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The Myth of a Desert Metropolis

Los Angeles was not built in a desert, but are we making it one?

The question is posed like this. You've probably heard it or asked it yourself. Perhaps at a cocktail party. Probably not in LA—but hey, maybe even here in the heart of the folly.

Why on Earth would you build a city for millions of souls in a desert?

Someday, and maybe sooner rather than later, the water is going to run out, and Los Angeles will dry up and blow away.

Alex Prud'homme, author of *Ripple Effect: The Fate of Water in the Twenty-First Century*, prophesied that Perth, Australia, “could become the world’s first ‘ghost city’—a modern metropolis abandoned for lack of water.” And, he warned, “similar fates may await America’s booming desert cities: Las Vegas, Phoenix, or Los Angeles.”¹ Prud'homme's description of Los Angeles as a “desert city” has a distinguished lineage. Boyle Workman, a 1930s booster, recalled Los Angeles’ “desert” beginnings when he described the Los Angeles Aqueduct as a triumph of human ingenuity and engineering. Workman praised “the men who diverted streams into ditches and fed waving fields of grain, vineyards, glossy orange groves and rich gardens that blossomed where once desert brooded.”² A 1977 article by the famed aqueduct critic Remi Nadeau was headlined “Los Angeles is by Far the Largest City Ever Built in a Desert.”³

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Mojave Desert and creosote bush on the outskirts of Lancaster, California. PHOTOGRAPH BY GLEN MACDONALD.

And nine years later in *Cadillac Desert: The American West and Its Disappearing Water*,⁴⁴ Marc Reisner referred to Los Angeles as being second only to Cairo as the most populous desert city on earth.

The myth of desert Los Angeles suggests that if not for the Los Angeles Aqueduct—and if the city were ever to lose the water that comes from Owens Valley—LA could be Ozymandias: that “colossal wreck, boundless and bare,” around which “the lone and level sands stretch far away,” in the immortal words of the poet Percy Bysshe Shelley. But is Los Angeles the once and future desert? And should the LA Aqueduct be seen as Mulholland’s greatest gift? Or a curse because it gave rise to an ultimately unsustainable metropolis?

That Los Angeles is a “desert city” is, in large part, a myth. Writers have chipped away at the myth of the desert metropolis before.^{5,6,7} Here my objective is not simply to dispel the myth but to explore the history that underlies

the mythology and to consider its potential for becoming true—because sometimes myths have a strange way of becoming true. Could we, through our own actions, be transforming the myth of desert LA into a self-fulfilling prophecy? It turns out, we have in fact gone a long way down that road.

“A very pleasing spot in every respect”

The term “desert” has specific meanings. But how well does Los Angeles fit the bill? According to the venerable Köppen-Geiger Climate System, deserts typically receive less than 10 inches of precipitation a year.⁸ Los Angeles gets around 15 inches.⁹ However, it is not quite that simple. The real mark of a desert is the ratio of potential evaporation and transpiration (*evapotranspiration*) to precipitation. This ratio is dependent on temperature, and when the ratio is taken into account we find that a Southwest city such as Tucson,

with its high temperatures, is classified as desert despite its average annual precipitation of around 11.6 inches. LA's higher rainfall and milder temperatures place it in the Mediterranean climate zone. Climatologically, Los Angeles' sister cities are not places like Cairo but Rome, Lisbon, Madrid, and Athens.

What else defines a desert? Ecologists and biogeographers delineate deserts as regions in which aridity produces sparse and treeless plant cover.¹⁰ Typically, in deserts there is more bare ground than vegetation. Consider the creosote bush-dominated Mojave Desert that extends from Lancaster to beyond Las Vegas. Here we see a generally treeless landscape where creosote bushes often occur at densities of less than one plant for every 100 to 200 square feet of land. Did Los Angeles ever look like this?

