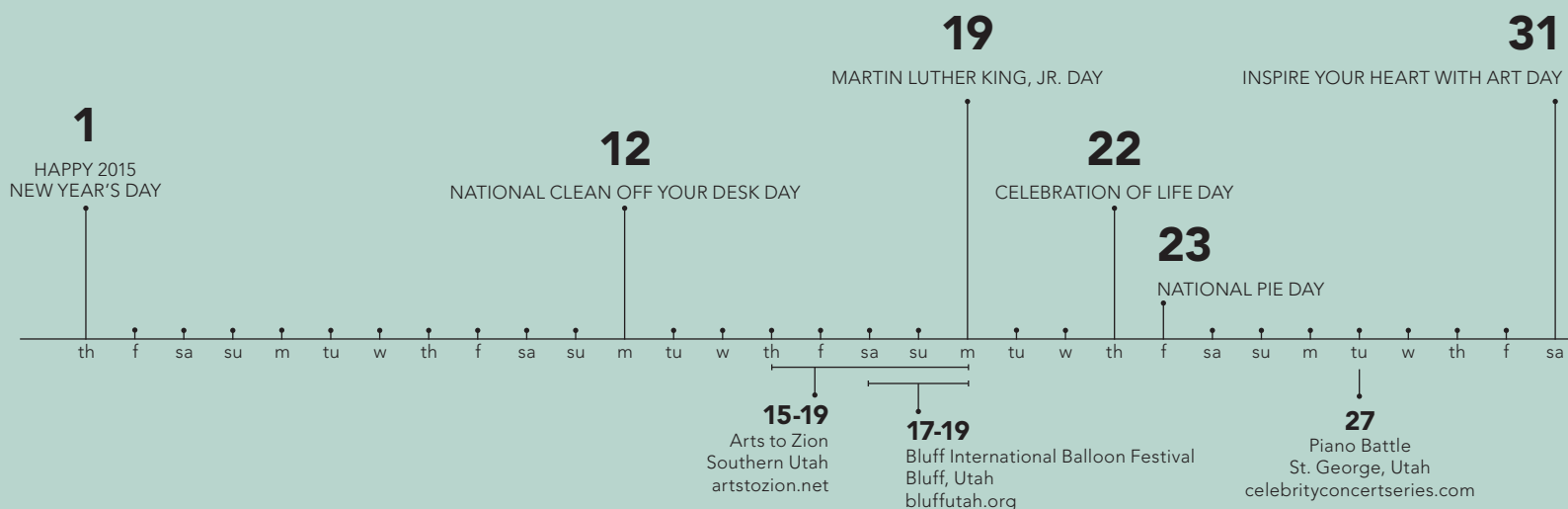
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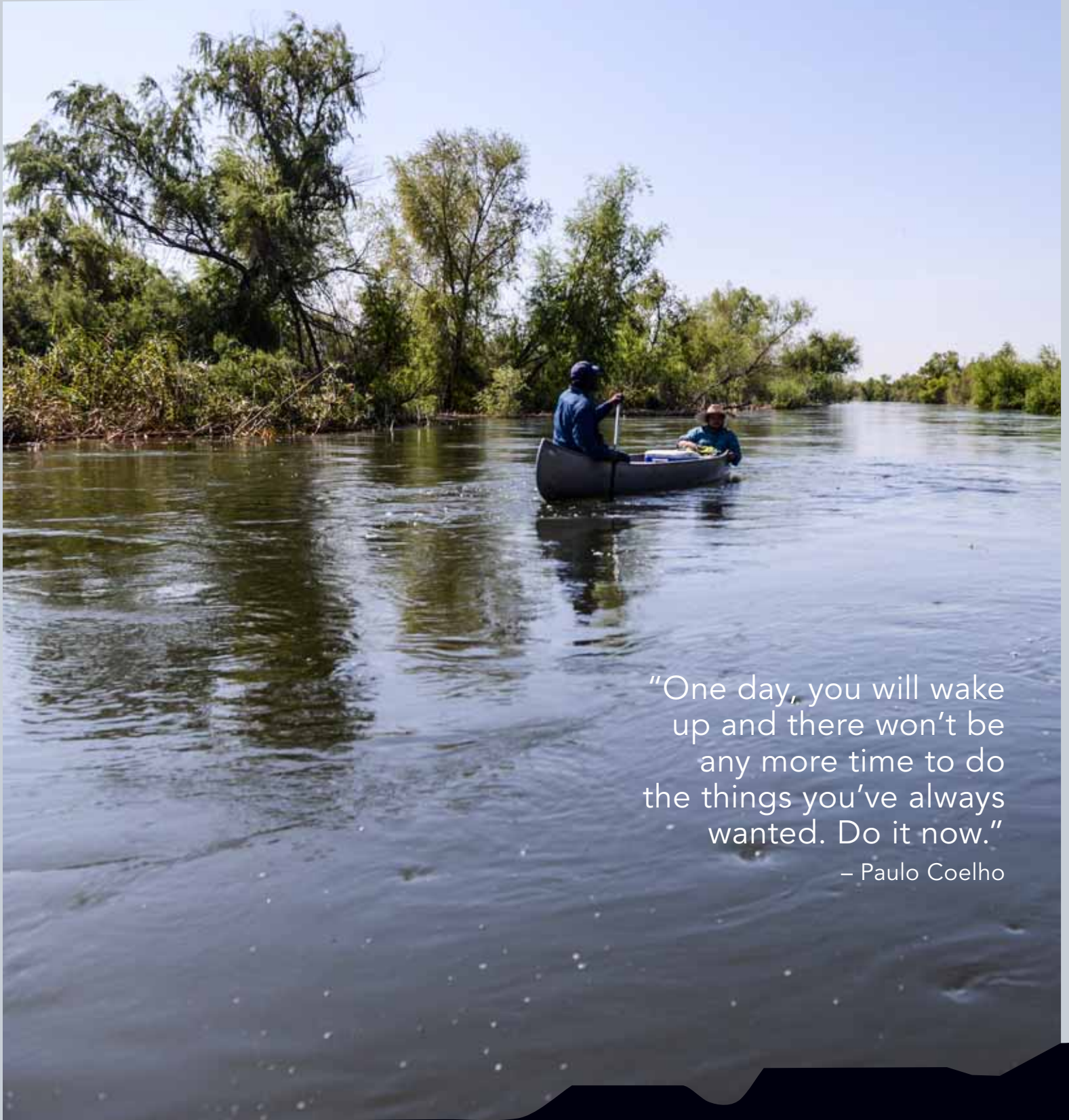
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## JANUARY 2015 - celebration of life month





