



Registry News

From the Oklahoma Natural Areas Registry Program

Newly Registered Site

Break O’Day Farm & Metcalfe Museum, Roger Mills County

Oklahoma Natural Areas Registry



The Washita River trickles into Oklahoma from the panhandle of Texas, and into Roger Mills County. Only a few feet wide in western Oklahoma, this humble stream ultimately develops in to the mighty Washita as it cuts through half of the state and pours into Lake Texoma. Here, on the western edge of our state, the river flows through a homestead that is rich in history and natural diversity.



Priscilla Crawford

The Washita River has humble beginnings in Roger Mills County near the Oklahoma-Texas border at the Break O’Day Farm and Metcalfe Museum

The Break O’Day Farm is the 640 acre homestead of Augusta Corson Metcalfe who arrived in 1893. During her lifetime on this land, Augusta and her son grew crops and raised cattle and horses. But Augusta also recognized the natural beauty of her property covered with mixed grass prairie, sagebrush, and shinnery oak shrubland. In fact, she spent her life time painting the farm scenes and natural landscape of her property, becoming known as the “Sagebrush Artist” and eventually being recognized in the Oklahoma Hall of Fame and the National Cowgirl Hall of Fame.

Western Oklahoma can be a harsh landscape — dry, rocky land buffeted by hot winds in the summer and bitterly cold winds in the winter. But somehow this provides the right conditions for prairie wildflowers to cover the stony hills, shrubby oaks harbor migratory songbirds nests, and ant colonies on which the Texas horned lizard can feast. Augusta and her son were also able to thrive and enjoy their life in this demanding landscape.

As the Washita River continues to flow through Augusta’s homestead, the Break O’Day Farm’s natural diversity and fascinating history will be protected for the benefit of Oklahomans by the local citizens who volunteer their time as a Board of Directors.

→continued on page 4

Winter 2010-2011

Taking Action: Rare Plant

Research..... 2

Where are the seaside alder seedlings?

Focus on Oklahoma’s Natural Diversity:

Tallgrass prairie patches:3

The fragmentation of tallgrass prairie in Oklahoma.

A Note From a Registry Intern 5

The Registry Program benefits from the hard working students at OU.

State of the Registry Program 2010 6

Quick recap of last year including a few stats and ongoing projects.

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.

Oklahoma Biological Survey

111 East Chesapeake St.
Norman, OK 73019-5112
Phone: (405) 325-7658
okregistry@ou.edu



Taking Action: Rare Plant Research — Where are the seaside alder seedlings?

by J. Philip Gibson & Priscilla Crawford

In and along the Blue River resides an inconspicuous shrub. To a casual observer or trout fisherman, the shrubby tree may not seem particularly special, but the seaside alder (*Alnus maritima*) is one of Oklahoma’s rare plants, occurring only in the Clear Boggy Creek and Blue River watersheds of south-central Oklahoma. But what makes this tree extra special is the location of the nearest populations of seaside alder – the Mid-Atlantic coast and a swamp in Georgia. The seaside alder has not been found any other place in between!

Although the seaside alder was discovered in Oklahoma over 100 years ago, we know little about how and why it grows where it does and we know little about its reproduction. We have observed that, although, trees produce copious quanti-

ties of healthy seeds, we find no seedlings in the wild. The alder population is apparently persisting solely by vegetative reproduction – sending up shoots from spreading underground roots. Unfortunately, vegetative reproduction is not keeping up with tree death and populations are shrinking.

Conditions in the wild

Trees typically produce thousands of seeds each autumn, but there is no sign that seedlings survive and establish new trees. These results are perplexing because seeds will happily germinate and establish in a greenhouse. Something in the natural habitat limits seedling growth. It could be a number of things. Seeds mature and are released in the fall and subjected to harsh winter conditions on the ground before spring germination. The ground on which seeds land may not be suitable for germination. For example, seeds could land in water, on river gravel, sand bars, or riverbank soil – we don’t know which, if any, is a suitable matrix. And along a river, the seeds may fall in the wet soil near the water level, or the relatively dry soil several feet from the water’s edge. Again we don’t know what conditions are tolerable.

