



In the Nebraska "Badlands," interesting landforms make a visit to Toadstool Geological Park a unique experience. Photo by Rick Houchin.

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INSIDE

Turkeys - a Photofactual Essay • Fires at Chadron
Medicinal Plants • Fishing Access Program • Grain Elevators
Making a Photo Blind • Roger Welsch's Plains Wildfires



NEBRASKAland

April 2013



FEATURES

- 12 Turkeys - A Photo-factual Essay**
Whether archery hunting today or awaiting the shotgun opener, here are a few facts and photos to get the blood boiling even more for hunting's most popular game bird.
TEXT AND PHOTOS BY JEFF KURRUS
- 16 Healing Plants of the Prairie**
Native Americans used native plants as medicine for years – now modern science is as well. BY GERRY STEINAUER
- 22 Building a Low-cost, Portable Photo Blind**
Blinds are a great way to get up close photos of wildlife. Here are some tips for building one. TEXT AND PHOTOS BY MICHAEL FORSBERG
- 26 Elevators - Corn Country Cathedrals**
"Prairie Skyscrapers" or "Sentinels of the Prairie" – grain elevators are a big part on Nebraska agricultural history.
TEXT AND PHOTOS BY JON FARRAR
- 32 Thin to Win**
By managing its forest properly, Chadron State Park played a key role in stopping last year's wildfire.
BY JUSTIN HAAG
- 40 Banking on Angler Access**
Nebraska's Angler Access program makes it easier for bank anglers to catch fish. BY ERIC FOWLER



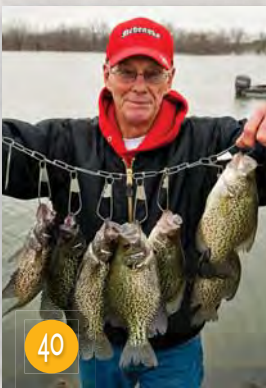
26

DEPARTMENTS

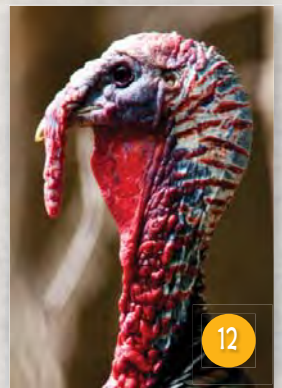
Comment.....	4
Mixed Bag.....	6
Nature Notes	44
Junior Journal.....	45
Classifieds	46
Portraits from the Past	48
Page 49	49
The Last Stop.....	50

Cover: A sharp-tailed grouse puffs up on a cold spring morning at the Bessey Ranger District of the Nebraska National Forest. Photo by Rick Rasmussen. **Opposite:** A 1928 Model D John Deere tractor sits in front of a 100-year-old barn in Lancaster County. Photo by Brad Moser.

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40



12



32



Swans, Ducks and Geese - Oh My!

Swans, ducks, geese and bald eagles all in one picture at Calamus lake – see the bald eagles in tall tree in background, note the “diamonds” on the lake above the birds. Such a variety of wildlife. All I needed was some deer and wild turkey in the background – I saw them also, but could not get everything on one picture. Nebraska wildlife is amazing.

Greg Jensen
Ord, Nebraska

Kudos for Hedge Trees

Each fall I pick hedge balls from the Osage-orange trees on my southeast Nebraska farm. Placed in our garage, the hedge balls keep out the crickets – I

promise!

My farm still has a few fencerows of hedge posts and barbed wire. I remember helping my dad string barbed wire onto the hard, tough hedge posts. Dad had a pile of hedge posts that would be used for fences and gates.

I recall an article printed several years ago in *NEBRASKAland* about the Osage-orange trees near Sterling. A good hedgerow is: horse high, bull strong and hog tight.

If memory serves me right, my first gift subscription for *NEBRASKAland* to my husband Steve, purchased many years ago, cost \$5 per year. After these many years, needless to say that we still enjoy reading your magazine.

NEBRASKAland photos continue to be superior.

Phyl Bates
Le Mars, Iowa

Questions for God

Dear Mr. Kurrus,

I just got my March issue of *NEBRASKAland* today and read your “Questions for God” article first. It was very well written. and I pray for Cayden’s family. Thank you for sharing that story.

Like you, I hope one day to have some answers to those questions. Thanks again for such a well-written, thoughtful perspective about young (too young) Cayden. God bless him (and you).

Regards,
Randy Rothchild
Friendswood, TX

NEBRASKAland Visitor Letters

We want to thank all 51 readers that sent e-mails and letters for last issue’s visitor, a **running crab spider** that was on **page 44** (see page 11 for the winner, rules and this issue’s hint). Here are some of the wonderful responses we received:

I found a spider (at least I think it’s a spider) on page 44 on the osage orange leaf. Wasn’t sure if this was the one we were supposed to be finding and I couldn’t find a name for it. I thought it was funny that a “pest” would be present on the leaf right beside the orange, when the question of the article was “Does it really repel pests?” Lol. I did have fun looking, even if this wasn’t the right one. I also love the magazine – keep up the good work!

Leta Olson,
Craig, Nebraska

Just got our second issue of *NEBRASKAland Magazine* and after reading the comment page about visitors, the wife and I couldn’t put it down until we spotted the spider on page 44. Used to subscribe years ago, will once again enjoy getting all the great info on where to take the grandkids fishing and hunting. I have a grandson who’s nickname is “Bass” – gonna take him to Memphis Lake to see if he can catch one, (thanks for tip).

The magazine still looks great, keep up the good work!

Jim Van Dyke
via e-mail

*Did you catch the creature scurrying across the page of last month’s magazine? It was a **running crab spider** (Family *Philodromus*). These spiders can be found all across North America, including Nebraska. Adult body sizes range from less than a quarter-inch to about a half-inch in length, not including legs. A running crab spider can be differentiated from other crab spiders (Family *Thomisidae*) by their second pair of legs, which are always longer than the other three pairs. Running crab spiders are beneficial because they feed on insects. They don’t spin webs to catch prey, but ambush them. Their coloration allows them to blend into their surrounds, such as a leaf, where they wait, motionless, until prey comes within reach. They grab the insect with their legs and deliver a quick bite, injecting a deadly combination of venom and digestive fluids that almost immediately paralyzes the prey.*

The spider then sucks out the now liquefied internal tissue of the insect. While the venom acts quickly on small insects, it is not known to be harmful to humans.



Special thanks to Julie Van Meter, State Entomologist, Nebraska Department of Agriculture. Visitor image by Chris Helzer.
www.bugguide.net is a good site for identification

Send your comments to:
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or e-mail Doug.Carroll@Nebraska.gov
Please include your postal address and telephone number.
Letters may be condensed and edited for clarity. Photographs are welcome and will be returned.

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The Vine That Ate the South ... and Midwest?

Karie Decker

Mile-a-minute vine, foot-a-night vine, the vine that ate the South – all pseudonyms for kudzu. But is it now eating the Midwest?

Kudzu was originally promoted as a forage crop and ornamental plant (great at erosion control) when it was introduced to the United States at the Philadelphia Centennial Exposition in 1876. But in 1953, kudzu was removed from the U.S. Department of Agriculture's list of permissible cover plants because of its recognition as a pest species. By that time, however, the damage was done. Over the past 60 years it has made its way across much of the Midwest and covers an estimated two million acres of forest land in the southern United States. In 2000 Kudzu found a ride and set roots on the West coast (Oregon, and then Washington), and is now even found in southeastern Nebraska, south of Nebraska City. Nebraska's cold winters seem to knock back its growth, but the plant's woody stems survive and re-sprout each spring.

Kudzu, a climbing, semi-woody, perennial vine, has the potential to reach up to 100 feet in length. It will grow over anything in its path (other plants, buildings, road signs) and eventually kill the plants it covers by blocking out sunlight. Kudzu will also uproot trees and shrubs through the masses of vegetation produced, and has been reported to grow roughly one foot per day once established.

Controlling kudzu is no easy task, but frequent mowing or grazing can suppress this tenacious weed, and the repeated use of chemical herbicides can kill it. Biological control agents are being evaluated, and the recent introduction of Asian soybean rust is thought to be very devastating to kudzu.

Prevention is worth a pound of cure, so learn how to identify kudzu. When recreating in forests, be sure to remove vegetation from your clothes/boots. If you think you've found some kudzu, report it to your county weed superintendent or to the Nebraska Invasive Species Project.

From the poem, "Kudzu,"

by James Dickey

In Georgia, the legend says

That you must close your windows

At night to keep it out of the house.

The glass is tinged with green, even so... ■



PHOTO BY JON VAN BUREN

Upcoming Events



Here is a list of upcoming outdoor events across Nebraska.

For more information about these and other events, visit the calendar page at www.OutdoorNebraska.org.

April 1

Paddlefish Archery Application

The application period for archery paddlefish permits runs April 1-14. For more information, pick up a free 2013-2014 Nebraska Fishing Guide. Contact Bob Zegar 402-471-5455 bob.zegar@nebraska.gov

April 6

Wanahoo Eagle Extravaganza

There will be a special eagle-viewing event featuring the lake's pair of nesting bald eagles from 8 a.m. to 11 a.m. at Lake Wanahoo near Wahoo on Saturday, April 6. Spotting scopes will be set up and there will be activities for kids as well.

April 6-7

Platte River Art Show

Featuring artists from across the Midwest, this annual art show will run Saturday from 9 a.m. to 8 p.m. and 9 a.m. to 4 p.m. on Sunday.

April 20

Indian Cave's 2nd Annual Outdoor Adventure

Come out for an event-filled day for the whole family at Indian Cave State Park. Featuring a mushroom hunting contest, fish fry, archery shooting, birdwatching and much more. New this year – the Morel Mile and 5K run. The pre-registration fee \$15 before April 15, \$20 day of race (shirts only guaranteed for pre-registration and while supplies last). Contact the park office for more details. A park entry permit is required.

Contact: Indian Cave State Park 402-883-2575 ngpc.indian.cave@nebraska.gov

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Travelogue

by Carol Henderson

Beatrice

First stop: The 1904 **Carnegie Library** building, restored in 2011 with the original marble floors and reception desk, is set in a comfortable park that is perfect for a walkabout or for rambunctious kids who need to stretch their legs. Jim Spangler, director of tourism for **Gage County**, greeted me with a smile and a fistful of information to help me plan my day.

Over at the **Gage County Historical Society and Museum**, Lisa Arterburn happily shared a fountain of information about the county, particularly the stone barn built by Elijah Filley in 1873. I grabbed several of the fascinating “read more about it” information sheets as I headed to my next destination. www.visitbeatrice.com

Let's do lunch...or dinner! The **Black Crow** on Court Street is not your typical steak-and-baked potato place but you could order them. Most likely you'll prefer to try a bit of herbed garlic butter and fresh, chopped green onions on your sirloin.

However, I ordered one of the Crow's homemade pizzas for lunch. It was a perfect pie with thin, buttery crust, the Crow's homemade sausage, fresh tomatoes and dotted with aromatic fennel. I had plenty left to load into a take-home carton – yum! www.blackcrowrestaurant.com

Decision time: East or west? Let's head west.

Selma and son Troy Stevens' real-deal country cottage is perfect if your visit includes an overnight stay. Their uber-clean **RV park and bed and breakfast cottage** are just 10 minutes from downtown **Beatrice**. Set on 80 acres of native timber, there is plenty of bird and wildlife viewing, including fox, turkey, deer and black squirrels. If the fresh-from-the-oven pecan rolls Selma served are any indication of the warmth you can expect when you visit, you won't be disappointed. “Bring your telescope,” Troy also advised, “the stars are amazing out here.” www.oakavenacres.com

Don't miss: Head back to Highway 4 to visit the **Homestead National Monument**

which celebrates the Homestead Act of 1862, America's most influential piece of legislation. The headquarters building features interactive displays and magnificent views of the tallgrass prairie as early pioneers might have seen it. According to Chief Ranger Merridith Baugham, “a typical visit can be an hour or a day or more if you delve into the databases about homesteading in Nebraska.” www.nps.gov/home

Just down the road: Seven miles east of **Beatrice** is **Cedar Creek Pottery**, with hundreds of exquisite and practical salt-glazed pottery pieces beautifully arranged on the rustic shelves of an 1895 church. The dried flowers, seed pods and wild grass wreaths that decorate the space are also artist Ervin Dixon's creations. I own a couple of his serving pieces and they are treasures. This is a spot-on shopping experience. <http://heritagehighway136.com>

The fields, farms, country churches and out-of-the-way treasures that dot the landscape in southeastern Nebraska have much to offer the casual traveler. I'll no doubt be back soon. ■



Carnegie Library Visitors Center



Cedar Creek Pottery



Beatrice

PHOTOS BY CAROL HENDERSON

Choose the Right Tent

Julie Geiser

Summer is coming and thoughts start turning to camping. Here are a couple of things to think about if you're planning to buy a tent this year: Keep in mind the number of people who will be using the tent, what type of terrain you will be in most of the time, and make sure that it is strong, durable and able to resist any sudden changes in the weather.

