



Registry News

From the Oklahoma Natural Areas Registry Program

Newly Registered Site J. T. Nickel Family Nature and Wildlife Preserve, Cherokee County

Tucked back in the hills of eastern Cherokee County just north of Tahlequah is the largest privately protected area within the Ozarks. Made up of bluffs and hollows; grassland and river; and oaks, maples, and pines; the J. T. Nickel Family Nature and Wildlife Preserve is one of Oklahoma's best examples of preservation and restoration of natural habitat in the Ozarks area. Several years ago, John Nickel and his family donated their ranch to The Nature Conservancy (TNC) to conserve indefinitely the native forest, woodland, and savannah communities found on the 15,000-acre preserve. This summer, we added the Nickel Preserve, along with other TNC preserves, to the State Register of Natural Heritage Areas.



Priscilla Crawford

Fire creates an open woodland or savannah on western and southern slopes of the Ozarks. The native short leaf pines are widely spaced with tallgrass prairie filling in.

Preserve director Chris Wilson has worked for TNC for many years in several states. When the Nickel Preserve was purchased, Wilson welcomed the chance to become the director and help restore the habitats. "I really wanted the opportunity to manage a large preserve and bring back the forest that used to be here," Wilson said.

Priscilla Crawford



Wilson, preserve director, and assistant, received their Registry plaque this autumn just as the trees on the hills were losing their leaves.

Wilson has made an excellent start restoring the native plant diversity. When TNC acquired the land, the open areas were covered in invasive plants and non-native agricultural species, such as sericea lespedeza (*Lespedeza cuneata*) and Johnson grass (*Sorghum halepense*)—see more about invasive species on page 2. After a series of treatments, these areas are now lush with native tallgrass grass species. Wilson and his staff are working on adding the wildflowers, or forbs, to these savannah areas. "We originally focused on restoring the native grasses

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Oklahoma Natural Areas Registry



Spring 2009

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About Us: The Natural Areas Registry was formed by the Oklahoma Legislature in 1984 to identify areas with unique natural features and to encourage their voluntary protection by Oklahoma's citizens.

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Focus on Oklahoma's Conservation Issues: Invasive Plants

Invasive Species: an organism that is non-native (or alien) to a specific ecosystem that is causing economic or environmental harm or harm to human health.

A plant species usually does not occupy all the areas where they could grow. Boundaries such as mountains, rivers, oceans, and deserts stop the spread of plants. Now with the help of globe-trotting humans, those geographic obstacles can be easily hurdled. Species have been jumping over boundaries with human assistance, both deliberate and accidental, and becoming alien entities in a new "world." If the habitat is right, alien species can survive and thrive in their new home. The alien may reproduce and spread rapidly over the landscape if there are few competitors and predators in the new region. When this occurs, we may consider the alien to be invasive.

Invasive alien species can have significant environmental impacts in their new region. Not only do alien invasive species have an ecological impact, but they have an economic effect as well.

Bruce Hoagland



Kudzu, a notorious invasive species across the southeastern United States, has been found in several locations in Oklahoma. The vine blankets an area near the railroad tracks in Choctaw county.

It is estimated that more than \$136 billion is spent each year in the United States to manage alien, invasive species. Early detection and eradication of invasive species before they become a major problem helps to reduce the monetary and ecological costs associated with these environmental menaces.

What is being done in Oklahoma

Recently, the Oklahoma Invasive Plants Council (OIPC) was established to coordinate our state's effort to raise the awareness of the economic and ecological impact invasive species have in our state. Bruce Hoagland, president of the OIPC and ecologist at the Oklahoma Biological Survey, emphasized that, "currently, the state of Oklahoma officially recognizes only a few of the invasive species that are causing problems in the state."