It can be hard to imagine what Los Angeles, with its pervasive built and irrigated landscapes, was like prior to Mulholland's aqueduct, let alone in a state of nature. But glimpses of LA long before the deluge can be found in the written accounts of Padre Juan Crespi who accompanied the Gaspar de Portolà expedition in 1769.¹¹ Crespi's descriptions challenge the notion that Los Angeles was a desert. On 2 August 1769, Crespi described what is now the heart of Los Angeles: "The river flows on down nearly at ground level through a very green, lush and wide reaching valley of level soil some leagues in extent from north to south; upon one and the other side of the river, which runs continually onward with a great amount of trees[,] lie very large, very green bottom lands, looking from afar like nothing so much as large cornfields." Crespi called it "a very pleasing spot in every respect." He went on to express his views about the potential for European settlement: "And good, better than good, though the places behind us have been, to my mind this spot can be given the preference in everything, in soil, water and trees of which it has a good amount as I have related. A grand spot to become in time a good-sized mission of Our Lady of the Angels and La Porciúncula." Instead of a mission, Governor Felipe de Neve established a civilian farming settlement on arable land that had once sustained the Tongva Indians. On 4 September 1781, a party of forty-four colonists and their military escort founded what was to become Los Angeles. The pueblo was established not in the middle of a desert but where colonists found water, lush vegetation, and good soils.

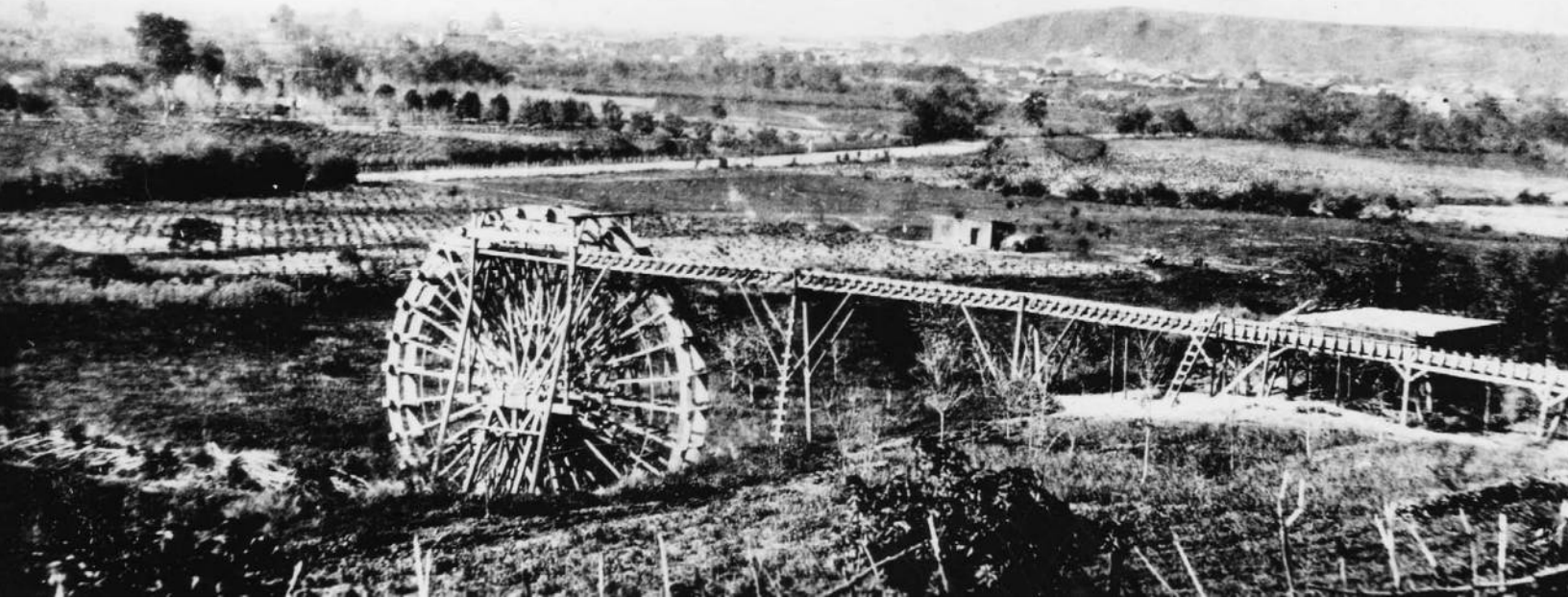
The Portolà expedition also crossed into the San Fernando Valley, a region generally hotter and drier than the site of future downtown LA. On 5 August 1769, near present day Encino, Crespi found another "grand spot for a good-size mission." He wrote that "there is no bettering the vast amount of level soil in this valley, dark and friable." Encino took its name from the Spanish word for live oaks, and Crespi commented on the many trees in the vicinity.¹² "There are a great many walnut trees and white oaks here on the slopes of the mountains belonging to this plain, with a great deal of trees visible to eastward."

