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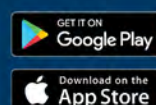
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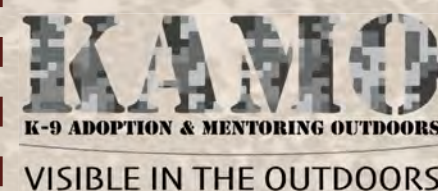
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Cover: Maximilian sunflower is a perennial sunflower found statewide in Nebraska and supports a wide variety of animals through its pollen, nectar, seeds and habitat structure.

CHRIS HELZER

This page: Trees and fog rise from the calm surface of Lake Wanahoo in Saunders County at sunrise.

ERIC FOWLER, NEBRASKALAND

Nebraskaland (VOL. 100 / NO. 7 ISSN 0028-1964) is published monthly, except for the combined Jan./Feb. and Aug./Sept. issues, by the Nebraska Game and Parks Commission, 2200 N. 33rd St., Lincoln, NE. Periodicals postage paid at Lincoln, Nebraska, and additional mailing offices. POSTMASTER: Send address changes to Nebraskaland, P.O. Box 30370, Lincoln, NE 68503-0370.

Nebraskaland
magazine

Published by the Nebraska Game and Parks Commission since 1926. The Commission is dedicated to the conservation and protection of all the state's natural resources and the people who use them.



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For address changes and questions about your subscription, call 800-632-5263

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Nebraskaland is available in audio from the Nebraska Library Commission Talking Book and Braille Service, Suite 120, 1200 N St., Lincoln, NE 68508. 800-742-7691. Nebraskaland Magazine and the Nebraska Game and Parks Commission reserve the right to reject any advertising not in keeping with the agency mission.
Rates: \$18 for one year; \$33 for two years; \$44 for three years. Nebraska recipients must add appropriate sales tax. To subscribe call 1-800-NEBLAND (632-5263), or go online to: NebraskalandMagazine.com.

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Please include your postal address and telephone number. Letters may be condensed and edited. Photographs are also welcome.

## A SLICE OF TIME

Erosion has exposed limestone, shale and sandstone geology of the area in the scenic cliffs along the shore of Lewis and Clark Lake SRA, a reservoir on the Missouri River in Knox and Cedar counties.

ERIC FOWLER, NEBRASKALAND



Cicada killer dragging a paralyzed cicada. JULIE GEISER, NEBRASKALAND

# CICADA KILLER WASPS

By Julie Geiser

Cicada killer wasps will start emerging from the ground anytime, but these docile wasps only have one thing on their minds: seeking out cicadas.

Found across the U.S., these native wasps start to appear in mid-to-late July through August in Nebraska. Cicada killer wasps are approximately 2 inches long with black and yellow on their abdomens and amber-colored wings.

When you hear male cicadas begin singing to attract their mates, adult cicada killer wasps will start to emerge from the ground, as well. The smaller males emerge first and begin to establish territories near where they emerged. Adult females emerge a week or two later.

Their goal above ground is to mate. The females emit a pheromone that attracts males, and since they only mate with one male, dominant males typically win those rights. Females hold sperm in a storage receptacle called a spermathecal, and before laying the eggs, female wasps will determine the sex of each: Unfertilized eggs become males and fertilized eggs become females.

After mating, females select a burrow site in loose soil around large, deciduous trees. They burrow about 10 inches into the ground, removing soil by backing up the burrow and pushing dirt behind them using “spurs” on their hind legs. Each burrow will have an oval chamber at its end where the females will place a paralyzed cicada and lay an egg on it.

Often, several nest chambers are dug, which branch off the same burrow. Dirt from new excavations are used to seal finished chambers.

Both male and female cicadas are caught by female wasps in trees, on the ground or in flight. Once caught, the wasp delivers a paralyzing sting to the cicada and then flies or drags it to the nesting burrow. Female eggs are given at least two cicadas to feed on, while males only receive one, which is why females are larger than males. This move is a daunting task as cicadas can weigh twice as much as female wasps.

After mating and egg laying is complete, both the male and female cicada killer wasps die. Their life span as adults range from about four to 24 days; but their offspring go on to repeat this life cycle every year.

The wasp larvae only take a few days to hatch and then feed for about two weeks on the cicadas their parents left behind. Once done, they spin themselves into a cocoon to winter in the ground; they merge as adults the following summer.

Though these insects may look frightening, they are more interested in finding cicadas and laying their eggs than concerning themselves with humans. Cicada killer wasps typically won’t sting or bite unless provoked, unlike other wasp species.

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Derecho damage can be severe, as seen by this downed tree at Niobrara State Park in Knox County. ERIC FOWLER, NEBRASKALAND

# DERECHOS

By Martha D. Shulski

While I was in northeastern Nebraska on the afternoon of May 12, I glanced at the RADAR app on my phone and promptly told a colleague I needed to hit the road. A severe storm moving 80 mph was on the horizon coming my way. When I realized I couldn't get around it quickly enough, I headed to Niobrara State Park to wait it out in the shelter of a Chevy pickup.

I lined the four-wheel drive with the tailgate facing southwest (perpendicular to the storm) and held on for the ride. It felt more like I was in an airplane than a truck as the storm moved past. By the damage at the park — shingles and siding ripped off cabins, downed trees and shelters ripped off their foundation — I figured the winds were gusting above 80 mph. This fast-moving beast with straight-line winds was the beginnings of a derecho.

Though a graduate degree could be obtained studying derechos, in simple terms, they are widespread and long-

lived clusters of severe, straight-line wind thunderstorm events that are in a hurry to get somewhere. Wind speeds can approach hurricane and tornado strength and damage can be devastating. Derechos are most common in summer in the middle of North America and can occur any time the atmosphere is grossly unstable and atmospheric wind profile exhibits highly variable wind speeds. Even winter is not out of the realm of possibility — remember December 2021? The roof on my house and my scared 10-year-old does.

Four primary types of derechos are recognized, and the RADAR often looks like an achery bow. Derechos can pulse and feed off their own energy, so to speak, moving hundreds of miles before collapsing. High wind is the predominant impact, but hail, heavy rain and even tornados are known to also occur. Given their speed, it is best to hunker down and wait it out in the most stable shelter available. Sometimes, that's a pickup in a state park.

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Dove poppers with brown-sugar glazed bacon. JENNY NGUYEN-WHEATLEY, NEBRASKALAND

# DOVE POPPERS

*By Jenny Nguyen-Wheatley*

Dove poppers are almost celebratory, like a hurrah to the beginning of hunting season. Here's how I like them: The breasts marinated for extra flavor and a little bit of sweetness to glaze onto the bacon. Also, don't make the mistake of using expensive, thick-cut bacon, which takes way too long to cook. The cheap, fatty stuff will work just fine.

**Servings:** 12 poppers

**Prep Time:** 30 minutes

**Cooking Time:** 15-20 minutes

**Ingredients:**

- Breasts from 6 doves (12 total breasts)
- 6 slices of cheap bacon
- Cream cheese

- 6 jalapeños

**Marinade**

- 2 tablespoons olive oil
- 2 tablespoons red wine vinegar
- 1 clove of garlic, minced
- ½ teaspoon of dried crushed rosemary, or fresh
- Freshly ground pepper, to taste

**Brown Sugar Glaze**

- 3 tablespoons of brown sugar
- ¼ teaspoon nutmeg
- ½ teaspoon cinnamon
- 1½ tablespoons water

1. Butterfly each dove breast. Combine marinade ingredients in a medium bowl and add dove. Marinate

for 30 minutes. Cut jalapeños into 12 strips; remove seeds and ribs for less heat.

2. Prepare grill for direct heat cooking at about 350° Fahrenheit. Cut each slice of bacon into two, which should give you a total of 12 short pieces of bacon. Stuff each marinated dove breast with a small dollop of cream cheese and a strip of jalapeño. Wrap a piece of bacon around the stuffed breast and secure with a toothpick.

3. Lay the poppers onto the hot grill and cook until bacon is rendered and browned, turning occasionally. Meanwhile, combine glaze ingredients. A few minutes before you remove the poppers from the grill, baste the poppers with the glaze. Serve warm.



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# Dove Hunting the Sandhills

Story by Angie Kokes

Photos by Jenny Nguyen-Wheatley

Dove hunting offers generous bag limits and opportunities statewide. Although these birds can be hunted in almost every corner of the world, one of the most serene destinations to do so is in the Sandhills of Nebraska. If you can hear the melancholy tune of an old windmill creaking, you have found

the ideal location to try your hand at bringing these tasty morsels out of the sky, while marveling in magnificent views of open grasslands to boot.

But before you go wandering at the sight of any windmill, remember to get permission first. Use plat maps to find more information about landowners in an unfamiliar area. And if you're not shy, stop by the local coffee shop and say hello. You'll likely meet a few faces there, and one might grant you access.

## Where to Find Doves

Doves love water, and in this part of the state, windmills attract doves like moths are pulled to a flame at sunset. There's nothing to stop a windmill from pumping too much water, and the overflow can create a "stream" or pond-size puddle that doves rely on as a water source in this dry, sandy landscape. Along with the windmill, also be on the lookout for the marijuana plant, which provides seeds these birds crave. Lastly, whether standing or downed, dead trees are choice areas of congregation for doves any time of day.

Water, food and shelter — if you can find one of these elements, you'll likely find doves. However, locate all three in one place, and that's what I call a

honey hole, and where you will find me the first couple of weeks in September each year.

