



Species Close-up

Why is the Interior Least Tern Endangered?

Interior least terns (*Sterna anillarum athalassos*) were added to the federal list of endangered species in 1985 due to a decline in numbers in the Great Plains and Mississippi Valley caused by the loss of breeding habitat.



Priscilla Crawford

Bare sandbars in and along the river are the preferred nesting habitat for the least tern.

Breeding Behavior

Least terns nest on the ground in bare sand, gravel, or shells on dry mudflats, salt plains, or in sand and gravel pits. The natural dynamics of prairie rivers maintain the sandbars that terns prefer for nesting. The water fluctuations that come with flooding and dry periods create sandbars bare of vegetation that are



Nests are simply a shallow depression in the sand.

Priscilla Crawford

attractive to terns for nest sites. However, many of the best habitats for breeding have been lost or disturbed due to river damming, dredging, and straightening. By regulating the rivers, we have disrupted the flood cycle that scoured vegetation out of the riverbed and shifted the sandbars in the wide river bottom.

Regular flooding reduces the invasion of the riverbed by plants. However, floods during the breeding season can wash away tern nests, eggs, and chicks. Too little water in the river also can adversely affect the tern population by reducing the fish population, and consequently, the food source for terns. To be successful, terns that breed in Oklahoma rivers need a combination of suitable sandbars, favorable water levels, and sufficient food during the nesting season.



Nick Kontonicolos, 1000birds.com

After laying eggs, the tern pair cooperates in tending the nest. One will incubate the eggs and the other will bring food.

Human Disturbance

In addition to the change in the natural river processes, terns are also threatened by increased disturbance by humans. Our rivers have become very popular recreation areas. ATV use in and along the river has increased, negatively affecting the nesting birds. Because terns build their well-camouflaged nests on the ground, they are vulnerable to trampling by people, pets, and livestock. Even if we do not destroy the nest, human activity can keep parent birds away from the eggs and chicks, leaving them vulnerable to overheating or predation by other animals.

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Interior Least Tern Identifiers

The Tern in Oklahoma

In May, the terns arrive in Oklahoma and begin their courtship rituals, which includes males chasing, calling to, and offering fish to the females. A pair of terns will then scrape a shallow depression in the sand of the riverbed that will serve as their nest. Both the male and female sit on the nest of two or three speckled eggs for about three weeks. After hatching, the chicks are tended by the parents. They can fly at three weeks old, but remain dependent upon the adults for food. Preparation for migration begins in mid-July and ends in early September. During this time, terns congregate in large flocks and fuel up for the long trip to South America. Juvenile terns practice fishing and learn to become independent during pre-migration.

Protecting the Tern in Oklahoma

In 1992, colonies of the interior least tern along the Canadian and Arkansas Rivers were protected through cooperation of private landowners, Oklahoma Natural Areas Registry, Oklahoma Department of Wildlife Conservation, U.S. Army Corp of Engineers, Audubon Society, Oklahoma Chapter of The Nature Conservancy, and the U.S. Fish and Wildlife Service. Many landowners are voluntarily protecting this endangered bird by allowing fencing of nesting colonies, discouraging human disturbance, restoring breeding and foraging habitat, and educating people who use the river. In the coming years we hope to add many more landowners to the voluntary cooperative to protect least tern nests and the river ecosystem. ■

How to identify the Interior Least Tern

The least tern is the smallest member of the gull and tern family.

- ❑ The males and females are similar in size and coloration.
- ❑ Distinguishing features of the least tern are:
 - grey and white body color
 - black eye-stripe, cap, and nape
 - slightly forked tail
 - narrow, pointed wings with a black edge
- ❑ Juvenile terns that are less than one year old are white underneath, grey above, and have less defined black markings.
- ❑ Nests are simply a shallow depression in the sand.
- ❑ Chicks and eggs are tan and brown speckled; both are well camouflaged on the sandbars and river beds.

- ❑ The graceful flight of the least tern is regularly interrupted to fish. To find fish, the tern will hover above the river using quick wing flaps. The tern will then dive straight down to make its catch.
- ❑ The call of the least tern is similar to the killdeer, but it is less regular with a harsher chirp.



Patricia Velte, BackyardBirdCam.com

Adult least terns are the smallest bird in the gull and tern group — significantly smaller than any other gulls in Oklahoma.



Patricia Velte, BackyardBirdCam.com

This juvenile least tern is the same size as an adult, but lacks the well defined black cap and eye patch.



Bill Schmoker, www.schmoker.org

Least terns are graceful fliers around and above the river.

More river habitat protected by private landowners

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nests. Byers was one of the key people making the “preserve” a success and with her untimely death the strong push to protect the terns and promote river conservation went missing.

After a few years, the Registry Program moved from its Tulsa office with The Nature Conservancy to its current location in Norman at the Oklahoma Biological Survey. The new location, so close to the Canadian River and tern nesting sites, has encouraged the Registry Program to resume its work with landowners and river users to protect the tern nesting habitat. If we couldn't help an endangered species that lived just a couple miles away, how could we promote conservation throughout the whole state?

In our renewed efforts to protect the tern, we have decided to change the name to Canadian River Landowner Conservation Cooperative. This change symbolizes the importance of the voluntary landowner conservation, not a government owned “preserve.” The change also emphasizes the conservation of the entire river habitat rather than only one species. We need to recognize the importance of entire ecosystem health instead of simply preserving a population of rare birds.

