Saving Wildlife and WILD PLACES 2015

A Newsletter from the Nebraska Wildlife Conservation Fund

Swift Fox

You can make the difference

Remember our wildlife and the wild places that we want future generations to enjoy. Make sure to "check" for wildlife on your state tax return. Look for the peregrine falcon symbol and donate all or a portion of your tax refund to the Wildlife Conservation Fund. You can also donate throughout the year by calling (402) 471-0641 or online at NebraskaWildlifeFund.org

All donations are fully tax deductible

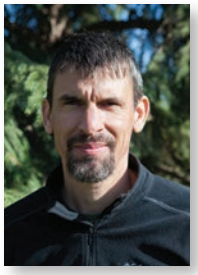
PHOTO BY BOB GRIER

Nebraska's Natural Legacy includes hawks and herons, bats and butterflies, turtles and tree frogs, milkweeds and milk snakes, and almost everything in between. Nebraska is a beautiful, interesting and unique place in part because of our wildlife. About 98% of the thousands of birds, mammals, fish, reptiles, amphibians, insects and plants are considered "nongame" species in Nebraska because they are not hunted, trapped or fished. By law, revenue from hunting and fishing licenses cannot be spent on "nongame" species, so the Wildlife Conservation Fund was created. The Nebraska Wildlife Conservation Fund connects people to nature through education. It is the state's primary source of funding for the research and habitat restoration necessary to ensure that spectacular nongame species, such as the whooping crane, river otter, and blowout penstemon thrive in Nebraska. By supporting the Nebraska Wildlife Conservation Fund with a tax-deductible donation, you are taking an active part in conserving our state's diverse wildlife and our natural legacy for future generations.

Eastern tiger swallowtail (female black form)

PHOTO BY DOUG CARROLL

Bird Monitoring and Management in Oak Woodlands



Joel Jorgenson, Nebraska Game and Parks Commission, Nongame Bird Program Manager

PHOTO BY ERIC FOWLER

Oak woodland at Indian Cave State Park.

One of the greatest challenges our land managers face is how to conduct conservation actions without fully understanding all the potential positive and negative consequences, or whether these actions will achieve the desired goals for wildlife. The learning process takes time and resources, but the investment is necessary to better understand oak woodland management actions and how wildlife is responding.

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Oak woodlands are an important ecosystem that supports local and regional biodiversity in eastern Nebraska, including species of high conservation concern. Within Indian Cave and Ponca State Parks are two of the largest continuous tracts of undeveloped oak woodlands in our state. Recently, managers recognized the future of these oaks woodlands in these State Parks was contingent upon the reintroduction of important ecological processes, particularly fire, which had been suppressed for decades. Even though prescribed fire is likely to be positive for the oak community, there is potential for both positive and negative consequences for individual species. Thus, there is a need to understand these consequences in order to make the best decisions going forward.

Both **Indian Cave** and **Ponca State Parks** have many exceptional resources for Nebraskans. Both have rich bird communities and are widely known as birding destinations, so management decisions need to incorporate impacts on local birds.

The need for good information to support decision-making is why we recently implemented three years of intensive bird monitoring at both parks. The data collected provides a robust baseline to evaluate changes in bird abundance in the future. Initial comparison between burned and unburned portions of the parks suggests management is, overall, having a positive effect on the parks' birdlife. Several species of conservation concern, such as Acadian Flycatcher and **Red-headed Woodpecker**, were more numerous in burned areas compared to unburned areas. No species of conservation concern was more numerous in unburned areas compared to burned areas. While these early returns are positive, having good information available to managers will help them effectively manage these two sites and conserve the important birds that occur at each for generations. ✔

PHOTO BY BUB BLAKE

Red-headed woodpeckers move to woodland edges and disturbed areas during the breeding season.

Watching the Smallest Wildlife

By Kristal Stoner, Nebraska Game and Parks Commission Wildlife Diversity Program Manager

When we think of watching wildlife, charismatic images of elk and sandhill cranes come to mind, but thanks to a **watchable wildlife grant program**, Nebraskans have more opportunities to view not only the famous large animals, but also the small ones. An interactive, mobile display has provided thousands of people the opportunity to view macroinvertebrates commonly found in our aquatic habitats, but which are rarely seen. The display also illustrates the importance of macroinvertebrates as indicators of aquatic ecosystem health and as the foundation of food webs. This grant program has also supported other projects such as the construction of viewing blinds, establishing pollinator gardens, supporting local wildlife festivals and has purchased scopes and binoculars for public use.✔

PHOTO BY LINDSEY CHIZINSKI

Small, aquatic invertebrates become easy to observe with this educational display.

