MISSOURI CONSERVATIONIST

VOLUME 87, ISSUE 11, NOVEMBER 2026

SERVING NATURE & YOU





POACHING IS NOT A VICTIMLESS CRIME.

Poachers steal from all of us, including hunters, anglers, outdoor recreationalists, and nature watchers. Missourians can protect nature by reporting poaching to the Operation Game Thief (OGT) hotline.

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ON THE COVER
A male American kestrel sits on a fence post.

NOPPADOL PAOTHONG
600mm lens, f/11, 1/500 sec, ISO 640

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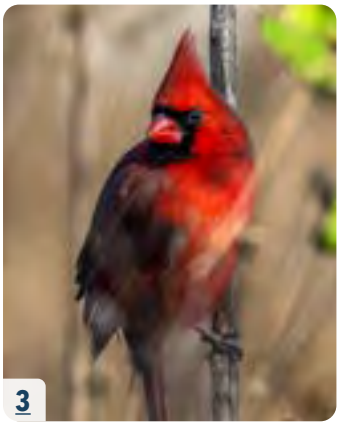
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Inbox









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

Submit your photos online via flickr.com/groups/mdcreaderphotos-2026, mdc.mo.gov/magazine-reader-photos, or by emailing readerphoto@mdc.mo.gov

Missouri Conservationist does not accept AI-generated photos.

1 | Bluffs on the Meramec River by Robert Charity, via Flickr

2 | Pileated woodpeckers by Ashley Bryant, via Flickr

3 | Northern cardinal by Lecia Michelle, via website submission

4 | Wood duck by Geoff Anderson, via Flickr

→ In the December issue, we plan to feature even more great reader photos. Send in 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.

Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to:
MISSOURI CONSERVATIONIST
PO BOX 180
JEFFERSON CITY, MO 65102



BUCK HOLLOW NIGHT SKY: DAN ZARLENGA

PLANTING SEEDS

The *Missouri Conservationist* and *Xplor* magazines have reached five generations of my family now that my eight grandchildren are faithful readers. My grandson Dominic, pictured here, has shown the most interest. I believe your publications have planted seeds in my grandchildren, developing in them the knowledge, interest, and attitudes they need as young conservationists. For your efforts since 1938, I am grateful.

Terry Henage Mexico, MO

REMEMBERING JIM

I was sorry to hear about Jim Rathert's passing [*Remembering Jim Rathert*, September, Page 22]. I lived in Missouri for about 40 years and although I now live in Montana, I still feel myself a native Missourian. I've always enjoyed the *Missouri Conservationist* and I remember enjoying Jim's photos many years ago in your magazine. Noppadol Paothong, an excellent nature photographer in his own right, sums up Jim's legacy eloquently in his tribute to Jim and what he loved most, "… loving and caring for nature, the way his images have always been a love letter to it." Thank you for such an excellent magazine and staff over the years.

Camille Consolvo Montana

Up Front



Artificial light inside and outside our homes is part of modern society. As a result of this constant barrage of light, we have fewer opportunities to experience truly dark skies. On a recent backpack hunt out west, I found myself alone in a place completely absent of artificial light. The sunset on the western horizon, with dust particles falling from the sky, was simply amazing. It was reminiscent of a South African sunset. As the light of the sun faded and the stars began to sparkle, I couldn't help but feel a sense of peace and calm.

It wasn't my imagination. There is a real biological explanation for this experience. Studies have shown that moonlit or star-filled skies encourage a slower reflective mindset when compared to the stimulation experienced by artificial light. These experiences reduce oxygenated hemoglobin in the brain, which reduces mental stress and increases the sense of relaxation. It's also known to reduce heart rate and blood pressure, easing tension and sending the parasympathetic nervous system into a much calmer state.



The night sky at Buck Hollow Access on the Jacks Fork River in south-central Missouri

The absence of artificial light allows for the natural synthesis of melatonin, which prepares the body for rest. This natural circulation of melatonin supports cellular repair and natural recovery from inflammation. Additionally, star-filled views commonly induce a sense of "awe," which is associated with lower anxiety and increased emotional well-being.

The benefits of nature don't stop when the sun goes down. Don't forget to appreciate, experience, and reap the benefits of wild spaces after dark.

JASON SUMNERS, DIRECTOR
JASON.SUMNERS@MDC.MO.GOV

Missouri Conservation Commissioners

Have a Question for a Commissioner?
Send a note using our online contact form at **mdc.mo.gov/commissioners**.



Raymond T. WAGNER JR.



Frank H.B. KRUSE



Edward C. CLAUSEN



Margaret F. ECKELKAMP

Nature LAB

MDC uses research to improve fish, forest, and wildlife management



With their light-colored plumage and heart-shaped faces, American barn owls stand out among Missouri's owl species. Historically, barn owls nested in hollow trees and crevices in cliffs and outcroppings. Today, they often nest in barns and other human-made structures.

SPECIES MONITORING

Checking Barns and Boxes

Biologists monitor barn owl nests in southwest Missouri

by Dianne Van Dien

MDC has tracked American barn owl populations since the 1970s, when the species was listed as rare in the state. The type of monitoring has varied over the years, at times accompanied by outreach for installing nest boxes. In 2015, MDC Natural History Biologist Rhonda Rimer and colleagues began surveying for barn owls in buildings and nest boxes on conservation areas and private land in southwest Missouri.

"We wanted to help conserve the species," Rimer said. "Collecting information — when the owls were showing up, how many eggs they were laying, how many young were fledging, whether nest boxes were helping or not — was a good place to start."

As word of their endeavor spread, more landowners invited them to keep track of owls nesting on private properties, some even checking the nests themselves. In time, more than 40 sites were being monitored across 11 counties. Graduate students from Missouri State University joined in, collecting owl pellets to study their diet and putting up cameras to watch their behaviors.

The data showed that nests in boxes were more successful than nests elsewhere. Footage from the cameras showed why. Raccoons, snakes, and other predators were raiding the nests. Those on barn ledges or open floors were hit the hardest.

"We saw how hard the parents will fight to defend a nest," Rimer said, "but when nests are in an open area, it's difficult. When the owls have a box, a defendable space, they are more successful at protecting their nest and young from predators."

The team has now deployed 64 nest boxes. As of 2021, barn owls are no longer a Missouri species of conservation concern; the state's population has increased and appears stable. Nest boxes were not the only factor, but they helped. To maintain the population, conservation efforts must continue. The owls' grassland habitat must be cared for, and nest boxes can still give them a needed boost.

"Conservation doesn't have to be complicated," Rimer said. "It is within the reach of regular people to make a difference. Barn owl boxes are easy to put up. It's something people can do. It's not an impossible mission."

At a Glance

Barn owl nests in southwest Missouri were checked regularly from 2015 to 2023. Less intensive monitoring continues today.

FINDINGS:

- Barn owls nest in varied places in barns (lofts, ledges, old equipment, conduits, etc.)
- Most nest from March to June but may nest any month of the year
- Nests are often plundered by predators
- Nests within boxes are more successful
- Voles are a staple prey item in SW Missouri





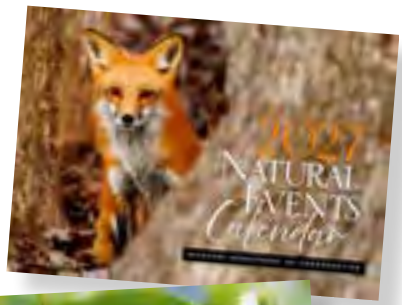
Nest boxes placed high above the floor help barn owls protect their eggs and hatchlings from predators.

JIM RATHERT; AT A GLANCE IMAGES: MDC STAFF

Learn more at **short.mdc.mo.gov/oNX**

ADD A TOUCH OF NATURE TO YOUR HOLIDAY GIFT-GIVING LIST THIS YEAR

MDC MAKES HOLIDAY SHOPPING CONVENIENT AND STRESS-FREE





Have nature lovers on your holiday gift list this year? MDC has you covered! Our online Nature Shop and six nature centers — located in Kirkwood, Cape Girardeau, Springfield, Kansas City, Blue Springs, and Jefferson City — make holiday shopping a breeze. Offerings include the ever-popular *2027 Natural Events Calendar*, a variety of books, and more for all ages.

Some of MDC's popular holiday gift ideas include:

2027 Natural Events Calendar ($9) — This annual favorite has amazing images of native animals, plants, and places, along with phases of the moon, holidays and days of recognition, daily notes about natural events, and more.

You Discover Mini Field Guide for Xploring Outside ($8.95) — Adapted from *Xplor* magazine, this engaging new booklet combines 13 mini field guides into a single, convenient, on-the-go guide.

Coneflower Nature Journal ($8) — This spiral-bound journal includes plenty of blank pages with simple tips to get started drawing or writing about nature.

Cooking Wild in Missouri ($16) — This favorite cookbook features more than 100 recipes for native game, fish, fruits, nuts, and mushrooms.

Strange but True ($8.95) — This fun offering was adapted from the pages of *Xplor* magazine and features 350 weird and wild facts and illustrations about creatures that inhabit Missouri.

A Paddlers Guide to Missouri ($9) — This 102-page, spiral-bound guide makes a great gift for canoeists, kayakers, and floaters with color photos, maps, and descriptions of 54 rivers and streams. It includes trip planning tips, equipment recommendations, paddling pointers, and more. New to the 2023 edition are maps of the upper Mississippi River from Hannibal to St. Louis and an expanded section on the Big River.



