



Black-eyed Susan's stand against the warm evening light of late-June in northern Lancaster County. Photo by Bill Hager.

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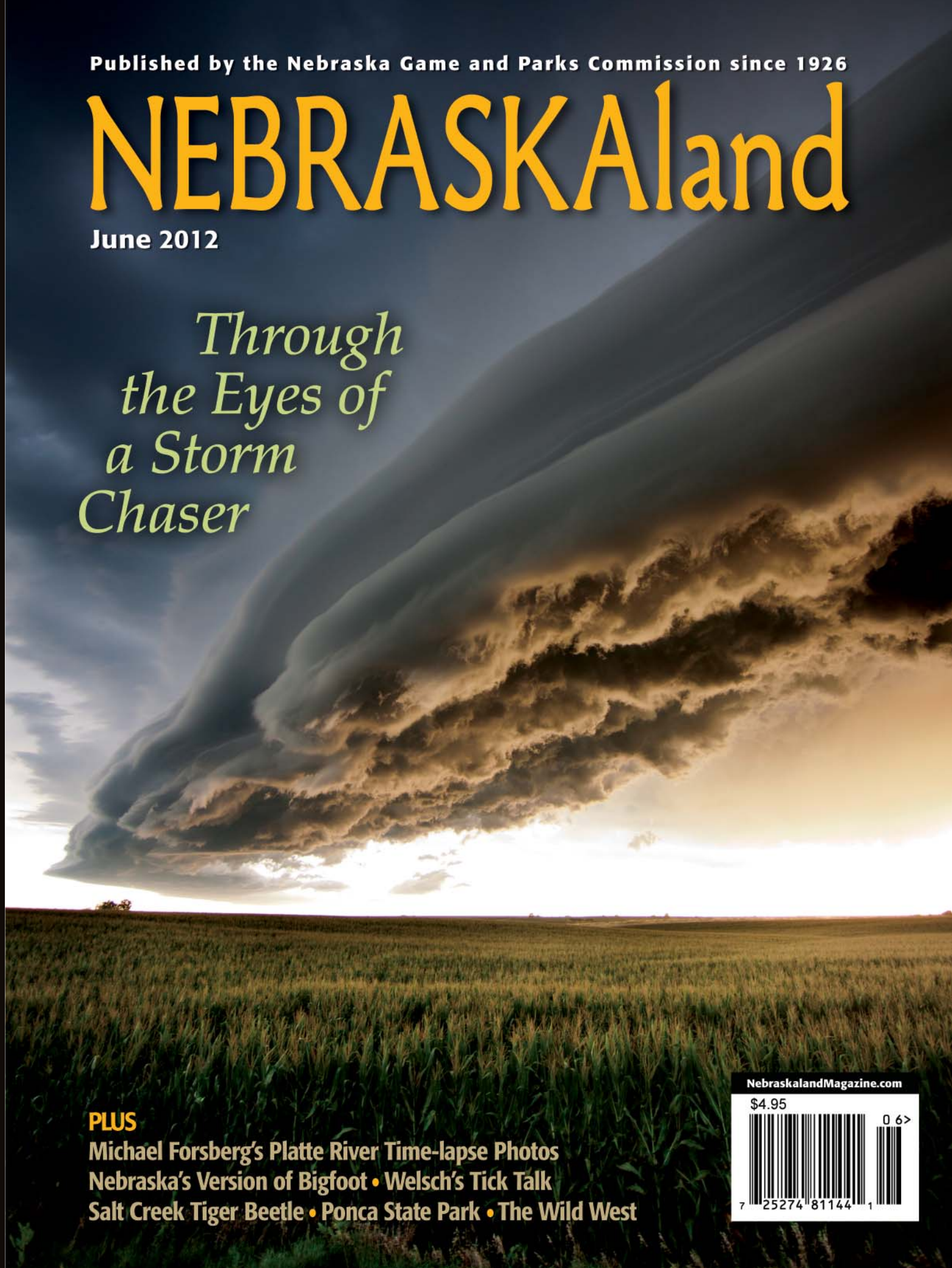
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NEBRASKAland

June 2012

*Through
the Eyes of
a Storm
Chaser*



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Michael Forsberg's Platte River Time-lapse Photos
Nebraska's Version of Bigfoot • Welsch's Tick Talk
Salt Creek Tiger Beetle • Ponca State Park • The Wild West

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NEBRASKAland

Volume 90, Number 5, June 2012

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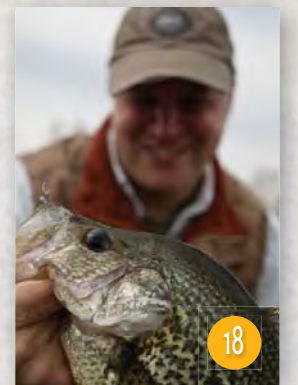
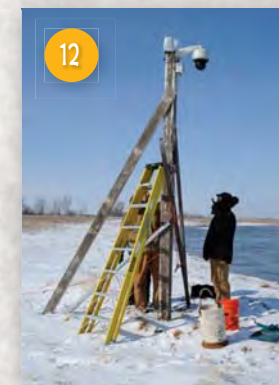
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Cover: An arcus cloud over a cornfield just north of Kearney. An arcus cloud is a low, horizontal cloud formation caused (in this case) by cold winds rushing outward from a thunderstorm. See story on page 22. Photo by Ryan McGinnis.

Opposite: A Henslow's sparrow at The Nature Conservancy's Caveny Tract along the central Platte River. Photo by Chris Helzer.

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Start ‘em Young

Just wanted to share a couple of photos that I took recently. One is of my husband, Jeremy, and our 2-year-old son Ben, ice-fishing at Frye Lake. The other is of Ben with his first pheasant – my husband was carrying him in a backpack when they shot it, and since Ben wouldn’t be quiet after that (too excited), it was the only one they got that day!

Thanks!
Amanda Hankla
North Platte, Nebraska



Hooked for Life

My son, Joshua Everett, shot his first turkey in Cass County on the opening day of youth turkey season – April 7, 2012. The hunt was pretty incredible, and he is hooked for life.

When I got Josh to where we were going to set up that morning, I spotted the gobbler before we even had a chance to sit down. I got Josh down and had to continue to encourage him to move slow and be quiet as he got

into the perfect shooting position and got his gun loaded. Once he was ready, I started doing some light calling.

I wasn’t able to set up a decoy because the gobbler was only about 200 yards away in clear sight, but once he heard my calls, the tom walked toward us until he was 100 yards straight across the field from us. I called again and he took a left turn and came straight to us as if on a string. It was so cool to be there whispering in my son’s ear to take the safety off and then “Wait, wait, wait ... ok, shoot.”

The entire experience took maybe five minutes. I am afraid Josh will now think bass fishing will mean to throw a lure in and immediately catch a 10-pound bass!

Daron Smith
Murray, Nebraska



Young Master Angler

Attached is a photo of my 13-year-old son, Levi, and the 44-inch, 36-pound, 4-ounce catfish he caught this April at the Lake Maloney inlet. Levi was using a worm for bait and caught the fish with a big catfish pole that his grandpa had just bought him. A 250-pound friend of Levi held him down in his chair while he reeled it in! This is Levi’s third Master Angler award – he received one for an 8-pound wiper and one for a 8½-pound drum, all caught from the Lake Maloney inlet.

Kim Simmons
North Platte, Nebraska

NEBRASKAland Visitor Letters

We want to thank all 39 readers that sent e-mails and letters for last issue’s visitor, a **red long-horned milkweed beetle** that was on **page 51** (see page 11 for the winner, rules and this issue’s hint). Here are some of the wonderful responses we received:

When I come home to find *NEBRASKAland* in my mailbox, I have to sit in the truck and scan the pages front to back, wowing at the photographs and getting an idea of what I can look forward to reading later. The history articles often top the list, along with the “Oh, I want to go there” ones. That milkweed beetle nearly crawled out from the inside back cover as I put the issue down so I could drive on up the lane.

I subscribe to several midwestern state-conservation magazine. None are better than yours.

Diane Ipsen
Vinton, Iowa

The visitor on the top right corner of the last page appears to be a longhorn milkweed beetle *Tetraopes basalis* (basalis).

I teach 7-12 science at Loup City High, have my wildlife class do a bug collection every year and it seems that this is one of the more popular beetles they enjoy finding. Some have even preserved them in epoxy mounts using Enviro-tex 50 coat that look very nice, using slick plastic containers for molds.

I have enjoyed this magazine for many years as I am also a hunter/bowhunter ed instructor, and look forward to each edition. Thanks

Jason Obermiller
Loup City, Nebraska

Thank you, Jason, for all you do to help promote outdoor education!

– Editor

The visitor is in the upper righthand corner of page 51.

Each month when *NEBRASKAland* arrives it’s a competition between me and my parents as to who can find it first. Usually it ends up being my mom (just because she gets the mail and has a head start) but I’m proud to say that this month I received the bragging

rights!

The whole family loves the magazine and we thank you for the friendly competition each month.

Katelin Lusch
Plattsmouth, Nebraska

The red milkweed beetle (Tetraopes tetrophthalmus) is a common native longhorn beetle found on milkweed plants. Adult beetles are red to reddish-orange, with 11 black spots, black antennae and legs, and a body length of about ½ inch. The milkweed beetle has four eyes; their antennae, which may be as long as their body, are located between the two pairs of eyes. Female beetles lay their eggs on stems of the milkweed plant, near the ground. The larvae hatch and burrow into the stems, overwintering in the roots. The larvae pupate in the spring and emerge in mid-summer as adults to start the cycle over. When the beetles feed on the milkweed, they ingest toxins found in the plant. The bold coloring of the red milkweed beetle is intended to warn predators that the beetle is not a good meal. Ignoring the warning and eating a beetle may cause the predator to get a stomach ache, even throw up, and be less likely to eat another beetle in the future.



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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NEBRASKAland Magazine
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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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Creighton Prep Shooter Wins Cornhusker Cup

Nick Zuerlein of Omaha Creighton Prep won the Cornhusker Cup this year as the overall champion at the 43rd Cornhusker Trapshoot.

Zuerlein shot 192x200 over two days and led the Creighton Prep Blue squad to the overall team title as well. The team, which shot 940x1,000, also included Ryan Glow, Andrew Pavlic, James Vasko and Brandon Metzler.

"We're shooting for team medals," Zuerlein said. "Individual titles are just icing on the cake. It's more about shooting with friends I have shot with for so many years, and having a good time."

Zuerlein spoiled Cody Newlun's bid to repeat as the overall champion. Newlun, shooting for Hastings 4-H No. 1, took second place with a 191x200 after defeating teammate Adam Florian in a shoot-off.

Cory Sorahan of Grand Island High won the girls' overall championship, shooting a 188x200.

The Omaha Marian Blue team captured the overall girls' team title, shooting a 859x1,000. Team members were Kelsey Genoways, Savannah Uden, Lori Nevole, Maddie Worth and Anna Vasko.

The Hastings No. 1 team of Newlun, Florian, Zach VanBoening, Cole Fisher and Marcus Long shot an 859x1,000 to win the 4-H team championship.

During the junior high portion of the trapshoot, Casey Petersen of the Western Nebraska 4-H trap team in Mitchell won top honors with a score of 99x100 on 16-yard targets. The Norris No. 1 team of Cole Anderson, Ian Kernes, Dylan Osterhaus, Logan Armknecht and Terran Goering won the junior high team title with a score of 456x500.

There were 1,273 shooters competing in the senior high division of this year's Cornhusker Trapshoot and 780 junior high competitors. The event, the largest youth trapshoot in the nation, is hosted by the Nebraska Game and Parks Commission and the Nebraska Trapshooting Association.

Send Us Your Trail Cam Photos!



Ron Bilstein of Battle Creek sent us this photo of a coyote with a cottontail rabbit in its mouth.

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

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.

June 1 - August 12
Fort Robinson Post Playhouse
To purchase tickets or view the schedule of shows, visit the website at: www.postplayhouse.com.

June 2-3
Rock Creek Trail Days
Historical interpretations and a buffalo stew cookout Saturday. Contact the park at (402) 729-5777 or ngpc.rock.creek.station@nebraska.gov.

June 2-3, June 30-July 1
Fort Atkinson Living History
Volunteers portray life at an 1820s military fort. Contact the park at (402) 468-5611 or ngpc.fort.atkinson@nebraska.gov.

June 8-10
12th Annual Intertribal Gathering
Pow Wow at Fort Robinson State Park near Crawford. Contact the park at (308) 665-2900 or ngpc.fort.robinson@nebraska.gov.

June 9
Wildflower Walk at Wildcat Hills
9 am - 12 pm. Contact the nature center at (308) 436-3777 or ngpc.wildcat.hills@nebraska.gov.

June 16
Outdoor Skills Workshop for Men
Experience real hands-on skills at Platte River State Park. Contact Christy Christiansen at (402) 471-5547 or christy.christiansen@nebraska.gov.

June 26
Free Fishing Clinic at Mahoney
10 am - 2 pm. Hosted by Go Fishing Omaha. Instruction on equipment, water safety and actual fishing. Equipment is furnished by Go Fishing Omaha for each participant. Valid fishing permits required for persons over 15. Contact Carl "Catfishman" Brown at (402) 681-6265 or oldcatfishman@cox.net.