Wind and Bats

By Michael Whitby, Nebraska Cooperative Fish & Wildlife Research Unit

With the current push towards renewable energy, Nebraska is poised to harness its abundant wind resources. However, building large numbers of turbines in the wrong places could have long lasting effects on bat populations - and consequently increase pest populations.

PHOTO BY EMMA BRINLEY BUCKLEY

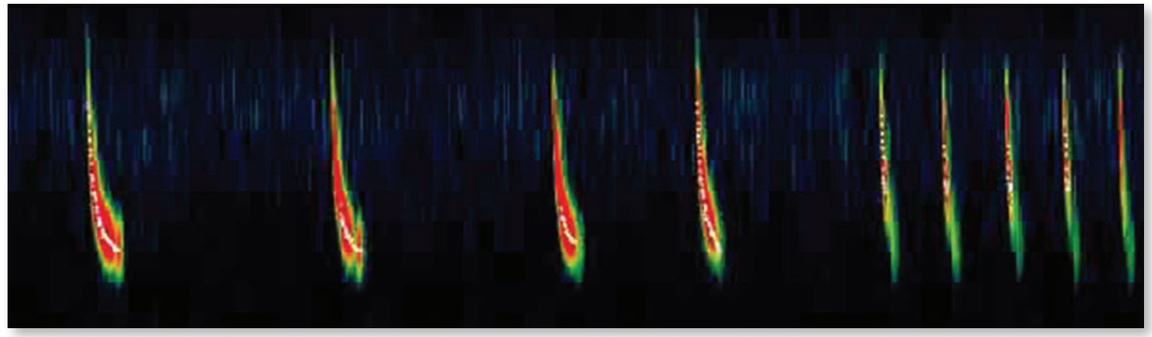
The microphone of an acoustic detector overlooking the Platte River at Platte River State park. Microphones are placed at 50-75 feet above ground level in order to hear bats migrating above the tree tops. Many are placed on the tops of generous farmer's silos or grain elevators.

PHOTO BY EMMA BRINLEY BUCKLEY

PhD student Michael Whitby setting up acoustic detectors to record the echolocation calls of passing bats.

Wind turbines kill nearly 1 million bats each year in the US, mostly during the fall when some species migrate 500-2000+ km to warmer regions. Because bats typically have only 1-2 young per year, even modest losses can devastate populations. This could cause problems for farmers, as bats have been shown to reduce the abundance of corn earworm moth larvae, providing an estimated $22.9 billion dollars of agricultural pest control every year.

We hope to support farmers and a blossoming wind energy industry in Nebraska by finding ways to minimize impacts to bats. Through support from the **Nebraska Environmental Trust** and **Wildlife Conservation Fund**, our 4-year study uses ultrasonic acoustic detectors to determine when and where bats are migrating in Eastern Nebraska. Describing landscape features (such as rivers or ridge tops) with high bat activity will allow wind developers to avoid placing turbines in areas most likely to kill bats. By identifying times of year and weather conditions that correspond to bat migration, wind farm operators can target timing of mitigation strategies to reduce fatalities. ✔



Echolocation call of a bat. By analyzing the shape and frequency we can identify what species of bat made the recoding and make conclusions for each species in the area.

An Incredible Wildlife Success Story

By Sam Wilson, Nebraska Game and Parks Commission Heritage Program Manager

River otters once swam, slid, wrestled and chased fish in every major waterway in Nebraska. Unfortunately, like many other native mammals, they were eliminated from the state during settlement due to unrestricted harvest and land-use changes. The final record of a river otter from this historic population was from Lincoln Creek in Seward County in 1916. For many decades residents of Nebraska went without so much as a glimpse of this energetic and playful member of the weasel family.

Fortunately for river otters and the people of Nebraska, much of the habitat that remained in our rivers and streams was still suitable for river otters. The only thing missing were the otters themselves. The Nebraska Game and Parks Commission reintroduced the species to the state with the help of trappers in states like Louisiana and Alaska that still had healthy populations. A total of 159 otters were released into seven rivers across the state during 1986 – 1991.

River otters are capable, adaptable and rarely seen. They spend a good deal of their time underwater or underground in beaver dens or other resting areas. Their adaptability has become apparent over time as track surveys conducted by Game and Parks have shown their expansion across much of the state. Additional immigrants likely came into Nebraska from neighboring states like Missouri, Kansas and Iowa which have also experienced incredible success with river otter restoration.