## Gear

Although these honey holes don't need a lot of help to bring in doves, I began using decoys when my dad started losing his eyesight. Decoys encourage birds to fly into

specific areas, which helped my dad concentrate on those areas during shooting. The decoys worked so well that I never stopped using them, even when hunting alone. I recommend the Mojo Voodoo Dove and Dove Feeding Frenzy by Hunter's Edge. Both are motion decoys and equally effective at luring doves into a location.

Dove hunting in the Sandhills is mostly stationary, so bring a compact

hunting chair. Camouflage clothing isn't necessary when dove hunting: Neutral colors will hide you just fine. Also, don't forget about the weather. In early September, you never know what you'll get in the Sandhills. The temperature could be 100 degrees, or it might fall into the low 50s. So, dress accordingly. Other essentials include a hunting vest, and if you don't want to be eaten alive by mosquitoes, better

bring a Thermacell and/or bug spray, too.

Seasoned hunters, including my husband, may be thinking, "That's a lot of gear for a dove hunt, and how do you carry it all in and out?" A backpack is your best friend and will make your walk in and out, no matter how long or short, a piece of cake. Sometimes, a landowner might not want you driving across their property.



At sunset, husband-wife duo Angie and Adam Kokes of North Loup walk back to their truck after a successful evening of dove hunting in the Sandhills.



Angie Kokes smiling with a couple of doves she successfully shot.



Angie and Adam Kokes waiting for doves to fly into range. A windmill is one of the elements needed of a good dove hunting location in the Sandhills, which attracts birds looking for water in the dry landscape.

## Gun and Ammo

When I started hunting doves as a young girl, I shot a Remington 870 Lightweight, which is a pump action shotgun. It's a gun I still recommend to youth. As I grew older, I graduated to the Remington 11-87 12 gauge, a semi-auto shotgun that has undoubtedly seen thousands of rounds. However,

a couple of broken neck vertebrae has made it hard for me to get down on my stock, and so I've now moved on to the Benelli M2 with an off-set stock, which makes it easier to bring the gun to my face.

In dove hunting, the most commonly used rounds are 2¾-inch shells in 7 or 8 shot lead for both 20 and 12 gauge. Speaking of spent shells, pick them up.

It's understandable you may not find them all, but try to do so, otherwise you might not be welcome back.

## Shooting Doves

If you're hunting over or under a dead tree, your shots are going to be easy. When coming in for a landing, doves will momentarily pause in the air just

before setting down. In this scenario, point the bead of your shotgun right on its head and pull the trigger — it's that simple. Also, these birds are much easier to mark and retrieve.

Shooting a flying dove, however, can be one of the most difficult game birds to hit. Doves are small, and their vital area is even smaller. What's more, they're tough, acrobatic birds,

capable of dodging and flying a long way even if you managed to clip a wing. Depending on if the dove is flying with or against the wind, and how fast the wind is blowing, etc., all will influence how far you need to lead the bird. Meaning, you are not aiming at the bird at all, but out in front of them. Many times, I've had to lead doves by several feet to make shots count.

Lastly, don't forget to follow through with your shotgun swing. Fortunately, there's no shortage of shooting opportunities when hunting in one of these honey holes, so bring plenty of shells.

With landowner permission and decoys in place, find a bit of cover, if you can, and be still. Then sit back and watch. The sound of a creaking windmill in the background is almost haunting, as these swift, gray ghosts materialize into view on the prairie's horizon. Aim true, because these birds have a way of disappearing just as fast as they come. [N](#)



## Dove Season

- **Season Dates:** Sept. 1 – Oct. 30
- **Shooting hours:** 30 minutes before sunrise to sunset
- **Daily bag/possession limits:** 15/45 in aggregate among mourning dove, Eurasian collared-dove and white-winged dove.
- **Licenses:** Hunt Permit, Habitat Stamp and HIP (Harvest Information Program) Number

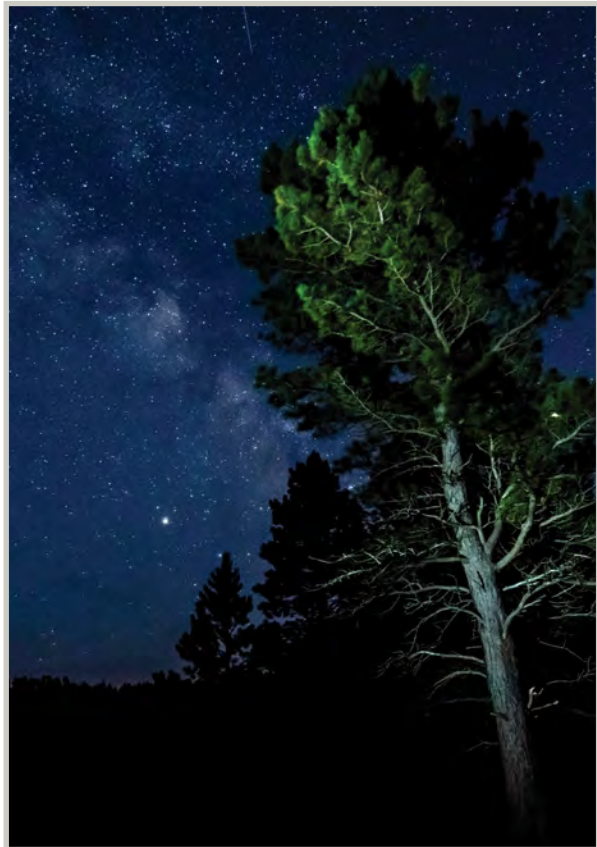


Angie Kokes, left, and Jenny Nguyen-Wheatley of Omaha pose for a bag shot with their doves at the end of the hunt.

# Outdoor Nebraska

By Renae Blum

As summer disappears into the rearview mirror, make the most of your time outside as fall begins to set in. There's plenty of hunting to keep you busy, but that's not all; read more below. [📖](#)



## Science of Night Sky Ecology

Aug. 11, 3-4 p.m. | Via Zoom

It's no secret that humans have used the night sky for orientation for generations, but what a lot of people don't realize is that it is just as important, if not more critical, for animals. In this free chat with a Game and Parks educator, learn how animals use the night sky for navigation, why light is so important, and more. Registration required; sign up at [Calendar.OutdoorNebraska.gov](#).

JUSTIN HAAG, NEBRASKALAND



## Take part in fall hunting season

Season dates vary Statewide

Are you ready? Fall hunting season is here, and your opportunities include archery deer, elk, turkey, grouse, dove and teal. Invite a friend to go with you, and enjoy all that this time of year has to offer.

JEFF KURRUS, NEBRASKALAND

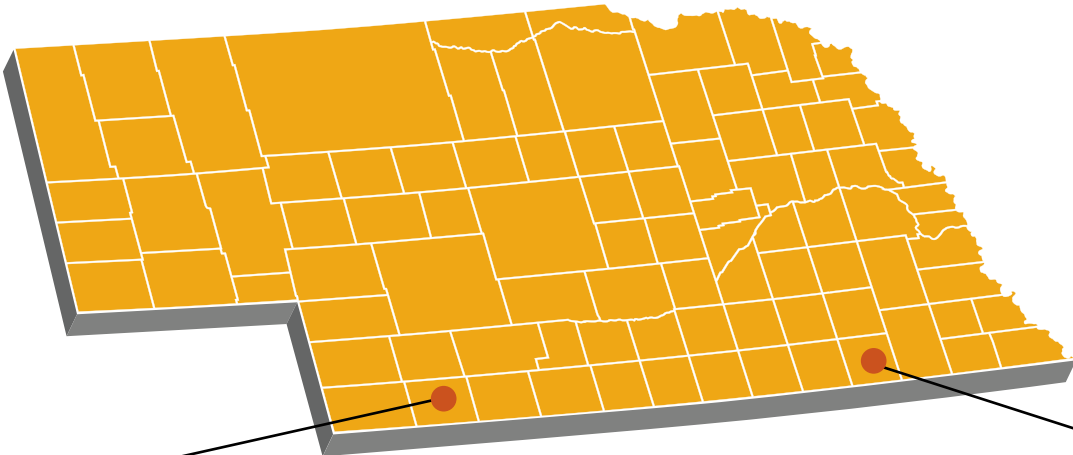


## Spend Labor Day weekend at a state park

Sept. 5 | Statewide

Celebrate the holiday weekend with some time outside at a state park! Your day could include fishing, camping, hiking, wildlife watching, boating or any other outdoor recreation you enjoy. For a list of events happening this weekend, visit [Calendar.OutdoorNebraska.gov](#).

ERIC FOWLER, NEBRASKALAND



## Fish for white bass at Swanson Reservoir

August through early September | Trenton

According to the 2022 Fishing Forecast, Swanson Reservoir is one of the best spots for white bass this year. This time of year, white bass are chasing schools of shad, creating a feeding frenzy as they drive them to the surface. You can catch a lot of fish this way. Watch for gulls, who will also be on the lookout for the same schools of shad.

ERIC FOWLER, NEBRASKALAND

## Bring your horse to Rock Creek Station State Historical Park

Throughout the month | Fairbury

Take a trip back in time and ride at this former stage and Pony Express station, which offers 5 miles of trails and a horse camp with 20 corrals, water for horse and rider, picnic tables and grills. Additional riding is available at the adjacent Rock Glen Wildlife Management Area, though riders must observe special regulations.