2012 Habitat Tour Schedule

Date	Tour	Location	Time
May 19, 2012	Carter Canyon Ranch Tour	Wildcat Hills Nature Center, South of Gering on Hwy 71	1:00 pm MST
June 6, 2012	Focus on Pheasants and Grassland Management for Upland Game Birds	Harlan Lake Reservoir, Methodist Cover Shelter, Alma, NE	9:00 am CST
June 21, 2012	Improving Wildlife Habitat on Your Property	Legion Hall, 108 North Main Street, Eustis, NE	10:00 am CST
June 21, 2012	Pollinator Habitat and Plant ID Tour with a Master Beekeeper	Duncan Building, 379 Main Street, Unadilla, NE	1:00 pm CST
June 22, 2012	Diversified Pheasant Management	North Park, Payne Street, Lodgepole, NE	9:30 am MST
June 27, 2012	Prescribed Fire and Managing for Wildlife on Private Lands	RC&D Office, 308 East Highway 20, Bassett, NE	8:30 am CST
June 28, 2012	Invasive Grass Control and Quail Management in the Loess Canyons	Ranchland Gas Station, 8849 South Spur 56A, Maxwell, NE	9:30 am CST
July 11, 2012	Focus on Pheasants and Grassland Management for Upland Game Birds	Sherman Lake Reservoir Wildlife Management Headquarters	9:00 am CST
July 11, 2012	Pollinator Habitat and Plant ID Tour	Community Center, 142 West 3rd Avenue, Red Cloud, NE	10:00 am CST
July 11, 2012	Pheasant & Quail Management	One Box Gun Club, 79681 Road 435, Broken Bow, NE	10:00 am CST
July 19, 2012	Cedar Tree Removal and Grassland Restoration	Myrtle Hall WMA, Sargent, NE	10:00 am CST
July 20, 2012	Available Wildlife Habitat Programs in Western Nebraska	Ole's Big Game Steakhouse, 123 North Oak Street, Paxton, NE	11:00 am MST
August 4, 2012	Pheasant & Quail Habitat Improvement	Seward USDA Office, 1940 North Hwy 15, Seward, NE	9:30 am CST
August 16, 2012	Rangeland Management Workshop	Mid-Plains Community College, 2520 West Hwy 2, Broken Bow, NE	9:00 am CST
August 16, 2012	Habitat Management on a Landscape Scale	Meet at City Park, "Wildwood Acres," Verdigre, NE	9:00 am CST

Landowner Tours for Better Habitat

Wildlife Biologists from across the state will be hosting a series of Habitat Tours this year. Tours are designed to demonstrate habitat management practices, available conservation programs and how to create the best results on your next habitat project.



For more tour details & to register visit www.NebraskaPF.com



Common Lambsquarter: Not Just a Weed!

Kimberly Stuhr

You most likely pluck this common invader out of your vegetable garden or flowerbed on a routine basis. But common lambsquarter is actually an edible, tasty, and nutritious vegetable. In fact, it has more vitamins and minerals than most domestically cultivated green leafy vegetables, including spinach.

Similar to dandelion greens, lambsquarter has an earthy, mineral rich flavor that is wonderful steamed or added raw to salads.

Lambsquarter greens were a staple among Native American tribes; Lewis and Clark ate them along the trail; and early settlers ground the seeds into flour.

Lambsquarter is extensively cultivated and consumed in northern India as a food crop. In Asia and Africa it is fed to livestock. Some American Indians used it to make green dye for their bows and arrows. And for centuries the Chinese have turned the hardened stems into walking sticks. Lambsquarter is also a traditional African medicinal plant, used to relieve stomach aches and to treat burns and itches.

Lambsquarter was once thought to be a native of Europe and Asia. However, archaeological studies show that seeds were stored and used by Native Americans during the 16th century. Likewise, European archaeologists

have found seeds mixed with conventional grains in storage pits and ovens at Iron Age and Roman sites.

The seeds have even been found inside the stomachs of Danish bog bodies. Thus, the native range of lambsquarter is obscure due to extensive cultivation and because it readily hybridizes with similar species. It's no surprise that the USDA PLANTS Database considers lambsquarter both native and introduced.

After you learn to identify lambsquarter, you may be surprised to find it growing all around you. But after you prepare a batch of the fresh leaves and stems, the biggest surprise may be just how much you enjoy the taste of this plant that you previously considered a weed.

Lambsquarter Fritters

2 cups wilted, chopped greens
1 ¼ cups dry fine breadcrumbs (reserve ¼ cup to coat patties for frying)
½ cup Italian cheese
¼ cup finely chopped onion
2 eggs
½ tsp. salt
¼ tsp. pepper
Healthy dash of cumin

Gather approximately ¾ gallon of fresh young greens, discard tough stems. Wash thoroughly and steam

until wilted. Let cool, squeeze out excess water. Coarsely chop and then fluff in a bowl. Add eggs and mix. Add salt, pepper, cumin, cheese and onions, mix thoroughly. Add 1 cup breadcrumbs and mix. If mixture seems dry, add a small amount of water; if wet, add extra breadcrumbs. Form into patties and coat with reserved breadcrumbs. Fry fritters in olive oil to a golden brown. Makes eight fritters.

Special thanks to nature enthusiasts Jarel Vinduska for the original recipe, and to Connie Anderson for testing and tweaking the recipe.

Lambsquarter eaves are highly variable ranging from triangular- to diamond-shaped, and somewhat toothed to mostly smooth. They are light green on top with a distinctive white scale on the underside. Flowers are green and very small, growing in dense clusters at the tips of the main stems and at branch junctions. Flowers blossom from June to September producing tiny fruits that contain tens of thousands of even smaller black seeds. Stems are green with purplish streaks. Plants grow three to four feet tall.

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MILLIGAN— June Jubilee, June 8-10
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GENEVA—Discover Patriotism, July 3 & 4
FAIRMONT—Old Settler's Picnic, July 13-15
FILLMORE COUNTY FAIR, July 14-19
EXETER—Summer Fun Day, July 27-29

EXETER•FAIRMONT•GENEVA•GRAFTON•MILLIGAN•OHIOWA•SHICKLEY•STRANG

Turtles and Frogs Oh My!

The Ak-Sar-Ben Aquarium Outdoor Education Center will host a display of turtles and frogs the first weekend of each month this summer.

Educators from the Nebraska Game and Parks Commission will show and discuss Nebraska's common frogs and turtles from noon to 4 p.m. each day, answering any questions that visitors might have. The public is invited to see and touch these animals up close, while learning how they survive in the wild.

The aquarium is located in Schramm Park State Recreation Area, south of Gretna. For more information about the program or the aquarium, call 402-332-3901.

Outdoor Message Plates

Jerry Merwald of Omaha chose his message plate about 10 years ago for his fondness of fly-fishing, which has taken him from coldwater streams in the Nebraska Sandhills to the Rocky Mountains to Alaska, and the pattern that any self-respecting fly angler should have in their box to match the afternoon hatch. When he gets a thumbs up on the road, he knows he's met another angler.

If you have a unique outdoor message plate you would like to share or know someone who does, e-mail a photo (high-resolution, JPEG format only, please) of it to Eric.Fowler@Nebraska.gov, along with your name, hometown and a brief description of the interests expressed on your license plate.



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Million Dollar Fish

The Nebraska Game and Parks Commission has teamed up with Cabela's to sponsor the "Wanna Go Fishing for Millions?" promotion, in which anglers can catch tagged fish to win cash and prizes.

In April the Commission tagged fish in Box Butte, Calamus, Cunningham, Harlan County, Lewis and Clark, McConaughy, Merritt, Swanson, Wagon Train and Wehrspann reservoirs. Tagged species include largemouth bass, smallmouth bass, white bass, wipers, walleye and channel catfish.

Between May 5 and July 8, anglers who catch tagged fish can receive cash and merchandise worth \$50 to \$2 million. Anglers must be at least 18 years old to be eligible and register at cabelas.com/fishformillions or at a Cabela's store before catching a tagged fish.

Tagged fish must be caught legally, and to receive a prize, the angler must take a digital photograph of the fish with the tag intact before removing the tag. The photo, tag number and information regarding the details of the fish and catch location must be entered into the cabelas.com/fishformillions web site. Anglers should retain the tags, as the grand prize winning tag must be provided to Cabela's. Only one tag number may be claimed per day.

Prizes will be awarded at the end of the promotion and include up to 907 Cabela's gift cards, 100 rod and reel combos, 50 line and bait packages, 50 pairs of sunglasses and two Ranger boats outfitted with Evinrude 250HP outboard motors.

There also will be a grand prize worth \$1 million if the tag is among the first 10 tags redeemed nationwide, \$100,000 if it is from the 11th to the 100th tag redeemed, and \$10,000 if it redeemed after the 100th tag. If a participant is a current user of the Fish Recon smart phone application or downloads the Cabela's Fish Recon application at least two days before catching a tagged fish, he or she will qualify to double the grand prize. Those not wanting to download the application can send Cabela's a postcard as explained on the web site.

Top Fishing Equipment Brands for 2011

FERNANDINA BEACH, Fla. - Southwick Associates' AnglerSurvey.com announced the brands and products anglers purchased most frequently in 2011. This list has been compiled from the 29,495 internet-based surveys completed by anglers who volunteered to participate last year in AnglerSurvey.com polls.

In 2011, the top brands included:

- Top **rod** brand: Shakespeare (9.6% of all purchases) 
- Top **reel** brand: Shimano (21.4% of all purchases) 
- Top **fishing line** producer: Berkley Trilene (13.1% of all purchases) 
- Top **hard bait** brand: Rapala (21.8% of all purchases) 
- Top **soft bait** brand: Zoom (15.2% of all purchases) 
- Top **spinner bait** brand: Strike King (16.4% of all purchases) 
- Top **sinker** brand: Generic (28.8%), Bullet Weights (12.1% of all purchases)
- Top **fly rod** brand: Orvis (10.4% of all purchases) 
- Top **Fly Reels** brand: Orvis (16.5% of all purchases)
- Top **fly combo** brand: Cabela's (31.5% of all purchases) 
- Top **fly line** brand: Scientific Angler (3M) (23.8% of all purchases) 
- Top **fly leader** brand: Rio (28.9% of all purchases) 

all purchases)

- Top **tackle box** brand: Plano (45.8% of all purchases) 

- Top **landing net** brand: Frabill (24.5% of all purchases) 

- Top **fishing knife** brand: Rapala (25.2% of all purchases) 

Largemouth bass remain the number one targeted species of freshwater fish, with 52% of fishing activity targeting largemouth bass.

Great Park Pursuit Open

Teams can still register for the Great Park Pursuit, which is back for its fifth year of encouraging healthy outdoor lifestyles through visits to Nebraska parks located across the state. The rewards include increased awareness of recreational opportunities and a chance to win prizes, including three grand prizes with a retail value of \$1,000 each.

Participants have 20 local, state or federal parks to visit from May 1 through Sept. 17. At each park, they follow clues to locate a post where they make a tracing of a nature impression. They then mail in the tracings, reflecting the total number of parks visited. Entry into prize drawings are based on the number of impressions collected. Participants (individuals or teams) can register online at negpp.org or request a packet and registration form by calling 402-471-5425.

Select a park from the 20 available on the Locations page at the web site, then print off the page and take it to that park. Follow the clues on the park page to locate a post. Make a tracing of the impression, and then plan your next Pursuit park trip.

The Pursuit is hosted by the Nebraska Game and Parks Commission and the Nebraska Recreation and Park Association. Last year 3,368 participants on 765 teams took part in the program.

Turpin Time

Dick Turpin

Man, I think I'm in heaven, but I'm not...the sign out front said Chadron State Park. Established in 1921, I'm not surprised that Chadron became Nebraska's first state park. Towering ponderosa pines dominate this park. Miles of trail lace the area. With an altitude that in places approaches 5,000 feet, you can usually keep your cool even on warm summer days. You can expect all the amenities and activities typically found in a major state park...cabins and camping...horses and hiking...pedaling and paddling...tennis and tanning. And history? The fur trade era of this nation once thrived in this region. Just east of Chadron, a replica outpost and museum is considered one of the best on the subject.

For a refreshing outdoor experience, come to Chadron State Park and in relax in its majestic beauty. I still think it's heaven. ■



NEBRASKAland Visitor Winner and Hint

Last issue's winner of the Visitor drawing was Diane Ipsen of Vinton, Iowa, who found the **red long-horned milkweed beetle** on page 51 (see her letter on page 4). 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, 40-45, 47, or 49.



Chapters from the Platte

“By the end of 2012, a total of 45 time-lapse cameras will in operation, each taking a photo every daylight hour of each day, 365 days a year, for what we hope are several years to document changes on the landscape and put this elegant and complex river system in motion.”

By Michael Forsberg

It was a cold, snow-covered day along the Platte River in early March 2011 when a team that included Michael Farrell, a veteran producer for NET television; Jeff Dale, a camera technology expert; Bill Hager, a Lincoln-based nature photographer; and myself flipped the switch on the first camera setup we had installed as part of a multi-year effort to do time-lapse photography of the Platte River Basin.