For a family of four, get a tent that sleeps six – you'll appreciate the extra room. I'd also recommend a cheap tarp for around \$15 to place under your tent. This will help protect your tent floor against tears and prevent water from seeping into the tent in case of rain.

A 10-by-10 foot tent is ideal for two adults. You will have enough space for cots or a double air mattress, plus space to stand up when changing clothes.

For older children who would prefer

to have their own, a 5-by-7 foot tent is an adequate size. For younger children, a separate tent is great for toys and as a play area.

Be cautious about tents larger than 10-by-10, as it can sometimes be difficult to find a smooth and level spot large enough to set the tent on. Big tents can also be on the heavy side when it comes to loading and unloading.

The peak inside height of the tent is very important for comfort – you'll want one tall enough to stand in. A 6- or 7-foot peak height is necessary for adults, and a 4-foot peak is about right for children.

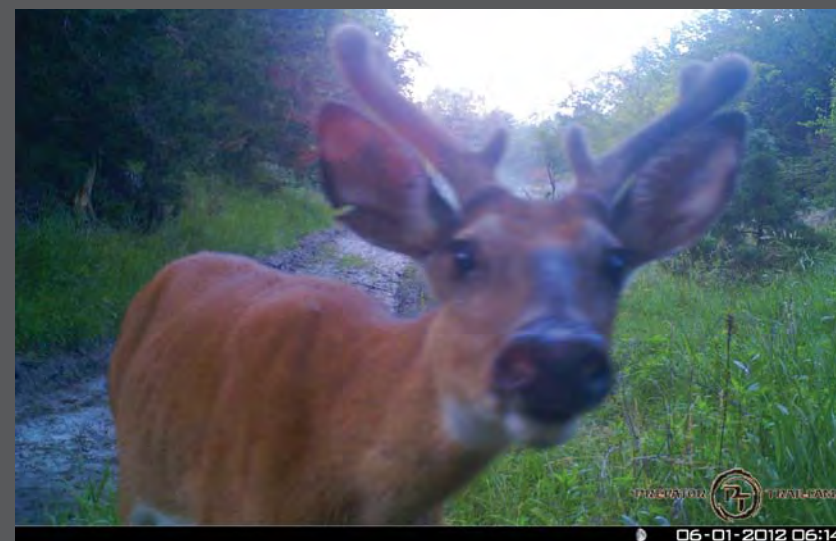
A good tip to remember before you go camping is to know everything about your new tent. You don't want to get to your camping site and not have

a clue about how to put up your tent. An easy remedy to this is to practice setting the tent up at home. Setting it up and taking it down a couple times will get you acquainted with the tent. This way you will be able to put it up and take it down in almost any situation.

Finally – be sure to pack a hammer, extra stakes and rope for those “just in case” moments. ■



Send Us Your Trail Cam Photos!



From Austin Kober – taken near Palmer, Nebraska: “We just happened to get this on one of our cameras. We have tons of other great pictures that are very cool.”

Please submit your trail camera photos by e-mail to: nebtrailcam@gmail.com. Also include any information that will help explain your photo.

Picking up for Ponca

The flood of 2011 brought large amounts of trash to the banks and sandbars of the Missouri River at Ponca State Park, and last year's drought exposed much of this debris in and along the river corridor.

As a result, Ponca State Park and the Missouri National Recreational River, are seeking volunteers for the first annual Mighty Mo Annual Cleanup on Saturday, April 20th. Volunteers will meet at the park's boat ramp at 8 a.m. for registration, coffee and doughnuts. Volunteers will receive official T-shirts on a first-come, first-served basis.

Boats from the Nebraska Game and Parks Commission, the National Park Service and partner agencies will transport volunteers to and from cleanup sites along the river. The cleanup will end at 11:30 a.m., and a lunch of hot dogs, chips and cold drinks will be served at noon.

Volunteers should wear appropriate clothing for the weather and closed-toe shoes. Sunscreen and insect repellent are recommended; bring gloves or gloves will be provided. Participants under age 18 must be accompanied by a parent or guardian. ■

Lewis and Clark Stops in Nebraska

By Olivia Johnson

Just over two centuries ago, Meriwether Lewis and William Clark departed from Camp Wood near St. Louis with the rest of the Corps of Discovery and started up the Missouri River on an expedition for President Thomas Jefferson. Among the group’s goals were to find a passage to the Pacific Northwest through the Louisiana Purchase, gain contact with Indian tribes, and make scientific observations of the unknown region.

A route through Nebraska was vital to the journey, and those interested in traveling Lewis and Clark’s original path can do so with ease today. Although less rugged than the uncharted route the Corps of Discovery endured, modern travelers can still get a feel for what the explorers experienced on their journey. Below are seven Lewis and Clark visitor destinations in Nebraska recognized by the National Park Service.

Indian Cave State Park, Shubert. Visitors have boundless areas of nature to get lost in. A Lewis and Clark interpretive lookout over the Missouri, ancient petroglyphs, and the old St. Deroin Schoolhouse built in 1908 are just a few of the attractions that make a visit to Indian Cave State Park unforgettable.

Lewis and Clark Interpretive Trail and Visitors Center, Nebraska City. This unique stop won’t leave visitors disappointed; it’s the only center in the nation that showcases the scientific observations of the explorers. Beyond the flora and fauna theme, guests can also enjoy a scenic overlook of the Missouri, as well as a 55-foot replica of the keelboat used on the journey.

Lewis and Clark Landing/Lewis and Clark National Historic Trail Headquarters and Visitor Center, Omaha. Omaha boasts not only a park dedicated to the explorers but also the headquarters that serves as a source for all interested in traveling the Lewis and Clark route. In the Landing visitors can enjoy Lewis and Clark interpretive exhibits, the Bob Kerrey Pedestrian Bridge and plenty of green, open space.

Fort Atkinson State Historical Park, Fort Calhoun. The original fort was constructed on the recommendation of Lewis and Clark after they passed through the area. Today a reconstructed version stands, offering a visitor center and a statue dedicated to Lewis and Clark’s 1804 meeting with the Oto and Missouria Indians.

Ponca State Park, Ponca. Named after Ponca Chief Standing Bear, this natural haven offers limitless recreation opportunities, including hiking and biking trails, outdoor educational programs, camping and a wide variety of wildlife to observe.

Missouri National Recreation River. Two free-flowing stretches of the Missouri located from Fort Randall Dam near Pickstown, South Dakota to Niobrara, Nebraska; and Gavins Point Dam near Yankton, South Dakota, to Ponca, Nebraska. Visitors can observe an area that still looks quite similar to the untamed wilderness the Corp saw on its journey. Guests can also check out a Lewis and Clark Visitor center, located at Gavins Point Dam, which marks the site where the explorers met with the Yankton Sioux.

Niobrara State Park, Niobrara. Located at the junction of the Missouri and Niobrara rivers, the park offers boat ramps, birdwatching and other wildlife viewing, horseback riding trails and camping areas.

With plenty of natural scenery and knowledgeable, friendly personnel willing to share facts and stories along the way, you’re sure to have a great experience and gain a better sense of what the Corps of Discovery saw in 1804. It doesn’t matter if you hit all the stops, or just one; the important thing is that you get out there to see some of this history that Nebraska has to offer. ■



Pre-peppered fish?

Justin Haag

Anglers who catch a fish with peculiar little black spots on its scales will almost certainly be safe putting it in the frying pan – the “peppered” fish has most likely been infected by the larval stage of neascus, a parasite harmless to humans.

“There are a variety of parasites you’ll find in our state’s fish, and none of them are harmful to humans especially if you cook the meat,” said Daryl Bauer, Nebraska Game and Parks Commission fisheries biologist.

Neascus, commonly known as black spot, is frequently found on the skin and sometimes the flesh of fish throughout the state. This parasite is especially common on fish that live in shallow waters near the presence of fishing birds such as blue herons and cormorants.

Such birds are one of several hosts that provide a home for the parasite at different stages of its life cycle. Adult neascus live in the digestive tracts of the birds. Its eggs find their way to water and take up residence on snails. From there, they become swimmers and find fish.

“When the bird eats a fish, it is infected with the parasite and the whole cycle begins again,” Bauer said. “There is nothing you can do about them. They’ll always be out there.”

Bauer said anglers shouldn’t let a little black spot keep them from enjoying a meal: “If you filet the fish, trim the spots out and miss a few, you’ll be fine as long as you cook the meat,” he said.

For more information about neascus and other fish parasites, read the Nebraska Pond Management Guide, available at OutdoorNebraska.org. ■



PHOTO BY JUSTIN HAAG



Preparing For Open Water

Daryl Bauer

Rods: Check your rod eyelets for rough edges that could abuse your line. To preserve cork handles sand out any bumps or dirt, then apply a cork sealing agent or varnish of some sort. It’s always a good idea to store rods in tubes while traveling or not fishing.

Reels: To clean and maintain a healthy reel, first take the reel apart, keeping track of the order in which each part is assembled. Thoroughly clean each component and apply a

quality lubricant of your choice to the moving parts. If you are unsure in your reel mechanic abilities, many fishing shops will clean reels at a cost.

Line: It is always a good idea to replace the line on your reel spools for the upcoming season, especially if you know the line received a lot of action or it is monofilament line.

Tackle: Give your tackle box a quick run-down. Clip any knots off of the hooks, then replace any broken or heavily rusted hooks, and sharpen hooks that saw a lot of hard fish teeth or caught hard rock snags. ■

The Litter Experiment

Jeff Kurrus

I am a hater of litter, no different than many outdoor enthusiasts. Nothing is better than walking down a pristine edge of lakefront, and nothing is worse than not. So last year I performed a small experiment in which I picked up trash as I fished, but I didn’t spend a lot of time doing it. Instead, I only let myself pick up items on my way to and from, and while walking around, a lake. I wanted to see how much I could collect in this minimal amount of time.

Answer: too much. Pictured below is my take for the year, including a tackle box, rodholder and handful of usable lures. I plan on performing the experiment again this year, and hope I’m not the only one to do so. ■



NEBRASKAland Visitor Winner and Hint

Last issue’s winner of the Visitor drawing was Steve Tyler of Omaha, Nebraska, who found the **running crab spider** on page 44. Readers are encouraged to contact *NEBRASKAland* within 10 days after this issue’s publication with the correct page number and name of this issue’s “Visitor” – a bug found in Nebraska that just happened to find its way onto one of the pages.

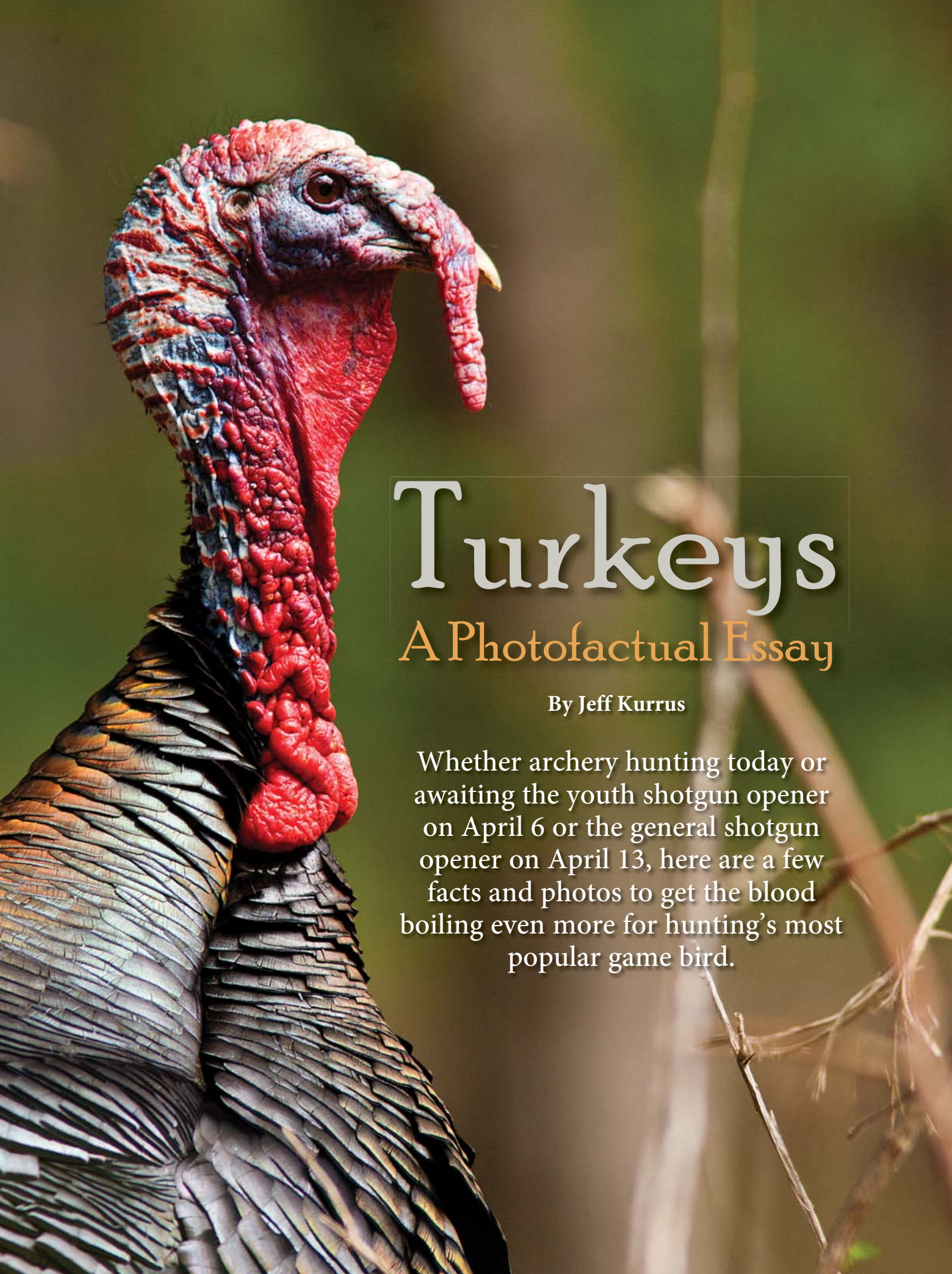
We will then gather the correct entries and draw one to win a *NEBRASKAland Magazine* mug. To enter each month, write: **NEBRASKAland Visitor 2200 North 33rd Street, Lincoln, NE 68503.**

Or e-mail: **Tim.Reigert@Nebraska.gov** with “Visitor” in the subject line of the message.

