

Registry News

From the Oklahoma Natural Areas Registry Program

Newly Registered Site Boehler Seeps and Sandhills Preserve, Atoka Co.

Boehler Seeps and Sandhills Preserve is at the extreme northwest edge of the Gulf Coastal Plain. The plants and animals found here are more typically found in east Texas, Louisiana, and other Gulf states. This unique natural area is a complex assemblage of habitats, including bluejack oak woodland, acid hillside seep, freshwater marsh, oak-hickory forest, and bottomland hardwood forest. Within these communities, one globally rare plant and more than 20 state rare plants and animals have been documented.



Photo credit: Bruce Hoagland

The tiny carnivorous sundew (*Drosera brevifolia*), only about 1/2-inch across, has sticky hairs that capture its insect prey.

As one would expect, the soil of the sandhills is very sandy, but also very deep. Many of the plant species found in bluejack oak woodland thrive on sandy soils. In fact, the distribution of bluejack oak (*Quercus incana*) is limited to deep, sandy soils. The restriction of bluejack oak to sandy soils makes this tree species and its woodland community rare in Oklahoma.

Another community type found on the sandhills is the acid hillside seep. These seeps are found along the sides of sandy hills and are caused by clay layers in the soil that hold water. The water in these areas becomes acidic as it seeps through the underlying sandy soil, and as layers of plant matter decompose. Acid hillside seeps are a type of wetland and support plants specially adapted to acidic environments. The globally rare dwarf pipewort (*Eriocaulon kornickianum*) can be found around the seeps at this site. A tiny carnivorous plant (*Drosera brevifolia*) also grows on the edge and downstream of the seeps.

In addition to numerous rare plant species, two amphibians rare to Oklahoma have been found at the site. The green tree frog (*Hyla cinerea*) was spotted in the freshwater marsh and Hurter's spadefoot toad (*Scaphiopus holbrookii*) was encountered in the oak-hickory forest.



Photo credit: Oklahoma Natural Heritage Inventory file photo

The dwarf pipewort is a rare and inconspicuous plant that prefers areas naturally disturbed by animals.

Visit this unique Oklahoma natural area!

Boehler Seeps and Sandhills Preserve is owned by The Nature Conservancy and is one of the few registered sites open to the public. To find this site from Boswell, go one mile west on Hwy 70 to black top road. Turn north and go 10 miles, then drive 1/4-mile west to the preserve, which is located on both sides of the road. Contact Jim Erwin, preserve director, for more information: (580) 777-2224 or jerwin@tnc.org.

Oklahoma Natural Areas Registry



Spring 2006

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Habitat Close-up

Granite Rock Outcrops

The remnants of a large, high mountain chain bulge out of the red soil of southern Oklahoma and create a diverse environment for plants and animals.

Granite rock outcrops are found throughout the southeastern United States. Within Oklahoma, we have several locales, including the Wichita Mountains (Comanche County), the mountains of Quartz Mountain Nature Park (Greer and Kiowa Counties), and Ten-Acre Rock (Johnston County).

Photo credit: Phillip Crawford



A thin layer of soil accumulates in a shallow depression and hosts a variety of plant species.

Several different plant communities are associated with granite rock outcrops. One unique plant community can be found in depressions on the surface of granite hills. Soil accumulates in these shallow basins on the rock surface and creates an "island" of plants on a bare stone "sea." The plants that grow in these islands must tolerate the physical conditions of high temperature, low moisture,

and high sun exposure. These islands host a diverse and unique plant community; over 40 species of plants can only be found in granite rock depressions! Many plants are short-lived and quickly grow and reproduce during a favorable time of year. Their seeds

can tolerate the difficult environmental conditions and will be ready to germinate when the conditions are more suitable. Instead of escaping the adverse living conditions, some plants cope with a series of morphological adaptations. For example, the hedgehog cactus (*Echinocereus reichenbachii*) conserves water by having spiny leaves that reduce evaporative surface and protect it from herbivores. The spiny leaves also shade the body of the plant and reduce the surface temperature during the grueling Oklahoma summer afternoons.

Granite rock outcrops also are host to several other communities. Cross Timbers vegetation can be found in and around granite hills and mountains. Within the valleys and canyons created



Photo credit: Phillip Crawford

Quartz Mountain is the westernmost granite rock outcrop in Oklahoma and the site of BioBlitz! 2006.

by the granite boulders grow plants more typical of the eastern deciduous forest. Sugar maple (*Acer saccharum*) is at its westernmost extent in the Wichita Mountains. In areas of the rock outcrop

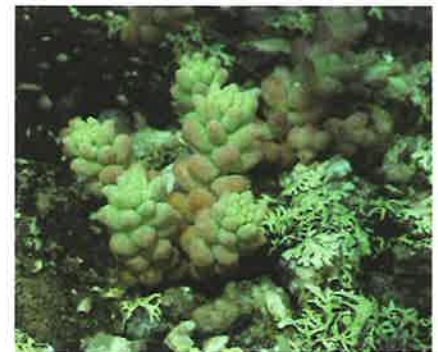


Photo credit: Phillip Crawford

Foliose lichens and succulent plants (*Sedum nuttallianum*) can tolerate the difficult environment found on top of the granite rock.

