A RIVER RUNS THROUGH US

Melissa A. McDonald

Before construction of Santa Fe's reservoir system in 1947, the Santa Fe River ran as a continuous flow. From its snow-fed branches in the upper watershed to the Río Grande, fish would swim, birds would fly and wildlife would come to splash and drink. Before Santa Fe was given its Spanish name, it was called "Po'e Gae," meaning "watering place."

We were blessed over the last two years with a substantial amount of water in the river due to necessary improvements of the Nichols and McClure reservoirs. With these projects almost complete, you may hear that "we'll never again see that much water on a regular basis in the river." This remains to be seen, but our city can and should continue to recreate a living river. This would improve the quality of our lives, provide a healthy boost to our economy, reconnect us with our past, recharge our aquifers, improve water quality to our downstream neighbors and restore our reason for being here.

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The Santa Fe River in the upper watershed

Thanks to the hard work of former Mayor David Coss and the City Council, the river has responded well to the induced meandering, vegetative management and other erosion control projects. Pedestrians, joggers, cyclists, bird watchers and children of all ages are now enjoying the corridor—almost as if it were the good old days.

Fortunately, Mayor Javier Gonzales and the current City Council are building upon this work by taking a holistic view of the river and its contributing watershed. Serious efforts to bring back the river have been underway for decades, but part of bringing back the river involves a revolution in the way our culture approaches stormwater.

To better understand the basis of this revolution, let's consider the words of Luna Leopold, the native New Mexican son of Aldo Leopold (whose "green fire" in the eyes of a dying wolf suggests the name of this newspaper). In his 1960 essay, "Water and the Conservation Movement," Luna asks, "Did you ever wonder how rivers and streams may continue to flow during long periods without rainfall? The flow in rivers during times of fair weather is water draining slowly out of the ground into surface streams."

In an average year the roofs and roads of the City Different shed over one billion gallons of water. Throughout the urban portion, impervious surfaces reduce infiltration into the ground, while they simultaneously divert runoff at alarming rates. It is this excessive speed and increased volume of runoff that is one of the main reasons why the Santa Fe River became less and less dependable over time. Instead of being supported by a steady flow of water from the kind of infiltration that Leopold describes, stormwater now flies off of our city in fits and starts—with long, dry spells in between. Meanwhile, the water crashes through the arroyos and the river brings sediment and other pollutants with it, and this makes it ever harder for our "river" to be one.

A major initiative that the city of Santa Fe will focus on is the infiltration of more stormwater into the river. Up until recently, conventional standards required that runoff

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Santa Fe River west of Frenchy's Field, flowing toward Siler Road

be directed quickly away from the built environment. But today, the city is assessing the use of green infrastructure projects, low-impact developments, and passive and active water-harvesting systems to capture and redirect water to the river by means of its greater watershed.

Before it was Santa Fe, it was called "Po'e Gae," meaning "watering place."

To do this effectively, Mayor Gonzales, the council, the Santa Fe River Commission and city staff will be working with Luna Leopold's idea and look at every arroyo as a potential stream that might one day feed the river with both surface and groundwater. To this end, a citywide arroyo assessment program ranks arroyos based on drainage problems, erosion issues and danger to infrastructure. Private/public arroyo projects that work with homeowners and/or neighborhood associations may soon be commonplace. Rain gardens, depressions that collect stormwater and clean it before it enters an arroyo or river, will become key features of these projects, as will native seeds and plants that stabilize slopes, absorb water, build soil and beautify our city.

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HAPPY 100TH BIRTHDAY, LUNA BERGERE LEOPOLD!

