



**BIRDS**

**By Jane Braxton Little**

Photography by Rosalie Winard

# dustbuster

Two hundred miles north of Los Angeles, windswept Owens Lake was the victim of one of the most audacious water grabs in the history of the American West. Now it is the site of one of its most innovative restorations—resurrecting a critical pit stop for migrating birds.

Owens Lake, at the base of the Inyo Mountains, covers nearly 100 square miles. The lakebed is crisscrossed by a grid of driveable dikes that hide hundreds of miles of pipeline. American avocets (opposite) find refuge in the lake's shallows.





**When the wind blows across Owens Valley**—and it almost always does—it can kick up dust so thick it reduces visibility to mere yards. Most motorists driving by along the east side of the Sierra Nevada miss the lake sprawling beside Highway 395 altogether. Hardly anyone stops to see birds. But when they do they find a sweet paradox. In the midst of the dust—actually, because of it—shorebirds, diving birds, and waterfowl are thriving at Owens Lake.

A visit at dawn on an unusually clear spring morning is proof. A flock of American avocets is feeding in one of the lake's shallow pools, flaunting breeding plumage the color of toasted marshmallows. All in a row, they sway their slender upturned bills to and fro in search of insects. The flock segues from straight line to smooth circle and back again in a delicate ankle-deep dance. A trio of least sandpipers and a pair of snowy plovers tag onto the column, as a crescent moon slips behind the granite peaks of the Sierra.

Suddenly the sunrise serenity implodes in a roar of motors shooting five-foot jets of water onto a wind-dried patch across the gravel levee that lines the avocets' pool. Beyond it are mudflats, salt flats, and gravel flats stretching to a cracked playa—nearly 100 square miles of lakebed crisscrossed by a grid of driveable dikes that hide hundreds of miles of pipeline. Soon 18-wheeler dump trucks lumber past, bearing loads of gravel bound for other sections of the lake. Acrid diesel exhaust overwhelms the delicate scent of salt.

Trucks and pumps, avocets, and the city of Los Angeles, 233 miles away, are all part of a drama playing out on this vast desert stage in remote southeastern California. Owens Lake, the victim of one of the most audacious water grabs in the history of the American West, is now the site of one of its most innovative restorations. Dust, long the scourge of this barren basin, is propelling a \$1.2 billion wetlands restoration funded by Los Angeles, a project where conservation and construction coexist. What was dry as bleached bone for nearly a century already has enough water to make it a critical stopover for tens of thousands of birds migrating on the inland Pacific Flyway. Under a proposal recently released by city officials, heavy equipment will further improve the habitat in an area twice the size of Manhattan. The





odd result is an industrial zone where birders must wear hard hats to enjoy an internationally significant Important Bird Area.

"Where else could you find 18-wheelers creeping around avocet nests built in the middle of the road?" says Mike Prather, the de facto patron saint of Owens Lake. A bespectacled, bearded man with curly gray hair and a slight paunch, Prather, 67, is driving slowly along a newly built single-lane levee. He is so engrossed in pointing out the birdlife—"Harrier!" "Willet!"—he nearly steers into the briny drink. Stopping the car, he cocks his head to listen to a yellow-headed blackbird croak metallically from his perch on a nearby bulrush. A thatch of cattails shelters greater yellowlegs. Virginia rails are probably breeding here out of sight.

This lush niche with its computer-controlled pumps is a stark contrast to nearby stretches of empty lakebed. For Prather, who has lived in Owens Valley for 33 years, it's a true sign of progress. "Sometimes it seems slow, but I'm hopeful," he says. The tally from this year's spring bird count supports his optimism: 115,000 birds in a one-day count, 64,500 of them shorebirds representing 20 different species. The new record blows away the old one of 75,000, set last year. "You can begin to dream about what this place could be, and what it once was," says Prather, whose Facebook name is "Owens Lake."