Was Crespi overselling the Los Angeles region? It is not all lushness in his accounts. He does note burned grasslands, coastal sage, and prickly pear cactus consistent with semi-arid vegetation, but he does not describe a desert.

We have other glimpses of early days in the so-called "desert city." In the nineteenth century, precipitation supported rich range lands and early cattle ranches surrounding Los Angeles, and farmers in the San Fernando Valley produced wheat without irrigation. River water irrigated vineyards, orchards, and market gardens near the pueblo. Shallow groundwater and spring water that collected in the basin's substrates provided additional water for pumping. A picture from 1863 of a water wheel taking irrigation water from the Los Angeles River against the background of verdant fields and green trees tells the story, as do maps of agriculture in the late nineteenth century. As Crespi had observed earlier, it was "a very pleasing spot in every respect." The natural local water of the Los Angeles Basin's streams, rivers, and groundwater allowed Los Angeles to become by 1910 the top agricultural producing county in the entire United States.¹³

Water Wars, Real Estate and the Birth of the Desert City Myth

So, where did the "Los Angeles is a desert city" myth originate? Historian Ralph Shaffer has laid the blame on Harrison Gray Otis, the Chandler family, and their use of the *Los Angeles Times* as a propaganda vehicle to secure water and ensure development.¹⁴ However, I think it's a little more complex than that. In the writings of city boosters during the first real estate boom in the 1880s, one finds no overt reference to Los Angeles as a desert. The following assessment in the *Los Angeles Times* comes from 15 August 1886:



Water wheel along the Los Angeles River in the 1860's. COURTESY OF LOS ANGELES PUBLIC LIBRARY PHOTO COLLECTION.

“The water supply of Los Angeles is abundant, and while not everything that it should be or can be made, it is better than the water of Boston, Philadelphia, and other Eastern cities.”