"One day, you will wake up and there won't be any more time to do the things you've always wanted. Do it now."

– Paulo Coelho





# The Day We Set **THE COLORADO RIVER** FREE

WRITTEN BY Rowan Jacobsen | PHOTOS BY Fred Phillips

**It's been more than 50 years since the Colorado River regularly reached the sea. But last spring, the U.S. and Mexico let the water storm through its natural delta for a grand experiment in ecological restoration. As the dam gates opened, a small band of river rats caught a once-in-a-lifetime ride.**

*The Delta seen from the air near its merger with the sea.*





On Friday, March 28, 2014, I did something that has been impossible for most of the past 50 years. As photographer Pete McBride snapped photos of me, and two French documentary filmmakers shot footage of him, and an unidentified blue helicopter circled above, I pumped up an inflatable NRS paddleboard, dropped it onto the Colorado River below Morelos Dam, on the Mexico-Arizona border, flopped onto the board, and glided over the cool waters.

What was remarkable about this was not my less-than-graceful launch but the fact that I was launching at all. Morelos, the last of the 12 major dams on the main stem of the “American Nile,” is where you go to watch the Colorado die. Stand on Morelos and look north, toward the United States, and you see a sparkling, reed-fringed river coming at you. Look south and you see an empty channel that twists 100 miles to the sea. After a thousand straws from Denver to Los Angeles have sipped the Colorado dry, after 40 million people, 10 million cows, and countless heads of iceberg lettuce have had their fill, the coup de grâce is delivered here at Morelos, where the last 10 percent of the river is shunted into the Reforma Canal and piped west to the Mexicali Valley so we can all eat baby spinach in January.

Thus it has been for more than 50 years. After Glen Canyon Dam was completed in 1966, the Colorado River delta was left for dead. No water, no life. But an unprecedented agreement between the U.S. and Mexico called Minute 319 changed all of that. Over eight weeks, a 105,392-acre-foot pulse flow of water—about 34 billion gallons—would pour through Morelos and down the dry channel. The idea was to mimic the dynamics of the Colorado’s historical spring flood, timed to coincide with the germination of willow and cottonwood seeds. For more than a year, restoration ecologists with Arizona’s Sonoran Institute and Mexico’s leading environmental group, Pronatura, had been planting seedlings and digging channels, concentrating on the low-lying areas where the groundwater was already high enough to support clusters of cottonwoods and willows—and even a few beaver and muskrat. With a little luck, the water would make it far enough down the dry channel to reach these places. With a little more luck, there might be just enough extra water in coming years to keep some of those new seedlings alive.

It was the unlikeliest of plans: take a titanic slug of water from the most over-allocated river in North America, shoot it through some of the driest country on earth, and turn these godforsaken wastelands back into an Eden. And how anyone managed to pull it off is mystifying, because—perhaps you’ve noticed—the West is as parched as Mars right now. In the heart of the Great Megadrought of 2014, with Lake Mead draining behind Hoover Dam like an unplugged bathtub, farmers scuffling for water like dying men in a life raft, and the Bureau of Reclamation warning Arizona and Nevada to plan on rationing by 2016, somehow \$10 million worth of agua pura was being jettisoned.



