

# MISSOURI CONSERVATIONIST

VOLUME 84, ISSUE 6, JUNE 2023  
SERVING NATURE & YOU





DISCOVER NATURE

# Notes

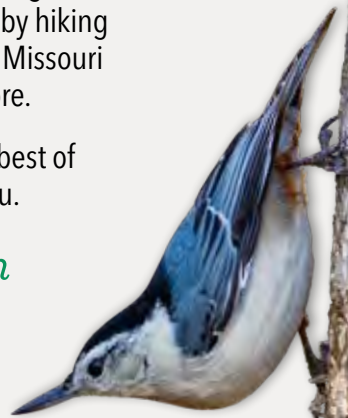
*spend a moment in nature*

Each week, Discover Nature Notes takes you outdoors in nature through stunning photos, video, and audio. You'll see the sights and hear the sounds of animals in the wild. Discover nearby hiking trails, find where you can see migrating ducks, learn that Missouri has freshwater shrimp, swamps, champion trees, and more.

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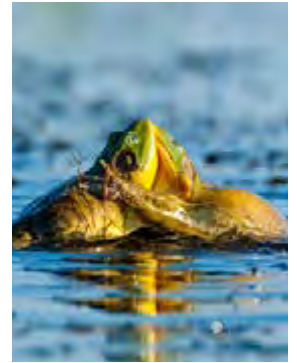
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## MISSOURI CONSERVATIONIST



### ON THE COVER

Two bullfrogs clash atop of shallow water.

**NOPPADOL PAOTHONG**

500mm lens, f/8  
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# Inbox



## Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to us:

MISSOURI  
CONSERVATIONIST  
PO BOX 180  
JEFFERSON CITY, MO 65102

## BEAUTIFUL MISSOURI

Thank you for the *Missouri Conservationist*. We love having it in our classroom to show the students what beautiful animals, plants, and places we have in Missouri.

Erin Guenther  
Kirkwood United  
Methodist Preschool

## MOREL MADNESS

What a delight it was to read about LaDonne Kieser and her lifelong hobby of morel mushroom hunting [*Missouri Morels*, April, Page 16]. It was one of the best things I have ever read in your magazine — combining culture, history, some biography, and the outdoors. I love morels but never hunted them, even though I live in the same area as the Kiesers. I may have to start hunting them this year now that I know how. Thank you to LaDonne and her son for inspiring me.

Susan Harris via email

## BRIGHTER DAYS

As a senior, I don't get out as much as I would like. But getting my *Missouri Conservationist* gives me memories of my youth. Your team are the eyes and spirit of us old timers. We may not be able to explore the woods and nature, but your team does a great job of bringing back those moments of past adventures. I look forward to each and every issue. Thanks again from this senior and all the other adventurers we once were.

W. Marshall O'Fallon

## LOVE FROM MISSISSIPPI

I had a subscription to the *Missouri Conservationist* in the late 1940s, long before the internet and when most libraries had little on wildlife or ecology. I lived

from one issue to the next. I now visit a cousin near Robertsville, Missouri, from time to time and enjoy reading her copies of the magazine. It was, and still is, an outstanding publication and I know of no other that is comparable.

J. E. (Jim) Matthews Bay St. Louis, Mississippi

## PERFECT TIMING

On the very day my husband spotted an unusual caterpillar in our flower bed, the *Missouri Conservationist* arrived and in the *Ask MDC* section, I spied what he had described — an imperial moth! Last year after identifying a bird we hadn't seen or heard before, I picked up a *Missouri Conservationist* and it included information and several photos of this great little bird — a prothonotary warbler. Interesting coincidences and great information!

R. Limback via email

## A FUTURE OUTDOORSMAN?

I am not an outdoorsman. I do not hunt, fish, camp, or hike in the woods. However, that does not prevent me from appreciating the timely and wonderful articles and the breathtaking photography appearing in the magazine. Also, the former English teacher in me enjoys the high quality of writing. I especially like the *Up Front* feature [Page 3]. It adds a personal and well-stated touch to the magazine.

Thank you for your work. It could possibly motivate me to venture out into Missouri's wilder side.

Phil Shayne Manchester

## Connect With Us!



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## Have a Question for a Commissioner?

Send a note using our online contact form at [mdc.mo.gov/commissioners](http://mdc.mo.gov/commissioners).

### MISSOURI CONSERVATION COMMISSIONERS



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The Missouri Department of Conservation protects and manages the fish, forest, and wildlife of the state. We facilitate and provide opportunity for all citizens to use, enjoy, and learn about these resources.



### Want to see your photos in the *Missouri Conservationist*?

Share your photos on Flickr at [flickr.com/groups/mdcreaderphotos-2023](https://www.flickr.com/groups/mdcreaderphotos-2023) or email [Readerphoto@mdc.mo.gov](mailto:Readerphoto@mdc.mo.gov).



1

1 | Little blue heron by Pamela Rethy, via Flickr

2 | Slough at Ted Shanks Conservation Area by Stephen Bogue, via Flickr

3 | Eastern black kingsnake by Joshua Uffman, via Flickr



2



3



### Want another chance to see your photos in the magazine?

➔ In the December issue, we plan to feature even more great reader photos. Use the submission methods above to send us your best year-round pictures of native Missouri wildlife, flora, natural scenery, and friends and family engaged in outdoor activities. Please include where the photo was taken and what it depicts.



# Up Front

with Sara Parker Pauley

✳ Perhaps my favorite time of day is that liminal period in which night hands off the baton to day. The call of the barred owl and bark of the red fox give way to the early morning melodies of the towhee and thrush. I've noted over time that there is a moment of stillness just before dawn when Mother Nature seems to take a pregnant pause or perhaps a silent drumroll. It is in this waiting period that sometimes I feel unsettled, as we humans like to be settled someplace, just not necessarily that place of the in-between. But it is also this liminal space that can hold the most promise — of adventures not yet lived, of hope, even transformation.

It is in the great outdoors that this concept of waiting just before transformation is everywhere — dusk into night, tadpole into frog, caterpillar into butterfly. And now comes June when we pause to note the summer solstice — the longest day of sunlight when the earth's poles are tilted closest to the sun — and with it the arrival of summer. (See the stunning summer solstice photo essay on Page 10.) And just as quickly comes the inevitable turning of the earth's axis away from the sun, and change moves us on once more.

English poet John Wilmot noted, "Since 'tis nature's law to change, constancy alone is strange."

As you venture forth into nature this month, may you seek and find the magnificence of its continual transformation, and the mystery of the in-between.

**SARA PARKER PAULEY**, DIRECTOR  
[SARA.PAULEY@MDC.MO.GOV](mailto:SARA.PAULEY@MDC.MO.GOV)

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# Nature LAB

by Dianne Van Dien

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

## WATERSHED HEALTH

# Dissolved Oxygen in Warmwater Headwater Streams

✳ When MDC Watershed Ecologist Darren Thornhill began his study of dissolved oxygen (DO) in warmwater headwater streams, he was looking for a pattern. DO is critical to the survival of aquatic organisms. While a daily oxygen curve has been established for large bodies of water like lakes and ponds, not much is known about the natural fluctuations of DO in small headwater streams.

“The majority of streams in Missouri are headwater streams, which leads to the incredible diversity of aquatic organisms in the state,” Thornhill says. “We wanted to look at DO levels in streams surrounded by high-quality habitat to determine how to best protect this important habitat.”

In 2020 and 2021, MDC staff measured DO and other water quality parameters in headwater streams at 34 sites on conservation areas in Missouri’s prairie ecoregions. At each site, technicians collected data two to four times each year from June to September.