BioBlitz! of Granite Rock Outcrops Would you like to explore Oklahoma's granite outcrops? Would you like to see first-hand the flora and fauna of these ancient mountains? Join us for BioBlitz! at Quartz Mountain Nature Park this fall on September 15-16. BioBlitz! is a rapid inventory of biological diversity. Scientists, educators, volunteers, and dedicated enthusiasts from across Oklahoma and the surrounding states identify and count as many plants and animals as possible in 24 hours. For more information go to: www.biosurvey.ou.edu/biotiddly.html or call (405) 325-4034.

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where fissures and crevices occur, deeply rooted grasses or trees can become established. Even the bare rock surface is colonized by colorful lichens, which are a fascinating group of organisms that are actually a combination of fungus and algae. A few caves that

support summer populations of bats can be found in association with granite rock outcrops. However, unlike the limestone caves in eastern Oklahoma, granite caves are slow to develop because granite is resistant to weathering. Caves discovered in the Wichita Mountains region are generally too small to serve as maternity caves or hibernation sites for bats, but do serve as shelter for other species of animals. ■



A stunted eastern red cedar (*Juniperus virginiana*) grows in a crevice between granite boulders.



Photo credit: Phillip Crawford

Photo credit: Phillip Crawford



Arogos skipper

The arogos skipper is a group known as skippers. They fly by the way they hold their wings at slightly different angles. The arogos skipper is divided into several subspecies. In Oklahoma we have the southern arogos skipper. In southern Minnesota we have the northern arogos skipper. Although its range is large, the arogos skipper is found in large numbers in the mountains of the arogos skipper is h



The arogos skipper's wings are held on the upper side of the flower on the lower side.

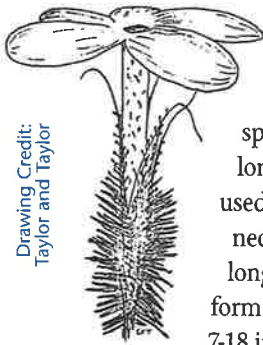
This skipper prefers relatively little bluestem (*Schizachyrium*) (*Andropogon gerardii*), both as a host plant and as a nectar source. The caterpillars live, hibernate, and pupate in the soil. Unfortunately this position is not safe during any time of



Focus on Oklahoma's Rare Plants:

Long-haired Phlox (*Phlox longipilosa*)

The long-haired phlox is so named for its long, jointed hairs that can be found on the stems, leaves, and calyx (leaf-like structures below the petals). This phlox usually blooms from late April to mid-June. The flowers are made up of five rosy-purple petals, which join to form a long tube. Many different species of moths and butterflies use their long proboscis (elongated mouth parts used for sucking) to drink the nutritious nectar at the base of these tubes. The long-haired phlox is perennial and can form shrub-like clumps, which are generally 7-18 inches tall.



Drawing Credit: Taylor and Taylor
Long hairs cover the calyx and other parts of the long-haired phlox.

The long-haired phlox is one of the few species of plants found only in the state of Oklahoma. Botanical research



Photo credit: Registry file photo

The stems of long-haired phlox can be many-branched, making it look like a small shrub.

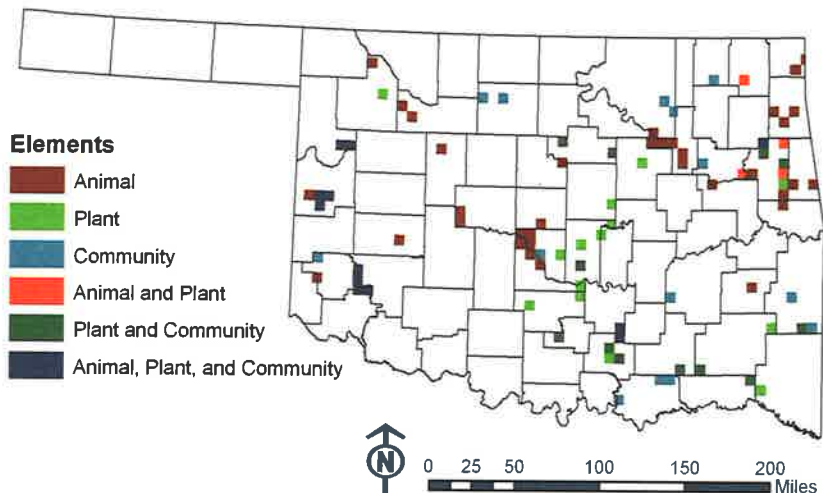
indicates that this species is restricted to soils weathered from granite. It has only been found in the granitic mountains of Comanche, Greer, and Kiowa counties. We should be able to find this unique Oklahoma plant during the BioBlitz! of Quartz Mountain Nature Park this fall. ■

Mapping our Natural Heritage

We use maps in the Registry program to help us visualize our progress and our conservation gaps. Each color block represents registered property within that township. We can see that several townships contain more than one element (an element is a species or natural feature that we protect). However, we also notice the lack of registered sites in the Panhandle and southwestern Oklahoma. Maps like this can help us to target areas and elements that are underrepresented in our program.