HINT: This issue’s visitor is not on page 5, 7, 11, 19, or 45.



PHOTO BY JEFF KURRUS



Turkeys

A Photofactual Essay

By Jeff Kurrus

Whether archery hunting today or awaiting the youth shotgun opener on April 6 or the general shotgun opener on April 13, here are a few facts and photos to get the blood boiling even more for hunting's most popular game bird.



Turkeys are known for their eyesight, compelling many hunters to wear patterns that completely blend with their surroundings. However, a turkey's ability to detect movement is its greatest asset.

Permit Me to Harvest

Nebraska turkey hunters are allowed to purchase up to three spring permits a year, each allowing the harvest of one male or bearded female turkey, or two fall permits, which allows the harvest of two turkeys of either sex per permit.

The Fall 2011 turkey harvest was approximately 8,400 birds, and last spring's turkey harvest was around 21,400. The success rate for Fall 2011 was almost 75 percent on a per-permit basis; last spring it was approximately 63 percent.

For more information about hunting turkeys in Nebraska, pick up a copy of the 2013 Turkey Guide, available at permit offices statewide or online at OutdoorNebraska.org.



The turkey is in Comparison [to the bald eagle] a much more respectable Bird, and withal a true original Native of America. Eagles have been found in all Countries, but the Turkey was peculiar to ours ...He is besides, though a little vain and silly, a Bird of Courage, and would not hesitate to attack a Grenadier of the British Guards who should presume to invade his Farm Yard with a red Coat on.

— Benjamin Franklin





There is no minimum legal age to hunt turkeys in Nebraska and youth 15 years of age and younger can purchase \$5 permits that are valid statewide.

Turkey Numbers

Because of heavy, unregulated hunting pressure following the arrival of Europeans in North America and the loss of habitat associated with forest clearing, the United States' turkey numbers were at an all-time low by 1920, with wild turkeys still found in only 21 of the 39 states that historically supported a population.

However, regulated hunting combined with intensive habitat management efforts have pushed continentwide turkey numbers to an all-time high. Because of their adaptability, they have been introduced into areas outside of their range and are now present in all states except Alaska.



A turkey's gobble can be heard almost a mile away.

Calling Birds

Most of the allure of turkey hunting, especially in the spring, comes from using calls to lure toms within gun or bow range. A wide variety of calls can be found on the market, and many of them can be effectively used after very little practice and/or coaching.

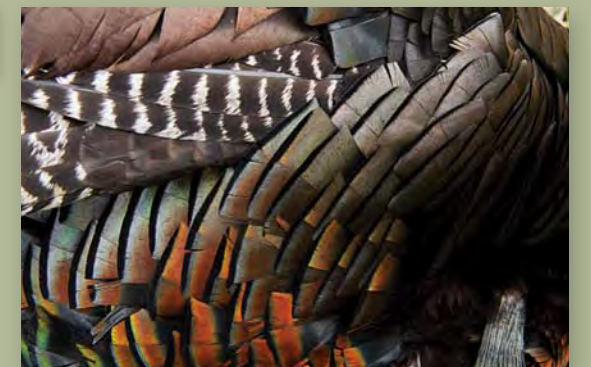


Turkeys roost in trees as a defense mechanism against predators. The only times turkeys roost on the ground is when the weather is too severe to support them standing on limbs and when hens are sitting on their ground nest, covering their eggs.

More Turkey Facts

You may already know that a tom's beard is made up of hairlike feathers, that turkeys are North America's largest game bird, have four toes, and can fly up to 55 mph, but did you know the following?

- An adult tom has straight, symmetrical tail feather edges, while an immature male's tail feathers are asymmetrical.
- A tom turkey's wingspan is up to 72 inches – a bald eagle's is 79 to 90 inches.
- The average turkey has between 5,000 and 6,000 feathers, and a tom's feathers are an iridescent red, green, copper, bronze and gold, among other colors.
- After Europeans arrived to this continent, they eventually made turkeys one of only two domesticated birds native to the Americas – the Muscovy duck (right) is the other.
- The oldest known wild turkey lived more than 13 years. The average lifespan is less than 2 years.
- There are five subspecies of turkeys, none of which migrate – the Eastern, Rio Grande, Merriam's, Florida and Gould's. Nebraska has released both Merriam's and Rio Grande birds in the past and some Easterns moved here on their own. Most Nebraska turkeys today are hybrids.



Healing Plants of the Prairie

By Gerry Steinauer, Botanist

On a hot July afternoon in 2010, five members of the University of Kansas (KU) Native Medicinal Plant Research Program scoured the rugged Niobrara River Breaks in Nebraska's Sioux County. They clipped and bagged the stems of silver-leaf scurf pea, prairie sagewort and other sought-after plants. In the riverbottom they dug the deep, sprawling roots of wild licorice from the sunbaked soil. In the KU medicinal chemistry lab this plant material would later be subjected to high-tech analysis in search of valuable medicinal compounds – an effort that continues a millennia-long tradition of Great Plains inhabitants seeking healing compounds from prairie plants.

Native American Healing Traditions

Prior to Euroamerican settlement, Plains Indians (and all other New World peoples) depended on native plants for medicine – knowledge of the healing powers of plants was critical to their survival. In 1932, anthropologist Ales Hrdlicka wrote in *Disease, Medicine and Surgery among the American Aborigines*: “In every tribe the older women and men knew scores of herbs ... They knew poisons, emetics, cathartics, antifebriles, tonics, narcotics and hemostatics, cleansing solutions, healing gums, and powders. They had antidotes. They employed massage, pressure, scarification,

cauterization, bandaging, splints, sucking, enemas, cutting, scraping and suturing.”

Though most Native Americans knew commonly used plants, only highly trained medicine men and women possessed specific knowledge of the many other medicinal plants and their uses. This wisdom developed over thousands of years of trial-and-error use of plants as medicine – some healing traditions may have arrived with the original aboriginal immigrants from Asia some 13,000 years ago. The Pawnees, for example, burned the stems of yarrow and leadplant as short punks on rheumatic joints to relieve pain. Known as moxa, this practice is commonly used in Asian medicine today, which suggests it originated there.

Knowledge of medicinal plants and healing methods was passed down orally from generation to generation of Native Americans. Elders took young disciples afield, teaching them the characteristics and habitats of specific plants, the proper time of harvest, and methods of preservation, preparation and use. The lessons were precise, as many plants ingested as medicine contained toxins. Locoweeds and some milkvetches, for example, contain potentially toxic alkaloids and selenium, which could be deadly if the remedies were not properly prepared or the correct dosage used. Native Americans' knowledge of herbal medicines perhaps equaled or even surpassed that of modern man's expertise with natural drugs.

The arrival of Euroamericans on the Plains in the mid-1800s brought foreign diseases, war and displacement to reservations. As our aboriginal populations crashed and their cultures crumbled, a wealth of medicinal plant knowledge was lost. In the late 19th and early 20th centuries, ethnobotanists (those who study a people's traditional knowledge and customs of plant use)



The Niobrara River Breaks in Sioux County.



PHOTO BY KANSAS BIOLOGICAL SURVEY

Hillary Loring (left), Quinn Long, Kirsten Bosnak and Kelly Kindscher of the University of Kansas Native Medicinal Plant Research Program hold the excavated root of wild licorice dug from a meadow in the Niobrara River Valley in Sioux County.

strove to document the remaining knowledge before “the death of all the old people who alone possess it.”

Early Ethnobotany

In his classic 1919 book *Uses of Plants by the Indians of the Missouri River Region*, ethnobotanist Melvin R. Gilmore described the medicinal, food and utilitarian uses of nearly 150 native plants by the Ponca, Omaha, Pawnee, Winnebago and Sioux tribes. A Valley, Nebraska, native, Gilmore earned his doctorate in botany from the University of Nebraska in 1919 at the age of 46. For his book, an outcome of his graduate work, he interviewed native elders who had gathered and used plants when the tribes still roamed the unsettled plains, and who still remembered their “old names, uses,

and symbolism.”

Gilmore described how the tribes used the macerated root of purple coneflower (*Echinacea angustifolia*), a prairie wildflower found nearly statewide, as an antidote for snakebite and other venomous bites and stings. To ease toothache, a piece of macerated root was placed on the painful tooth – the root contains a novocaine-like substance that has numbing effects. Gilmore reported that a Winnebago “often used the plant to make his mouth insensible to heat, so that for show he could take a live coal into his mouth.” Purple coneflower was also used in a smoke treatment for headaches in people and for distemper in horses.

A Ponca informed Gilmore that thyme-leaf spurge (*Euphorbia serpyllifolia*), a small, sprawling

annual of sandy soils, “was boiled and the decoction drunk by young mothers whose flow of milk was scanty or lacking, in order to remedy that condition.” This may be an example of the “belief in signs,” where characteristics of a plant reveal its potential medical use – spurges have a white, latex-like sap and therefore were thought suitable for nursing mothers in need of increased milk production. Of thyme-leaf spurge, Gilmore wrote: “An Omaha informant said it was used as a remedy in case of dysentery and abdominal bloating in children. For this purpose the leaves of the plant were dried and pulverized and applied after first cross-hatching the skin with the head of a certain plant. Then the pulverized leaves were rubbed by hand on the abraded surface. It was said to cause a painful, smarting



Nebraska ethnobotanist, Melvin R. Gilmore, pictured in 1907 with an Omaha tribe member and children at an archeological summer camp.



PHOTO BY MICHAEL FORSBERG

Purple prairie coneflower growing at Spring Creek Prairie in Lancaster County. Extract from the plant was the key ingredient in Meyer’s Blood Purifier, and compounds from the plant are now used in modern medicines.

sensation and to act powerfully upon the bowels through the intervening tissues and to give relief.”

Of butterfly milkweed (*Asclepias tuberosa*), a now uncommon wildflower in tallgrass prairies and open woodlands in eastern Nebraska, Gilmore penned: “The root was eaten raw for bronchial and pulmonary trouble. It was also chewed and put into wounds, or pulverized when dry and blown into wounds. It was applied as a remedy for old, obstinate sores. In the Omaha tribe the ceremonials connected with the digging, preparation, consecration, and distribution [of the plant’s roots for medicine] occupied four days.”

Spirituality was integral to Native American healing, and medicine men and women often used ritual, song, drumming and prayer, in addition to plants, to heal. They believed the spirit healed the individual, and the plant was the vehicle through which it worked. For known conditions, such as fevers, congestion and stomach ailments, healers used specific plants for a

variety of preparations. For unknown diseases, perhaps cancers, they often relied entirely on the spirit for healing. Modern science is discovering that many plants used by Indians in medicines contain medicinally active compounds, potentially explaining their healing powers. The healing power of other Native American medicinal plants remains suspect; perhaps some medicines were effective placebos.

Purple Coneflower

Unfortunately, little of the medicinal plant knowledge possessed by Native Americans was passed on to early white settlers, as most Indians had been isolated to reservations at the time of settlement, and the greatly differing spiritual views that underlay the health systems of the two groups made exchange and acceptance of native healing traditions difficult. The few plants that white settlers used to treat ailments tended to be from outside the region or were cultivated plants; they also relied heavily on non-plant

remedies. Purple coneflower was one of the few Native American medicinal plants adopted for use by Plains settlers.

Purple coneflower remained little more than a folk remedy until 1871, when patent medicine salesman H.C.F. Meyer of Pawnee City included coneflower extract in a tonic called “Meyer’s Blood Purifier.” He boasted that his secret purifier had “cured 613 cases of rattlesnake bite in men and animals.” The purifier’s label professed: “This is a powerful drug as an alternative and Antiseptic in all tumorous and Syphilitic indications; old chronic wounds, such as fever sores, old ulcers, Carbuncles, Piles, eczema, wet or dry, can be cured quick and active ... It will not fail in Gangrene ... It relieves pain, swelling and inflammation, by local use, internal and external.”