## Take a titanic slug of water from the most over-allocated river in North America, shoot it through some of the driest country on earth, and turn these godforsaken wastelands back into an Eden.

Honestly, nobody knew if it would make it to the sea. Nobody knew what would happen. Nothing like this had ever been tried before. And while scores of scientists from all over the world had descended on the delta to measure the effects on salinity, hydrology, biology, and every other factor they could think of, we were here to take the river's pulse in an entirely different way. We were going to float it. Dead for decades, would it now feel like a glorified irrigation canal? Or, somewhere in the middle of it all, away from the cameras and piezometers, might we still summon the spirit of the Colorado? Forget the science; we were here for a séance.

Just below the dam, at least, the river truly looked reborn. All but one of Morelos's 20 gates were wide open, and so much water was pouring down the channel that a lake had formed around the structure. Before a handful of perplexed onlookers, our ragged flotilla of river rats carried a couple of dented aluminum canoes and two inflatable paddleboards to the shores of the instant lake. The water would be sinking into the dry sand over every mile, but for now it was all systems go.

I was with four men, most in their forties, who'd made the Colorado their lives. Fred Phillips, the Flagstaff, Arizona, consultant who'd put the trip together, is the Southwest's premier restoration ecologist, the man who pioneered the art of transforming barren Colorado riverfront into lush wetlands. Pete McBride grew up on a Colorado ranch that depended on the river. Six years ago, he'd attempted to follow it 1,450 miles to the sea; the resulting book and film are unforgettable testaments to the death throes of the lifeblood of the Southwest. Osvel Hinojosa Huerta, 39, the ecologist in charge of Pronatura's restoration projects and the region's preeminent ornithologist, had covered every square mile of the river channel on foot doing bird surveys; he could hardly believe he was about to do it by boat. Sam Walton, a member of the family behind Walmart, had worked for years as a river guide in the Grand Canyon, as well as a hydrologist. He'd assisted Fred on several restoration projects, and the Walton Family Foundation funded some of the pulse-flow-restoration work. Sam had grown skeptical, however, of the pulse-flow strategy—he feared that too much water would simply sink into the dry riverbed, when it could have been channeled directly to restoration sites via canals—and was here to see the results for himself. As it was for all of us, the resurrected Colorado was catnip to him, whatever happened.

Our game plan had been to "start slow, then back off"—we'd be running out of river soon enough—but Sam shot down the channel on a banana-yellow Badfish paddleboard and disappeared, chasing virgin water. The rest of us stuck to the program. Pete glided in a canoe, snapping photos. Fred broke out his guitar and rattled off "The Baggage Boat Blues," a Fred Phillips original. I paddled upstream until I was above the dam, lay flat on my back, and became maybe the first person to float under the gates since Chris McCandless slipped through here in his canoe in 1990, during one of the last floods to wet the lower Colorado, on his way to the Gulf of California and into the wilds of history. The world felt new.



Days earlier, the world had felt very old to me. Old and exhausted. I'd stood in the center of the parched riverbed and stared at the Mad Max misery of the limitrophe, the 23-mile stretch where the Colorado delineates Mexico from Arizona and where desperate men run the gauntlet to deliver themselves or drugs to the promised land. If you wanted to find a place that symbolized everything that has gone wrong in the delta, this was it. On the U.S. side, the 20-foot-high rusted fence with the halogen spotlights rising above it and Border Patrol trucks stalking the front. Next to it, the bridge in the Mexican city of San Luis Río Colorado arching over the riverbed. The guys in San Luis told me how fishing was their life back in the 1990s, when a few unusually wet years revitalized the river. Bass, carp, corvina. As teenagers they used to jump off the bridge. Kersplash. Now it's a 35-foot plunge to the dry bed below. Bored teens on ATVs did donuts in the sand, round and round.

I tried to reconcile what I saw with Aldo Leopold's description of the Colorado River delta in *A Sand County Almanac*, a towering text of the conservation movement. In 1922, Leopold and his brother paddled up the mouth of the river from the Gulf of California, camping along its braided channels and "deep emerald" waters. Leopold fell hard for the place. "The river was nowhere and everywhere," he wrote, "for he could not decide which of a hundred green lagoons offered the most pleasant and least speedy path to the Gulf. So he traveled them all, and so did we. He divided and rejoined, he twisted and turned, he meandered in awesome jungles, he all but ran in circles, he dallied with lovely groves, he got lost and was glad of it, and so were we."