Owens Lake looms between Mount Whitney, the highest point in the Lower 48 states, and Death Valley, the lowest. For thousands of years avocets and snowy plovers nested here along with hundreds of gadwalls and long-billed curlews. In his 1917 surveys, field biologist Joseph Grinnell reported "literally thousands of birds within sight of this one spot." He described large flocks of shorebirds in flight as "now silvery, now dark, against the gray-blue of the water."

Wildlife was thriving in the 1860s, when the discovery of silver in the mountains east of the lake created the boomtowns of Swansea and Keeler. The raw ore was smelted into ingots shipped across the lake in propeller-driven steamboats. From there the precious metal was hauled by wagon to the Southern California coast to help build the pueblo of Los Angeles. For the farmers who followed the miners into Owens Valley in the late 1800s, making a living was always a hard scramble. It became all but impossible after the early 1900s, when Los Angeles officials set their sights on eastern Sierra runoff as a water supply that would allow their young city to grow. William Mulholland, superintendent of the newly created Department of Water and Power, began acquiring water rights in the valley using underhanded tactics that included a city official posing as a rancher. Once secured, he engineered a 200-mile gravity-flow aqueduct and, in 1913, turned the spigot that diverted the Owens River and all the other streams feeding the lake to Los Angeles. "There it is," Mulholland declared. "Take it." The scandal was memorialized in *Chinatown*, Roman Polanski's 1974 movie. For rural water users, Owens Valley became a symbol of exploitation by a ruthless and deceptive metropolis. The once 200-square-mile lake shrank steadily, leaving in its wake a ghostly white alkali void. By 1927 Owens Lake was a barren expanse bigger than Washington, D.C.

Prather and his wife, Nancy, passed through in 1972—in a VW bus that had a McGovern sticker affixed to its bumper—en route to jobs teaching kindergarten through sixth grade at a two-room school in Death Valley. They arrived at midnight in 92-degree heat to find their linoleum-floored apartment with a disconnected cooler. "You do a lot of stuff in

Owens Lake, which hadn't gone dry in at least 5,000 years, if ever, became the single largest source of air pollution in the nation. A dust storm in 2000 exceeded federal air standards by more than 100 times.

your mid-twenties," Prather says. But jumping into the frying pan of Death Valley launched his career as an environmental educator. Once a month students, their families, and assorted neighbors piled into the school bus, which Prather drove, for treks up mountain peaks and full-moon walks across the sand.

Death Valley also introduced Prather to some of the world's best birders. Like bees to honey, the birders came in droves to see vagrants straying from their migration courses to land, exhausted and thirsty, on Death Valley National Park's Furnace Creek golf course. "I learned most of my eastern warblers at Furnace Creek Ranch," Prather says. He was never so batty about birds to chase them around the world, but he and Nancy did name their daughters Robin and Phoebe.

When the family moved to Lone Pine, where Prather helped found the Eastern Sierra Chapter of Audubon, Owens Lake was not among the places he looked for birds. All the water was long gone to Los Angeles. But a corner of the lake fell into the Christmas Bird Count circle, so in 1985 Prather and his fellow birders dutifully surveyed it. The tally results astonished them. Sandpipers and other migrants flying south were lingering in a chain of small wetlands on the fringes of the lake. "It was like this lake refused to die," he says, still amazed.

**F**inding migrant birds at Owens Lake sparked a passion in Prather to preserve the remaining habitat and restore as much more as possible. He organized birding trips, gave lectures, taught Birding 101 at a community college, and nominated the lake as an Important Bird Area.