Born in Albuquerque on October 8, 1915, Luna Leopold was the second son of Aldo and Estella (Bergere) Leopold. In 1948, Aldo died, soon after hearing that Oxford University Press planned to publish *A Sand County Almanac.* Fortunately, Luna saw to it that the manuscript became a book, and now we have one of the most important books of the ecological movement. Like his father, Luna was a brilliant scientist with successful careers in both government and academia. Awarded his doctorate in geology from Harvard in 1950, he spent 22 years with the U.S. Geological Survey and then joined the faculty at U.C. Berkeley. In Luna's obituary, the *New York Times* called his 1964 book, *Fluvial Processes in Geomorphology,* seminal. Other important works include *Water: A Primer* (1974) and *A View of the River* (1994). He was awarded the National Medal of Science in 1991. In 1996, David Rosgen dedicated his book *Applied River Morphology* to "Luna B. Leopold, whose wise counsel and teaching have benefitted many, and whose exemplary contributions have advanced science and promoted the river ethic." He died in Berkeley on February 23, 2006. Much of his published work can be accessed for free at The Virtual Luna Leopold Project For more information, visit www.aldoleopold.org.

Courtesy U. C. Berkeley

Luna Leopold (in his 50s, ca. 1974) on the bank of the East Fork River near Boulder, Wyoming, attired in his typical Stetson Silverbelly Rancher, Filson cruiser coat and gloves. Leopold and colleague William Emmett conducted bedload research along the river from 1967 through 1980.

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IMPACT ON SANTA FE AND NORTHERN NEW MEXICO

MSL benefits Santa Fe and the surrounding region in many ways. It supports local energy-modernization efforts with world-class technical expertise from its members and affiliates. By partnering with the city on research projects, it helps demonstrate that Santa Fe can be a "living laboratory" for smart energy systems design, positioning New Mexico as an innovator in the field. MSL will also foster entrepreneurial and economic development activity in the smart/microgrid space, and with SFCC, will create workforce training and employment opportunities for interested Santa Feans and New Mexicans.

In the future, microgrids could become an important part of the region's energy system. This will begin with the SFCC campus grid described above, and with appropriate regulatory support, could extend to the adjacent residential communities. Tribal communities also are well suited to microgrid architectures, and the energy independence and sovereignty they offer. As resiliency becomes a more pressing factor for cities like Santa Fe, microgrids' ability to disconnect from the main grid and continue autonomous operation could help ensure essential services. Finally, by creating an "energy innovation zone" (such as the Pecan Street project in Austin and the recently proposed innovation district in Washington, D.C.) with special regulatory factors favoring advanced and emerging technologies, Santa Fe can be at the forefront of developing the electric grid's future, with the attendant economic and public benefits.

David Breecker, managing director of the Microgrid Systems Laboratory, serves on the Energy Efficiency/Renewable Energy and Finance working groups of the Santa Fe Climate Action Task Force.

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In some of the wetter areas, often along acequia routes, locations for urban agriculture will also be identified and developed. In other areas, shade, windbreaks and biodiversity will become obvious additional benefits to the watershed-wide effort. Even plant material that provides noise abatement and view screening will be considered as projects are developed.

There are many ways that the public can contribute to the revitalization of the river. For some, the easiest would be to contribute to the Santa Fe River Conservation Fund. The fund is designed to provide monies for projects that will have a positive effect on our urban riparian areas. The city will match each donation dollar for dollar. Currently, you can check off a box on your water bill and, with the city's forthcoming billing system, you will be able to sign up for recurring donations.

Another way to support a living river is to look into the work of the Santa Fe River Commission. The commission meets from 6 pm to 8 pm on the second Thursday of every month in the city's offices in the Railyard. The commission has been key to getting improvements in the river to actually occur, and it is eagerly looking at new ways to bring our river back to life.

We can recreate a living river. It will take time for us to regularly see the flows that we have enjoyed over the last two years, but, with our cooperative and concerted efforts, this goal can be achieved. It's a worthwhile goal, too. As climate change challenges the resiliency of cities everywhere, it's exciting to be part of this city's efforts—this watering place's efforts—to bounce back better. It's up to us to make it happen though. Can you hear the happy splashes of future generations?

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