The river Leopold found was a "milk-and-honey wilderness" filled with game "too abundant to hunt," which Leopold chalked up to the innumerable seedpods hanging in every mesquite tree. "At each bend we saw egrets standing in the pools ahead, each white statue matched by its white reflection. Fleets of cormorants drove their black prows in quest of skittering mullets; avocets, willets, and



*Sam Walton paddles toward the Morelos Dam.*

yellow-legs dozed one-legged on the bars; mallards, widgeons, and teal sprang skyward in alarm.... When a troop of egrets settled on a far green willow, they looked like a premature snowstorm."

There are few birds here now. Few walls of mesquite and willow. A classic case of unforeseen consequences. The delta gets about two inches of rain per year. It makes Kuwait look like a rainforest. But thanks to its great benefactor, it used to be the ecological jewel of the Southwest. Fed by snowmelt from the Rockies, the Colorado would leap out of its banks each spring to green the delta countryside for miles around. At two million acres, the Colorado River delta was half the size of the Mississippi River's lower delta and, because it was an oasis in a vast desert, probably even more vital.

Of the hundreds of thousands of acres of riparian forests that once flourished on the lower Colorado, less than 2,000 acres of native willow and cottonwood remain. The rest has turned largely to tamarisk, a mangy, invasive shrub that is one of the only plants that can survive the salty sands of the modern delta. In jeopardy is the entire Pacific Flyway, that billion-bird artery stretching from Alaska to Patagonia, whose travelers must now make the 400-mile death-flap over the Sonoran Desert without food or respite.

Even today, few Americans grasp that the same river that carved Canyonlands and filled Lake Mead also kept Baja and Sonora alive. Back in the era of massive dam building, farmers and city planners were only too happy to see the wild Colorado transformed into a domesticated delivery system. Denver, Las Vegas, Phoenix, Tucson, Albuquerque, Los Angeles, San Diego, Mexicali, and many more municipalities drink the Colorado every day.

As do you. Most of America's winter veggies are grown in the irrigated valleys of Southern California and Arizona. Your fridge is filled with Colorado River greens. Your beef was fattened on Colorado River alfalfa. Even your milk may well be the Colorado transformed. We all nurse from the mother river.



*Rowan Jacobsen and Osvel Hinojosa pump up the paddleboards before setting out on the river.*





Rowan Jacobsen canoes past Morelos Dam.

**I'd planned on misery.  
I'd thought: The water won't be that deep.  
I'd thought: The water will be gross.  
I'd thought: We'll be clawing our way  
through tamarisk thickets. Pushing  
ourselves through flotsam and froth.**

**I was wrong on all counts.**

We ripped downstream on a bona fide river. It was eight feet deep, a hundred feet wide, roiling cool and green in the desert light.

Beneath me, drowned tamarisk trees waved like kelp in the current. We were flying through a forest, the paddleboards our magic carpets. I smacked into the top of the occasional tamarisk, staggering like a drunken pirate, but the river had risen right over the top of most obstacles. An hour into our journey, the river felt very alive. And this entire pulse flow was just 0.7 percent of its annual flow. We were surfing on a rounding error.

Yet this miraculous flood—deemed so important to relations between the two countries that it had elicited a morning of speechifying by everyone from the governor of Baja (“There are 260 rivers that cross international boundaries, and this is the first such event in the history of the earth”) to the U.S. deputy secretary of the interior (“In retrospect, it seems so obvious that neighbors should take care of one another”)—had taken 15 years of lobbying to bring to fruition.



Rowan Jacobsen lets sand fall through his fingers in the riverbed, before the pulse flow.



Rowan lets water fall through his fingers in the same spot of the once dry riverbed, during the pulse flow.