Our other preliminary step in restarting conservation work along the Canadian River was to resume the monitoring of the interior least tern nesting colonies this summer. In the coming years, we hope to encourage more landowners to join the Conservation Cooperative. We also intend to work with landowners to improve or restore riparian habitat along the river by assisting with grant applications and management plans. And of course, we will continue to monitor the least tern colonies. ■

Landscape Architecture: For the birds?

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While it is apparent that some people are aware of the Canadian River and do find ways to enjoy it, there is an entire population of the city of Norman who may not even know that there is a river, often times, within walking distance of them. Natural areas like rivers can create recreational opportunities and foster an awareness of wildlife habitat and water quality issues. Without some kind of public awareness of the Canadian River, its wildlife, and water quality functions, it is likely that unregulated, and often harmful activities (ATV use, dumping, etc...), will go unnoticed.

The relationship between science and design is an important one. Without the experience I had this summer, my

Graduate Project would not have included information on tern nesting habitat. Now, I know that increasing people's access to the river may promote wildlife habitat awareness, but it could also have a devastating effect upon the tenuous existence of the interior least tern. Having this experience will help me to create a more sustainable design for both people and wildlife within this riparian area. As a design student, I strongly believe we will all benefit when we build relationships between those who study the outdoors and those who design them. ■

lyla will graduate in May 2008 with a Master in Landscape Architecture degree from the University of Oklahoma's College of Architecture.

“Crayfish of Oklahoma” The third installment in our poster series on Oklahoma's Biodiversity

The third installment of our Biodiversity of Oklahoma series is now available free of charge! Send your name and address to us at okregistry@ou.edu (put Crayfish Poster in subject line) or send a letter to:

Oklahoma Biological Survey
Crayfish Poster
111 East Chesapeake St.
Norman, OK 73019-5112

If you want large quantities to distribute to classes, conference attendees, or other groups, contact our office by phone or e-mail. We would be happy to arrange pick-up or delivery of posters.



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.

Landscape Architecture: For the birds?

Graduate Research Assistant Iyla Griffin writes about her experience with the Registry Program this summer.

As a student in Landscape Architecture who is interested in environmental concerns, I had a tremendous summer working with Priscilla Crawford and the Registry Program. Many times during our hikes and kayak trips along the Canadian River, I reveled in my luck at procuring this employment and research opportunity. Not only did I spend a great number of hours kayaking and hiking along the Canadian River, but I was also able to explore interesting relationships between landowners along the river, people's activities along the river and the wildlife in the area. Monitoring the interior least tern included identifying the birds, observing their courtship behavior, finding and mapping their nesting colonies, and finally locating and counting their successful offspring.



Priscilla Crawford

The experience I had during this summer of fieldwork was very beneficial to my understanding of wildlife habitat in this area. The loss of habitat along this stretch of river has had a significant impact upon the nesting and chick survival rates for the terns. This year, the flooding appeared to have had the largest negative impact on the breeding success of the tern, but human impact could have played a part in the lack of nest success. Frequently, we saw evidence of all-terrain-vehicles that can easily disturb nesting birds and crush cryptic eggs camouflaged on the bare sand. Human impact is perhaps the most relevant component to my studies in landscape architecture.

In lieu of a thesis, my landscape architecture program offers a "Graduate Project" option, which requires the student to develop a real or fictional project that demonstrates the student's skills and illustrates principles of sustainable design, a strong focus of our department. The project that I am developing this year is a design for public access to and use of the Canadian River within the city of Norman. Encouraging access has the possibility of creating a greater awareness of natural resources in the area as well as facilitating stewardship, educational, and recreational opportunities. At this time, the portion of the Canadian River through the city of Norman sees no publicly promoted access; instead, people who access the river often gain entrance through private property (usually trespassing) or via utility easements in order to enjoy this wonderful natural area.

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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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Registry News

From the Oklahoma Natural Areas Registry Program

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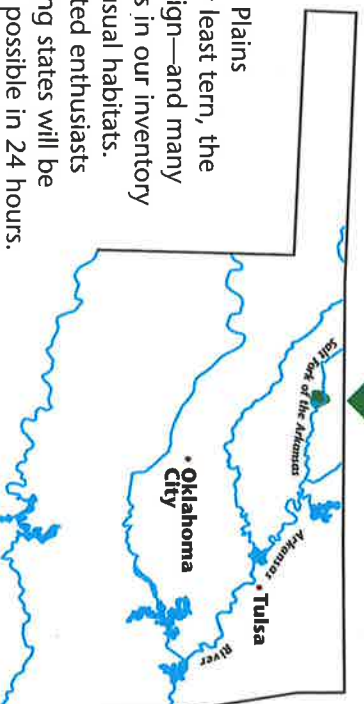


BioBlitz! 2008 Great Salt Plains

Save The Date! BioBlitz! 2008

will be held at the Great Salt Plains State Park and the Salt Plains National Wildlife Refuge on September 12-13, 2008. The Salt Plains are another breeding ground for the interior least tern, the snowy plover—represented in this year's design—and many other shorebirds. Come join other volunteers in our inventory of the biodiversity of one of Oklahoma's unusual habitats. Scientists, educators, volunteers, and dedicated enthusiasts from all across Oklahoma and the surrounding states will be identifying and counting as many species as possible in 24 hours.

Great Salt Plains



Special volunteer opportunities are available this year! To learn more call (405) 325-7658 or check out the web site at www.biosurvey.ou.edu, click on the BioBlitz! button.