

# MISSOURI CONSERVATIONIST

VOLUME 78, ISSUE 11, NOVEMBER 2017  
SERVING NATURE & YOU



# HUNTERS, HELP US!

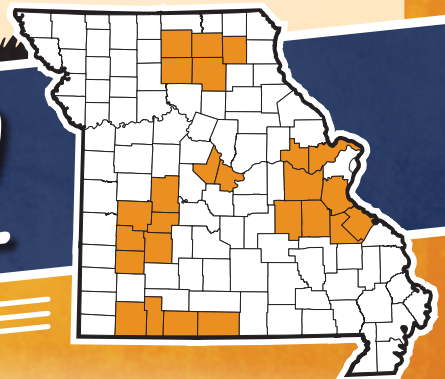


## MANDATORY CWD SAMPLING OF DEER OPENING FIREARMS WEEKEND IN 25 COUNTIES

Bring your deer  
to a sampling  
station near you.

The 25 mandatory CWD sampling counties are: Adair, Barry, Benton, Cedar, Cole, Crawford, Dade, Franklin, Hickory, Jefferson, Knox, Linn, Macon, Moniteau, Ozark, Polk, St. Charles, St. Clair, St. Francois, Ste. Genevieve, Stone, Sullivan, Taney, Warren, and Washington.

# NOVEMBER 11-12



Get information on chronic wasting disease and sampling locations at [MDC.MO.GOV/CWD](http://MDC.MO.GOV/CWD), or in the *2017 Fall Deer & Turkey Hunting Regulations and Information* booklet available where permits are sold.

# Contents

NOVEMBER 2017  
VOLUME 78, ISSUE 11

# 10



## FEATURES

### 10 Secretive Marsh Birds

Researchers work to understand how these little-studied birds use Missouri's wetlands.

by **Auriel Fournier, Doreen Mengel, and Lisa Webb**

### 16 Missouri Hunting 3.0

Digital technology makes it easier for everyone to go hunting and celebrate success.

by **Lucas Bond**

### 22 Chasing Winter Rainbows

A Missouri urban trout fishing tradition.

by **Bill Graham**



## DEPARTMENTS

- 2 Inbox
- 3 Up Front With Sara Parker Pauley
- 4 Nature Lab
- 5 In Brief
- 28 Get Outside
- 30 Places To Go
- 32 Wild Guide
- 33 Outdoor Calendar



## MISSOURI CONSERVATIONIST



### ON THE COVER

A Virginia rail at Eagle Bluffs Conservation Area near Columbia.

#### 📷 NOPPADOL PAOTHONG

600mm lens +2.0x teleconverter  
f/8, 1/250 sec, ISO 3200

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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](mailto:Magazine@mdc.mo.gov) or write to us:

MISSOURI  
CONSERVATIONIST  
PO BOX 180  
JEFFERSON CITY, MO 65102



**BUTTERFLY EFFECT**  
I have attended meetings, listened to lectures, and read books, but your article *The Butterfly Effect* [September, Page 10] is the best I have seen on monarchs.

Shelley Wilson  
via email

## BUTTERFLY EFFECT

We planted a few milkweed plants in our flower gardens this summer. It's fun watching the beautiful caterpillars. And we're finding the jade-green chrysalises suspended under the deck railing and hose reel. If more people will make a small effort to promote the health of the monarch, we can bring back the population of this beautiful butterfly and important pollinator.

Great September monarch article! Love reading the *Conservationist*!

Bruce Barnett Marthasville

I saw a young monarch on our front sidewalk, and it was in the sun and appeared to be drying its wings. The back wings still appeared to be moist.

We assume this butterfly is from the group of nine to 10 caterpillars we found on one of our milkweed plants in mid-August. Those caterpillars stripped every leaf from the plant, which now has produced new leaves. We searched for the chrysalises, but they really hide very well on nearby plants. We are anxiously waiting to see if any more young monarchs appear.

Our family enjoyed the wonderful article about monarchs by Matt Seek in the September issue. We plan to get tags from Monarch Watch for next year's monarchs.

Gus Degardin St. John

The photos of the monarch butterflies in the September issue are beautiful. Your photographers deserve recognition for their fine work.

Jeanne Sheets Nevada

We want to let you know how much we enjoyed and appreciated *The Butterfly Effect* by Matt Seek. We watched the monarchs right out of our sunroom windows. However, they were about half the size of those my son chased and collected 50 years ago in St. Charles. Thanks for the *Missouri Conservationist*.

Dallas and Joan Barteau Troy



Monarch butterfly

The article on monarch butterflies in the September issue was perhaps the best I've ever read in your magazine. Interesting, informative, and well written. Well done!

Lenny G. Kostecki Florissant

As a retired research biologist with the U.S. Fish and Wildlife Service, I appreciate the excellent work that MDC does. What an outstanding article by Matt Seek on the monarch butterfly in the September issue. It was highly relevant and very informative! I chose to retire in Missouri because of the excellent wildlife potential in this beautiful state. As our new Commissioner Nicole Wood said, "Missouri has the best Department of Conservation in the United States." Thanks for a great magazine!

Donald H. White, Ph.D. Willow Springs

## PROTECTING WILDLIFE, CITIZENS

Just a note of appreciation to your great conservation agents. I was dove hunting over Labor Day weekend. Agents came onto the farm near Minor where we were hunting to check our licenses. They were great people – very professional and friendly. I was approached last year, too. Both times, I couldn't have asked for nicer people. They were thorough and patient. They asked questions about the farmer, who they knew, and made sure we knew him, too. Thank you for protecting my family from trespassers. I couldn't ask for better men and women. Made me proud that I live in Missouri.

Duane Billington Festus

NO PADDOL PAOT HONG

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## Conservation Headquarters

573-751-4115 | PO Box 180, Jefferson City, MO 65102-0180

## Regional Offices

Southeast/Cape Girardeau: 573-290-5730

Central/Columbia: 573-815-7900

Kansas City: 816-622-0900

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## Have a Question for a Commissioner?

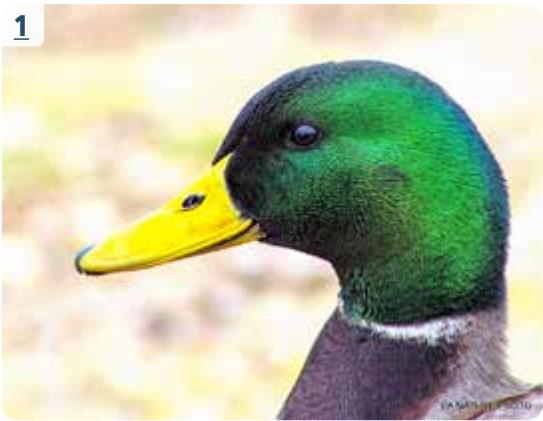
Send a note using our online contact form at [mdc.mo.gov/commissioners](http://mdc.mo.gov/commissioners).



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

Share your photos on Flickr at [flickr.com/groups/mdc-readerphotos-2017/](https://www.flickr.com/groups/mdc-readerphotos-2017/), email [Readerphoto@mdc.mo.gov](mailto:Readerphoto@mdc.mo.gov), or include the hashtag #mdcdiscoversnature on your Instagram photos.

1



1 | Mallard drake by Erwin Allen, via Flickr

2 | Deer camp by teakphillips, via Instagram

3 | Frost flower by Kandi Mislevich-Greer, via email

4 | Squirrel and deer by Cheryl Sloan, via Flickr



2

3



4



### MISSOURI CONSERVATION COMMISSIONERS



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# Up Front

with Sara Parker Pauley

✳ Last month, I had the honor of joining the annual pilgrimage to Hunnewell hatchery in Shelby County for a celebratory gathering before the start of catfish-harvesting activities. Every October, MDC fisheries staff from around the state meet at Hunnewell, which serves as the headquarters for these efforts, to stock catfish in lakes and ponds in the northern half of the state. Another dedicated group travels to Chesapeake hatchery in Mount Vernon the following week to deliver catfish to the southern half of Missouri.

Before the trucks depart early the following morning, these hearty souls break bread together. They catch up on each other's families, talk fish tales, and share conservation issues of the day.

There was lots of talk about how technology has improved our ability to deliver conservation to communities. For example, the design of the "kettle," or the big bathtub-like structure inside the raceway where the catfish are grown at the hatcheries, enables us to capture the catfish in a far superior manner than decades before. Google Earth and GPS technology on smartphones also makes finding various lakes and ponds easier than the hand-drawn maps of the past (see how technology has also changed deer hunting in *Missouri Hunting 3.0*, Page 16).

What hasn't changed over the years is the excitement of staff coming together for a common conservation purpose — delivering catfish so all Missourians have great fishing opportunities. At dinner that night, MDC Fisheries Chief Brian Canaday said it best, "Remember the importance of what you're doing out there. You're doing this so others can make memories."

