



*Quivira dawn reflection.
Photo by David Rintoul*

UPDATE ON WATER IN KANSAS

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Water, as a natural resource issue, never goes away. That's true throughout the American West, where droughts seem endemic. And while Kansas hasn't really dealt with severe drought over the past few years, the state continues to grapple with water issues. Or tries to.

Probably the most looming long-term issue is the ongoing depletion of the Ogallala portion of the High Plains aquifer in the western third of Kansas. Depletion has been going on, more or less, for the past 50 years. During that time, people and water agencies in the state have developed responses to those declines, some effective, some conjectural.

Perhaps the most significant has been the evolution and adoption of Local Enhanced Management Areas (or LEMAs). In these areas, water-rights holders have agreed, largely voluntarily, to reduce their pumping. The state's initial LEMA was created primarily in a portion of Sheridan County in northwestern Kansas, where locals agreed to reduce pumping by 20% over a five-year period, beginning in 2013 and renewing in 2017. In 2018, the Northwest Kansas Groundwater District created a LEMA over the entire extent of that district, and in 2020, the West-Central Kansas Groundwater Management District authorized a LEMA for parts of Wichita County.

LEMAs are complex creations, and they include provisions that give water-users flexibility (for an excellent summary of LEMAs from a legal perspective, see Griggs, 2021). For the most part, the areas covered by LEMAs have not faced a time of really significant drought since their creation. Still, they appear to have encouraged

landowners, mainly irrigators, to schedule and allocate their water use in ways that allow them to maintain production and profit (for a recent analysis of the efficacy of LEMAs, see Zwickle, *et al.*, 2021). Pumping reductions are just a condition of a successful LEMA. Ultimately, the success of a LEMA depends on the impact of the pumping reduction on water-level decline rates. So far the Sheridan County LEMA appears to have done that. In short, LEMAs appear to be an effective tool for extending the life of the aquifer—without causing undue economic dislocation (see Butler *et al.*, 2020; Butler *et al.*, 2018; and Whittemore *et al.*, 2018).

While LEMAs have seemingly been effective in places, they have yet to be adopted in southwestern Kansas, where the Ogallala is the thickest and absolute water-level declines have historically been the greatest. During drought years, water levels in the Ogallala can drop an average of three feet per year in southwestern Kansas. And while those declines were less severe in the past few years, the aquifer declined an average of 1.3 feet across southwestern Kansas in the year ending in January 2021 (for 2021 results, see https://www.kgs.ku.edu/General/News/2021/groundwater_levels_fall.html).

For the most part, however, southwestern Kansas has focused on solutions that involve water importation, rather than limiting water use. The concept of an aqueduct from northeastern Kansas to southwestern Kansas faces obvious issues of energy, environmental, financial, and legal hurdles, but the idea continues to be floated.

Water issues aren't relegated to western Kansas. In central Kansas, Audubon of Kansas filed a lawsuit against the federal and state government, claiming that water rights in Quivira National Wildlife



Canada Geese (*Branta canadensis*) and goslings. Photo by Nathalie Kind-Chalmers.

Refuge have been impaired by upstream pumping for irrigation along Rattlesnake Creek, the source of much of Quivira's water. Quivira has long been recognized as an important stop for migratory waterfowl and shorebirds, and conversations have gone on for decades about ways to fulfill the refuge's water rights. Dick Seaton, one of the attorneys involved in the lawsuit, has written a Quivira update on p. 15 in this issue of *Prairie Wings*.

In eastern Kansas, conversations continue about reservoirs and sedimentation. In 2016, the Kansas Water Office led an effort to dredge sediment from John Redmond Reservoir, a ground-breaking project between the state and the Army Corps of Engineers that was generally considered a successful proof-of-concept. But dredging is expensive and requires an ongoing commitment. The Kansas Water Office and other agencies have looked more and more at upstream conservation measures that keep sediment out of reservoirs in the first place. Those efforts continue, along with conversations about other ways to move sediment out of reservoirs without the ongoing expense of dredging.

On top of all this, the Kansas House of Representatives formed a committee on water, chaired by Representative Ron Highland from Wamego, to study the state's water agencies and their response to water issues (some excellent instructive videos from the committee's work are available on YouTube. Find them by searching under Kansas Water Committee). The committee held hearings in 2021, including several days in the field in Garden City. Recommendations will likely be unveiled before the 2022 legislative session.

There were leadership changes in the state's most visible water agencies and organizations. Earl Lewis moved from the Kansas Water Office to become chief engineer of the Division of Water Resources (DWR) of the Kansas Department of Agriculture. The DWR is the primary regulator of water rights in the state and thus the agency central to dealing with issues of groundwater declines and impairments. Connie Owen, an attorney from Overland Park, moved from her role as chair of the Kansas Water Authority to director of the Kansas Water Office, the agency that coordinates water planning and policy in the state. The Water Office began updating the state's water plan in 2021. And Dawn Buehler of Eudora, head of the Friends of the Kaw, replaced Owen as chair of the Kansas Water Authority, the committee that provides guidance to the governor, legislature, and Water Office concerning water issues.

In short, the state, especially through legislative hearings, appears to have ramped up its interest in water. Yet, year after year, the state's water plan continues to be woefully underfunded. Declines continue across the Ogallala. And the state has not faced a really severe drought, the likes of which focused attention on water issues in Kansas in 2011-2013.

When it comes to water, the only certainty is that dry times will come again, as they already have in much of the west. Is the state better prepared to face drought than it has been in the past? Stay tuned.

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