An MDC technician uses a probe with an optical sensor to measure the dissolved oxygen, temperature, turbidity, and other properties of water in a prairie headwater stream. Headwaters are small streams at the beginning of a watershed. In grassland habitats, headwaters are classified as warmwater streams and are highly affected by the surrounding air temperature and amount of rainfall.

Study of dissolved oxygen in headwater streams yields unexpected results

“DO is related to water temperature,” explains Thornhill. “The warmer the water, the lower the concentration of oxygen. So, we focused on the hottest, driest time of year to see what these highest quality streams produce during the worst conditions for oxygen.”

Information about DO levels and their daily fluctuations in healthy prairie streams could provide a reference for what to aim for when restoring habitat. But no single pattern emerged from the study.

“We saw that high-quality habitat in the watershed lends to high water quality,” says Thornhill. “But no stream had a DO profile exactly the same as another. Each stream is an individual, unique in what it provides to those species that use it. So, we need to protect each stream because there isn’t another one like it.”

## Dissolved Oxygen Study at a Glance

### Objectives:

- Find typical range of DO in headwater streams in high-quality habitat during summer
- Determine if DO levels are related to other water quality parameters and stream habitat
- Try to determine a daily DO cycle for these streams



### Methods:

- DO and other water quality factors measured at 34 sites
- Three adjacent pools at each site measured 2-4 times from June to September
- Measurements taken every hour from sunrise (when DO is lowest) to noon (when DO is highest)
- Stream structure and vegetation assessed

MDC staff collected baseline data on dissolved oxygen (DO) in headwater streams across Missouri’s prairie region in 2020 and 2021.

### Findings:

- DO in warmwater headwater streams is highly variable from stream to stream and day to day
- Every stream has a unique DO profile

# In Brief

News and updates from MDC



These young scissor-tailed flycatchers don't need rescuing. They are learning to fly, and the parents are likely nearby.

## LEAVE WILDLIFE WILD

YOUNG WILDLIFE  
MAY APPEAR  
ABANDONED, BUT  
THAT'S RARELY  
THE CASE

➔ Newborn wildlife can pull on our heartstrings, especially if you find them alone. But, interfering with wildlife usually does more harm than good, so leave wildlife wild.

A common newborn animal people come across in spring is young birds. If you see a chick with feathers hopping on the ground, leave it alone because it's a fledgling and the parents are nearby keeping watch. Fledglings can spend up to 10 days hopping on the ground, learning to fly. If you find one that has no feathers, you can return it to the nesting area, if possible, as it likely fell out of its nest.

Don't "rescue" newborn rabbits. Wild rabbits seldom survive in captivity and can die of fright from being handled. Even if the animal is injured, it's best to return it to the nest because the mother will most likely return.

Human scent does not cause wild mothers to reject their young, but most newborn animals do not survive in captivity. Wildlife can also become dangerous as they mature, carry disease and parasites, and cause property damage.

For more information, visit [short.mdc.mo.gov/4A5](http://short.mdc.mo.gov/4A5).

# Ask MDC

## Got a Question for Ask MDC?

Send it to [AskMDC@mdc.mo.gov](mailto:AskMDC@mdc.mo.gov)  
or call 573-522-4115, ext. 3848.

### Q: I found this snake beside my driveway. What species is it?

→ This is an eastern hog-nosed snake. One identifying feature is this snake's pronounced upturned snout.

This species' coloration can be highly variable. Their ground color can be gray, tan, yellow, brown, olive, or orange. Individuals can either have a series of brown dorsal blotches (20 to 30) with a smaller light marking between them or can be dull colored and lack dorsal markings, except near the head. With heavily marked specimens, there are several additional dark markings on the head: a V-shaped marking behind the eyes, a dark bar across the head between the eyes, and a diagonal dark bar from each eye to the corner of the mouth. In some parts of this species' range, individuals can be jet black. For more information about eastern hog-nosed snakes, visit [short.mdc.mo.gov/4Ac](http://short.mdc.mo.gov/4Ac).

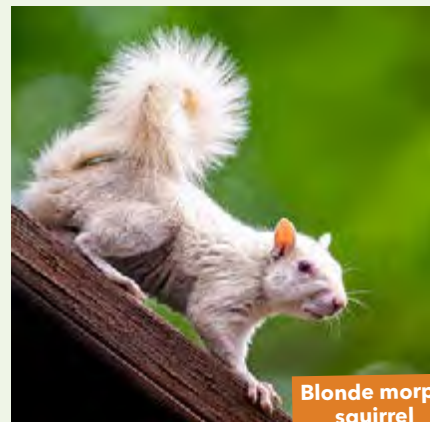


Eastern hog-nosed snake

### Q: Last spring, we found a white squirrel in our backyard. At first, I thought it was an albino. But the eyes didn't appear red; they were blue. Do white squirrels sometimes have blue eyes?

→ Missouri's two most common tree squirrel species — the eastern gray squirrel and the eastern fox squirrel — can have quite a lot of color variation from dark to light. MDC Scientist Beth Emmerich considers this squirrel a "blonde morph." It lacks some, but not all, of its melanin, causing it to appear unusually beige or buff colored.

The blue eyes lead us to believe it's more likely leucistic, as opposed to albino, which have pink eyes. Leucism is a condition in which there is partial loss of pigmentation in an animal resulting in white, pale, or patchy coloration of the skin, hair, feathers, scales, or cuticle, but not the eyes. Unlike albinism, it is caused



Blonde morph squirrel

by a reduction in multiple types of pigment, not just melanin. Typically, leucistic animals are partly white, with brown, tan, and gray.

According to *The Wild Mammals of Missouri* book, "Albino squirrels occur occasionally, and, in some instances where this characteristic is common in the heredity of the local population, small colonies of albinos may form. Missouri has one such colony in Marionville."

For more information, visit [short.mdc.mo.gov/4AT](http://short.mdc.mo.gov/4AT).

### Q: Why are there no grizzly bears in the Ozarks?

→ Historically, grizzly bears did inhabit the western regions of Missouri, given the extensive grasslands found in those parts of the state. However, compared to grizzly bears, black bears were believed to live at much higher densities in the forested regions of the eastern United States. Grizzlies, due to their slower reproductive rates, have been slower at expanding back into their historic range. In comparison, black bears reproduce and repopulate more quickly than grizzlies.

When high-quality food resources such as salmon or bison are readily available, grizzly bears easily out-compete black bears. But when



those resources are unevenly dispersed across the landscape and more food resources — such as acorns — are found in trees, black bears can out-compete grizzly bears. Given the historic availability of food resources available for both bear species, conditions in Missouri were always in favor of black bears over grizzly bears. MDC has no plans to restore grizzly bears to Missouri.

**Q: These were attached to my garage doors. What will they become?**

➔ These are hackberry emperor caterpillars and chrysalises. Found throughout Missouri in woodlands, city yards, and parks, they are always associated with hackberry trees. Their favorite places are wooded streams, river edges, and forest glades.

They are attracted to the sodium in human perspiration, so it's not unusual for them to alight on people.

When they are not flying in a fast and erratic manner, they can be seen resting upside down on tree trunks. Males will perch on



Hackberry emperor pupae

a tall object in a sunny area to watch for females. Eggs are laid in clusters and the caterpillars are gregarious when young, dining on tender hackberry leaves. They overwinter in groups gathered inside dead, rolled leaves.

As adult butterflies, they eat tree sap, rotting fruit, dung, and carrion and sip moisture from puddles along roads and streams. This species has two broods between May and October.

For more information, visit [short.mdc.mo.gov/4Aq](http://short.mdc.mo.gov/4Aq).