ERIC FOWLER, NEBRASKALAND



# The Butterfly Explorers

Story and photos by Renae Blum

It had been a slow year so far. But not at this moment. Joanne Langabee calls out, “I’ve got an orange and a blue!” Her companion, Holly Hofreiter, responds almost immediately: “I’ve got a Peck’s” — short for Peck’s skipper.

One butterfly after another materializes from the prairie grasses at their feet, just seconds apart, but the women aren’t fazed. They continue calling back and forth in a kind of butterfly shorthand, identifying new species as quickly as they appear and writing them down in a notebook.

When you spend as much time counting butterflies as Joanne and Holly do, you need a shorthand. The pair, both retired science teachers, count and identify over 14,000 butterflies each year at Fontenelle Forest and



Holly Hofreiter approaches an eastern tiger swallowtail while surveying for butterflies at Lauritzen Gardens in Omaha.



After a day of surveying for butterflies at Lauritzen Gardens, Joanne Langabee and Holly Hofreiter show the notebook they use to record species. The two women count and identify over 14,000 butterflies in Omaha each year.

Lauritzen Gardens in Omaha. Staff use their data to shape how they manage and understand these sites. And now, researchers at the Nebraska Game and Parks Commission plan to incorporate Joanne and Holly’s data into statewide conservation planning.

“Conserving species first requires understanding where they occur, what their habitat needs are, and how they are doing. This information is the result of painstaking work of many people, and the work by these researchers is a great example,” said Rachel Simpson, who manages the Nebraska Natural Heritage Program database.

## A Labor of Love

The women keep to an intense schedule: From mid-April to mid-October, they visit Lauritzen Gardens once a week and Fontenelle Forest twice a week, following the same routes every time. It’s a team effort: One person looks to the right, the other to the left, calling out what species they see so the other can verify. Joanne also snaps pictures of the butterflies, which she shares with Creighton University professor Ted Burk when she could use a second opinion.

After six years of surveying, Joanne and Holly still get excited

at seeing the first butterfly of the day after a slow morning, or when the sun comes out on a cloudy day, potentially attracting more butterflies. One morning, their faces lit up when they spotted a viceroy, a relatively uncommon butterfly to see along their route at Fontenelle Forest, and they paused for several minutes to enjoy the sight.

Surveying isn’t easy work. Joanne and Holly are 72 and 71 years old, respectively, and their hikes at each location are hours long; Joanne affectionally calls a part of the trek at Fontenelle Forest “the rollercoaster” for its steep inclines. The two-hour walk through Lauritzen Garden’s 100-acre



Eastern Tailed-Blue



Least Skipper



Viceroy



Red-Spotted Purple



Black Swallowtail



Silver-spotted Skipper

campus includes wading through waist-high grasses, stepping through shrubs and climbing hills to lesser-visited places in the garden.

“It’s not just a nice little path,” Joanne commented, Holly adding that she’s a bit rusty every spring until she can get back in shape.

Another challenge about butterfly surveying is that identification can be tricky. Butterflies fly in an erratic pattern to evade birds and can easily be mistaken for falling leaves, grasshoppers or moths. Simply spotting them at all can be difficult without practice. But after spending time with Holly and Joanne, it’s apparent how quick their eyes are: They can spot a brown praying mantis camouflaged in the grass and notice butterflies the size of a fingernail.

Joanne and Holly’s butterfly knowledge was hard-won — they’re entirely self-taught. The two met in Nebraska’s master naturalist program, which offers training and volunteer opportunities to anyone interested in the natural world. The two connected easily: They are both from Bellevue and are both women interested in nature. They began surveying for butterflies after an introductory class at Lauritzen Gardens, but it was slow going at first.

“We started knowing zero,” Joanne said. “The first year it was just learning [the species]. ... It was about three years to where we were pretty comfortable.”

As they gained knowledge and experience, the surveying grew in complexity.

“It’s something that just built,” Holly said. “We started out, and it was really simple. And then we would talk about it and say, ‘What if we counted them? What if we wrote down what gardens they were in?’”

## Simple Rewards

What can motivate someone to spend hours every week looking for butterflies? For Holly and Joanne, part of it is pure logistics: If they didn’t go every week, they would be missing out on important data.

“Butterflies don’t have that long of a lifespan, so if you go



Holly and Joanne survey for butterflies along the History Trail at Fontenelle Forest in Omaha, which overlooks Iowa.



During a butterfly tour that she and Joanne led at Fontenelle Forest, Holly shows a millipede to the group.

out just once a month, you can miss a whole species,” Holly said.

But beyond that, there are many reasons why they do what they do. Part of it is the sheer adventure that every day of surveying brings.

“I think one of the things that keeps us going is seeing how it changes, what’s going to be new the next day, or that year. The unknown,” Joanne said. “You don’t really know what you’re going to discover.”

Another big pull is the camaraderie between them; the two say they’re best friends, and they enjoy exchanging ideas about what they’re observing. “We can bounce ideas off of each other and see what’s new each week,” Joanne said.

Holly also appreciates the exercise, the chance to learn, and the chance to give back. “The project gives me the opportunity to gather data to help shape the decisions made on a local level about habitat restoration,” she said. And, through presentations and butterfly tours that she and Joanne give, they’re able to communicate about habitat, species decline and climate change, she said.

## Making a Difference

Each year, Joanne compiles the information into two reports summing up what they’ve observed at Fontenelle Forest and Lauritzen Gardens. She analyzes each trail, garden and butterfly that she and Holly saw, including bar charts, pictures, graphs and endless arrays of numbers. Last year, her reports each spanned over 130 pages.

The data is welcome, site managers say. “It’s extremely valuable,” said Michelle Foss, director of resource stewardship at Fontenelle Forest. “Every year I get super excited about going through the reports with Joanne and finding out what they’ve seen.”

At Fontenelle Forest, staff use Joanne and Holly’s data to help measure the success of their restoration efforts. The area, once a healthy oak woodland, is overrun with invasive plants and animals, as well as shade-tolerant trees that wouldn’t typically be found there. As trees are removed, and a more open forest structure is restored, staff are hoping to see butterflies that prefer that type of habitat, showing that

restoration efforts are working. While it’s still too early to see big differences, those butterflies are starting to show up, Foss said.

At Lauritzen Gardens, Joanne and Holly’s work helps inform how the gardens are managed: what is planted, how it’s maintained, and when and if pesticides are used. It’s encouraging for the staff to see explosions of butterflies when native plants are included in the landscape, and they’ve made changes to help keep butterfly numbers high, said Jim Locklear, Lauritzen’s director of conservation.

Now in their seventh year of surveying, Joanne and Holly’s reports will be used in a new way. Nebraska Game and Parks researchers plan to include their work in a database of Nebraska’s at-risk species, as well as an update of the Nebraska Natural Legacy Project, the blueprint for conservation in the state.

Rachel Simpson, who manages the database, was excited by the women’s finds. In several cases, “we didn’t even have a record of these species in the county or a nearby county,” she said. Work like this can help conservationists better

target their efforts, she said, and shows how much a couple of skilled volunteers can contribute.

Lepidopterist Neil Dankert, who has conducted butterfly counts in Nebraska for over 30 years, agrees. “It’s an awesome piece of work,” he said. And it proves something else, Dankert said. “You do not need to be a professional entomologist to contribute to our knowledge of the flora and fauna of our state.” **N**



Top: Joanne and Holly wrote a guidebook, *Common Butterflies of Eastern Nebraska*, based on their surveying, research and photographs. Bottom: While surveying, Holly discovers a monarch caterpillar at Fontenelle Forest.

# Rescuing a Child from the Path of a Speeding Train

By David L. Bristow, History Nebraska

In 1905, George Poell was a railroad fireman, soon to be a hero. One day the Grand Island resident was shoveling coal into a locomotive's red-hot furnace as the train rounded a curve. Suddenly, the train lurched as the engineer put on the emergency brake. Poell looked out the window to see what was wrong.

He saw a child walking on the track, a toddler with blond curls bobbing.

"The little fellow seemed to have heard us," Poell recalled, "and in his childish way appeared to turn partly around and then toddle off straight ahead of the engine, as if to run away from us and beat us."

The train was near Powell, northwest of Fairbury. Reports of the train's speed vary widely; Poell described it as "a pretty good rate ... on a down grade with a heavy train." It was not going to stop in time.

Knowing the engineer could not leave his post, Poell crawled out of the cab and climbed forward along the locomotive's running board until he reached the "pilot" or "cow-catcher" at the front. From here, he "snatched the child from certain death, and threw it to the side of the track," said the *Chicago Tribune*, but in the process tumbled from the pilot and "was dragged 300 feet, bumping over the ends of the ties. His right foot was torn off at the ankle, both arms were broken, and his flesh frightfully torn and bruised."

But Poell survived and was hailed as a hero. Just before Christmas, Poell received a letter from President Theodore Roosevelt informing him that he had been named the first recipient of a new medal of honor recently authorized by Congress, the Railroad Lifesaving Medal.

"No man could have shown greater coolness, skill and



George Poell with Paul Ussary, *Grand Island Democrat*, Oct. 20, 1905. This was a common way to dress little boys in that era. At the time of "breeching," a boy would be given a haircut and dressed in short pants.

daring, or more heroic indifference to his own safety," Roosevelt wrote.

The president added, "It is not in my power to make you

any material amends for the crippling injuries you received," and it went without saying that the railroad would take no further responsibility for its former employee, even though he was injured on the job and the boy he rescued was the son of a station agent. It was up to local people to provide for the disabled 25-year-old.