Seeking an endorsement for his purifier, Meyer sent a sample to Dr. John King, a prominent doctor in Cincinnati, and John Uri Lloyd, a professor at the Eclectic Medical

Institute and co-founder of Lloyd Brothers Pharmacists, a leading drug company based in Cincinnati. To demonstrate his product’s potency, Meyer offered to bring a rattlesnake to Cincinnati and have it bite him in the presence of Lloyd. Lloyd declined the invitation and dismissed Meyer, having serious doubts about the purifier’s professed healing powers. King, however, later convinced Lloyd Brothers to put an *Echinacea* tincture on the market. Part of King’s confidence in *Echinacea* stemmed from the fact that it was the only drug that gave his wife relief from the pain and discharge of her ovarian cancer.

In 1917, Lloyd wrote that the *Echinacea* tincture was a “therapeutic favorite with many thousand American physicians, and which is consumed in larger quantities today than any other American drug introduced during the past thirty years.” Apparently the tincture was most effective when the ground root was mixed with four parts alcohol to one part water.

During the 1920s, however, the use of *Echinacea* fell into decline. This was a time of discord between doctors who favored the new lab-synthesized drugs and those who favored herbal remedies. The herbalists were losing. With World War II came the development of modern antibiotics, which was a near deathblow for the use of *Echinacea* as a medicine.

The herbal revival of the 1970s, however, brought about a rebirth of *Echinacea*’s popularity, both as a botanical antibiotic and immune system stimulant. The first modern scientific research into *Echinacea*’s medicinal properties began in the 1950s and continues today. Much of this research has been conducted in Germany, a country with considerable scientific interest in medicinal plants and with liberal laws concerning their use. Pale purple coneflower (*E. pallida*) and eastern purple coneflower (*E. purpurea*), species common to the south and east of Nebraska, have also been subjects of investigation.

The research indicates the *Echinaceas* have active medicinal components, including compounds



PHOTO BY QUINN LONG, KANSAS BIOLOGICAL SURVEY

The wild tomatillo, which grows nearly statewide in Nebraska prairies and disturbed sites, contains steroids with known antimicrobial, antitumor and anti-inflammatory properties.



PHOTO BY MICHAEL FORSBERG

Native Americans commonly used butterfly milkweed, a now uncommon wildflower in eastern Nebraska prairies and open woodlands, as a medicinal plant.

with mild antibiotic activity against the disease-causing *Streptococcus* and *Staphylococcus aureus* bacteria. A pentane-extracted oil from purple and pale purple coneflower roots inhibits Walker carcinosarcoma and a type of lymphocytic leukemia. Highly active polysaccharide molecules from purple and eastern purple coneflowers stimulate the immune

system, while other coneflower extracts have anti-inflammatory properties. Purple coneflower plants also contain compounds with potential as insecticides, one compound being toxic to mosquitos and house flies. Today, coneflower roots are still widely used in herbal remedies, the plants being commercially grown or harvested from prairies.

Modern Ethnobotany

Kelly Kindscher is one of the Great Plains' few ethnobotanists. A native of Newton, Kansas, Kindscher spent much of his childhood summers in Nebraska on his family's farm along the Republican River in Webster County. Here, in bluff prairies and wooded bottoms, Kindscher's father, a teacher by trade, taught young Kelly about native plants. He can still recall the first plant name he learned – Carolina anemone. His childhood interest in plants persisted and evolved to include ethnobotany. Kindscher later studied botany at the University of Kansas, earning a Ph.D. in 1991. For his 1992 book *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide*, Kindscher reviewed the writings of early Plains ethnobotanists and interviewed Lakota medicine men and women on the Rosebud Reservation in South Dakota who still used medicinal plants in traditional healing.

Kindscher is now a senior scientist with the Kansas Biological Survey, professor in environmental studies, as well as co-leader of the KU Native Medicinal Plant Research Program, a joint effort between KU's

Department of Medicinal Chemistry and the Kansas Biological Survey. Founded in 2009, its goal is to identify medicinal compounds in Great Plains plants for use in natural remedies, foods, pharmaceuticals and veterinary products.

Since 2010, Kindscher and other

“By educating people about native plants and their uses, I hope they will learn to appreciate their values and work to conserve them.”

– Kelly Kindscher

program staff have undertaken plant collecting expeditions across the Great Plains from Montana to Texas, including the 2010 trip to Sioux County and excursions to the Sandhills in Thomas County and to Thurston County (where the Omaha Indian

Reservation is located). Believing that plant species previously used by Native Americans are good leads for containing compounds useful in modern medicines, program leaders are choosing to concentrate their collecting and testing on those species.

All plant species produce numerous chemical compounds; the most abundant, called primary compounds, help plants grow and reproduce. Plants also produce secondary compounds, so called because they occur in minute amounts and were once thought by science to have no function. Secondary compounds, however, have recently been found to have many functions, primarily protecting plants from environmental stressors. For instance, some secondary compounds screen out damaging ultraviolet rays, others are toxic or distasteful and dissuade browsing mammals and foraging insects, while still others fight disease-causing bacteria and fungi. Because they promote plant survival, many secondary compounds are designed to affect the cells, tissues, and physiological function in competing microorganisms, plants and animals. Some exert their action in ways similar to human hormones, neurotransmitters and other compounds and thus have potential medicinal value for humans. Secondary plant compounds, or the molecules modeled after them, are the source of 25 percent of the prescription drugs used in the United States today.

Plants of the semi-arid western Plains are adapted to climatic extremes and intense grazing and therefore thought to contain more secondary compounds than plants of the wetter, eastern Plains. Western prairies, therefore, are a prime collecting area for Kindscher.

“We collect whatever plant parts the Native Americans used, whether it be the roots, stems, leaves, flowers or all parts,” said Kindscher. “We also try to collect the same species from several locations, as populations may differ genetically and contain unique secondary compounds. At some locations, we also collect the same species during different seasons as growing conditions may affect the presence or quantity of potential



University of Kansas Native Medicinal Plant Research Program staff spread collected plant material on the floor of a Sioux County barn to begin the drying process.

medicinal compounds.” The group harvests about 20 pounds of fresh plant material of each species at each location. Once dried, this will provide the two pounds of material needed for chemical analysis.

At KU's medicinal chemistry lab, chemists first grind the plant material to the consistency of dried oregano, then add solvents to break down the material into a thick liquid. They use complex techniques, such as liquid-liquid partition and reverse-phase chromatography, to isolate and then identify individual compounds from the liquid. Promising compounds, such as potential antioxidants or anti-cancer agents, are further tested.

Great Plains prairie plants likely contain many medicinal compounds waiting for discovery, but is the intense effort needed to find these compounds justified? Why not just create new compounds in the lab? Though chemists can artificially synthesize millions of compounds in the lab, most do not interact well with biological systems and therefore have limited medical value. Chemists also struggle to lab-synthesize the medicinally

active compounds found in plants. Morphine, for example, cannot be created in the lab and must be derived from the opium poppy. When chemists can synthesize botanical compounds, it is often in minute quantities and more expensive than procuring the compounds directly from the plants that naturally manufacture them.

A high point of the KU medicinal plant program's recent efforts includes the discovery of 14 previously unknown medicinal compounds (called withanolides) in the wild tomatillo or common ground-cherry (*Physalis longifolia*).“ A member of the nightshade family, along with tomatoes and potatoes, the wild tomatillo grows nearly statewide in Nebraska prairies and disturbed sites. Withanolides are steroids with previously known antimicrobial, antitumor and anti-inflammatory properties. In tests on mice, the newly-discovered withanolides shrank, and in some cases completely dissolved, aggressive cancers without side effects or toxicity to normal cells (in high concentrations many plant compounds will kill cancer cells, but if they also

kill healthy human cells they cannot be used as treatments). The Kansas group also recently discovered promising anti-cancer agents in several species of Plains milkweed.

Kindscher's goals for the medicinal plant program go beyond the practical application of new medicinal compounds. He hopes to honor the traditional knowledge of Native Americans and to conserve native plants. Over much of the Great Plains, native landscapes – and the plants they support – are fast disappearing,” he said. “By educating people about native plants and their uses, I hope to encourage them to appreciate the value of these plants and work to conserve them.” ■



In the University of Kansas High Throughput Screening Laboratory, Peter McDonald, Ph.D., uses a signal detection instrument to screen hundreds of plant extracts for antioxidant activity.

PHOTO BY DAVID MCKINNEY/KU MARKETING COMMUNICATIONS

PHOTO BY HILLARY LORING, KANSAS BIOLOGICAL SURVEY

Much of the material for this article came from Kelly Kindscher's book *Medicinal Wild Plants of the Prairie: An Ethnobotanical Guide* and other articles by Kindscher.



Building a Low-cost, Portable, Photo Blind

Blinds are a great way to get up close photos of wildlife. Here are some tips for building one yourself.

Photos and text by Michael Forsberg

Several summers ago I spent a week in Tuttle, North Dakota, a tiny town that straddles the 100th meridian in the heart of the prairie pothole region – North America’s “duck factory.” I was staying at my friend Scott’s house to photograph the vast diversity of waterfowl and other birds that live and breed in the maze of wetlands, lakes and rolling, rock-strewn hills that define the region.

Scott is both a waterfowl biologist and a serious waterfowl hunter. His

garage behind the house was a duck hunter’s dream: Bags of decoys representing nearly every waterfowl species in the Central Flyway were scattered across the floor; chest waders and hip boots hung upside down from the rafters; blinds of every shape and size were piled high in the johnboat; and a dozen cans of camo paint and tools were arranged on the workbench along the back wall.

It was an amazing display, but one thing in particular caught my eye one day while loitering around the garage – a

simple roll of 4-foot-high garden fence standing on end. Affixed to it were several woven grass mat panels, material usually used to camouflage boat blinds. The grassy fence roll was held together by a couple of bungee cords.

“What do you use that for?” I asked Scott.



A telephoto lens peers out of the blind set next to a plum thicket on a prairie hillside.

“It’s a very simple blind I use from time to time,” he said. “It’s relatively cheap, lightweight and is easy to set up. Works great.” This was high praise from Scott and, I was sure, came from deep experience. I was sold.

In wildlife photography, I’ve learned, what usually works well for seasoned

waterfowl and archery hunters usually works for photographers as well. Since that summer I have deployed blinds like Scott’s numerous times with good success, whether tucked away in the fold of a prairie grassland or set up along the water’s edge. In a day and age

with lots of bells, whistles and technology, it is still often the simplest setups that work the best, getting you close to wildlife and allowing you to feel one with the landscape.

Turn the pages for step-by-step instructions on how to build a blind like this one for yourself.



The Materials:
Garden fence typically comes in 20-foot rolls with varying heights and can be purchased at most any hardware store. I think 4-feet-high works best because that's tall enough to hide behind when you are sitting on stool, bucket or folding hunter's chair inside the blind. For grass mats, I like to use FastGrass®. It comes in four roughly 4-foot-square mats of woven palm leaves and is lightweight, has a great 3-D look that blends well with the prairie and wetland vegetation and, if stored properly, can last years before it begins to degrade.



The Tools:
1 package of zip ties, black or mid-tone colored
6-8 tent stakes
1 hammer, mallet or rock
A pair of wire cutters or pliers
Several heavy duty metal clips (because you never know when you might need them)



The Steps:
First roll out several feet of the fencing, lay it on the ground and walk back and forth on it a few times until it flattens out. Next, place one of the grass mat panels on the section of fence you just flattened and anchor the four corners with zip ties.

Once the corners are anchored, use more zip ties to secure the middle of the panel to the rest of the wire frame until snug. Then roll out more fence and repeat the same procedure for the three remaining grass panels.



When done you will have one long, 16-foot section with four feet of fence frame to spare. Cut the extra fence off using your wire cutters or pliers and save it – you can use it later to help shape a roof for the blind with other camo material or natural vegetation from the surrounding area. You can also choose to leave the blind top open.

Now stand the fence on end and shape it into a circle, leaving a two to three foot open space in the back where you will enter and exit the blind.

Use the tent stakes to anchor the blind to the ground. Once anchored, you may tweak the general shape of the blind simply by bending the wire frame. At this point you can use your extra wire to fashion a roof if you need to.

Finally, put a chair, bucket or whatever you are going to use to sit on, inside the blind and set up a tripod and camera. Then cut an opening in the



wire frame for your camera lens, making sure to leave enough room to pan left or right, up or down. Leave one side of the squarish opening uncut so it acts like a hinge, allowing you to close the opening when you are done using it. The Fastgrass® material will part easily around your lens.

When finished using your blind, you simply pull up the stakes and roll it up like a carpet. A couple of bungee cords gathered around its waist make it an easy carry out, or you can store it right out there on the landscape for next time.



This photo of a mule deer was taken from the blind one winter afternoon in the Nebraska Sandhills.

A regular contributor to *NEBRASKAland Magazine*, Lincoln-based wildlife photographer Michael Forsberg's most recent project is a film collaboration with NET Television — "Great Plains: America's Lingering Wild" — based on Forsberg's book of the same name.