The **Nebraska Game and Parks Commission** has partnered with the **Nebraska Cooperative Fish & Wildlife Research Unit** to conduct additional research on river otter habitat use, survival, and population densities. They are presently working on a project aimed at determining river otter presence throughout the state. These projects have helped document the restoration of river otters and their expansion throughout the state – which may allow the species to be removed from the state list of threatened species. The successful restoration and return of this playful species to Nebraska would not have been possible without support and funding from the **Nebraska Wildlife Conservation Fund**. ✔

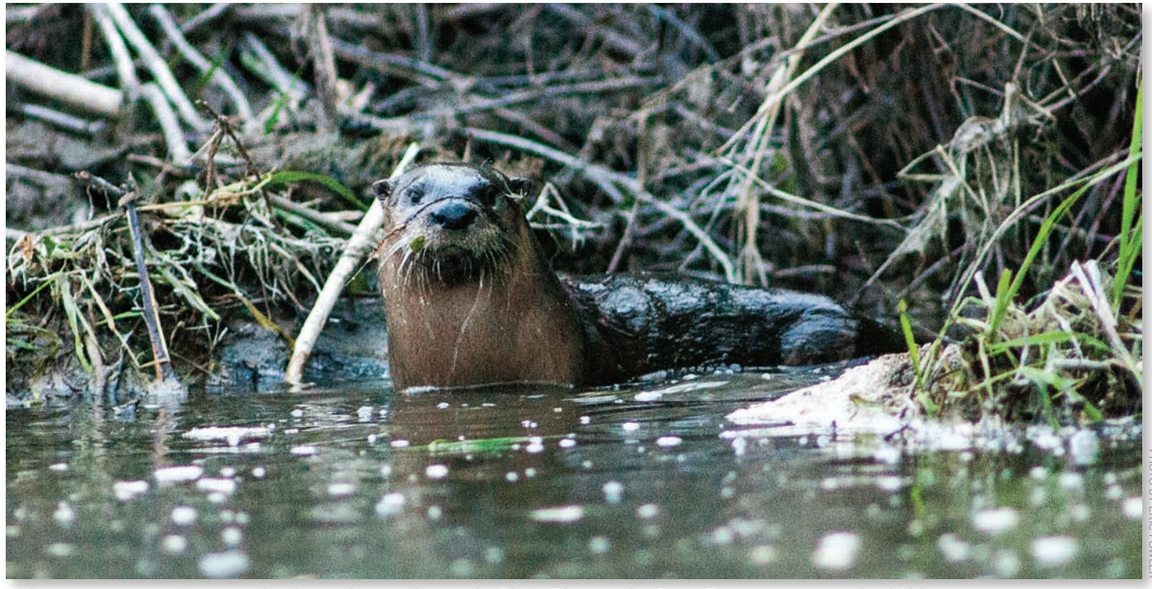


PHOTO BY ERIC FOWLER

A river otter pauses after emerging from a beaver den on the Platte River on the Crane Trust property south of Alda.

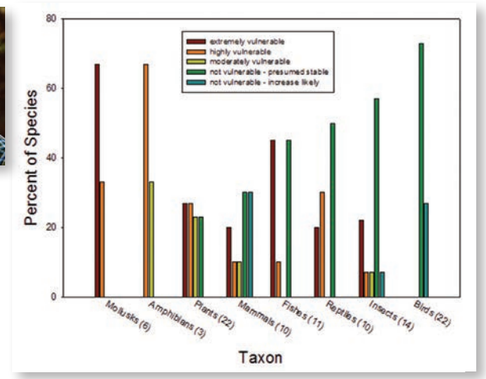
Project WILD Guide Update

By Lindsay Rogers, Nebraska Game and Parks Commission Project WILD State Coordinator

Project WILD Curriculum and **Activity Guide** is an award-winning publication focusing on wildlife, habitats, wildlife management, and human interactions with wildlife. The goal of Project WILD is to help educators engaging children in fun and educational activities while teaching about our natural resources. Over 1 million educators have taken part in a Project WILD Educator Workshop; even better, over 53 million students have participated in Project WILD activities! And yet, with every program there comes a time to update, revise and perfect. This time has come for Project WILD. Starting in 2014, Project WILD State coordinators from across the country began work on a complete update of the guide. The goal is to perfect activities, delete a few outdated activities and add new activity topics such as wildlife diseases, pollinators and climate change. It is only through the help of many agencies that this extensive endeavor can be accomplished. The Nebraska Wildlife Conservation Fund is pleased to be able to help. Look for a fantastic new guide in mid-2016! ✔

Species' Vulnerability to Climate Change

By Rick Schneider, Natural Heritage Program Manager



Proportion of species, within each taxonomic group, ranked at different level of vulnerability to climate change. Numbers in parentheses indicate number of species evaluated in each group.