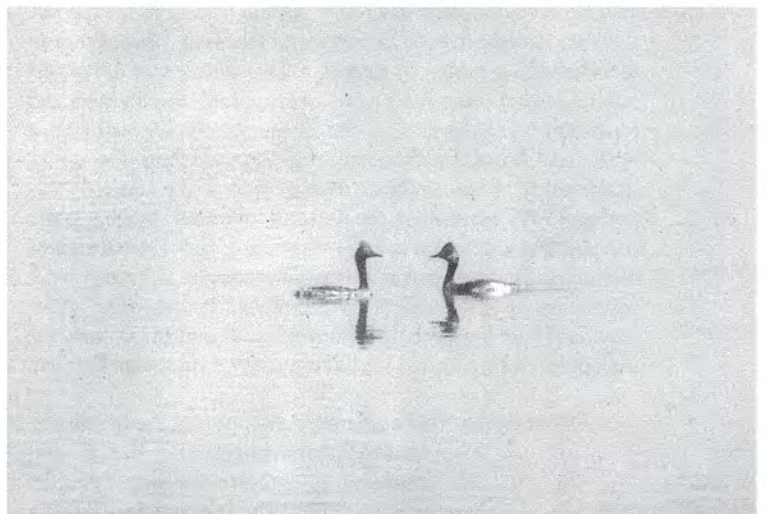
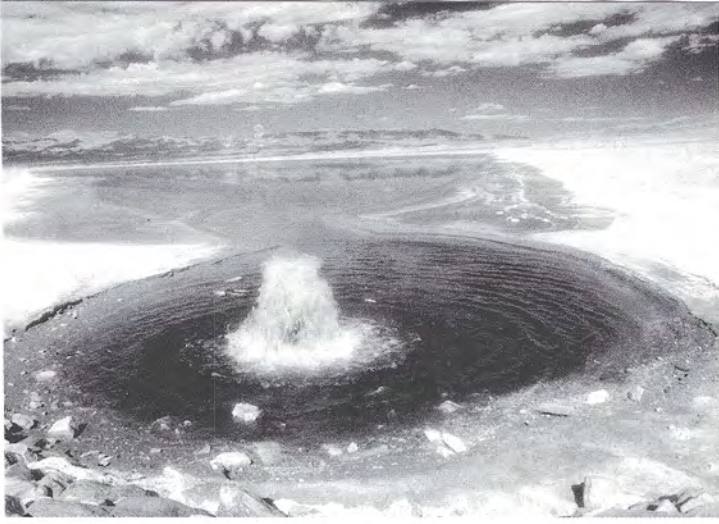
White-faced ibis and long-billed dowitchers are at Owens Lake, Prather would tell anyone who would listen. He described winter flocks of snow geese, the return of cinnamon teals, and snowy plovers nesting on the white salt flats, where they are well camouflaged from predators.

A teacher by nature and profession, Prather spoke fervently about the potential for improving Owens Lake for birds from the seeds of habitat that had somehow survived. He was, in his quiet way, building an Owens Lake constituency from the mud-cracked lakebed up.

For many years he was a lone voice, says Andrea Jones, who directs Audubon California's Important Bird Areas program. "It was just Mike out there jumping up and down." By the time they met in 2006, Prather was armed with three-ring binders loaded with articles, photos, data, and testimony from his many public statements. "I gave her both barrels," he says with a chuckle. Jones also remembers the meeting: "He accosted me with those huge binders." Audubon California immediately committed staff time and resources to Owens Lake.

The excitement over birds parallels a more

Clockwise from top left: Water from the Los Angeles aqueduct gushes out of pipes to fill the dry lakebed; a flock of American avocets; Owens River water flows into lake wetlands; a pair of eared grebes; an 18-wheeler carries gravel for dust control; a snowy plover; Highway 136, which runs along the lake's eastern shore; a black-bellied plover.





contentious process that has been playing out in legal offices and courtrooms since the 1980s. That fight is about dust. Winds sweeping down the 11,000-foot Sierra escarpment have always blasted across Owens Valley, but when they blew over the newly drained lakebed they stirred up a toxic mix of arsenic, cadmium, and other carcinogens along with the salts and minerals left behind when the water went south. These tiny particles—more than 50,000 would fit in the period at the end of this sentence—penetrate deep into the lungs, causing damage to respiratory systems that can trigger asthma, emphysema, and even heart attacks.