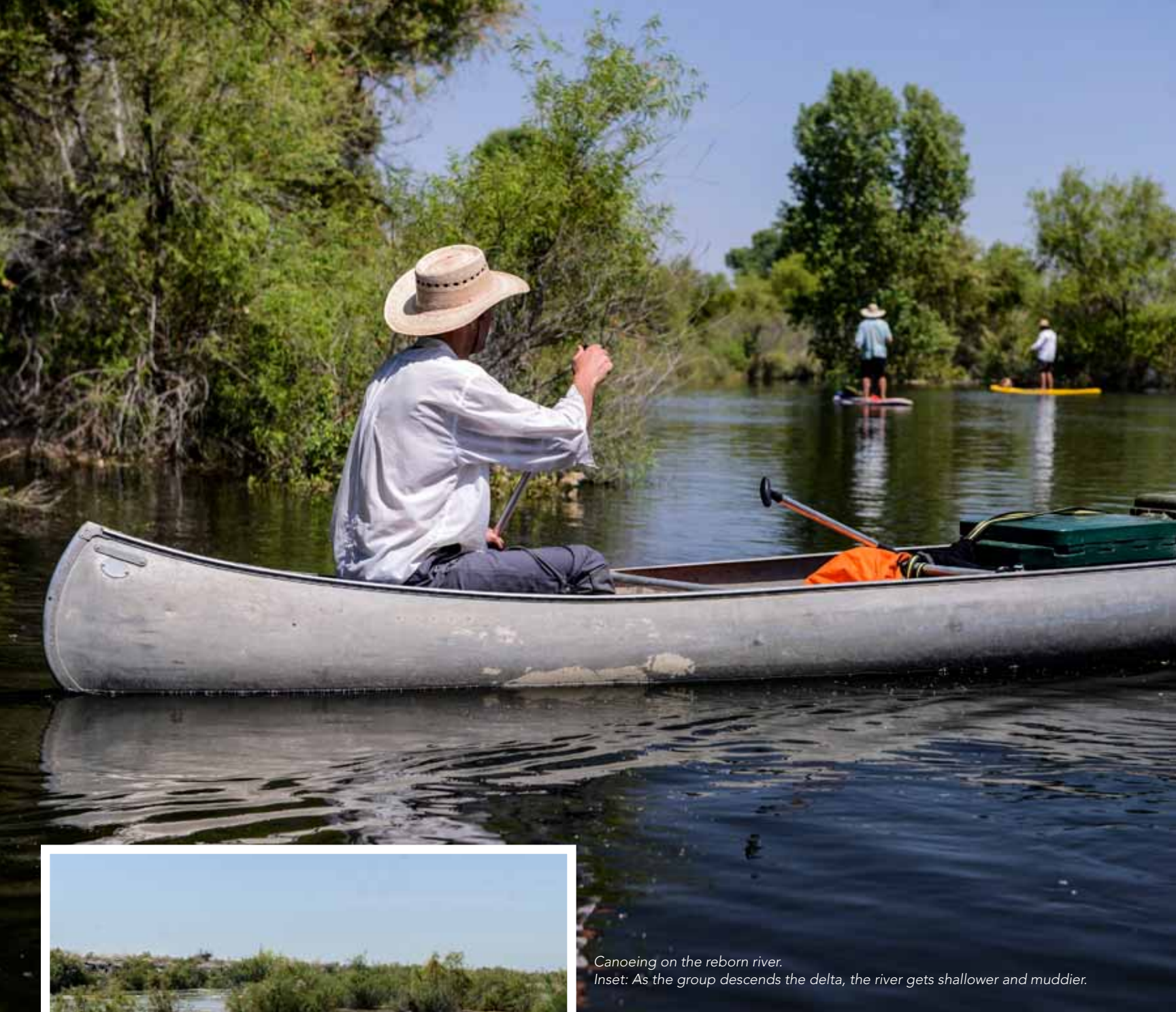
On March 23, I'd stood with a crowd of 200 on the bank below Morelos Dam, gazing at the concrete monolith and waiting for the first gate to open. Beside me, Jennifer Pitt, the director of the Environmental Defense Fund's Colorado River Project, and Peter Culp, a Phoenix attorney and the go-to lawyer for Colorado River water issues, held their breath. "We've been waiting a long time for this," Pitt said. It was way back in 1998 when Pitt, who was already at EDF, and Culp, then a law student volunteering for the Sonoran Institute, first came up with a plan for how new water-sharing agreements could free up some flow for the delta.

For years the idea went nowhere. Mexico and the U.S. were battling over Mexico's water supply, and by 2006 litigation was the preferred mode of communication. It took an earthquake to shake everyone into action. On Easter Sunday 2010, a 7.2-magnitude temblor destroyed much of Mexico's canal system. The U.S. agreed to store some of Mexico's water in Lake Mead on an emergency basis until Mexico could use it, and relations began to thaw. In November 2012, Minute 319, the latest amendment to the 1944 Water Treaty between the two countries, was signed. It allows Mexico, which has no large reservoirs of its own, to store future surplus water in Lake Mead in exchange for agreeing to share the burden of any future shortages. The U.S. agreed to invest in improvements to Mexico's irrigation network, and part of the water saved from that was devoted to delta restoration. Mexico's National Farmers Confederation objected to what it saw as a water grab by the U.S., and California's Imperial Irrigation District and Los Angeles squabbled over each other's role in the agreement, but their voices were drowned out by the deal's environmental component, which made it a crowd-pleaser in both countries. As Pitt put it, "How could you not fix this problem? It's so obvious. And it gets people on an emotional level. It's just not right. Especially at the bottom of something as grand as the Colorado River."

And with that, Gate 11 creaked open, a frothing mass of whitewater spilled out of the dam, and everybody went wild. Jennifer and Peter raised their fists in the air. Cameras clicked. Two drones whirled overhead. A sheet of water rushed over the marsh, simmering with escaping air bubbles, and licked our feet. Champagne corks popped. Jennifer doused Osvel. Osvel doused Francisco Zamora, director of the Sonoran Institute, who cried, "¡Hay agua!" And we all watched as a tendril nosed its way down the channel, hesitated in a pool, seemingly uncertain, then appeared to make up its mind as it spilled over the lip and ran downstream. If the water could make it 50 miles, it would reach the Laguna Grande restoration site, where tens of thousands of seedlings had been planted by Pronatura and the Sonoran Institute.