Climate change is already having significant impacts on wild species and ecosystems and these are likely to increase considerably in the future. To help inform conservation actions, we evaluated 98 species to determine their vulnerability to climate change. This included nearly all Tier 1 at-risk species identified by the **Nebraska Natural Legacy Project**. Evaluations were conducted using the standardized Climate Change Vulnerability Index developed by NatureServe. The Index considers 20 factors that assess a species predicted exposure and sensitivity to climate change. The results can be used to develop strategies to help species cope with climate change and to prioritize conservation action.

Overall, 47% of the species evaluated had some level of vulnerability, with 39% being ranked as either extremely or highly vulnerable. More than half of the species were ranked as not vulnerable, with 10% identified as likely to benefit from climate change. There was considerable variation in vulnerability among the different taxonomic groups (see chart). Mollusks and amphibians were the most vulnerable, with all species evaluated having some level of vulnerability. About 3/4 of the plant species had some level of vulnerability, while 2/3 of mammal and insect species were not vulnerable. For the fish, all species that inhabit small, cool-water streams ranked as extremely or highly vulnerable while all species inhabiting large, warm-water rivers ranked as not vulnerable. None of the birds were ranked as vulnerable. However, it should be noted that the assessment only evaluated vulnerability within Nebraska, so some of the migratory species could be vulnerable when they are outside the state.

Aquatic species were the most vulnerable overall, due in part to the projected impacts to aquatic ecosystems. Changes in climate will alter both water quality and quantity. Increases in the frequency of high intensity precipitation events, particularly in a landscape dominated by agriculture, will lead to increased runoff of sediments, fertilizers, and pesticides into water bodies. Increased frequency of drought and heat waves, will result in lower stream flows and an increase in the frequency of streams and wetlands drying up. Finally, increases in air temperature will result in increases in water temperature, spelling trouble for cool-water dependent species such as pearl dace and blacknose shiner, a state endangered species. ✔

In Search for Large-spike Prairie-clover

By Gerry Steinauer, Nebraska Game and Parks Commission Botanist

Large-spike prairie-clover (Dalea cylindriceps) is a rare plant of dry sandy and gravelly prairies in areas of the western Great Plains including western Nebraska. Prior to 2013, there were only 22 records for the plant in Nebraska, the first from 1890 and the most recent from 2004 in Box Butte County. The Nebraska Natural Legacy Plan lists large-spike prairie-clover as a Tier 1 species (at-risk nationally).

In 2013, because so little was known about the plant in Nebraska, the Game Commission, hired Jim Locklear, Director of Conservation at Lauritzen Gardens, to assess the conservation status of this species and gain a better understanding of its ecology.

Jim spent two weeks that summer surveying the known locations of the prairie-clover and documenting habitat characteristics as well as searching for new populations. He found plants still growing at only five of the historical sites these in Box Butte, Sheridan, and Sioux counties. The populations were small, the largest consisting of 110 individual plants. He found no new populations that summer. Jim concluded that **large-spike prairie-clover** indeed had undergone significant population decline in Nebraska.

The plants he found were growing primarily in loamy sand soils associated with sandsage prairie and western sand prairie. Of concern to Locklear, non-native cheatgrasses were common in the prairies where the clover had been reported and he feared competition from cheatgrass had become a significant threat to the prairie-clover's survival.

In the summer of 2014 while doing other botanical survey work Jim found two previously unknown populations of large-spike prairie-clover, each containing several hundred plants, growing in sandy prairie in Keith and Garden counties near the North Platte River. Also this past summer a Commission wildlife biologist found several hundred plants in a prairie near Chadron. Perhaps things are looking up a bit for the prairie-clover. Jim will continue his search for new populations of the large-spike prairie-clover in 2015. ✔

PHOTO BY JIM LOCKLEAR

With its large size of up to 32 inches tall, and dramatically elongate 7 inch flower spikes, the large-spike prairie-clover is a striking and noticeable object in the landscape.