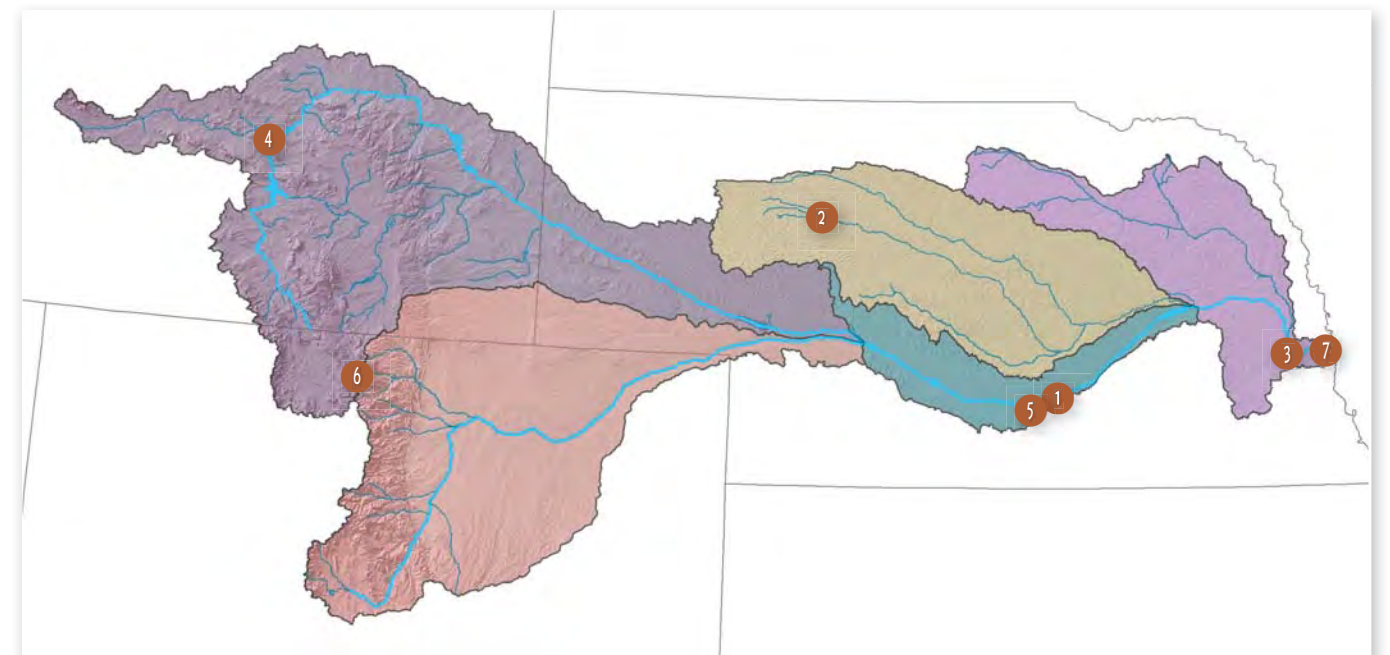
One year later, 24 time-lapse cameras have now been installed across the basin, from as high as 11,000 feet above sea level at Lake Agnes near the Continental Divide in northern Colorado, to Pathfinder Dam in eastern Wyoming, to the confluence of the Platte and Missouri rivers at Schilling Wildlife Management Area near Plattsmouth. By the



Photographer and field advisor Bill Hager installs a custom-built, time-lapse camera system on a pasture fence at Mormon Island. This camera, in place since March 2011, is focused on a wet meadow slough in a large prairie grassland hydrologically connected to the Platte River. The resulting time-lapse photos have revealed seasonal changes in water levels, grassland growth and grazing, and use by cranes, waterfowl and shorebirds during migration.



The calm before the storm – evening light bathes a windmill stock tank in the Nebraska Sandhills on the University of Nebraska’s Gudmundsen Research Ranch north of Whitman. The Platte River Basin derives its water from three key sources: snowmelt from the Rocky Mountains, precipitation from our region’s weather and climate, and groundwater-fed springs, seeps and streams from the immense Ogallala Aquifer that lies beneath much of the state.



The Platte River Basin drains 90,000 square miles of Wyoming, Colorado and Nebraska and includes habitats from from alpine tundra to floodplain. The numbers on this map correspond to the time-lapse camera locations indicated on each photo in this story.



end of 2012, a total of 45 time-lapse cameras will in operation, each taking a photo every daylight hour of each day, 365 days a year for what we hope are several years to document changes on the landscape and put this elegant and complex river system in motion.

Roughly 90,000 square miles in area, the Platte River Basin gets its water from three key sources: snowmelt in the Rockies, groundwater from the immense Ogallala Aquifer that lies beneath Nebraska, and precipitation in the form of rain and snow from our region's weather. Each camera put in place helps tell a different chapter in the story of water and its contribution to the Platte River system.

The Platte Basin Time-lapse project (PBT) is supported by a collaboration of private and public partners, with numerous cooperators such as the Nebraska Game and Parks Commission. By following that proverbial drop of water from



A time-lapse camera mounted on Eugene T. Mahoney State Park's observation tower between Lincoln and Omaha captures an overview of the Lower Platte River and its wooded bluffs and floodplain. The Lower Platte is mostly fed by groundwater from the Loup River Basin, which drains a large portion of the Nebraska Sandhills and enters the Platte near Columbus. This location is also very near Lincoln's well field, where the city of 250,000 draws its water supply.

the top of the watershed all the way through the system, PBT's vision is to help us better understand where our water comes, the natural and man-made processes that move it through the system, and to further scientific research and education.

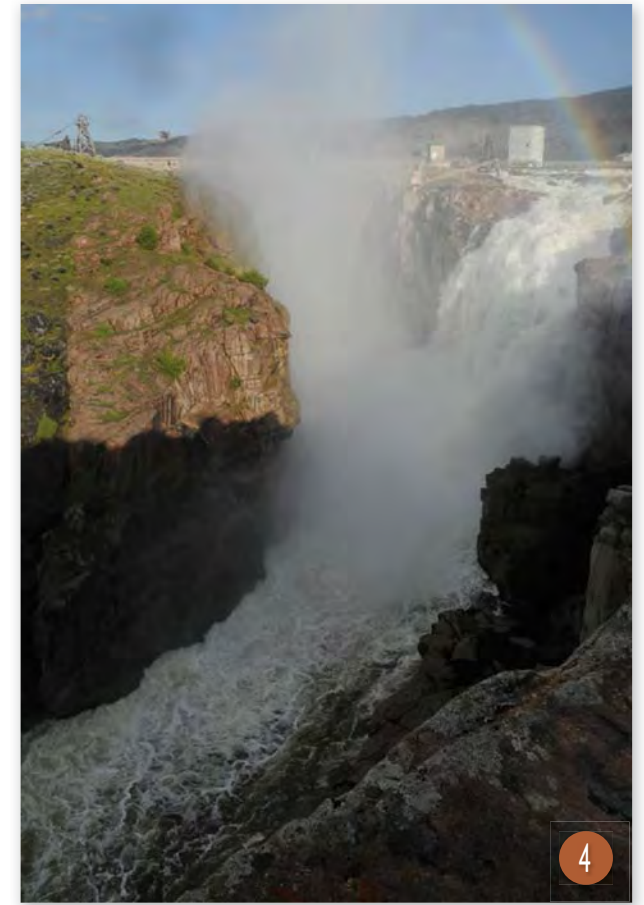
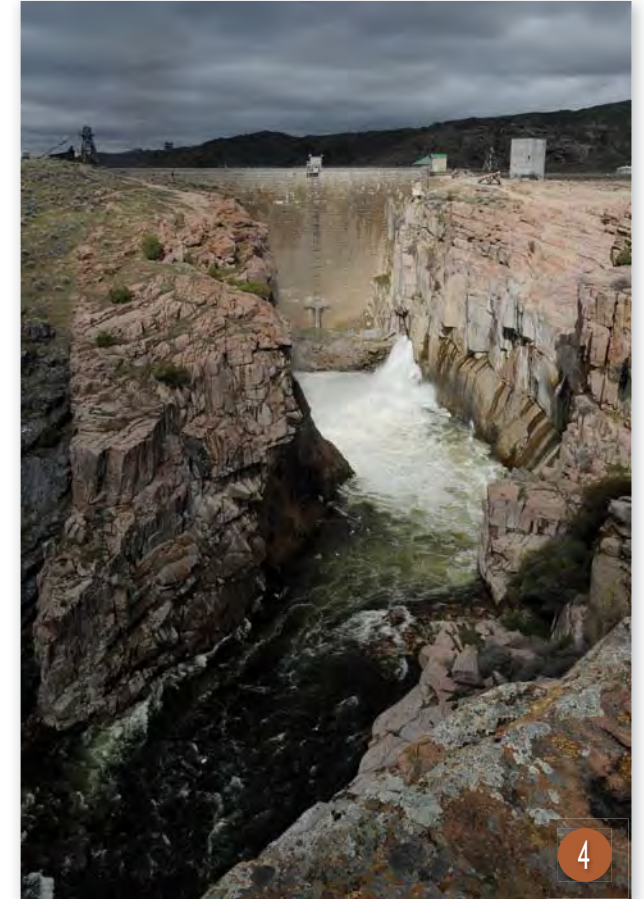
The resulting time-lapse videos allow us to see this complex river system in motion and in short snippets can show viewers both natural and man-made processes on the landscape that may take months or years in real time: from flood and drought cycles to the changing of the seasons, formation of sandbars or the spread of invasive species, restoration of a wetland to grazing management of a grassland, the delivery of water to a crop field, and the ebb and flow of water in a reservoir.

Over the course of this last year, the project's cameras have been mounted on everything from fence posts to pine trees, granite cliff faces to observation towers. There have been challenges: One camera was lost to flooding, spiders have made webs over the lenses, and birds have used the camera structures as perches and pooped on solar panels, to name a few.

These cameras will act as long-term environmental monitoring instruments, not just making pretty pictures but recording visual data that can be linked up with other information such as weather and stream-gauge data – even water quality measurements.

As these images are collected and time-lapse

Completed in 1909, Pathfinder Dam and Reservoir holds 1.2 million acre feet of water. It was the second major project undertaken by the U.S. Bureau of Reclamation, and is part of a series of dams and reservoirs that feed agriculture, municipal and power generation uses along the North Platte River in eastern Wyoming. During "normal conditions," water enters Fremont Canyon through the dam's needle valve outlet (top). During the spring and summer of 2011, however, above average snowpack and precipitation in the North Platte watershed resulted in water running over Pathfinder spillway for only the fourth time in history (bottom).





This bird's-eye view from a research tower at Audubon's Rowe Sanctuary looks upstream and includes a major roost for sandhill cranes each spring. With above average water levels, time-lapse imagery here since early March 2011 has helped reveal the dynamic nature of sandbar formation and sediment transport within the "Big Bend" reach of the Central Platte between Kearney and Grand Island.



videos are made, they are uploaded to a dedicated web site to be shared with the public. Over time, the interactivity of the web site will increase, and we hope to build both a citizen science component and provide a forum for students and citizens to show and tell their own stories about the river and this basin they call home. ■

Editor's Note: The Platte Basin Time-lapse Project will be featured at the Lake McConaughy Visitor and Water Interpretive Center beginning in early summer with a large, touch screen interactive display.

To learn more about the project, visit, www.plattebasintimelapse.com.

Left: The Lake Agnes time-lapse camera in northern Colorado is the project's furthest west and highest camera placement at 11,000 feet above sea level. Above: The furthest east time-lapse camera is at Schilling Wildlife Management Area near Plattsmouth, anchored in place at the confluence of the Platte and Missouri rivers. During the 2011 flood, the water level rose higher than where area manager Neal VanWinkle's hands are holding the ladder. Fortunately, the installation remained in place.

The Elusive 12-inch Crappie

Nebraska's Version of Bigfoot

By Jeff Kurrus

The crappie is an oft-discussed species in Nebraska due to the state's inability to produce consistent trophy crappie fisheries in its public waters. Here are answers why this is the case, and how you can help.

Attention all Nebraska crappie fishermen: Let's go ahead and get it out the way. You know it and we know it: Kansas generally has better crappie fisheries than Nebraska.

But why? And how can you, our faithful anglers, help? Let's briefly discuss why Nebraska has to play second fiddle to the Sunflower State, at least when it comes to crappies.

The Problem

First, the primary purpose for the majority of our reservoirs, where most of our crappies are found, is irrigation. That means we don't have the stable water conditions that many of those waters south of the border have. Second, Kansas' reservoirs, overall, are larger compared to ours. With this size usually comes enough bays and fingers to supply good habitat. In addition to stable waters and more habitat, their growth rates are faster than ours.

But enough about Kansas. Let's talk more specifically about what is not working here. First, in the small- to medium-sized reservoirs of eastern Nebraska, the crappie numbers are strong but there aren't

enough largemouth bass to stabilize the populations. Plus, there is more fishing pressure in this region of the state. Combine these two points and it's easy to see why we have few slab crappie.

A Biologist's Confessions

"I can't give you any easy answers on Nebraska's crappie issues," said Daryl Bauer, a fisheries biologist with the Nebraska Game and Parks Commission. "What I can do is tell you how complicated the problem is."

Ideally there would be higher largemouth bass densities in our reservoirs to control each year-class of crappie, said Bauer, and with fewer crappie the survivors would grow fast. This scenario is often seen in the many farm ponds across the state that have excellent crappie fishing.

In order to help make up for the low number of bass in some waters, biologists often turn to length limits to help manage the size and number of



DARYL BAUER

While trophy crappie are common in private waters throughout Nebraska, multiple factors influence their scarcity on public areas.



PHOTO BY JEFF KURRUS



PHOTO BY JEFF KURRUS

Eight- to ten-inch crappie are abundant at many lakes throughout the state, including this one caught at Wehrspann Lake in eastern Nebraska. Only with some restraint, and ideal spawning conditions, can Nebraska produce more trophy fish each year.

crappie in a given body of water, with mixed results.

“These fish live hard and die young,” said Bauer. “That’s why fast growth is so important – they may only live four or five years. So length limits haven’t had a lot of success.”

One contradiction, however, is Sherman Reservoir – while also an irrigation reservoir and thus prone to fluctuation throughout the year, Sherman is consistently full each May and features a number of bays and

coves. Crappies head into these areas each spring to spawn, and the lake has a low enough density of fish that some 10- to 12-inch crappie can be caught there.

Such situations aren’t consistent across the state, however, and are even further complicated because of the differences between black and white crappie. These two species, differentiated on sight only by knowledgeable anglers, have contrasting habitat needs that hinder

Nebraska’s ability to have stable populations even more. “Black crappies do better in clean, clear water with lots of vegetation, while whites do better in murky water and reservoirs with flooded timber,” said Bauer.

It would seem simple then, to just match the type of water with the type of fish that will do best there, but there are a couple of reasons why it isn’t: First, “bucket biologists” – those anglers who feel compelled to stock fish themselves – often add their own fish to the equation with little regard (or knowledge) of how it will affect a fishery. Second, fluctuating water levels and surrounding environmental factors, including erosion, can alter a given waterbody considerably throughout a year, affecting the habitat needs of each species.