Elevators

Corn Country Cathedrals

Text and photos by Jon Farrar

Rail lines branched across Nebraska like blood vessels from an artery in the 1870s and 1880s, particularly in eastern and southern counties. Where there were not already towns, new ones sprouted from the rich farmland, usually spaced eight to 15 miles apart, close enough most farmers using a team and wagon could go to town and return home the same day.

Inevitably rising as the highest building on the skyline of these towns was the grain elevator, as farmers were beginning to produce more grain than needed to feed their livestock and began selling the surplus. These elevators and rail lines linked the farming community to regional markets as well as bringing them the necessities of life. When railroads were advancing into new territory they

often financed elevators, a short-lived practice judged as being illegal as it constituted a monopoly of two critical links in marketing grain. With each passing decade these tin-sided elevators have become less common. Once monuments to the land's fertility and the industry of the families who farmed it, today they are remnants of times past, of agriculture vastly different than today, reminders of what once was.

Grain elevators were built of materials such as tile blocks, but wood-crib elevators were less expensive and the type most commonly constructed in the late-1800s and first half of the 1900s. Among many meanings for the word "crib" is a bin for storing grain. Wood-crib elevators were utilitarian, almost stark structures with no frills, except, perhaps, the name of the



Crib-style elevators were once common in small towns across northern Nebraska, north of the Sandhills where hard ground was suitable for raising crops. Elevators were the connection between farmers and markets, and always located adjacent to a rail line.



Steel scoops attached to a long conveyor belt called a "bucket elevator" lifted grain high enough to be dumped in a bin. These discarded scoops were at a Fairbury elevator.

company painted high on one or more of the sides for all to see. They were designed for function and simplicity. Reduced to the simplest description they are a rectangular box standing on end, internally divided into separate bins (10 or more), with a receiving pit where grain was dumped and a "bucket elevator" – a long belt with cups or scoops to lift the grain high enough to be dumped in one of the bins. In the beginning the belt was powered by horses, then gas-powered engines, and eventually driven by electric motors. Most wood-crib elevators have a sloped-shoulder gable roof. The headhouse, the cupola atop the elevators, was where spouts directed

the grain into one bin or another. The operator selected the bin by turning a steel wheel from below. Exterior spouts were used to load rail cars. So efficient was the design that most wood-crib elevators looked much the same, varying largely in capacity and some having adjacent, attached storage buildings.

Grain can weigh up to 60 pounds a bushel. To contain the enormous lateral pressure of a bin full of grain, the elevators were built hell-for-stout. Depending upon the size of the elevator the lower walls were constructed of either 2-by-8 or 2-by-6 lumber stacked horizontally, so the walls were either six or eight inches thick. The boards

were nailed together; the union of two boards in one layer was always covered by the board above so there were no vertical seams, even short ones, to weaken the walls. Corners were interlocking like a log cabin. Higher parts of the elevators were often built of 2-by-4s – also flat, one upon another – as the lateral pressure was not so great. In some regions the structure was finished with a wood-siding exterior, but most in Nebraska were covered with sheet metal.

Some wood-crib elevators were small, holding about 10,000 bushels of grain. As years passed they grew in capacity, some large enough to

hold as much as 60,000 bushels. However, there was a limit to the size a wood-crib elevator could be built and the amount of grain that could be stored in one bin. That was at the core of their demise – agriculture outgrew them. Through the first half of the 20th century, most small farms were diversified with pastures for cattle, alfalfa for forage, and oats for the horses that powered farm machinery. As years passed, more land was planted to grain crops and increasingly more grain was produced than needed to feed livestock. By the mid-1900s, with irrigation and the application of inorganic fertilizers, yields incrementally crept higher to



Small elevators were often associated with mills, where grains were ground for flour, meal or livestock feed. Sometimes farmers would trade grain for a finished product or sell it outright to the miller. This one is located about four miles east of Guide Rock.

once unbelievable numbers of bushels-per-acre.

Harvesting equipment had also changed – shelled corn poured from harvesting equipment into trucks and was taken to steel bins on the farm or directly to the nearest elevator. The need for larger storage structures grew with the ever-increasing yield

of the land. During the 1950s and 1960s, more and more large-capacity concrete elevators were being built. Even an average-sized, concrete silo elevator had the capacity to replace 15 or more wood-crib elevators, and some significantly more than that. As livestock vanished from many farms, all harvested grain was sold

on the market. Even more land was put into row-crop production after the expansion of center-pivot irrigation beginning in the 1970s.

Today most farms have steel bins for storage and driers to reduce the grain's moisture content. Ear corn air-drying in wood or wire-mesh cribs became novelties. The mobile shellers that

once went farm to farm emptying the cribs vanished. There was no longer any need for a good terrier on the farm to catch and kill the rats as they squirted out from the cribs as they were emptied.

Large wooden barns once found on nearly every farm were the first



Most surviving elevators and mills are boarded up. Gone is the hustle and bustle of grain being delivered and finished products being loaded on wagons by the sack load.

to begin vanishing from Nebraska's farm-country landscape. They had become obsolete – their lofts no longer filled with hay, their stalls no longer filled with work horses or milk cows. While many loved having the old barn on the place, they were expensive to maintain: the exterior walls required periodic painting and replacing the

wooden shingles was cost prohibitive. Some barns weathered, leaned ever more precariously and finally collapsed from benign neglect. Some were methodically disassembled to salvage the lumber. Some became practice fires for the local volunteer fire department.

Wood-crib elevators, because of their massive construction and sheet-



The little town of Abdal northwest of Superior was plotted in 1899, but before the town existed there was a crib elevator, serviced by the Kansas-Nebraska Railway Company. The original elevator could hold six railcars of grain. Today, a farming family owns it.

metal exteriors, had the potential to last far longer than wooden barns unless they were destroyed by a fire that was spark-ignited in their dust-filled chambers. Once abandoned, these elevators could have endured for decades – unless nails holding the exterior sheeting in place rusted away or were worked free by relentless winds creeping under the metal sheeting, peeling them away a section at a time. Once the wood walls were bared and exposed to the elements, their life expectancy was much diminished.

And so, like the old wooden barns,

wood-crib elevators dwindled in number – lost to fires and not rebuilt, destroyed to make way for larger, concrete-silo elevators, or removed because they were no longer needed and considered an eyesore. Most of those remaining today are filled only with dust and pigeons, but some are still used as part of larger grain storage complexes of steel bins and concrete silos, and dwarfed by them. A few were purchased by farmers or a farming corporation and used privately where they stood or moved. Today, a wood-crib elevator that once was large enough to serve a whole

farming community is about right for a corporate farm. Here and there, a few of the old elevators were converted into unique houses.

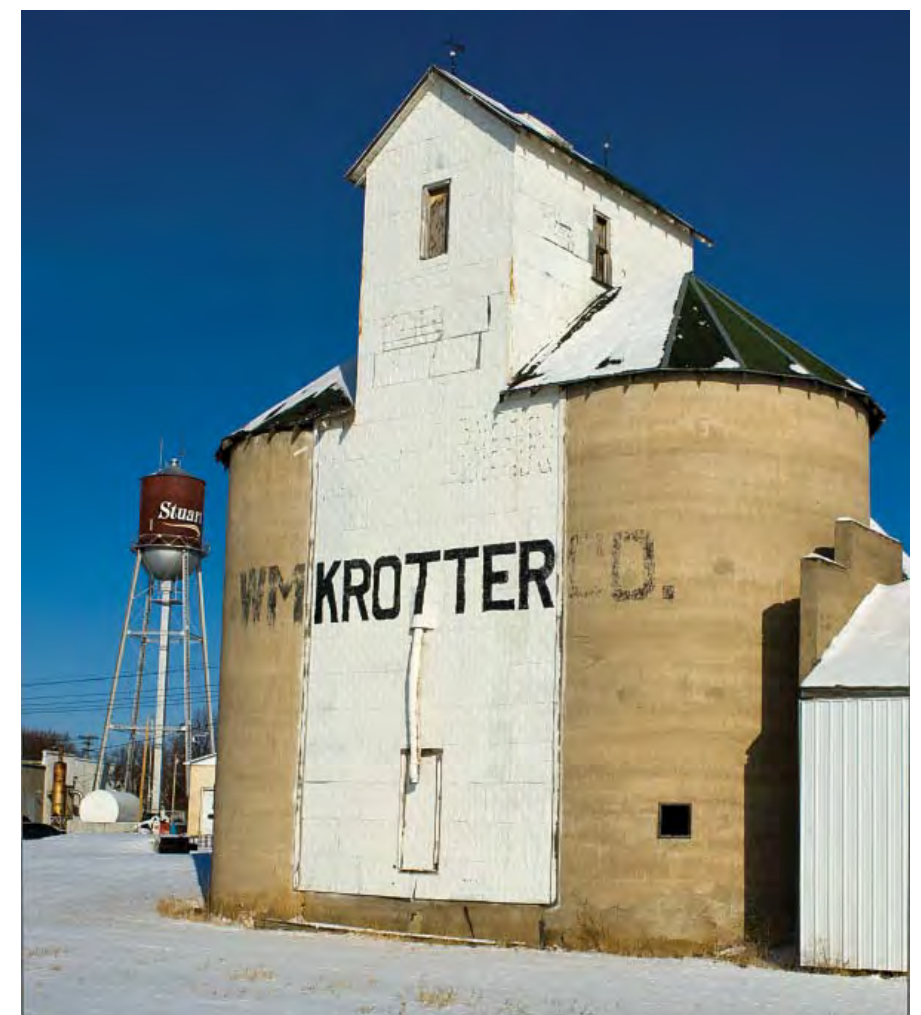
By the 1970s, many minor rail lines had been abandoned, isolating small town elevators and leaving transport by trucks the only means to move grain to markets. And as small towns began to wither, there was even more incentive to abandon the small elevators. Today, some wood-crib elevators stand isolated, the once-accompanying town and rail line gone.

But they still persist, here and there. Finding them is almost like a scavenger

hunt. Drive U.S. highways 275 and 20 west from Norfolk and you'll find them – Oakdale, Neligh and Stuart. Or drive U.S. Highway 136 or Nebraska Highway 8 that parallel Nebraska's southern border – Fairbury, Hubbell, Chester, Byron, Hardy, the ghost town of Abdal northwest of Superior, Nelson, Guide Rock, Red Cloud, Inavale and Riverton. Or pick a small town on a road map and go looking – Pawnee City, Humboldt, Shubert, Elk Creek . . . It won't take long to find a gathering of elevators in Crawford. There are wood-crib elevators along State Highway 2 northwest from Grand



Tin-covered crib elevators were virtually indestructible and could have lasted decades. Their greatest threat was grain dust being ignited by a spark or careless smoker.



The design of nearly all crib-style elevators was similar, but varied in size and adjacent storage structures. This one in Stuart is flanked on both sides by concrete tubes.



Left: Jim Hyberg dumps a truckload of corn into a receiving pit so it can be carried up into one of the Shubert elevator's bins. Today most crib elevators stand empty, reminders of times gone and now simply roosting and resting places for pigeons.

Island – Cairo, Mason City, Ansley, Broken Bow, Merna and Anselmo. And if you go looking where you don't expect to find them, you might. It seems odd to find a grain elevator in the heart of the Sandhills, where raising cattle, not growing corn, is how the land is used, but there it is in Mullen with a raft of pigeons on the roof soaking up the morning sun. It is, probably, a reminder of the early history of the region when farmers were granted free land under the Homestead or Kinkaid acts, when small fields were scratched in dry valleys and for a few years produced enough grain not only for home use but to sell. The hopeful experiment did not last long, and by the 1920s nearly all of the farmers and fields of grain were gone.

One can imagine the scene at the foot of a small town's wood-crib elevator at harvest time in the early-1900s, a relatively dust-free and quiet

setting, farmers bringing the reward of a growing-season of labor to sell, their teams tied off, talking as they wait their turn to dump their grain, some no doubt exaggerating how many bushels per acre of corn they grew.

In time, tractors pulling wagonloads of grain and ancient old trucks kept mostly for that purpose replaced the horse-drawn wagons. The scene today is America as it is today – all about efficiency and profit. Giant concrete silo elevators loom over some small towns; semi-trucks belching diesel fumes are lined up for a block or more, waiting to dump grain or haul it away; the drone of dryers is constant; and women only hang their wash to dry when the wind is not blowing grain dust their direction.

Those who fancy old wood-crib elevators sometimes, rather romantically, call them "prairie skyscrapers," "sentinels of the prairie" or "prairie cathedrals." Referring

to them as prairie anything is contradictory, however, as it was the plowing of the prairies that created the farmland that filled the elevators with grain. Perhaps the old elevators are the prairie's tombstones.

Some attention has been paid to the Great Plains' vanishing wood-crib elevators. Saskatchewan is particularly proud of theirs, as is Kansas. Nebraskans do not seem to see much historic value in old and unused elevators, although the Ithaca grain elevator in Saunders County, built about 1890, is on the National Register of Historic Places. More should be preserved – they are a part of the agricultural history of the state. It could be argued they are a more important symbol of what we were in Nebraska than another old house in a town. At least some are worth keeping, and maintaining them would be inexpensive. But, nostalgia does not pay the bills. ■

THIN TO WIN

By Justin Haag

When massive wildfires struck northwestern Nebraska in 2012, Nebraska's oldest state park became a crucial point in the fight against them. Thanks to a decade-long forest management project at Chadron State Park and the decision to light a backfire there, one of the worst fires was halted, saving the Pine Ridge from further destruction.