According to Hoagland, OIPC will work to educate the public through its Web site, but also will raise the issue with legislators who can help to fund a proactive approach to invasive species management. "One of the most important things is to watch out for 'newcomers' that are not abundant, but have the potential to be a big problem," Hoagland stressed. In the future, the OIPC will have a system online for people to report an invasive species location. Educating landowners and teaching them the plants to be looking out for is one of the main goals of the OIPC.

The second annual meeting of the OIPC will be hosted by Karen Hickman with Oklahoma State University's Department of Natural Resource Ecology and Management. Like the first meeting in 2008, Hoagland expects many agencies and landowners to be represented. He, along with the entire OIPC board, looks forward to bringing together a diverse group of Oklahomans to fight the growing numbers of invasive plants in our state.

To learn more

To find out more about invasive species in our state, visit the OIPC Web site at: www.biosurvey.ou.edu/invasive/invasive.htm.

Technical Assistance: Helping with invasive species eradication is one way the Registry Program can work with program members to maintain diversity in their natural area. We want to be of service to other program members who have habitat conservation problems. Let us know if you have a need for our technical assistance. For more information go to www.oknaturalheritage.ou.edu/registry_about.htm or call (405) 325-7658.

Taking Action: An Invasive Plant Case Study

Looking down from the bank of the pond, we could see a couple acres completely covered in pretty yellow irises. The spring-fed pond's overflow winds around for several 100 yards through a wetland and eventually flows into the Blue River. The wide swath of iris followed the water's path down, almost to the river. In spite of its beauty, this iris is an invasive alien that will soon force out all native vegetation.

Imported from Europe as an ornamental and still sold in Oklahoma in garden centers, *Iris pseudacorus* is an invasive plant that has taken over riparian systems in several U.S. states. Thick stands of this beautiful, yet dreadful, plant crowd out native plants as it forms a monoculture in wetlands, along rivers, and in moist meadows.

In coordination with The Nature Conservancy (TNC), we have begun work to eradicate this invasive species from a ranch along the Blue River. Working with Jona Tucker, TNC's Arbuckle Plains/Blue River Project manager, and Phillip Crawford, Oklahoma Biological Survey biologist, the Registry Program tested several treatment methods to kill the iris.

Our first instinct was to try to eliminate the iris using non-chemical methods—dig it up. But, no matter how much you dig out, there will still be irises coming up in the spring! When removing the plant it is easy to leave behind parts of the underground stem, the rhizomes. Any of these bits left underground will grow into new iris plants. We also were concerned about the amount of disturbance digging would

cause to the wetland. We could cause significant problems by disturbing the soil layers and introducing sediment into the spring-fed aquatic system of the Blue River. Also, after much research, we found other people had little success eradicating iris from large areas by digging.

Although, it is counterintuitive for conservation biologists to use “nasty chemicals,” invasive plant infestations often must be treated with herbicides. In our case, to eradicate the iris and to minimize the damage to the aquatic ecosystem, we were required to use an aquatic-approved herbicide.

We tried two herbicides that affect plants in different ways: an imazapyr herbicide, commercial name Habitat, and glyphosate herbicide, commercial name AquaNeat. In the spring of 2008 we tested the effectiveness of these two herbicides and experimented with cutting the leaves



Phillip (in back) cuts the iris leaves in preparation for herbicide application while Jona swipes the herbicide-filled wicking applicator across the leaf surface.



Priscilla Crawford

This garden ornamental is on Oklahoma's invasive species watch list. If you have a yellow iris growing in a natural area, please contact us!

before applying the herbicide. Cutting the leaves may allow better uptake of the herbicide, but there is less leaf surface area to absorb the chemical. Another step we took to reduce our impact on the wetland was to apply the herbicide using a wicking applicator rather than a sprayer. This stopped any overspray of the herbicide on non-targeted plant species and nearly eliminated any herbicide dripping into the wetland. We checked our test plot monthly during the growing season and were pleased with the results. Our small test area indicated that the imazapyr herbicide was significantly more effective in killing the standing iris and reducing sprouts from the rhizomes. Also, we were happy to see that cutting the leaves prior to herbicide application was unnecessary, thus reducing the manual labor needed.