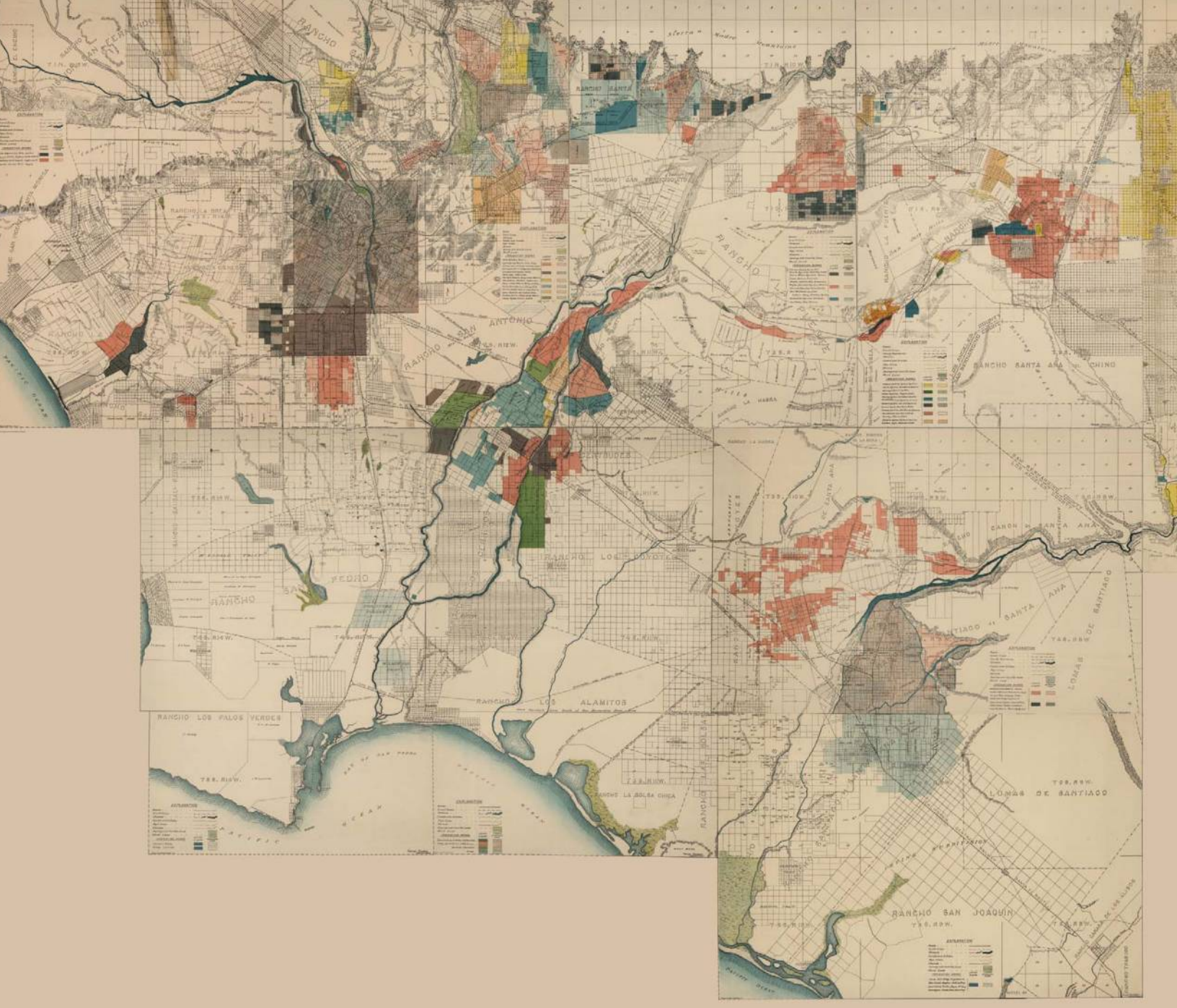
There were, however, other forces at work that may have contributed to conceptions of Los Angeles as a desert at the time. The 1877 Desert Lands Act classified as desert those tracts of land that “will not, without irrigation, produce an agricultural crop.”¹⁵ Private citizens could be granted title to such lands if they intended to “reclaim” them through the provision of irrigation waters. The area of Rancho Cucamonga in San Bernardino County east of Los Angeles was a region of such activity, although it is arguably not a true desert either.¹⁶

Closer to Los Angeles, the San Fernando Valley in the 1880s was explicitly referred to as desert that could be made to bloom with irrigation.¹⁷ Here is one example from the *Los*

Angeles Times, on 4 June 1886: “It was said by somebody years ago, that the man who made a blade of grass grow where none grew before was a public benefactor. What can we say of the man who brings water from the bowels of the earth and causes a fresh, pure living stream to flow where there never was one since the world’s creation? Streams shall break out in the desert, and the thirsty lands become pools of water.” We begin to see the desert city myth taking hold in what would become the greater Los Angeles area, appropriately enough in the San Fernando Valley, where water from the LA Aqueduct would enable urban development in the twentieth century.¹⁸