Lastly, when both black and white crappie are in the same waters, they hybridize, further complicating this seemingly endless dilemma. “We just don’t have ideal conditions for either species,” said Bauer. “We’re stuck in the middle.”

What You Can Do

How can you help? Throw a fish or two back when you’re catching big ones. Yes, I know this is tough, considering how well breaded crappie fillets go with a side of hushpuppies, but that’s what needs to be done.

“Any given year, any one of the Salt Valley lakes will have excellent crappie fishing,” said Bauer. “But then word will get out, it will get pounded by anglers, and then the crowd will move on to the next lake.” Such intense pressure often ruins a crappie fishery for several years, if not forever.

It’s a vicious cycle for crappie anglers, but one that can be managed with a little restraint. It doesn’t stop at managing crappie either – don’t remove trophy bass from reservoirs with large populations of crappie. Take a picture instead. Those big bass help control the population of small crappie, giving others a chance to grow up.

It’s a matter of common sense and a common goal. Both the biologists and anglers want the same thing – big, fat slabs the size of a dinner plate, with half the gas it takes to drive south of the border. ■

Biology of a Slab

Exclusively found in North America, the crappie is one of the nation’s most popular sport fish due to their palatability and catchability. They belong to the sunfish family, *Centrarchidae*, which also includes largemouth bass and bluegills, and contain two distinct species – the black and white crappie. While a novice might assume they can be differentiated by color, this often is not an adequate way to distinguish the two. Instead, the most reliable method is to count the dorsal fin spines. While blacks normally have seven or eight, whites will have six, or maybe even five, spines.

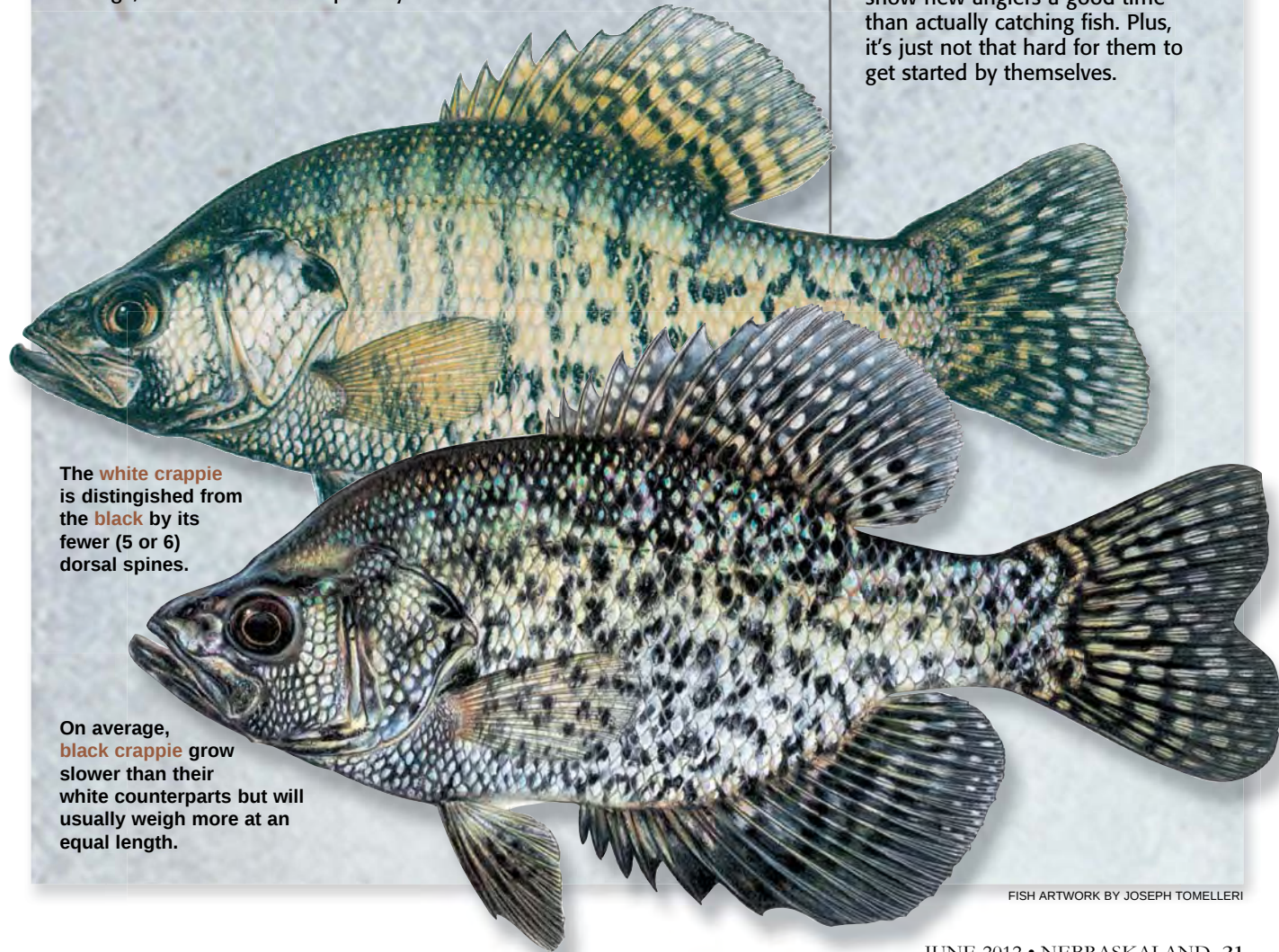
Crappies are found in all of the lower 48 states, as they have been introduced throughout the country. Originally black crappie were found in the eastern United States, while white crappie extended from eastern South Dakota to New York, then south to Alabama and Texas. There is also another difference between the two: While black crappie tend to grow slower than their white brethren, a black crappie of equal length to a white will weigh more.

Each spring, crappies move into the shallows to spawn when the water nears 56 degrees. Males build the nest, not unlike others in the sunfish family, near some sort of underwater cover. Nests can be found anywhere from one foot of water down to 20 feet in depth.

The female then enters the nest and can lay as many as 180,000 eggs. She can also produce eggs multiple times during the same spawning period. The eggs will hatch in two to four days, and the fry will then be guarded by the male for several days before they leave the nest. Their diet consists of aquatic insects, tiny crustaceans and eventually small fishes. By their second or third summer, these fish will be sexual mature until they die, on average, within the next couple of years.

Catching Crappie Now

Let’s not get complicated: Those same weedlines, contour breaks, and pieces of flooded timber where other fish species can be found are also perfect for finding crappies. Jigs of various sizes, including 1/16- to 1/4-ounce, can be fished with a rubber, Gulp!, or live trailer. Fish these with light spinning tackle using a slip bobber, vertical jigging, or simply casting and reeling to find fish. Once you find fish, either move until you find the size of fish you’re looking for, or adjust your gear size and color in search of larger or more fish. It’s as simple as these few techniques, and is a great way to introduce a young or novice angler to fishing. Crappie are often caught in bunches because they travel in schools, and there’s no better way to show new anglers a good time than actually catching fish. Plus, it’s just not that hard for them to get started by themselves.



The **white** crappie is distinguished from the **black** by its fewer (5 or 6) dorsal spines.

On average, **black** crappie grow slower than their white counterparts but will usually weigh more at an equal length.

FISH ARTWORK BY JOSEPH TOMELLERI



The Center for Severe Weather Research's "Doppler on Wheels" radar truck scans a storm in the Nebraska Panhandle on June 5, 2009, during Project Vortex 2. This radar truck gathers data near tornadoes in an effort to discover why some storms form tornadoes and others don't.

Through the Eyes of a Storm Chaser

By Kristen Friesen
Photos by Ryan McGinnis

As young boy of six or seven, Ryan McGinnis informed his parents that, when he grew up, he was either going to be a storm chaser or ride on the back of the garbage truck smashing garbage. Not long afterwards, his father got him a subscription to "Storm Track" – a storm-chasing magazine published at the time that focused on storm chasers, but also had stories aimed at children. To say he was hooked would be an understatement – even his childhood diary is full of weather-related records.

For McGinnis, however, weather has always been far more than child's play, and despite always being sent to the basement over is objections by his "safety-conscious" parents whenever the sky turned the color of split pea soup, his interest in stormy weather continued to grow.

Not surprisingly, McGinnis began his college career majoring in meteorology ... until he realized that field was "mostly calculus" and that by following that career path he would likely end up sitting behind computer screens, doing forecasting. Turns out that desks, for weather-smitten folks such as McGinnis, are nearly as confining as basements.

Perhaps inspired by sentences beginning with "It was a dark and stormy night," McGinnis then headed to the University of Nebraska – Kearney to major in English. He also bought a camera and began, in his own words, "shooting like crazy." By the time he graduated in 2001 (and before he switched to a digital camera) he had more than 500 rolls of film containing photos of storms, urban panoramas and candid shots tucked away in a closet.

Official degree and trusty camera in hand, he then spent the next few years working at the *Lincoln Journal Star* doing digital touchups, which put him in the path of creative people, stunning photography and ultimately a career change.

Despite all the storm-chasing he was doing in

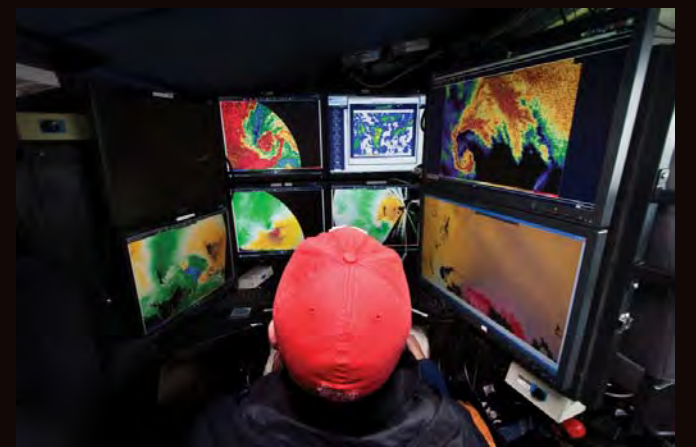
his free time, McGinnis still found time to chase Jasmin, now his wife of four years, with whom he had worked at Kearney's Country Kitchen. It was Jasmin's support (and regular paycheck) that allowed McGinnis to turn his storm-chasing hobby into an actual profession by photographing storms and selling the images.

"The first time I realized I could make a go of this was back in 2007," said McGinnis, "when someone from Germany wanted my photos to advertise their cameras."

In addition to the large number of cameras, lenses and computer hardware and software that he needs for his work, his annual business expenses include roughly 15,000 miles on his vehicle, as well as spontaneous (and sometimes lengthy) time away from home.

McGinnis can still remember his first chase in Kearney – a real "monster storm" in mid-June, 2002.

"I went up to the local gas station, filled up with gas, drove north out of town, then overshot and drove right into five-and-a-half inch hail, which



Project Vortex 2 participant Josh Barnwell sits at the radar data control inside a "Doppler on Wheels" radar truck. These computer screens both control and display all the data acquired by the vehicle's instruments.

basically totaled my Honda Civic," he said. One large hailstone, estimated to be at least the size of a baseball, hit the top of his car so hard that his dome light ended up in the backseat. OK, so his work also requires regular brushes with danger.

"There is a kind of science to what storm chasers do," McGinnis explained. "You have to understand a bit about weather and forecasting in order to see really good storms to keep yourself out of a lot of trouble."

In order to find the best storms – and avoid being caught in the worst – McGinnis relies on a cocktail of sources and several different weather-model websites to do his own forecasting. Two of his favorites are the National Oceanic and Atmospheric Administration's (NOAA) weather website (www.noaa.gov/) and the National Severe Storms Laboratory site (www.nssl.noaa.gov/).

McGinnis's hobby turned profession has now taken him all over the Midwest and has allowed him to meet a variety of people in the "chasing community," including people from



Left: A tornado spins in the distance near Deer Trail, Colorado, June 10, 2010. This tornado was studied by Project Vortex 2.

Above: A squall line approaches a farm in north-central Kansas, May 26, 2006. A squall line is a long line of thunderstorms, sometimes several hundred miles in length, that usually produces heavy winds, rain and hail.

Opposite: A white tornado photographed near O'Neill on May 29, 2004. Tornadoes sometimes appear white when they are illuminated by the sun and are seen from the west.



all over the world who come to the U.S. simply for the thrill and experience of being part of the most informed chases.

In 2009, McGinnis was given the opportunity to follow along with Project Vortex 2, an \$11 million project funded by the National Science Foundation and NOAA to study how and why tornadoes develop. The project, which pulls together more than 60 people, 50 vehicles and 10 radar trucks "led by a bunch of PhDs," only rolls around once every 10 to 15 years. So the little boy who simply wanted to watch storms





A low precipitation (LP) supercell with a tornado spins in the distance near Deer Trail, Colorado, June 10, 2010. An LP supercell is a type of rotating storm with little precipitation. This tornado was studied by Project Vortex 2.

has now morphed into a man “logistically interested in how scientists gather information.”

Still living in Kearney, McGinnis continues to chase storms whenever the opportunity presents itself and markets his work. Some of his photos are sold as wall art, while others have been used in textbooks, advertising and to market such things as the IMAX movie *“Tornado Alley.”* Talk of putting one of his images on the side of a bus in Boston has McGinnis absolutely tickled, because it would allow that particular storm to “move” again, while helping to illustrate a Great Plains storm for an audience that may never have had a chance to experience one themselves.

“A storm can be twice as tall as Mount Everest, and while people here have seen it, people on the east coast may never have,” said McGinnis. “What’s hard to capture in words through pictures can do the storm justice.”

