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Whooping cranes at Quivira National Wildlife Refuge in Stafford County, Kansas. © D. Severson/USFWS

Saving Water, Saving Wildlife

Helping farmers make irrigation more efficient in Rattlesnake Creek

Is it possible for profitable agriculture to coexist alongside healthy ecosystems? Heidi Mehl, director of water and agriculture for The Nature Conservancy believes so. One of the places where that idea is being put to the test is around Rattlesnake Creek in central Kansas. The 95-mile stream flows through Quivira National Wildlife Refuge, where large salt marshes provide critical habitat for migratory birds like the endangered whooping crane. Wildlife relies on the wetlands having enough water flowing from Rattlesnake Creek. Local farmers rely on the creek to irrigate their crops. These competing needs have caused tension, but there's a solution.

"The flow of water in Rattlesnake Creek can be improved if the farming community increases irrigation efficiency," says Mehl. "Protecting the refuge is vital. We need to find the solutions that support everyone who relies on the creek for water—that means supporting both wildlife and agriculture."

A Rattlesnake Creek farmer checks the moisture in his soil. © Heidi Mehl/The Nature Conservancy

For years, the local groundwater management district, GMD5, has encouraged water conservation but there is an urgent need for new technology that allow farmers to use water more efficiently.

In early 2021, TNC began an on-farm trial project in the area around Rattlesnake Creek. The goal is to reduce the amount of groundwater pumped and used for crop fields while still maintaining harvest size and profitability. Participating farmers can receive a 50% cost-share grant to upgrade their irrigation systems to mobile drip lines which apply water directly to the soil surface. K-State is providing free technical assistance tailored to the farm operation, including use of a new irrigation scheduling tool developed by the university. If you would like to enroll as a Water Technology Farm in this project, please contact Heidi Mehl at **heidi.mehl@tnc.org** or 785-233-4400.

This work is supported by the Conservation Innovation Grants program at USDA's Natural Resources Conservation Service. Key partners include Kansas State University, WaterPACK and Groundwater Management District 5.

Left: The mixed-grass prairie of Rick Warshauer's property provides high-quality habitat for wildlife. © Paula Matile/TNC;
Right: Nescatunga Creek is fed by an underground spring. © Ken Brunson/TNC

Protecting a Heritage Stream

Easement blends grassland and stream conservation

Rick Warshauer is a field biologist raised in Hawai'i, but the Red Hills of Kansas have a special place in his heart.

"I've been visiting this land since I was a toddler," the 75-year old explains. "My great-grandfather came to Comanche county before many of the larger cattle operations settled in the area. I'm now the youngest of the cousins who owned the family land."

The rolling Red Hills of mixed-grass and sand sage prairie cover nearly 2 million acres—the second largest area of native grassland in the state, after the Flint Hills—and nearly all of it is operated as working cattle ranches. When the cousins found themselves without anyone in the family to take over, they knew they would have to sell. But Rick kept one small parcel, buying out his cousins, and it wasn't just for nostalgia.

"As I got older and got more involved with the Kansas Native Plant Society, I began to appreciate more and more of the natural aspects of the property," says Warshauer.

One of those natural resources he wanted to see protected was the headwaters of Nescatunga Creek, one of just six pristine streams in the state to earn the designation of Heritage Stream. Earlier this year, Warshauer granted a conservation easement to The Nature Conservancy, ensuring his piece of the Red Hills and this irreplaceable prairie stream will be protected long after he's gone. Like most conservation easements, the agreement means the land can't be cultivated, paved or otherwise developed, but can remain in agricultural use as grazing land. Somewhat unique is the addition of a stewardship plan. Every five years, TNC will work with the current landowner to develop a plan that ensures the property is managed with natural resources in mind, just like Rick is doing.

"I see a conservation easement as the best way to make sure the land gets long-term protection and long-term management that focuses on the diversity of the prairie," says Warshauer. "And The Nature Conservancy will be there to enforce it after I'm gone."

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Dr. Debra Bolton Joins Board of Trustees

The Nature Conservancy's Kansas Board of Trustees is pleased to announce Dr. Debra Bolton has joined the board.

Dr. Bolton is a human scientist and director of Intercultural Learning and Academic Success at Kansas State University's Department of Diversity and Multicultural Student Affairs. She also serves on the faculty of the Geography and Geospatial Sciences department.

Her continued research focuses on health, well-being and environmental/social connectedness in the minority-majority communities of southwest Kansas, where a multitude of racial, ethnic and religious minorities make up the majority of the local population.

"My love of the land and its flora and fauna is a long tradition of my family and ancestors, as is our Native American tradition," explains Bolton.

Dr. Bolton's combination of traditional knowledge and scholarly research will be a unique asset to TNC's board and work in Kansas.

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