*Sara Parker Pauley*

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

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Printed with soy ink



# Nature LAB

by Bonnie Chasteen

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

## WILDLIFE MANAGEMENT

### Tooth Aging

✳ **The biologist worked quickly and carefully to extract the sedated sow bear's tiny upper premolar.** "We send the premolars to a lab in Montana," said MDC furbearer biologist Laura Conlee. "They will tell us how old she is, when she began having cubs, and how many times she has had cubs."

Conlee's team tracks sow bear age and reproductive history as part of their annual monitoring efforts. "When the bear population reaches 500 animals, we will recommend a hunting season to the Commission," she said.

Conlee and many other MDC resource scientists rely on Matson's Lab in Manhattan, Montana, for its cementum age analysis (CAA) services. "With this technique, we prepare and stain the cementum, a material that grows in annual layers around the tooth-roots of all mammals," said Carolyn Nistler, who owns the lab with her husband, Matt. "The dark-staining rings form during the winter, and the light-staining rings form during the spring and summer growth seasons. In the case of a sow bear, light, narrow growth rings show the years she had a cub."

MDC sends Matson's Lab the teeth of several other



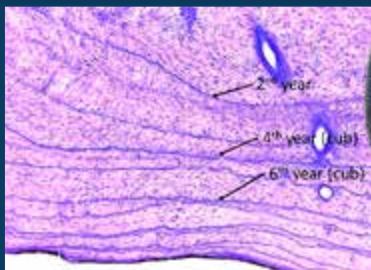
Furbearer Biologist Jeff Beringer (retired) gently extracts a small premolar, which has a tiny root and isn't used in feeding.

Analyzing an animal's tooth can reveal its age and other clues about its life history

game mammals, including bobcats, river otters, and white-tailed deer. In these cases, however, teeth are collected during annual harvest seasons. "CAA helps us know exactly how old an animal was when it was harvested," said MDC Cervid Program Supervisor Barbara Keller. "This data helps us create accurate models of Missouri's game-mammal populations, so we can set appropriate regulations to ensure sustainable harvest. It's all management driven."

### Tooth Aging at a Glance

MDC sends **4,500 wildlife teeth** to Matson's Lab yearly



In the lab, slicing, staining, and magnification show **annual growth rings**



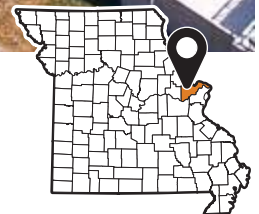
Other mammals we tooth-age: otter, deer, bobcat

Browse more research projects at [research.mdc.mo.gov](http://research.mdc.mo.gov)

TOP: NOPADOL PAOTHONG; TOOTH SLIDE: MATSON'S LABORATORY

# In Brief

News and updates from MDC



## BUSCH SHOOTING RANGE NOW OPEN

THE STAFFED RANGE IN ST. CHARLES COUNTY OPENS AFTER 22 MONTHS OF RENOVATION AND EXPANSION

➔ The completely renovated shooting range on the August A. Busch Memorial Conservation Area opened Oct. 28. The range is located in St. Charles at 3550 Route D, approximately 5 miles west of Highway 95.

It features 20 positions at the 100-yard range and 15 positions at 50 yards for rifle and pistol use. Concrete floors, walls, and overhead steel baffles control and contain projectiles. A bullet trap decelerates bullets and deposits them into sealed plastic buckets for recycling. Shooting booths are now handicapped-accessible. Shotgun shooters can enjoy five trap/skeet overlay ranges with electronic controls and two shotgun-patterning ranges.

Lighting for night programs, sound-reduction guards, public restrooms with full plumbing, and a new education/office building with an 80-person classroom add to user convenience and comfort.

The new range also incorporates archery facilities on site, including a static archery range with an elevated shooting tower and broadhead pits.

Fees remain the same. Learn more at [short.mdc.mo.gov/ZkL](http://short.mdc.mo.gov/ZkL). Stay informed about range happenings by texting "MDC Busch" to 468311 and signing up for text alerts.

## MDC OFFICES CLOSED, PHONE LINES OPEN ON VETERANS DAY

MDC offices and nature centers will be closed Friday, Nov. 10, in honor of Veterans Day. MDC staffed shooting ranges will be open. MDC Permit Services and Hunter Education staff will answer phones to help with permit questions and other inquiries before the opening weekend of firearms deer season, Nov. 11-12. Call 573-751-4115.



MDC headquarters

## MDC SAVES OVER \$1 MILLION ON ENERGY COSTS

MDC has saved \$1.2 million on energy costs since 2010, including more than \$250,000 in 2016 alone.

Staff has used energy-saving technologies in nature centers and offices, such as replacing incandescent lighting with more efficient LED bulbs and climate-control systems to adjust building temperatures after working hours. They have also installed motion-activated lights, and heating systems that use geothermal energy.

As a result, seven MDC locations have achieved ENERGY STAR® ratings. ENERGY STAR is a joint program of the Environmental Protection Agency and the Department of Energy. Its goal is to help consumers, businesses, and industry save money and protect the environment through the adoption of energy efficient products and practices. The ENERGY STAR label identifies top performing, cost-effective products, homes, and buildings. The ENERGY STAR rating means the building is more energy efficient than the numbered percent of similar buildings around the country.

Learn more about ENERGY STAR at [energy-star.gov](http://energy-star.gov). Find out more about energy efficiency assistance programs at the Missouri Public Service Commission's website, [psc.mo.gov/General/Energy\\_Efficiency\\_Assistance\\_Programs](http://psc.mo.gov/General/Energy_Efficiency_Assistance_Programs). For more information about MDC, visit [mdc.mo.gov](http://mdc.mo.gov).



### 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: Can I feed deer in Missouri?

➔ It depends on where you live in the Show-Me State.

In an effort to limit the spread of chronic wasting disease (CWD), the Missouri Conservation Commission restricted the feeding of deer in 41 Missouri counties, effective July 1, 2017. (For the affected counties, see map below.)

Deer are social animals and feeding them increases the chance they might share this communicable disease, explained Jasmine Batten, MDC wildlife disease coordinator.

The ban applies to the placement of grain, salt products, minerals, and other consumable natural and manufactured products used to attract deer.

There are a few exceptions. Since deer are less likely to gather near buildings, homeowners can

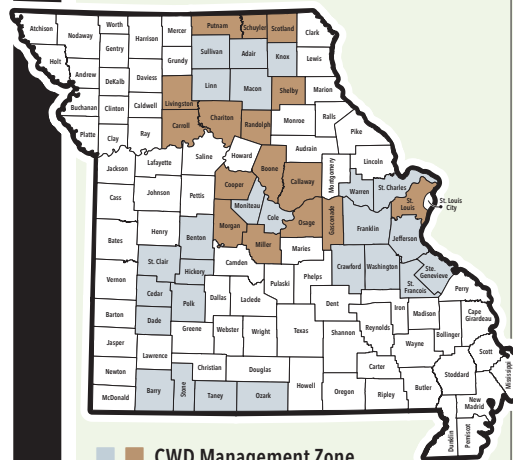
feed them within 100 feet of any residence or occupied building. Also exempt are food and minerals present solely as a result of normal agricultural and forest management practices, as well as food placed out of the reach of wild deer. Finally, the planting of food plots for wildlife is still permitted.

"CWD is spread from deer to deer and the potential for transmission increases when deer gather in larger, concentrated numbers," Batten said. "Feeding deer or placing minerals for deer unnaturally concentrates the animals and can help spread this deadly disease."

#### Q. When I fill my birdfeeder at night, a raccoon shows no fear of me. It walks within 2 feet, but I keep my distance. I had not seen him all summer, but he reappeared recently. Do you have any thoughts on his absence and return?

➔ It's conceivable the raccoon was able to forage more successfully when the weather was warm. But now that temperatures have dipped, the animal has returned to a known food source. Perhaps it doesn't show any fear of people because it is used to eating human food. Raccoons are notorious for exploiting easy sources of food and for growing comfortable around humans. If you haven't done anything to harass it, it may not have a reason to leave.

Because feeding wildlife – either inadvertently or on purpose – can lead to conflict and negative repercussions, we suggest you stop filling the feeder for at least



■ CWD Management Zone (all shaded counties)

■ In these counties, if you harvest a deer during Nov. 11-12, you must take it (or the head with at least 6 inches of neck attached) on the day of harvest to a designated CWD sampling station. See [short.mdc.mo.gov/ZiE](http://short.mdc.mo.gov/ZiE).