It is the size of the particles and their immense quantity that make them so dangerous, says Ted Schade, who works for the Great Basin Air Pollution Control District based in Bishop, 60 miles north of the lake. “You don’t want to breathe this stuff,” he says. “It can kill you.” Owens Lake, which hadn’t gone dry in at least 5,000 years, if ever, became the single largest source of air pollution in the nation. A dust storm in 2000 exceeded federal air standards by more than 100 times, Schade says.

The dust blustered into the China Lake Naval Air Weapons Station, 75 miles to the south, disrupting tests being conducted there. U.S. Forest Service officials complained that it irritated visitors and employees alike. The most adverse consequences by far were to the 40,000 residents of Owens Valley, predominantly members of the Paiute-Shoshone Tribe. Many of the students at the Lone Pine Elementary School were using inhalers, and often the dust was so thick the entire student body was kept inside at recess. Visits by asthmatic patients to local emergency rooms surged.

The Great Basin district documented the air pollution for more than a decade, and then held Los Angeles responsible for controlling it. Court orders backed the air district. City officials guarded their precious resource like liquid gold; diverting flow from their aqueduct was like putting a hand in the city till. But they already owned the water and releasing some of it onto the lakebed—a matter of turning a few valves—was the easiest way to control dust. After years of rancorous negotiations and consistent rulings in favor of the air district, the Department of Water and Power finally committed to controlling dust on 22 square miles of the sandiest, grimmest part of the lakebed. Following a 1997 agreement, the department began spraying water and planting vegetation as well as spreading gravel across an area now expanded to 45 square miles. The moisture was magical: A population of single-celled algae exploded in the saline water, providing food for alkali fly larvae and adults, which, in turn, the shorebirds and waterfowl scarfed up. It was a start, says Prather.

**T**he 1997 agreement did not end the hostilities. Even as the habitat burgeoned, the air district continued to measure the dust. “We just kept poking around the lakebed and finding more pollution,” says Schade. As the area of mandated dust control crept up, the city filed lawsuits. The courts rejected them, and the air district imposed additional dust control standards. The 1997 agreement left the city responsible for deciding how to control the dust, but whatever method it proposed met with opposition from someone. Conservationists objected to anything that reduced the habitat; water and power officials opposed anything that required reducing the flow in the aqueduct. “The process was just plain ugly,” says Pete Pumphrey, a retired attorney and president of Eastern Sierra Audubon, who has been involved in the negotiations since moving to Bishop in 2004.

The eventual breakthrough may have stemmed from a

change in leadership at the Department of Water and Power. Or, perhaps, from the air district’s threat of a \$10,000-a-day fine for not meeting the dust control mandates. Or it could have been sheer battle fatigue.

In 2008, after years of protracted negotiations, Jones and Audubon California issued an invitation to anyone with a stake in Owens Lake: conservation groups, such as the Native Plant Society and the Sierra Club; state and federal agencies; county and Los Angeles officials. Everyone accepted. For the next three years a U.S. Forest Service office on the Bishop Paiute reservation was used to facilitate an open dialogue focused on identifying common habitat goals and solutions that address the entire lake. It soon became clear that they could protect significant amounts of habitat as well as save significant amounts of aqueduct water. “We realized that what is good for Los Angeles operationally can also be good for the habitat,” Jones says. In 2010 the city offered to fund a facilitated master-plan process based on shared goals.

