



G2S1

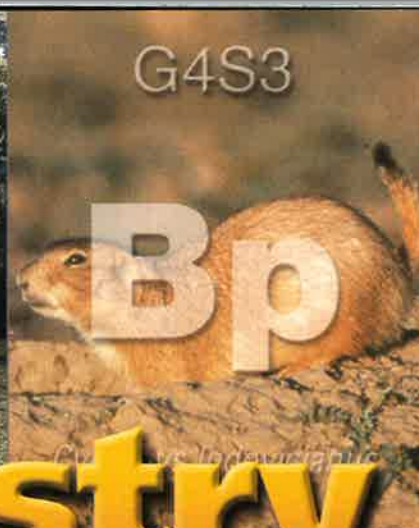
Bv

Vireo atricapillus



Rc

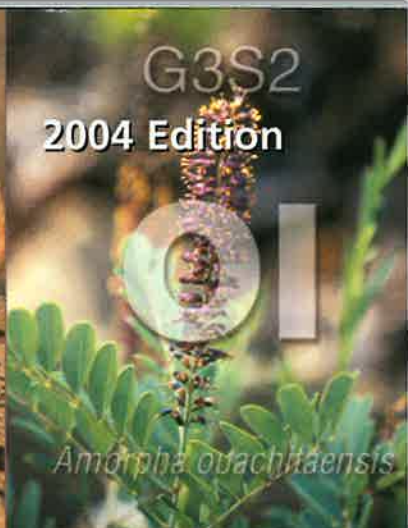
Rc



G4S3

Bp

Citellus richardsoni



G3S2

2004 Edition

Oi

Amorpha obtusiloba

Registry News



G3S3

Ob

Penstemon oklahomensis



G4S2

Lt

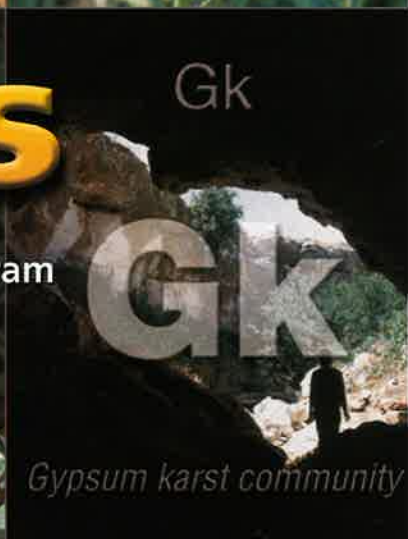
Sterna antillarum



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Cl

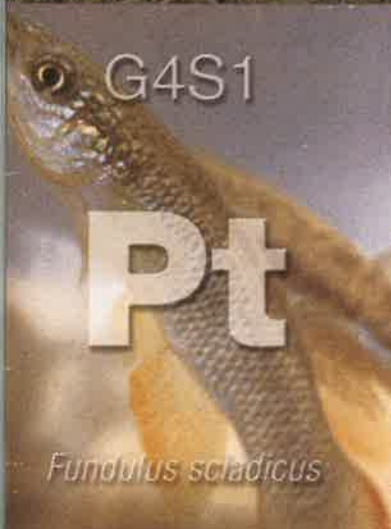
Penstemon murryanus



Gk

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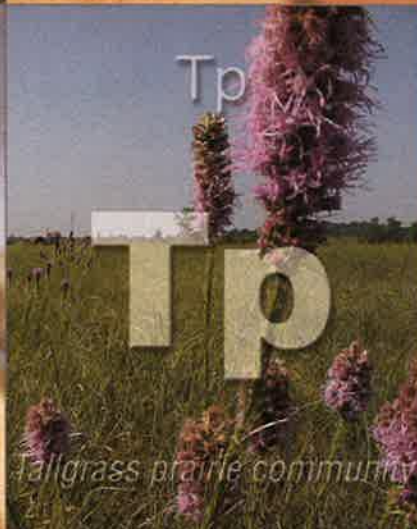
Gypsum karst community



G4S1

Pt

Fundulus sciadicus



Tp

Tp

Tallgrass prairie community



G4S1

Be

Haliaeetus leucocephalus



G4S1

Co

Tipularia discolor



G2S2

Lp

Phlox longipilosa



G4S1

Oe

Corynorhinus townsendii ingens



Sc

Sc

Saline creek community



G4S2

Th

Phrynosoma cornutum

Introduction

There are Elements and then there are Elements.