With the results of our test to guide us, we will treat the remaining acres of iris this spring. With luck, we will be able to eradicate most of the iris this year. However, managing invasive species is continuous. We will need to set up a long-term monitoring program and be prepared to spot treat rogue iris that pop up in years to come. ■

Newly Registered Site: J.T. Nickel Family Nature and Wildlife Preserve

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and neglected to add the forbs,” Wilson lamented. However, the staff is working to remedy this by collecting native wildflower seeds from the preserve to seed in restoration areas.

Fire has been used extensively to restore the open woodland that once dominated this part of Oklahoma. According to preliminary results from research being conducted on the preserve, fires probably burned through the forests of this part of the Ozarks every two to five years. Analyzing tree ring data, scientists at the University of Missouri are finding that for 100s of years, until 1920, significant fires would have occurred at least every five years on some parts of the preserve. After 1920, however, the fire frequency drops to approximately one every 20 years. Wilson and his crew are changing that. “We try to burn 2,000 or 3,000 acres twice a year depending on the weather,” Wilson explained. Wilson and TNC

believe in the power of fire as a restoration tool so much that they will even help their neighbors conduct prescribed burns.

One of John Nickel’s dreams when he donated the land was to see the re-establishment of an elk population to the Ozarks. Working closely with the Oklahoma Department of Wildlife Conservation, TNC was able to release 20 free-range elk at the preserve. The herd has grown with additional releases and a few births to more than 60 individuals. The elk are able to roam free in and out of the preserve. This has concerned a few of the adjacent farmers about the loss of cash crops, but most of the nearby landowners are thrilled to have elk in the area. To keep the elk from roaming too far and eating too much of the neighbors’ hay, Wilson has planted some areas with food plants to supplement the winter forage. “We put in wheat, oats, clover, and turnips. They like to eat the turnips after it freezes, tastes better to them then,” Wilson explained. “I never thought I would put in food plots,” Wilson added. Even conservation efforts must be modified to maintain good relationships with neighbors, he explained.

As with most important conservation projects, the Nickel Preserve is a work in progress that is constantly changing. As the director, Wilson is looking forward to many years on the preserve, helping to maintain the natural diversity of the land and repairing the damage to the landscape caused by overuse, neglect, and ignorance.

Visit the Nickel Preserve

The public is free to drive through the preserve and to walk on the designated trails during daylight hours seven days a week. Two self-guided nature trails begin at the headquarters. One wetland trail is along the road that travels through the preserve.



Priscilla Crawford

Hiking the nature trail in will take you up on the ridge to look out over the tall grasses and down into the forest to see ferns and sassafrass growing in the shadows of the hills.

When visiting, you will be confronted with roads that are gated and locked. While the preserve is open to the public, access to the land is restricted to protect sensitive areas, safeguard land undergoing restoration, and limit human disturbance to the wildlife.

From Tahlequah go 10 miles north on Highway 10. Turn right on the gravel road just after the “Eagle Bluff” sign. Cross the bridge, at the Y in the road veer right. Turn left on the first road. This road travels through the preserve on Pumpkin Flats. You can stop and walk the wetland trail or proceed to the preserve headquarters on the far side of the preserve.

No hunting, fishing, or camping is allowed on the preserve. For more information, call the Nickel Preserve at (918) 456-7601 or follow the link to the Nickel Preserve on our Web site. ■

Priscilla Crawford



Many native perennial grasses are fire adapted. The growing tissue of a grass, or meristem, is protected by its location just below the surface of the ground. You can see the charred remains of the brown grass with green shoots coming from the meristem base of the plant.

Our Aim: Oklahoma Natural Areas Registry encourages citizen-based conservation of Oklahoma's natural diversity through a voluntary land-preservation program that promotes awareness of rare species, natural communities, and important geologic features.