Card players cutting the deck often recite the phrase “thin to win” in hopes of being dealt a good hand. In the ponderosa pine forests of northwestern Nebraska, “thin to win” has been used to get the upper hand in a bigger game.

Thinning has become the keystone management tool in western forests that have become increasingly susceptible to wildfires when extended periods of drought grip the landscape.

The benefits of thinning overgrown ponderosa pine forests – and an example of what happens when they’re allowed to grow unchecked – were evident in western Nebraska last year as a massive late-summer wildfire burned seemingly out of control. After starting in the rugged, forested canyon country 15 miles southeast of Crawford, the raging West Ash Fire, as it was known, blazed northeast across the drought-stricken, tinder-dry



Joe Blazek, assistant superintendent of Fort Kearny State Park, cuts down a burned tree near the cabins at Chadron State Park in February. Commission crews worked through the winter to remove trees that could pose a hazard to park visitors or buildings after last year's big wildfires.



PHOTO BY ERIC FOWLER

countryside and entered Chadron State Park just a little more than two days later.

Fire officials say forest conditions at the park, where countless trees had been thinned in recent years in order to reduce fuel loads for just such a situation, were much better than those in most of the Pine Ridge, where largely unmanaged forests and extremely dry conditions had created dangerous fire conditions. The park's tree management strategies ultimately helped keep the blaze from jumping U.S. Highway 385 and racing the nine miles to Chadron through the area burned in the 2006 Spotted Tail Fire.

Joe Lowe of Rapid City, S.D., the incident management team commander who supervised the inter-agency battle against the fires near Crawford and Chadron, said one of the primary goals early on was saving the park and keeping flames from crossing the highway.

With the West Ash Fire quickly approaching, officials decided it would be best to start controlled fires in the park to reduce ground fuel, protect structures and keep the wildfire from having its way with the area as it had already done with much of the ridge.

Had the past forest thinning not occurred, however, it would have been

difficult to keep even a controlled burn from erupting and making its way into the area burned by the Spotted Tail Fire. Fires in areas burned in the past can be extremely difficult to manage – downed timber not only adds to the fuel load but also make such areas virtually inaccessible for equipment.

“If that fire would have gotten into the old burn scar, it would have burned with a vengeance and it would have been very hard to keep it out of Chadron,” Lowe said. “We drew a really hard line to make sure that fire did not jump (Highway) 385.”

The back-burning, which was started outside the park's scenic loop

The scars of three forest fires, and the varied behavior of the one that burned through the park last summer, can be seen from a hilltop above the Sawmill Shelter in Chadron State Park. The recent fire burned hot enough to kill the needles on some ponderosa pines. Others were torched black. But in some places, such as on the hillside at right center in this photo, thinning efforts during the past 10 years cooled the flames enough that trees remain green and should survive. The hillside at top left has been mostly free of trees since the Dead Horse Fire in 1973. The pines that covered the distant hillside at top center were destroyed in the Spotted Tail Fire in 2006.

Major Pine Ridge Fires (500 acres or more)

- 1

Five Points Fire

Early 1960s, 2,000 acres.
- 2

Dead Horse Fire

July 1973, 3,500 acres.
- 3

Cunningham Creek Fire

September 1976, 2,500 acres.
- 4

McIntosh Fire

July 1985, 3,150 acres.
- 5

Fort Robinson Fire

July 1989, 48,000 acres.
- 6

Belmont Fire

August 1989, 2,500 acres.
- 7

Corkscrew Fire

June 1990, 1,000 acres.
- 8

Unnamed fire

Spring 2000, 1,000 acres.
- 9

Sawlog Fire

September 2000, 1,278 acres.
- 10

Lunenburg Fire

September 2000, 800 acres.
- 11

Unnamed fire

March 2006, 1,000 acres.
- 12

Unnamed fire

March 2006, 600 acres.
- 13

Spotted Tail Fire

July 2006, 17,899 acres.
- 14

Roberts Fire

July 2006, 10,079 acres.
- 15

Thayer Fire

July 2006, 29,466 acres.
- 16

Rudloff Fire

July 2006, 8,379 acres.
- 17

Soldier Creek Fire

August 2007, 3,586 acres.
- 18

Cottonwood Fire

June 2012, 3,948 acres.
- 19

Douthit Fire

August 2012, 29,731 acres.
- 20

West Ash Fire

August 2012, 58,836 acres.
- 21

Wellnitz Fire

August 2012, 48,615 acres in Nebraska, 28,961 acres in South Dakota.

Key

Fires prior to 2012

Fires in 2012

NGPC owned or managed areas

US Forest Service

Major streams

IMAGERY (ESRI), FIRES (USFS & NGPC – COMPILED BY TRISHA SCHLAKE), MAP CREATED BY SUDHIR PONNAPPAN



PHOTO BY DAVE KINNAMON

drive, was successful for the most part, but some hot ashes were blown hundreds of yards by fierce winds, sparking flames within the loop and placing the park’s 22 cabins, some constructed as far back as the 1930s, and other structures in danger. Park superintendent Dave Kinnamon, who was among the dozens of Nebraska Game and Parks Commission employees involved in fighting the Pine Ridge wildfires, said he feared Commission crews watch a backfire started by fire officials burn toward the Cabin Trail at Chadron State Park in August 2012.

every cabin would be lost at that point. Thankfully, an air tanker carrying 12,000 gallons of fire retardant arrived in time to douse the park structures and stray flames that had jumped the highway. When the smoke cleared, green needles could still be found hanging on many of the park’s pines, indicating that the trees still had some life. This was in contrast to much of the forest between Chadron and Crawford, which was left charred from turf to treetop. Lowe is among the many longtime observers who say 2012 was the worst year they have witnessed for battling

wildfires. From June through October, nine large fires – most started by “dry” lightning (storms that bring lightning but no rain) – burned 271,514 acres across the state, from the Niobrara River Valley of north-central Nebraska westward. The damage was particularly extensive in the Pine Ridge, with 163,000 acres scorched by the Wellnitz Fire north of Hay Springs and the West Ash and Douthit fires near Chadron and Crawford. Five homes burned and hundreds of rural residents were evacuated as a precaution. At one point, the West Ash fire moved eight miles in 14 minutes.

“It was extremely dry and extremely hot for so long. We had explosive fire conditions,” said Lowe. “That fire ran hard for many days in the timber stringers.”

Trees “Pining” Away

In Nebraska, where only two percent of the land is labeled forest, special value is given to tree-covered areas and these places are becoming even more cherished as time goes by. Doak Nickerson, Nebraska Forest Service district forester, said the Pine Ridge forest has gone from a quarter-

WILDLIFE AND WILDFIRE

Shortly before a massive wildfire burned through the Ponderosa Wildlife Management Area near Crawford in August 2012, a trail camera captured images of a mountain lion and her two kittens drinking at a water tank. What you won't see if you watch a video produced with those and other images by the Commission is the scene during the weeks following the fire when only one of the kittens returned to the tank. This evident separation of the family group is just one documented case of how wild animals were affected by last summer's fires, said Todd Nordeen of Alliance, district wildlife manager for the Commission.

Some evidence of the wildfires' effects were painfully obvious, including scattered deer carcasses along fence lines and in the timber, as well as dead wild turkeys near roost trees. It is virtually impossible, however, to calculate how many birds and mammals died as a result of the fires, said Nordeen.

Countless small mammals, such as rabbits and squirrels, were probably not able to stay ahead of the fires, especially considering the incredible speed of the flames in some areas. Others animals fared better: Data from tracking collars showed that some bighorn sheep traveled ahead of and around the flames, moving back into their home range when the fires were out. All the sheep with collars were found alive, but the fate and whereabouts of some sheep that didn't have collars remains unknown.

Nordeen said much of the regions' wildlife moved to unburned areas after the fires. Some elk in the Hat Creek area north of Harrison, for instance, are believed to have moved into Wyoming. When the burned areas turn green again, he expects many of the animals to return.

Despite the loss of tree cover, Nordeen said the fires will actually help some species. Birds such as red-headed woodpeckers, for example, thrive in areas of dead timber, and both bighorn sheep and mule deer prefer open country to thick forests.

"As devastating as it is – you often hate to see the loss of those older trees – fire is a natural event that happens every so often," said Nordeen. "You set back that (habitat) succession and it grows again."

To see the video of the mountain lion family at the water tank, go to www.youtube.com/NGPCnews and look for "Wild Cats and Wild Fire in Nebraska."



PHOTO BY ERIC FOWLER



PHOTO BY BEN WHEELER

Some wild turkeys, including this one found at Ponderosa WMA, were among the wildlife unable to escape last year's wildfires.

million acres to half of that in five decades, and data indicates that the Pine Ridge now has fewer acres of ponderosa pines than does the Niobrara River Valley to the east.

"The fire season of 2012 carved three huge holes in our forestry source in the Pine Ridge and didn't leave a lot behind," he said. "We're losing the Pine Ridge. If we can't right this ship, we're going to lose it."

Nickerson wishes more of the forest had been thinned the way Chadron SP has been, but noted the fires could have been worse. The best thing that ever happened to the Pine Ridge forest, he said, was the 20-year stretch of market demand for lumber beginning around 1990 – many trees were cut down then, decreasing the forest's fuel load. Because of the recent economic downturn and a glut of lumber entering

the market from states suffering damage done by mountain pine beetles, however, that demand has all but disappeared in recent years, as have most thinning operations, which were subsidized or even paid for by timber sales.

Nickerson has been promoting other uses for forest materials, including renewable energy. He would like to see more of the excess materials converted to ethanol or burned in biofuel operations. If it's going to burn, he said, it is better for it to burn in a boiler than a forest fire. It's a tough sell, but he says it makes sense, could be profitable and is better than doing nothing.

"When you stand back and take a look at the big picture and the burn intensity in 2012, you don't have to go too far from the park to see what

happens in unmanaged forests," said Nickerson. "A lot of the Nebraska National Forest, quite frankly, had too many trees per acre. That's OK as long as you don't have something like what happened in 2012."

Mike Groenewald, Nebraska Game and Parks Commission horticulturist, and Nickerson were among those who spearheaded the effort to thin the park at the turn of the century. Groenewald noted that of the 750 burned acres in the 770-acre park, only 30 burned hot enough to die immediately.

"We'd done a lot of thinning work, and I think that is why we didn't lose every tree and structure in the park," he said.

According to Groenewald, approximately 400 acres of the park were thinned from 2001 through 2010. While many considered it a bold move

at the time – it's hard for some people to realize that cutting down trees can be a good thing – hindsight has proven the project wise. Although some groups of trees torched, a crown fire, one that leaps from tree top to tree top, couldn't sustain itself due to the tree spacing.

The park certainly didn't escape unscathed, and neither did other Commission owned lands in the Pine Ridge – the Bighorn and Metcalf wildlife management areas east of Crawford and north of Hay Springs were completely burned, while the Chadron Creek and Ponderosa WMAs south of Chadron and east of Crawford, respectively, were between 30- and 45-percent charred. Wildlife in the area was also affected (see sidebar).

What is still uncertain is how many of the trees still carrying green needles will survive. Temperatures exceeding 100 degrees before and during the fires had the pines starving for moisture, compounding the severity of their exposure to the fires. Nickerson said the flame length and heat generated from the grass below the trees was unprecedented in his years of experience.

Post-fire tree survival across the Pine Ridge may hinge on the amount of area precipitation this spring and summer, but forecasters aren't placing many bets on rain.

Groenewald said trees at the park suffered varying degrees of damage and that those that have 70 percent of their green needles remaining have a solid chance of survival. Even those pines, however, were exposed to extreme heat and many are circled with charred bark several feet high.

"We have a lot of trees with 20- to 30-percent green top crown," he said. "Whether they're going to live or not – I'm leaning toward they probably won't if we don't get some moisture. If we get some moisture, some probably will. Those that are 50-percent green, it's just anybody's guess – it's probably a 50-50 thing on whether or not they will live."

The true extent of the damage will be known sometime around the beginning of June, said Groenewald. He is hoping 40 percent of the trees survive. Officials will have a better idea of what steps are needed for rehabilitation this summer.



PHOTO BY ERIC FOWLER



PHOTO BY ERIC FOWLER

Photos taken near the Spotted Tail Shelter at Chadron State Park in January 2011 (top) and October 2012 give a before and after view of the park and the hills to the south following the Ash Creek Fire in August. It will be June before it is known how many of the trees that were still green and had a chance of surviving actually would.

Looking Forward

Despite the challenges it faces, Chadron State Park has already begun its road to recovery.

Groenewald organized Commission crews in January and February to remove hundreds of the park's burned trees for safety reasons around cabins, roads and trails. Plans are being developed to replace fencing that was lost, and the park still has its cabins, miles of trails and countless pine trees. New plumbing, air conditioning and roofing projects for the cabins will make them even more appealing when the park begins its official summer season Memorial Day weekend. With a little moisture, park-goers will be greeted by a blanket of new vegetation

this spring.