Missouri's Wild Mushrooms ($26) — This book is a great guide for hunting, identifying, and cooking the state's most common mushrooms.

Discover Missouri Natural Areas, Second Edition ($19.95) — This handy reference helps nature lovers experience 50 great examples of our state's natural heritage. This edition features updated maps, text, references, and scientific names.

Amphibians and Reptiles of Missouri, Third Edition ($29) — This classic book has been updated and expanded to a 522-page illustrated guide that provides descriptions, distribution, habitats, habits, breeding, and other information on nearly 130 species of native salamanders, toads, frogs, turtles, lizards, and snakes.

For hunters and anglers on your list, give the gift of hunting and fishing permits. Buy permits from vendors around the state or online at **mdc.mo.gov/buypermits**.

Buy these and other items at our nature centers, through our online Nature Shop at **www.mdcnatureshop.com**, or by calling 877-521-8632. For nature shop hours and specific locations, visit **short.mdc.mo.gov/4JV**. Order early for the best selection. Applicable tax, shipping, and handling costs will apply.



FIRST TIME *Afield*

Janne Stein, our foreign exchange student, had the opportunity to go spoonbill snagging at the Lake of the Ozarks. As someone visiting the United States, this was his first exposure to this unique Missouri outdoor tradition, and it left a lasting impression on him.

During the trip, Janne successfully snagged a spoonbill, but what made the catch even more special was that it turned out to be a banded fish, carrying a $75 reward. The odds of landing a tagged fish like that are incredibly rare, and it added an unexpected level of excitement to an already memorable day on the water.

When Janne shared the news with his family back home, his grandfather laughed and replied with a German saying, "Der dümmste Bauer hat die dicksten Kartoffeln," which means "The dumbest farmer has the biggest potatoes." It added a lighthearted touch to the moment and perfectly captured the role a little luck played in such a rare and memorable catch.

This experience gave Janne a deep appreciation for Missouri's outdoor resources and the conservation efforts that make opportunities like this possible. Thank you for the work you do in preserving Missouri's fisheries and creating opportunities like this for both residents and visitors alike.

Submitted by Jeff Carriger

Got stories? The *Conservationist* staff want to hear them!

Tell us about the first time you experienced something in nature — harvesting a deer, catching a fish, hunting for mushrooms, birdwatching, etc. We are looking for memorable moments of connection and inspiration that may encourage other readers to go out and explore. These short stories will be used in this new segment, *First Time Afield*.

Please submit no more than 200 words at **short.mdc.mo.gov/oGW**.

Ask **MDC**

Got a Question for Ask MDC?
Visit mdc.mo.gov/contact-us



Burrowing crayfish chimney

Q: I have this mud hole in the middle of my lawn not far from Dardenne Creek. Can you identify what animal made it?

Peer into a Missouri stream bed and you're likely to see a crayfish flip its tail and jet away. But other species of crayfish — often called "burrowing crayfish" — live private, solitary existences in places you might not expect; for example, many feet beneath the soil's surface.

Some of these "burrowers" include the painted devil crayfish, paintedhand mudbug, and digger crayfish. These species are found in lowlands. But the grassland crayfish are found on Missouri's prairies, and the Great Plains mudbug are found statewide.

Burrowing crayfish often build "chimneys," made of excavated soil at their burrow entrances. Chimneys can act as passive ventilation structures, where fresh air is drawn down into the burrow from an entrance with a lower chimney and exits through a second entrance with a taller chimney. Prairie dogs build similar structures.

BURROWING CRAYFISH CHIMNEY: JOHN FLEMING; SCORPION: JIM RATHERT

These burrows, which extend to and even below the water table, are more complex than they appear at the surface. They can reach depths of 15 feet. Sometimes, they're a simple vertical passage that ends in a chamber. Other times, they have branches and multiple chambers.

Burrowing crayfish spend most of their life cycle in the burrows they dig, but we often see them wandering around a few days after heavy rainfall, looking for food and mates.

Q: Last season, I harvested a large white-tailed doe in Iron County. When I skinned her out, I noticed quite a lot of fat or tallow. It was more than an inch thick in some places. My buddy harvested a doe on the same property, and he said it even had fat around her heart as well as fat all over. Does this mean anything? I have always been told it means a harsh winter ahead. Is that an old hunter's tale? The buck I harvested last season didn't have much fat on it.

→ Does with significant fatty deposits in November likely didn't have fawns that season or weaned them early in the year.

"Milk production burns a ton of calories, so not having to produce milk allows does to build up reserve fat deposits," said Aaron Hildreth, MDC scientist.

Mature bucks frequently have little fat left this time of year as they have been in various stages of the rut for most of the past month. During this time of year, they are more focused on breeding and fighting than eating, causing their fat reserves to be depleted. Once the rut ends, they begin trying to rebuild those fat deposits.

Fatty tissue in deer isn't correlated to what the winter may hold, but rather the recent history of that individual deer, Hildreth said.



Striped bark scorpion

Q: Does Missouri have scorpions? I found some in my lake house.

→ Missouri is home to the striped bark scorpion. These venomous arachnids can live in a variety of habitats but prefer glades with lots of loose rocks, such as limestone or dolomite, so they can hide from the sun during the day. They also are found in buildings and shelters, as well as under piles of wood, brush, or garbage. They are identifiable by the dark triangle on the front of their carapace and often have two dark stripes down their backs.

Scorpions arrived in this part of the country about 8,000 years ago when the climate was warmer, drier, and more like the desert Southwest. When the climate here changed again about 4,000 years ago, and became cooler and wetter, these scorpions were able to remain in glade environments where they can be found today.

What IS it?

Can you guess this month's natural wonder?

The answer is on Page 9.



OUTDOOR SKILLS

COYOTE HUNTING

by Ashley Edwards

The crisp autumn air means local hunters are heading back into the timber. While white-tailed deer may dominate fall headlines, true conservationists know the pursuit never actually stops. Late winter brings with it muddy miles of antler shed hunting. Spring shifts the focus to green-up scouting. And late summer demands the sweat of hanging tree stands and cultivating lush food plots.

Yet, there is a shadow season often left out of the mainstream outdoor narrative — predator species hunting.

Predator hunting, which includes coyote hunting, is rapidly gaining traction across the state. Since you can hunt for coyotes most of the year, coyote hunting offers a fast-paced experience that gets you into the woods when other big game seasons are closed.

And in Missouri, coyote hunting takes an exciting turn after dark.

> **EQUIPMENT:** Certain specialized equipment is permitted for use after dark, including night vision and infrared technology, thermal imagery devices, and artificial light sources. Electronic or mouth calls can be used during the daytime all year, and at night from January 1 through September 30 (excluding the prescribed spring turkey hunting season).
>
> **SEASON:** You can hunt coyotes year-round with no limit on take. This year, MDC extended the night vision and thermal imaging season from two months (February through March) to nine months (January through September). This extension provides hunters additional opportunities and landowners access to additional tools in response to predator conflict. During turkey season, you can hunt coyotes ONLY during legal turkey hunting hours. On private lands, that's half hour before sunrise to sunset. On public land, that's half hour before sunrise to 1 p.m. Coyote hunting restrictions apply during April, spring turkey season, firearms deer season, and firearms elk season.

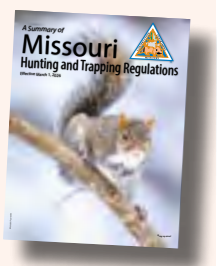


DAVID STONNER

Engaging in this sport after sunset requires a high level of responsibility and a deep understanding of local safety ordinances. Coyotes are smart predators that require skillful calling, a precise set up, and focus. With their sharp senses, they typically circle downwind, meaning that just a whiff of your scent in the wrong set up could end your encounter.

So, if you feel like you are not out in the woods enough, coyote hunting could be a great activity to get you out there, even after dark. You may even learn some new skills and take your harvest to the fur trade.

For more information, including restrictions and permits required, consult *A Summary of Missouri Hunting and Trapping Regulations* online at **short.mdc.mo.gov/44v**.



What outdoor skill would you like to learn?

NOMINATE MISSOURIANS FOR MDC MASTER CONSERVATIONIST AWARD AND MISSOURI CONSERVATION HALL OF FAME

The Missouri Conservation Commission and MDC recognize Missourians who make outstanding contributions to conservation and are accepting nominations through Dec. 31 for their Master Conservationist Award and the Missouri Conservation Hall of Fame.

Anyone can submit a nomination, which should include a statement describing the nominee's accomplishments and a brief biography. A screening committee meets annually to consider nominees, with the commission conveying final approval.

The Master Conservationist Award honors living or deceased citizen conservationists, former MDC commissioners, and employees of conservation-related agencies, universities, or organizations who have made substantial and lasting contributions to the state's fisheries, forestry, or wildlife resources, including conservation law enforcement and conservation education-related activities in the state. Get more information on the Master Conservationist Award and nomination form at **short.mdc.mo.gov/ofB**.

The Missouri Conservation Hall of Fame honors living or deceased citizen conservationists, former MDC employees, and other conservation-related government agencies, universities, or organizations — including conservation law enforcement and conservation education-related activities — who changed the landscape of conservation in the state of Missouri in the field of fisheries, forestry, or wildlife resource management. Get more information on the Missouri Conservation Hall of Fame and nomination form at **short.mdc.mo.gov/ZyG**.

