

100 YEARS OF DUST: OWENS LAKE AND THE LOS ANGELES AQUEDUCT

Photography by Jennifer Little

Exhibition reflection essays by

Al Clark
Professor of Humanities

and

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Irene Carlson Gallery of Photography
August 31 through October 29, 2015

A lecture by the photographer will take place at 4:30 p.m. Thursday, October 1, 2015, Ballroom A, Abraham Campus Center. A reception will follow at 6:00 p.m. in the Irene Carlson Gallery of Photography, Miller Hall.

Jennifer Little describes her work...

My photographic work focuses on social and ecological concerns and documents intersections between the natural and the man made. My most recent series, *100 Years of Dust: Owens Lake and the Los Angeles Aqueduct*, documents the latest chapter in a century of legal battles over water rights and air quality in Owens Valley, California. Owens Lake lies in California's Eastern Sierra Nevada Mountains, about 200 miles northeast of Los Angeles. This 110-square-mile lake began to dry up in 1913 when the City of Los Angeles diverted the Owens River into the Los Angeles Aqueduct. The new water supply allowed Los Angeles to continue its rapid growth and turned the arid San Fernando Valley into an agricultural oasis, but at a tremendous environmental cost. By 1926, Owens Lake was a dry alkali flat, and its dust became the largest source of carcinogenic particulate air pollution in North America.

In 1998, the Environmental Protection Agency mandated that the Los Angeles Department of Water and Power (LADWP) take steps to minimize the toxic PM-10 dust pollution from Owens Dry Lake. This pollution was 100 times greater than federal air safety standards. LADWP began construction on the Owens Lake Dust Mitigation Project in the year 2000. They have installed 42 square miles of dust mitigation zones, including gravel cover, managed vegetation, buried drip tubing, and irrigation bubblers to shallow flood the dry lakebed. This dust mitigation program has cost \$1.3 billion to date and requires so much water that it may not be sustainable as climate change results in a drier climate for California.

The sordid history of Owens Valley and the Los Angeles Aqueduct is an important cautionary tale about modern civilization and the ill-conceived hubris of our water engineering projects. We cannot afford to forget how delicately interconnected ecological systems are as we deal with the impacts of climate change. The LADWP of today has not learned the lessons of its past. They are trying to mitigate the negative environmental impacts of the Los Angeles Aqueduct—the largest aqueduct engineering project of its day—with a massive, expensive, and extremely high maintenance new environmental engineering project that is the largest of our day.

Despite these devastating conflicts over water rights, Owens Valley remains one of the most majestic high desert landscapes in the world. This arid valley is nestled between the 14,505 ft. peak of Mt. Whitney, the highest point in the contiguous United States, and Death Valley, the lowest point in North America. I love to camp and hike in these sublime landscapes every summer, and during my travels, I began to wonder why the distant City of Los Angeles owns most of the land in Owens Valley. Ranchers, businesses and residents in towns like Independence and Lone Pine lease their land and buildings from Los Angeles, which uses abusive leasing practices to keep the Valley's population artificially low so that they can pump away the groundwater with impunity.

I worked closely with environmental groups including the Owens Valley Committee and the Sierra Club while developing this series between 2012 and 2015. I interviewed Owens Valley residents, LADWP workers on Owens Lake, Great Basin Unified Air Pollution Control District employees, and members of the Lone Pine and Bishop Paiute Tribes. I lived in Owens Valley for two months during both the summers of 2013 and 2014, and I made repeated short trips there in the fall, winter, and spring to capture seasonal weather conditions.

I make large scale archival pigment prints of the images in this series using an Epson Stylus Pro 9900 ink jet printer. The majority of the series was photographed with a Nikon D800 digital camera and a Pentax 6x7 medium format film camera. My images create a thought provoking visual paradox by juxtaposing environmental devastation with the sublime beauty of the Eastern Sierra.

About Jennifer Little...