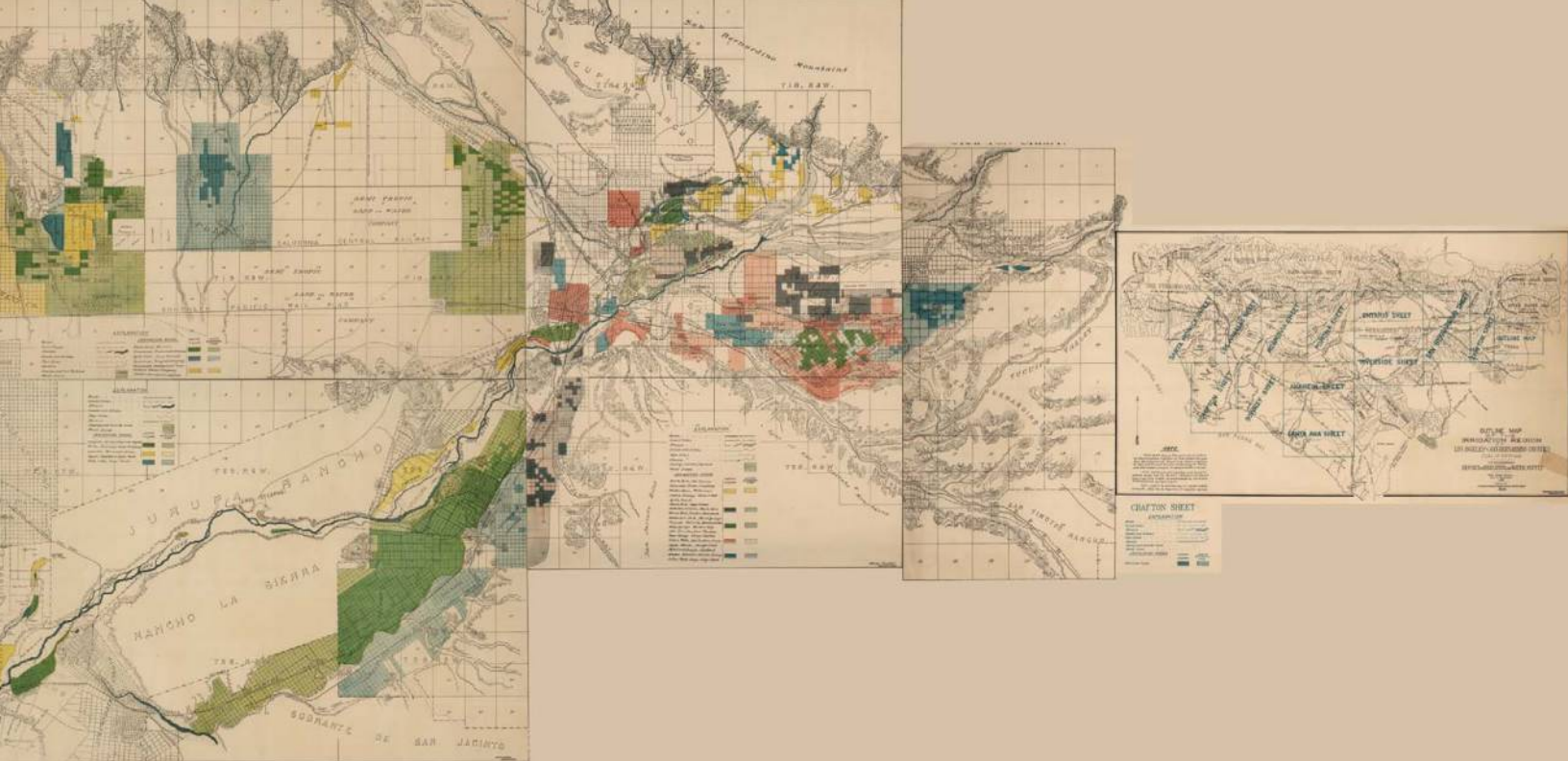
The image of Los Angeles collapsing and returning to desert can be seen in a remarkable *Los Angeles Times* article, “When the Desert Came Back,” which was published 29 May 1927, just twelve years after the aqueduct first brought

A stirring panorama, a drama in orchards, steel and stone, and brawn and brain and heart.



water to the city. Nathaniel Davis's ostensible subject was the Roman ruins at Timgad, Algeria, but he used the occasion to warn about the potential environmental collapse of Los Angeles and the need for the conservation of water and surrounding forest lands. Uncannily, his voice can seem to speak directly to us from over eighty years ago about topics starkly relevant today. As many would do after him, Davis employed the desert motif in his plea: "I stood on the heights of Hollywood's hills and looked seaward and then

toward the mountains. It is a stirring panorama, a drama in orchards, steel and stone, and brawn and brain and heart. And I was pessimistic enough to imagine that self-confident Los Angeles had forgotten Babylon, Palmyra, Palestine, China and Timgad. What I now saw was our own beloved land. And I saw sand dunes, sage brush, aridity, stately ruins, idle derricks, desolation." Much of what has since been written about Los Angeles' fated return to desert echoes this refrain.