**Makayla Leppert**

CHRISTIAN COUNTY  
CONSERVATION AGENT

*offers this month's*

**AGENT  
ADVICE**

June is a great time to get outside and try a new activity or perfect a favorite hobby. Kayaking has grown in popularity and with more than 110,000 miles of running water in the state, Missouri is the perfect place to start paddling. Water temperatures are getting warm, and fish are biting. Get out there and experience the thrill. If you are in the southwest Missouri area, a popular spot is Busiek State Forest and Wildlife Area. The area offers a shooting range, hiking, biking, horseback riding, camping, birdwatching, and shallow streams to explore. Need help finding a conservation area in your neck of the woods? Visit [short.mdc.mo.gov/Z9o](http://short.mdc.mo.gov/Z9o). Looking for a new activity? Download the MO Outdoors app at [mdc.mo.gov/mooutdoors](http://mdc.mo.gov/mooutdoors). Nature awaits.

**What  
IS it?**

Can you guess this month's natural wonder?

*The answer is on Page 9.*



*Invasive nonnative species destroy habitat and compete with native plants and animals. Please do what you can to control invasive species when you landscape, farm, hunt, fish, camp, or explore nature.*

## Poison Hemlock

by Angela Sokolowski

Poison hemlock (*Conium maculatum*) is a toxic biennial forb in the carrot family that spreads via seeds. Its leaves are highly dissected and fernlike in appearance. The leaves and flowers are similar to Queen Anne's lace, but unlike similar species, poison hemlock leaves will not have hairs.

First year plants are low basal rosettes. Second year plants grow up to 8 feet tall and flower. Marked with distinct maroon or purple blotches, the stalks are hollow and hairless, except at the nodes. Umbrella-shaped clusters of small white flowers bloom May through July.

### Why It's Bad

Poison hemlock not only out-competes native vegetation, but it is also toxic to humans and animals. Toxins are found inside the tissues of all parts of the plant and can affect humans, cattle, horses, and other livestock. Ingestion is the primary cause of toxic effects, which can be fatal. Exposure to skin can cause irritation, and exposure to mowed or burned plants can cause respiratory irritation in some. Even dead and dried plants contain toxins for several years, so these plants should not be hayed or fed to livestock.

### How to Control It

Use caution and always protect skin from exposure by wearing gloves, long sleeves, and pants during any control activities. Launder workwear after use.

**Manual:** Small populations can be pulled or dug. Remove the entire taproot, place plants in plastic bags, and dispose in the trash.

**Mechanical:** Mow before plants flower to prevent seed production. Wearing a mask is recommended. Stalks will regrow and require repeated mowing.

**Chemical:** Herbicide application to rosettes in spring or fall is most effective for eradication. Glyphosate, triclopyr, and 2, 4-D based products are commonly used. Always follow herbicide label instructions.



Look for dark red or purple spotting on the stalks of poison hemlock.

To learn more, visit [short.mdc.mo.gov/4Qu](https://short.mdc.mo.gov/4Qu)

## MDC HONORS FORMER COMMISSIONER BEDELL

MDC recently honored former Commissioner Don Bedell during a dedication ceremony for the new Don C. Bedell Unit of Peck Ranch Conservation Area (CA) in the Missouri Ozarks.

Bedell, an avid conservationist and enthusiastic sportsman, served on the Missouri Conservation Commission through 2021 after serving two six-year terms. During his time serving on the Conservation Commission, Bedell saw MDC accomplish numerous feats, including the historic restoration of once-native elk at Peck Ranch CA in the Missouri Ozarks.

The 5,805-acre property, formerly known as Chilton Creek Research and Demonstration Area, contains some of the most biologically important woodland habitat in the Midwest and is surrounded by Peck Ranch CA, Rocky Creek CA, and Ozark National Scenic Riverway.

The Don C. Bedell Unit will be open to the public and managed by MDC for multiple uses under certification through the Sustainable Forestry Initiative.

For more information on Peck Ranch CA, visit [short.mdc.mo.gov/4AS](http://short.mdc.mo.gov/4AS).



## NEW CASES OF CWD REPORTED

MDC staff sampled and tested more than 33,000 deer for chronic wasting disease (CWD) during the 2022 CWD surveillance year between July 2022 and April 2023. Of the more than 33,000 deer sampled, 117 tested positive for CWD.

Those 117 deer bring the total number of CWD cases found in the state to 409 since the first case in wild deer was confirmed by MDC in early 2012. Including recent sampling efforts, more than 243,000 tissue samples from wild deer have been collected for CWD testing in Missouri since MDC began surveillance in 2002.

It is a 100 percent fatal disease in white-tailed deer and other members of the deer family. The disease has been attributed to significant deer population declines in other states. Learn more at [mdc.mo.gov/cwd](http://mdc.mo.gov/cwd).



## WHAT IS IT?

### PAINTED BUNTING

The brightly colored markings of adult male painted buntings are not easily confused with any other birds. Male painted buntings have blue heads, lemon-green backs, green wings, reddish rumps, and red rings around each of their eyes. Birding was made for birds as beautiful as painted buntings. Once you spot one amongst the thickets and shrubs they prefer, you will be hooked.



## GIVE TURTLES A BRAKE!

Be cautious on the roads this spring and give turtles a brake! These reptiles are often hit by cars during the warmer months but are at special risk this time of year because they are more active. Common turtles spotted crossing Missouri roads include three-toed box turtles, ornate box turtles, and snapping turtles.

Vehicles are one of the leading threats box turtles face in Missouri, and MDC urges motorists to be cautious and slow down if they see a turtle in the road. If helping a turtle make it safely across, check for traffic and always move the turtle in the direction it is traveling.

Additionally, MDC urges the public to leave turtles in the wild. Taking a wild animal, whether a turtle or other wildlife species, and keeping it as a pet normally ends in a slow death. Leave turtles in the wild, follow the speed limit, and keep your eyes on the road.



# Drinking *the* Wild Air

SUMMER SOLSTICE WELCOMES A SEASON OF ADVENTURE

## **Birdsong Conservation Area**

The sun peeks through gaps in the forest creating beams of warm light.

**David Stonner**

500mm lens • f/4 • 1/800 sec



*Live in the sunshine. Swim in the sea. Drink in the wild air.*

— Ralph Waldo Emerson

June 21 marks the summer solstice, when the sun reaches its northernmost point from the celestial equator. It is also the longest day of the year.

Missouri outdoors is full of summertime fun. With well over 100,000 miles of waterways in Missouri, it's a great place to beat the summertime heat by boating, fishing, or floating. The Show-Me State is alive with blooming wildflowers and chirping, colorful birds, so it's a perfect time for nature viewing. MDC cares for more than 1,000 areas that boast everything from hiking to biking and camping, so family fun is always in season.

Summer is like a blank canvas. Get out and discover nature. Your summer is sure to be a masterpiece.





## Eastern Gray Squirrel

Squirrel sunbathes in a tree on a warm summer day. **David Stonner**  
500mm lens • f/5.6 • 1/125 sec

## Katydid

A bright pink katydid explores a leaf. **David Stonner**  
100mm lens • f/8 • 1/125 sec

## Eastern Gartersnake

A snake slithers across the warm ground. **Noppadol Paothong**  
40mm lens • f/7.1 • 1/60 sec

## American Goldfinch

A bright yellow finch sits in a pool of water. **Noppadol Paothong**  
600mm lens • f/5.6 • 1/125 sec





### **Gray Treefrog**

A frog lounges casually on a leaf.

**Noppadol Paothong**

100mm lens • f/16 • 1/250 sec

### **Leafcutting Bee**

A bee collects pollen as it investigates a blooming flower.