Raccoon

two weeks or bring it indoors. If the raccoon continues to reappear, you may need to forgo feeding altogether. Removing this food source is the best way to encourage this raccoon – and other foragers, such as bears – to move on.

**Q. I noticed hellbender eggs begin hatching in early November. How do the young survive Missouri’s cold winter temperatures?**

➔ As one of the few salamander species in the world to fertilize eggs externally, female hellbenders begin spawning in September and finish by November. Placed in depressions under flat rocks or within bedrock crevices, the eggs look like strands of glossy, white pearls. The eggs

will begin to hatch within four to six weeks. The hatchlings, called larvae, are nourished by yolk sacs – a process that can last up to three months – and guarded closely by the males, said Herpetologist Jeff Briggler. The males cope with the cold by lowering their metabolism and eating nearby crayfish and occasionally eggs in the nest.

Scientists believe hellbenders’ somewhat unusual fall hatch is an evolutionary defense against many preying species of fish. Most predators reduce feeding and movement during the winter months. This break in activity gives the hellbender larvae a chance to mature to the point where they can better evade predation and survive to adulthood.

# AGENT ADVICE

from

**Bob Lyons**

WARREN COUNTY  
CONSERVATION AGENT

Waterfowl season is upon us! Before you hit the water in search of your favorite species, be sure to check out the *Waterfowl Hunting Digest 2017–2018* and familiarize yourself with this year’s changes. First, waterfowl hunters can look forward to later seasons. Previously, hunters were mainly seeing local birds during the season opener because the big migration hadn’t occurred. With a later start date and a season split in the middle and south zones, hunters are given the opportunity to see a bigger population of ducks and enjoy greater success during their hunt. Second, bag limits have changed for two species. Hunters can now harvest two black ducks and one pintail. The U.S. Fish and Wildlife Service dictates bag limits, which vary from year to year based on population. For more information, pick up a copy of the *Waterfowl Hunting Digest* at local vendors or regional conservation offices, or view it online at [short.mdc.mo.gov/ZZf](http://short.mdc.mo.gov/ZZf).



## What IS it?

Can you guess this month’s natural wonder?

The answer is on Page 9.



# I AM CONSERVATION

Tom Love

Tom Love hosts free guided hunting and fishing events for disabled veterans at his 125-acre Gobbler Ridge Farm in Stoddard County.

→ Love spent a few years in the Marine Corps, so he is familiar with disabled vets and understands their needs. In 2012, he remodeled his farm's cabin, widening the doors and making it wheelchair accessible. He also set up a disabled-accessible hunting blind, and he manages his land to offer excellent hunting opportunities.

### He helps disabled vets get outside

Love's farm is known as the Disabled Veterans Wildlife Facility, and it serves 50-75 disabled vets each year. Visitors hunt, fish, and use the cabin free of charge.

### In his own words

"The farm gets heavy hunting pressure, so I have to utilize every acre to its full potential. In order to do this, I rely on our local MDC private land conservationist, Kara McSpadden. I hope visitors will promote the importance of habitat conservation, too."



Tom Love, front and center, welcomes a group of visitors to his Disabled Veterans Wildlife Facility.

by David Stonner



## THANK YOU FOR YOUR FEEDBACK

MDC would like to thank the more than 1,000 people who attended the 80th anniversary open houses, held August through October in Cape Girardeau, Jefferson City, Kirksville, Kirkwood, St. Joseph, Springfield, Winona, and Kansas City.

Director Sara Parker Pauley and conservation commissioners visited with attendees to share information and get feedback, including hundreds of comments. Popular topics included fishing regulations, turkey hunting, how to improve our conservation areas, future bear and elk hunting, and what we should focus on in the future. The open houses also featured refreshments and a variety of activities, such as nature crafts, fishing and a demonstration on how to clean and cook fish, trail walks, a presentation on butterflies and other important pollinators, a waterfowl identification workshop, and educational displays.

"Citizen involvement and participation have always been and continue to be important to the Department of Conservation," said Director Pauley.

Former *St. Joseph News-Press* outdoors writer Jeff Leonard was a guest speaker at the Sept. 26 open house in St. Joseph. He echoed Director Pauley's support of citizen involvement in conservation.

"The Missouri Department of Conservation is a vital entity, but just as important are all of you sitting here tonight," Leonard said. "Without concerned hunters, anglers, and other outdoor people, our past and present would not be what they are and our future would not look bright!"

He added, "None of us in this room would be able to live the outdoor lifestyles we do today if it weren't for the folks in MDC uniforms gathered here tonight and their predecessors



Director Sara Parker Pauley and Deputy Director Aaron Jeffries (right) speak with Missourians after a recent open house.

who have made the state of Missouri one of the best places in the country for an outdoors person to call home. We must work together to continually bridge the gap for the good of our wildlife and natural resources and hope that in another 80 years, they'll meet again to celebrate our successes and plan for a brighter future themselves."

John Winkelman, associate editor for *Outdoor Guide* magazine and host of the *Scenic View* outdoor radio program, was a guest speaker at the Sept. 7 open house at Powder Valley Conservation Nature Center in Kirkwood.

"Most often when we think of the Conservation Department, it's about the men and women who make sure everyone follows the rules to guarantee fairness for those who always follow the rules," Winkelman said. "However, more frequently, the department means access to places and things that we may never get to see or discover otherwise. Thanks to MDC, my family and I have enjoyed many wonder-filled opportunities throughout Missouri."

In addition to open houses, MDC was at numerous fairs and events around the state to share information and collect public comments.

## What IS it?

### GREATER ROADRUNNER

A member of the cuckoo family, the greater roadrunner (*Geococcyx californianus*) has a brown and pale streaked appearance, long tail, down curved bill, and four toes positioned like an X. People enjoy watching these rare, permanent residents of the southwestern corner of the state, where their presence still seems like a novelty. This species runs on the ground, snatching up insects, small reptiles and mammals, scorpions, and small birds.



Photograph by Noppadol Paothong



A least bittern chick stands above its nest one spring. This marsh bird relies on emergent vegetation like cattail to build nest platforms above the water's surface, which helps provide refuge from predators.

PHOTOGRAPH BY  
NOPPADOL PAOTHONG



# secretive marsh birds

**Researchers work to understand  
how these little-studied  
birds use Missouri's wetlands**

**BY AURIEL FOURNIER, DOREEN MENGEL, AND LISA WEBB**

# W

hat image comes to mind when you hear the word *wetland*? Do you immediately picture cattails or ducks and geese feeding in the shallow water? What sounds do you hear? The buzzing hum of mosquito wings? The splashing and grunting sounds of contented ducks? Or perhaps a red-winged blackbird calling repetitively from the top of the tallest rush or willow?

What you may not realize is there is so much more going on in wetland ecosystems than you can see and hear. Many species, such as small, amazing insects, crayfish, and amphibians, live much of their lives in wetlands and are rarely seen or heard. There is even a group of wetland birds that are infrequently seen or heard because of their elusive behavior, cryptic coloration, and infrequent calls.

## What's in a Name?

These elusive and cryptic birds, known as “secretive marsh birds,” include rails, bitterns, coots, and grebes, some of which breed in Missouri while others just stop here temporarily during fall and spring migration. Fall-migrating marsh birds stop in Missouri wetlands in August through November to fuel up before continuing on their 1,000-plus mile annual journey from their breeding grounds in the northern U.S. and southern Canada to their wintering grounds on the Gulf Coast of Mexico and farther south. They stop in Missouri again the following spring as they make the reverse trip from their wintering grounds back north where they will initiate a nest and hopefully raise their young before the summer breeding season is over.

Secretive marsh birds are among the least-studied birds in North America because their elusive behavior and, well, secretive ways make them very difficult to observe. This has contributed to a lack of understanding about their migratory movements and habitat selections when they stop to refuel at places like Missouri wetlands. Despite these challenges, marsh birds are worth learning more

about because they can help us better understand how wetlands function and what management actions are needed to ensure they leave Missouri in as good or better shape than when they arrived. For example, different species of rails, such as sora and Virginia rails, use different types of wetlands as they travel across countries during their migration. Their presence can serve as an indicator of a wetland's general health. They are also a great rallying point for birders and hunters alike, since, as they seasonally pass through the state, rails are sought after by both groups.



Least bittern

## Discovering the Unexpected

Because marsh birds are so poorly studied, there are many aspects of their lives and habitat requirements that we don't know about and await discovery by keen-eyed observers. One such discovery occurred when Auriel Fournier, then a

King rail





American bittern

**Secretive marsh birds are among the least-studied birds in North America. This has contributed to a lack of understanding about their migratory movements and habitat selections.**

graduate student at the University of Arkansas and researcher with MDC, saw a sora rail dive and swim underwater. This occurred when she heard her technicians shouting across the wetland one night while capturing rails. Her technicians had just tried to capture a sora, and it dove under the water to get away from them, then popped up several yards away. After this encounter, Fournier and her team observed this unusual sora behavior several times, eventually capturing it on video for the first time anywhere. It will be published in the *Wilson Journal of Ornithology* later this year.