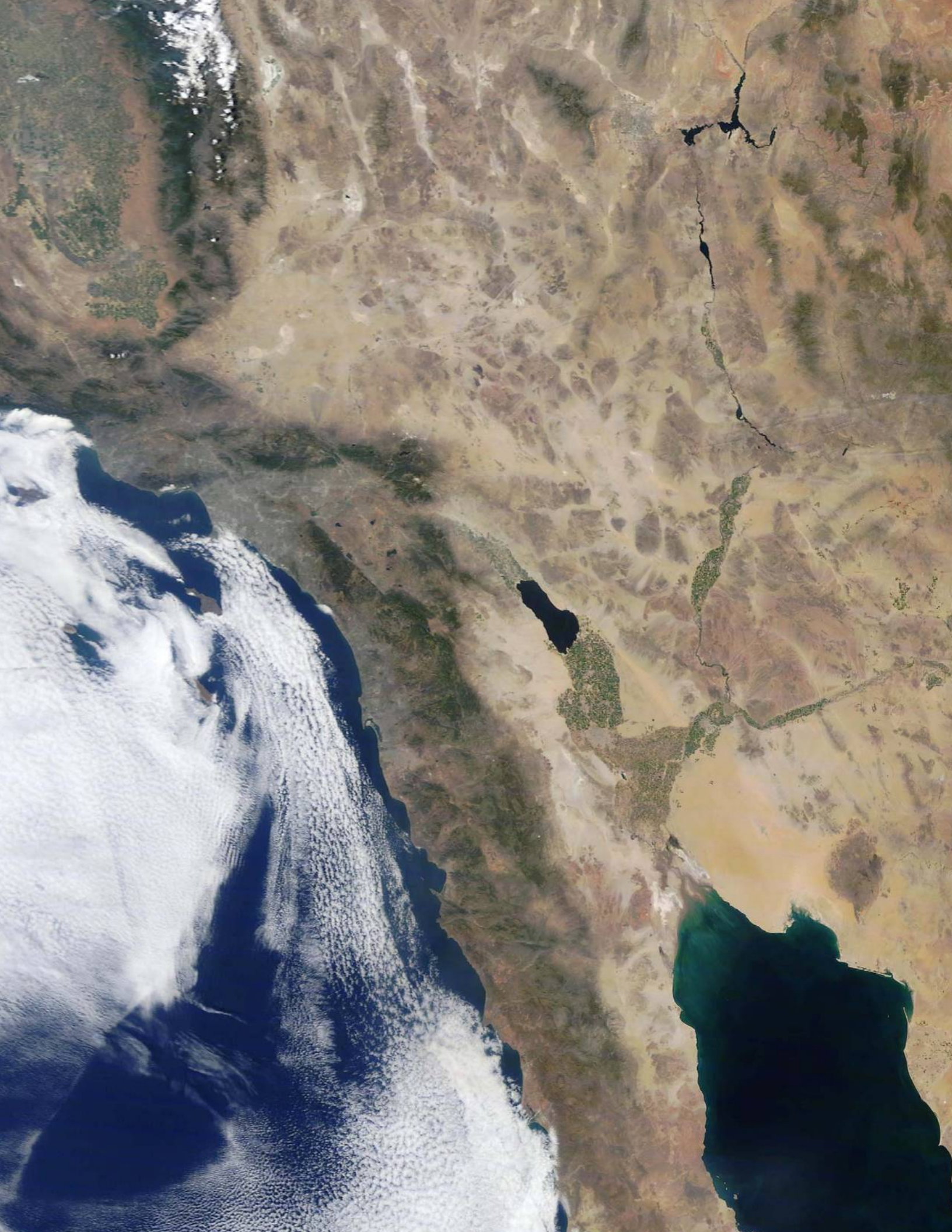
Maps to accompany report on irrigation and water supply, by William Hammond Hall, California Department of Engineering, 1888.

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What About William Mulholland?