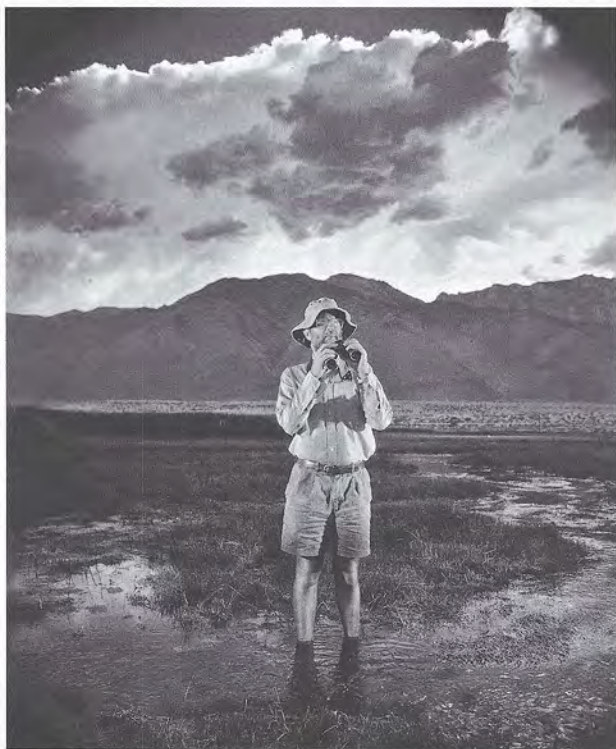
The newfound partners developed an index of suitable habitats for the entire lake based on scientific data each had gathered on such factors as water depth and species use. Multiplying each area’s richness by the number of acres it occupies can determine where to create shallow ponds and marshlands with the least amount of water. The soils are richer at the lake’s north end, for example, so it makes more sense to put water there to grow cattails for Virginia rails than to flood the poorer soils farther south, says Bill Van Wagoner, manager of the city’s Owens Lake dust mitigation program. What the partners were designing was an enormous, on-the-ground experiment. “No one has ever tried to do anything on this scale,” he says.

So far actual on-the-ground restoration has been spotty, determined by the demands of dust control, not birds. It has created a 100-square-mile mosaic crisscrossed by hundreds of miles of levees. About 36 square miles are flooded areas that include shallow pools for avocets, open water for pelicans, and wetlands for marsh wrens and red-winged blackbirds. Los Angeles planted about four square miles of saltgrass near the south end of the lake. At \$12 million per square mile, it was an early, expensive effort to control dust. Today the habitat also includes roughly 30 square miles of natural brine pools. What’s left remains a wind-rumpled playa where dust continues to blow in dirty-white clouds.

Along the fringe of the lake, where Prather is currently driving, the graveled levee abruptly crosses to a shallow flooded area devoid of vegetation but packed with nutrients. Hundreds of western sandpipers, startled at the approaching vehicle, rise in unison to wheel over the water in alternate flashes of white bellies and brown backs. “That’s one of the prettiest spectacles of nature,” says Prather, grinning with pure boyish awe. Since dust control began, Owens Lake has become a reliable refueling place on the sandpipers’ annual 6,000-mile migration from Panama Bay to Alaska, where they breed and nest before heading south for the winter.

Habitat restoration here comes at a critical moment for the Pacific Flyway. At a time when the Colorado Delta is gradually deteriorating, the Salton Sea is dying, and the Tulare Basin is drying up, Owens Lake is a priceless stopover site for migrating birds. “It’s not the silver bullet,” says Prather, “but it’s a degree of insurance. We are witnessing the return of wildlife on a scale unparalleled in the state of California.”

Yet everything about Owens Lake is as shifting as the winds that have dusted up the problems he and others are trying to solve. Despite the partners’ agreement nearing completion and wildlife flourishing on the lake, Los Angeles and the air district



**“What keeps me going is fairness and the opportunity to defend the things I love—these gigantic landscapes and empty wild places.”**

continue to battle over how much of the original lakebed the city should be responsible for. It might take 50 square miles to control the dust, says Schade. The 75,000 acre-feet of water (enough to cover a football field with water nearly 14 miles deep) Los Angeles is taking out of the aqueduct annually has reduced the dust by almost 90 percent. “We’re nearly there,” he says.

But Los Angeles officials said they’d done enough. After particularly combative litigation last year, negotiations stopped and everything went quiet, says Jones. The master plan, which lacked little beyond signatures, lay dormant.