Jennifer Little received a B.F.A. in Photography from Washington University in St. Louis and an M.F.A. from the University of Texas at Austin. She is a tenured Associate Professor and Art Department Chair at University of the Pacific in Stockton, CA. Little's *100 Years of Dust* series won the prestigious 2014 Critical Mass Top 50 Award from PhotoLucida as well as the 2014 "Dotphotozine Award for Excellence in Photography" and is featured in the September, 2014 issue. Exhibitions include: Sol Mednick Gallery, University of the Arts, Philadelphia, PA; Stanford University's Thomas Welton Stanford Art Gallery; Tag Gallery in Bergamot Station Arts Center, Santa Monica, CA; Photo Center Northwest, Seattle, WA; Kala Art Institute in Berkeley, CA; The San Francisco Arts Commission Gallery; The LAB, San Francisco; Viewpoint Photographic Art Center in Sacramento, CA; Eisentrager-Howard Gallery at The University of Nebraska at Lincoln; The Marin Museum of Contemporary Art in Novato, CA; The Center for Fine Art Photography in Fort Collins, CO; and Jay Etkin Gallery in Memphis, TN. Little's work has been published in *Dotphotozine*, *View Camera Magazine*, *ArtAscent Magazine*, *Camera Arts Magazine*, and *The Austin Chronicle*. She has presented at the Society for Photographic Education (SPE) National Conference; University of the Arts, Philadelphia, PA; Stanford University; San Francisco Art Institute; the Foto 3 Conference; Kala Art Institute in Berkeley, CA, and the Dimen Cultural Eco-museum Forum on the Preservation and Development of Ancient Villages, Dimen, Guizhou, China.

Beauty Enchants One Forlorn Valley
Al Clark

Water is the most contentious substance California knows, not excluding gold, oil, or real estate, and the City of Los Angeles is California's most notorious water thief, at least according to *Chinatown* legend. Owens Valley is the scenic vista of this David and Goliath myth, as the commanding backgrounds in Jennifer Little's compelling photographs manifest. What is water's most valuable use—farms, cities, power, recreation, or the environment? Are almonds more deserving than smelt? Is Los Angeles worthier than Lone Pine? How does a democracy decide? How should capitalism choose? Who gets to make the decision? Water flows uphill to money. Whiskey is for drinking and water for fighting. Etymologically, the word "rival" derives from Latin meaning a "person using the same stream as another."

Historically, Owens Valley was a lonesome stretch, something like *Symmes Creek Subsidence...* suggests, but by the turn of the 20th century it was becoming a farmers' patchwork, another Imperial Valley. The Los Angeles Department of Water and Power used secretive land purchases, newly invented electric- and gasoline-powered water pumps, and one of the most remarkable aqueducts ever built on this planet—celebrated with irony in *The Los Angeles Aqueduct Cascades, San Fernando Valley, CA*—to strip Owens of farming, return it to rural starkness, and suck it dry. This unwittingly re-created a magnet for outdoors people, but it also left an environmental disaster in a dry Owens Lake and the frequent poison-laden *Dust Storm...* Today, urbanites who seek solitude and nature can head for the underdeveloped landscape of Highway 395 (only one of the 20 photographs on display contain people), but they need to bring facemasks with them, and, of course, water. LADWP rescued Owens Valley from becoming urban Los Angeles (aptly portrayed in ... *San Fernando Valley, CA*), but failed to protect it from the particulate residue created by agriculture, mining, and aridity.