Nominations must be submitted by Dec. 31 to the Missouri Department of Conservation, Attention Julie Love, 2901 W. Truman Blvd., PO Box 180, Jefferson City, MO 65102-0180 or emailed to Julie.Love@mdc.mo.gov.

WHAT IS IT?

BELTED KINGFISHER

The belted kingfisher is a stocky bird with a long bill, short tail, and big head. Both males and females have a shaggy crest atop their heads, which serves an important purpose. It can be raised or lowered, signaling the bird's mood to mates and rivals. The crest makes the head appear larger, scaring off predators. Belted kingfishers perch over water to catch fish. You will often hear their loud rattle before you see them.



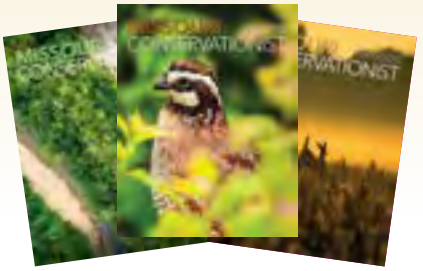
BELTED KINGFISHER: JIM RATHERT; REDHEAD: NOPPADOL PAOTHONG

WE WANT TO HEAR FROM YOU



To better understand our readers and deliver the best content, we need to hear from you! Please take a few minutes to respond to the *Missouri Conservationist* reader survey.

Scan the QR code with your smartphone or visit **short.mdc.mo.gov/4w8**. The survey should only take approximately 5 minutes.





Male American kestrel in flight

KESTRELS ON THE WIRE

HOW MISSOURIANS ARE HELPING AMERICA'S SMALLEST FALCONS

story by Dianne Van Dien
photographs by Noppadol Paothong

It's hard not to like kestrels. American kestrels are North America's smallest falcons and one of our most colorful raptors. Although no bigger than a blue jay, they are formidable hunters, particularly to the small animals that find themselves within the grip of a kestrel's talons. People who study or work with kestrels often describe them as cute but feisty. When handled, adult kestrels tend to bite and somehow know to set the point of their beak right into the quick of your fingernail. One could sum up a kestrel as a small bird with lots of spunk.

Watch a kestrel as it hunts from a perch, scanning the ground for mice, voles, and grasshoppers. It may be sitting, but it does not remain still. It will bob its head and pump its tail, often repeatedly, as if raring to go. And when it does go, it will be fast, whether dropping to the ground to snatch prey with its feet or crossing a field with the rapid flaps of its pointed wings.

While commonly seen across the continent, American kestrels have been falling in number. Annual Breeding Bird Surveys show that kestrels declined an average of 1.4 percent each year from 1966 to 2019, and the citizen science database eBird shows a 20.3 percent range-wide decline in kestrels from 2012 to 2022. Many studies have sprung up and symposiums held to better understand the plight of these small predators. Scientists are looking at what we know and don't know about the species and determining what types of questions should guide future research as they tease out what's behind the decline.

ORPHANS

Ruth Stephens was well aware of the kestrel population conundrum as she gazed down at two nestling American kestrels who entered her care one day in late May 2025. They stared back at her through big, dark brown eyes. Presumably, the young birds had fallen out of their nest. Found on the ground, along with two siblings who hadn't survived, they'd been brought to the wildlife rehabilitation hospital at Lakeside Nature Center in Kansas City, where Stephens works as a naturalist.

The two youngsters were barely half grown. Still mostly clad in fluffy white down, their feathers were starting to peek through, showing just enough plumage to reveal the signature colors of their species — thin, horizontal brown and black stripes across their backs and two short, vertical black stripes on each side of their faces. When kestrels' feathers are completely grown, the wings and tail of a female have the same brown and black striping as the back, while males sport blue-gray wings and a rusty-orange tail with a black band near the bottom. Although the nestlings' feathers had yet to fill in, enough clues were present to surmise that one nestling was a male and the other female.

With more than two decades of caring for injured and orphaned wildlife, Stephens knew the best thing for kestrels at this age would be to place





Dinner is served. A female brings a snake to the nest box to feed her young.

them back into their nest. But, for these two, their own nest wasn't an option. So, she'd have to try the next best thing: find another active kestrel nest with parents who might adopt them and raise them with their own offspring.

"If you get young kestrels in the nestling stage, before fledging," Stephens said, "they're highly imprintable."

Imprinting refers to how young animals learn to identify with what they see feeding them. Normally it would be a parent, but if it's a person, they may "imprint" more strongly on people than their own species. A kestrel imprinted on people won't interact with other kestrels appropriately and may not learn the necessary behaviors to survive in the wild.

This is a risk with many young animals, but, Stephens explained, kestrels imprint on people much more easily than other raptor species do.

"We have to be really careful to not exacerbate the imprinting," she said. "We definitely try to limit any contact [with them] and get them to eat [on their own] right away without having to tweeze or feed them like [we might] with some other baby raptors."

Being raised by another kestrel family would greatly increase the nestlings' chances of growing up and surviving well. Most kestrels lay four or five eggs each season, but sometimes they'll lay up to seven. So, parents with an average-sized brood are capable of feeding two more mouths. The trick would be finding a nest with offspring about the same age as the two orphans. To check for possibilities, Stephens reached out to her network of kestrel box monitors.



NEST BOXES

As cavity nesters, kestrels readily use nest boxes. Their most common natural nesting places are holes pounded out by woodpeckers in dead trees. But these cavities are in high demand. Kestrels must compete with other cavity nesters like bluebirds, tree swallows, starlings, and squirrels. And as the landscape has become more developed, tree cavities are harder to find. Lack of them is one reason scientists believe that the kestrel population has been declining over the past several decades. To provide more nesting opportunities for kestrels, people around the country have been putting up nest boxes.

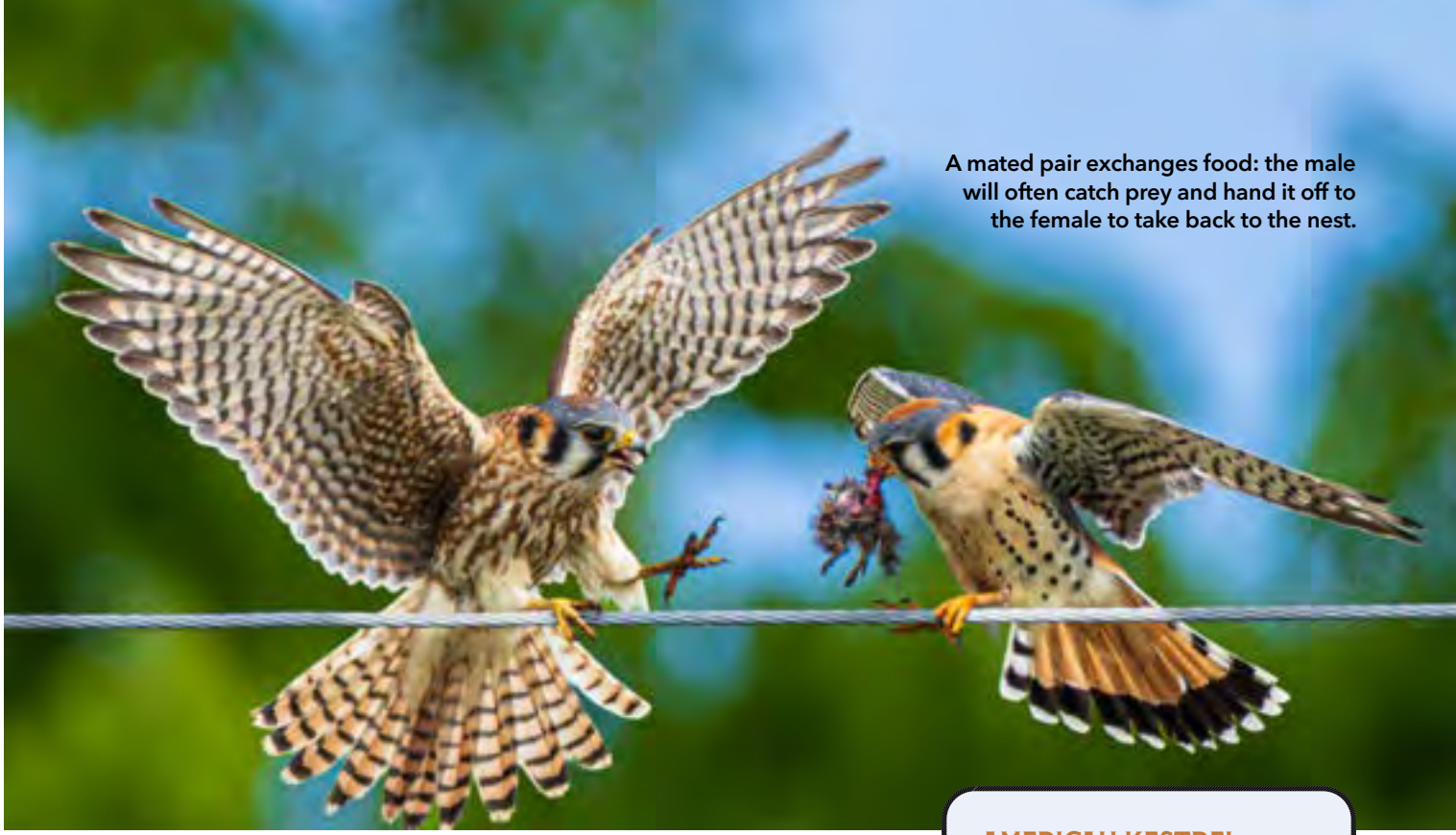
CARING FOR A KESTREL NEST BOX

Hang boxes before nesting season begins, preferably no later than mid-February.