The elements that make up our man-made and natural world surround us, are us. One definition of the word element is, "a fundamental, essential or irreducible constituent of a composite entity." The basic elements, such as carbon, hydrogen, oxygen, nitrogen, phosphorous, etc., combine in a multitude of ways under varying circumstances to form every living and nonliving thing in our universe. While some of the matter that these elements combine into is ordinary, bland or even grotesque, other combinations can be quite beautiful, impressive and rare. At some level of biological organization, it is the infrequent combination of elements that give rise to the rare plants, animals and natural communities here in Oklahoma and around the globe.

The rare species and communities of

Oklahoma are often referred to as elements and it is these elements that are the basis for the work of the Oklahoma Natural Areas Registry. Each Registered Natural Area in Oklahoma has one or more unique elements that either live at a site or comprise the site as a whole. So a biological element can be a rare or endemic plant such as the Long-hair Phlox, an endangered animal such as the Black-capped vireo, or a rare natural community type such as an intact Tallgrass prairie (see front cover).

Elements such as the Texas horned lizard have become harder to find over the past 20 years. I remember seeing horned lizards on a regular basis during my childhood, we even played with them on the playground during my elementary school years. Now some populations of this lizard are monitored on a regular basis because they are a rare element. Other ele-

ments besides the horned lizard are rare in Oklahoma due to their shrinking or degraded habitat. The black-capped vireo, an endangered bird, once had a range from central Kansas to Mexico. Now the northernmost population of this bird is found in northwestern Oklahoma and a group of registrants, including U.S. Gypsum, work to restore habitat in Blaine County. There also are many plants that are rare elements, some of which (like the Longhair phlox) are found *only* in Oklahoma.

These elements and others are featured on the following pages along with the sites at which they flourish and the landowners that voluntarily protect them. You also can find information about many of Oklahoma's elements on the back cover and at the Oklahoma Biological Survey Website: <http://www.biosurvey.ou.edu>.

Cottage Corner

Element: Interior Least Tern (*Sterna antillarum*) 70 acres, Canadian County

I meet potential new Registrants all over the state and this past year I met Betty Kaelin at the 2003 annual Wildflower Workshop. The Registry program display was set up at this event with brochures, newsletters and posters for those who were interested. Between presentations at the workshop and during breaks, I typically try to station myself at the booth in case someone has a question. I have found over the years that if someone has a question and is a landowner, that many times they are good potential Registrants.



The sandy banks of the Canadian River are an important habitat for least terns in Oklahoma.

This was the case with Betty and her property in Canadian County. The west side of her property is bordered by the Canadian River. This river and others in central Oklahoma provide important habitat and food for the federally endangered Interior Least tern (*Sterna antillarum*).

These smallest of the terns come to Oklahoma and other states in May, breed and then fledge their chicks during the summer months and migrate back to Central America in the fall.

During the initial site visit to Cottage Corner, Betty and I watched one or more Least terns feeding along the shallow Canadian river. The least tern is a good hunter and is fun to watch while it's at work. These birds fly at an easy pace a few feet above the water and when they spy their prey they hover above the water and watch. Eventually they quickly dive into the water with a small splash and, if successful, they catch their fish. Early in the breeding season male Least terns will offer fish to females



Photo by Marcus Koenen

Historically, these birds were found throughout the Great Plains between the Rocky Mountains and the Mississippi River.

during courtship. As the season progresses and the birds have bred and the female has laid eggs, the male often continues to bring her fish while she incubates or shades the eggs. Once the eggs hatch, both parents typically provide food for the hungry chicks.

Along the Canadian River there are 15 landowners who protect the Least tern on their registered natural areas of more than 4,500 acres. There are landowners along the Arkansas River in and around Tulsa who also protect the Least tern and its habitat. The commitment of the registrants on the Canadian Rivers and the Arkansas River, now including Betty Kaelin, help to ensure the continued survival of this beautiful little bird.

Quartz Mountain Nature Park

Elements: Longhair Phlox (*Phlox longipilosa*), Live Oak (*Quercus fusiformis* or *Q. virginiana* var. *fusiformis*), Golden Eagle (*Aquila chrysaetos*) and Mountain Lion (*Felis concolor*)
6,199 acres, Kiowa and Greer County

In southwestern Oklahoma, north of Altus is a jewel of a natural site, the second largest registered natural area in the state. Quartz Mountain Nature Park is dominated by steep, red hills of granite and is surrounded by Lake Altus-Lugert. Deposits of quartz within the granite often reflect the bright southwestern sunlight, so this place really does sparkle like a jewel at times.