Decades of bitter litigation finally forced Los Angeles to become serious about combating airborne poisons in Owens Valley by restoring parts of the ancient lakebed, and both the ugliness and the beauty of this grudged effort emerge from Little's striking photographs. As her *100 Years of Dust* exhibition proves, no one can permanently ruin the majestic mountains or the alluring sky that frame the panorama, but the valley floor is now under assault by miners, hunters, pumpers, restorers, off-roaders, and solar farms. What is amazing is the unremitting beauty of it all, at least in Little's remarkable eye—encrusted salt, manmade intakes, restored rushes, abandoned mine pits, random pumping stations; everything both natural and human caused. The rainbow of colors she captures is both thrilling and calming, on the valley, in the mountains, and across the sky. How else but through color could a *Brine Formation...* compete with *Lower Owens River...*? Geometry also steals the show, as in *Gate...*, *Small LADWP Water Pumping Station...*, and *Salt Formation...* Starring elsewhere are mountains, sky, distances, pipelines, and pumping stations, but never, it seems, does water itself, the liquid heart of this tale. Little's exhibition is a song of history, nature, development, justice, and art, whose melody seems best appreciated in its many contrasting details, such as the cars, condos, and conduit of ... *Cascades...*; the ripples, ridges, and rocks of *Original Intake...*; and especially the expanse of carbonates, squiggle of canal, and procession of cows that cross *Pittsburgh Plate Glass Mine Pit, Owens Lake, CA*. Can any other photograph tell more about the timeless landscape, human carelessness, and incongruous beauty of Owens Valley than this gem?

Reflections on the exhibition ...
Kevin S. Marshall

The photographs in Jennifer Little's exhibition, *100 Years of Dust: Owens Lake and the Los Angeles Aqueduct* speak to me in a very scared way about the temporal and perpetual interdependent relationship between humanity and its environment. The term "ecology" somehow seems appropriately relevant. The exhibition reveals a complex, ecological story intimately relevant to many of us in California (and other regions plagued with the starkness of scarcity).

When I read the exhibition's opening title phrase "100 Years of Dust," I immediately find myself connecting it to the phrase "... and to dust we shall return."¹ When the title directs my frame of reference to "Owens Lake" (of Owens Valley), I discover that it "... remains one of the most majestic high desert landscapes in the world, nestled between Mt. Whitney and Death Valley."² And the final reference to the "Los Angeles Aqueduct" strikes a celebratory chord resonating the praising notes "historic, civil engineering landmark."³

The images inspire within me a reverence for the reciprocating and sustaining relationship between man and nature. They document a complex landscape upon which is manifested a dramatic dance of give and take, a dance in which each partner intermittently takes the opportunity to lead the other. As I take Little's visual tour, I empathize with the ebbs and flow of humankind and a sacred earth adapting to one another over a continuum of time, each transforming the other through their respective evolutionary dynamics and technology.

The exhibition's expansive imagery inspires in me a myriad of emotions triggered and tainted by the shadows of muted earth tones and stark landscapes, the productive and even lush possibilities of the water's edge, and the engineering feats and defeats of the human race. Ultimately, Little's work is a reflective journey of wonderment, consternation, and optimism.

Through her images and accompanying narratives, Little reiterates the imperative that we sustain our relationship with Mother Earth and her life giving arteries. Such a relationship is necessary for the creation, maintenance, and administration of complex physical, psychological and social spaces that are inherently adaptive, progressive, innovative, and resilient.

¹ See, Genesis 3:19; Genesis 18:27; Job 30:19; Ecclesiastes 3:20; see also Book of Common Prayer.

² Jennifer Little, exhibition statement.

³ American Society of Civil Engineers Historical Landmark Program.

<http://www.asce.org/project/first-owens-river-los-angeles-aqueduct/>



1. *LADWP Shallow Flood Irrigation Zone, Owens Lake, CA*

17.5 x 24 Inch Archival Pigment Print, 2013

Shallow flood irrigation zones at Owens Lake recirculate water through a series of very shallow ponds to keep the lake playa moist and prevent blowing dust. The LADWP has installed 39.5 square miles of shallow flood irrigation at Owens Lake to date. It costs \$10 million per square mile to construct this type of water-based dust mitigation.



2. *LADWP Irrigation Pipe, Owens Lake, CA*

17.5 x 24 Inch Archival Pigment Print, 2013

The LADWP has built one of the largest environmental mitigation projects in the world at Owens Lake, with ongoing annual maintenance costs around \$40 million. A permanent staff of 60 to 65 LADWP employees is required to maintain the very extensive irrigation and dust mitigation infrastructure at Owens Lake. Hundreds more contract employees are brought in for each construction phase.