Research

We know alder seeds will germinate and grow under the ideal conditions of a greenhouse. Now we want to discover what affects seed germination and seedling survival in nature. Unlike a greenhouse, we planned our experiment to simulate the natural conditions of seeds released in the fall. We gathered seeds in October, before they were released from the tree. We planted seeds in pots filled with sand, gravel, or riverbank soil to



Priscilla Crawford

Melissa, Registry graduate research assistant, collects seeds from the cone-like fruits (top) of the seaside alder along Pennington Creek just north of Tishomingo.

represent the different substrates found along a river. We also set up different moisture levels to replicate different distances from the river edge. The pots were placed outside so that the seeds and substrate would be exposed to winter conditions similar to seeds in the wild. Now we wait for the warm days of spring to stimulate germination and see if the seeds survived winter and if we provided any suitable habitat for them to grow.

Future of seaside alder

With the findings of this research we hope to improve the chances of seaside alder regeneration in its native environment. Restoration of seaside alder in areas of population decline will be more effective if we have a better understanding of the tree’s habitat requirements. ■

Priscilla Crawford



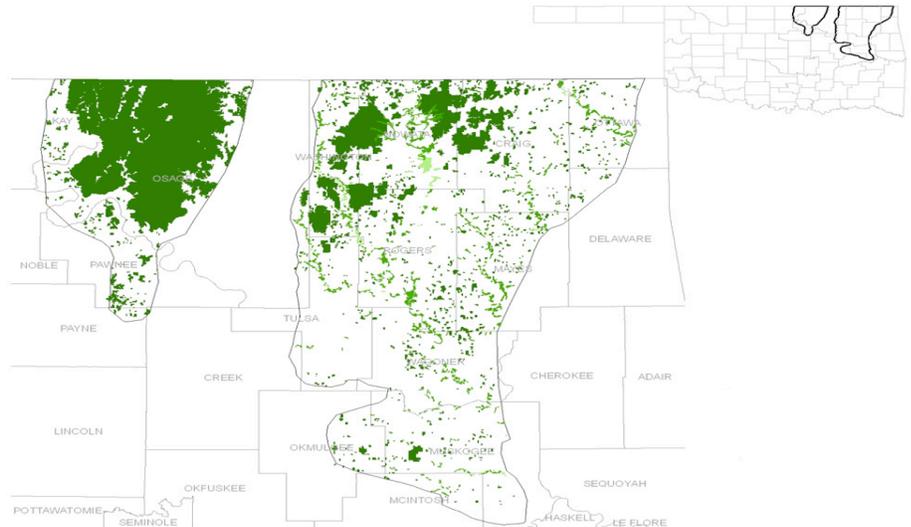
Student helpers prepare pots of sand, gravel, and loam soil in which to plant seaside alder seeds to test seedling establishment in different substrates and water levels.

Focus on Oklahoma's Natural Diversity: Remnant Tallgrass Prairie Patches

by Melissa Hinten

Tallgrass prairie, dominated by four big grasses — big bluestem, little bluestem, switchgrass, and Indiangrass — has greatly diminished over the past 150 years. Loss of the prairie is caused by the conversion to row crops, monoculture pastures, and urban development. In Oklahoma, the largest tracts of tallgrass prairie are located in the northeastern region of our state. This area is divided into two tallgrass prairie sub-regions — Flint Hills and Osage Plains.

Using historic maps, such as the Public Land Survey plats, I have measured the loss of tallgrass prairie habitat in Oklahoma. These plats from northeastern Oklahoma were created from the first land surveys conducted by the General Land Office between 1896 and 1897. Using computer mapping techniques (Geographic Information System, or GIS) and these historic maps, I was able to map and measure the number of acres of the historic extent of tallgrass prairie. I then compared to the present and historic



The historic, natural distribution of tallgrass prairie in Oklahoma is outlined in black. Green patches indicate land currently covered by tallgrass prairie. Melissa's research has quantified the dramatic decline of native prairie meadows in the state.

tallgrass prairie acreages to determine the amount of prairie lost in the past 100 years. While there is presently unplowed tallgrass prairie in Oklahoma, it remains as small, isolated, scattered patches.

The smallest of these tallgrass prairie patches may be used for hay production.