## Secrets to Uncover

There are many other mysteries to discover and questions to answer regarding secretive marsh birds. MDC is committed to managing wetlands across the state to support all plants and animals that rely on these unique habitats, including marsh birds. One of the best ways to detect marsh birds is by playing a recording of their calls in spring. The birds typically answer the recorded calls during this time of year, revealing

their presence. However, it's only been in the past few decades that technology has produced devices small enough to easily carry into the marsh. Additionally, the recent development of standardized survey protocols has enabled researchers to compare results from one study area to another to learn more quickly about marsh bird habitat needs.

MDC, the U.S. Fish and Wildlife Service, and the USGS Missouri and Arkansas Cooperative Fish and Wildlife Research Units collaborated on two secretive marsh bird projects. One project focused on spring migration and the breeding season, and the other focused on fall migration.



## Spring Migration and Breeding Study

The spring portion of the study, conducted by University of Missouri graduate student Evan Hill, focused on understanding what wetlands the birds used during spring migration and how habitat conditions and management decisions in those wetlands influenced the birds' use. To locate secretive marsh birds, Hill and his technicians did over 1,600 call-back surveys at eight department-owned conservation areas and four national wildlife refuges across Missouri in spring 2013 and 2014. They heard and, in a few cases, saw approximately 1,400 secretive marsh birds, including sora rail, Virginia rail, king rail, least bittern, and American bittern. According to the study, sora were attracted to wetlands where water levels were drawn down slowly and remained through mid-April, whereas least bittern preferred wetlands with water drawdowns that were initiated in mid- to late-May. American bittern presence increased with slower drawdowns, with water present through May, later drawdowns (initiated in July), and deeper water (more than 5 feet).

Hill's team also searched wetlands for nesting marsh birds and found 71 least bittern nests, all of which were located in persistent emergent vegetation, such as cattail or bulrush. Least bitterns rely on this vegetation to build nest platforms above the water's surface, which helps provide refuge from predators. Least bitterns are the smallest member of the heron family and are unable to wade in deep water, so they cling to the robust vegetation. They are able to move around a wetland and forage at deeper water depths than other wading birds that walk through the wetland. Approximately 60 percent of least bittern nests were successful — which means at least one chick per nest fledged — and nests were more likely to be successful at water depths that ranged from 1.5 to 3 feet deep.

**Researcher Evan Hill conducts a call-back survey to better understand what wetlands marsh birds use during spring migration and breeding season.**

Understanding when species use different habitats and for how long helps wetland managers make **better informed decisions**, which benefits the entire ecosystem.



Sora



Virginia rail



Yellow rail

## Fall Migration Study

Rails fall migration is especially difficult to study because, unlike in spring, when you can broadcast the calls of a rail and increase your chances of hearing or seeing them, the birds don't usually vocalize this time of year. Therefore, in order to find the birds, Fournier had to find another way of increasing the chances of finding them. This is why she and her team were in a wetland in the middle of the night. It turns out it's easier to find a rail at night during fall migration.

By doing nocturnal surveys, Fournier and her technicians were able to observe approximately 8,000 rails over the past five years, including three species — sora, Virginia, and yellow rails. Soras are by far the most abundant, arriving in Missouri in early August and passing through until early November. Yellow

and Virginia rails have a shorter migration, arriving in mid-September and migrating until late October, and are much less abundant.



Researcher Auriel Fournier searches for sora at night during rail fall migration.

While the location of these three rails overlaps in Missouri, they often use slightly different habitats, even within the same wetland. Soras are generalists, spreading out over a wide range of wetland conditions, from drier areas to deep water. They often occur at the highest densities in areas with shallow water depths and dense vegetation, like smartweed and wild millet, that produce large numbers of seeds. Yellow rails use shallower areas with dense vegetation. They avoid deep water areas, preferring places where the ground is just moist. Virginia rails can be found somewhere in between these conditions, preferring shallow water depths, with a tendency toward areas containing tall wetland vegetation, such as cattails, instead of the shorter, seed-producing plants.

## B.K. Leach Conservation Area





## A Balancing Act

Wetland management is part science and part art — combining the information learned from research projects, like the marsh bird studies, with the experience and knowledge of local managers. This balance ensures that the department continually improves how it makes decisions and uses information. Understanding when species use different habitats and for how long helps wetland managers make better informed decisions, which benefits the entire ecosystem and all the species that may use the wetland, whether those are rails, waterfowl, or frogs.

Think back to your initial image of a wetland and see if it has changed. Now, perhaps you are picturing some of those less-seen and -heard critters. Perhaps, the next time you visit a wetland, you'll arrive with increased awareness that there is more than meets the eye as you look across the seemingly empty pool of water. Maybe you'll be on the lookout for a shy marsh bird hiding in the wetland plants as it refuels before continuing with its spring or fall migration. These marvelous marsh birds and many other amazing creatures await your discovery in our wondrous Missouri wetlands. ▲

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*Auriel Fournier was a Ph.D. student with the Arkansas Cooperative Fish and Wildlife Research Unit at the University of Arkansas when studying fall migrating rails for MDC. She is now a postdoctoral research associate at Mississippi State*



### Researchers measure a sora during fall migration.

*University, where she is learning to enjoy life on the coast, exploring the salt marsh, and gardening year-round.*

***Doreen Mengel** is a wetland/ water bird ecologist who is happiest traipsing through wetlands with her Labrador retriever, looking for amphibians and ever-elusive rails. She works out of the Central Regional Office and Conservation Research Center in Columbia.*

***Lisa Webb** is an assistant unit leader with the U.S. Geological Survey Missouri Cooperative Fish and Wildlife Research Unit at the University of Missouri. When not working on research to better understand Missouri's wetland dependent wildlife, she enjoys exploring Missouri's outdoor recreational opportunities and training her new short-haired pointer pup.*