Along with the physical beauty of Quartz Mountain, an abundance of elements occur there, the most important of these being the Longhair phlox (*Phlox longipilosa* or *P. pilosa* var. *longipilosa*). This beautiful plant is especially significant because it is endemic to Oklahoma.

There are only a handful of populations of this plant in the entire world and they all occur in only a few counties in southwestern Oklahoma. Many populations of this rare plant element can be found at Quartz Mountain Nature Park, and the Oklahoma Natural Heritage Inventory tracks those populations.

Another important element at the park is the Live Oak (*Quercus virginiana* var. *fusiformis*). This small evergreen oak is more widely distributed over central Texas and into northeastern Mexico, but the northeastern edge of its distribution extends to southwestern Oklahoma. The typical variety of this oak (*Q. virginiana* var. *virginiana*) is found in the southeastern United States and can grow to be much larger than the Live oaks found here in Oklahoma. There are many Live oaks found throughout the park, and they dominate many of the camping areas. Other elements also are found on a more seasonal basis in the park. Golden eagles (*Aquila chrysaetos*) are known to roost at Quartz Mountain during the winter months and Mountain lions (*Felis concolor*) move through the park, too.

Oklahomans have been enjoying the rugged terrain, wildlife, the lake, and a variety of recreational opportunities at Quartz Mountain for many years. The park is once



Live oaks shade the campsites.

again a destination for all, thanks to the reconstruction and updating of the lodge after it burned in 1995. The beautiful lodge is a large log building decorated with typical cabin touches and amazing southwestern and Native American artwork. A visit to the lodge is a must if you are in the area or camping at the park.

This entire park also is a must see for its natural rugged beauty, and its diversity of native plants and animals, and for the



Photo by Sue Hokansan

The appropriately named Long-hair Phlox.

knowledgeable staff who can show you the wonders of Quartz Mountain Nature Park. The Registry program is excited to have Quartz Mountain with its many important elements as a new participant.

Sources:

- Robbins C.S., Bruun B., and H.S. Zim, 1983. A Guide to the Field Identification of North American Birds, 360 pages. Golden Press, Western Publishing Company, Inc. Racine, Wisconsin.
- Oklahoma Biological Survey Web site
- Oklahoma Department of Wildlife Conservation Web site
- Oklahoma Natural Heritage Inventory Web site
- Personal communication from Ray Moody and John Krupovage of Tinker Air Force Base
- Quartz Mountain Nature Park Web site



Salt Creek Canyon Project

Element: Black-capped Vireo (*Vireo atricapillus*)
2,200 acres, Blaine County

Article by Kim Shannon and
Chris Hise, *The Nature Conservancy*

Three years ago, The Nature Conservancy, in cooperation with the Oklahoma Natural Areas Registry program and state and federal wildlife management agencies, began a habitat restoration project for the federally endangered Black-capped vireo. This small migratory bird has become quite rare in Oklahoma, with populations persisting only at the Wichita Mountains Wildlife Refuge and on private lands in Blaine County. The Conservancy's work focuses on the Salt Creek Canyon area near Southard, where the Natural Areas Registry program first worked with area landowners to monitor Black-capped vireos in the early 1990s.

Loss of nesting habitat is one of the primary causes for the decline of the vireo. Invasive eastern red cedars (*Juniperus virginiana*) continue to spread into nesting sites, rendering formerly occupied areas unsuitable. Federal grant awards from the U.S. Fish and



This small bird was listed as federally endangered in 1987.

Wildlife Service are funding Conservancy efforts to identify threatened vireo habitat

and remove cedar trees from critical areas. Since 2001, work has been completed on a



Large gypsum boulders dot the canyon floor.



The black-capped vireo has a woven, pendulous nest.

number of restoration plots. We are hopeful that these areas will provide a valuable nesting habitat for the vireos as their numbers recover. Another threat to the Black-capped vireo is the Brown-headed cowbird (*Molothrus ater*), which parasitizes the nests of vireos by laying its own eggs in vireo and other birds' nests. Traps have been used to catch these birds near the nesting sites of the vireos.