Despite his success and vast experience, the sheer magnitude of the storms he chases still makes McGinnis feel “absolutely humbled” and very aware of the danger inherent to his work:

“It’s not my goal to get close to tornadoes – the closer you get to the tornado, the less you’re able to see the entire storm,” he said. “It’s my goal to take good pictures of good storms.” ■

Editor’s note:

To see more of McGinnis’s photos, visit bigstormpicture.com, where he also blogs about his storm-chasing adventures.



PHOTO BY LANETTE EPPS



Storm chaser and IMAX director Sean Casey’s “Tornado Intercept Vehicle 2” parked off the road at Interstate 80 Exit 285 near Gibbon on May 29, 2008. Casey had just intercepted the tornado that struck Kearney.

Nebraska's Needlegrasses

By Gerry Steinauer, Botanist, Nebraska Game and Parks Commission

Three species of needlegrass grace Nebraska's prairies. They are distinguished from other native grasses by their elongate, needle-tipped seed heads with long trailing awns, an ingenious design for self-planting. **Needle-and-thread** (*Stipa comata*) thrives in Sandhills and mixed-grass prairie over the western two-thirds of the state. **Porcupine grass** (*Stipa spartea*), a tallgrass species, ranges over the eastern half of Nebraska and extends westward only along the cooler northern tier of counties. **Green needlegrass** (*Stipa viridula*) prefers dry, often clayey soils of prairies and open woodlands nearly statewide, but is absent from areas of the south and east and is most abundant northward.

Needlegrasses have an ancient history in Nebraska. Fossilized seeds of *Berriochloa*, the likely ancestor of our present day needlegrasses, have been found in late Miocene (11 to 5 million years ago) deposits in Nebraska, including those at **Ashfall Fossil Beds** in Antelope County. Here paleontologists discovered *Berriochloa* seeds in the oral cavities and rib cages of fossil rhinos (*Teleoceras*). The seeds were part of the rhinoceroses' final meal. Soon after dining the rhinos, gathered by a pond, were overcome, buried and preserved by smothering clouds of volcanic ash from a cataclysmic eruption in the Rocky Mountains.



PHOTO BY KEN BOUC

RHINO FOSSIL AT ASHFALL



Porcupine seed heads (above) are designed for self-planting.

The eloquent, yet functional, awns of modern needlegrasses arise from the top of the lemma, the lowermost of two protective bracts tightly enveloping the seed. On needle-and-thread, this awn (the thread) can be seven inches long, the upper portion loosely coiled. The straight awns of porcupine grass are up to six and a half inches long. Green needlegrass awns are only one to one and a half inches long and distinctly bent in the middle. Needlegrass awns are composed of two separate strands, which on mature seed heads dry at varying rates in response to changes in temperature and moisture, such as the evaporation of a morning dew, causing them to twist and coil. When seed heads fall to the ground, often landing tip first, the twisting drills them into the soil. The slightly curved, pointed tips (less so on green needlegrass) act as auger bits to help seed heads drill into the soil, and a collar of long, thick, retrose (backward-facing) hairs behind the tip prevent them from exiting the soil. Seed burial increases germination rates and protects seeds from prairie fire and predation (mice and other rodents are fond of the large, nutritious seed grains of needlegrasses).

Needlegrasses begin growth in early spring and flower in late spring and early summer. Livestock readily graze them spring through fall, though needle-and-thread and porcupine grass are avoided while bearing seed heads as they can lodge in the mouth or face of grazers, bore in and abscess. The treatment is to open and drain the abscess. The seed heads can also entangle in sheep's hair, degrading the quality of the wool and penetrating the skin. If hayed, needle-and-thread and porcupine grass are harvested before seed heads develop. Green needlegrass seeds are not troublesome for livestock.

When collecting needle-and-thread or porcupine grass seeds for prairie restorations, we strip handfuls of seed heads from plants, align the tips, and clip the awns with pruning shears – otherwise the stored seed heads will twist into a gnarled, unplantable mass. While collecting, my brother once had a porcupine grass seed head wedge itself under his thumbnail. Unable to remove it, it bore deeper and festered painfully until surgically extracted. A co-worker, with the bad habit of using porcupine grass seed heads as makeshift toothpicks while wandering the prairie, once accidentally swallowed one that imbedded deep in his throat causing a distressing infection and swelling. A large dose of antibiotics was required to relieve his suffering.

Ethnobotanist Melvin R. Gilmore, in his 1912 book, *Uses of Plants by the Indians of the Missouri River Region*, reported that Indian children used porcupine seed heads as throwing darts. The straight awns and heavy seed of porcupine grass make its seed heads a more effective dart than those of the coil-awned and lighter seeded needle-and-thread or the short-awned green needlegrass. For those wishing to continue this Indian tradition, pull about 20 nearly ripe seed heads from plants, arrange them in a tight bundle with tips aligned, grasp the bundle in the middle and fling it into the back of an unsuspecting target. From a distance of five feet or less the darts will penetrate the shirt and stick lightly in the skin, causing only a short-lived tinge of pain often accompanied by the utterance of a profanity.

A one- to two-inch diameter bundle of nearly ripe porcupine grass seed heads with tips aligned and tightly bound around the lower awns with string or rubberband will dry into a contorted, artful display. When my mother-in-law's elderly friend viewed such a display on a china cabinet (a gift from me) she exclaimed with dismay: "That's a terrible grass! My dad made me dig it out of our pastures as a kid." Though disliked by some, needlegrasses deserve admiration for their unique adaptations that allow these beautiful grasses to make the prairie their home. ■

Right: By early summer, the seed heads of green needlegrass are well developed, as in this South Dakota prairie restoration. **Below:** Needle-and-thread growing in a Sandhills prairie located in Brown County.



Ponca Park

Pick Your Passion

By Doug Carroll

Photos by Eric Fowler and Jeff Kurrus

Ever since it opened in 1934, people have been coming to Ponca State Park to experience nature. Nestled in the bluffs on the banks of the scenic Missouri River, there has always been plenty to experience here: miles of trails through the dense hardwood forest; the wide, wild river; abundant wildlife; unique geologic history; rustic cabins and more.



PHOTO BY JEFF KURRUS

Above: The Towers of Time sculpture, located near the entrance of Ponca State Park, represents three separate geologic periods and features an adjacent waterfall.

Left: Fifteen mini-lodges at Ponca State Park offer all the modern amenities, with views of the dense Missouri River woodlands from every window. For those wanting a little comfort and nature, there is no better place to spend a few days.

Opposite: Brothers Nick and Jacob Push of Omaha and Deb Ohlman and daughter Rachel of Pilger kayak through a restored Missouri River backwater, one of many activities available at the park.



PHOTO BY JEFF KURRUS



KAYAKER AND AERIAL PHOTO BY ERIC FOWLER

But this is not your grandparents' Ponca State Park – with seemingly something new to offer each year, the park now mixes nature with ultra-modern amenities. Fifteen plush mini-lodges and two green cabins offer the conveniences of home. The park also has a vibrant naturalist program, which capitalizes on other additions to the park, including three miles of riverfront, the 1,762 acres of Missouri River bottomland that have been added to the park since 2000, and a new shooting range that lets people test their skills. In addition, the park's annual Missouri River Outdoor Expo draws thousands. All of which continues the long-standing tradition told in the park's slogan: "Where People and Nature Meet."



Ponca State Park, located less than three hours from both Lincoln and Omaha, has more than 1,400 acres of forest and rolling hills butting up to an unchanneled section of the Missouri River in northeastern Nebraska.

PHOTO BY JEFF KURRUS



Above: The 17,000 sq. ft Missouri National Recreational River Resource and Education Center features hands-on educational opportunities and exhibits focusing on the park area and the Missouri River. A must-stop for visitors wanting to know more about this fascinating region.

Left: Andrew Milan blows out flaming marshmallows as his classmates from Madison watch during school day at the Missouri River Outdoor Expo.

Opposite: Horseback trail rides through the park's woodlands are a long-standing staple on the park's list of activities.



PHOTO BY ERIC FOWLER



HORSEBACK AND AERIAL PHOTO BY ERIC FOWLER

The Wild West

Keeping the American Legend Alive

By Elizabeth Mack

For a month past the great event to which all our citizens were looking forward was the appearance of the Cody and Carver combination, with their original and novel Nebraska show, entitled the "Wild West."

— *The Omaha Daily Bee, May 21, 1883*

The newspaper excerpt above describes the first ever Wild West exhibition of William F. "Buffalo Bill" Cody, performed in Omaha to an enthusiastic crowd. Along with Cody was his one-time partner, Doc Carver, and their large troupe of performers, including Capt. A.H. Bogardus (U.S. champion trap shooter), as well as numerous Pony Express riders and Sioux, Omaha and Pawnee Indians (Chief Sitting Bull and Annie Oakley would later join the troupe) and even a small herd of buffalo. The newspaper reported "no less than 8,000 persons were present to witness the opening" of Cody's extravaganza, a substantial number even by today's standards.

Buffalo Bill's re-enactments were the first in a long line of Wild West exhibitions that served to keep the legend of the outlaws and gunslingers alive; more than 80 companies have been documented to operate in the late 19th and early 20th centuries, and these re-enactments continue to thrive today. On any given weekend across the country, re-enactment troupes depict the era of the rough-and-tumble cowboy hero. Though America's history boasts many interesting and unique periods, it is the era of wild, western cowboys – roughly 1860 to 1890 – that seems to capture the

public's imagination. What was, and continues to be, the attraction to these shows and the Wild West? Cody's "The Wild West, Rocky Mountain, and



Prairie Exhibition" (he was careful not to use the word "show" in the title, as he argued the performances were "reality itself") and others like them served as a

way to satisfy the public's fascination with the West. Even as early as the late 1880s, Cody and others believed the West was dying, and that his exhibitions were a way to keep it alive. According to Sarah Blackstone, author of *Buckskins, Bullets and Business*, by the time Cody's shows were at the height of their popularity in the early 1890s, "all but four of the Western territories had become states, the last Indian uprising had been quelled, and there were four transcontinental railroads." Settlers were coming west by the thousands, and for Buffalo Bill, these exhibitions served to not only entertain, but to quell what was becoming known as "frontier anxiety." Many Americans became concerned, believing the free land was nearly gone, and feared its disappearance would change society. The belief that the frontier had ended created a nostalgia that spurred many Americans to wonder what they had missed by not going west. The Wild West shows satisfied their craving for adventure.

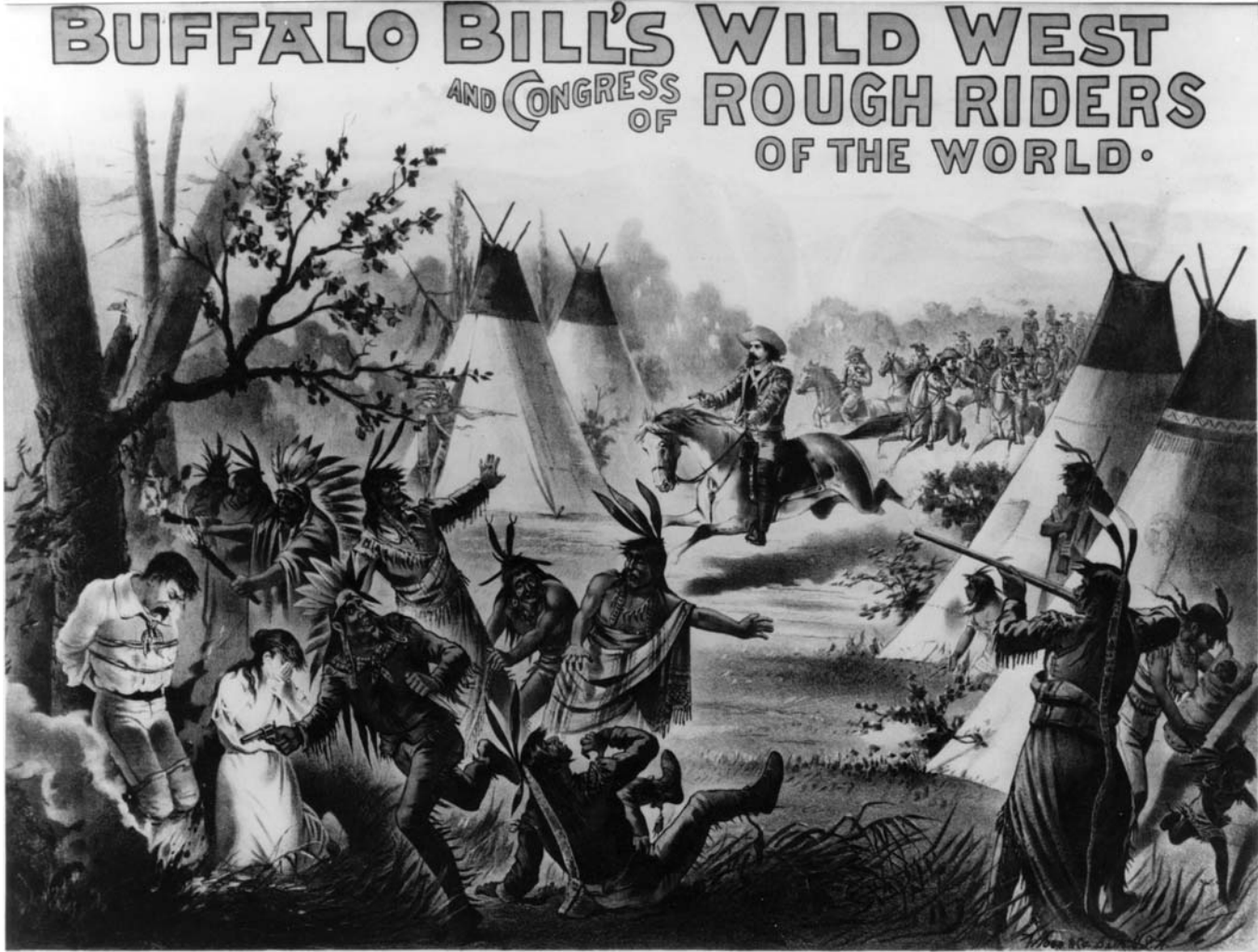
Cody's exhibitions, which thrilled audiences with displays of shootouts, stagecoach robberies and Indians on foot racing against horses, glamorized the West. According to Paul Reddin, author of *Wild West Shows*, these elaborate "re-enactments" satisfied a cultural need for Americans who

PHOTO BY PASQUALE MINIGARELLI



In Buffalo Bill's Wild West show posters, the Congress of Rough Riders were always highlighted as great hunters, expert equestrians and skilled sharpshooters. The posters – and word of mouth – were the primary forms of advertisement at the time. Even today, modern reenactors often try to keep the legends of the Wild West alive by dressing in period dress (left) and using replicas of period weaponry as they recreate famous gunfights or popular heroes of the time.