"That was so easy," I said to Peter Culp. "Just open the gates and let the water flow. Should happen every year." But Culp wondered if it would ever happen again. As part of Minute 319, EDF, the Sonoran Institute, and Pronatura had agreed to provide a 52,000-acre-foot base flow, to be delivered over five years, to keep the new trees alive. They were scrambling to purchase water rights from Mexican farmers, and they'd teamed up with the Nature Conservancy, the Redford Center, and the National Fish and Wildlife Foundation in a Raise the River campaign to find the \$10 million needed to do it. Even Will Ferrell and Kelly Slater lent a hand, shooting a mock PSA with Robert Redford in which they proposed that instead of raising the river, we should move the ocean.





*Canoeing on the reborn river.  
Inset: As the group descends the delta, the river gets shallower and muddier.*

But in 2017, the agreement must be renegotiated, and there is no guarantee that it will include water for the environment at all. With the Southwest projected to add another 20 million people in the next two decades and climate-change models predicting a 10 percent decline in the Colorado's flow, finding extra water is getting harder. Frankly, the fact that it happened in 2014 felt like a minor miracle. Right up until the moment when the first dam gate opened, I'd half expected black helicopters to swoop in and claim this precious resource for the city-state of Los Angeles.

Knowledge that this flood might never be repeated made it seem even more dreamlike as we forked into a low-lying meander and found ourselves in a lush bayou that felt more like Mississippi than Mexico. Beavers slapped their tails at us. Bees nuzzled willow flowers. Seeds rained down by the billions. Osvel cocked his ear and





reeled off bird names. A flock of white-faced ibis wheeled overhead. Beads of light caught where the water surface bulged around cattail stems.

"This looks suspiciously like a green lagoon," I said.

"I can't believe how normal it feels," said Pete, a look of awe on his face. "The ecological memory is so deep." When Pete tried this journey in 2008, he'd run out of water to travel on and wound up hiking 90 miles through salt pan to reach the sea. "It was hell," he said. "A total slog. Worst trip I've ever done."

"I can't believe how safe it feels," Sam said. Just a few years earlier, every crime known to man took place amid the tamarisks of the limitrophe."

By late afternoon, we'd already covered 20 river miles, and the cottonwoods disappeared. Billions of tiny copepods, having lain dormant as eggs for a decade or more, had hatched and were feasting on algae along the water's fringe. High, sandy banks—perhaps 100,000 years' worth of powdered canyon—bracketed the flow. Beyond them, a khaki nothingness. The occasional image of a drowned cactus rippled up at us like something out of a Dalí painting. We saw no one.

No one, that is, until we rounded a bend at dusk and heard the throb of ranchero music. The sleepy city of San Luis Río Colorado had awakened. The water had arrived

the day before; the party was ongoing. Kids splashed and giggled in the shallows. Dozens of trucks lined the banks, speakers blasting. An ice cream truck and a coconut seller were doing brisk business on the beach beneath the bridge. An optimist with a net waded chest-deep through the water, sweeping it around him. The French filmmakers, who were working on a two-hour documentary for their People of the River series, were waiting for us.

We camped in a mesquite grove previously restored by Pronatura, where Osvel's Pronatura compadres were waiting for us with tamales, tequila, Tecate, and a mountain of carne asada so vast that it stretched all the way into breakfast. To the binational agreement we contributed three guitars and a mandolin. Juan Butron, a leathery local guy who'd been working with Pronatura and would be helping us navigate the delta's twists and turns tomorrow, joined us in time

to deliver a rousing rendition of "La Bamba" to the stars, with light coyote accompaniment.

Around the campfire, we discussed what it would take to get San Luis its river permanently. "I wish social memory was longer than it is," Sam said, strumming absently. "Are people still going to be inspired in three years when there's not much to show from this?" With Sam's backing, Fred's consulting firm had developed a concept design for the delta restoration projects that used high-tech gates and levees to capture much more of the water than the dirt channels dug in the current sites, but it had not been implemented. "There will be a lot of excuses not to go further," he said. "But the opportunity is huge. It'll be something to watch."

Yes it will. Here's the short version: In ten to twenty years, unless the drought breaks in a big way or everybody in Los Angeles starts recycling their own pee, Lake Mead will run dry, and the Southwest will have to pack up its playthings and move in with its relatives back east.

Here's the longer version: Each year, according to the Law of the River (<http://www.usbr.gov/lc/region/g1000/lawofrvr.html>), the century-old pillar of legal documents governing the allocation of the Colorado, Lake Mead must distribute 1.5 million acre-feet (MAF) of water to Mexico, 4.4 to California, 2.8 to Arizona, and 0.3 to Nevada. It loses another 0.6 MAF to evaporation. But the reservoir receives 1.2 MAF—four Las Vegases—less than it distributes. Currently, Mead has just 12 MAF left.