The Nature Conservancy is grateful for the cooperation of area landowners in allowing the restoration work on their property. Their support and participation have made this project a success. Work continues this winter at Salt Creek Canyon, focusing on property owned by the U.S. Gypsum Corporation.

The U.S. Gypsum mining plant in Southard, Oklahoma, joined the Registry program in March of 1990. This facility is part of a vast array of operations across the United States, Canada and 28 other countries. The Chicago-based company, known as USG, is the world's leading producer of gypsum wallboard, joint compound and a variety of related construction products.

In total there are six landowners who protect the endangered Black-capped vireo at the Salt Creek Canyon Natural Area. Adjoining landowners often are the most



W.C. Weber of USG is the TNC and Registry program contact.

successful at protecting an element since most animals don't pay attention to fences and property boundaries. In Blaine County, this is certainly true of USG, Doug and Alice Boeckman, James and Norma Scott, the Viersen Land and Royalty Company, Ebbie Wray Farms Inc., and Brenda Wray. The Oklahoma Natural Areas Registry greatly appreciates the combined efforts of all these landowners.



The namesake of Salt Creek Canyon.



Tarantulas are common in the canyon.



Cedars, such as these in the foreground and across the canyon, are being removed in restoration plots throughout Salt Creek Canyon.

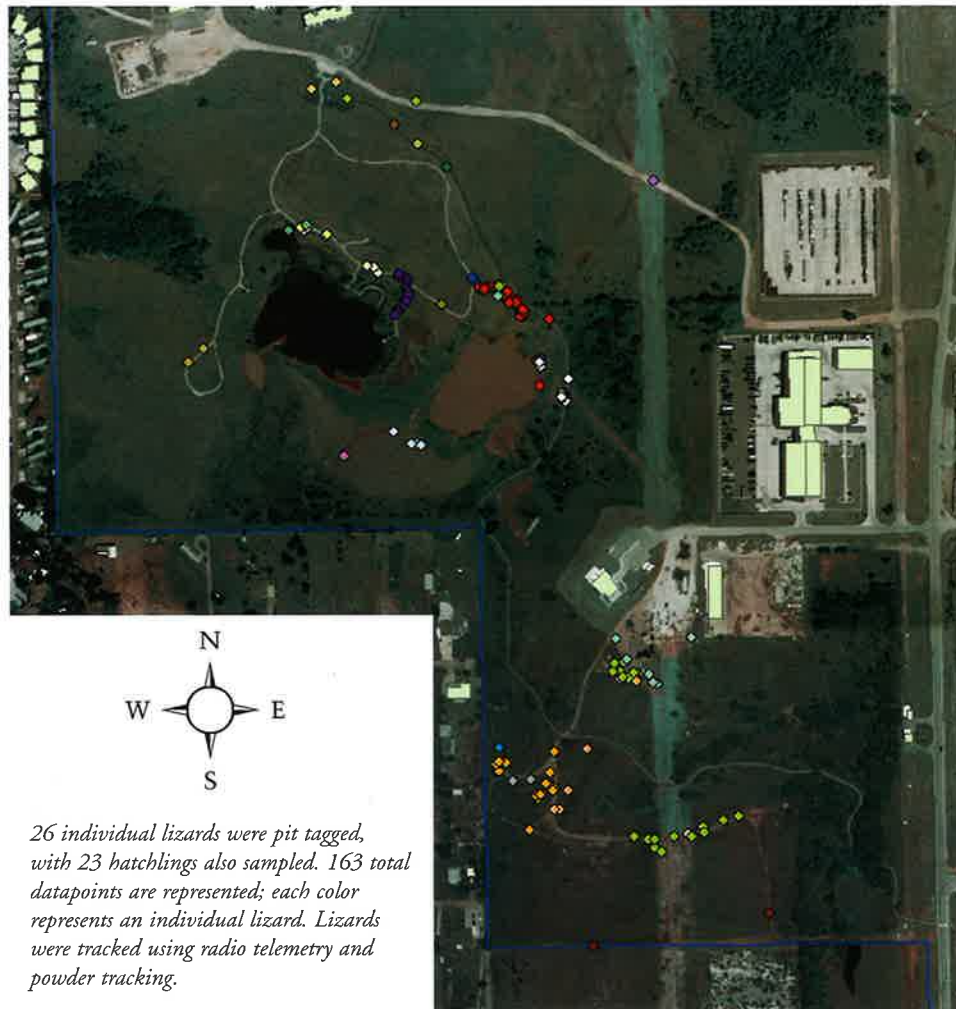


Tinker AFB Urban Greenway, Reserve 3

Element: Texas Horned Lizard (*Phrynosoma cornutum*)
41 acres, Oklahoma County

An Air Force base seems a most unlikely place to find a rare element. From the rifle range to the large planes flying overhead and the extensive industrial and residential areas, it is definitely a most unusual Registry site. But within Tinker Air Force Base there is a population of the Texas horned lizard (*Phrynosoma cornutum*) thriving in a portion of the Urban Greenway that meanders through the base.