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Many Wild West exhibition posters often depicted heroic riders coming to the rescue of white settlers from the “savage Indians,” as shown here. The show’s depiction of Indians reinforced inaccurate stereotypes that followed Native Americans into 20th century films.



This Omaha Daily Bee clipping reports Buffalo Bill’s 1883 opening exhibition a “sensation.” The show was over three hours long and thousands attended.

wanted to see the conquest of the country as a grand accomplishment filled with drama and excitement: “Characterizing the winning of the Plains frontier as easy and peaceful would have minimized something that Americans wanted to see as heroic.” It would have been difficult (and boring) to show a farming family raising a cabin and planting crops – Americans needed a larger-than-life hero to represent the epic “conquering” of the Plains, and the dashing and adventurous Buffalo Bill Cody fit the bill. Cody’s “National Entertainment” advertised “Object Lessons” and “Educational Exhibitions” but Buffalo Bill’s realistic portrayals of the West were often so mingled with myth, it became impossible to differentiate between the two.

These myths of the Wild West began with the minstrel shows and popular

music in the 1840s. During this period, American showman P. T. Barnum exhibited Indian chiefs, dances and an array of Wild West displays in his museums before he became known for his circus. The myths grew bigger and more exaggerated when the dime novel took off in the late-1850s. These novels captured the public’s fascination with sensational tales of violence and heroics – cowboys versus Indians, lawmen versus outlaws, settlers versus predatory cattlemen. One of the most successful of these dime novels was Ned Buntline’s series on William Cody. *Buffalo Bill Cody - King of the Bordermen* was the first of 550 titles featuring the hero. Bill Cody decided to promote his own now widely popular legend, and after a brief stint in the theater began to form his traveling Wild West exhibitions.

At the height of its popularity,

Cody’s Wild West show performed to a crowd of 18,000 at Chicago’s World’s Fair in 1893. At the same fair, a scholar declared in a speech that “The frontier has gone.” This was the beginning of the end of the Wild West shows. Cody’s exhibition closed up for good in 1913, partly due to the advent of the motion picture. The first narrative film ever in 1903, *The Great Train Robbery*, was inspired by the robbing of a Union Pacific train by Butch Cassidy’s Hole in the Wall Gang. Other exhibitions continued with mixed success for another decade, but the characters lived on. Even though the Wild West shows were dying off, the shaping of the mythological American hero continued in paintings, dime-novels and film. Buffalo Bill became the most often-portrayed western hero in re-enactments and on screen.

“It’s embedded in Americans’ psyche. When we see those characters riding the range, taming the horses, saving the farm or ranch, it touches on our basic emotions of not only survival, but that we can make a difference,” said J. B. Tyson, Nebraska filmmaker and film studies specialist. “It comes down to the basics of good versus evil. Even though the idea of the Wild West and its heroes is based in legend and surrounded by myth, the desire to be that hero is real.”

Even though these shows slowly came to an end, they created a passion for western-style entertainment, and the contemporary rodeo is a direct result of Cody’s Wild West exhibitions. Though informal rodeos existed in the 1820s and 1830s, competitive rodeo emerged after the Civil War, and often Wild West shows introduced rodeo exhibitions into their acts. The only difference is Buffalo Bill’s and other shows hired performers instead of prize-money contestants. Professional rodeo had an explosion of popularity in the decade after World War I, and in many cases, “rodeo” seemed to be substituted for “Wild West” as a more popular drawing card. Today’s rodeos often intermingle western-style re-enactments with competition. North Platte’s NEBRASKALAND Days

Wild West Re-Enactments – Nebraska to Arizona

Nebraska

- Rock Creek Trail Days – Fairbury, Nebraska. First weekend in June.
- Railroad Days – Railroad heritage at Durham Western Heritage Museum, Lauritzen Gardens, Union Pacific Railroad Museum, The Historic General Dodge House and RailsWest Railroad Museum in Omaha, Nebraska. July.
- Grand Duke Alexis Rendezvous – Russian Czar, Alexander II, the Grand Duke Alexis visited Nebraska in 1872 for a buffalo hunt led by Buffalo Bill Cody, General George Custer, and General Phil Sheridan. This celebration includes storytelling from the “actual” characters and other events at Camp Hayes Lake, Hayes Center, Nebraska. September.
- NEBRASKALAND DAYS – Buffalo Bill Rodeo, The Frontier Revue, Heritage Festival and more. North Platte, Nebraska. June.
- The Great Platte River Road Archway – Kearney, daily.

Outside Nebraska

- Gathering of the Gunfighters – Yuma, Arizona. January.
- Custer’s Last Stand Re-enactment & Little Bighorn Days – Hardin & Crow Agency, Montana. June.
- Buffalo Bill’s Wild West Days – Sheridan, Wyoming. June.
- Wild West Shakespeare – Much Ado About Nothing or . . . A Whole Lotta Fussin’ over Nothin’ – American West Heritage Center, Logan Utah. Weekends in July.

came out of Buffalo Bill’s “Old Glory Blowout,” which celebrated the Fourth of July in 1882 and is argued to have been the first rodeo in the country. Cheyenne Frontier Days is another immensely popular example, going strong since 1897.

Another legend that lives on in re-enactments is Wild Bill Hickok. Rock Creek Station, located on the outskirts of Fairbury and established along the Oregon Trail as a stage and Pony Express stop, is where Hickok began his gunslinging career in what is known as the “McCanles Massacre.”

In 1980, the Nebraska Game and Parks Commission began to develop Rock Creek Station as a state historical park. Today, the park hosts “Rock Creek Trail Days” the first weekend of June, an event that boasts living history demonstrations, stagecoach rides, trick roping demonstrations, a buffalo stew cookout and re-enactments of the McCanles-Hickok shootout.

“We do basket weaving, blacksmithing, loom weaving and

other period-specific demonstrations,” said Judy Weers with the Rock Creek Station Visitors Center and Museum, “but the shootouts with the re-enactors are always the most popular.”

Harlin Krueger, along with his wife Carol and a band of about 15 volunteers, form the Old West Theater Group, a band of re-enactors who perform the famed McCanles shootout that set Wild Bill Hickok’s reputation in motion, at Fairbury’s Trail Days: “We not only recreate the actual shootout that took place here, but we also reenact the Pony Express changing of the mochila.” These *mochilas* (from the Spanish word for “knapsack”) were thrown over the saddle and held in place by the weight of the rider, and the mail pockets (*cantinas*) were padlocked. Only two minutes were allowed at a station, so changing of the Pony Express’s mochila became an art unto itself.

“I got started in cowboy action shooting and that got us started doing the re-enactments,” said Krueger.



Many Oglala Sioux tribe members traveled with Cody's Wild West troupe, but often wore costumes from tribes other than their own during the shows' performances.

Annie Oakley and the Role of Women

Though arguably the first female superstar, sharpshooter Annie Oakley's (nicknamed "Watanya Cicilla" or "Little Sure Shot" by fellow performer Sitting Bull) presence in Buffalo Bill's Wild West shows was not the result of Cody or other management wanting to recognize the role of frontier women. After auditioning in 1884, they decided the show had no position for her until sharpshooter A. H. Bogardus left unexpectedly. Oakley auditioned again and was hired, so having her was more a result of an unplanned hiring than any inclination of Cody or management to include a white woman in the show. Cody's later autobiography included little mention of any contributions of women – the "winning of the West" was still believed to be a strictly male accomplishment.



"We're getting older so we don't do as much as we used to, but the re-enactments are extremely popular." Buffalo Bill and Wild Bill Hickok were both famed Pony Express riders before they became famous gunslingers.

Another popular troupe of re-enactors is Wild West Creations out of Omaha. Frank Murcek, a.k.a. Wyatt Earp, along with his brother, Steve, and a band of outlaws, stage shootouts, bank and train robberies, and will even perform a shotgun wedding if needed.

"When I was young, I grew up with the western on TV, so I've always had a love for cowboys like John Wayne, Roy Rogers and Gene Autry," says Murcek. "In 1958, of the top 10 programs on TV, seven of them were westerns. Now there are none. So for us, it's the nostalgia, and what we do in the re-enactments is bring this part of

history to younger kids.

"Kids will come up to us after a performance and ask if we're 'real' cowboys. We get a chance to educate a new generation," he said.

The era portrayed by Wild West Creations' cowboys is the lawless era after the end of the Civil War, which according to the troupe, was dominated by diverse personalities of law abiding and lawless men and women settling the untamed land.

"Part of the charm of the old west, as viewed through our eyes, has always been the colorful characters of those days," says Deb Skinner, director of marketing for Wild West Creations. "We find that live performances of the old west history are the best way to bring the west alive."

Americans are not the only audience hungry for a taste of our rough and rowdy history. Wild West re-enactment groups are widely popular in England and other European countries. One large troupe meets every weekend in their own "Western" town in England. Nestled in the Kent countryside outside of London is the town of Laredo, an

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Myth of the Savage Indian

Scholars believe that negative stereotypes of Native Americans grew out of the same dime novels and Wild West shows that glamorized the cowboy and gunfighters. William Cody is said to have greatly respected and admired the great Indian chiefs, featuring them prominently in his shows as noble warriors, though in many of his exhibitions, Cody featured Native Americans as wild savages attacking whites – with Cody and his Rough Riders riding in to save the day. Some of the re-enactments included the Lewis and Clark Expedition, Battle of Little Bighorn and many battles from the Plains wars. Other performances depicted were "Attack on Setter's Cabin" and "Attack on the Emigrant Train," where natives were defeated by the brave settlers. Custer's Last Stand was staged with actual survivors of the melee. All were paid for their performances and also made side money signing autographs and photographs after the show.

Native Americans taking part in Cody's show included:

Sitting Bull (who never actually performed in any re-enactments)
Black Elk
Geronimo
Rains in the Face (reported as the man who killed Custer)
Standing Bear

Most of the Native Americans used in the shows came from the Pine Ridge Reservation and were Oglala Sioux, but had to represent themselves from multiple tribes. Many of the Native Americans used the shows as a way to advance recognition of Indian lives, as well as an avenue to be "useful and productive" citizens. Both Standing Bear and Black Elk discuss their experiences in the Wild West shows in their respective autobiographies, "My People the Sioux" and "Black Elk Speaks."

"authentic" Wild West town complete with twenty-six period-correct buildings lit by oil lamp, cowboys and saloon girls, stagecoaches and hitching posts. Colin Winter, Laredo's resident spokesperson, believes the popularity of the Wild West for outsiders is rooted in childhood nostalgia: "I think it goes back to when we were young – we were always playing cowboys and Indians. I always watched the old films with Roy Rogers, Lone Ranger and Cisco Kid – we had some great adventures."

J.B. Tyson believes America's vibrant history not only crosses cultural boundaries, but geographic boundaries as well: "A rich history has the ability to intertwine geography and capture the imagination of any generation."

The old West conjures up images of cowboys and Indians, six-shooters and spurs, John Wayne and Roy Rogers. Who hasn't, at some time in their childhood, slung a holster over their hips and challenged the neighbor kid to a quick draw? Even though the Wild West is now only a faint memory, the

Wild West exhibitions have created a lasting image of the American West. Although the shows are based largely on myth, they have helped in some ways to preserve part of the history of the American frontier, including the colorful characters of the legendary time. As the public continues to remain enthralled with the long-vanished rugged frontier and its inhabitants, re-enactments live on to capture the strength and spirit of the wild, wild West. ■

Historical information was taken from Wild West Shows by Paul Reddin; The Wild West: A History of the Wild West Shows by Don Russell; Buckskins, Bullets and Business by Sarah Blackstone; Outside American; Race, Ethnicity, and the Role of the American West in National Belonging by Dan Moos.

For more information on Wild West Creations, go to wildwestcreations.net. Visitors to England can find the town of Laredo 25 miles outside of London, or visit their web site at laredo.org.uk.



Ned Buntline, Buffalo Bill and Texas Jack; 1872.

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Beetles on the Brink

Captive breeding now part of Salt Creek tiger beetle recovery

Text and photos by Eric Fowler

After spending most of the past year in the comforts of climate-controlled incubators at the Lincoln Children's Zoo and Omaha's Henry Doorly Zoo, eleven larvae of the endangered Salt Creek tiger beetle were released into the real world in early May. This month the captive breeding program that produced those larvae will reset in hopes of rearing and releasing even more next year and making headway toward the recovery of the species, one of the rarest in North America.

The captive breeding program is currently helping supplement the

three known existing populations of this half-inch-long, metallic brown to olive green insect that lives only along moist stream banks and muddy areas free of vegetation that are associated with equally rare saline wetlands in Lancaster County. If successful, this program could help reestablish populations at other locations.

Historically, saline wetlands comprised about 65,000 acres of the Salt Creek watershed, an abundance that spawned a short-lived salt industry and led to the founding of Lincoln. As the city grew, however, more than 90 percent of these wetlands were lost



Salt Creek tiger beetles captured along Little Salt Creek north of Lincoln mate in a lab in the Henry Doorly Zoo in Omaha last June.