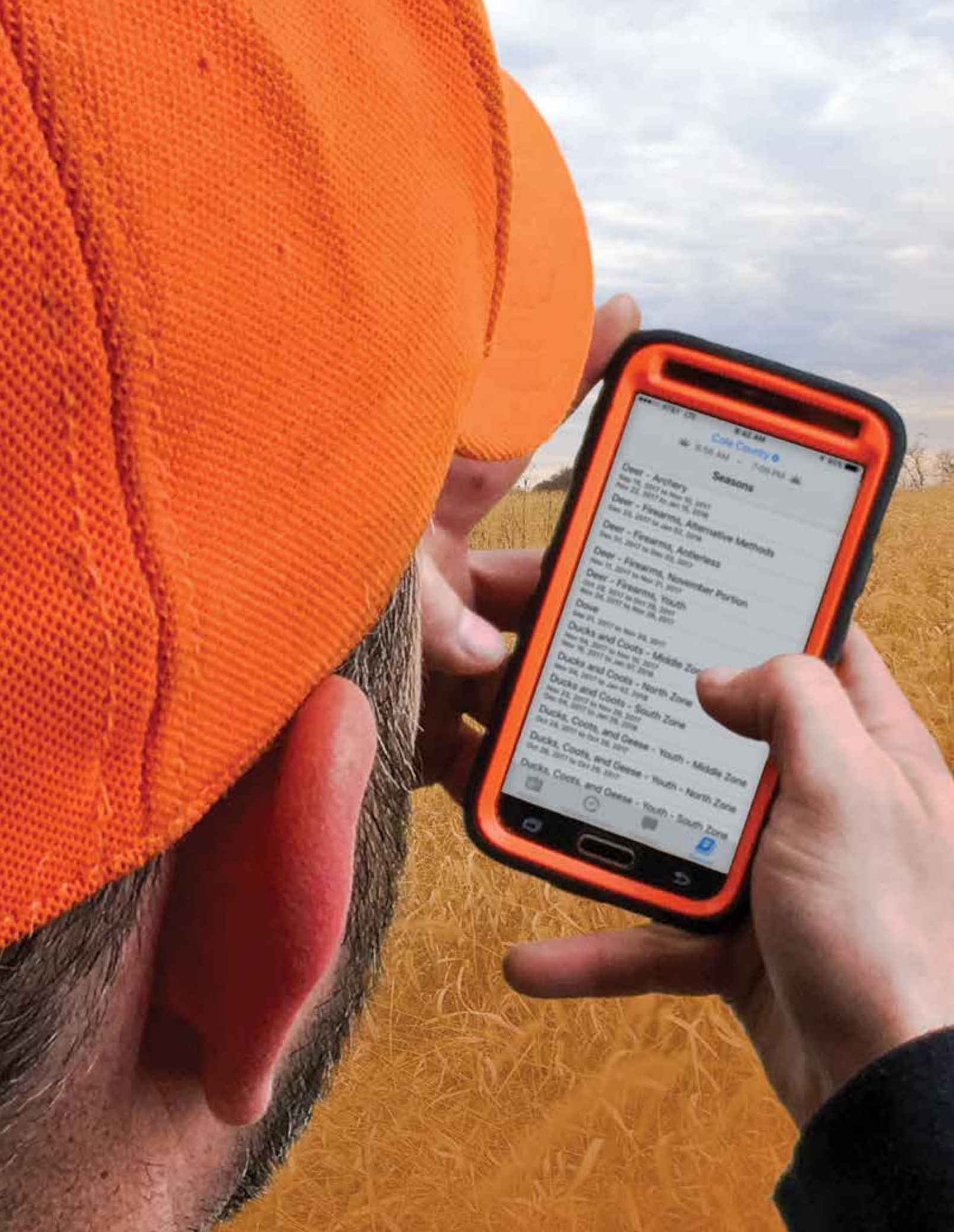
### It's All About the Mouth and Feet

During my undergraduate studies, I took a *Natural History of Vertebrates* course taught by Dr. Ernest E. Provost, who was well-known as a tough, but extremely knowledgeable teacher. He often told us, "If you want to know how an animal makes its living, look at its mouth and feet. They have the most contact with the environment and will tell you what you need to know." Dr. Provost was infamous for an ornithological test he once conducted because he did not think his students were listening to his advice. They arrived for their lab test and found all the bird specimens covered by paper bags. They were required to identify each bird based simply on their feet. This may sound a bit extreme, but it really is doable. You can learn a lot by looking at an animal's feet.

Many wetland-dependent birds, such as ducks, geese, and swans, have webbed feet, which enable them to easily swim through water. A sora, on the other hand, has virtually no webbing on its feet, but rather has long toes that can spread wide apart. This configuration is helpful in distributing the bird's light body weight as it walks across lily pads, soft mud, and otherwise maneuvers through a wet, soggy environment. However, these feet give no clue that swimming underwater would be a strategy that worked for a sora escaping a potential predator or a curious researcher.

—Doreen Mengel





# MISSOURI HUNTING

# 3.0

Digital technology makes it  
easier for everyone to go hunting  
and celebrate success

by Lucas Bond



Odds are you carry a computer in your pocket or pocketbook. You use it constantly – sending messages, making appointments, and finding places to eat. Did you know you can use your smartphone, tablet, or laptop to get ready for your next hunting trip, too?

More Missourians are using digital technology, including MDC's online resources, to make their hunting trips more convenient, successful, and fun.

### Planning Your Hunts

Before the rise of digital technology, hunters scouted the woods, drew maps, and prepared for hours to get ready for a hunt. Now, hunters use their smartphones and other digital devices to buy their permits, find new places to hunt, avoid trespassing, scout an area, and dodge bad weather on opening day.

### Getting Your Permits

When Missouri issued its first hunting permits in the early 1930s, the only way hunters could get them was by going to the county clerk's office at their local courthouse. After MDC was established in 1937, hunters were able to purchase permits at vendors around the state, including gas stations, convenience stores, and MDC offices. Missouri hunter Chuck Koenig Jr. remembers purchasing his permits at the local convenience stores when he was younger.

"I remember the days I would have to go to a store and purchase my permit and have almost 4 feet of licenses to carry.





Thank goodness that’s no longer the case!” Koenig said. “I now can get on the Missouri Department of Conservation’s website or use the MO Hunting App. This is a huge tool for hunters. I now don’t even have to carry a piece of paper for my hunting permit — all I need is my phone.”

Now, he says, technology has improved the permit-purchasing process for the convenience and benefit of hunters.

### Finding New Places to Hunt

Koenig also uses his phone’s terrain-mapping technology to find private landowners who may be willing to let him hunt on their land.

“I use a land application on my phone a lot,” he said. “The LandGlide app tells us who the landowner is, where the land is located, and it shows the boundaries of the land. The app will also give us the address and phone number of the landowner, so I could call and talk with the owner to see if I could hunt on their land.”

Mapping technology also lets you see where you are in relation to an owner’s property line, helping you avoid trespassing if boundaries aren’t clearly marked.

“Respecting private property is important,” Koenig said. “Hunters who don’t ask permission or ignore property lines give all hunters a bad name.”

For their part, some Missouri landowners are welcoming hunters onto their land through the new Missouri Recreational Access Program (MRAP). Featured in last month’s *Conservationist*, MRAP helps landowners who manage for wildlife offer the public more hunting, fishing, and other outdoor recreational opportunities. To see if there’s a participating landowner near you, visit [mdc.mo.gov/mrap](http://mdc.mo.gov/mrap).

Finding places to hunt on Missouri’s public lands is a similar web-browsing process. Visit [mdc.mo.gov/atlas](http://mdc.mo.gov/atlas) to search nearly 1,000 Missouri conservation areas, many of which are managed for specific kinds of hunting, such as dove, quail, turkey, waterfowl, or deer. In addition, the Mark Twain National Forest and many national wildlife refuges offer hunting opportunities in Missouri. Your favorite search engine can help you find them.

### Scouting the Area

There was a time when hunters would log hours in the woods looking for signs of deer and big bucks on their property. While hunters still enjoy time in the woods, the invention of digital game cameras has lessened the time they need to spend scouring the woods for sign.

“Before game cameras, hunters really didn’t know exactly where deer were on their land — it was really just a guess,” said Andrew White, an avid hunter in northwest Missouri. “But now with game cameras, I can check photos from

**Andrew White embraces all types of technology improvements for hunting.**

LUCAS BOND



### Connect With Outdoor Missouri Online

MDC makes getting outdoors and into nature more convenient for all Missourians. From hunting and fishing permits to free mobile apps, conservation area maps, and weekly fishing reports, MDC’s online resources help keep nature at everyone’s fingertips. Explore more at [mdc.mo.gov](http://mdc.mo.gov).

#### ✘ Get Hunter Ed Certified

Hunter education is required for most firearms hunters in Missouri, but MDC makes it easy to complete your requirement online if you’re 16 or older. Learn Missouri’s hunter ed requirements, review exemptions, and browse different ways to complete the program at [mdc.mo.gov/huntereducation](http://mdc.mo.gov/huntereducation).

#### ✘ Download Free Apps

Three free apps for Android or iPhone include MO Hunting, MO Fishing, and MO Conservationist Magazine. Download all three at [short.mdc.mo.gov/Zi2](http://short.mdc.mo.gov/Zi2).



The **MO Hunting** app lets you purchase and view your annual hunting permits as well as Telecheck deer and turkey permits directly from your mobile device.

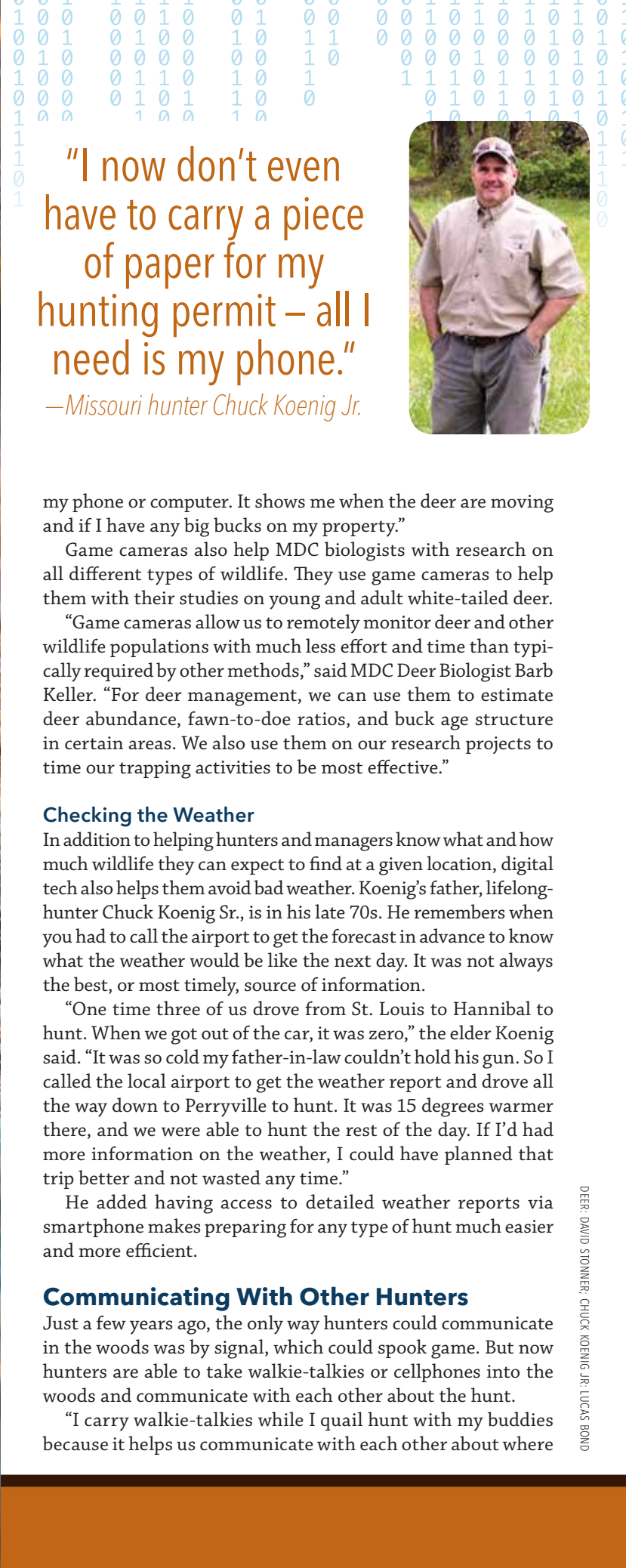
The **MO Fishing** app helps you get ready for your next fishing trip. Purchase and view your fishing permits and search for nearby bodies of water. View fish attractors, boat ramps, parking lots, and restrooms available for public use.