But what about William Mulholland, the father of the LA Aqueduct? Did he ever subscribe to this view of the desert city? Or use it to sell the aqueduct? In 1905, Mulholland claimed that he originally thought the city would never need water from anywhere else. “Thirteen years ago Fred Eaton first told me that Los Angeles would one day secure its water supply from Owens Valley,” Mulholland told the

Los Angeles Times. “At that time the Los Angeles River was running 40,000,000 gallons of water daily, and we had a population of less than 50,000. I laughed at him. ‘We have enough water here in the river to supply the city for the next fifty years,’ I told him. ‘You are wrong,’ he said, ‘You have not lived in this country as long as I have. I was born here and have seen dry years, years you know nothing about. Wait and see.’” Mulholland concluded: “Four years ago I began to discover that Fred was right. Our population



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climbed to the top and the bottom appeared to drop out of the river.”

The cause was drought. Mulholland’s case for the aqueduct was not built on making a barren desert bloom, but accommodating population growth and providing protection against drought, arguments that have been used to justify importing more water to the city ever since.¹⁹ In 1907, Mulholland urged voters to support bonds that were critical to building the aqueduct, arguing: “Our population has doubled since 1904, while our water supply has diminished. At times we have faced a veritable water famine.”²⁰ Drought, of course, was no stranger to Angelenos even prior to Mulholland’s arrival. A devastating drought from 1862 to 1865 eviscerated the region’s cattle-based economy.^{21,22} A prolonged dry spell from 1893 to 1904, coupled with dramatic population growth—the city tripled in size during that period—motivated Mulholland’s quest, not a vision of creating a city in the desert.

Myth Made Real?

But are we turning the city into a desert? To see, let’s get a view from on high, above the city, from a satellite orbiting Earth, which gathered data to create an image while I was writing this piece. What has Los Angeles become since the pastoral eighteenth and nineteenth century views we encountered earlier?

Now we see the gray tones of our metropolitan area blanketing the entire Los Angeles basin, San Fernando Valley, Santa Clarita Valley to the north, and Inland Empire to the east. The San Gabriel and San Bernardino Mountains, which seem so imposing from the ground and separate us from the true desert to the east, appear like tiny green islands in a sea of city and desert. Indeed, because it now veritably merges with Palmdale, Lancaster, Victorville, and Palm Springs, it is the growth of the megacity that

encroaches upon the Mojave Desert and not vice versa. The cities merge physically and in terms of the daily flows of people, energy, and commerce. Taken as a whole, Greater Los Angeles has grown from its Mediterranean core outward and has merged with the true deserts to the east. The “fertile vales” that once separated city from desert are no more. This image shows a huge city that blends in with vast deserts to the north and east.

That is not all. Increasing concentrations of greenhouse gases, to which Los Angeles has contributed directly, threaten to bring the true desert climate closer to the city’s core. A recent projection of the impacts of climate change shows the city of Los Angeles warming by some 3 to 4 degrees Fahrenheit by the middle of this century, while foothill, mountain, and desert regions could warm even more.²³ At the same time, other models suggest that precipitation patterns are likely to change in ways that will reduce the snowpack in our mountains and diminish our water supply. The result is likely to be increasing general aridity in the Southwest, Southern California, and the Los Angeles region coupled with longer droughts that will tax an already stressed water system.²⁴ Neither the Sierra Nevada nor the Colorado River are likely to be able to provide the imported water to which we have become accustomed.

Unfortunately, the phrase “desert city” could soon accurately describe Los Angeles. As we move further into the twenty-first century, not only are the outer boundaries of the Los Angeles megacity sprawling into the true desert, we are also bringing the desert climate inexorably closer to the heart of the founding plaza of *El Pueblo de Nuestra Señora la Reina de los Ángeles de Porciúncula*.

And just so we come to the end of a chapter of our history that William Mulholland began, “There it is. Take It.” Now we must write a new chapter of our history, and in the process perhaps create a new myth for our metropolis. **B**

MODIS satellite image of the urban area of greater Los Angeles and the surrounding desert. COURTESY OF GLEN MacDONALD.