- Add wood shavings or straw to the bottom.
- Place on a tree, pole, or building near an open field or meadow.
- Hang the box 8 or more feet above the ground
- Check weekly for unwanted occupants (starlings and house sparrows may be removed).
- Clean and disinfect at the end of each season.

For more information or to participate in the Missouri River Bird Observatory's American Kestrel Nesting Project, contact Marlee at marlee.malmborg@mrbo.org.

Kestrel boxes may be purchased from MRBO and other sources. Plans for building a kestrel nest box can be found on Cornell Lab of Ornithology's website at **short.mdc.mo.gov/ofn**.



A mated pair exchanges food: the male will often catch prey and hand it off to the female to take back to the nest.

Stephens herself started a kestrel nest box program in 2019, in part to help with the kestrel decline, but also for situations just like this one, because nestling kestrels are brought to Lakeside Nature Center every year. Unfortunately, only one volunteer had kestrels use their box and then that person moved away. After several years with no nesting kestrels, the project faded. Yet Stephens emailed the participants in case 2025 was a lucky year. All the boxes were still vacant. Most of these are in the city, Stephens said, "where we get a lot of kestrels, of course … but it's a highly populated area with a lot of traffic."

American kestrels mainly hunt in open fields. When selecting nesting spots, these falcons not only look for cavities, but also grassy habitat with adequate prey. They feed primarily on large insects and small rodents but will also take lizards, amphibians, and small birds. Often perching on a treetop, telephone pole, or telephone wire, they watch and wait, then swoop down to pounce on prey. When perches aren't available, they hover 12 or more feet above the ground, scanning the grass for rodents and insects. You may have seen one hunting along the highway or above the median, aloft but stationery, facing into the wind and holding its head steady while flapping its wings and flexing its tail to remain in one spot. From above, kestrels can detect ultraviolet light reflected from the urine of voles, which helps them see the trails the rodents make in the grass.

Marlee Malmborg of the Missouri River Bird Observatory (MRBO) started that organization's American Kestrel Nesting Project in 2023. MRBO already had a monitoring project for grassland species of conservation concern, so adding kestrels made sense.

"No one was really monitoring them in Missouri, so we kind of just saw to build it into our [existing] monitoring project," Malmborg explained.



AMERICAN KESTREL NESTING FACTS

- Nesting season spans mid-March through August.
- In Missouri, eggs are typically laid in late March through April, but sometimes in May or June.
- On average, 4–5 eggs are laid.
- Incubation lasts 26–32 days.
- Chicks fledge at 28–31 days old.
- Fledglings depend on parents for food for the first 2 weeks after leaving the nest.

Both parents incubate the eggs; usually the female incubates more, but this varies from pair to pair. After the chicks hatch, the female does all the brooding and the male brings food. When the chicks can regulate their own body heat (in 7 to 10 days), both parents hunt and bring back food. Pairs are monogamous (mate for life). If one dies, the survivor will find another mate.

While MRBO puts up and monitors its own nest boxes, it also looks to the public to become "kestrel box landlords." Many participants have open fields on or near their property. The project's first year, there were 10 boxes with one active nest. In 2025 when Stephens contacted Malmborg, there were 26 boxes on 20 different properties; six had active nests. All the chicks, however, were older than the pair that needed a new family.

Stephens contacted other wildlife centers around the state, but none of her Missouri connections knew of kestrels with nestlings of the right age. Fortunately, someone just across the border in Kansas did. Jim Walton, a member of the Johnson County Extension Master Naturalist program, was monitoring nest boxes on telephone poles not far from Kill Creek Park near Olathe, Kansas — in an area with grassy fields. Two days after arriving at Lakeside Nature Center, the orphans were placed in a new home.

The parents seemed to accept the two extra nestlings, which increased their brood from five to seven. Walton couldn't check the box regularly but said a neighbor kept an eye on it and noted that the adult kestrels appeared to make more prey deliveries.

No one witnessed the fledging, but a few weeks later, the box was empty, and no dead kestrels were found nearby. Apparently, all the young falcons, including the two adoptees, had hopped out of the box to begin their next survival challenge — mastering flight and hunting to become independent of their parents.

While the fate of the baby kestrels will never be known, Stephens is happy that she could at least give them a better chance of survival. With the population declining, each kestrel that grows up and leaves the nest is one step closer to becoming an adult that can reproduce and keep its species going.



A young fledgling is ready to leave the nest.

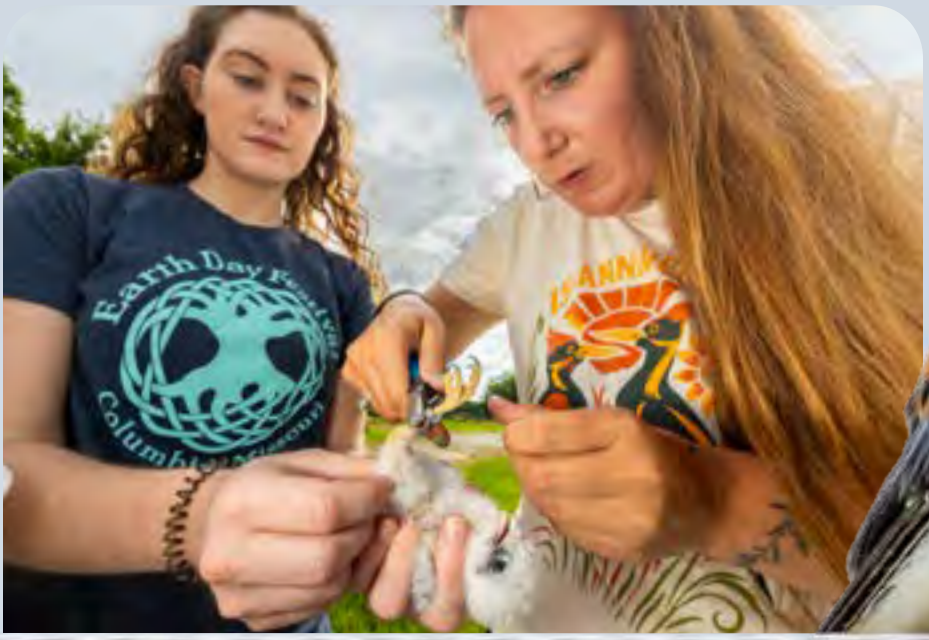
SPECIES DECLINE

Unraveling why kestrels are declining is complex. Scientists have been looking at a range of possibilities: climate change, habitat loss, effects of pesticides and reduction of insects, avian diseases, rodenticides that kestrels consume secondhand in the rodents they eat, an increase in Cooper's hawks, and nest competition with European starlings. For more details about the kestrel decline, visit **short.mdc.mo.gov/oJt**.

So far it appears that the causes and severity of the decline vary by region. The decline has been steepest in the northeastern U.S., where changing climate may play a strong role. Although the data doesn't look as dire for the Midwest, "recent trends are certainly concerning," said State Ornithologist Kristen Heath-Acre, pointing out that eBird records for Missouri show a 26.4 percent decline in kestrel abundance from 2012 to 2022.

Since starting MRBO's Kestrel Nesting Project, Malmborg speculates that lack of nesting sites may be a factor for Missouri's kestrels because of how quickly they move into nest boxes after boxes are put up.

"Kestrels are looking for insects and rodents to feed on in the open grasslands and agricultural areas. And that's also where they need to have their nests," she said. "When we remove fence



Missouri River Bird Observatory staff put metal U.S. Geological Survey bands on kestrel chicks a couple weeks before they fledge.

rows and clear out small strips of trees for more agriculture ground, kestrels have nowhere to nest."

HELPING KESTRELS THRIVE

Getting the word out and finding people interested in putting kestrel boxes on their property is part of Malmborg's ongoing work. Once a box is hung, the box landlords are asked to watch for kestrels going into the box in the spring and to check for eggs. Malmborg checks in with participants and advises when to open the box to see if the eggs have hatched. When possible, MRBO works with MDC to put metal U.S. Geological Survey bands on the chicks a couple weeks before fledging.

"I love to see the joy and excitement on kestrel landlords' faces when they get to be a part of watching their clutch be raised by the parents and banding the hatchlings if we have the opportunity," Malmborg said. "Just the joy they get after having a box up for years and finally getting kestrels to nest, along with being part of the actual citizen science side of things."

Data from the project helps provide insights about kestrels in Missouri, and because Malmborg adds it to NestWatch, a global citizen science database, it contributes to kestrel knowledge more broadly.

Figuring out the right location for a nest box is sometimes trial and error. Some people have a box up for years with no takers, then move it to a new spot and kestrels move in right away. Some years kestrels move in but then squirrels or starlings push them out.

"Starlings are the biggest hindrance to kestrels' nesting," Malmborg said. "They come in and invade the box and it's almost impossible to get rid of them."

The first year Marge Lumpe of Cole Camp hung a nest box, starlings nested in it, but the following year she moved it. Kestrels have now fledged from the relocated box three years in a row.