The **MO Conservationist Magazine** app lets you read the *Missouri Conservationist* on your smartphone or tablet.

#### ✘ Browse the Online Field Guide

MDC’s field guide is a great place to learn more about Missouri’s fish, forests, wildlife, and the many different kinds of habitat they depend on for survival. Check out what to look for right now, or browse by species group and other features. Visit [mdc.mo.gov/field-guide](http://mdc.mo.gov/field-guide).



“I now don’t even have to carry a piece of paper for my hunting permit – all I need is my phone.”

—Missouri hunter Chuck Koenig Jr.



my phone or computer. It shows me when the deer are moving and if I have any big bucks on my property.”

Game cameras also help MDC biologists with research on all different types of wildlife. They use game cameras to help them with their studies on young and adult white-tailed deer.

“Game cameras allow us to remotely monitor deer and other wildlife populations with much less effort and time than typically required by other methods,” said MDC Deer Biologist Barb Keller. “For deer management, we can use them to estimate deer abundance, fawn-to-doe ratios, and buck age structure in certain areas. We also use them on our research projects to time our trapping activities to be most effective.”

### Checking the Weather

In addition to helping hunters and managers know what and how much wildlife they can expect to find at a given location, digital tech also helps them avoid bad weather. Koenig’s father, lifelong-hunter Chuck Koenig Sr., is in his late 70s. He remembers when you had to call the airport to get the forecast in advance to know what the weather would be like the next day. It was not always the best, or most timely, source of information.

“One time three of us drove from St. Louis to Hannibal to hunt. When we got out of the car, it was zero,” the elder Koenig said. “It was so cold my father-in-law couldn’t hold his gun. So I called the local airport to get the weather report and drove all the way down to Perryville to hunt. It was 15 degrees warmer there, and we were able to hunt the rest of the day. If I’d had more information on the weather, I could have planned that trip better and not wasted any time.”

He added having access to detailed weather reports via smartphone makes preparing for any type of hunt much easier and more efficient.

### Communicating With Other Hunters

Just a few years ago, the only way hunters could communicate in the woods was by signal, which could spook game. But now hunters are able to take walkie-talkies or cellphones into the woods and communicate with each other about the hunt.

“I carry walkie-talkies while I quail hunt with my buddies because it helps us communicate with each other about where

DEER: DAVID STONNER; CHUCK KOENIG, JR.: LUCAS BONDI



the dogs are, if the dogs are on point, and where the quail are,” said Koenig Sr. “Walkie-talkies are a great tool for us quail hunters.”

He said walkie-talkies and other communication tools make hunting more convenient in so many ways. It’s even hard to imagine not having some of the communication tools we have now.

Cell phones and walkie-talkies are also very important tools for safety. If there is an accident or an issue while hunting, you can use either of these communication devices to get help immediately. Before there were smartphones and walkie-talkies, hunters blew whistles or yelled for help during an emergency — and hoped someone would come to their aid.

## Keeping Track of Your Dogs

Quail hunters are benefiting from a new digital technology that minimizes the stress of tracking their hunting dogs when in the field. New global-positioning-system (GPS) dog collars have allowed hunters to focus more on the quail and less on keeping track of their dogs.

White has hunting dogs he trains and uses for quail hunting. He has firsthand experience of the benefits of GPS-collar technology, including remembering a time when there were no collars to help train or locate bird dogs.

“Back in the old days, we didn’t have tracking collars, and you had to keep the dogs in close range while quail hunting. This takes a lot of your focus off hunting and onto the dogs,” White said. “But now with



Share your successful hunts on social media with **#mdcbragboard**



**GPS collars allow hunters to focus more on quail and less on keeping track of their hunting dogs.**

technology, you can have a GPS-tracking collar on your dog and know where it’s at all the time and focus on hunting.”

## Celebrating Success

Missouri’s hunting heritage remains strong in many families and communities. It’s still a big event, requiring intimate knowledge of nature and tying friends and family to the outdoors. A successful hunt is something to celebrate, and digital technology has made bragging about your harvest easier, too. Social media gives us plenty of opportunities to post photos and videos. A successful hunt can also mean putting a lot of delicious wild game on the table, and the internet is full of cooking sites with collections of recipes for turning your take into a family feast.

While the spirit and traditions of hunting haven’t changed much through the centuries, preparing for the chase and celebrating a successful hunt in Missouri have gotten much easier, thanks to digital technology. MDC has certificates online you can download to commemorate your first hunt, as well as guidelines to prepare your game for taxidermy. Visit MDC’s Trophies and Certificates pages at [short.mdc.mo.gov/Z3S](https://short.mdc.mo.gov/Z3S). ▲

*Lucas Bond, statewide news services coordinator, is an avid Missouri deer hunter and angler.*



# Chasing

PHOTOGRAPH BY  
DAVID STONNER



# winter rainbows



A MISSOURI URBAN TROUT FISHING TRADITION  
by Bill Graham

*A* rainbow trout flashing crimson-on-silver colors as a fishing rod bends makes an angler smile on any shore, perhaps even amid a city. Welcome to MDC's urban winter trout fishing, a close-to-home option for getting outdoors and potentially landing a tasty entrée to cook for dinner.

Trout swimming in urban ponds and lakes requires a partnership between nature and conservation. The winter air chills the waters. MDC provides the trout and some fishing sites. Local partners, such as cities and counties, also provide lakes or ponds for fishing at public parks, and they often help pay for hatchery-reared trout to stock. Anglers enjoy connecting with a feisty fish that requires cold, oxygen-rich water.

“The first days after they stock are crazy, you can pull in one after another,” said Jim Davis of Sedalia, who fishes at that city’s 3-acre Liberty Park Lake. “But if they’ve been in there a month or so, they get a little smarter and it takes a little more patience.”

## On Your Mark, Get Set, Fish!

In November, MDC fish stocking trucks roll up to ponds and lakes across the state with trout reared at the department’s Bennett Spring Fish Hatchery or Montauk Fish Hatchery. These trucks will carry 75,000 rainbow trout to 34 ponds and lakes at conservation areas or waters in city or county parks. The fish slide from tanks on the truck into the water. Then the fishing fun begins.

The St. Louis metro area has winter trout fishing in 16 lakes. Kansas City area anglers will find rainbows in seven lakes. Trout are also stocked in 11 other lakes in Missouri towns.

Anglers with proper permits can catch and keep trout at some lakes through the winter. While at others, such as Sedalia’s Liberty Park Lake, the fishing is catch-and-release from Nov. 1 until Feb. 1. But after that, anglers with valid Missouri fishing licenses and state trout permits can keep what they catch up to the daily limit of four trout.

Davis enjoys the fishing and camaraderie.

“There’s a regular group of us that see each other trout fishing every year,” Davis said. “It’s a lot of fun.”