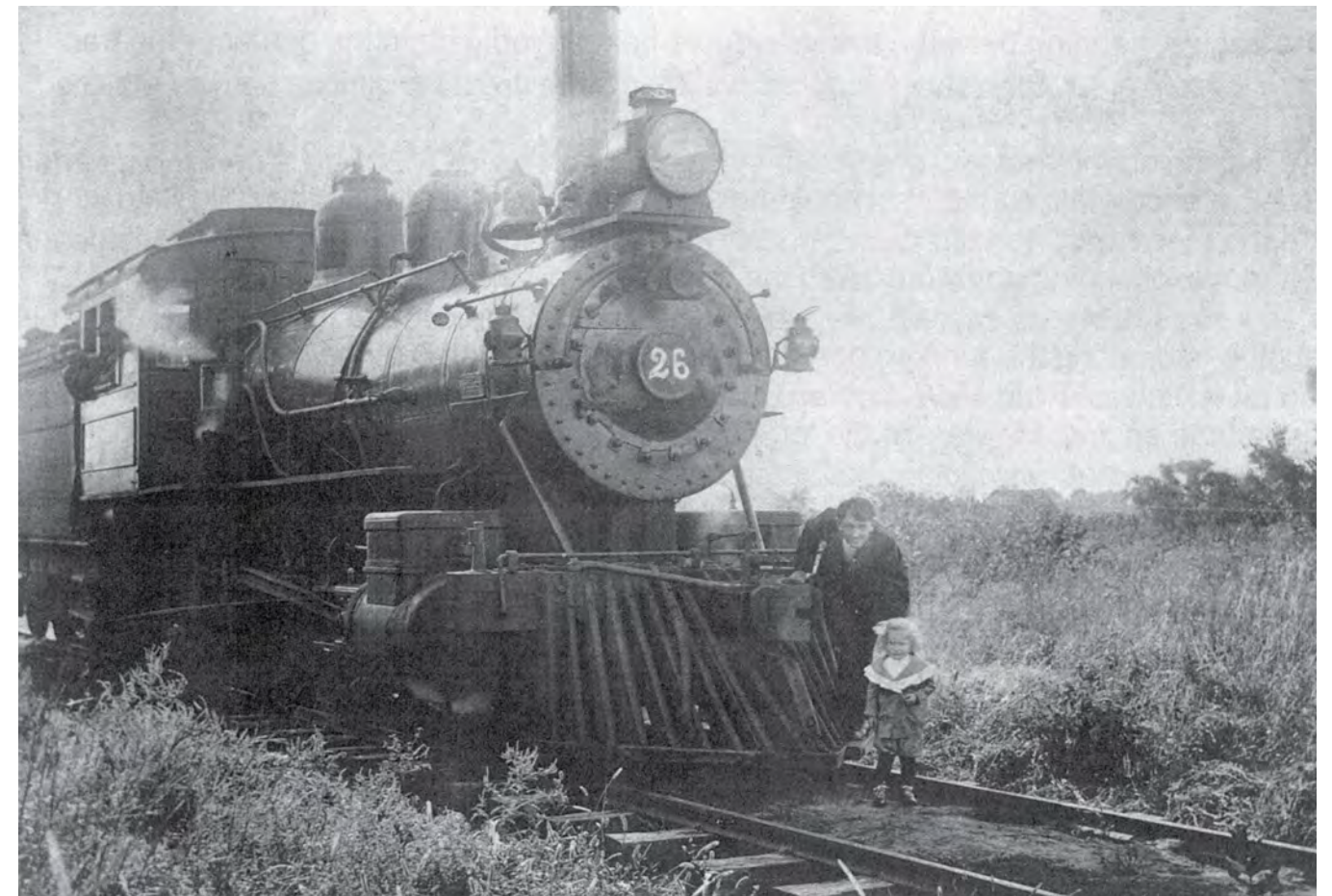
Poell posed for photographs with the child he rescued; prints were sold to raise money to buy a small house for Poell and his wife. The young man needed a desk job, so Hall County voters elected him county clerk.

According to railroad historian Jim Reisdorff, Poell resigned his clerkship in 1910 after being accused of misappropriating county funds. Poell left Grand Island and eventually moved to Kansas. But he maintained a lifelong friendship with Paul Ussary, the little boy he had rescued. Ussary, who grew up to be a train dispatcher, recalled that Poell "was like a second father to me." Reisdorff tells the story in his new book, *Hero of the Rails* (South Platte Press).

For me, the oddest part of Poell's story is that I first heard of him while researching a nearly identical 1907 railroad rescue between Seward and Milford. Marion Lux didn't lose any limbs, but like Poell, he rescued a toddler by climbing out on a locomotive's cow-catcher. How many small children were playing on railroad tracks in those days? 📖



Learn more about History Nebraska's publications, including free history emails, at [history.nebraska.gov/publications](http://history.nebraska.gov/publications)



Prints of this reenactment of the rescue were sold to raise money for Poell and his wife. Stuhr Museum of the Prairie Pioneer.

# A Rapid City

## Kearney's new whitewater park

Story and photos by Eric Fowler



Dylan Knapp of Kearney is all smiles as he rolls upright after doing a trick in the wave below the lower drop structure on the Kearney Whitewater Park. A Florida native, Knapp began whitewater kayaking at summer camp in North Carolina, taught classes at the University of Wyoming, and was thrilled when he moved to town and learned of plans for the park.

Even though he hadn't used it for years, Dylan Knapp brought his whitewater kayak with him when he moved to Kearney in 2021. At the time, he didn't have a clue he would be dusting it off, along with his bag of playboating tricks, including flat spins, stern squirts and loops, when the state's first whitewater park opened in his new home a year later.

"I picked the perfect time to move to Kearney," said Knapp, who was one of the first to paddle the new rapids on Turkey Creek when water started flowing in April and has made many excursions since.

"I've been waiting. To come here and actually have rapids

for the first time in 8 or 10 years is huge."

### History of the Kearney Water Trail

The whitewater park is located at the tail end of the 2.3-mile-long Kearney Water Trail, which has been a boon to paddlers in town since the trail opened in 2016. A joint effort between the Kearney Whitewater Association, the city of Kearney and the Nebraska Public Power District, the trail begins on the Kearney Canal in Yanney Park, joins Turkey Creek a half-mile downstream and winds its way along the southwestern edge of town before ending above Central Avenue. It is open from April to October when the power

district is operating its hydroelectric plant below Kearney Reservoir, which draws water from the Platte River near Elm Creek.

The roughly 100-member Kearney Whitewater Association spearheaded development of the trail. Its founding members, a grassroots group of a dozen or so individuals who simply enjoy paddling, met at a local watering hole in 2011 to discuss resurrecting the idea of a water trail and whitewater park that was born and died in the previous decade. Members donated thousands of hours to help clear 20 tons of trash, car bodies and other debris from the bed and banks of the creek, and the group split the cost of building the put-in and take-



Greyson Peterson of Columbus jumps into the wave below a drop structure on a body board. He came to test the waters with his grandfather, Bob, of Norfolk.

out points with the city.

Their ultimate goal, however strange it may have sounded at the time, was to build what was part of their name: a whitewater park. They funded a feasibility study with a Colorado company to see if such a park was even possible. When the study found it was, they helped fund project design and worked with the Kearney Area Community Foundation to raise the money needed to cover the \$700,000 cost of the park, working through a "brutal" two-year stretch that included severe flooding on the creek in 2019 and the COVID-19 Pandemic that started in 2020. In the end, they raised \$260,000 from grants and foundations, and \$112,000 from individuals in the community — including \$40,000 from the core group of KWA board members — for the whitewater features and the water trail. Along with it, the city of Kearney committed \$400,000 to the projects.

"I think really, up until a year ago, it still seemed like we were making this whole thing up, like it was never going to happen," said Carson Rowh, a whitewater paddler and founding member of the whitewater association. "I'm still pinching myself to be honest. It's beautiful."

### The Course

The whitewater park includes two drop structures above and below Second Avenue constructed this past winter with limestone boulders and rock trucked in from a quarry in Weeping Water and held in place with sheet piling and cement. The structures form a V across the creek channel, pooling water above them. As water rushes over the structure and drops into a hole below, it turns back on itself and creates a foam-topped wave. Unlike waves in the ocean, however, these don't move. But experienced kayakers can paddle in from eddies on either side of the drop and ride the wave like

# More Parks?

The Kearney Whitewater Park won't be the only such park in Nebraska for long. Work will begin this month on an \$8.4 million redevelopment project in downtown Norfolk that will include eight drop structures on the North Fork of the Elkhorn River.

The North Fork Development Project is centered around restoration of Johnson Park, a federal Work Project Administration plan from the 1930s that was a centerpiece for the town before it was wiped out by flooding in the 1960s.

The project will restructure the river, replacing an aged hydroelectric dam with smaller drop structures to create whitewater features. It also includes a trail system, fish-habitat improvements and angler access, an amphitheater and festival space along the river, as well as business and residential development and street improvements. It is expected to be complete in the fall or winter of 2023.

a surfer.

That kind of experience isn't needed to enjoy the whitewater park, though. Paddlers on the trail can simply point their boat downstream and ride right through the wave.

"They're both surfable," Knapp said. "The top one is a little easier. The bottom is a little bigger. With both of them, you're probably going to get water in your boat coming down, so just be ready for that."

Flows at the features vary depending on natural flows in Turkey Creek and, according to the U.S. Geological Survey



Zach Nelson paddles through the rapids below a drop structure in the Kearney Whitewater Park.