"You know, it's thrilling to share a little bit of your life with wildlife. It's so satisfying that you might help a species thrive and survive," Lumpe said. "It's fun to go outside in the mornings when they're around and hear them and see them flying."

For those without nest boxes or nests nearby, you're likely to see kestrels perched along roadways, often on telephone wires, especially in winter when kestrels that breed in the north make their way south to spend the colder months in our grasslands.

On particularly frigid days, you may be blown away by their cuteness when they fluff their feathers for warmth, making their bodies round like a Christmas tree ornament. Or perhaps you'll hear the high-pitched call, *killy-killy-killy*, as one dive-bombs a much-larger red-tailed hawk. The sight of a spunky kestrel can certainly boost our spirits, and with luck, the ongoing work of conservationists and individuals will help keep these fierce little falcons around. ▲

Dianne Van Dien is an editor for MDC and writes Nature Lab *for the* Missouri Conservationist.



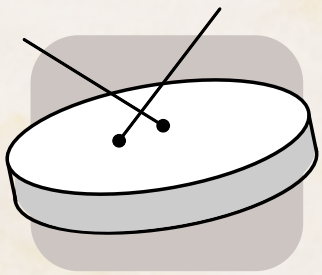
Making Buckskin

AN ANCESTRAL PRACTICE THAT PROVIDES TODAY'S HUNTERS ANOTHER USE FOR THEIR HARVESTED DEER

by Ginger Miller
photographs by David Stonner

Our ancestors harvested deer and other animals for uses far beyond meat or a trophy to hang on a wall. For them, a successful hunt meant food for the family, fat to render for tallow, sinew to make strong rope for wrapping and securing items, and bones to fashion into knives, scrapers, and other tools. But perhaps the most versatile item was the animal's hide.

Hides were prepared in many ways, depending on the need at the time. Rawhide, a stiff and strong material, was fashioned for shoe bottoms, drumheads, and parfleches, a small carrying case. Hair-on hides, from furbearers like raccoons, coyote, beaver, and fox, were transformed into leather for cold weather. Hair-off hides, from deer, were a good fit for warm weather. Deer hair is hollow and brittle, breaking off easily if worn. Therefore, deer hides were usually prepared with the hair off for leather clothes and other goods.



Rawhides were used to make drums, shoe bottoms, and parfleches.



Hair-on hides were used to make leather for cold weather.



Hair-off hides were used to make warm weather leathers.

MAKING BUCKSKIN

SKINNING

Once you have harvested and field dressed your deer, skin out your deer to produce a large, continuous section of hide. Using a sharp knife, extend your cut from field dressing going forward and then down the inside of the legs. Slice through the hide in a ring around each leg and the neck. Going farther up the neck will yield a larger hide, but the neck section is very thick and challenging to work with, especially for your first hide. Knife marks will lower the quality of your leather, so use your gloved hands and muscle rather than your knife to separate the hide from the meat of the deer. An old butter knife or other dull metal edge can be used to aid in this process without the risk of cutting the hide. Skinning a deer is easiest before the heat leaves the tissues. As the deer cools, any ticks present on the deer will begin looking for a warm host. Remember to check yourself for ticks after handling a fresh hide.

Supplies

- Rubber gloves
- Sharp knife
- Butter knife (or similar dull-edged tool)
- Leakproof container
- Bucket
- Heavy-duty tub
- Gallon zip-top bags
- Hydrated lime
- Dry soy lecithin granules
- Olive oil or vegetable shortening
- Plenty of water

FLESHING

If time allows, flesh the hide immediately after removing it from the deer and before freezing or salting. To flesh the hide, place the hide flesh side up along a smooth surface with the neck end toward you and scrape downwards using a fleshing knife or other dull metal edge. Work to scrape off the meat, fat, and connective tissue in the area immediately in front of you. Move the hide as you scrape off each area to keep the portion of the hide you are working on in front of you. The hide can be frozen and stored to work with later by folding it with the fur side out, down the long axis of the backbone, and then rolled up. Next place the rolled hide in a leakproof container and place in the freezer.

For more information on scraping a hide, check out *Binding Traditions* on Page 22 of the November 2025 issue of the *Missouri Conservationist*. It's also available online at **short.mdc.mo.gov/oYB**.

BUCKING

When a hide is referred to as brain-tanned buckskin, it is not referring to the sex of the deer. It refers to a hide as having been bucked during leather processing. Bucking a hide refers to soaking the hide in a high pH solution, which degrades the epidermis that helps hold hair in the follicle. Thus, it is only used in hair-off tanning. Several materials may be used to raise the pH of the solution, but the easiest and most cost-effective material is hydrated lime. In a heavy-duty tub, add about 2 pounds of powdered lime per 6 to 10 gallons of water, then stir to combine. Add a little lime at a time until it stops dissolving and precipitates out of solution. Wear glasses and gloves when working with lime powder and avoid inhaling the dust. After three to seven days of soaking in cold water, check to see if the hair slips off into your gloved hand with a gentle tug. If so, you are ready to proceed to removing the hair, the epidermis, and the grain layer beneath the epidermis. Because deer hair is hollow, the hide will try to float. Keep your hide submerged by placing rocks, bricks, or water jugs on top of it.



Bucking will cause the hide to swell and break down the outer layers of the hide (epidermis and grain layer). Scrape off the hair and the outer layers with a scraper on a smooth surface as before. Inspect the hide carefully for remaining hair, fat, meat, or epidermis and remove them before proceeding. The next step is to remove the lime from the hide and get the pH back down to neutral. Deliming is best done by rinsing the hide thoroughly, then placing the hide in a bucket, and running a small trickle of water over the hide for 12 to 24 hours. Alternatively, the hide can be soaked in a tub of cool water with water changes every two to six hours across two days. The hide is done when it no longer looks swollen or feels rubbery.

It will be a lot smaller with the fur and fat removed and will likely fit in a heavy-duty gallon-size zip-top bag. You can freeze the hide now or proceed to the next step, braining the hide.

BUCKING
a hide refers to soaking the hide in a high pH solution, which degrades the epidermis that helps hold hair in the follicle.

BRAINING
a hide refers to coating the fibers of the remaining layer of the skin with fats emulsified in water.



BRAINING

Braining a hide refers to coating the fibers of the remaining layer of the skin (the dermis) with fats emulsified (dissolved) in water. Historically, the brain of the harvested animal was used because it contained both fats and lecithin. Lecithin also is found in egg yolks, soybeans, and other plants. There are as many braining recipes as there are tanners. I use dry soy lecithin granules because it is inexpensive and easy to work with. Granules dissolve slowly in water, so begin dissolving them the day before. Use approximately 6 tablespoons of granules per gallon of water. The next day, warm the lecithin and water solution to a simmer and add ½ cup of olive oil or vegetable shortening. If using shortening, warm mixture until dissolved. Allow solution to cool until it is comfortable against your hand; hot solution will burn the animal hide the same way it can your skin.

Prepare your hide to soak in the braining solution by wringing the water from the hide. One way to do this is to form a doughnut shape out of the hide by making a very loose circle around an object lengthwise, then rolling up from one side to the other to form a ring. Place a bucket underneath the hide to catch drippings, if indoors.

Slide a strong limb or pole in and twist firmly. Twist in opposite direction. Make a quarter turn. Repeat four times until hide is wrung out, tucking any loose ends as you twist. Unwind and stretch hide out in all directions. Squeeze out any drippy bits. An old towel can be used to remove squeezed out moisture. Give the hide a good stretch in all directions and then place it in a bucket with 1 quart to 1 gallon of tanning solution. Let the hide sit in bucket, turning often for 30 minutes to one hour or until it appears saturated with solution. Stretching the hide while it is soaking will help get the mixture into the hide.











When breaking by hand, pull the hide firmly down over knees and in all directions using your thigh muscles. Or use an alternative surface. With three to five friends, pull the hide in pairs across from one another for a few rounds and then turn the hide and keep going. A cable can also work, with the flesh side of the hide toward the cable and the hair side facing out, pull the hide toward you.









Preserving hide softness after wetting by smoking is an art unto itself.