Run Wild or Just Click

Since 1984, the Nebraska Wildlife Conservation Fund has been saving wildlife and wild places through habitat restoration, research and education. The Wildlife Conservation Fund is entirely funded through tax-deductible donations. Here are just a couple ways to support the Wildlife Conservation Fund.

1) Support with just a click, simply visit www.NebraskaWildlifeFund.org to make a donation.

2) Remember the Wildlife Conservation Fund when you are doing your taxes. Taxpayers should look for the new peregrine falcon symbol on your tax form to make a contribution.

3) This year on May 16th you can choose from a 10k or 5k run through the scenic, naturally challenging dirt trails at Mahoney State Park. Kids can enjoy the one mile fun run! Register by April 15th for discounted registration. Watch for information at www.RunWildNE.org.

Out of a Test Tube, Into the Wild

By Tim Olin, Certified Nebraska Master Naturalist and Salt Creek Tiger Beetle monitoring team member and

Matt Jones, Trainings Assistant, Nebraska Master Naturalist Program

PHOTO BY ERIC FOWLER

What are the odds that a tiny, rare, worm-like creature will survive to be an adult when it began its life in a lab tube, fed by dedicated humans for several months, but then is dumped at a saline wetland and encouraged to crawl into a manmade burrow to fend for itself? The odds decrease when you add the ravages of summer heat, flooding, freezing snow, hungry birds, and bee fly attacks. This is the plight of the endangered **salt creek tiger beetle** that can only be found in saline wetlands near Lincoln.

PHOTO BY BRUCE MELBERG, MASTER NATURALIST PROGRAM COORDINATOR

Kit Ehlers (left) and Tim Olin (right), Certified Master Naturalists, are learning to use monitoring equipment for salt creek tiger beetle habitat.

The salt creek tiger beetle spends approximately two years as larvae in a burrow and only six weeks as an adult. These burrows must be in saline mud flats, found at saline wetlands. Nebraska's eastern saline wetlands once ranged in excess of 20,000 acres. Now, less than 4,000 acres remain. Such wetlands form a regionally unique wetlands complex that supports biodiversity.

Because there is only hundreds of this beetle left in the world, a coalition is working to recover this species through the Endangered Salt Creek Tiger Beetle Reintroduction Project. It includes representatives from the Nebraska Game and Parks Commission, the Lower Platte South Natural Resource District, U.S. Fish and Wildlife Service, University of Nebraska Department of Entomology, Henry Doorly Zoo, Lincoln Children's Zoo and the Nebraska Master Naturalist Program.

The Nebraska Master Naturalists are the "boots on ground" for this project. They are volunteering their time as citizen scientists and taking on beetle rearing, reintroduction, and site monitoring. Each week, volunteers hike to reintroduction sites to collect data about the beetles' home environment. The information is critical for an ongoing study sponsored by the Entomology Department at UNL.

These are very dedicated volunteers, as getting to the tiny burrow sites is not just a walk in the park. It's a hike through a marsh accompanied by masses of mosquitoes and deer flies. They are prepared for the unexpected, including an encounter with a mouse that finds the monitoring unit a perfect place to build a nest, and the added duty of repairing the nibbled wires which sample soil salinity, moisture and temperature.

"It's about more than just the salt creek tiger beetle." Said Tim Olin - Certified Nebraska Master Naturalist and Salt Creek Tiger Beetle monitoring team member. "It's also an opportunity to view the many other inhabitants of the marsh like shorebirds, waterfowl, pheasants and quail. You can see plants that are unique to the saline wetlands such as Sea Blight and Saltwort."

Reintroduction efforts are planned to continue, so the information gathered by these volunteers is critical for future efforts.

Monitoring Salt Creek Tiger Beetles is but one of countless opportunities for Nebraska Master Naturalists trained to volunteer toward conserving Nebraska's Natural Legacy. Discover more about the Nebraska Master Naturalist Program by visiting www.naturalist.unl.edu, or contact us today at Naturalist@unl.edu , or 402-472-8689. ✔

NEBRASKA GAME PARKS

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Donate to the Nebraska Wildlife Conservation Fund

Help protect our natural legacy by making a tax-deductible donation to the fund. The Fund supports the conservation of Nebraska's diverse wildlife (including endangered and threatened species). For a donation of $25, you will receive a "Do Something Wild!" T-Shirt.

Short-sleeved T-Shirt - Adult S, M, L, XL, XXL

To donate, call 402-471-0641 or go online at

www.NebraskaWildlifeFund.org

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