Members of the Kearney Whitewater Association paddle below the top drop structure of the Kearney Whitewater Park on Turkey Creek during a dedication on May 19. The grassroots group raised roughly half of the funds for the \$700,000 project.

stream gauge on the creek, range from roughly 150 to 250 cubic feet per second on weekdays when NPPD's hydroelectric plant is operating. "I would say anywhere from around 180 to 250 cfs is where it is best for surfing. Any higher and you can't stay in the wave because the water is too high and washes the wave out, and any lower it gets kind of rocky and small," Knapp said, adding that the lower flows also mean a bigger drop and more water coming over the bow of paddlers heading through the features.

If you happen to capsize, the drop structures are designed to spit you out of the whitewater and send you downriver, where you can easily get to either shore. Life jackets are recommended for all paddlers, and helmets for anyone attempting tricks in the whitewater.

Below each feature, boulders terrace the shoreline, providing a place for spectators to sit and watch. Paddlers can carry their kayaks from the bottom feature back to the top along the paved hike-bike trail on the south side of Turkey Creek, part of a 13.1-mile trail connecting Cottonmill Lake

and Fort Kearny State Recreation Area. Parking is available in the lot at the end of the water trail on Central Avenue.

## If You Build It

There are more than 70 manmade whitewater parks of varying shapes and sizes around the country, with more on the way. Each draws paddlers from near and far, a fact that was included in the economic development side of the fundraising pitch used by the Kearney Whitewater Association. An economic impact study completed by a University of Nebraska at Kearney student estimated the park would draw 7,900 paddlers, nearly half from outside Buffalo County, and bring \$1 million annually to the community.

That doesn't surprise Rowh, who said 16 float trips the group organized on the water trail since it opened and promoted through social media drew people from 44 cities and eight states. In its first month, the whitewater park had already drawn people from across Nebraska. "People from Colorado, Iowa and South Dakota are online talking about making trips

this summer," Rowh said. "It will bring people, there's no doubt."

Bob Peterson has been whitewater kayaking since 1975 and drove 2.5 hours from Norfolk to try out the new park the week it opened. He came back in May with his son and grandson. "I don't get to [whitewater kayak] much because I live in Nebraska," he said. "I've always had a full-time job, so it's always been long weekends and vacations."

Peterson liked what he found, spending a few hours playboating in the features. "It's real easy surfing," he said. "It's real easy to get in, and it's pretty forgiving."

Though you can seemingly buy a kayak anywhere these days, retailers in Kearney may want to expand their selection to include short, skirted, maneuverable, whitewater kayaks as more people try out the park. Knapp and Justin Stout, outdoor adventure coordinator at UNK's campus recreation department, are talking about teaching roll classes so those who flip can get back upright while riding the waves. "It's going to be a fun summer," Rowh said. 

# Deceptive Dayflowers

Story and photos by Gerry Steinauer, Botanist

As their name implies, each dayflower blossom is fleeting. New flowers that open to greet the rising sun close about noon and wither by dusk. The lovely blue flowers are as delicate as they are short-lived. When rubbed between one's fingers, their petals quickly disintegrate into a watery ooze.

Belonging to the spiderwort family (*Commelinaceae*), two dayflower species, both growing up to a foot tall,

inhabit Nebraska. Slender dayflower (*Commelina erecta*) is a wide-ranging perennial native to the Americas, Africa and western Asia. They grow alone or in loose clusters in sand prairies in the western half of our state, including the Sandhills. Oddly, the plant is absent from apparently suitable, sandy habitats in eastern Nebraska.

Common dayflower (*C. communis*), native to Asia, was introduced to North

America, likely as an ornamental, and first collected in Nebraska in 1905. Limited to the eastern half of the state, the sprawling annual is mainly a yard and garden weed in clay to somewhat sandy soils. The plant rapidly spreads by rooting from nodes on its reclining stems and, in infested gardens, can form dense tangles among summer crops.

Characteristic of the spiderwort family, dayflowers have distinct, parallel veins running the length of their leaves. Common dayflower leaves are broadly lance-shaped and hairless, while slender dayflower leaves are narrowly lance-shaped and somewhat hairy. Both species' flower heads are hidden within a wide, folded, leafy bract from which individual flowers emerge throughout the summer and into early autumn.

*Commelina* flowers have two bright-blue, showy petals and a third petal that is small and translucent or sometimes absent. When present, it sits below the two showy petals.

These highly-modified flowers are designed for pollination by mid-sized bees and flies. The flowers contain no sweet-scented nectar to attract and reward pollinating insects. Instead, the vivid blue petals catch the eye of pollinators, while the four yellow, cross-shaped anthers draw them into the flower. In most plants, these anthers contain a rich meal of pollen, but in dayflowers they contain none.

While fruitlessly probing the infertile, yellow anthers, the insects' abdomen flanks are dabbed with pollen from two blue, fertile anthers found at the tips of long filaments that extend

outward from the flower. When the duped insects visit another flower, this pollen is transferred to a single female, pollen-receiving stigma found at the tip of a long filament that extends between the two fertile anthers. While pollination is complete, the insects are still hungry.

The dayflowers' deceptive flowers are just one of the plant kingdom's many unique floral designs to ensure pollination and survival on this remarkable planet called Earth. 🌻

RIGHT: Early one July morning in the author's garden, a common dayflower blossom emerges from the leafy bract enclosing the flower head. Above the fresh bloom, the previous day's flower sits withered.



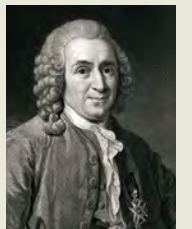
Slender dayflower blooms in a Sandhills prairie in Brown County. The small, translucent third petal is visible below the blue petals.



Cousins of the dayflowers, spiderwort flowers have retained three showy petals and six fertile, yellow anthers.

## A Botanical Joker

The 18th century Swedish botanist Carl Linnaeus bestowed dayflowers with the



CARL LINNAEUS

genus name *Commelina* in honor of his friends: the Dutch family Commelin. One version of the story states that the flowers' two bright blue petals represent the families' renowned botanists: Jan and his nephew Caspar. The third small, colorless petal represents Jan's brother Casparus, who was merely a book seller and newspaper publisher. Linnaeus deserves credit as this is about as good as botanical humor gets, excluding, of course, the classic joke about the rabbi, the priest and the botanist.

# Rules of the Marsh

## An ethical guide to public hunting

*Story and photos by Jeff Kurrus*

“I think we got a shot,” said hunting partner Todd Mills, peering through grass on the edge of a Rainwater Basin wetland as a flock of pintails made a turn below the tree line and were cupping their wings in our direction.

“Eli, be ready,” I told my 9-year-old son. “Mills will make the call to shoot.”

But when someone did shoot, way out of our range and not even close to their range, it wasn’t us. Another hunter had emptied his gun and not a single bird had fallen.

We were devastated.

There are some common sense and safety rules to the marsh that should be followed. If you don’t have any rules of your own, I hope these help. And if you already do, pass them on to someone else. Hunting public land doesn’t have to be a nightmare.

### First Come, First Serve

Many hunters aren’t fortunate enough to have private land to hunt, and they will do whatever they can to protect the places they hunt on public land. Some arrive hours before shooting time. Others go so far as to spend the night in their vehicles. If you’re not this person, respect the work they’ve put in and either look

for a different spot or ask if they have room. I understand it’s public land and you don’t have to ask anyone, but respecting others while hunting goes a long way toward making everyone’s hunt a good one.

On a dove hunt two years ago, my dad, Eli and I got very little shooting early on a patch of public land. We switched spots and listened to hunters boom and bang for a couple of hours. From afar, it sounded like there were already more than enough hunters on this particular sunflower field. So we hunted the fringe until they began walking out. One of the hunters approached us as he was leaving.

“You need to take your boy up to that field,” he said. “It’s got birds all over it.”

“How many folks are still up there?” I asked.

“No one. The field is yours.”

It turned out to be one of the best shoots I’ve ever been on, and we didn’t pull the trigger for the first time on the opening morning of dove season until after 9 a.m.

### This Is My Dance Space

How much is enough room? Talking to conservation officer Keith Jadowki, also a lifelong hunter, the answer varies. “I don’t think you can put a set



Todd Mills and his Lab, Hope, spend a lot of hours on public land each year. When hunted correctly by everyone, these hunts can be memorable for all of the right reasons.



On this morning, young Eli Kurrus was setting teal decoys too close to another hunter's spread. The hunter calmly, and nicely, shared this with our group, which included Eli's grandfather, Larry, prompting us to move to a safer location.

amount of distance on it, because it depends on terrain and what you are hunting. The question I always ask is, "Will I mess up their hunt if I'm this close? Because they beat me fair and square to that spot."

Even though you're both hunting public land, you both also prayed that the marsh would be empty when you

first arrived. If you were the early bird, leave a head lamp on so others can make a logical decision where to go. But remember that sometimes depth perception is hard to judge in the dark. On one Rainwater Basin hunt, my hunting party began setting up decoys when I heard a hunter, whose light I had already seen, say, "Guys. You're

really close."

It wasn't until I heard his voice that I realized how close I actually was. "Sorry about that," I whispered. We picked up our decoys and moved another 75 yards away, where we were able to find our own little patch of water that the teal wanted to work as well. Quite often, there's space for everyone.