3. *LADWP Shallow Flood Irrigation Ditch, Owens Lake, CA*

17.5 x 24 Inch Archival Pigment Print, 2013

This natural water channeling has to be continuously managed by building berms to keep the irrigation water in small ponds that spread out over the dry lake playa.



4. *LADWP Irrigation Construction, Owens Lake, CA*

17.5 x 24 Inch Archival Pigment Print, 2013

The Owens Lake Dust Mitigation Project completed construction Phase 7a in March of 2015. Forty-five square miles of the Owens Lakebed are now mitigated for dust control. Plans are in development for future construction Phases 9 and 10 to work on an additional 5 square miles of the Owens Lake playa.



5. *Water Pump for Sheet Flood Irrigation Pond, Owens Lake, CA*
17.5 x 24 Inch Archival Pigment Print, 2013

The LADWP used 95,000 acre feet—almost 31 billion gallons—of water for dust mitigation at Owens Lake in 2013 and the previous few years. This was equal to the annual water supply for the City of San Francisco.



6. *Gate, LADWP Gravel Mitigation Zone, Owens Lake, CA*
17.5 x 24 Inch Archival Pigment Print, 2013

The LADWP has covered a little over 2 square miles of the Owens Lake playa with gravel for dust control. Gravel has been used in the smallest area because it is the most expensive mitigation technique with a construction cost of \$25 million per square mile. Gravel cover is now being expanded in construction Phases 7a, 9, and 10 to save water.



7. *Salt Formation in Dry LADWP Shallow Flood Irrigation Zone, Owens Lake, CA*
17.5 x 24 Inch Archival Pigment Print, 2013

The LADWP implements a summer dry down for their irrigation at Owens Lake between July 1 and September 30. The worst winds and dust storms occur during the rest of the year—especially between March and May—which is considered the primary dust control season. During the summer dry down, shallow flood ponds are allowed to evaporate, leaving behind bizarre, man-made salt formations.



8. *Brine Formation, Owens Lake, CA*

24 x 36 Inch Archival Pigment Print, 2013

Brine is hypersalinated water. When the brine water at Owens Lake evaporates, a salt crust forms and covers the remaining few inches of water like ice on a pond. Because these floating salt crusts prevent further evaporation of the water, the LADWP is experimenting with using brine as a less water intensive dust mitigation strategy. Naturally occurring halobacteria attracted to the high concentration of minerals in the brine stain the water vividly red and orange.



9. *Dust Storm in Dry Shallow Flood Pond, Owens Lake, CA*

24 x 36 Inch Archival Pigment Print, 2013

Winds regularly blow across the dry Owens Lake playa at over 20 mph and can stir tons of dust into the air each second. Owens Lake dust contains high levels of toxic metals including arsenic, selenium, and cadmium. This carcinogenic dust was a significant cause of respiratory problems for people living in communities within 250 miles of the dry lake until 2009, when the LADWP's dust mitigation program achieved significant reductions in the dust storms.



10. *LADWP Underground Water Pipeline, Owens Lake, CA*

24 x 36 Inch Archival Pigment Print, 2013

This buried water pipeline transfers water from the Los Angeles Aqueduct to the dust mitigation irrigation system on the Owens Lake playa.



11. *Small LADWP Water Pumping Station, Owens Lake, CA*

24 x 36 Inch Archival Pigment Print, 2013



12. *Symmes Creek Subsidence, Owens Valley, CA*

17.5 x 24 Inch Archival Pigment Print, 2014

This subsidence along Symmes Creek is a direct result of the LADWP's excessive groundwater pumping in this area. The LADWP tried to stabilize the subsidence by paving over the creek bed, but it eventually collapsed anyway. The failure of legally mandated environmental mitigation projects in this area does not prevent the LADWP from continuing to pump the groundwater. Active groundwater pumps surround this subsidence immediately to the north and south.