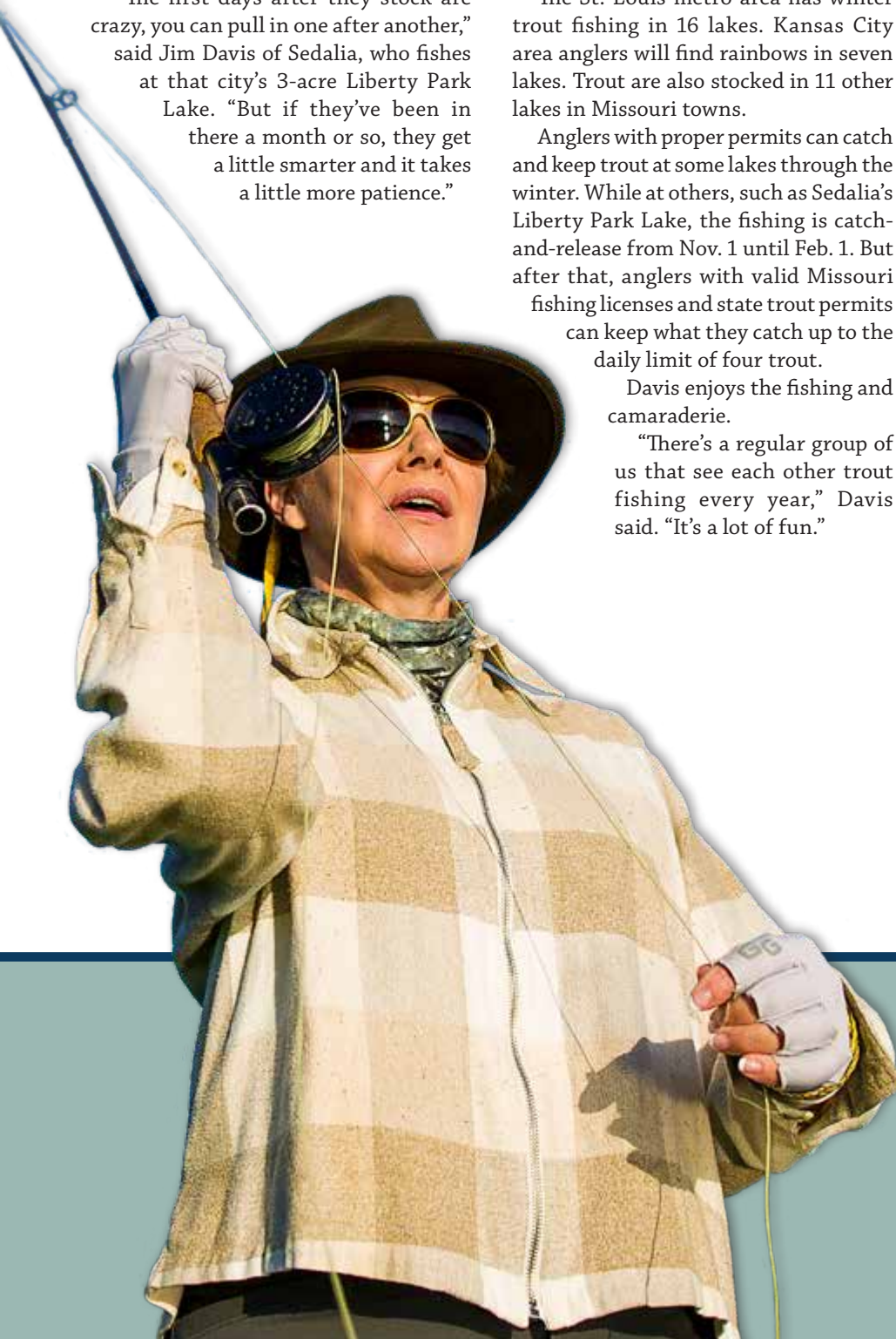


## No Easy Catch

Urban winter trout fishing comes with no guarantees about weather or if the fish are hungry and biting lures. Anglers must still make fly, lure, or bait presentations that appeal to sometimes finicky fish. Fishing’s satisfactions are due in part to when success triumphs over uncertainty. But anglers can count on a chance to catch a trout in waters where cold-water fish are not normally found.

Kathi Munholland wields a fly rod for rainbows during winter at the lakes MDC stocks in the Kansas City area. Munholland, of Overland Park, Kansas, likes fishing at Coot and Plover lakes at MDC’s James W. Reed Memorial Wildlife Area in Lee’s Summit. She’s also fished at Sedalia and at a new lake for the program, Johnston Lake at Raymore. She exchanges winter trout tips with her friends in the area’s Gals Go Fish club. The fly-rodders tweak tactics for trout swimming in waters beyond their normal range.

“It’s not like you have to pack up and go to the Ozarks to catch trout. You can just keep a rod and reel in your trunk.”  
*Kathi Munholland*





**Fish stocking trucks carry rainbow trout to urban ponds or lakes during winter from MDC's Bennett Spring or Montauk fish hatcheries.**

A weighted Jujubee Midge in solid colors, a zebra midge in red, or a fluffy rainbow-colored fly are among her favorite winter trout flies. Sinking tip fly lines help get flies down to deeper water faster. She uses a 9-foot, 6-weight fly rod. On the business end she starts with a 4x tippet.

Stocked trout take some days to settle into new surroundings, she said. They soon adjust to natural feeding habits and the lake's bottom structure. Early morning and late evenings become their prime feeding times and the best time to catch trout.

"That's why a lot of people fish for them on their way to work or after work," Munholland said. "It's not like you have to pack up and go to the Ozarks to catch trout. You can just keep a rod and reel in your trunk."

Many urban park lakes have grassy, open shores that make back casting a fly line a bit easier. Winter trout fishing is a good place to introduce youngsters

"One thing I love about fly-fishing is matching the hatch," Munholland said. "But in winter, not as much. The fish are down deeper, and those lakes are not their natural habitat. You need to use something that will get down to them, like a fly with a bead (weighted) head."

**A weighted fly, such as a bead head nymph that sinks quickly, will help anglers reach trout that stick to deeper water during winter in urban lakes.**



to fly-fishing and rainbow trout. Although, once trout have settled into habits in urban lakes, they can begin to stay beyond the casting range of many fly-rodders.

"At times, the fish are farther away than we can get," Munholland said.

## **Practice Makes Perfect**

Ed Horack of O'Fallon solves that problem with spin fishing gear and techniques he's honed at St. Louis area lakes since MDC's urban winter trout program began in 1990. He likes fishing at MDC's August A. Busch Memorial Wildlife Area, particularly Lake 22. But he also catches trout from Jefferson Lake at the city of St. Louis' Forest Park.

When trout are first stocked and aggressive, Horack says anglers catch them by casting crankbaits, spinners, spoons, and small jigs. But as trout begin feeding naturally, they become warier of lures.

"After about two days, it's cheese bait and dough bait time," he said.

Horack favors a light-action or ultra-light spinning rod. But he prefers a long rod for winter trout fishing, such as his 9-foot rod designed for crappie fishing. The extra rod length helps him make long casts when the fish are staying 30 or 40 feet from shore. Also, if moss or other aquatic growth creates snag-prone clutter near shore, he can lift lures and fish up over it. Light line, such as 2-pound test, is important because trout have sharp eyes and water is clear in winter. But it can be used as a tippet tied to a float or ahead of 4-pound test backing on the reel spool.

"You've got to be sure to have the reel's drag set right or they'll break the line," Horack said. "In the last two years, we've been catching 12- to 14-inch fish. If they see that spoon going through the water, they'll come and nail it, and it's a ball."

MDC's hatchery staff also stocks a few brood fish no longer needed to produce eggs. Those fish are lunkers that can weigh 4 pounds or better.

A few years ago, Horack and a buddy were catching trout at a Busch area lake when a big fish struck his buddy's lure and peeled line off the reel. When he was finally able to bring the fish close to

shore, Horack went in, without fishing waders, in icy water to help land it. Then they broke out a portable scale and tape measure.

"It weighed 10 pounds, 5 ounces, and was 27 inches long," he said. "That was on New Year's Day. The trout just decided it was time to bite, and it did."

Horack uses a jig-and-float rig for catching wary trout in deeper water offshore. Those fish often congregate at sudden drop-offs in the bottom. To reach them, he ties a micro jig about 30 inches below a weighted 2-inch or 4-inch

torpedo float. The plastic bobbers let the jig hang straight down, and any slight movement can indicate trout nipping at the jig. They may nibble and let go if the angler doesn't set the hook quickly.

"Trout fishing is a very visual sport," he said. "You've got to watch that rod tip. You've got to feel that slightest little tink on the rod."

Natural- or artificial-scented baits can be effective fish catchers if allowed, Horack said. But they need to be fished with a rig that floats the bait off the bottom where fish can see it as well as smell it.

"I don't know why because it's not a natural food for them," he said, "but trout like garlic."

The type of bait, lures, and hooks allowed may vary depending on where you're fishing. Before you head out, check *A Summary of Missouri Fishing Regulations*, available at your local MDC office, where permits are sold, or online at [short.mdc.mo.gov/Z3C](http://short.mdc.mo.gov/Z3C).