And when there's not, you can either wait out the crowd in the truck, hunt the fringe, or look for another spot altogether. All are better options than putting you, or the hunter next to you, in an uncomfortable situation.

## My Bird or Yours

Anyone who has hunted public land



I met Bud Bowlin, from Palmeira, on a public dove hunt in 2016. His hunting group often camps at the hunting location the night before to be the early bird.

has seen a bird go down and found themselves, and a complete stranger, walking toward that same downed bird. Most of the time, even when others shoot as well, you know if you hit a bird. In these instances when there are two hunters and one bird, smile. Tell the other guy you felt pretty good about your shot. He'll respond that he did, too. Then give him the bird and say you'll take the next if it happens again.

Where this situation becomes more complicated is when hunting waterfowl and birds are circling. Anyone who has hunted ducks on public land has had birds called off of them and seen other hunters shoot

when birds were just about to cup into your decoys. Again, be respectful. This can be accomplished by putting your calls in your pocket when birds are working another group of hunters, or even taking a few minutes and asking the other group if they want to alternate calling. I think you'd be surprised at how most of these potentially uncomfortable situations can be quickly corrected.

For many hunters, public land is the only option they have. And when done correctly, it is a great option, with plenty of room and game for everyone and the chance for unlikely friendships to form in the likeliest of places. [N](#)

# Deer Fangs

By Brian Peterson

In Nebraska, male white-tailed and mule deer are most recognized by their elaborate, showy antlers. While we all have observed deer or pictures of deer with antlers, have you ever encountered a deer with fangs or tusks — canine teeth? If you have, this is extremely rare, possibly a 1 in 10,000 occurrence.

Both whitetail and mule deer have two lower “incisiform” canines which look and function like incisors and are used for foraging and browsing vegetation, but a rare few have upper canine teeth. Over the past 10 years while preparing European skull taxidermy displays, I have encountered three males, two whitetail and one mule deer, that exhibited upper canine teeth. These canines were not visible to me, as they were embedded in the gumline, until the skull was cleaned, so maybe they are more common than reported, at least in Nebraska.

Elk, the largest deer species in Nebraska, still retain canine teeth in both males and females; commonly known as ivories, whistlers or buglers, these teeth are smooth and rounded.

Upper canines in whitetail and mule deer may at first glance resemble the canine teeth in coyotes, bobcats and mountain lions. However, these upper canines are not for

catching prey, but remnants of prehistoric tusks in extinct deer species and several Asian species that retain tusks today, for example tufted deer, musk deer, Chinese water deer and muntjacs. Within today’s Asian species, canine tusks are used to fight other males during breeding season or for self-defense against predators.

The occurrence of canines in deer is not well understood. Multiple surveys within the United States estimated the prevalence of canines ranging from 0-4 percent, with the most extensive study conducted in New York State where 18,000 white-tailed deer were examined, and within the population, less than 1 percent contained upper canines. Occurrence of canines varies geographically, and when they occur, it is primarily in males; however, some canines in females have been reported. Canine teeth were first documented in Nebraska by a Nebraska Game and Parks biologist in 1963, when two mule deer (1 male and 1 female) were observed containing canine teeth at a deer check station in North Platte.

The presence of canine teeth is likely a genetic trait, however, the mechanism that expresses this trait is still unclear. In addition, Nebraska deer and elk still possess a



Upper canine teeth are rare, and typically only visible once the skull is clean like this trophy Nebraska mule deer European skull mount.

RICK SIMONSON



Prehistoric and today’s Asian deer like this tufted deer native to southern and central China have large, showy canine teeth.

THOMAS E. LABEDZ, COURTESY UNIVERSITY OF NEBRASKA STATE MUSEUM

prominent black or dark brown patch on their lower jaws where canines would occur. These are present in Asian deer and are thought to emphasize their showy canine tusks to rivals and predators. As deer and elk canine tooth size decreased or disappeared, showy antlers developed and increased in size.

There is still a lot of mystery surrounding canine teeth in deer. Next time you are in the Nebraska woods and are lucky enough to harvest a deer or find a skull, examine the upper jaw for canines. You may have an incredibly rare, 1 in 10,000, sharp piece of prehistoric genetics piercing its way into the present-day population. [N](#)

Brian Peterson is a biologist at the University of Nebraska at Kearney and coordinates the M.S Biology Online Program. His research focus is white-tailed deer antler metrics. For more information, contact [petersonbc@unk.edu](mailto:petersonbc@unk.edu). He would like to thank Rick Simonson of UNK Biology and Science Lab Studios, Inc., for taking photos, Jacob Wasser of Outlaw Taxidermy, and his client Sam Hoyt for allowing photos of his mule deer trophy.



Upper canine teeth are likely a prehistoric genetic trait.

RICK SIMONSON

# My Favorite Insect Gets Even Better

*Story and photos by Chris Helzer*

It's hard to pick a favorite insect, but I have anyway. It's the camouflaged looper, which is an inchworm that turns into the wavy-lined emerald moth. The moth is pretty enough and I'm sure is fascinating in its own right, but it's the caterpillar I love.

The camouflaged looper feeds on flowers of many kinds. What makes it incredible, though, is that it also selects pieces of the plant it's munching on and glues them to its back as camouflage. When it switches to another kind of flower, it changes its disguise to match. It's a really impressive strategy for a tiny creature with an even tinier brain.

I've only been lucky enough to spot this little inchworm a handful of times, despite being on constant lookout for it. I guess that's a testament to the effectiveness of its camouflage, but it also makes every sighting an event to celebrate.

My most recent looper observation came at the Nature Conservancy's Niobrara Valley Preserve after finishing up a long day in the field. I actually spotted the inchworm on a sunflower as I was driving slowly down a two-track road and scanning for photo opportunities. I have the eyes of a hawk, no big deal.

Anyway, I stopped and photographed the critter and

then grabbed both the sunflower and the inchworm to take back and show other staff. Everyone was gone for the evening when I arrived at the Preserve headquarters, so I took the caterpillar to my cabin for the night. I put the sunflower in a jar of water and added another flower (hoary vervain), hoping to entice the inchworm to change its diet and disguise. Then I put a paper towel across the water to prevent drowning accidents and put an upside-down glass on top of the jar.

The next morning, I woke up and immediately checked on the caterpillar. To my surprise and delight, it had altered its appearance overnight. However, it had chosen a costume I hadn't predicted. It was a completely reasonable decision, given the dominant color in its new environment, but it still made me shake my head in amazement.

The looper didn't switch to the vervain and decorate itself with bits of purple flower. Nope, the little bugger had crawled down to the paper towel and made itself a beautiful white garment to match! It was the perfect choice.

I didn't think I could love the camouflaged looper any more than I did. I was wrong. 🐛

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*Chris Helzer is the Nature Conservancy's director of science in Nebraska.*



Here's the container I made to keep the caterpillar happy overnight (minus the glass I put over the top).



Here's the camouflaged looper as I first saw it on stiff sunflower.



The caterpillar camouflaged itself with bits of paper towel.

# More Water for Wetlands

*Story and photos by Eric Fowler*

**W**etlands in the Rainwater Basin provide premier habitat for ducks, geese, shorebirds and other species during the spring migration. While in this part of south-central Nebraska, the birds fatten up for the rest of their journey to breeding grounds in the north, whether it be in the Sandhills or the prairie potholes of the Upper Midwest and Canada.

But that is only the case when the wetlands are wet. This spring, during severe drought, few would have held water had the Nebraska Game and Parks Commission and U.S. Fish and Wildlife Service not pumped them at select locations. Combined, both agencies pumped groundwater at 24 of the 94 wetlands they own and manage for wildlife, helping maintain the habitat that wasn't lost to agriculture and development. Even fewer would have been wet if not for the first disbursement of cash from Ducks Unlimited's new Rainwater Basin Water Development Fund.

The water development fund, established in 2019, is a partnership between DU, the Game and Parks Commission,



PHOTO BY TRAVIS KOPE

Well water spills from a pipeline at Kirkpatrick Basin South Wildlife Management in York County in October 2021.



Ducks, primarily northern pintails, along with mallards and teal, take flight at Hultine Waterfowl Production Area in Clay County in March. If not for groundwater being pumped to fill the wetland, it would have been dry.

USFWS and the Rainwater Basin Joint Venture. The goal is to create a \$7 million interest-bearing account that would provide more than \$300,000 annually to fund pumping, improvements to pumping infrastructure, and wetland restoration work. To date, \$800,000 has been donated or pledged, and this spring, approximately \$20,000 in interest was transferred to the agencies to use on their areas as well as on the Verona Complex, which is owned by DU's land trust and open to the public.

And it worked.

"Every basin we pumped [this spring] had birds on it," said Terry Kostinec, director of development for DU in Nebraska

and South Dakota. "We even had whooping cranes sighted on a number of these sites."

In wet years, a limited amount of money is spent on pumping, but in dry years, the Game and Parks Commission typically spends about \$30,000 on its wildlife management areas, primarily in the fall to provide opportunity for hunters, said Ted LaGrange, wetland program manager with the Game and Parks Commission. Were it not for the funding provided by DU's water fund, the Commission may have not pumped any of the 12 wetlands it did this past spring, LaGrange said.

The USFWS typically spends between \$80,000 and \$125,000 on pumping on its waterfowl production areas

in the spring and fall, said Brad Krohn, project leader of the Rainwater Basin Management District. The additional funding from DU allowed them to run pumps powered by diesel longer than they would have on some areas, a growing concern amid high fuel prices.