BREAKING

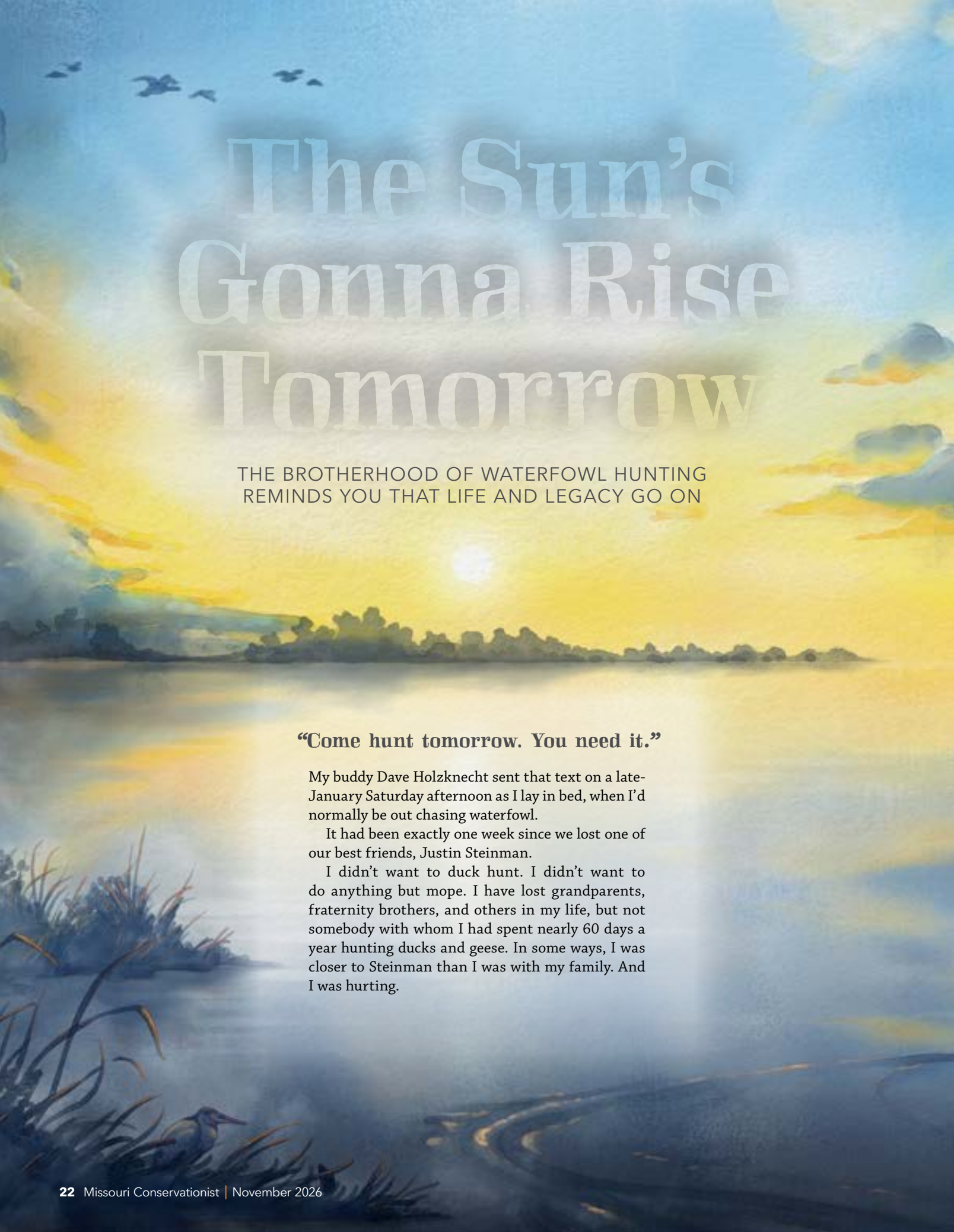
Wring out your hide again using the donut method, then stretch it. You are now ready to break your hide until it is completely dry to the touch. If the hide feels cool to the touch, it is still wet. It will take several hours for the hide to dry completely. Stopping before the hide is fully dry will result in a stiff hide. If you must pause, then place the hide in a plastic zip-top bag with some braining solution and freeze it until you are ready to proceed. If you are not satisfied with the softness of your hide, resoak it, and repeat the process once your muscles have rested.

Breaking a hide can be done with friends or alone using a frame or by hand. To break a hide on a frame, poke holes along the edge of the hide and use string to attach it to a sturdy wooden frame. Stretch hide with a flattened, dull wooden or metal paddle every few minutes until dry. You will need to tighten the string partway through. If breaking by hand, pull the hide firmly down over knees and in all directions using your thigh muscles. Alternatively, gather three or five friends to pull the hide with you and have pairs across from one another pull the hide a few rounds and then turn the hide and keep going. You can break the hide over a cable or other surface with the flesh side of the hide toward the cable and the hair side facing out. Do this until hide is dry.

Hides can be gently smoked over punky wood to preserve softness after wetting, but that is an art unto itself.

Preparing leather from a deer hide can be done in many ways. Try this approach as a starting point to practice this hunting heritage craft and then explore other methods to fine tune your technique. ▲

Ginger Miller, Ph.D., is a conservation educator for MDC's Kansas City region.



The Sun's Gonna Rise Tomorrow

THE BROTHERHOOD OF WATERFOWL HUNTING REMINDS YOU THAT LIFE AND LEGACY GO ON

"Come hunt tomorrow. You need it."

My buddy Dave Holzknecht sent that text on a late-January Saturday afternoon as I lay in bed, when I'd normally be out chasing waterfowl.

It had been exactly one week since we lost one of our best friends, Justin Steinman.

I didn't want to duck hunt. I didn't want to do anything but mope. I have lost grandparents, fraternity brothers, and others in my life, but not somebody with whom I had spent nearly 60 days a year hunting ducks and geese. In some ways, I was closer to Steinman than I was with my family. And I was hurting.



by Ryan Miloshewski

illustrated by Matt Byrde

Steinman was six years my junior, but I learned many things from him in the five years I knew him — calling waterfowl, picking the perfect hunting spot, proper decoy placement, and how to be a decent human being, just to name a few. As a new public land waterfowl hunter, I encamped myself with him, Dave, and others and absorbed as much as I could.

He lived with me for a year. We cooked together, fished constantly in the spring and summer, visited our local dive bar and favorite neighborhood restaurant, all in our years of becoming great friends. We just clicked.

But most importantly, we hunted well together. Not a word needed to be spoken when ducks were working or when to take the shot. We were good at it. I could not fathom duck hunting without him.

He made every hunt enjoyable, even if a shot was never fired.

I recall one December day with a lull in mallard activity. He had purchased a pack of donuts at the local Casey's some hours before and was having his mid-morning snack when he said, "Hey Milo, look, chocolate milk!" I watched as he dunked a donut into the dirty marsh water and sent it down the hatch. We laughed for a solid minute. It was the type of guy he was, and I am glad I knew him.



Freedom At Last

Ultimately, Dave was right. I needed to get out of the house and back in the saddle again. I loaded up my waders, my 20-gauge, and shells that Steinman had handloaded for me. I headed to southwest Missouri, still unsure of what I was doing. Upon arrival, Dave, who had been squirrelled away at his camp, greeted me with a Mexican duck dinner. We reminisced, expressed our feelings, and hit the hay early. I lay awake for some time before falling victim to physical and emotional exhaustion.

Early the next morning, we set off for the river. Missouri was in a deep freeze at the time, and if ducks were going to be around, they would be hitting dry fields and rivers. Dave shoved off in his kayak to our spot, some 200-yards upriver, and I clicked on my headlamp to make the trek onto dry land. I got turned around twice, cursing my futility. My mind still was not right. I pressed on and reached the area we would hunt. It was a steep bank overlooking a mildly flowing river — a great ambush spot. We would be shooting down on any ducks who came into our calling and decoys. After setting the spread and enjoying some coffee, some normalcy began to return.

As the sun rose on the east side of sorrow, turkeys serenaded us with thunderous gobbles. A pack of mallards, chuckling in unison, cruised overhead with purpose. Heading to feed on anything they could find, I silently surmised. The anxiety and uncertainty began to subside. Shortly after shooting light, a hen wood duck landed out



of sight, and Dave stalked after her. Moments later, we had our first duck of the day.

As he got back on the bank overlooking the river, I was happy he had us on the board. As he went to put the duck on his game strap, we realized it was banded. We hugged, high-fived, and yelled in jubilee. Maybe this was the right choice, I silently thought.

Shortly after the banded wood duck excitement, two mallard drakes came screaming in, slammed on their brakes, and pitched right into our decoy spread. I did not even shoot. Dave dispatched both. It felt as if I had shackles on me. Soon after, a pack of gadwalls and wigeon repeated the actions of the two mallards.

We let loose with our 20 gauges, and all but one of the six were lying in the river. Freedom at last. I scurried down the sharp bank and gathered up our ducks. I smiled for the first time in seven days as I touched the grayish blue leg of a yearling drake wigeon.

As we sat there reveling in our success, I finally started to feel right. A weight lifted off my shoulders and I laughed. I had not laughed in a long while. Sometime later, a group of mallards flew in, and Dave took them. Later, I connected with two mallards for the first time that day, just like I had done with Steinman many times before.

For the first time in my life, I can say it was absolutely about the ducks I harvested. We ended up with eight ducks: four mallards, two gadwalls, a wigeon, and the hen wood duck. Shy of a two-man limit on paper, but not in our minds.

As we sat there reveling at the success, I finally started to feel right. A weight lifted off my shoulders and I laughed. I had not laughed in a long while.



Waterfowl Hunting: A Brotherhood

Waterfowl hunting is a brotherhood. Contentious at times, but a brotherhood, nonetheless. We all do it because we must. It defines us. When you meet good ones, you best latch onto them and take in all you can.

I was lucky enough to know Steinman, and his ideology lives on. I have been hunting since I could fathom a thought, but first hunts come in all shapes and sizes. This was one I was not expecting to occur. Life, and duck hunting, finds a way to displace your plans and mindset. Good friends and determination are assets you must utilize to push forward.

"I cannot believe you are duck hunting again so soon," a sentiment I both heard and felt.

But you must remember, nobody can tell you how to grieve. Ultimately, getting back out there and hunting was the cure for my ailing mind. After this memorable hunt, I thought, I cannot believe I did not duck hunt sooner after I lost my friend. Continuing his legacy, utilizing his tactics, and spending time with another good friend was more therapeutic than anything I could have imagined.