Regardless of how well the trees bounce back, the summer of 2013 marks a new beginning at Nebraska's oldest state park and officials say it is much better off because of past management decisions and plans for the future. It will undoubtedly retain some scars from the monumental battle of 2012, but officials expect it to prosper despite the hand it's been dealt. ■

Justin Haag recently joined the Commission as a Public Information Officer and NEBRASKAland regional editor. He is based out of Chadron.



Banking on Angler Access

By Eric Fowler

Opportunities Abound Across State



Angler Access Program. A list of about 100 potential projects was created with input from the public, park and fishery managers and prioritized to ensure a geographic mix to benefit anglers throughout the state. Waters close to cities, where projects would benefit more people, are a priority. The list includes adding access features to current and planned aquatic habitat projects, going back to lakes where work has been completed, and improving or gaining access at lakes where fishing was fine without the help of that program.

In cases where fish are a short cast from shore, simply making it easier for people to get to the shoreline is enough. That work could include developing trails from parking areas to prime spots, or improve existing trails that anglers have already blazed. Those trails might lead to breakwaters built of large rock by the Aquatic Habitat Program that the access program can surface with concrete or crushed rock to make them easier to walk on and fish from. In some cases, this surfacing does not end on top of the breakwaters, but extends down the sides, easing access to the water's edge. Similarly, selected areas of shorelines armored with large riprap are also smoothed with smaller rock.

Future trails may be similar to the loop trail being built around Lake No. 17 at Fremont Lakes SRA to improve access to the south side of the lake. Previously, anglers had mostly fished the steep north bank by the parking lot. Some trails will lead to locations that obviously hold fish, others might be created to guide anglers within casting distance of brush piles or other underwater habitat created under the Aquatic Habitat Program.

Steep, high banks at the waterline of some lakes are another impediment the Angler Access Program tries to correct. In some cases, a narrow strip of dry land is bounded by water on one side and a cliff on the other, making it impossible to complete a full backcast, not to mention difficult to reach.



Shelby Parrott of Lincoln holds a bluegill caught at Holmes Lake in Lincoln. The large rocks that armor the sides of the breakwater she is standing on, as well as other breakwaters at the lake, were smoothed with smaller crushed rock to make it easier for anglers to reach the water's edge.

"You've got to be a young spry kid to crawl down them and hopefully you'll get back out," Porath said. "Lake 1 at Louisville is a great example of that. But anglers had scrambled down a steep bank there for years because it was a good little fishing area. So we clipped the bank, put in a set of stairs and built a pier right next to the water. Now it's easy to get to the water and easy to fish along the shoreline."

That pier is one of two permanent

piers built on Lake 1 at Louisville. Another covered pier was built on Lake No. 2. Porath said that while piers built atop pilings driven into the lakebed are longer lasting, they are more expensive to build. For that reason, floating piers are used on many lakes where feasible, allowing the program's



If a fish swims near the shore, but no one can get there to catch it, does it matter?

Not being able to fish from shore is rarely the case at any of Nebraska's public waters, but for some bank anglers it may seem that way: Getting to prime stretches of shoreline can sometimes require rock climbing or bushwhacking, something many anglers can't or aren't willing to do.

The Angler Access Program,

launched by the Nebraska Game and Parks Commission in 2010, is working to fix that problem by using a variety of techniques ranging from building fishing piers to grading shorelines to make it easier for land-bound anglers to get to the fish.

Mark Porath, Aquatic Habitat Program Manager for the Commission, said the access program was created to "fix a good problem" created by the Aquatic Habitat Program, which

since 1996 has invested more than \$45 million to improve fish habitat in 60 Nebraska waters, primarily older reservoirs. "We've created some great fisheries, but we haven't always made it very easy to fish them," said Porath.

In 2009, the Nebraska Legislature approved a plan to increase the price of the Aquatic Habitat Stamp, required of all anglers, from \$7.50 to \$10. The approximately \$400,000 in additional revenue each year is earmarked to the

Access Plan

There are numerous ways to make it easier for bank anglers to get to fish. Here are the ones the Angler Access program focuses on:

Recently Completed Projects and What Was Done:

Louisville SRA, 3 lakes (3, 5); Burchard WMA (1, 2, 3, 4, 5); Carter Lake (1, 4, 5); Swan Lake (6); Valentine NWR (3)

Projects Under Construction:

Fremont SRA, 15 lakes (2, 3, 4, 5); Arnold Lake (1, 3, 4, 5); Bowling Lake (3); Victoria Springs SRA (1, 2, 3, 5); Harlan County Lake, Gremlin Cove (3, 4, 5)

Projects on Deck:

Lake Helen (1, 3, 4, 5); Conestoga SRA (1, 2, 3, 4, 5); West Gothenberg WMA (2, 3, 5); Brady WMA (2, 3, 5); West Brady WMA (2, 3, 5); West Maxwell WMA (2, 3, 5); Fremont Slough WMA (2, 3, 5); Birdwood WMA (2, 3, 5); Hershey WMA (2, 3, 5); Sandy Channel WMA (2, 3, 5)

1. Vegetation Management:

Create lanes of open water through the submergent aquatic vegetation that rings some lakes, especially following Aquatic Habitat Program projects, so anglers don't have to fight through the "weeds" during their retrieve.

2. Trails: Paved trails that serve hikers and bikers are more likely to be built by cities and other entities partnering in lake rehab projects, but the Angler Access Program can sometimes help build permanent trails to get anglers to good fishing spots like breakwaters, including some that meet ADA requirements. Mostly, however, the program

improves primitive trails that anglers have already blazed to prime fishing locations or forges trails to new fish structures.

3. Fishing Piers: Piers help anglers reach the deep water where fish are found most of the year, and in some cases get them to the outside edge of the weedbed that often holds fish. Some piers are built on pilings, but others are floating structures.

4. Breakwaters and Hard Points: Like piers, these structures get anglers closer to deep water, but because of their cost, few are built solely for access. Where they are built for Aquatic Habitat Program purposes, however,

they are often improved for angler access by surfacing the tops and, where appropriate, the sides.

5. Reshaping Shorelines: Some good fishing spots are hard to reach or impossible to cast from because of steep banks. The Angler Access Program reshapes some of these areas, making them easier to reach and fish from.

6. Easements: There are numerous public lakes in the Sandhills that are surrounded by private land. The Angler Access Program works with landowners interested in allowing access, developing trails, roads and, in some cases, boat launches. ■



PHOTO BY ERIC FOWLER

John McIntyre of Yutan shows off a nice stringer of crappies caught from a breakwater at Lake Wanahoo State Recreation Area. The breakwater and the pier that tips it are among the features benefitting bank anglers that were included in the design of the lake and are also part of the Angler Access Program.

funding to go further. Most of the piers, whichever type they may be, are accessible to people with limited mobility, including those in wheelchairs.

Piers themselves can attract fish, which are drawn to shade they provide and the food web that begins with plant growth on the pilings. Commission staff make them even more attractive by

stuffing trees under the piers. “That’s really attractive to bluegill and other panfish, and then the predators like largemouth bass come in at the same time,” said Porath.

When ponds and reservoirs fill, shorelines often erode and leave a stretch of shallow water that may be too far to cast across. Piers, breakwaters and hard points all get bank anglers closer to deep water which can hold fish year-round.

They can also get anglers past the aquatic vegetation that rings many waters

following a habitat project, thanks to improved water quality. “What’s considered too much vegetation by a fish manager is completely different than what’s too much vegetation by a fisherman,” said Porath. Aquatic vegetation is critical to a healthy fishery, but when curly leaf pondweed, for example, grows from the shallows to depths of six or eight feet and creates a band of vegetation around an entire lake, anglers tend to have problems.

“You’ve got to throw your bobber out a long way to get past that,” said Porath. Anglers skilled and brave enough to attempt to cast to the outer edge that often holds fish get frustrated at having to clean weeds off their hooks or losing fish they try to drag back through them.

Piers and breakwaters can get anglers beyond that weedbed, allowing them to fish the outer edge along with the

Last summer, contractors built this covered pier on Lake No. 2 and two others on Lake No. 1 at Louisville State Recreation Area to give anglers better access to deep water.

PHOTO BY JEFF KURRUS



“A lot of times we can fix a lake, but if we just have a single access point around the boat ramp and 90 percent of the shoreline is inaccessible, you’re really only going to improve that habitat for the boat fisherman.”

— Mark Porath, Aquatic Habitat Program Manager

boat anglers. Another way the access program helps bank anglers deal with aquatic vegetation is by creating gaps in those weedbeds, primarily by laying down fabric and rock barriers that inhibit their growth. These strategically placed openings also create additional edge cover for fish to hide in.

The Commission has also used Angler Access funds to help the U.S. Fish and Wildlife Service install fishing docks at three lakes on the Valentine National Wildlife Refuge, with two more planned. These docks are long enough to get anglers beyond the cattails that typically ring those Sandhills lakes.

Finally, the Angler Access Program

works to gain access to publicly owned waters that are surrounded by private land. This especially applies to meandered lakes in the Sandhills. “Some landowners are interested in allowing public access, but to build a road around there to get there to make a service launch, that’s difficult,” said Porath. “With the Angler Access Program we can enter a long-term agreement with them to do that.” The program has already paid for a lease agreement with a landowner to allow access to Swan Lake south of Atkinson in Holt County.

Admittedly, easements such as that one, which only opens a small stretch of a lakeshore to bank anglers, are of

greater benefit to boat anglers who can then fish the entire lakeshore. The majority of access program projects, however, will help level the playing field a bit for bank anglers.

“A lot of times we can fix a lake, but if we just have a single access point around the boat ramp and 90 percent of the shoreline is inaccessible, you’re really only going to improve that habitat for the boat fisherman,” said Porath. “The people that are going to fish right at the boat ramp don’t get to take advantage of the great fishing across the entire lake. So what we’re trying to do now is incorporate fishermen-friendly ideas with our fish-friendly ideas.” ■



PHOTO BY DOUG CARROLL

Hard point structures, such as this one at Bowling Lake in Lincoln, help anglers get closer to deep water and, when possible, are surfaced so that mobility-impaired anglers can use them as well.



We All Benefit

New program helps landowners and the hungry.

By Teresa Lombard, Hunters Helping the Hungry Coordinator

In Nebraska, good land stewardship resonates with almost everyone. Farmers and ranchers in particular value keeping a good balance between agricultural uses and maintaining healthy wildlife populations.

Landowners, however, are often challenged by all the details of true stewardship, particularly when it comes to the deer population on their land. The best way to control deer is through hunting, but what's a hunter to do when, for the overall health of the land and the herd, more deer need to be removed than can be easily consumed? It's unethical (and illegal) to waste deer meat, and while many hunters are willing to share their excess harvest, it can be a challenge to make the connection between the person harvesting a deer and people who could really use the meat.

Nebraska's new Hunters Helping the Hungry program is helping to solve that problem. Created by the Nebraska Legislature with the passage of LB 928 in 2012, Hunters Helping the Hungry uses donated money to pay selected meat processors to process deer given to the program by hunters. Charitable organizations then pick up the processed venison and distribute it to needy Nebraskans across the state. Hunters Helping the Hungry is funded entirely by tax-deductible donations that are made throughout the year by hunters, businesses and individuals.

One individual, who donated deer at Belschner Custom Meats in Amherst and wanted to remain anonymous, offered the following perspective, "On our property there is an overpopulation of deer, and we can't possibly eat all the deer we would like to harvest. In the past we have donated deer to individuals, but this year we learned that we could donate deer to the program and not pay processing costs. This worked great because we can't afford to pay for all the permits and all the processing to really manage the deer on our land the way we would like."

This landowner estimated that deer caused \$20,000 in crop damage per year to their farm and said that over the last five to 10 years her family and the hunters they've allowed to hunt on their land have probably taken 250 deer off of their land – almost all does.

"We generally only harvest one buck per year – all of the deer that we donated to the program this year were does. This new program makes it much more affordable for landowners to harvest more deer, and Belschner's provided a great service by providing the processing for the program."

Last November, 600 pounds of venison were provided to the Open Door Mission in Omaha, and its president, Candace L. Gregory, was very appreciative:

"Open Door Mission provides 816 beds and more than 2,000 hot, nutritious meals to the hungry and homeless daily. We are very grateful to the hunters whom not only have a love of hunting for themselves, but are also willing to provide for others, as well. The venison that has been



Donated venison can be substituted for beef in most recipes and fills an important nutritional void in some people's diets.

donated through the Hunters Helping the Hungry program has been used to make a variety of menu items and provide healthy nutritious meals in our community kitchen."