**Noppadol Paothong**

100mm lens • f/16 • 1/200 sec

### **Least Bittern**

A large bird attempts to stay hidden inside tall grass.

**Noppadol Paothong**

280mm lens • f/7.1 • 1/250 sec

### **Niawatha Prairie Conservation Area**

The sun sets over the prairie on a summer evening.

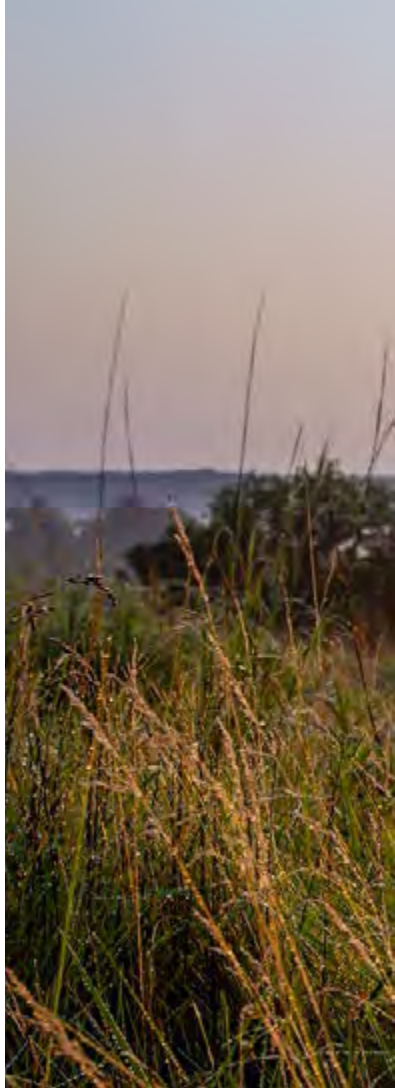
**Noppadol Paothong**

40mm lens • f/8 • 1/40 sec











### **Eastern Hercules Beetle**

A large beetle is camouflaged on top of a fallen log.

**Noppadol Paothong**

100mm lens • f/11 • 1/200 sec

### **Union Ridge Conservation Area**

The sun rises over Union Ridge on a summer day.

**Noppadol Paothong**

35mm lens • f/8 • 1/200 sec

### **Common Snapping Turtle**

A baby snapping turtle sets out on its own adventure.

**Noppadol Paothong**

100mm lens • f/9 • 1/30 sec

### **American Mink**

A mink reveals itself from the tall grass to observe its surroundings.

**Noppadol Paothong**

500mm lens • f/8 • 1/320 sec

# Nightclub Nature

OUTDOOR MISSOURI DOESN'T CLOSE WHEN THE SUN SETS

If you are longing for an outdoor adventure, but the daytime summer heat has you feeling like a couch potato, we have the solution. Time for you to check out Missouri's nightclub nature! That might seem counterintuitive to humans, who are diurnal — or active during the day — but nature is not. It's open and active 24 hours a day. At nightclub nature, the temperatures are cooler, the atmosphere is mysterious, and the animals are not often seen or heard in the daytime.



Exaggerated nighttime photo illustration

White-tailed deer

# Who's at Nightclub Nature?

## Mammals

Bats are always out at night, particularly little brown bats and red bats. These nocturnal mammals help control the pest population, making your visit outdoors more enjoyable. Starting at dusk, look for them where flying insects are plentiful — over bodies of water, above meadows and clearings, near barns, and streetlights. Their flight patterns are erratic and fluttering, matching the dance of their prey.

Small prey mammals, like flying squirrels, are also out at night, but aren't as obvious as bats. You may not catch a glimpse of these gliding pint-sized furballs, but if you stay quiet, you might hear them. Late at night near a woodland stream, listen for a high-pitched *tseet* repeated in three- to five-second intervals or a musical chirping. Another tell-tale sign that a flying squirrel is near is the soft thump of a small body landing against a tree.

Mammals that we see during the day often make an appearance at night. Larger wild mammals — such as deer, raccoons, foxes, coyotes, opossums, skunks, beavers, bobcats, and badgers — are known to enjoy the night life. But they become more skittish as the sun goes down. Most interactions are accidental — a coyote howling in the distance, an opossum caught in a car's headlights, a raccoon jumping from a dumpster. If you want to be more purposeful about sighting these mammals, take a hike at night, armed with a flashlight. Find a spot to sit and stay quiet, taking in the sights and sounds.



Flying squirrel

Rough greensnake



Gray treefrog



## Snakes

Nighttime is prime time for snakes. On summer nights, snakes come out to hunt their prey, such as insects, mice, and frogs. Don't let the thought of a snake crossing your path or gliding across a moonlit pond deter you from heading out at night. It helps to remember that snakes are shy and nonaggressive. If you encounter any snake at night — venomous or not — simply back away and watch from a distance.

## Frogs and Toads

If there is a soundtrack to Missouri's nightclub nature, it is supplied by the frogs and toads. Missouri's toads and frogs must mate and lay their eggs in water, so any fishless pond, flooded field, or ditch will do. These amphibians gather in spring and the frog-and-toad concert begins. Voices often heard in this nighttime performance include spring peepers, boreal chorus frogs, cricket frogs, bullfrogs, and American toads.

Spring peepers emit a piercing *peep* about once a second while chorus frogs sound like a thumbnail running across the teeth of a pocket comb. A cricket frog makes a clicking sound, *gick-gick*, like two pebbles struck together twice, and a bullfrog's baritone is a deep, bellowing *ger-rrr-um*. The American toad has a high-pitched trill lasting six to 30 seconds.

If you would like to see the critters making these sounds, head to a pond, armed with a flashlight. Walk slowly and quietly and you may catch the eyes of these masterful musicians.



Evening primrose

## Plants

Looking for plants in the dark may seem odd, but some plants and fungi were made for the night.

Evening primrose is known as a nightblooming flower. Its large, lemon-yellow flowers open at sunset and close by mid-morning. It is sweet-smelling, attracting night pollinators like the hawkmoth, which resembles a familiar daytime pollinator, the hummingbird.

Glowing fungi is another plant made for the nighttime. Fungi, like honey mushrooms and jack-o'-lantern mushrooms, release a glow of cold light thanks to a chemical reaction between oxyluciferin molecules, an enzyme called luciferase, and oxygen. This phenomenon is known as bioluminescence, and it's also used by fireflies to light up their backsides. Fungi use bioluminescence to attract insects that help spread their spores while fireflies use it to attract mates.

## Insects and Spiders

If frogs and toads are the soundtrack to nightclub nature, then insects provide the backup. Though you may have a hard time spotting these boisterous bugs, head out and stay quiet and you can hear them. Much of this noise is made by breeding male crickets and katydids. Crickets produce musical, evenly spaced chirps, while katydids make a raspy *ch-ch* or *ch-ch-ch* sound (to the rhythm of *ka-ty* or *kay-ty-did*). Groups of katydids sometimes call in unison, so the sound seems to pulsate through the night air.

Most spiders are nocturnal hunters, whether they hunt on the ground, like wolf spiders, or spin a web to snare their prey. To find spiders in the dark, go on a spider hunt! Shine a flashlight into grass or other low vegetation and you may catch the eye of a spider. Wolf spiders, fishing spiders, and crab spiders all have eye shine. Web-building spiders don't, but their webs will glitter by the glow of a flashlight.

Flip on your porch light and wait for some of Missouri's largest, most colorful moths — the luna moth and the polyphemus. The pale green, long-tailed luna moth and the reddish-brown polyphemus, with its dramatic eyelike wingspots, can't resist the warm glow of a porch light. Sometimes, the party lasts until dawn, and you will wake up in the morning and find these moths still resting on the side of your house.