These hay meadows are found in patches ranging about 25 to 200 acres. Annual cutting and bailing in early July maintain tallgrass prairie hay meadows. Very few biologists have studied these small patches of prairie. Yet, they are some of the most species rich grasslands and are important reservoirs of biodiversity. Not only

has the reduction in prairie area meant a loss of plant diversity, it has also meant a loss of some extraordinary grassland orchid populations — the Oklahoma grasspink (*Calopogon oklahomensis*) and the western prairie fringed orchid (*Platanthera praecleara*).

Because of the rare species they harbor and their general importance as remnant prairie patches, many native hay meadows I identified during my research qualify for the Registry Program. Being members of the program, landowners will be recognized for their continued protection of these significant refuges of natural diversity. The Registry Program can help to encourage further prairie conservation by landowners in the region. ■

Melissa is currently finishing her dissertation on Land Use Change in Oklahoma Tallgrass Prairies at the OU Department of Geography.

Melissa Hinten



One of the many tallgrass prairie patches that Melissa visited during her study of landuse history in the region.

Newly Registered Site: Break O'Day Farm & Metcalfe Museum

→continued from page 1

Fall Festival at the Farm

by Pat VerSteeg

It was one of those picture perfect fall days that we yearn for, especially during the dog days of August. The hint of cool in the air conjures images of pumpkins, football, and hot coffee on a frosty morn! The gentle breeze trickled through the leaves like a natural wind chime, reminding us that autumn is here. It was that kind of day at the Metcalfe Break O' Day Farm on Saturday, September 24th. Around 10 a.m., Bill and Loretta Whitfield, along with old friend Chester Cline took to the porch, which served as a stage at the Metcalfe Homestead, to play their special brand of bluegrass.

Lawn chairs were set out under the shade trees by the porch, so patrons could relax and enjoy outstanding homegrown musicians and singers, as well as the good food and art.

The festival commenced with a ceremony to recognize the Metcalfe Museum Board for their effort in protecting the biodiversity of the Break O'Day Farm. The Board was presented with a plaque given by the Oklahoma Natural Areas Registry, which encourages citizen-based conservation of unique and special natural areas. The Registry Program recognizes landowners who

are committed to protecting our State's natural heritage. The Metcalfe Museum and Break O' Day Farm is in this select group! Presenting the award of recognition was Priscilla Crawford, conservation specialist. Accepting the award on behalf of the Board was Janna

Montgomery, Board Chairman, and Lloydelle Lester, Museum Co-Director. "I am pleased to accept this plaque of recognition on behalf of the Metcalfe Board. Howard Metcalfe especially wanted the Break O' Day Farm to be a wildlife refuge, and we are so pleased to participate in this program to register the many special natural and wild places of this State so they may be preserved for future generations," said Montgomery.

The Festival included a variety of entertainment and exhibits: singers, china painters, local artists, hand crafted jewelry, and western re-enactors, the Spring Creek Regulators. Metcalfe Board Members and volunteers grilled hamburgers with all the fixin's.

If you would like to attend the festival, mark your calendar for the end of September, and check the museum web-site as the date approaches.



Phillip Crawford

During the annual Festival at the Farm, Priscilla Crawford presents the Registry plaque to Janna Montgomery, Metcalfe Museum Board Chairman, with additional Board members present.

Visit the Metcalfe Museum

Admission to the museum and grounds is free. The museum houses Augusta Corson Metcalfe's paintings as well as contemporary regional artists. Outside the museum are several older buildings containing artifacts from the time period of Augusta's life, including the actual Blue Goose Saloon moved from the now deserted town of Hamburg, Okla.

The surrounding homestead property can be accessed on a series of maintained nature trails, which take you up rocky hills and down along the Washita River.

From I-40 in western Oklahoma near Erick, drive north on Hwy 30 for approximately 33 miles. Turn east onto Hwy 33 and travel four miles. Turn south on paved county road NS176 and travel three miles. Turn west on county road EW860. The farm is located at the end of EW86. (You should see Metcalfe Museum signs pointing the way beginning at the Hwy 33 turn off).

No hunting, fishing, or camping is allowed on the property. For current hours of operation, call the Metcalfe Museum at (580) 655-4467. ■

Priscilla Crawford



Signs, which are works of art themselves, point visitors across the sagebrush and shinnery oak covered hills to the Metcalfe Museum.