Stephy Hanigan, a keeper at the Lincoln Children's Zoo, returns a vial containing a captive-bred Salt Creek tiger beetle larva to an incubator after feeding it fruit flies.

to development and to channelization and bank stabilization of creeks. As the beetle habitat plummeted, so did the number of beetles. Their range is now the smallest of any insect in the United States: All known populations are found along a seven-mile stretch of Little Salt Creek on the north edge of Lincoln. At three other locations where beetles were once found – another site along Little Salt, on Rock Creek near Ceresco and at Capitol Beach on the western edge of Lincoln – none have been seen since at least 1999.

Steve Spomer, a University of Nebraska-Lincoln entomology research technologist involved in Salt Creek tiger beetle research since the 1990s, found just 318 insects during his annual survey in 2011, nearly double the number he found in 2008 but less than half of the 2003 count.

Repeated flooding along Little Salt Creek washed away the insects'

burrows, causing the 2008 decline, but there are other threats, including contaminated runoff, which could significantly affect the population. Such vulnerability was the impetus for the Nebraska Game and Parks Commission adding the insect to Nebraska's list of endangered species in 2000. It gained protection of the federal Endangered Species Act in 2005.

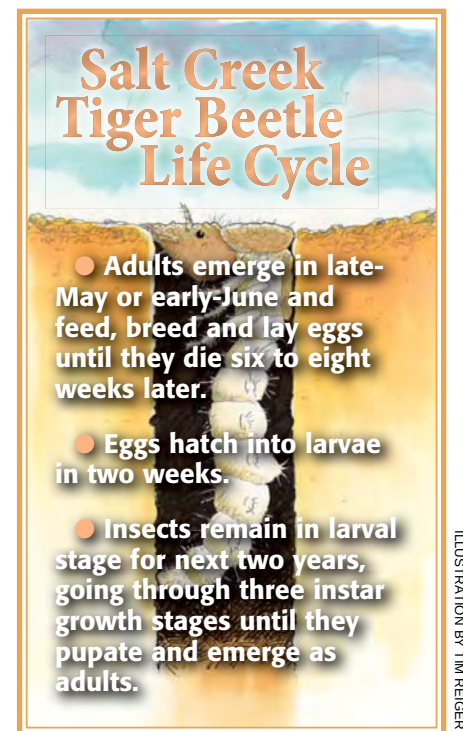
Threats to the Salt Creek tiger beetle also launched the captive breeding program and many other research projects at UN-L to study the species' life cycle. "It became evident that we could be in the same boat as the California condor where it was possible that with a couple of really catastrophic events we could actually lose the beetle in the wild, so we decided it was time to start looking at captive rearing," said Mike Fritz, natural heritage zoologist with the Commission.

Federal grants obtained by the

Commission were used to fund the UN-L life history research, which began in 2001. There is still much to be learned about the process, which isn't easy considering the insect spends the first two years of its life as larvae in underground burrows and lives only six to eight weeks above ground as an adult, all in locales with very specific requirements.

In 2010, the captive rearing program grew into a cooperative effort between the U.S. Fish and Wildlife Service, the Commission, UN-L, and the Lincoln and Omaha zoos. Sixty-seven larvae propagated at UN-L were moved to incubators at the Lincoln Children's Zoo, resulting in nine larvae being released in May 2011.

In June 2011, soon after adult insects began to emerge and during the peak of the breeding season, 15 pairs were collected from the healthiest population and taken to the Henry Doorly Zoo for



● Adults emerge in late-May or early-June and feed, breed and lay eggs until they die six to eight weeks later.

● Eggs hatch into larvae in two weeks.

● Insects remain in larval stage for next two years, going through three instar growth stages until they pupate and emerge as adults.



Salt Creek tiger beetles emerge in early-June and spend their entire six- to eight-week adult lifecycle feeding and breeding. Left: As if watching from a cave entrance, a tiger beetle stands in a deer track in the mud along Little Salt Creek last June. Below: University of Nebraska-Lincoln researcher Steve Spomer uses a sweep net to capture a tiger beetle for the captive breeding program as Bob Harms, a U.S. Fish and Wildlife Service biologist from Grand Island, watches.

breeding. The same will be done early this June.

“It’s kind of a balancing act because you have to have enough adults to get enough eggs to have the larvae for rearing, but at the same time you don’t want to deplete the wild population to the point where you’re going to make it crash,” said Fritz.

Adult males are kept with the females for 10 days to ensure successful mating, and females kept for two weeks before being returned to the wild. The insects breed throughout their entire adult life, with females laying 40 to 50 eggs, so some wild reproduction may also occur before or after they are captured.

In captivity, females lay their eggs in petri dishes filled with a special mixture of saline soil similar to what females would select in their natural habitat. The eggs hatch into larvae about two weeks later, at which point they are carefully moved into soil-filled vials. Half of the larvae are then sent to the Lincoln Children’s Zoo, ensuring that if an incubator or something else were to fail in one location, an entire year’s effort is not lost.

Larvae are fed live crickets or fruit flies daily. A predator at each stage of

its life, the tiger beetle larvae wait at the top of their burrows, their heads filling the opening, and ambush any prey that comes close, grabbing it with their toothy mandibles and pulling it into their burrow.

In the wild, when temperatures begin to drop and days become shorter in the fall, Salt Creek tiger beetle larvae seal off the ends of their burrows and begin hibernation. When temperatures and the amount of light increase around April, larvae open their burrows and become active once again.

These conditions are replicated in the incubators, and it is during this period of increased activity that the captive-reared larvae are being removed from the vials and returned to the saline wetlands, where they will spend another year before pupating into adults just prior to their emergence.

While researchers have been experimenting with captive rearing for about a decade, a perfect procedure has yet to be developed – of the more than 100 eggs laid in Omaha last year, only 27 developed into larvae.

“We’re just really scratching our heads over that one, trying to figure out why that happened,” said Spomer. “We never get as many larvae as we have

eggs. We never have. There’s always the problem that some eggs are infertile or they die from other reasons – we really don’t know. But last year seemed to be worse than normal.”

With more people now involved in the process, however, there are more heads to scratch, something Bob Harms, the Grand Island-based FWS biologist overseeing the Salt Creek tiger beetle project, hopes will lead to increased success. “We’re evolving,” he said. “It made sense to have a lot of people who would have some expertise involved, because then you put all these people together and you have this synergy where one person thinks of this and one thinks of that. We’re trying to come up with a recipe for how to rear Salt Creek tiger beetles. There are lots of unknowns, so we have to move forward and try things.”

Researchers don’t know how many eggs develop into larvae for wild beetles. Likewise, they don’t know how many larvae typically survive the first winter, but they were happy with the 40 percent survival rate they had this year. With both eggs and larvae, they are confident survival is higher in the lab, where they can ensure eggs and larvae don’t dry out. The partnership

also allows researchers to spread the risk of experimenting with variables such as temperature, lighting, moisture and salinity.

Spomer said the University experimented with keeping beetles throughout their life cycle – the original goal of the program and one still on the table for the future – but saw few adults emerge, and only one at the same time wild beetles were also emerging. That fact and research with other species of tiger beetles, which found more success releasing larvae mid-life rather than releasing adults, is why the program is centered on larvae.

This year, researchers will be intensively monitoring the larvae that are released. Weekly visual inspections will record changes in burrow size, which will show whether the larvae

are surviving and growing. High-tech monitoring equipment will record the soil temperature and moisture 12 to 18 inches below the ground, the depth of most larval burrows.

“We don’t know what the temperature of those burrows is over the winter,” Fritz said, noting that while the frostline might reach three feet in some locations, groundwater circulation likely keeps beetle habitat much warmer. “So if we’re keeping them in the lab at 40 degrees, is that too warm? Are they using up their energy reserves? Is that why we’re getting mortality at the lab? But we don’t know what the mortality is in the wild, either.”

The information they gather may uncover factors that can be used to increase success in the captive-rearing



program.

For now, captive-reared larvae will only be released at locations where there are currently wild beetles, supplementing and hopefully bolstering those populations. With so few larvae available, there is too much risk in releasing them on previously occupied sites and hoping both male and female larvae survive a year in the wild and find each other following emergence.

Researchers may place traps over the burrows next spring to capture any adults that emerge, which would provide a true measure of survival and success but could also put those adults at risk of exposure to weather they could otherwise escape. Knowing that number, however, will tell researchers how many breeding pairs they would need to ensure they will have enough adults emerge if and when they are ready to reintroduce larvae to other

areas that have supported beetles in the past.

Historically, Salt Creek tiger beetles could move throughout the basin, but UN-L research has shown that beetles today don't move more than a half mile. The gaps between occupied and unoccupied habitat are much greater.

"They aren't necessarily going to go and colonize new areas," Harms said. "We'll have to help them along by doing a reintroduction."

In the meantime, Salt Creek tiger beetle numbers as a whole are climbing. Some of that growth could be attributed to restoration work done at Frank Shoemaker Marsh, a saline wetland on North 27th Street on Little Salt Creek acquired by the city of Lincoln in 2003. That work included creating or restoring five seeps along the creek to serve as beetle habitat. In 2011, Spomer found beetles on

all but one of those sites, and the 78 individuals he found was double the 2010 survey.

"That's been very encouraging," he said. "Hopefully we can mimic that at Arbor Lake."

Arbor Lake, also located on Lincoln's north edge, is a saline wetland owned by the Commission. Restoration work there was completed this spring. As was the case at Shoemaker Marsh and elsewhere in the Salt Creek Basin, members of the Saline Wetland Conservation Partnership, which includes the Commission, FWS, UN-L, LPS-NRD, Lincoln and the Nature Conservancy, are guiding the work. Other habitat work in the basin includes using mechanical or chemical means to control vegetation that is encroaching on the open stream banks the beetles require.



Salt Creek tiger beetle eggs are visible in the bottom of a petri dish filled with special saline soil. As they do in the wild, captive-bred females use their ovipositor to lay their eggs one-quarter to one-half inch beneath the surface of the soil.

While changes in habitat can have measurable effects on tiger beetle populations, both positive and negative, the rise and fall in beetle numbers is part of the cyclic nature of insects. "All insects are that way," Spomer said. "It can be a factor of weather conditions, flooding, drought, prey availability, parasites ... there's a lot of different factors."

But to Spomer and others working with the beetles, there is still concern due to the fact that the number of insects at some sites within a larger population has continued to drop, and the species can't afford to have such losses to continue. "Usually when you see fluctuations in insect numbers, it's an entire population, not so much in little local pockets," Spomer said. "There could be environmental factors or something going on there that we don't know about that causes these fluctuations."

Those isolated declines place urgency on both habitat restoration work and the captive breeding program, but the work isn't just for the tiger beetle, it's for the health of their habitat, both the saline wetlands and Little Salt Creek, which are used by other wildlife species as well.

"The Salt Creek tiger beetle is an indicator of the health of the saline wetland system," said Harms. "And wetlands are important to people

because they provide a lot of beneficial things like flood control and aesthetics. And I know that's important because there's a lot of support for the restoration of lands like Shoemaker Marsh and Arbor Lake, and a lot of people that go out there to use the trails and go birdwatching.

"Wetlands provide those functions and the tiger beetle will help us decide whether or not the wetland is healthy

and will continue to provide those functions."

Harms is optimistic the captive breeding program will help restore this indicator species. "I can see the beginnings of something that's going to come together, I really can. I think that there's a good future for rearing and reintroduction. We've still got a lot of questions we have to answer, but I think we can do better next year." ■



A captive reared Salt Creek tiger beetle larvae is released into a man-made hole along Little Salt Creek in May.



Keeper Isacc Powell checks on breeding tiger beetles in Omaha's Henry Doorly Zoo last June.



The Many Values of Cup Plant

This member of the sunflower family has many benefits.

By Gerry Steinauer, NGPC Botanist

One of my most reliable morel mushroom hunting spots is a large colony of cup plant (*Silphium perfoliatum*). The mushroom's finicky mycelia (the underground vegetative portion of the fungus) likely feed upon the cup plants' roots. Besides being a host for a delectable mushroom, cup plant, like numerous other native plant species, has many values for humans and wildlife alike.

A member of the sunflower family, cup plant is a perennial that grows in moist prairies, open woodlands and road ditches over the eastern fourth of Nebraska. Its stout, square stems often reach over six feet tall and the species spreads via rhizomes, creating dense colonies. The plant's large, opposite leaves clasp the stem, forming cuplike depressions that fill with rainwater; hence the name.

Songbirds drink from and bathe in the water-filled cups. During the

breeding season, male dickcissels sing from atop the lofty stems, proclaiming their domain. Young game birds and other wildlife seek refuge from aerial predators, storms and the scorching summer sun under cup plant's leafy canopy. Deer browse the young, tender, nutrient-rich leaves.

Cup plant's composite flower heads, set on stalks atop the plant either singly or in clusters, bloom from mid-July through August. The heads are 2½ to 3½ inches across, with 20 to 30 yellow, petal-like seed-producing ray florets surrounding central disc flowers. Bees, butterflies, other insects and hummingbirds collect copious pollen from the long-blooming and plentiful flowers. In fall, goldfinches flock to cup plant to feed upon its plump, sunflowerlike seeds.

Cattle and sheep graze cup plant's young leaves. When grown in pure stands in the upper Midwest, fertilized and cut for hay, the low-maintenance

cup plant can produce forage of equal quality and quantity to alfalfa. Furthermore, cup plant is well adapted to cold winters and wet springs – conditions that often kill alfalfa. Cup plant silage has comparable value to that of corn silage.