Polyphemus moth

### Tips for Wildlife Watching at Night

**Be safe.** Scout your observation area in the daytime. Don't hike alone at night and tell someone where you are going and when you will be back.

**Be equipped.** Bring a flashlight with fresh batteries. Try covering the lens of the flashlight with red plastic wrap, fastened with a rubber band. (Most night animals can't see red light.) An audio recorder for night sounds and binoculars to see wildlife at dusk are also fun for wildlife-watching at night.

**Be comfortable.** Wear sturdy, closed-toe shoes and warm, layered clothing. Insect repellent, a plastic garbage bag to sit on, a water bottle and some snacks will also make your hike more enjoyable.

**Be quiet.** It's best to settle down quietly in one place for 20–30 minutes. It typically takes a human's eyes that long to get fully dark-adjusted.

**Be patient.** It's great to encounter creatures of the night, but it's just as important to slow down and soak in the benefits of nature.

Eastern screech-owl



## Birds

Birdwatching is a popular daytime activity. You can take those skills into the night but call it bird listening.

Owls are the best-known night-calling birds, and the voices most often heard are those of the barred, great horned, and screech-owls. Barred owls make the distinctive hoot-series *hoo hoo hoo-hoo*, *hoo hoo hoo-hooahh*, which sounds like, “Who cooks for you? Who cooks for you-all?” The call of the great horned owl is a low-pitched series of four to six hoots. Screech-owls don’t really hoot. Rather, their call is a descending whinny or one long, quavering note. The easiest way to hear owls is to drive out to the country around dusk and stop at a place near both fields and woods. Roll down the car window and listen for calling owls.

Train your ear to pick up the sounds of these nocturnal birds:

**Whip-poor-wills** are easy to spot as they announce themselves over and over — *whip-poor-will*. With a flashlight, you may catch their red eyeshine on roads in wooded areas.

**Nighthawks** are easy to identify from their call — a harsh, nasal *peent* — and from their darting, swooping flight. Look for them around streetlights and above native prairies and Ozark glades.

**Catbirds and mockingbirds** imitate everything from a lost kitty to other birds.

The **male woodcock** makes three distinct sounds during its mating display at dusk. First, on the ground, a *peenting* call. Then a musical twittering, created by its wings as it spirals high into the air. Finally, an encore of twittering and chirping as the woodcock zig-zags back to the ground.

**Great blue herons**, huge storklike birds, cry in a low, harsh *gwok*. Look for them around lakes, ponds, rivers, and marshes.

Most bird species migrate at night, in spring, and fall. On clear nights, watch (and listen) for flocks of geese and other birds as they pass across the face of the moon.

This is just a sample of what you might find in Missouri’s nightclub nature. It is like a whole new world when the sun goes down. What will you discover? ▲

## See What?

If it takes a human’s eyes 20–30 minutes to adjust to the dark, how can animals see in the dark? Nocturnal (or night active) and crepuscular (or active at dawn and dusk) animals are quite at home in low light thanks to three special adaptations.

First, nocturnal creatures often have very large eyes, which gather more light. Compare an owl’s huge eyes with the smaller eyes of a hawk, which may hunt the same fields as the owl during the day.

Second, with fewer cones and more rods, the structure of a nocturnal animals’ eyes is different. Cones pick up colors and sharp details; they require bright light to function. Rods are more useful at night because they work in dim light to detect shapes, movement, and shades of gray.

Third, many nocturnal animals have a mirrorlike reflective layer behind the retina of the eye, called the tapetum. This layer reflects light back to the retina, and then out of the eye. This means the retina is struck twice, once by incoming and once by outgoing light, so that objects seen at night look brighter. The tapetum is also the reason for eyeshine. Eyeshine color can sometimes help identify an animal at night. For example, if your flashlight reveals two tiny red eyes high in a tree, you have spotted a flying squirrel. As you drive at night, look along the road for the eyeshine of deer (yellow), opossums (orange), and whip-poor-wills (red).

These visual adaptations allow them to travel, feed, and find mates in very low light.

*Content for this article was taken from Nature’s Night Shift by Barb Bassett, published in 2008.*

# Mozingo Lake

A HIDDEN GEM FOR BASS FISHING  
IN NORTHWEST MISSOURI

by Brent Frazee | photographs by David Stonner

“One last cast,” Dave Cochran announced as he used his trolling motor to position his bass boat off a point on Mozingo Lake.

He tossed his weightless plastic worm to the shallows, and watched it land with hardly a splash. When he started his retrieve, the line grew considerably heavier.

Cochran set the hook, and a big bass shot out of the shallow water in an angry attempt to throw the bait. But it was only seconds before he had the fish in the boat.

“Good to see you, big girl,” Cochran said as he admired his catch, which he estimated at 4 pounds.

With that, he eased his catch back into the water and reflected on another fitting end to a fishing trip on Mozingo Lake, a 1,006-acre body of water in northwest Missouri.



Dave Cochran





Mozingo Lake has become one of Missouri's top bass lakes in an unlikely setting.

Cochran and two friends in another boat caught bass throughout the morning, but nowhere near what they hoped for. Expectations run high at Mozingo.

## A Hidden Gem

Against all odds, the water-supply lake for Maryville has become one of the best bass-fishing spots in the nation. If you don't believe it, talk to the people at B.A.S.S., a national organization that annually publishes a Top 100 list of the country's best bass lakes and rivers. Mozingo has consistently made that list in the last decade.

Better yet, talk to anglers such as Cochran, who lives about 15 miles from the lake and has fished it since its inception in 1992.

"I've fished a lot of places in my life, but Mozingo ranks right up there with the best of them," said Cochran, 72. "The number of bass from 3 to 5 pounds is unbelievable.

"Sometimes, you have to work to get 'em. But they're here."

Tory Mason, MDC fisheries biologist who manages Mozingo, agrees.

"The lake has gotten national exposure and there are big tournaments here about every weekend," Mason said. "But the bass population continues to hold up.

"The data from our surveys on bass this year (2022) was just amazing, both in terms of quantity and quality of the fish. It's just that they get so much fishing pressure, they get educated."



Largemouth bass



Brett Ware (right) admires one of Mozingo Lake's largemouth bass as Dave Cochran looks on.

## A Success Story

When fishermen talk about famous bass lakes, in Missouri, they often mention Table Rock, Lake of the Ozarks, or Bull Shoals.

Mozingo? Well, yeah, the serious anglers include the northwest Missouri reservoir in that group. But amazingly, many casual fishermen, including those in nearby Kansas City, are still unfamiliar with Mozingo.

That could have to do with the traditional look of a powerhouse Missouri bass lake — tens of thousands of acres, located in the Ozarks, with dozens of resorts and dining establishments on the water.

Mozingo breaks that mold.

It's located in farm country, where cattle and crops are more common than tourist attractions. But Mason

points out that may be part of Mozingo's success.

"When Mozingo was built, a lot of fertile land was flooded," he said. "I think that definitely is a factor.

"When you flood fertile land, you are adding a lot of nutrients, new vegetation and timber, and lots of food like insects."

The city of Maryville owns the lake, but MDC manages it.

Before the lake was built, fisheries crews stocked ponds in the basin with bass, bluegills, and channel catfish. The lake filled quickly with the heavy precipitation of 1993, and the fish population flourished.

The bass numbers grew so quickly that they stockpiled at a small size, Mason said. But a fish kill thinned the numbers and allowed the survivors to



Dave Cochran fights a feisty largemouth bass at Mozingo Lake.

grow quickly. And a slot limit imposed by MDC — allowing a daily limit of six bass but protecting fish from 12 to 15 inches — had a major impact, encouraging anglers to keep smaller fish.