In the middle of this standoff, to the surprise of almost everyone, Ron Nichols, director of the Department of Water and Power, initiated a meeting with Audubon California. Within a few months Jones, Pumphrey, and Prather were poring over a brand-new, 33-page document: the city’s proposal for a project designed to meet all of the goals of the unsigned master plan. The abrupt, unilateral process Los Angeles used smacked of its century-old negotiations in Owens Valley, but the proposal itself retains the wildlife habitat Audubon has been demanding.

It adds trails for public access and puts birds “all over the place,” and does so with much less water on the lake, Jones says. Los Angeles plans to nearly double the \$1.2 billion it has already put into dust control, committing up to an additional \$1 billion to the restoration project. Because it halves the amount of water now flooded onto the lakebed, funding will come from selling that saved water to cus-

The surprising discovery in 1985 of a key migratory bird stopover at Owens Lake sparked Mike Prather’s passion to preserve the remaining habitat and restore as much more as possible.

tomers in Los Angeles. Suddenly years of talking and planning have evolved into a defined project. “We got what we wanted,” says Jones, slightly stunned.

Even the decades-old battle between Los Angeles and the Great Basin air district may be settling down. In June they reached an agreement that allows the city to fast-track gravel and other dust control measures that do not require water.

While the restoration proposal goes through certification under California environmental regulations, a 6.5-square-mile pilot project is poised for the start of construction this fall. Heavy equipment will dig ponds, pushing the dirt removed into islands where stilts and avocets can nest without fear of terrestrial predators. Mudflats will morph into marshes for northern harriers and savannah sparrows. It is the first restoration project deliberately designed around habitat, not dust control, says Van Wagoner. The pilot project, which will be vigorously monitored by city and independent scientists, will test the goals set by the partners during their years of planning.

It’s just the start of a multistage project, but Jones and Prather plan to celebrate with a groundbreaking ceremony in November. Department of Water and Power officials will be there, sharing shovels overturning the first dirt, says Van Wagoner. “It’s remarkable to me that we’ve actually found a path forward where we are arm in arm with Audubon.” Ironically, honoring habitat restoration will coincide with commemorating the cause of its demise. One hundred years after draining the lake, the Los Angeles City Council has declared 2013 “The Year of the LA Aqueduct” and scheduled a November 5 celebration.

The opposing festivities are classic Owens Lake—simultaneous reminders of the human potential for destruction and the power of nature to recover. After living for three decades with both the devastation of the lake’s habitat and the promise of restoration, Prather remains mostly optimistic. The Department of Water and Power’s latest proposal for restoration is good, he says. But his heart has been broken before. This is the time to rally the public, agencies, conservation groups, and Los Angeles politicians to commit to the proposed protections before they change their minds.

For Prather the fight is about more than birds and a lake; it is also about the overlooked parts of our nation’s natural heritage and the struggle for small communities pushed around by larger cities. “What keeps me going,” he says, “is fairness and the opportunity to defend the things I love—these gigantic landscapes and empty wild places.”

At dusk, when the 18-wheelers shut down and construction has stopped for the day, Owens Lake settles back into habitat. A chalk-colored cloud is blowing toward a shallow pool where another flock of avocets is feeding, their heads the burnished orange of breeding. One pair stops. Ignoring the gusts, they stretch their necks up and down, so close together they are almost rubbing in a ritual that has to be courtship. Their dance continues for 60 astonishing seconds. Just as suddenly it is over, and the pair blends back into the flock. Soon, perhaps within a week, they may be building a nest together in the middle of one

of the lake’s levees. For now they are bobbing with the others in a wind-whipped pool of whitecaps as the cloud closes in. Owens Lake is once again engulfed in a spring dust storm. ■

*Contributing editor Jane Braxton Little also writes for Scientific American, Environmental Health Perspectives, and The Daily Climate, among other publications.*