These small and somewhat fierce-looking reptiles are tracked and monitored on a regular basis at Tinker. Small backpacks with radio transmitters are rotated among the population of Reserve 3 in order to track the movements of the lizards. The lizards' movements also were tracked using fluorescent powder. During the summer of 2003, 44 lizards were tracked via radio telemetry with approximately 164 data/recapture points that were geo-referenced using a global positioning system (GPS). One lizard was even tracked to its hibernaculum about 2.5 centimeters below ground! A graduate student from Oklahoma State University, Joe Hackler, worked at Tinker to assist with the monitoring of the lizards. The field data was collected using Arc Pad, a handheld computer program. That data was then downloaded directly into a GIS program as a layer within a GIS project. The preliminary results of the GIS project are included. Each point within the GIS



26 individual lizards were pit tagged, with 23 hatchlings also sampled. 163 total datapoints are represented; each color represents an individual lizard. Lizards were tracked using radio telemetry and powder tracking.

project shows where lizards were found. Along with the location of each lizard, habitat tables will be associated with each GPS point.

In conjunction with the horned lizard study, an ant study was begun during 2003. Thirteen different species of ants were identified, ranging in size from the tiny thief ant that is less than 1 millimeter in length to the 15mm carpenter ant. While the carpenter ant (a red ant) is known to be a preferred food for the horned lizard, next year the ant study will include what types of ants the horned lizards are actually consuming.

The Registry program is excited to have Tinker AFB as a new registrant. While this site is not a typical Registered natural area, it is a wonderful example of

how dedicated people can protect a rare species, even in the middle of a huge Air Force base.



Bullfrogs thrive in the ponds in Reserve 3.



Joe Hackler (L) and Mark Allen (R) track the horned lizards.



Texas Horned Lizard

The Texas horned lizard is classified as a "Species of Special Concern." In 1992, the Oklahoma Department of Wildlife Conservation established a year-round closed season on these lizards and 20 other rare reptiles and amphibian species. It is unlawful to kill, capture, keep as pets or sell Texas horned lizards without specific written permission. While the Texas horned lizard is not a threatened or endangered species, its widespread decline has caused concern for its future status. The closed season is designed to protect it from unnecessary collection.



This horned lizard is sporting an older transmitter backpack. New transmitters will be smaller and weigh half as much as the one pictured above.

Poster #1 a Success!

The first poster in a series from the Oklahoma Natural Areas Registry and the Oklahoma Biological Survey became available to the public in April 2003, and it has been a big hit! There were 10,000 copies of Oklahoma's Botanical Heritage printed and, as of December 2003, there were less than 1,300 copies left. The poster features almost 30 plants that are found throughout Oklahoma.

The posters were given to various entities across the state, including the Oklahoma Department of Wildlife Conservation, OSU extension service offices, public schools, libraries, Oklahoma Department of Tourism and Recreation, and many others. Some also were distributed at various events throughout 2003, and some newspapers ran stories about the poster. All in all, it has been very popular!

The second poster will be planned, designed and printed this year. It will feature some of Oklahoma's rare animals and plants. And like the first poster, it also will

have species and contact information on the back. For more information about the first poster, see the Web site:

<http://www.bio.survey.ou.edu/poster.html>.

And in future months, check this Web site's homepage for information about the second poster.



Little Tallgrass Prairie

Element: Tallgrass Prairie Community
90 acres, Nowata County



Deciduous holly (Ilex decidua) grows along the prairie edge.

The Tallgrass Prairie natural community is an endangered resource throughout central North America. Over the past century it has become home to millions of cattle, replaced by country estate developments, trailer parks and shopping malls, or it has been plowed up for various agricultural

crops. Only one percent of the original 142 million acres of tallgrass prairie remains intact in North America. And of the one percent that remains, many sites are very small tracts of 60 acres or less.