Ducks, geese, shorebirds and other water birds stop in the Rainwater Basin during spring migration to feast on flooded seed sources, such as smartweed and barnyard grass, along with a smorgasbord of insects and other invertebrates. Research has shown the quality of spring migration habitat is key.

"If you can get the birds to the breeding grounds alive and



Green-winged teal drakes follow a lone hen on a courtship flight around Eckhardt WPA in Clay County, another wetland that was pumped to provide habitat for migratory birds in the spring of 2022.

healthy, they're going to reproduce better, which is going to lead to a better fall flight," said LaGrange, noting the fund may allow the Game and Parks Commission to continue to pump more in the spring.

The USFWS also pumps water on some of its wetlands in the fall, beginning early enough on some to provide water during the early teal season in September, and continuing after the growing season to provide water during the regular duck season in October and November. Krohn said they may be able to do more fall pumping with the help of the water fund.

Fall pumping can help ensure conditions will be better in the spring, as it can take a substantial amount of water to fill the dry, cracked clay soils and seal the base of the wetlands. Combined with the frost layer that develops in moist soils when cold temperatures arrive, these marshes can more readily capture and hold runoff from melting snow or rain or pumped water longer than a bone-dry wetland come spring.

"Our No. 1 priority, the whole reason the district is here, is for supporting spring migration," Krohn said. "But we pump a lot in the fall as well, focusing on public use and areas that we are planning to manage for our spring pumping."

Pumping in the spring comes in stages. The USFWS pumps larger marshes first. These areas are attractive to the massive flocks of snow geese, some of the first migrants to arrive and first to leave in the spring. It then pumps shallower wetlands

with abundant seed sources for the pintails, mallards, white-fronted geese and other waterfowl that arrive later. Krohn said snow geese can deplete these food sources if they are pumped too early. Later pumping also ensures favorable conditions for shorebirds that arrive in April and May.

"That's the benefit of pumping later," Krohn said. "We're supporting the entire length of the migration instead of just one aspect of it."

During the past 15 years, the Game and Parks Commission, with the assistance of DU and other conservation partners, has added or improved wells, pumps and power sources and installed underground pipelines to efficiently deliver water from wells on high ground to the wetlands below on 18 wildlife areas in the basins. It has also completed restoration projects on 22 areas, removing sediment and filling pits. And in some instances where the Game and Parks Commission owned only a portion of a wetland, it has purchased property from willing sellers to bring more of the wetland into public ownership, making it possible to pump more water without flooding a neighbor.

The USFWS has done the same during the past 10 years, drilling new wells on seven areas and replacing pumps on two, as well as adding pipelines and doing other restoration work. But Krohn said it has a big backlog of projects awaiting funding, including replacing or repairing 35 of its 63 wells that are inoperable.

Kostinec said DU's goal is to help the Game and Parks Commission and the USFWS continue their efforts and restore another 23,000 acres of wetlands by making these types of improvements so more water can be available each spring.

"Mother Nature doesn't consistently put moisture across the landscape," he said. "And the pumping budgets for the state and federal agencies have just never kept up.

"If we can achieve a \$7 million investment goal, the interest that spins off that every year would essentially take care of all pumping needs and alleviate the problem of agencies fighting for a budget to do a little bit of pumping here and there each year. And once fully funded, it has the capability of really upgrading the infrastructure and continuing to help pay for restoration efforts in the region."

Proceeds from the Federal Duck Stamp, Nebraska Habitat Stamp and Nebraska Waterfowl Stamp, all required by waterfowl hunters, have been used to purchase land from willing sellers in the Rainwater Basin and restore wetlands since 1962. The Game and Parks Commission owns 35 wildlife management areas in the area, 29 with wells and pumps. The USFWS owns 59 waterfowl production areas, 25 of which have operational wells and two that can capture surface water from canals diverting water from the Platte River. The number of wells used to maintain these areas for wildlife represents .3 percent of the 31,000 registered wells in the Rainwater Basin region.

These 95 marshes and a few hundred more found on private land represent only 10 percent of 4,000 permanent and seasonal wetlands ranging from 40 to 1,000 acres in size that once dotted the region. The rest were drained or filled and are now farmed, most of them since World War II. Development altered the hydrology of many that remain, with roads, terraces and reuse pits keeping runoff from reaching some wetlands and erosion filling others with sediment.

Managing what remains, including pumping water when needed, is critical to ensure birds have what they need when they stop, said LaGrange. It also spreads out the birds, reducing the chances for disease outbreaks, such as avian cholera, that have claimed 100,000 birds in a single spring in years past.

"Hunters like large concentrations of birds, and for birdwatchers it's an amazing spectacle to see tens of thousands or even a million birds on a given spot," he said. "But if those birds get spread out, you're going to minimize the probability of a large die-off. It's social distancing for birds."

LaGrange and Krohn said their agencies are grateful for DU's effort and look forward to using the fund to do more for wildlife, hunters and birdwatchers. Judging from the hundreds of thousands of birds that stopped last spring, the birds are grateful, too. [N](#)

*To make a donation to the Rainwater Basin Water Development Fund, contact Terry D. Kostinec, director of development, South Dakota/Nebraska, at 605-760-5791 or [tkostinec@ducks.org](mailto:tkostinec@ducks.org).*

## Pumping Basics

Pumping water into Rainwater Basin wetlands to provide habitat for migratory birds can be beneficial, but it is not always feasible.

Care needs to be taken so neighboring private lands are not affected, especially before the crops are harvested.

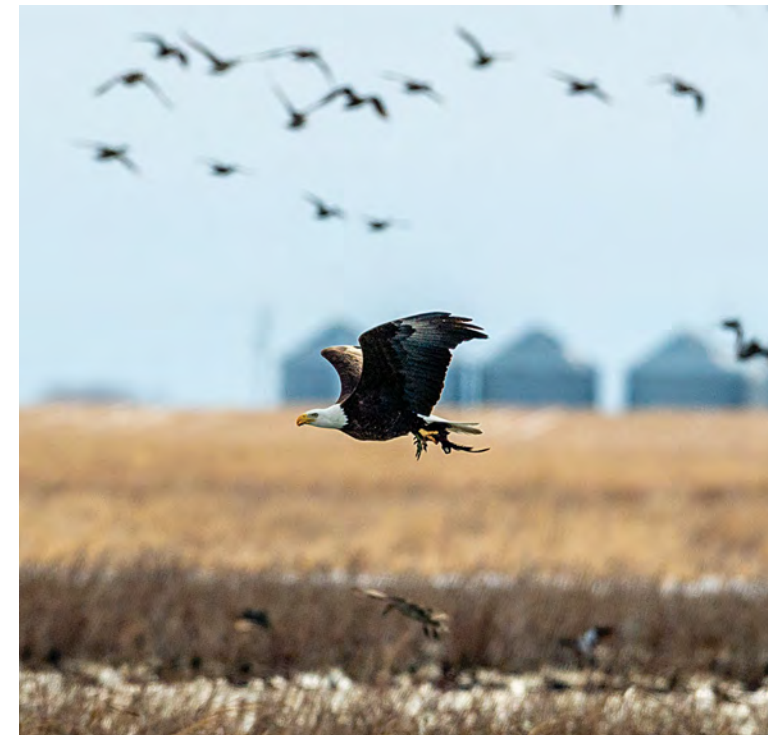
Wetlands in the area aren't always wet. The wet/dry cycle is natural and promotes the growth of plants that provide seed sources for birds.

Wetlands with moist soils are usually the first to be pumped. When clay soils are dry and cracked, much of the pumped water flows into the ground and it can take a lot of water just to seal the soil before it can pool. Rainwater or pumped water flowing through the cracked soils helps recharge groundwater.

In the fall, most pumping begins after a killing frost, ensuring plants won't suck up the water and when evaporation rates are lower.

Pumping occurs outside the irrigation season, and, in an average year, the amount pumped at all state and federal wetlands combined in spring and fall amounts to what is used to irrigate three sections of farmland.

In most cases, only enough water is pumped to flood vegetation that ducks and geese like to eat. It is not feasible to pump enough to float a duck boat.



A bald eagle carries a dead coot it picked up at Hultine WPA in March. Eagles often follow the waterfowl migration north.

# COOLER TALK PREVAILS

By Jeff Kurrus

In the outdoors, I’m always looking for items that change the way I do my day-to-day job. But rarely does this happen, and it has never happened with coolers.

However, through the years, I have been taught or discovered various tips about coolers that have led to day-to-day success with a category of outdoor products that, despite claims like “keeps ice for five days,” haven’t changed much.

Keep these tips in mind next time afield as you wait for that last cube of ice to melt on day four.

- An Igloo Playmate, with its plastic side button and light-weight construction, is only good for a few hours of keeping drinks cold, even with ice. But it’s perfect as a last-minute livewell for wading anglers. Simply connect the cooler handle, rope and a loop on your waders. The water

will circulate the entire time you fish.

- Store clothes in a cooler throughout the hunting season, adding a pine needle bough to the cooler to help alleviate any odors. If the cooler maintains a fishy smell from the summer, simply place a dry newspaper inside to extinguish that odor in a matter of days.

- Coolers are excellent transport containers for frozen meat. Lining the cooler with newspapers will maintain the cool temperatures even longer.

- If your cooler has a top that warns against sitting on it, don’t buy it. You’re going to end up sitting on it.

- Look for coolers without plastic hinges. They’ll be the first to break.