Really, really bad math? Well, yes, but the original math was done during a particularly wet period in the early 20th century, when there seemed to be more than enough water to go around for the sparsely populated Southwest. Even as the Sunbelt boomed in the 1980s and 1990s, Mead's managers avoided paying the piper, thanks to a series of wet El Niño years.

The piper came calling in 2000, when the worst drought in 1,200 years settled onto the Southwest. Worse, research into the deep archeological record revealed that the wet decades of the 20th century were the anomaly and the dry years of the 21st were closer to the norm. Since 2001, Mead has been dropping 13 to 14 feet each year. It is now below 1,100 feet, with a 120-foot-high white bathtub ring to show just how far it has fallen.

When Mead hits 1,075 feet, which should be in either 2016 or 2017, automatic rationing begins. Farmers in Arizona will begin to be cut off. At 1,050 feet, which looms for 2020, Vegas loses its current water intake, Arizona's farmers go under, and Hoover Dam stops being able to generate hydroelectric power. "All of those agricultural districts receive federally subsidized power," Peter Culp had pointed out to me as we'd watched water pour out of Morelos Dam. "Suddenly, you have the ag districts trying to buy power on the market at five times the price." When the reservoir drops to 1,000 feet, somewhere around 2025, Phoenix is toast, Vegas loses its new intake, and farming becomes impossible in great swaths of the Southwest. "In the meantime," according to Culp, "you've got a bunch of banks and bond markets saying, You know, that Vegas-Phoenix real estate market doesn't look like such a great investment. The last time they concluded that, it tanked the world economy." Which is why Culp suspects emergency measures would kick in before then. "There's no way you can let Mead hit 1,000. It would be so horribly stupid."





*Digging a channel to help the river through the earthen causeway.*

Slowing Mead's downfall would require suspending the Law of the River, which dictates that Southern California will remain unscathed as its neighbors collapse—something Culp finds unlikely. "It's not credible that Arizona and Vegas would be entirely cut off before California is affected. Can you imagine the feds standing by and allowing that to happen?" Instead, picture a wildly unpopular federal water czar declaring a state of emergency and parceling out Southern California's water to keep Phoenix and Vegas on an IV drip. Picture the mother of all lawsuits creeping across the Mojave dunes.

That's the doomsday scenario. And who doesn't love the clarifying tonic of impending doom? Y2K. Peak oil. Now the coming megadrought. Dry riverbeds and white bathtub rings seize headlines. Sam wishes there was less focus on scare stories and more on smart water solutions—ways to shepherd the West through its day of reckoning to a green future of thriving cities, hyperefficient agriculture, and a Colorado delta teeming with life. It turns out that, even at the lower-flow levels projected for the Colorado, we have enough water to do all those things, if—and this is a big if, an if as vast as a Sonoran Desert horizon—we get smart. Really smart. Children of Dune smart.

For example, while Phoenix uses 165 gallons of water per person per day, Tucson uses just 128. One difference? Phoenix still favors a lush-lawn look, whereas Tucson embraced its desert identity decades ago. Lawns out, cactuses in. All new homes are required to have gray-water systems that reuse water for irrigation. The city offers rebates for low-flush toilets and rain collectors. And 10 percent of the city's water is reclaimed from the sewer system, treated, and used for irrigation.

That still can't touch Vegas, where every drop of water that goes down a drain or toilet is treated and pumped back into Lake Mead. The only water lost is what's used for irrigation, and even that has plunged since the city banned new front lawns and began paying people to replace existing ones with desert vegetation. Water use in Vegas has dropped by a third. Los Angeles is also now paying

people \$2 per square foot to remove their lawns. Drip systems are being ran to shrubs and shade trees.

Every city in the Southwest will need to get aboard the Vegas bandwagon. And they can. Australia already has. Cities there, which have been dealing with crippling aridity longer than we have, use just over half the water per person of their American counterparts. If Southern California alone were to adopt Australian rules concerning outdoor watering and low-flow fixtures, it would save 1.3 MAF of water per year—more than Lake Mead's deficit.

Agriculture can save even more—though the real gains must come through you, carnivore. At least 70 percent of the water in the Colorado River basin gets used for agriculture, and most of that is used to grow livestock feed like alfalfa. This means that about five million acre-feet of the river—a third of its entire flow—gets turned into milk or hamburgers, and hamburgers are a particularly stupid thing to make out of the Colorado. Each hamburger takes about 500 gallons of water. If we each eat one fewer hamburger per year, we've just freed up a generous annual pulse flow for the river.