By the mid-1990s, the vegetation along the banks grew thick. And the bass thrived.

“You could use a plastic frog and bring it over the vegetation or punch a big plastic crawdad, worm, or Senko-type bait into the middle of it, and catch big bass,” Cochran said.

“Back in those days, you could bring in a 20-pound bag in a tournament (five bass weighing 20 pounds) and still not be guaranteed of winning a check.”

The boom phase that all reservoirs go through has ended. But Mozingo still produces big catches, though not as frequently as in the past.

### Remembering the Start

Few bass anglers have fished Mozingo as long as Cochran.

He remembers when the lake first flooded, and fishermen anxiously awaited the day when it would open to fishing.

“My buddy would call the city manager every day to see when it would open,” Cochran said. “When he finally told us it was OK, we took off work and went right out there.”

That anticipation was understandable. There weren’t many large bodies of water to fish for bass in northwest Missouri at the time, Cochran said. And for a bass fanatic such as Cochran, that left a void.

“We had some good farm ponds in the area, but that was about it,” he said.

When Mozingo came in, Cochran had a quality bass fishery practically in his backyard. He began fishing the lake several times a week and soon became one of the area’s best tournament anglers.

He catches bass when others grumble about how tough the fishing is. Part of that is because he knows the lake so well — where the humps, brush piles, and drop-offs are. But he also knows when it’s time to switch lures and give the bass a new look.

Most of the baits he uses were made by his friend, Brett Ware, who owns the Tightlines UV Co. on the lake. The

company produces enough variety of lures that he knows he can always find something the bass will like.

“I think I’m Brett’s best advertising,” Cochran said with a laugh. “I catch a lot of bass on his lures.”



Brett Ware

## A Day on the Lake

Cochran looks the part of a bass-fishing fanatic.

On a hot day last summer, he showed up dressed in a bright-colored fishing jersey and loafers that were fashioned to look like a bass.

He rolled up his sleeve to expose a tattoo of a bass. He opened the glove box on his boat and reached for his good-luck charm — a goose feather.

“My wife told me that she read in the Bible that a feather means an angel is looking out for you,” he said. “I found a feather floating on the water one day and I put it in my glove box.”

Cochran has caught and released bass as big as 8 pounds, 3 ounces at Mozingo. He was after fish of that stature when he set out on this cloudy morning.

He followed his normal routine, casting to the clear water off main-lake points, to humps and the riprap along bridges.

The bass were tight-lipped, possibly because of the commotion caused by the recent Fourth of July weekend, he

theorized. But he stayed with it and still caught bass, including several exceeding the 15-inch range. All went back.

“If you came out here and caught them on every cast, it wouldn’t be fun,” he said. “I like the challenge of figuring out ways to get them to hit.”

## Testing Missouri-Made Lures

Cochran wasn’t alone in his quest to get the bass to hit on this summer day.

In a nearby boat, Ware and his son, Brenden, also worked points and rocky banks. They, too, were rewarded with occasional bass that were soon released.

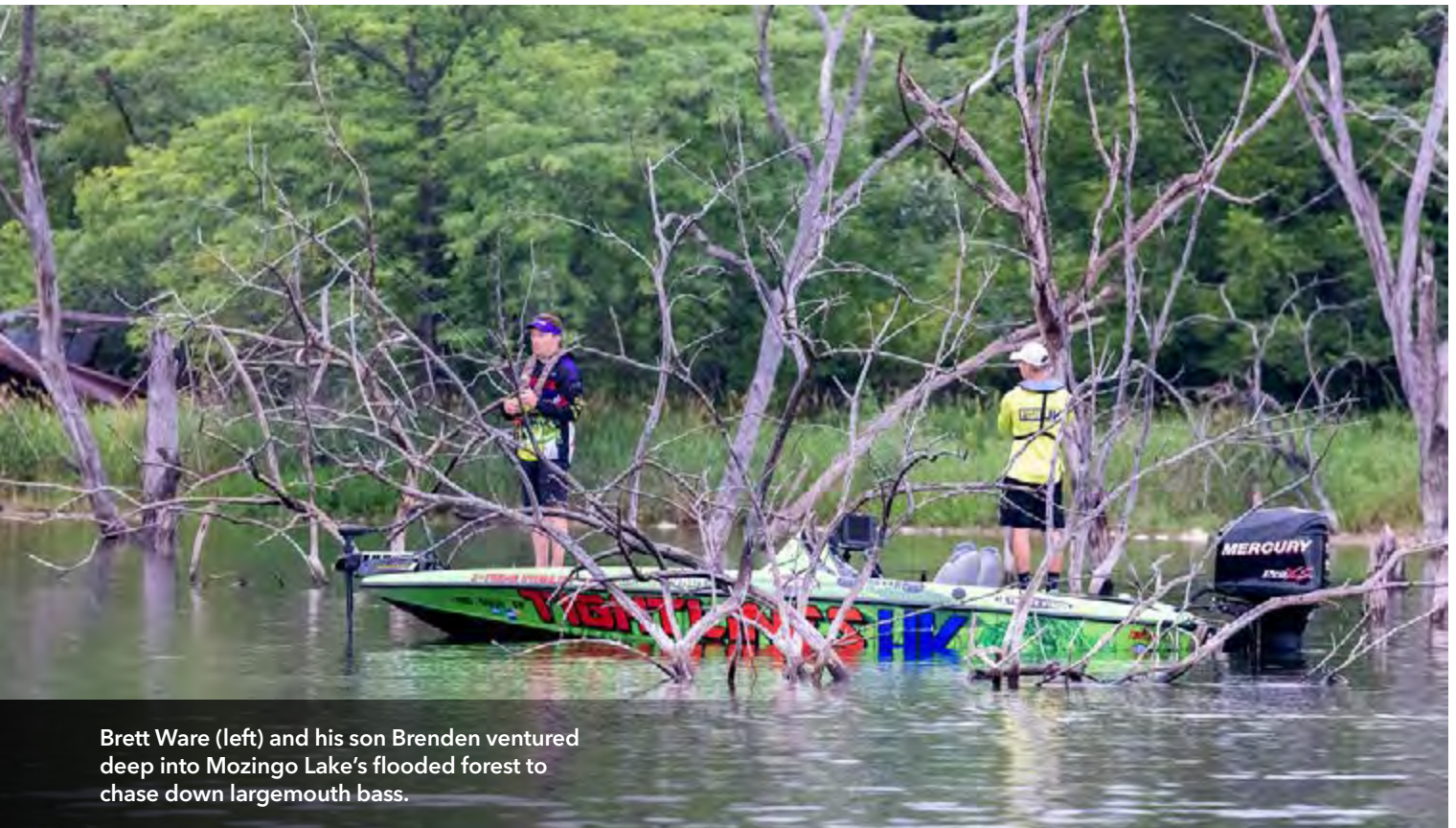
Ware takes pride in the lake, which he considers one big test laboratory for the baits he manufactures. He established his Tightlines UV Co. in 2008, using new technology to make the plastic baits he produces reflect UV light and make them more visible to bass.

He had his choice of places to manufacture the baits, but he ultimately chose a site along the banks of Mozingo.

“There’s as direct correlation between



**Tightlines UV Lures uses an ultraviolet vision enhancer in its soft-plastic lures to make them more visible to hiding largemouth bass.**



**Brett Ware (left) and his son Brenden ventured deep into Mozingo Lake’s flooded forest to chase down largemouth bass.**



## Mozingo Lake: Fish and More

a company like ours and a great place to test products,” Ware said. “For a little lake in northwest Missouri, this has provided me with a great place to develop high-quality fishing tackle.