A Note From the Registry Representative

This past year we added four new natural areas to the Registry Program, two of which are owned by The Nature Conservancy (TNC), one is profiled on page 1. Some of you may be wondering why we are registering preserves owned by TNC? Although the Registry Program doesn't need to encourage TNC to protect this land, we are happy to recognize them for helping to conserve some of the best examples of natural diversity in our state. To protect Oklahoma's natural areas, we must rely on all types of private landowners to voluntarily protect our natural resources. TNC is one of those special private landowners that we can count on to protect and enhance the land they own in Oklahoma.



Jona Tucker

You wouldn't think a botanist would look so happy in patch of dead plants, but last spring this was a monoculture of a nasty invasive species that we are hoping to eradicate before it takes over the Blue River corridor—read more on page 3.

By adding TNC preserves to the State Register of Natural Heritage Areas, we add properties that are open to the public. For privacy reasons, most registered Natural Areas owned by private individuals are not open to the public. Several of the preserves owned by TNC allow visitation and people are encouraged to enjoy the natural diversity found within natural areas.

Registered Natural Areas you can visit without appointment or special permission:

- ▶ TNC Nickel Preserve near Tahlequah
- ▶ TNC Pontotoc Ridge Preserve near Fittstown
- ▶ TNC Tallgrass Prairie Preserve near Pawhuska
- ▶ Quartz Mountain Nature Park near Altus

I hope this spring you can take a short trip to one of these special areas and enjoy Oklahoma's natural beauty.

Priscilla Crawford joined the Oklahoma Natural Areas Registry Program in January 2006 as the registry representative and conservation specialist.

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The Oklahoma Natural Areas Registry is a program of the Oklahoma Biological Survey, Oklahoma Natural Heritage Inventory, and the state of Oklahoma.



Registry Signs:

Free Registry boundary signs are available for all Registry participants. The signs measure 11" x 11" and are made of white plastic with blue lettering. To order signs for your natural area, please contact the Registry Program.

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Robbers Cave State Park is located in the scenic, hilly woodlands of the San Bois Mountains of southeast Oklahoma, five miles north of Wilburton on Hwy 2.

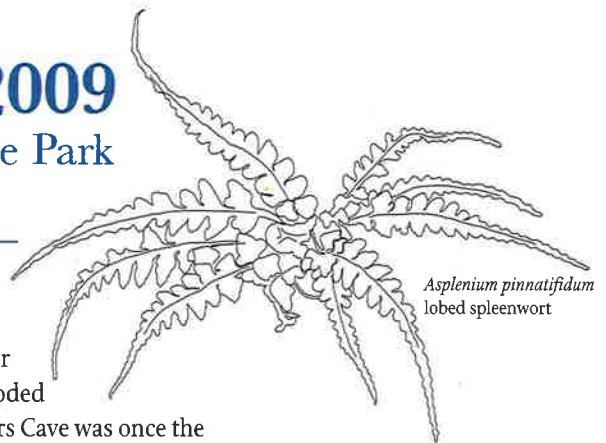
Save the Date!

BioBlitz! 2009

Robbers Cave State Park September 18-19

BioBlitz! 2009 will be held at Robbers Cave State Park and Wildlife Management Area near Wilburton. Nestled in the wooded hills of eastern Oklahoma, Robbers Cave was once the hideout for bandits. But this year, biologists of all ages and affinities will be scouring the hillsides, not to flush out criminals, but to find as many different organisms as possible. Join these dedicated scientists in our annual inventory of Oklahoma's biodiversity.

To learn more, call (405) 325-7658 or check out the Web site at www.biosurvey.ou.edu and click on the BioBlitz! button.



Asplenium pinnatifidum
lobed spleenwort

The lobed spleenwort, in this year's logo, is found in the deciduous forests of the eastern United States, but Robbers Cave is the *only* place in Oklahoma that it can be found. Come look for it and other rare wildlife this September!