Not that the river would get it. Current "use it or lose it" water laws don't allow farmers to sell any surplus allotment, so they end up growing as much alfalfa as they can and selling it on the global market. Peter Culp estimates that 50 billion gallons of water—1.5 pulse flows—is shipped to China each year in the form of alfalfa, and even more to Japan. An open water market would allow both cities and environmental groups to pay farmers far more than they currently make growing alfalfa. Conservation groups are working to establish one, but the effort will face years of political wrangling.

We don't have years, so let's get on it. Toilet to tap. Grass to cash. Beef to beans. A new generation of falafel-munching cowboys checking the drip irrigators on their olive farms. And spending their off-season floating the mighty Colorado delta.

By the time we launched, it felt like we were on a vision quest of our own, traveling the Colorado's possible futures. There were no

more green lagoons. The water got browner, sandier, shallower. In places the surface was dotted with clouds of frothy brown scum. "The Mojaves call this turtle shit," Fred said. "It used to cover the river before the dams."

We knew we were running out of river when the channel flattened and we found ourselves paddling in a foot of brown, tamarisk-clogged water. Osvel and I were in a canoe up front, and as we cleared a stand of tamarisk we saw a ten-foot-high wall of sand stretching across the channel—a road crossing installed by some farmer who never expected the river to be wet again. I looked up at the wall and thought, This is how it ends.

But then we saw two figures standing on the berm. It was Peter Culp and Jennifer Pitt, who'd been chasing the leading lobe of the river for days by jeep through farmers' barren fields. After spotting the dam from the air, the NGOs had sweet-talked a local excavator into digging an emergency trough through the berm. It was still too high for the water, but not by much. Osvel and I canoed through the last few inches, pushing our paddles against the sandy bottom, until our bow ground to a stop. We'd run the river dry.

The others arrived behind us. "Keep it going!" they shouted. We attacked the trough with our paddles, shoveling it down to the water's level. Peter and Jennifer joined in. For 15 years they had written reports, filed briefings, raised funds, and bended ears to get the water this far. Now they were digging with their bare hands to get it a few feet farther.

At 6:24 p.m., as the shadows of tamarisks lengthened across the red-tinged sands, the first trickle escaped the trough and dropped into the empty channel on the far side. We cheered. Soon the water was building on itself, picking up speed, scouring the sandy walls of the road. Through the night it rose, and we rode the mini-rapids on our paddleboards again and again, occasionally knocked sideways by a calving chunk of road. Pronatura had brought Fred's truck down from Morelos to haul our gear back, and we spent the night by the river, sleeping in the sand.

We had come 32 miles. That meant there were another 68 or so to reach the sea, some of them very dry. The water would make just a few more miles the next day, and the day after that, creeping on through the saline lands. A week later, it would fill the backwaters of Laguna Grande, where 100,000 trees are now sprouting, and it would touch places—and people—that never thought they'd see water again.

Having no more river to travel, we returned to our lives. Fred to Arizona, Sam and Pete to Colorado, me to Vermont. Osvel and Juan to Pronatura's bird counts and flow monitoring. Sam gave Juan his paddleboard, scrawling "Por Juan del Rio" on the yellow deck.

A few days later, they began reducing the flow out of Morelos, and the river slowed even more. So I was surprised when I received a note from Pete. He and Sam had returned to the delta. "I have to make the sea," Pete wrote. "Kind of reaching mission stage at this point." With Juan divining the way on his Badfish, they took it in 20-mile chunks, waiting for the water to fill each reach. It wasn't pretty. "Complete warfare," Pete wrote. "Chopping, pleading the boards through dead and living cattail and mesquite jungles. It will go down as the most beautiful and one of the hardest paddles in this kid's book." They battled mosquitoes and 107-degree temperatures; they

floated over swimming coral snakes and under endangered clapper rails. Toward the end, they had to paddle commando on their bellies in the dark to hide from malditos—narco bandits who work the empty lower delta—but on May 5, they hit the high-tide line of the gulf and kissed salt water.

Thus the séance ended. On May 21, 2014, the gates of Morelos Dam groaned closed, and the last of the water snaked into the dust. San Luis Río Colorado went back to being the city on the sandbox.

Was the grand experiment worth it? To Sam, that depends on what happens next. "One pulse does not a living system make, but it does remind us that it is alive," he wrote. Knowing that, do we let the river go back to its slumber, or do we raise it again? Annually? Permanently? Having seen the limitrophe wet and dry, having watched the dam open and close, I now understand more than ever that, at some level, it is simply a choice we get to make, and I have to believe that for anyone, Mexican or American, who got a taste of the delta in the spring of 2014, it's an easy call. We'd found the bucking, ecstatic Colorado of old, right where we'd left it, romping through its old playgrounds like an oversize kid. For a few electric miles, it was in its element, and so were we. It tumbled into a hundred green lagoons, traveling them all, and so did we. It divided and rejoined, twisted and turned, meandered in awesome jungles, got lost and was glad of it, and so were we. It turned down long-forgotten paths, trying to find a graceful way forward, and so did we.



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