Native Americans cut the stem tops of cup plant to collect its resinous sap, enjoyed as chewing gum. The gum reportedly eased nausea and vomiting and freshened the breath. Cup plant's young leaves make tasty greens, either fresh or cooked. In modern medicine, chemical extracts from the plant are used to lower cholesterol and triglyceride levels in blood, as antiseptics and in healing burns.

Cup plant is easily grown from seed, available from seed dealers or harvested from wild plants in autumn. As a landscaping plant, cup plant can be aggressive, spreading by seed and rhizome, and may not be suitable for all gardens. ■



A colony of cup plant (yellow flowers) growing in a tallgrass prairie restoration in Hamilton County provides good wildlife habitat.

PHOTO BY BILL WHITNEY

Dark Days for Black Walnut

New disease poses significant threat to state's walnut trees.

By Julie Van Meter, State Entomologist, Nebraska Dept. of Agriculture

Nebraska's black walnut trees (*Juglans nigra*) are under threat from a new pest called **Thousand Cankers Disease of Walnut (TCD)**. Several years ago, tree experts in the Boulder, Colorado area noticed an unknown disease killing off black walnut trees in the city's urban forest. This ultimately led to the discovery of TCD. Once the diagnosis was in place, other western states that had recently experienced black walnut die-off were able to determine that TCD was the culprit in many of those instances. This pest has not been found in Nebraska, but is causing great concern because of the potential damage it could wreck on the state's black walnut trees. TCD has been found in Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah and Washington to the west of Nebraska, and Pennsylvania, Tennessee and Virginia to the east.

Causes and Symptoms

TCD is caused by a combination of the walnut twig beetle (*Pityophthorus juglandis*) and a fungal disease (*Geosmithia morbida*). The walnut twig beetle is native to the southwest U.S., where it is a minor pest of Arizona walnut (*Juglans major*). The fungus is likely also native. The fungal spores are carried on the body of the beetle, and infect the tree as the beetle tunnels through the bark. Each infection site becomes a small canker. These small cankers grow and coalesce, creating very large cankers which girdle the tree and ultimately kill it. Tree death may occur in as little as three years after initial infection.

The walnut twig beetle is very small, attacking



KATHY KEATLEY GARVEY, UC DAVIS DEPT OF ENTOMOLOGY

Despite their very small size, the walnut twig beetle could devastate Nebraska's walnut trees.

branches and even the trunk of black walnut trees. Because of their small size, their exit holes are extremely difficult to see. It is easier to look for the disease symptoms, which include yellowing and thinning of the tree canopy, and wilting of foliage. Dark cankers form under the bark, around the beetle's tunneling, and may cause a dark stain on the bark surface. It is difficult to differentiate many of these symptoms from other causes, such as drought.

At Risk

The native range of black walnut extends from the east coast through the South and Midwest, to the eastern edge of the Plains states. In Nebraska, black walnut can be found in eastern parts of the state, primarily in riparian areas. This includes forests along the Missouri River and rivers and streams leading into the central part of the state. Black walnut is very important to the native ecosystem in Nebraska. The nuts are utilized by many animals, from squirrels to turkey to deer, for food. The caterpillar of the beautiful Luna butterfly (*Actias luna*) is just one of several native insects that feed on walnut foliage. Additionally, black walnut is a high-value timber product. Nebraska produces approximately one million board feet of walnut lumber each year, valued at roughly \$3.5 million dollars, and has an annual nut crop that adds approximately \$1.2 million to the state's economy. Should TCD become introduced to Nebraska, the results could be devastating.

The Nebraska Department of Agriculture (NDA) is working in conjunction with the Nebraska Forest Service to survey for TCD across the state. The focus is on high-risk sites, such as campgrounds, saw mills, and walnut plantations. Because black walnut is such a high-value wood, there is an increased risk that when infested trees are cut down, the wood may be



Branch die-back and canopy thinning are symptoms of a possible TCD infestation.



Removing the bark from an infected branch exposes twig beetle galleries surrounded by dark cankers.

moved to new areas. The beetles could then emerge from the wood to infest new areas. Because of this, NDA has enacted a TCD quarantine, prohibiting the movement of certain items, including walnut trees, wood and all hardwood firewood, from known TCD infested states. The full text of the quarantine and a list of specific regulated articles can be found at www.agr.ne.gov.

Firewood is recognized as an excellent means of transporting plant pests from one location to another, and walnut firewood could easily bring TCD into Nebraska. Other pests, such as **emerald ash borer** and **Asian longhorn beetle**, could also be transported this way, so help protect our state's trees by leaving your firewood at home, purchasing what you need at your destination, and leaving any unused firewood for the next camper. Also, as you visit your favorite campgrounds and parks, and hunting and fishing spots, take a few minutes to check out the walnut trees in the area. Contact NDA at (402) 471-2351 for more information on the TCD quarantine or to report any symptoms of TCD. ■

KAREN SNOVER-CLIFT, CORNELL UNIVERSITY, BUGWOOD.ORG

NED TISSERAT, COLORADO STATE UNIVERSITY, BUGWOOD.ORG

junior journal

interesting notes for readers of all ages

by Lindsay Rogers and Donna Schimonitz

Doctor's Orders: Go Outside!

by Lindsay Rogers, Nebraska Project WILD

It may sound simple, but getting outside is a great way to enjoy the summer. But, it is not just about having fun! Spending time in nature can actually help you feel better. People – including kids – can gain many benefits from taking a walk outside, going bird watching, growing a garden, or really anything in nature. Check out these amazing benefits from spending time in nature:

Increased White Blood Cells

White blood cells are the cells in your blood which help fight off illnesses (like colds or an infection). If you have more white blood cells, you will not get sick as often.

Reduced Blood Pressure

Think about gym class. As you run around, your heart beats faster. When this happens, the pressure inside your heart goes up. This is normal. But, what is not normal is when your heart has this higher pressure all of

the time. Spending time in nature reduces your blood pressure. This means that your heart is getting a little break.

Reduced Stress

You know that feeling when you are about to take a test that you forgot to study for? This is the feeling of stress. Some stress is fine (it can actually be good!). But, too much stress can cause stomach aches, headaches, and diabetes, and even skin conditions (like pimples). A simple solution is to go outside and enjoy nature.

Better Grades ... Really!

Lots of research has been done to show that students, like you, who spend time in nature actually do better on tests. So next time you need to do your math homework, take it outside!

So, This Summer, GET OUT!

Outside, that is!



photo by Doug Carroll

Fishing is a fun activity for the whole family.

Summer Bucket List

Summer is a great time of year to get outside – the weather is great, you don't have to go to school, and there is a lot happening in nature. Check out this list of all the great things to do in nature this summer. Try to complete as many as you can... check them off as you complete them.

- ☐ Go for a night walk
- ☐ Plant a garden
- ☐ Go fishing
- ☐ Take camping trip... in your backyard
- ☐ Go swimming in a lake, river or stream (with supervision)
- ☐ Make a scavenger hunt for your friend... and vice versa
- ☐ Set-up a bird feeding station
- ☐ Make s'mores around the campfire or fire pit
- ☐ Go kayaking or canoeing
- ☐ Catch fireflies in the evening
- ☐ Look for squirrel or bird tracks in the mud after a rain



photo by Doug Carroll

NATURE CALENDAR

- Turtles begin laying their eggs: mid May through June
- Squirrels mating: mid May through June
- Prairie plants begin to bloom: mid-June through September
- Cicadas singing: late June through August
- Hummingbirds begin migrating south: mid August
- Bats flying about: all summer



photo by Doug Carroll

Tick Talk

The most disgusting and dispicable of God's creatures is native to Nebraska and "vexacious."

By Roger Welsch

The principal value of the tick is as a ready and profound theological argument in any situation where someone suggests that all God's creatures have a value and function. That's it. That's the only thing a tick is good for. Tick mommies don't even like tick babies. Tick babies aren't cute like almost every other baby anything. Next to ticks, crawdads are gorgeous.

I have never figured out why the Egyptians didn't suffer a plague of ticks when they were being divinely inspired to release the Jews from captivity. Frogs, locusts, rivers of blood, drought, flood ... big deal. A dozen ticks would have sent the Hebrew people on their way along with their backpacks full of sandwiches and cold beer.

For some real fun, let's talk about what the worst thing is about ticks. Yes, they carry disease, they are disgusting, they cause injuries, they are disgusting ... I already said that? Well, that's how disgusting they are. But the worst thing about ticks and the reason I am thinking about them today as I write this is that they are vexacious (a word I invented just now specifically for ticks because they deserve a special word) when and where they aren't. Few other vexations can make that claim.

Sometime last night, about 2 a.m., I got a creepy feeling along the back of one leg. If you have spent any time in the Nebraska outdoors, you know that feeling. It's always somewhere you can't reach or see, which in my case is an area growing daily by the acre. I felt around, did a quick review of my mental wart chart so I didn't wind up removing a substantial part of my anatomy, quickly identified and dismissed a couple cookie crumbs from my bedtime snackie, and found what I was pretty sure was neither me nor edible. I clamped down and reached to turn on the bed lamp. Reaching and turning on requires both my hands and here I was, trying to keep a grasp on what I presumed was a disgusting body invader, so of course by the time I had the light on, covers off, and hand lifted for inspection ... there was nothing there.

Well, not exactly. There was ... something. There was the creepy feeling that somewhere in that bed with me was a tick. Suddenly every fiber of my being was tuned to the slightest feeling, tickle, touch, bristle, hair, fiber ... each rising in my imagination to the certainty of a tick.

About 6 a.m. I got a stronger radar reading of a bogey at about six o'clock, if you catch my drift. And I caught something. This time I got the light turned on, and there the ugly booger was. I had him, but now I had to maintain my grasp, roll over, grab the little medicine container of rubbing alcohol I keep bedside for just this purpose, and get it open – which even when I am not wrestling with a tick can be a daunting exercise. Eventually I got it opened, did the quick, deft gymnastic required to get a tick between finger and thumb sited over that little jar and convinced that this would



be a good time to bail ... and there he was suffering what I hoped was an excruciating death. (Please note – Linda tells me I am gruff and fearsome when in a snit or fury. I am actually a pussycat and don't even like to see a cricket missing one leg, like the one currently sharing my bathroom with me. But ticks ... that's different).

But that's not the end. A tick out of sight, or even out of luck, is not a tick out of mind. Now I have what I call "tick fever," the constant feeling that somewhere on this ample geography there's one of that deceased tick's relatives, intent on taking over where his cousin failed. The moment I begin to forget that blasted night visitor, I will find another one somewhere on my person and the cycle will start all over again.

Like I said, it's not even a matter of ticks being creepy where they are ... they are creepy even where they aren't. ■

During a recent hospitalization Rog was tested for Lyme disease ... fortunately negative. Less auspiciously he was found positive for Parvo. Now his dogs won't talk to him and his wife, Linda, is suspicious. He reports that the worst part is a nagging urge to chase cars and bite at tires.



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▲ This is a picture of my dad, Albert Johnson. The goose he is holding was won at a trapshoot at Bristow in the early '30s. Two men were behind railroad ties and when they had the trap loaded they'd hold up a red flag to tell the shooters they were ready. That's how I got interested in shooting. I was a member of Spencer Gun and also Lincoln Gun Club.

The other picture is, left to right: Bud Johnson (myself), Cayton Ring and Phillip Hamond. These ducks were shot at Hodge's Point on the Missouri River at Sunshine Bottoms on a windy day. They would fly low over Hodge's Point.

— Bud Johnson,
Lincoln, Nebraska



◀ I am sending a picture and article of albino coyotes killed by myself and a friend, September 24, 1940. I received an original picture from the museum after they were mounted and on display.

Below is an article from the Chambers Sun, dated September 26, 1940.

PAIR OF ALBINO COYOTES CAUGHT

The outstanding coyote capture in the county and possibly in the United States was made last Tuesday September 24 in the hill country south of Chambers. They ran down and killed two albino coyotes, one male and one female.

On rare occasions one albino coyote is seen, but never before had a pair been caught together, according to Mr. Sichter of the Nebraska State Museum at Lincoln.

Gordon Watson brought the rare specimens to town and called the State Museum to see if they cared to have them. So glad were they to get them that they sent Mr. Sichter after them immediately. The animals will be stuffed and put on display at the museum in Lincoln.

Mr. Watson says that he had seen one running on the prairie near his place several times, but did not know that there were two of them until Tuesday. Mr. Howe caught one and Mr. Watson the other. At the time that they were caught they were several miles apart.

— Wesley Howe, Fremont, 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.

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Having spent a career piloting Army helicopters, my fondness for birds, especially raptors, is apparent in my work as a photographer. The in-flight ability of our avian brothers and sisters is nothing short of miraculous. Besides the marvel of flight, some of their other displayed behavior amazes me as well.

The osprey is one of my favorite raptors to observe and photograph. In recent years I've watched and photographed these birds fish on the North Platte, Niobrara, Snake and Loup rivers in Nebraska. The female osprey is usually larger than the male and will have darker markings on the chin, breast and neck, while the male will appear to be almost all white in those areas.

To capture this shot I spent a fair amount of time waiting, watching the nest from a distance. My goal was to photograph behavior at the nest and hopefully one of the adults with a fish. In the quiet hours spent waiting, I couldn't help but notice how alert the female on the nest was. From the low position in the nest she kept a keen watch on me in my hide, and also on birds flying overhead. It was this keen awareness that helped me get this shot.

When the female raised her head and stared to the east, which she had not done before, I slid my eye behind the eyepiece of my Nikon and put my finger on the shutter button. A second later the male osprey appeared at the edge of the nest with a half-eaten fish. Once on the nest, the male dropped the fish and took over the incubation duties while the female immediately got up, grabbed the fish and flew off to a nearby perch to have breakfast.

As I looked back at the multiple frames of images from this sequence, it struck me that these two ospreys, who are likely paired for life, are really a team. The half-eaten fish on the other hand, gave new meaning to breakfast in bed.

Bill Hager
April 29, 2012



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