Examples of plants, animals, and natural communities currently protected by landowners in the Registry program are:

- Bald eagles (*Haliaeetus leucocephalus*)
- Texas horned lizards (*Phrynosoma cornutum*)
- Mexican free-tailed bat (*Tadarida brasiliensis mexicana*)
- Oklahoma beardtongue (*Penstemon oklahomensis*)
- Long-haired phlox (*Phlox longipilosa*)
- Tallgrass prairie
- Ouachita Mountain forest
- Cross Timbers forest



Our New Look: We are changing the look and content of the Registry News. The issues will be shorter, but we plan to send out news twice a year. Each issue will have a theme or habitat focus. This spring, we have focused on the Granite Rock Outcrops. Next time we might focus on springs or wetlands. Please contact us if you have any comments about our new format.

A Note from the Registry Representative

I guess you can say I was born into land conservation. A few months before I arrived in this world, my family moved into an old farmhouse on land that was soon to become Muscatatuck National Wildlife Refuge in south-central Indiana. My parents paid very little in rent because the house was to be sold and moved off the new refuge property. More than half of the refuge had been farmland at one point, but attempts to drain the natural wetlands were unsuccessful and farming the land was difficult. Muscatatuck is known for the diverse waterfowl that come to breed, winter, or migrate through. In honor of the Great Blue Heron, one of the many spectacular species of birds found in abundance on the refuge, my parents gave me the middle name of Heron.

But that was just the beginning. I always knew I wanted to study the natural world. I attended a small college in southern Vermont, Marlboro College, and graduated with a degree in biology and botany. Soon after finishing my studies, I worked in the San Juan National Forest near Pagosa Springs, Colorado conducting plant surveys. We were creating maps of the soils and vegetation, which were to aid land managers. Plant survey work is a seasonal job (especially in the mountains!), so I left Colorado in the fall and soon got a position with the National Wildlife Federation's Backyard Wildlife Habitats program. I encouraged homeowners to bring wildlife into their neighborhoods by removing lawns and adding natural landscaping.

My work at NWF sparked an interest in grasslands and I came to the Great Plains to study Oklahoma's prairies. I began by studying the mesquite savannas of southwestern Oklahoma. Ecologists and ranchers alike are concerned about the increase in woody plants, such as mesquite and cedars, in the grasslands. My current research project uses data from plant collections to help predict the location of rare plant species in Oklahoma. I hope to generate maps of potential rare species distributions. These maps will help me to focus on the land conservation strategy of the Registry Program. Implementing different techniques to locate potential registry sites is one component of our multiyear plan for the Registry Program. In the coming issues of "Registry News," I will discuss our future goals and let you know of our progress towards accomplishing them.

Although I have lived and enjoyed my time in many different places, I now call Oklahoma home. I am excited to work in a biologically diverse state that has palmettos in one corner and short grass prairie in another. I know more about Oklahoma's wildlife than I do any other place. I look forward to applying my knowledge to help conserve Oklahoma's natural beauty.



Priscilla visits a potential Registry site in Adair County. This cave was historically a maternity site for the grey bat.

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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. If you would like to order signs for your natural area, please contact the Registry Program.

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Priscilla Crawford joined the Oklahoma Natural Areas Registry Program in January 2006 as the Registry Representative and Conservation Specialist.

Priscilla



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Oklahoma Natural Areas Registry



About us:

The Oklahoma Natural Areas Registry was formed by the state Legislature in 1984 to identify areas with unique natural

features and to encourage their voluntary protection by Oklahoma's citizens. We work closely with biologists at the Oklahoma Biological Survey and Oklahoma Natural Heritage Inventory so that we can locate areas in the state that have special natural significance, such as populations of rare plants, breeding sites for endangered birds or a unique habitat.

To qualify for the Registry Program, a property must have one of the following features:

- populations of or habitat for native plants or animals that are rare, threatened, or endangered
- outstanding natural community, geological feature, or aquatic element
- unusual natural feature or unique ecological area

If a property qualifies, landowners who are dedicated to conserving Oklahoma's natural diversity can have their property listed in the State Register of Natural Heritage Areas. Without the commitment and concern of individual landowners, we stand to lose our rich natural heritage. If you are interested in learning more about the Registry Program please visit our Web site at www.oknaturalheritage.ou.edu/registry_about.htm or call (405) 325-7658.

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.