Last fall marked the inaugural season for the program. Some highlights for the program's first year include:

- More than \$89,000 donated to the program by hunters, businesses and individuals
- 213 deer donated
- An average yield of 54 pounds of processed meat per deer, for a total of 11,536 pounds of venison
- 16 different charitable organizations helped distribute the venison
- 11% of the 188 hunters who donated a deer donated more than one
- 21% of the deer donated were harvested on landowner permits
- 13% of donated deer were harvested using nonresident permits

If you would like to find out more about the program or help support it with a tax-deductible charitable donation, please visit www.OutdoorNebraska.org/hhh. Or, if you have a smart phone,

you can scan the code at the right to go directly to the Shop NGPC page on the Nebraska Game and Park Commission's web site to make a donation by credit card. ■



Have questions? Contact Teresa Lombard, Hunters Helping the Hungry Program Coordinator, at teresa.lombard@nebraska.gov.

from NEBRASKAland's Trail Tales magazine for kids

junior journal

interesting notes for readers of all ages

by Lindsay Rogers and Donna Schimonitz

A Fungus Among Us

by Dan Fogell, Herpetologist, Southeast Community College

Frogs are disappearing. Worldwide, entire species of frogs and toads are simply vanishing. At first scientists had no clue why. Maybe there were dangerous chemicals in their ponds. Recently we discovered the major reason frogs are disappearing: a fungus. It has a long scientific name, but we can call it chytrid (kit-trid).

Frogs are amphibians. Their skin is very thin and very leaky, so water easily moves back and forth across it. When frogs need water they just plop into a puddle or pond and absorb water like a sponge ... through their skin. This is how they get minerals, such as sodium and calcium. So the skin plays an important role in keeping frogs healthy.

The outside layer of frog skin is made of a protein called keratin (care-a-tin). It's the same thing your fingernails and hair are made from.

As it turns out, chytrid likes keratin. It infects the keratin cells

and damages the skin. So guess what? Damaged skin makes absorbing water and minerals very difficult. Without sodium and calcium, muscles and nerves – including heart muscles – do not function. So when frogs can't absorb these minerals, their hearts stop beating and their muscles stop working. And because frogs breathe through their skin, they may actually suffocate. Either way, they die.

Frogs can be infected by other frogs, water or wet soil, and chytrid can be carried from place to place on muddy boots. Another way it can spread is through releasing unwanted pet frogs in local ponds.

Are there ways that you can help? Yes! Tell someone – like your parent or science teacher – if you find a lot of dead frogs. Finally, if you have a pet frog, do NOT let it go in your local park. Frogs are too awesome for us to lose. 🐸

Amphibian Activity

Nebraska has mammals, reptiles, birds, insects, fish, plants and amphibians. Amphibians are animals that spend the first part of their life in water (like tadpoles) and the second half of their life on land near the water (like adult frogs).

Circle the animals below that are amphibians.



Woodhouse's Toad



Mountain Bluebird



Hognose Snake



Painted Turtle



Long-tailed Weasel



N. Prairie Lizard



Cope's Tree Frog



Lady Beetle



Bluegill (Fish)



Tiger Salamander

NATURE CALENDAR

- Sandhill cranes (and snow geese, Canada geese and whooping cranes) arrive to rest along the central Platte River: late-February through April
- Frogs and toads begin calling: late-March through the summer
- Watch for ticks!: late-March through June
- Look for morel mushrooms after a rain: April
- Bluegill fish begin spawning (mating): late-May



Based Chorus Frog (calling) photo by Dan Fogell

BOOKS/PUBLICATIONS/VIDEOS

NEBRASKA WILDFLOWERS. It's baaack ... ! Out of print for 21 years, the second edition of *Field Guide to Wildflowers of Nebraska and the Great Plains* is now available. This 6-inch by 9½-inch paperback is a must have for anyone interested in learning more about wildflowers in Nebraska and the Great Plains region and makes a great gift. To order this publication or to learn about other great gift ideas, visit NebraskalandGifts.com or call (800) 742-0056.

EXPLORE NEBRASKA art, history, culture and the great outdoors with a subscription to *Nebraska Life Magazine*. One year (six issues) for \$21 or two years (12 issues) just \$38. Phone (800) 777-6159, write us at 206 W Norfolk Ave, Norfolk NE 68702-0819 or visit www.NebraskaLife.com. Makes a great gift.

"BECOMING AN OUTDOORS-WOMAN" cookbook. 150 pages containing a variety of recipes, including traditional home cooking along with Dutch oven and wild game. \$9.75 plus \$2.50 shipping. Call (402) 471-5482, or go online to www.NebraskaBOW.com.

DOGS

DUCKDAWG RETRIEVERS - Raising exceptional yellow and black Labradors. 30 month written health guarantee. www.duckdawg.com North Platte, NE (308) 534-3659.

PREMIER GUNDOGS TRAINING KENNEL, Inc: Nebraska state licensed gundog training kennel specializing in training programs for waterfowl and upland hunting retrievers, spaniels, pointing Labradors and all gundog pointing breeds. Dale-Kris Taylor (402) 787-2048, www.premiergundogs.com.

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FISH/FISHING

GET YOUR FISHING PERMIT online today! Don't wait until tomorrow to enjoy Nebraska's great outdoors by going fishing with the family. To purchase a permit from the comfort of your own home, go online to www.OutdoorNebraska.org and click on *Purchase a Permit under Licenses and Fees*.

FISH FOR SALE. Catfish, largemouth bass, smallmouth bass, perch, crappie, bluegill, walleye, rainbow trout, grass carp, minnows. Pleasant Valley Fish Farm, 72645 U.S. Highway 83, McCook, NE 69001. (308) 345-6599.

NEBRASKA LAKE MANAGEMENT. Biological lake surveys, fish stocking, rough fish control, lake aeration, algae control, aquatic weed control. Rob Hofpar, Aquatic Biologist, licensed, insured and qualified. (402) 784-6005 Valparaiso - (888) 850-2460 www.nelakes.net.

CRESCENT LAKE FISHING - Blue Creek Lodge, located seven miles south of the best panfishing in the Sandhills of Nebraska. The lodge offers bass boat rentals for your fishing excursions and a five-star lodge with additional fishing and hunting on the property. Visit www.bluecreeklodging.com or call (308) 772-9912.

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VACATIONS/RESORTS

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Beautiful dining room with fireplace. Headquarters for General Nelson Miles, Wounded Knee Incident, 1890-91. 115 Main Street, Chadron, NE 69337 (308) 432-3380. www.chadron.com/oldemain.

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TAKE AN IN-STATE vacation this spring and summer or start making vacation plans for next fall! Close to home, affordable rates and locations with a view - visit a Nebraska state park or recreation area this year, even if only for a few days. Go to OutdoorNebraska.org and click on State Parks to look at the multiple options available and to make reservations at state park facilities located across Nebraska.

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◀ This is a photo of my great-grandfather, Glen Fruide, and his brother-in-law, Clyde Whittington. My great-grandfather and great-grandmother, Esther, used to own and operate a cafe and motel at Kingsley Dam in Ogallala back in the 1950s and '60s. As kids, we used to play under the basement stairs where he kept his hunting gear. I can still remember the aroma of rubber waders, gun shells and wooden decoys. Special memories.

The second picture, above, is of motel and cafe that they owned. It was taken from Kingsley Dam.

– Jeff Krull, Lincoln, Nebraska



▲ Taken in the early 1950s during the winter when carpenter work was scarce, my dad, Carroll Saunders, hunted, skinned, and sold coon hides. This is a section of the house where we lived south of Waterloo on the Elkhorn River. It's me with the black-and-tan hounds.

– Barbara Saunders Fowle, Grand Island, Nebraska

► This is a picture of my father, Frank Armstrong, who lived near Brunswick. The catfish was taken from the Elkhorn River by Neligh in the late-1940s.

– June Armstrong Wilgocki, Columbus, Nebraska



Send contributions to: Portraits from the Past, NEBRASKAland Magazine, P.O. Box 30370, Lincoln, NE 68503-0370. Or e-mail to tim.reigert@nebraska.gov. Photos should show people enjoying Nebraska outdoor activities, such as camping, boating, hunting or fishing, and must have been taken before 1980. We will give priority to unusual photos or activities. When possible, please include a story about the photograph and identify the people, places and approximate date it was taken. Photos will be returned.

A Great Plains Force of Nature

Wildfires – dangerous, sometimes ferocious and often impressive – are a fact of life on the prairie.

By Roger Welsch

I wrote these words hoping that they would make no sense whatsoever by the time you read them. We are now seven months into deep drought and live in constant fear of fire. Will some idiot up in town decide it's a good time to burn trash and start a fire that won't stop racing downwind until it hits Oklahoma? Or, as has happened before, will a careless driver toss a lit cigarette out of a car window and leave acres of death and destruction behind him?

Am I exaggerating? Well, yes, but no more than natural. A couple weeks ago Linda and I smelled smoke and ran from the house to find the air filled with a gray haze. We jumped into our pickup truck and drove to the upwind edge of our land, where we were relieved to find no flames. So we cruised town to see if a friend perhaps needed help fighting a fire there. Still nothing. We drove miles north and west out of town looking for the fire and then listened to our scanner for emergency fire calls. Still nothing. We got an answer to our curiosity later that night when we watched the 10 o'clock news and the meteorologist pointed out a long, narrow line of smoke on his radar screen, streaming right over Dannebrog – from a fire near Valentine, 200 miles away.

I should have known. My life work with pioneer history should have reminded me that homesteaders knew of approaching fires days in advance, fires moving faster than a man could ride on horseback. Omaha and Pawnee war parties signaled their impending return to the home village by setting a grass fire, which traveled downwind faster than they could travel on foot or even horseback. The belief was that white smoke showed they were returning with captives; black smoke, horses.

I have witnessed two prairie fires, one a planned burn, the other a terrible mistake. Both times I was amazed. Dry prairie grass doesn't just burn; it explodes. The roar is terrifying. Sheets of flame blasting into the sky and forward. God help anything in the path of the inferno. No wonder our friends, Sheila and Monte in Sheridan County, spent long, sleepless nights in their pickup trucks this past summer, sitting on hills on their ranch, watching for dry lightning strikes, hoping to head off any fires before they could go out of control and destroy livestock and fences.

On the frontier, homesteaders fought flames with what they had. There were, after all, no fire departments, little

water and never enough manpower. So if they had time they quickly plowed firebreaks to protect their farmsteads, but that was rarely successful because a full-fledge, prairie wildfire throws flaming torches high into the air and downwind, well ahead of the flames on the ground. In desperation, some settlers slaughtered valuable livestock (or earlier, buffalo), cut open the animal and dragged the carcass behind a galloping horse to wet the grass with blood. Burlap

bags were doused with water and everyone available, including the youngest children, swung the wet cloth in an effort to stop just enough of the flame to save a home and barn. Backfires could be effective if there was time and the flames were not so ferocious that nothing was enough to forestall destruction.

Men on horseback

backfired, ran for creeks and wet mud if any was near, or galloped at full speed laterally across the fire front in hopes of outflanking the flames. It was a desperate run – failure meant death.

When there are fires here today, we see the damage with sorrow but we can also see how fire was not just a symptom of these Great Plains but the very force that made them what they are. Where there are black, burnt acres in the autumn, the greenest grass appears in spring, fed by nutrients in the ashes, the ground warmed early by sun on the black surface. Another small comfort I get from a season of prairie fires is that I impress friends unfamiliar with the Plains by telling them that a Sandhills fire has burned 130 sections of land – 130 square miles! And then, after I pause for effect, I add that there was no loss of life and damage to only three structures in that massive blaze.

As our long tradition of tall-tales says so well, “Yep, Nebraska. No ordinary person can survive out here. I’m doing fine. Living in Nebraska is a little like being hanged – the initial jolt is fairly sudden, but after you hang there a while you kind of get used to it.” ■

Roger Welsch is an author, humorist and folklorist. For years he was a regular guest on CBS's Sunday Morning with Charles Kuralt. Welsch resides in Dannebrog, Nebraska, with his wife, Linda. He has appeared in NEBRASKAland Magazine since 1977.





Short-eared Owls

I was on an early evening hike with my two-year-old daughter last November through Martins Prairie at Pioneer Park Nature Center in Lincoln when we first saw the short-eared owls flying low over the tallgrass prairie.

I felt an immediate attraction to these beautiful raptors as I wanted to learn more about them. I also wanted to use their presence to help teach my daughter about the importance of protecting our local prairies – short-eared owls are grassland raptors, meaning that they are very likely to hunt, roost and nest in prairies such as the one found at Pioneer Park.

There were numerous trips out to photograph these birds. Each time brought a different experience. A couple of the most memorable were my first time there, when the two short-eared owls discovered me in my hiding spot in the tall grass on the side of a small bank overlooking the pond. Both circled no more than 10 feet above, trying to communicate with their scratchy, barklike sound. The second was this past winter about a week after a good snowfall. I carefully made my way to the fence posts on the north part of Martins Prairie, where I would always see them perched through my telephoto zoom lens. I moved a couple steps at a time, as I didn't know where they were at the time and didn't want to accidentally surprise and spook them. I finally came to a spot that I thought would be a good distance – 30 to 35 yards from their normal perching area – sat down and adjusted my camera settings. As I sat there, I could sense something observing me, watching as I fiddled with my gear. Slowly I raised my head up and looked towards the fence posts. Sure enough, there sat one of the “shortys,” with an almost unhappy look on its face. We both sat looking at each other for 30 to 40 minutes until its hunting friend showed up, a northern harrier.

Adrian Olivera
June 29, 2012



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