13. *Original Intake for the Los Angeles Aqueduct, Owens Valley, CA*
17.5 x 24 Inch Archival Pigment Print, 2013

This is the intake for the Los Angeles Aqueduct first constructed in 1913. It originally diverted the full course of the Owens River into the aqueduct canal, which runs 233 miles from here to Los Angeles. Today, Los Angeles supplies about 1/3 of its drinking water from the Los Angeles Aqueduct system.



14. *Pittsburgh Plate Glass Mine Pit, Owens Lake, CA*
24 x 36 Inch Archival Pigment Print, 2013

Pittsburgh Plate Glass Chemical Plant mined crystalized carbonate compounds from the exposed bed of Owens Lake until the late 1960s. They used soda, silica, and other naturally occurring chemicals to produce glass. The chemical plant was abandoned in the late 1960s when a breach of the Los Angeles Aqueduct flooded their facility and refilled Owens Lake for several years.



15. *Los Angeles Aqueduct Intake Diversion Gates, Owens Valley, CA*
17.5 x 24 Inch Archival Pigment Print, 2013

These diversion gates for the Los Angeles Aqueduct intake control the flow of water between the Los Angeles Aqueduct and the Lower Owens River. They direct part of the river back into the last 62 miles of its original channel. The rest of the river still passes into the Los Angeles Aqueduct through its original intake.



16. *Lower Owens River Restoration Project, Owens Valley, CA*
17.5 x 24 Inch Archival Pigment Print, 2012

The 62-mile Lower Owens River is being restored as part of a court ordered environmental mitigation project. The LADWP redirected water from the Los Angeles Aqueduct back into the Lower Owens River's original channel for the first time in December 2006. It was dry for the previous 93 years. The Lower Owens River Restoration Project (LORP) is the most extensive river restoration in the American West. It has succeeded in rebuilding fish populations and restoring native habitat for birds and other animals.



17. *Main LADWP Pump Back Station, Owens Lake, CA*

24 x 36 Inch Archival Pigment Print, 2013

This large pumping station on the Owens Lake playa was built as part of the Lower Owens River Restoration Project completed in December 2006. It lies near the terminus of the Owens River's natural channel and diverts some of the water from the Lower Owens River back into the Los Angeles Aqueduct, as well as supplying water for the dust mitigation system on the Owens Dry Lake.



18. *Intersection of the Los Angeles & California Aqueducts, Neenach, CA*

17.5 x 24 Inch Archival Pigment Print, 2014

The Los Angeles Aqueduct pipeline intersects with the much larger California Aqueduct canal in Neenach, California. The water from the two aqueducts is not mixed because the Los Angeles Aqueduct is exclusively for metropolitan use in the City of Los Angeles while the California Aqueduct serves much of the state and is managed by the California Department of Water Resources through the State Water Project. Half of the water that feeds the Los Angeles Aqueduct is now used for environmental mitigation projects in the Owens Valley and the Eastern Sierra. The LADWP is replacing most of that water supply with increasingly limited water from the California Aqueduct. This water comes primarily from the Sacramento and Feather Rivers in Northern California. This year's record breaking drought is a reminder that water resources in the Western United States are both extremely limited and interconnected, especially as global warming results in a drier climate.



19. *Los Angeles Aqueduct Canal, Owens Valley, CA*

24 x 36 Inch Archival Pigment Print, 2013

This upper section of the original Los Angeles Aqueduct is in a 40-ft wide open air, unlined ditch running through the Owens Valley south of the town of Big Pine and north of Lone Pine.



20. *The Los Angeles Aqueduct Cascades, San Fernando Valley, CA*

24 x 36 Inch Archival Pigment Print, 2013

The Los Angeles Aqueduct terminates at the northern corner of the San Fernando Valley where it fills the Van Norman Reservoir. This site, named the Cascades, is the location where 40,000 people gathered on Nov. 5, 1913, to watch the Aqueduct water reach Los Angeles for the first time. Addressing the crowd, William Mulholland, the City's chief water engineer, simply uttered the now infamous phrase, "There it is — take it," as Owens Valley water flowed into Los Angeles for the first time.