Notes

- ¹ Alex Prud'homme, "Drought: A Creeping Disaster," *New York Times*, 16 July 2011.
- ² Boyle Workman, *The City That Grew* (Los Angeles: The Southland Publishing Company, 1935).
- ³ Remi Nadeau, "Los Angeles: A City That Water Built," *Los Angeles Times*, 26 June 1977.
- ⁴ Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Viking Press, 1986).
- ⁵ Mike Davis, *Ecology of Fear* (New York: Vintage Books, 1998).
- ⁶ Ralph Shaffer, "That desert myth: will it ever dry up?" *LA Observed*, 10 November 2003, <http://www.laobserved.com/archive/2003/11/la_is_not_a_des.php>.
- ⁷ Glen MacDonald, "Los Angeles Water—Myths, Miracles, Mayhem and William Mulholland," *AAG Newsletter*, December 2012.
- ⁸ M.C. Peel, B.L. Finlayson, and T.A. McMahon, "Updated World Map of the Köppen-Geiger Climate Classification," *Hydrology and Earth System Sciences* 11 (2007): 1633–1644.
- ⁹ <<http://www.ncdc.noaa.gov/land-based-station-data/climate-normals/1981-2010-normals-data>>.
- ¹⁰ Glen MacDonald, *Biogeography: Space, Time and Life* (New York: John Wiley and Sons, 2002).
- ¹¹ Juan Crespi, *A Description of Distant Lands*, Alan K. Brown, trans. (San Diego: San Diego State University Press, 2001).
- ¹² In the San Fernando Valley, Crespi describes *grandes enzinos y roblez*, meaning large evergreen live oaks (*Quercus agrifolia*) and deciduous valley oaks (*Quercus lobata*). The neighborhood of Encino in the San Fernando Valley takes its name from this. The modern Spanish spelling for live oak is *encina*.
- ¹³ Quoted in: J. Cohen, "Agricultural Land Is Growing Scarce: Nursery Plants Are Now the Top Crop in Los Angeles County," *Los Angeles Times*, 10 May 1987.
- ¹⁴ Ralph Shaffer, "That desert myth: will it ever dry up?"
- ¹⁵ " 'Instink' and Desert Lands: The Act of Congress in Such Cases Made and Provided," *Los Angeles Times*, 7 July 1883; J.T. Gano, "The Desert Land Act in Operation, 1877–1891," *Agricultural History* 11: 142–157.
- ¹⁶ "Improving the Waste Places: The Work of Settlers on the So Called Cucamonga Desert," *Los Angeles Times*, 17 November 1883; "Cucamonga," *Los Angeles Times*, 20 July 1883.
- ¹⁷ "San Fernando Valley. A Fertile Region with a Prosperous Future," *Los Angeles Times*, 25 November 1883.
- ¹⁸ See for example: "The San Fernando Water Case," *Los Angeles Times*, 22 August 1904; "Bright Days in the Valley," *Los Angeles Times*, 10 August 1905.
- ¹⁹ Robert W. Matson, *William Mulholland: A Forgotten Forefather* (Stockton: University of the Pacific, 1976); Margaret Leslie Davis, *Rivers in the Desert: William Mulholland and the Inventing of Los Angeles* (New York: Harper Collins, 1993).
- ²⁰ "Truth About Owens River: Mulholland Talks to Sixth Ward Property," *Los Angeles Times*, 30 May 1907.
- ²¹ Boyle Workman, *The City That Grew*.
- ²² Lynn Bowman, *Los Angeles: Epic of a City* (Berkeley: Howell-North Books, 1974); Gordon DeMarco, *A Short History of Los Angeles* (San Francisco: Lexikos, 1988).
- ²³ A. Hall, F. Sun, D. Walton, S. Capps, Q. Xin, and H-Y. Huang, "Mid-Century Warming in the Los Angeles Region"—Part I of the *Climate Change in the Los Angeles Region* (UCLA Institute of the Environment and Sustainability Peer-Reviewed Report <<http://escholarship.org/uc/item/6v88k76b>>).
- ²⁴ IPCC, 2007: *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Ed. R.K. Pachauri and A. Reisinger (Geneva, Switzerland, IPCC); Glen M. MacDonald, "Climate Change and Water in Southwestern North America Special Feature: Water, Climate Change, and Sustainability in the Southwest," *Proceedings of the National Academy of Sciences* 107, 21256–21262; doi:10.1073/pnas.0909651107, 2010.