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 Intern

by Sarah Duncan

I stumbled upon the Internship in Conservation Biology at the Oklahoma Biological Survey while browsing class offerings for the fall of 2009. At the time, I was in the final stretch of my journey to become a certified science teacher. I wanted a class that would be meaningful and help me become a more effective educator. Being interested in conservation, I hoped that the internship would be a chance to put that interest into practice.

Coincidentally, the Registry Program needed a science educator to help with the next installment of the biodiversity poster series. For this poster, Life Along a Prairie River, Priscilla wanted to develop an accompanying educational booklet. This was the ideal opportunity for me — to apply my science education background to create activities to support the prairie river poster.

As I began the internship, I learned more about real-world conservation biology. Up until this point, my involvement was passive — I donated money to various organizations once a year and considered my good deed accomplished. Now I see conservation biology as so much more than that. I have a better picture of what conservation biologists do and feel a renewed zeal to learn more about conservation and spread this knowledge! I also feel renewed enthusiasm for expanding my own scientific knowledge.

Science education in secondary schools is sometimes abstract and disconnected from the world in which students live. I hope that the Prairie River poster and educational booklet will be a tool for teachers to use to take their students outdoors. There is a wonderful world full of biodiversity in our own backyards and seeing this can be a meaningful learning experience.

In addition to the poster, I helped with BioBlitz! 2009 and 2010. BioBlitz! greatly boosted my excitement about science and science education. I loved listening to all the different biologists and hearing the passion in their voice as they shared their biological knowledge. I want to sound as passionate about science and conservation when I speak to my future students! I want to inspire an excitement in them for science and a true appreciation for all that the world around them has to offer. Seeing so many children and young adults at BioBlitz! was fantastic. I look forward to being one of the teachers bringing their students out to see nature in action. Fun science activities like BioBlitz! are a perfect way to begin to recruit the scientists of tomorrow.

Working with the Registry Program has been a wonderful and meaningful experience for me. My involvement has made me a better teacher, a better student, and more appreciative and aware of the natural world around me.

As I begin to teach, I will remember some of the things that I have learned while working with the Registry Program. I will think back to how excited I am right now about conservation biology. I will do my best to inspire my students to feel the same way! It will be their job to take up the gauntlet and be advocates for conservation some day. I will help them by providing necessary tools, as best as I can.



Sarah helped with several outreach activities while working for the Registry Program.

Priscilla Crawford

Oklahoma Biological Survey
111 East Chesapeake St.
Norman, OK 73019-5112
Phone: (405) 325-7658
okregistry@ou.edu

Editor

Priscilla H. C. Crawford,
Conservation Specialist

Contributors

Sarah Duncan, 2009-10
Registry Program intern & assistant, now teaching science at Heritage Hall, Oklahoma City.

J. Philip Gibson, *Associate Professor, Depts of Zoology and Botany & Microbiology, University of Oklahoma.*

Melissa Hinten, 2010 Registry Program Graduate Assistant.

Pat VerSteeg, *Metcalfe Museum Board member and Associate District Court Judge for Roger Mills County.*

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



This publication, printed by OU Printing Services, is issued by the University of Oklahoma. 500 copies have been prepared and distributed at a cost of \$1000 to the taxpayers of the State of Oklahoma.

The University of Oklahoma is an equal opportunity institution.

This newsletter is printed on 100% recycled paper, 30% post-consumer.



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



The State of the Registry Program 2010

At the end of 2010, over 101,000 acres were enrolled in the State Register of Natural Heritage areas. Overall, 135 landowners are members of the Registry program, making up 93 Registry sites. In 2010, one new Registry site was added, representing 160 acres protecting rare plant and invertebrate species in McCurtain County, southeast of Idabel. 44 counties are represented in the Registry Program, with Cherokee County having the most sites with 12. Those 12 sites protect a variety of species including: bald eagles, Ozark spiderwort, bat caves, Ozark chinquapin, plains top minnow, and oak-hickory forests. Johnston County comes in second with nine Registry sites, most of which protect populations of the seaside alder.

In the Registry Program's commitment to support the continued conservation of member sites, we have initiated several projects on private lands:

- *Interior Least Tern monitoring and colony protection along Canadian River*
- *Ancient cross timbers investigation on three properties*
- *Invasive iris eradication near Blue River*
- *Eagle nest monitoring in Cleveland County*