While Oklahoma is not immune to this trend, we are fortunate to have

relatively vast expanses of tallgrass prairie around our state. Oklahoma landowners are able to conserve or preserve the prairies they own while most landowners in northern states must restore their prairies to former native and natural conditions.

In Nowata County, two new registrants are managing their element, a beautiful stand of Tallgrass prairie. They actively manage the site in order to maintain its diverse assemblage of grasses and forbs and the animals they support. Managing a prairie is a hands-on process with annual and other less frequent tasks. At this site and other registered tallgrass prairie sites, an annual haying is necessary to maintain a healthy prairie, and it even



Both Blue sage and Pitcher's sage are found here.



The freshly cut prairie

somewhat mimics the grazing of the large herds of bison and other animals that historically occurred on these lands.

Accompanying the annual haying is prescribed burning at intervals of every three to five years. This natural and



A small prairie orchid (Spiranthes sp.)

essential ecological process nearly eliminates the litter that accumulates over time and reduces any heavy mats of dead grass and other vegetation. This reduces the shading of developing young plants and invigorates the growth of all the prairie plants that have evolved over thousands of years with fire. Fire also helps keep invasive and exotic plants in control and does not allow trees



Eastern gamagrass (Tripsacum dactyloides) is one of the dominant tall grasses here.

to become established in the prairie.

In the near future, new elements may be found at this new Registered Natural Area, thanks to the hard work and conservation commitment of the landowners.



A fall blooming aster



This Tallgrass prairie site also has two well established ponds.



Blue Haven, Inc.

Elements: Seaside Alder (*Alnus maritima*), Blue River 285 acres, Johnston County

Blue Haven is a peaceful yet lively place along the Blue River in south central Oklahoma. Many years ago, Blue Haven was started as a getaway for a group of men from the Oklahoma City area, a weekend hideaway of sorts. But for the past 30 years or so, Blue Haven has been a family place. Blue Haven is a private, gated community with multiple residences. There are some residents who live at Blue Haven year-round and others from around Oklahoma and Texas who visit on weekends, during their vacations and on holidays. They come to Blue Haven to enjoy the outdoors, fish and spend time with their Blue Haven neighbors.

Like other nearby sites just a few miles to the west along Pennington Creek, Blue Haven has an element, a rare shrub that flourishes along the banks of the Blue River and among its small rocky islands. The Seaside alder (*Alnus maritima*) is found only in two Oklahoma counties, in the Chesapeake Bay area of Maryland and Delaware and also in Georgia. It currently is being studied by researchers at Iowa State University and at Southeastern Oklahoma State University in Durant, OK. Recent research suggests that the Oklahoma species of the Seaside alder is different enough morphologically that



Seaside alder is often found among the granite islands along the Blue River.



Just upstream of Blue Haven is the Blue River Public Hunting and Fishing Area. The Oklahoma Department of Wildlife Conservation stocks the river with trout from November to March for anglers to enjoy.

it should be a separate subspecies called *Alnus maritima* sub. *oklahomensis*. Ongoing genetic research also may show that this plant may be unique enough to be considered a separate species. The river itself is an element because it provides habitat for an assemblage of plants, including the Seaside alder, a variety of fish and other aquatic animals.

The Oklahoma Natural Areas Registry is glad to have another protected Seaside alder site and proud to have the members of Blue Haven as new Registrants.

It's, it's the BioBlitz!

So, what is BioBlitz!? BioBlitz! is a rapid inventory of biological diversity hosted by the Oklahoma Biological Survey and conducted by volunteers from the state and the region. As many plants and animals in a designated area of public land as can be identified in 24 consecutive hours are tallied. This annual event is designed to capitalize on the interaction between fellow biologists and to encourage the public's interaction with scientists at the "base camp." The "base camp" is the hub of activity and is equipped with microscopes, plant presses and other tools of the trade. This is where identifications take place, species are recorded, discoveries are made and the final tally of species is recorded.

BioBlitz! was invented in 1996 by scientists at the National Park Service. Other states, including Pennsylvania, New York, Massachusetts, North Carolina and North Dakota, also conduct BioBlitzes. In Oklahoma, cosponsors for BioBlitz! include the Oklahoma Department of Wildlife Conservation and the Oklahoma Department of Tourism and Recreation.

Who is invited to BioBlitz? Everyone is welcome. Anyone may take part in the inventory or come to see what goes on at the base camp. The Oklahoma Biological Survey hosts one BioBlitz! each year in a different part of the state.