I have had many first hunts, but none as unique or hard as the one after losing a close friend. I was riddled with anxiety, uncertainty, and dread. It felt as if I was waterfowl hunting for the first time in my life again.

How do you continue doing something that reminds you of somebody you can no longer talk to? I love waterfowl hunting. It brings me peace, and I have met some of my best friends doing so.

But so soon after his death felt wrong. I since have learned you had better strap on your waders, put on your best face, and attack the day. His time on earth is done, but I can do my best to honor his legacy. I may even dunk a donut in a

I have had many first hunts, but none as unique or hard as the one after losing a close friend.





marsh one day to get a laugh out of my friends or children.

As the morning flight subsided, we sat in silence for quite a while. Not an awkward silence, but a silence that heals.

I broke it.

"You know, if it were me who passed away, Steinman would be here with you instead of me," I said to Dave.

"And he with you," Dave immediately replied.

My healing process had begun. This day in late January confirmed the sun will rise tomorrow. ▲



Ryan Miloshewski is a freelance outdoor writer. He enjoys chasing ducks, turkey, deer, walleye, and trout with his dog, Hank, across Missouri's seasons.

Find details on Page 6 on how to submit your First Time Afield *short story to* Missouri Conservationist.

Get Outside in NOVEMBER

Ways to connect with nature



Changing Colors

Fall color, with its brilliant reds and oranges, has begun to fade, replaced by the coming winter's preferred palette of gray, rust, and tan. But don't despair. There are pops of color here and there, some more welcome than others.

Eastern Witch-Hazel

Eastern witch-hazel is a shrub or small tree, found mostly in Missouri's eastern Ozark. Its beautiful yellow flowers bloom from November through December.

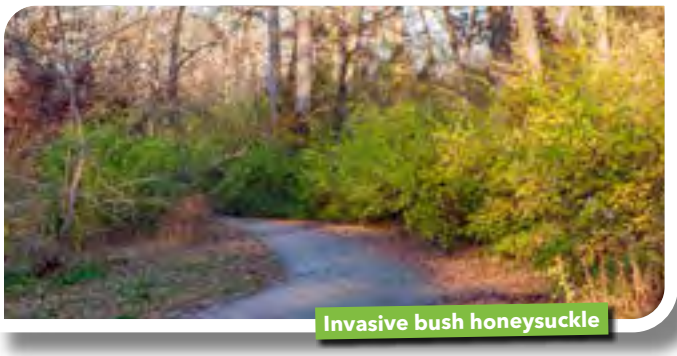
Cedars and Pines

Cedars and pines bring color to the landscape throughout the winter months. **Eastern white pines**, which are not native to Missouri, stay green year-round. They were introduced for lumber, landscaping, windbreaks, and erosion control. Our native shortleaf pines are a lovely green and provide shelter for wildlife in the winter. **Eastern red cedars** remain a deep emerald green until freezing when their needles turn a deep reddish bronze. Female cedars bear cones that become waxy-coated, blue berries, which feed many species of birds.

Bush Honeysuckle

This is the green you don't want to see. **Invasive bush honeysuckle** remains green well into December and will green first in spring, making it easy to spot and eliminate. For more information on how to help control this aggressive, problematic shrub, visit **short.mdc.mo.gov/ZCi**.

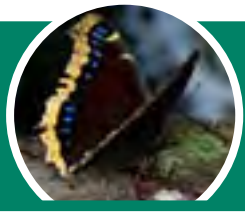




EASTERN RED CEDARS: HOWARD F. SCHWARTZ, COLORADO STATE UNIVERSITY, BUGWOOD.ORG; EASTERN WHITE PINES: JOSEPH O'BRIEN, USDA FOREST SERVICE, BUGWOOD.ORG; CHICKEN OF THE WOODS: © JARROD1 | DREAMSTIME.COM

Natural Events to See This Month

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



Mourning cloak butterflies may appear on warm days.



Look for bald eagles near lakes, rivers, and marshes.



Carolina chickadees frequent backyard feeders.

VIRTUAL

GAME UTILIZATION: Deer Tallow Heel Balm and Candles

Thursday • Nov. 5 • 5:30–6:30 p.m.
Online only
Registration required by Nov. 5. For more information, call 888-283-0364 or visit short.mdc.mo.gov/oxS.
Ages 14 and older

Our ancestors used many parts of the deer they harvested. Many products, such as candles, skin moisturizing heel balms, soaps, fire starters, etc., can be made from deer fat (tallow). During this one-hour virtual workshop, we will demonstrate techniques on how to render deer fat to create a soothing heel balm and candles. A handout with recipes and directions for heel balm, body butter, candles, and fire starters will be emailed to attendees after the program.

Mushroom Mania

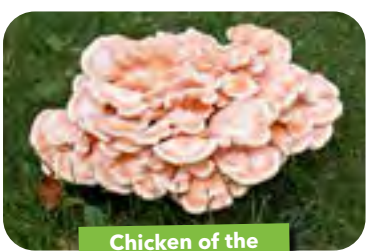
If you are in the woods chasing a turkey or a deer, keep your eyes on the ground. There's a bounty of mushrooms fresh for the plucking.


Oyster mushrooms

Oyster mushrooms, a choice edible, fruits year-round, but may be easier to spot during the fall and winter months. They grow in overlapping clusters on stumps, logs, and trunks of deciduous trees.


Hen of the woods mushrooms

Hen of the woods grows on the base of oak trees through November. A large, edible mushroom, hen of the woods tends to grow in the same spot each year, so take note of your location.


Chicken of the woods mushrooms

Chicken of the woods also grows through November in overlapping clusters on dead or dying deciduous trees, stumps, buried roots, or living trees. They are orange to yellow, fleshy, and fan-shaped.



Always be certain of your mushroom identification before consuming. For more information, consult *A Guide to Missouri's Edible and Poisonous Mushrooms* at **short.mdc.mo.gov/ZNf**.

CONSERVATION NEAR YOU

Craving more local conservation connections? Find events near you at **mdc.mo.gov/events**, or catch the latest on social media. Reach out to your closest regional office and learn about events from MDC staff. Outdoor fun awaits. Get out there!





Get Social

Join the conversation and connect with us on social media. Search "MO Conservation" to follow us on Twitter (X), Facebook, YouTube, Instagram, Pinterest, and Flickr.

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Central
573-815-7900
3500 E Gans Rd
Columbia, MO 65201

Kansas City
816-622-0900
12405 SE Ranson Rd
Lees Summit, MO 64082

Northeast
660-785-2420
3500 S Baltimore
Kirksville, MO 63501

Northwest
816-271-3100
701 James McCarthy Dr
St. Joseph, MO 64507

Ozark
417-256-7161
551 Joe Jones Blvd
West Plains, MO 65775

Southeast
573-290-5730
2302 County Park Dr
Cape Girardeau, MO 63701

Southwest
417-895-6880
2630 N Mayfair
Springfield, MO 65803

St. Louis
636-441-4554
2360 Hwy D
St. Charles, MO 63304

Places to Go

SOUTHEAST REGION

Hornersville Swamp Conservation Area

Not as swamp as it once was

by Larry Archer

Country singer Toby Keith once famously sang, "I'm not as good as I once was." Were someone to parody that song on behalf of Hornersville Swamp Conservation Area (CA), it would likely include the confession that the area is "not as swamp as it once was."

Hornersville Swamp CA, located on 3,381.5 acres in Dunklin County, stands as one of the Bootheel's largest remnant of bottomland forest. However, its flat and poorly drained landscape includes remnant stream channels, backwater sloughs, and shallow depressions that retain up to 2 feet of water after seasonal rains, contributing to areas that are truly a swamp, said Ross Glenn, Mississippi Lowland District supervisor.

Sitting on the Missouri-Arkansas border, the area serves as a cap to Arkansas' Big Lake National Wildlife Refuge. Combined, the two attract large populations of waterfowl and woodland bird species, drawing hunters, anglers, birders, and more, he said.

"When talking to area users and answering questions about the area, it is not uncommon to hear stories about successful waterfowl hunts, the big buck that got away, a successful swamp rabbit hunt, or unique bird that has recently been spotted on the area." Glenn said.