- If you go YETI or some other high-dollar brand, understand that these coolers are not cure-alls. I was gifted one by a relative last summer and while I like its durability, my cheap Coleman keeps ice just as well and isn’t nearly as heavy. But the YETI does make a great seat.

- A cooler with wheels is a cooler worth having.

- Several cooler brands come with food baskets, and these add-ons help keep protein bars and other foods dry when your “keeps ice for five days” cooler has a puddle of water in it by your first afternoon.

In your own time afield, what am I missing as regards to coolers? Write to me at [Jeff.Kurrus@nebraska.gov](mailto:Jeff.Kurrus@nebraska.gov) so our *Nebraskaland* readers can become more educated on this often frustrating, yet necessary, outdoor staple.



An Igloo Playmate cooler can be used as a portable livewell. JEFF KURRUS, NEBRASKALAND

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Asian Longhorn Tick with penny for size comparison.  
ERIC R. DAY, VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY, BUGWOOD.ORG



# TICKS IN NEBRASKA

By Julie Van Meter, State Entomologist  
Nebraska Department of Agriculture

The Nebraska Department of Agriculture is working to better determine which tick species are present in Nebraska. NDA field staff are partnering with USDA Veterinary Services to provide outreach to veterinarians and identify ticks submitted by veterinarians, collected from pets and livestock.

NDA staff also conducts surveys by “dragging” for ticks. A large white sheet is dragged across vegetation in preferred tick habitat, and any ticks found on the cloth are identified. Survey data assists the public, livestock producers and health professionals by providing a more complete picture of the distribution of tick species in the state.

Several tick species are known to be established in Nebraska, including **American dog tick**, **winter tick**, **brown dog tick**, and **lone star tick**. The **deer**, or **black-legged tick**, has been confirmed in Douglas, Sarpy, Saunders and Thurston counties in eastern Nebraska.

The invasive **Asian longhorned tick** is also on NDA’s radar. This tick, native to parts of Asia, was discovered in the United States in New Jersey in 2017, infesting sheep. Since that time, infestations have been confirmed in at least 16

additional states, including Missouri, but the tick has *not yet* been found in Nebraska. This tick can infest pets, livestock and humans, and may carry a number of serious diseases.

Asian longhorned ticks are light brown and very small. Nymphs are only about the size of a poppy seed. An adult female may be ¼ inch in length when fully engorged. Female ticks can reproduce without a male, and in fact, males have not yet been found in the U.S. This tick has a tendency to feed in large masses, which can cause additional stress to animals and even death.

In addition to disease transmission, tick feeding can result in tissue damage to livestock and wildlife hosts, blood loss, weight loss, and overall health decline or even death.

Report tick stress on pets or livestock to your veterinarian, and submit tick specimens when possible. Consult your doctor if you experience a fever, rash, chills or joint/muscle pain after you’ve had a tick bite.



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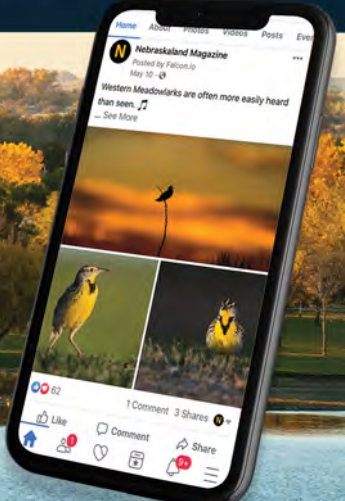


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## PHENOLOGY — NATURE'S CALENDAR

By Monica Macoubrie, Wildlife Education Specialist

Phenology is a word you may not be familiar with, but I am pretty sure that you've experienced it. Think about what season it is. Spring? Summer? Fall? How do you know it is that season?

Phenology, that's how, which can be defined as the timing of events in the life cycles of plants and animals. For example, you know that winter is waning when you see robins begin building nests or when Pasque flowers start blooming. Or later in the year, you know that fall has arrived at the first sign of foliage changing color. Animals and plants have a sense of phenology, too, and thus rely on cues from the changing seasons in order to survive.

Phenology is a key component to life on earth. Changing precipitation and temperature usually signal organisms to enter a new phase of life. In plants and trees, that includes flowering and leafing in spring, and leaves falling from deciduous trees in the fall. In animals, phases include hibernation, reproduction and migration. Many birds, for instance, time nesting and egg-laying so that insects will be available for their babies to feed on when they hatch. Insect emergence, then, is timed with the blooming of flowers, which insects rely on for food.

Scientists who study phenology look for the timing of events in relation to changes in the season and the climate, and phenology has been a major interest: Our global climate is undergoing a shift, which means the phenology of different seasonal organisms is also changing. Ecosystem services such as pollination and seed dispersal, regulation of pest species and soil quality are all affected by phenology, and if phenology is shifting from species to species, these services

could be interrupted over time, or even lost all together.

For example, scientists are finding that flowers are, on average, blooming earlier around the world, even here in Nebraska: Flowers are blooming around 40 days earlier than they did just three decades ago, and while this may not seem like a big deal in itself, the trend could have cascading effects. Insects need time to develop before emerging; they simply can't speed up their developmental process to catch up with flowers that are blooming earlier. If insects have no food, they die, and without insects, that's bad news for the birds that feed on them.

Furthermore, as the temperature of the Earth rises, global seasonal trends show that climates are becoming warmer earlier in the year, and staying warmer later into the fall. As a result, changes in phenological events can have a significant impact on how humans interact with the environment on a daily basis: One example is in the food we eat.

Common foods such as almonds, apples, melons, strawberries, chocolate, peaches and tomatoes require pollination by insects. If flowers are blooming earlier than pollinators are emerging, this could lead to severe declines in many of the foods we know and love.

One way to help scientists is to participate in a global project called Budburst. There, you can report when the plants in your garden, park, town or state are changing with the seasons. Scientists can then use data collected through this community science project to predict how our climate and different ecosystems will change decades, and even centuries, into the future.

For more information on Budburst, visit [budburst.org](http://budburst.org).



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### Camping at Long Pine, 1989

This is a family photo taken at Long Pine SRA in 1989. My family has continued to camp at Long Pine every year since 1968. It was my wife's first visit, or fiancé at the time. (She is in the back row first from the right, next to me in the blue cap.) The tykes in the photo now bring the new generation to fall in love with the creek that has remained constant for 53 years.

– Mick Clark, Broken Bow



### Bowfishing near Yellowbanks, 1967

Pictured is a snapper I shot while bowfishing at Jackson Lake west of Norfolk near Yellowbanks. The first two shots glanced off the shell. The third went through and it took 15-20 minutes to pull it to shore.

I was 16, going into my junior year of high school. I had a retired neighbor who helped me de-shell and harvest the meat.

Can't say I could honestly tell seven kinds of meat, as they say, but the stew was really good. Grew up in Norfolk and have been reading the magazine for many years.

– Reginald Ayers, York



### Pheasant hunting near Dodge, 1971

This picture was taken on the first day of pheasant season 1971. Pictured is of my dad, Bill Mlnarik of Dodge, me and my daughter, Julie. The pheasants were bagged around the Dodge area in the first hour of the season. Pheasants were so abundant at that time. We just took pheasant hunting success for granted.

– Dr. Dave Mlnarik, Elkhorn



### Pheasant hunting near Schuyler, 1982

Thanksgiving weekend 1982 on the family farm southwest of Schuyler. Me (left), my father Robert Schmidt, and our always reliable German shorthair, Toni.

– Roger Schmidt, Adrian, Missouri



### Halsey grouse hunt and camping, 1981

Gary Winans (front), Terry Smith, Lynne Winans, Kathy Smith, Kim Bruno, Tommy Cogan and Sue Strnad.

– Terry Smith, Omaha

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](mailto: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 2000. 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. Text may be edited and photos adjusted for reproduction. All photos will be returned.



FISHING SPIDER



MILKWEED TUSSOCK MOTH CATERPILLAR



GRANDDADDY LONG-LEG SPIDER

# THE WONDROUS MILKWEED PLANT

By Julie Geiser

The relationship between milkweed and monarch butterflies is well-known in the pollinator world. In my garden, the plants not only provide beautiful and fragrant flowers, but also food and shelter to many other species as well. So, when I noticed the different species of insects and arachnids using the milkweed in my flower garden, I began documenting them with a camera.

First, I watched a granddaddy long-leg (or harvestmen), which is not a true spider, eating a smaller spider on a milkweed leaf. Longlegs are scavengers, and they feed by searching the ground and plants for small insects, eggs or dead plant or animal material. In this instance, my milkweed plants offered the ideal hunting grounds.

Then I saw a milkweed tussock moth caterpillar making its way through the maze of milkweed leaves, stopping to feast along the way. I had never seen a tussock caterpillar before, and it reminded me of a Shih Tzu dog with its fluffy tufts

of black, orange and white. Like monarch caterpillars, this caterpillar's bright coloration signals to would-be predators that its body contains toxic cardiac glycosides from eating the milkweed, which the tussock caterpillar exclusively feeds on.

One of the neatest things I found was a fishing spider and her egg sac with newly emerged spiderlings. As the mother stood guard to protect her young, the large, strong leaves of the milkweed plant provided them shelter from the elements as well. With its thick stem, this milkweed plant has survived through many of Mother Nature's trials, which is why the spider chose it as the location to lay her egg sac.

Each plant was like a world in itself, and this was just a small sample of what I saw. In addition to knowing that I'm helping pollinators, I've delighted in the joy of watching nature play out on milkweed. I encourage you to plant them in your own garden

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