Why do it? BioBlitz! is designed to increase the public's awareness of the variety of life in their immediate area and the services these various species contribute to the quality of their lives. The word biodiversity usually is associated with rainforests and 'exotic places, but the diversity of life in our own backyards can be quite phenomenal. 'We often take for granted the clean water, fertile soil and air we breathe. Yet these are 'all the result of working ecosystems filled with species that perform these tasks. What better way to address the topic than to invite people to share in our 24 hours of discovery?

The first BioBlitz! event was held in Norman, Oklahoma at the Sutton Urban



Photo by Ian Butler

So many bugs, so little time.

Wilderness Park Reserve on April 27-28, 2001. Some 485 species of plants and animals were found on that day. The event was moved to September in 2002 was held at Broken Bow Lake in McCurtain County. Having the event after the summer season proved beneficial because 140 biologists representing 26 different organizations found

1,017 species! On Sept. 12-13, the 2003 BioBlitz! was conducted in Woodward County at Boiling Springs State Park. Over that 24-hour period, 161 volunteers found 1,071 species of plants and animals.

The 2004 BioBlitz! will be held in Okmulgee County at Dripping Springs State Park on Sept. 10-11. For more information about this annual biodiversity event, check out the BioBlitz Web site at www.biosurvey.ou.edu.



Photo by Sheila Strawn

This group is setting up a bat mist net along the Canadian River. Bats often search for insects near water.



Element Ranking and the ONHI

The Oklahoma Natural Heritage Inventory is a program within the Oklahoma Biological Survey. When it was created in 1987, it was charged with two main tasks, the first of which is to maintain dynamic, geo-referenced databases of information on Oklahoma's biological diversity, including rare and endangered animals and plants, species of special concern, significant biological communities and landscapes. The second task is to provide information resulting from biological surveys, inventories and scientific studies on the biota of Oklahoma to the people of the state for environmental review, conservation, resource management, research and education. The current coordinator of the Heritage program is Bruce Hoagland. He and other Heritage scientists conduct a variety of studies in order to fill the data gaps from around the state. The ONHI is also part of a national heritage system and the Natureserve network (www.natureserve.org).

The rare elements that are tracked by the ONHI are given ranks

in order to classify their rareness. ONHI gives species two ranks: a global (G) rank, reflecting its rarity throughout the world, and a state (S) rank, reflecting its rarity within Oklahoma. Taken together, these ranks serve as an index of biological status, but the ranks are subject to change with new information. ONHI rarity rankings have no regulatory stature; they are intended for information only. Global (G) ranks range from 1 to 5. A G1 species is considered to be "critically imperiled globally because of extreme rarity with five or fewer occurrences, few remaining individuals, or it is extremely vulnerable to extinction." A G5 species is secure globally, though it may be quite rare through parts of its range. The State (S) ranks use the same criteria as the G ranks so that S1 species are much more rare than S5 species.

For more information about the Oklahoma Natural Heritage Inventory, its role and ranking methods, check out its Web site at: <http://www.biosurvey.ou.edu/heritage>.

The common names of the elements on the front cover are listed here from the top to bottom and left to right.

Bv = Black-capped vireo, **Rc** = Riparian community, **Bp** = Black-tailed prairie dog, **OI** = Ouachita leadplant, **Ob** = Oklahoma beardtongue, **Lt** = Least tern, **Cb** = Cupleaf beardtongue, **Gk** = Gypsum karst community, **Pt** = Plains topminnow, **Tp** = Tallgrass prairie community, **Be** = Bald eagle, **Co** = Crane fly orchid, **Lp** = Longhair phlox, **Oe** = Ozark big-eared bat, **Sc** = Saline creek community, **Th** = Texas horned lizard

Oklahoma
Natural Areas
Registry



Questions? Comments?

For more information about the Oklahoma Natural Areas Registry contact Kim Shannon at:

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Oklahoma Natural Heritage Inventory

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Norman, OK 73019-5112

Phone: (405) 325-7658

www.biosurvey.ou.edu/heritage/registry.html

Free Registry boundary signs are available for all Registry participants. They can be obtained through an Oklahoma Natural Areas Registry Program representative. The signs measure approximately 11" x 11" and are made of white plastic with blue lettering, like the one to the right. If you would like signs for your Registered property, please call the number above.

Articles in this issue of Registry News were written by Kim Shannon.

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