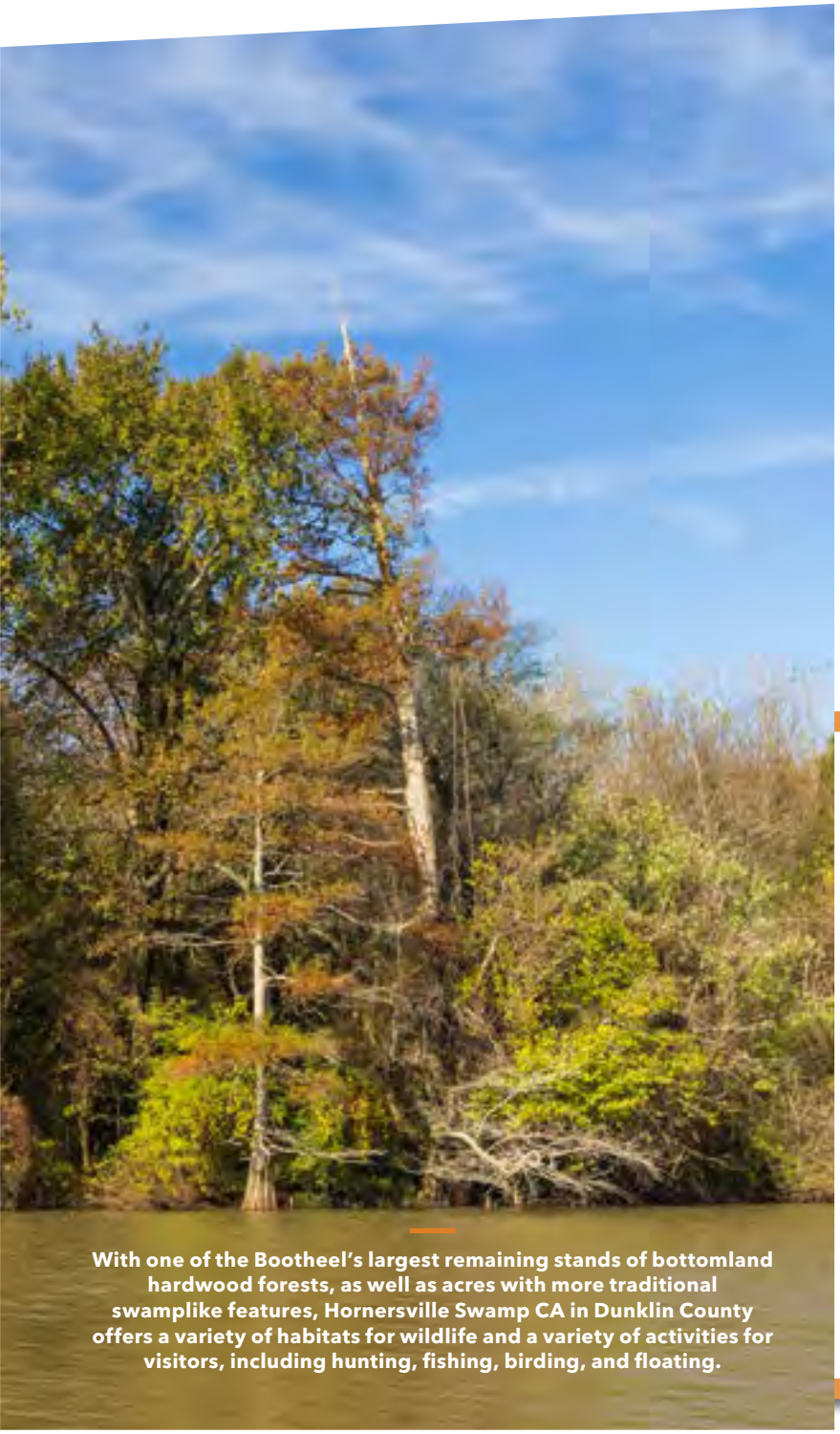


"There's a good chance that they're going to see some swamp rabbits."

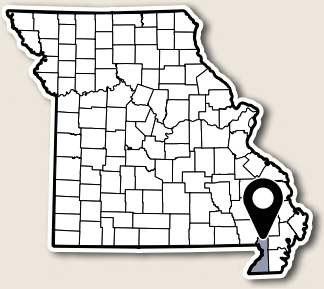
—Mississippi Lowland District Supervisor Ross Glenn

Swamp rabbit

NOPPADOL PAOTHONG; SWAMP RABBIT: LAWRENCE JEFFERSON, STOCK.ADOBE.COM



With one of the Bootheel's largest remaining stands of bottomland hardwood forests, as well as acres with more traditional swamplike features, Hornersville Swamp CA in Dunklin County offers a variety of habitats for wildlife and a variety of activities for visitors, including hunting, fishing, birding, and floating.



HORNERSVILLE SWAMP CONSERVATION AREA

consists of 3,381.5 acres in Dunklin County. From Rives, take Highway 164 west approximately 1 mile, turn left (south) on Highway TT for 4.3 miles, turn right (west) onto County Road 726 for 2.5 miles until you reach the levee bordering the east side of the area. Turn right to access the north parking lot (1 mile north) or turn left to access the south parking lot/boat ramp (2 miles).

36.06, -90.0813

short.mdc.mo.gov/oSA 573-290-5730

WHAT TO DO WHEN YOU VISIT

Birdwatching The eBird list of birds recorded at Hornersville Swamp CA is available at **short.mdc.mo.gov/oSd**.

Fishing Black bass, catfish, crappie, sunfish, white bass.

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

Also **rabbit**, and **squirrel**.

Trapping Special use permit required.

Waterfowl Hunting Open hunting. Regulations are subject to annual changes. Refer to MDC's *Migratory Bird and Waterfowl Hunting Digest 2026–2027* online at **short.mdc.mo.gov/4SZ**.

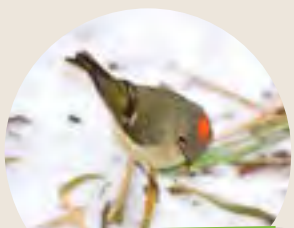
WHAT TO LOOK FOR WHEN YOU VISIT



Water tupelo



Bald cypress



Ruby-crowned kinglet



Northern shoveler

Wild Guide





Gray Fox

Urocyon cinereoargenteus

Status	Size	Distribution
Common	Total length: 31¼–44 inches; weight: 5–15½ pounds	Statewide

There are two species of foxes in Missouri — the gray fox and the red fox. Though they resemble red foxes in general build, gray foxes are distinguished by their grayish color, smaller size, black-tipped tail, coarser fur, and dark brown eyes. Gray foxes are more likely to be found among the forests in the southern half of Missouri. Though they are primarily nocturnal, gray foxes will climb trees during the day to sun, forage for fruits, and take refuge from bothersome dogs. For fur trappers and fox hunters, they are not as desirable as their red counterparts. Their thin, coarse hair is not held in high esteem and is used in inexpensive coats for collars and trim.

LIFE CYCLE

Gray foxes mate from January to May but breeding peaks from February through the first week of March. Most litters contain three to five pups. At about three months, pups leave the den for the first time to accompany their parents on a hunting trip. The family disperses in late summer, when the pups are about six to seven months old. Foxes are chiefly nocturnal but are often out during the day.

ECOSYSTEM CONNECTIONS

Gray foxes eat rabbits and other small mammals, wild birds, insects, and a small amount of plant matter. They feed on rats and mice, keeping these populations in check. Gray foxes take far less livestock and poultry than red foxes, so they cause little economic loss.

JIM RATHERT

Outdoor Calendar

MISSOURI DEPARTMENT OF CONSERVATION

FISHING

Black Bass
Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:
- Catch-and-Keep:
  May 23, 2026–Feb. 28, 2027

Nongame Fish Gigging
Streams and impounded waters, sunrise to midnight:
Sept. 15. 2026–Feb. 15, 2027

Paddlefish
On the Mississippi River:
Sept. 15–Dec. 15, 2026

Trout Parks
During catch-and-release season, Maramec Spring Park is open daily; other state trout parks are open Friday–Monday.

Catch-and-Release:
Nov. 13, 2026–Feb. 8, 2027

TRAPPING

Badger, Gray Fox, Red Fox
Nov. 15, 2026–Jan. 31, 2027

Beaver, Nutria
Nov. 15, 2026–March 31, 2027

Bobcat, Coyote, Mink, Muskrat, Opossum, Raccoon, River Otter, Striped Skunk
Nov. 15, 2026–Feb. 28, 2027

Rabbits
Nov. 15, 2026–Jan. 31, 2027

HUNTING

Badger, Gray Fox, Red Fox
Nov. 15, 2026–Jan. 31, 2027

Bobcat, Opossum, Raccoon, Striped Skunk
Nov. 15, 2026–Feb. 28, 2027

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

Open all year

Crows
Nov. 1, 2026–March 3, 2027

Deer
Archery:
Sept. 15–Nov. 13, 2026
Nov. 25, 2026–Jan. 15, 2027

Firearms:
- November Portion:
  Nov. 14–24, 2026
- Late Youth Portion (ages 6–15):
  Nov. 27–29, 2026
- Late Antlerless Portion (open areas only):
  Dec. 5–13, 2026
- Alternative Methods Portion:
  Dec. 26, 2026–Jan. 5, 2027

Doves
Sept. 1–Nov. 29, 2026

Elk
Only hunters selected through a random drawing may participate in this hunting season.

Firearms:
Dec. 12–20, 2026

Groundhog (Woodchuck)
May 11–Dec. 15, 2026

Pheasant
Regular:
Nov. 1, 2026–Jan. 15, 2027

Quail
Regular:
Nov. 1, 2026–Jan. 15, 2027

Rabbits
Oct. 1, 2026–Feb. 15, 2027

Sora, Virginia Rail
Sept. 1–Nov. 9, 2026

Squirrels
May 23, 2026–Feb. 15, 2027

Turkey
Fall:
- Archery Portion:
  Sept. 15–Nov. 13, 2026
  Nov. 25, 2026–Jan. 15, 2027

Waterfowl
See the Migratory Bird and Waterfowl Hunting Digest *or visit* ***short.mdc.mo.gov/ZZx*** *for more information.*

Wilson's (Common) Snipe
Sept. 1–Dec. 16, 2026

Woodcock
Oct. 18–Dec. 1, 2026

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at **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**.

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Free to Missouri households

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Eastern fox squirrel in fall leaves

by **Noppadol Paothong**