

ROESLEIN FARMS SAVANNA RESTORATION

“Marginal Land” Becoming Showcase of Good Stewardship

By Sheldon Ripson



FRANK OBERLE

It is remarkable how quickly land can bounce back from years of poor management. Less than two years after beginning a savanna restoration project on 150 acres of his northern Missouri farm, Rudi Roeslein is seeing native grasses, flowers, legumes, and other plants visible after decades of being suppressed by undesirable trees and non-native cool-season grasses. Roeslein is a private landowner with both purpose and passion to demonstrate the ecological and economic benefits of native prairie and other natural communities.

“This is an example of what can be done to a landscape that had high soil erosion and was quickly on its way to becoming another northern Missouri farm of marginal land with limited possibilities. Rebuilding this farm with a focus on its natural communities will take time and patience to make it a productive tract of land,” said Rudi Roeslein, Missouri Prairie Foundation technical advisor and founder and CEO of St. Louis-based Roeslein and Associates, Inc. He recently started Roeslein Alternative Energy with a focus on native prairie biomass as a renewable fuel source.

Roeslein bought the now 1,600-acre Putnam County farm in 2008 initially for wildlife enhancement. Along with his son Derrick Roeslein, who serves as farm manager for Roeslein Real Estate, they are converting the property’s highly erodible acres away from low-yielding corn and soybean production.

“Our good friend and native seed supplier Frank Oberle pointed us to John Murphy, the Missouri Department of Conservation’s Private Land Conservationist in northeastern Missouri, who toured the majority of the farm and developed a plan that we have been putting in place,” Derrick Roeslein said. As part of the plan, Murphy identified a 150-acre tract containing diverse remnant plant species and believed it would be best for savanna.

“That particular area was too steep to farm. I am sure it could have been over-seeded with non-native cool-season grasses and put into pasture. But there was evidence to suggest it would be worthwhile investing the money in savanna restoration to see what would come back,” said Derrick Roeslein.

The Missouri Department of Conservation, in conjunction with the U.S. Fish and Wildlife Service’s Partners

Landowner and Missouri Prairie Foundation Technical Advisor Rudi Roeslein stands amid rough blazing star (*Liatris aspera*) on his land, revitalized by prescribed fire and other restoration techniques.

for Fish and Wildlife Program and the National Wild Turkey Federation, provided cost-sharing funds that essentially split the restoration expenses with Roeslein.

“The voluntary cost-share program helps private landowners restore native habitat for the benefit of declining, threatened, and endangered species,” said Chris Woodson, private lands biologist for the U.S. Fish and Wildlife Service.

Roeslein’s savanna restoration called for dividing the tract into two sections. In fall 2011, firebreaks were installed around the perimeter of the tract and between the two sections. The firebreaks were created using a combination of disking, tree sheering, bulldozer work, mowing, and over-seeding of wheat and

legumes. The firebreaks also serve as vehicle paths.

Next was woody cover control to remove undesirable trees and shrubs. Those woody species had prevented native warm-season grasses from receiving sunlight, keeping them dormant for generations.

“The sections were overstocked with undesirable trees invasive to native grasslands, woodlands, and savannas including eastern red cedar, honey locust, and autumn olive. There was also shingle oak, a native species that is quite aggressive and will take over native grasslands,” Woodson said.

The remaining stumps of the sheared trees were chemically treated to prevent them from re-sprouting, except for eastern red cedar, which does not resprout after cutting.

“The idea was to get rid of as many undesirable trees as possible and leave only the desirable post oaks, which will really define the savanna,” Derrick Roeslein said. “We hired a contractor with specialized equipment and a reputation for doing good work. They did the north unit in the winter of 2011–12 and the south unit the winter of 2012–13.”

Results were evident immediately with native grasses, prairie flowers, and legumes emerging in the first growing season following woody cover control.

“Big bluestem and especially indiangrass began expressing themselves. Prairie blazing star really popped up almost immediately. It just shows the potential of what already existed,” Woodson said. “Those plant species were not seeded. They already had established root systems. They just had been suppressed by lack of sunlight. So that was really exciting to see.”

The south section was treated with a prescribed burn in early April 2012 when the non-native cool-season grasses

were already green, to allow native warm-season grasses to compete. “They are on the right track to get the desirable habitat effects. The remaining mature post oaks and young post oaks that will grow are the big, open canopy savanna-type trees,” Woodson said.

The north section was scheduled for a prescribed burn in spring 2013, but extremely wet conditions prevented that portion of the plan from being executed. “In the meantime we are using herbicide on any sericea lespedeza we find, as well as late fall herbicide applications on fescue. Next March we plan to prescribe burn the entire savanna,” Derrick Roeslein said.

Woodson believes the grassland and herbaceous composition of the Roeslein savanna restoration will be nearly complete in the next five years. The existing desirable trees will mature in 30 to 50 years.

“The Missouri Department of Conservation’s Union Ridge Conservation Area is widely regarded as a good example of northern Missouri savanna. When we look at Rudi’s savanna, it is a young version of Union Ridge. They have the same species composition of savanna oaks. They are just at a younger stage,” Woodson said.

Roeslein started exploring how to improve the wildlife carrying capacity of woodlands and savannas about two decades ago on another farm he owns in central Missouri. Although the learning curve was steep on the Osage County farm, especially for proper ground preparation and dealing with invasive species, Roeslein was better prepared for the Putman County project.

“Like every journey, there are many unexpected turns and twists and sidetracks. But this one has been extremely rewarding. I think the results really speak for themselves,” Rudi

Roeslein said. “I believe the ecological services that this tract of land will provide to society, my family, and the many people that come to see it are worth the effort. It will also continue to provide excellent hunting opportunities and prime habitat for many other species.”

“This savanna will provide good habitat use for field sparrows, eastern kingbirds, Baltimore orioles, and other song birds in decline—all of which the U.S. Fish and Wildlife Service is concerned about,” Woodson said. “We will also get some good habitat for bobwhite quail, turkeys, and many other species.”

Savanna restoration is just one native project at the Roeslein farm. A significant additional project envisions using native prairie plantings and the biomass produced as a source of renewable energy.

“Hopefully this farm can be a demonstration model for the ecological and economic benefits of native prairie. That entails benefits for wildlife habitat, water quantity and quality, air quality, soil health, and pollination services,” said Rudi Roeslein. “We hope to demonstrate there is a viable economic return to restoring marginal land to native vegetation rather than using it as cropland.”

“The savanna is special because it is a true remnant section of the farm. We have not planted a thing over there. All the native plants in the savanna were already there. We just allowed them to flourish. To me, that represents the potential of this entire region for native plant species,” Derrick Roeslein said.

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