“We do research in a lab environment. But the true test comes on the water.”

Ware’s lures — including Whiskers grubs, swimbaits, Senko-type Uvenko baits, and creature baits — are well-known by fishermen who fish Mozingo. They’re hardly a secret weapon anymore.

But they still catch fish, and big ones, too. Meanwhile, Ware continues to tinker with new colors and designs to fool bass.

If they work at Mozingo, he knows they will be productive elsewhere.

Tightline Lures pays a federal excise tax on the lures the company manufactures that then comes back to MDC for the management and construction of lakes, rivers, and streams. The funding helps the department manage the fishery in Mozingo Lake and other reservoirs around the state.

### Quality Facilities

There’s more than just bass fishing at Mozingo.

The Mozingo Recreation Park offers

recreation to meet a wide range of interest. There is an award-winning golf course along the water, a swim beach, hiking trails, and three ramps to accommodate boaters.

There also is a large campground, cabin rentals, a nice hotel, a farm to table restaurant, and a large convention center.

Though there are no boat rentals, the water is often crowded on summer weekends. But on weekdays, there often is plenty of elbow room.

When Cochran and Ware pulled into the parking lot at the main boat ramp, they were surprised to find that they had the lake to themselves, at least temporarily.

To Cochran, that was just another reminder of why he is so enthralled with bass fishing, especially at Mozingo.

“It’s a passion that I’ll have until I die,” he said. “I’ll probably die with a rod and reel in my hands.” ▲

*Brent Frazee was the outdoors editor for The Kansas City Star for 36 years before retiring in 2016. He continues to freelance for magazines, newspapers, and websites.*

**What:** Mozingo Lake is a 1,006-acre water-supply lake owned by the city of Maryville. The fishery is managed by the Missouri Department of Conservation.

**Age:** It opened in the early 1990s.

**Location:** Five miles east of Maryville.

**Fishing:** Mozingo is best-known for its bass fishing. But it also has excellent fishing for big channel catfish and walleyes. Crappie fishing is fair but improving.

**Access:** Three paved boat ramps.

**Regulations:** Lake users must purchase a daily or season boat permit, available at the Mozingo Lake Information Booth or Mozingo Public Safety. No boat rentals are available. Maximum length of boats is 28 feet. Boat speed limit is 40 miles per hour.

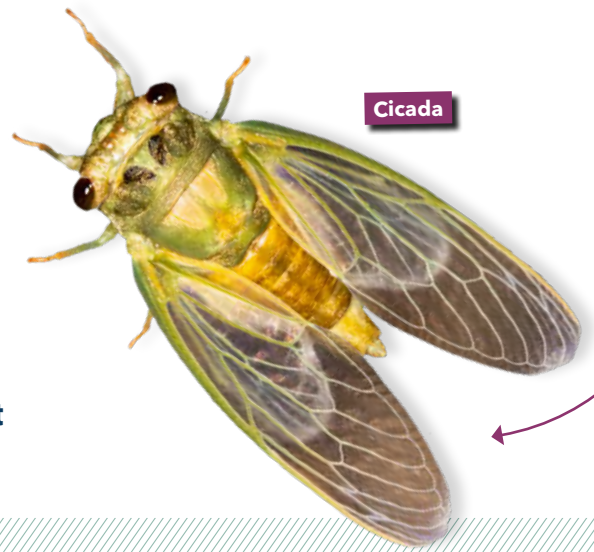
**More than just fishing:** Mozingo Lake Recreation Park includes an award-winning golf course, a swim beach, hiking and equestrian trails, campgrounds and cabin rentals, a restaurant, and an events center.

For more information, visit [mozingolake.com](http://mozingolake.com).

# Get Outside

in JUNE

→ Ways to connect with nature



Cicada

STATEWIDE

## Free Fishing Days

Saturday and Sunday • June 10 and 11  
 Visit [short.mdc.mo.gov/Z9o](https://short.mdc.mo.gov/Z9o) to find a place to fish.  
 Registration is not required.  
 All ages.

During free fishing days, any person may fish state waters without an MDC fishing permit, trout permit, and prescribed area daily tag. However, user fees and permits may still be required at county, city, or private fishing areas. Normal regulations, such as size and daily limits, still apply, too.

## Moving Out

Young woodchucks strike out on their own. These young woodchucks, also known as groundhogs, leave the care of their parents and make their own burrows. You may see them out and about as they make this big move.



Woodchuck



Soapweed

## Yay for Yuccas

Yuccas are blooming, so it's time to look for yucca moths. Peek carefully into the yucca flowers, also known as soapweed. The moths will be the same color as the flowers. The moths and their food plants are an amazing example of mutualism: the moth larvae will eat some of the yucca's developing seeds, but the yucca can afford that price since the female moth cross-fertilizes the flowers as she deposits her eggs. This amazing relationship was first studied in the 1870s by Charles V. Riley, Missouri's first official state entomologist.

### Natural Events to See This Month

Here's what's going on in the natural world.



Eastern kingbirds nest.



Western ratsnakes lay eggs.



Warmouth spawning peaks.

## First Frost?

Annual cicadas begin to sing. Folklore says that cicadas start singing six weeks before the next frost. Whether you believe that or not, it is a sure bet that cicadas herald warm, dry days ahead.

### SOUTHWEST REGION

## Archery with Dad

Sunday • June 18 • 2-4 p.m.

Andy Dalton Shooting Range

4897 N. Farm Road 61, Ash Grove, MO 65604

Registration is not required. Call 417-742-4361 for more information.

All ages.

Come out to the range with Dad and shoot archery for free. We will have instructors here from 2 to 4 pm giving extra instruction and assistance if needed.

## Fascinating Flowers

By June, the beauty of blooming flowers dots the Missouri landscape.

The yellow flowers of our most common **bladderwort** are among them. As aquatic plants, bladderworts grow in thick floating mats under the water while their flowers, which resemble snapdragons, stand tall above the water. They trap tiny crustaceans, minute aquatic insects, mosquito larvae, and newly hatched tadpoles and fish fry.

**Butterfly weed** is Missouri's only orange-flowered milkweed. It blooms in native prairies and other sunny habitats, attracting butterflies. Keep an eye out for coral hairstreak butterflies. The single brood of this uncommon butterfly extends only from mid-June through July and has been described as being addicted to the blossoms of butterfly weed, ignoring all other flowers when they are present.



Bladderwort



Three-toed box turtles mate.



Fawns are born.

# Capture memories of your outdoor adventure with our new Nature Center sticker series!



The artful and retro style will keep you dreaming of a return to the nature center. Put it on your favorite reusable water bottle, laptop, bumper, cooler, camper...

Each sticker is available exclusively at its own Nature Center. Add them to your collection today!

**\$3** each

# Places to Go

KANSAS CITY REGION

## Osage Prairie Conservation Area

An oasis among the row crops  
by Larry Archer

✦ Like most of Missouri's remnant prairies, Osage Prairie Conservation Area (CA) is an oasis of nature surrounded by agricultural land. What distinguishes it is what lies just under the surface.

"It is a dry mesic upland prairie with exposed sandstone and shale much like most of the prairies around here," said MDC Wildlife Management Biologist Stasia Whitaker. "But what makes it slightly different is it has a bit of a hardpan to it. There is a clay component to the soil that basically holds the water on the surface in certain areas, so there's going to be these little pools of water that create their own little micro habitat during wet seasons."

These micro habitats contribute to a "highly diverse" population of prairie species, which includes more than 170 species of plants, Whitaker said.

"You're going to see conservative plants, animals, or invertebrates, such as your regal fritillary, ornate box turtle, and northern bobwhite," she said.

