

Grassroots approach to conservation developed

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Prescribed fire is applied on reserves, but grazing is typically excluded and herbaceous vegetation is often dominated by grasses. Credit: Ryan Harr. © Ecological Society of America

A new strategy to manage invasive species and achieve broader conservation goals is being tested in the Grand River Grasslands, an area within the North American tallgrass prairie ecoregion. A University of Illinois researcher along with his colleagues at Iowa State and Oklahoma State Universities enlisted private landowners in a grassroots community-building effort to establish a more diverse landscape for native wildlife.

The Grand River Grasslands has three main problems that pose challenges to [conservation efforts](#): invasive [juniper trees](#), tall fescue, and heavy grazing of cattle. U of I ecologist Jim Miller and his team developed a new model for conservation that begins by raising

landowners' awareness of these problems and providing strategies, such as moderate livestock grazing and regularly scheduled controlled burns. Miller and his team identified landowners who are interested in trying something different -- who will, in turn, transfer their newfound knowledge and understanding to larger groups of people in the region.

"We conducted a survey and learned that people recognize burning as a legitimate management tool but don't have experience with it," Miller said. "Most of the landowners have never participated in a controlled burn, so we've essentially lost a fire culture in much of that part of the country."

Miller's team invited landowners to hands-on educational field days at nearby [nature reserves](#) to show them how grazing and burning techniques work. They got experience with drip torches and learned how to work with the wind and [moisture levels](#).

"We followed that up with a burn at one of the landowner's savannahs that he was trying to restore," Miller said. "It went really well and was a key step for us in our process because now we're getting landowners to try these new strategies on their own properties."

Miller said the next step in the model is to encourage the landowners to champion these new practices to the larger community. "They go down to the coffee shop and meet their neighbors and friends and tell them about the success they're having with the new practices to control the juniper trees and tall fescue and how well their cattle are doing on these pastures. The neighbors start to pick up on this, and then we have the whole process repeat itself with a larger group of landowners.

"If we're successful with this, we'll start to see changes, not just on individual properties here and there for key landowners but over the whole landscape or the whole region," he said.

According to Miller, the fastest-growing group of landowners in the area is non-traditional. They don't live in the region or come from a farming background, but they instead buy land to hunt deer, turkey, quail, or maybe just to birdwatch. He said that on land with intensive cattle grazing, the cedars can be kept at bay.

"Without burning or grazing, the cedars will take over," Miller said. "Trees seem like a good thing to wildlife enthusiasts, but they don't see that their land will go from being an open grassland to a closed-canopy cedar stand in 20 to 25 years. Under those conditions, there are no deer, no turkey, no quail – it's a biological desert, and it's too late to do much with it. We think we can make the most inroads with the non-traditional owners."

Juniper trees are invasive, largely due to fire suppression. Junipers are a fire-intolerant, woody plant. This particular species of juniper is also called eastern redcedar.

Although that may sound appealing for patio furniture or decking or biofuels, it's not. Miller said there's no market for this type of tree. The trees produce a prodigious seed rain that facilitates rapid colonization of an area when left unchecked. With a survey from aerial photography dating back to 1983, Miller estimated a 3 percent increase in cedar coverage per year.

Tall fescue, an exotic invasive plant that forms a monoculture, greens up early in the spring making it difficult to burn.

"Heavy stocking of cattle is an issue," Miller said. "Cattle quickly reduce available forage to the point that some ranchers feed hay by July and August. That's not quality habitat for grassland birds, which have seen the steepest declines in North America since we've been monitoring bird populations." He said.

"There are at least two things necessary for this model to work: ecological potential in the landscape and some level of social readiness," Miller said. "In the Grand River [Grasslands](#), there is ecological potential, but landowners don't all recognize that eastern redcedar trees are invasive. We're working on that."

Miller says that with conservation, you need a plurality, a variety of approaches, because one size doesn't fit all.

"We're providing a model or a road map for a different way of doing things in conversation," Miller said. "We need to go beyond the traditional jewels-in-the-crown or fortress conservation models, characterized by national parks and other set-asides. Paying people to take their land out of production and creating state and national parks or reserves just aren't enough. This model may not work everywhere, but in some landscapes we think this can work, and we're trying to provide an initial example to demonstrate how it could work."

"It's meant to be a dialogue between, our team, [landowners](#), and other resource management professionals, such as biologists who work for the Department of Natural Resources -- not us telling them what they need to do," he said.

Provided by University of Illinois at Urbana-Champaign

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