June is also a good time to catch the prairie in bloom.

"Some of those species would include pale purple coneflower, hoary puccoon, slender mountain mint, golden Alexanders, and a really cool species, goat's rue," she said. "It's quite different than anything you could see anywhere else."



Foxglove beardtongue

"We don't have designated walking trails, but it's open to foot traffic all year-round."

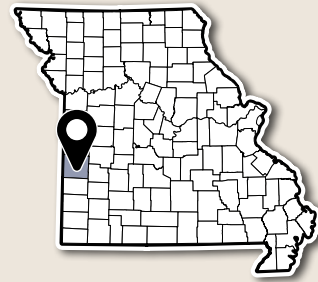
—Wildlife Management Biologist  
Stasia Whitaker

DAVID STONNER





Pale purple coneflowers bloom at sunset as a summer rain storm begins to clear over Osage Prairie CA.



## OSAGE PRAIRIE CONSERVATION AREA

consists of 1,545 acres in Vernon County. From Nevada, take I-49/Highway 71 south 6 miles, then Tally Bend Road west 0.50 mile, and 1725 Road south 0.5 mile.

37.755920, -94.343093

[short.mdc.mo.gov/4AP](http://short.mdc.mo.gov/4AP) 417-876-5226

### WHAT TO DO WHEN YOU VISIT



**Birdwatching** The eBird list of birds recorded at Osage Prairie CA is available at [short.mdc.mo.gov/4QL](http://short.mdc.mo.gov/4QL).

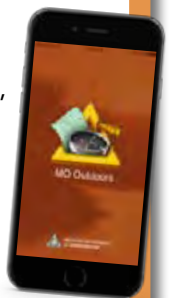


**Hunting Deer and turkey** Regulations are subject to annual changes. Refer to MDC's regulation page online at [short.mdc.mo.gov/Zjw](http://short.mdc.mo.gov/Zjw).

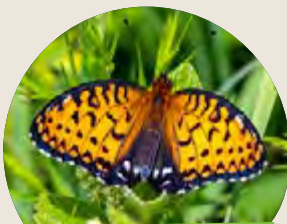
Also **bear, dove, quail, and rabbit**

### DISCOVER MO OUTDOORS

Users can quickly and easily find outdoor activities close to home, work, or even while traveling with our free mobile app, MO Outdoors. Available in Android or iPhone platforms at [mdc.mo.gov/mooutdoors](http://mdc.mo.gov/mooutdoors).



### WHAT TO LOOK FOR WHEN YOU VISIT



Regal fritillary



Dickcissel



Slender mountain mint



Speckled kingsnake

# Wild Guide



## Gray Catbird

*Dumetella carolinensis*

**Status**  
Common

**Size**  
Length: 8½ inches

**Distribution**  
Statewide



### Did You Know?

Catbirds sing nonstop for minutes at a time. You may hear them quote the tunes of cardinals, robins, wrens — even frogs or chickens.

Being dark gray and preferring to search for food in dense forage, catbirds can be hard to spot. Males usually announce themselves acoustically. Their song is a complex jumble of musical and nonmusical squeaks, whistles, clicks, and nasal sounds. Calls are a distinct and characteristic down-slurred catlike *meeoow* and a harsh *kute* or *tcheck*.

### 📍 LIFE CYCLE

Female catbirds build bulky nests using twigs and debris, but line them with soft materials like grass and hair. Catbirds can have up to three broods per year with one to six eggs, which incubate in 12-15 days. Hatchlings are naked and helpless, but they fledge in just 10 or 11 days. Catbirds defend their nests vigorously and sometimes destroy the eggs and young of other forest songbirds.

### 🍴 FOODS

During the summer, catbirds, with nestlings in need of protein, mostly eat spiders and insects, including those that are harmful to crops. They also eat berries and fruits in shrubby areas. Catbirds have long been blamed for their habit of eating cultivated fruits, such as cherries, grapes, strawberries, and raspberries, but they generally prefer wild berries, such as deciduous holly, poison ivy, mulberry, blackberry, elderberry, greenbrier, mulberry, dogwood, and sumac. They distribute berry seeds, creating new populations.

# Outdoor Calendar

MISSOURI DEPARTMENT OF CONSERVATION



## Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at [short.mdc.mo.gov/Zi2](http://short.mdc.mo.gov/Zi2).



## FISHING

### Black Bass

Impounded waters and non-Ozark streams:  
Open all year

Most streams south of the Missouri River:

- ▶ Catch-and-Keep:  
May 27, 2023–Feb. 29, 2024

### Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2023

### Nongame Fish Gigging

Impounded Waters, sunrise to sunset:  
Feb. 16–Sept. 14, 2023

Streams and Impounded Waters,  
sunrise to midnight:  
Sept. 15, 2023–Feb. 15, 2024

### Paddlefish

On the Mississippi River:  
Sept. 15–Dec. 15, 2023

### Trout Parks

State trout parks are open seven days a week  
March 1 through Oct. 31.

Catch-and-Keep:  
March 1–Oct. 31, 2023

*\*Only hunters selected through a random drawing may participate in these hunting seasons.*

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at [short.mdc.mo.gov/Zib](http://short.mdc.mo.gov/Zib). Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at [short.mdc.mo.gov/ZZf](http://short.mdc.mo.gov/ZZf).

## HUNTING

### Black Bear\*

Oct. 16–25, 2023

### Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2023

### Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

### Crow

Nov. 1, 2023–March 3, 2024

### Deer

Archery:

Sept. 15–Nov. 10, 2023

Nov. 22, 2023–Jan. 15, 2024

Firearms:

- ▶ **New!** Early Antlerless Portion (open areas only): Oct. 6–8, 2023
- ▶ Early Youth Portion (ages 6–15): Oct. 28–29, 2023
- ▶ November Portion: Nov. 11–21, 2023
- ▶ **New!** CWD Portion (open areas only): Nov. 22–26, 2023
- ▶ Late Youth Portion (ages 6–15): Nov. 24–26, 2023
- ▶ Late Antlerless Portion (open areas only): Dec. 2–10, 2023
- ▶ Alternative Methods Portion: Dec. 23, 2023–Jan. 2, 2024

### Dove

Sept. 1–Nov. 29, 2023

### Elk\*

Archery:

Oct. 21–29, 2023

Firearms:

Dec. 9–17, 2023

### Groundhog (Woodchuck)

May 8–Dec. 15, 2023

### Pheasant

Youth (ages 6–15):

Oct. 28–29, 2023

Regular:

Nov. 1, 2023–Jan. 15, 2024

### Quail

Youth (ages 6–15):

Oct. 28–29, 2023

Regular:

Nov. 1, 2023–Jan. 15, 2024

### Rabbit

Oct. 1, 2023–Feb. 15, 2024

### Squirrel

May 27, 2023–Feb. 15, 2024

### Sora

Sept. 1–Nov 9, 2023

### Teal

Sept. 9–24, 2023

### Turkey

Archery:

Sept. 15–Nov. 10, 2023

Nov. 22, 2023–Jan. 15, 2024

Firearms:

- ▶ Fall: Oct. 1–31, 2023

### Waterfowl

See the Migratory Bird and Waterfowl Hunting Digest or visit [short.mdc.mo.gov/ZZx](http://short.mdc.mo.gov/ZZx) for more information.

### Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2023

### Woodcock

Oct. 15–Nov. 28, 2023



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Ralph Waldo Emerson wrote, "Adopt the pace of nature: her secret is patience." These eastern collared lizards have embodied that secret — patiently basking on a large rock, soaking up the warmth of the summer sun. Find time to slow down this summer and find the pace of nature. What will you discover?

📷 by **David Stonner**

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