## A Good Winter's Meal

For many urban anglers, winter trout fishing brings a chance to put fresh fish

Trout will strike spinners, spoons, and scented baits. Some anglers prefer using micro jigs fished under a plastic float when trout become wary. Anglers should check regulations before heading out because some urban trout fishing lakes prohibit specific lures or baits.



"Trout fishing is a very visual sport. You've got to watch that rod tip."  
Ed Horack

on the supper table. Horack releases most fish he catches, but not all.

“There’s nothing like hickory smoked trout,” he said. “I smoke ’em at 200 degrees, leave them in for three hours with the head and skin on or off. I also fillet, bread, and fry them. They eat excellent.” ▲

*Bill Graham is an MDC media specialist from Platte City who enjoys dining on rainbow trout almost as much as he enjoys fishing for them.*



NOPPADOL PAOTHONG

DAVID STONNER



## An Urban Winter Trout Starter Guide

Catching urban winter trout is a sport open to everyone. Some lakes have accessible fishing docks and piers for anglers with mobility challenges. Don’t hesitate to ask other anglers for fishing tips. Many anglers enjoy helping others.

### Getting Started

- **Permits:** Statewide trout fishing regulations apply. All Missouri residents over age 15 and under 65 must have a valid fishing permit, and all nonresidents over age 15 must have a fishing permit. To keep trout, all anglers must have a Missouri trout permit.
- **Regulations:** Remember, some lakes stocked with trout offer catch-and-release fishing only until Feb. 1, when anglers can begin keeping trout. Other lakes offer catch-and-keep fishing, with proper permits, through winter. The daily limit is four trout at sites where anglers are allowed to keep trout. Some lakes have bait or lure restrictions. Check the regulations for waters where you plan to fish before going. Visit [short.mdc.mo.gov/Z5T](http://short.mdc.mo.gov/Z5T).
- **Where to Fish:** For a list of urban lakes MDC stocks with trout in winter, visit [short.mdc.mo.gov/ZoH](http://short.mdc.mo.gov/ZoH).
- **Stocking:** When and how often a lake gets stocked with trout varies. Rain, warm weather in late autumn, or ice in winter can delay stockings. Lakes designated for catch-and-keep fishing all winter may be stocked more than once, perhaps three or four times. While smaller ponds designated as catch-and-release sites may be stocked once in November.
- **Designated Programs:** How urban winter trout programs are designated may depend on local partners assisting with costs. For example, Columbia and the Mid-Missouri Chapter of Trout Unlimited are partners with MDC in stocking the city’s Cosmo-Bethel Lake near Rock Bridge High School. Fishing at that lake is catch-and-release until Feb. 1. Anglers who want to support winter trout fishing can also drop money in a donation box or send donations to the city’s parks department.
- **Trout Updates:** The most up-to-date information on MDC’s winter trout stockings in the KC Metro Area is available by calling the trout hotline at 816-525-0300, ext. 4001. In the St. Louis area, call 636-300-9651 to get the latest information. Anglers in other cities should call their nearest MDC office for information.
- **About Trout:** Rainbow and brown trout are not native to Missouri. But they can survive in cold, spring-fed streams or in lakes where water conditions are cool, such as at Lake Taneycomo, which is chilled from water released from the bottom of Table Rock Lake. Trout fishing is found at several streams in the Ozarks, at Lake Taneycomo, and the four trout parks with a focus on trout fishing.
- **Timing:** MDC stocks trout in urban lakes during winter to provide additional fishing opportunities. Urban lake water temperatures are favorable to trout for a limited time, so stocking occurs only in winter. That allows anglers to harvest trout before water temperatures become too warm.
- For more information about Missouri trout, visit [short.mdc.mo.gov/Zou](http://short.mdc.mo.gov/Zou).

# Get Outside → Ways to connect with nature

## in NOVEMBER



**1 MALLARD MIGRATION**  
Mallard ducks are gathering at nearby lakes and ponds. You can't miss the male's distinctive bright green head.



**2**



**MAKE A PIE**  
If you have a hankering for pecan pie, now is your time! Pecans are ripening and falling from trees.

**3**

**SOUTHEAST REGION**

### Fireside Tales

Friday, Nov. 17 • 6-7:30 p.m.  
Cape Girardeau Conservation Nature Center, 2289 County Park Drive, Cape Girardeau, MO 63701  
Registration required, call 573-290-5218 by Nov. 17  
All ages  
Enjoy a hot beverage and sit around the fire as we spin stories about Missouri's wildlife. Bring your own camp chair and a blanket for your lap.

#### Natural Events to See This Month

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



Milkweed pods open



Female black bears are in their winter dens



Scaup and ring-necked duck populations peak



# 6 Thankful for Trees

ST. LOUIS REGION

Saturday, Nov. 4 • 10-11:30 a.m.  
 Rockwoods Reservation  
 2751 Glencoe Road, Wildwood, MO 63038  
 Registration required, call 636-458-2236 by Nov. 3  
 Ages 5-12

Come learn why tree leaves change color in the fall as well as how animals use trees and fallen leaves to prepare for winter. We will also collect leaves and make leaf placemats. Please only register the children participating.

# 4

## COMFORT FOOD

Time to put up your bird-feeding stations. Birds begin gathering at feeders this time of year.

# 5

## SCAVENGER HUNT

Take a walk through the woods and scan the leafless trees for **old bird nests** and **gray nests** of bald-faced hornets.



# 7

## FROST FLOWERS

With the first hard frost of the season, look for flowerlike ribbons of ice on stems of dittany, stinkweed, and white crownbeard.



Woodchucks are asleep in underground nests



Hellbender eggs begin hatching

# 8

## LAST CALL

Listen closely for the cricket's final chirp of the season.



# Places to Go

## OZARK REGION

### Mudpuppy Conservation Area

Deceptively named area's secret revealed

by Larry Archer

✦ Amidst the clear, gravel-bottomed Little Black River, more than 1,000 acres of forest, and a 353-acre designated natural area in southeast Missouri, Mudpuppy Conservation Area (CA) hides a dirty little secret.

"We don't have any mudpuppies here," said Steve Paes, Mudpuppy CA manager.

The area's flora and fauna is diverse — deer and turkey hunting is considered good, as is the squirrel hunting, the area is included on the Great Missouri Birding Trail, and a variety of both upland and bottomland tree species can be found in its forests — but one thing you will not find is the aquatic salamander that is its namesake.

Perhaps that is because mudpuppy is more relatable — and easier to say — than the real reason this 1,400-acre parcel between Doniphan and Poplar Bluff was purchased in 1988: protection of the endangered Curtis pearlymussel.

Mudpuppy CA's nearly 5 miles of riverfront along the Little Black River is home to the endangered freshwater mussel, and proper management of the area is key to its continued survival, Paes said.

"The riparian habitat protecting the river is the number one priority," he said. "Everything is geared toward water quality and protecting the river."



**The endangered Curtis pearlymussel relies on the Ozark habitat of the Little Black River at Mudpuppy CA.**

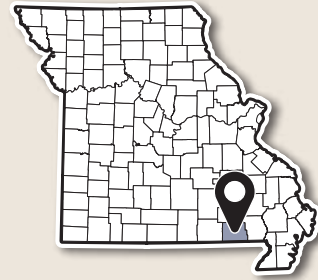


TRUMPETER SWANS: STEVE PAES;  
CURTIS PEARLYMUSSEL: CLIFF WHITE





Although rare in Missouri, these trumpeter swans were drawn to the many ponds at Mudpuppy CA.







### MUDPUPPY CONSERVATION AREA

consists of 1,404 acres in Ripley County. From Doniphan, take Highway 160 east 6 miles, then Route BB north 4 miles.

N36° 42' 22.9399" | W90° 42' 9.0101"  
short.mdc.mo.gov/Z5N 573-226-3616

### WHAT TO DO WHEN YOU VISIT

-  **Bird Watching** Included on the Great Missouri Birding Trail ([greatmissouribirdingtrail.com](http://greatmissouribirdingtrail.com))
-  **Camping** Primitive, with no amenities provided
-  **Canoeing** Area includes 4.91 miles of Little alt text. Photograph by Cliff White Black River
-  **Fishing** Fair populations of bass, sunfish, and suckers
-  **Hiking** One-quarter mile Trout Lily Trail
-  **Hunting** **Deer** (good) and **turkey** (good). Deer and turkey regulations are subject to annual changes, so refer to the *Spring Turkey* and *Fall Deer and Turkey* booklets for current regulations. **Squirrel** (good) and **rabbit** (fair).

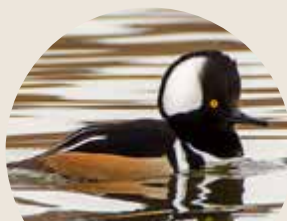
"We have a couple of big fields – 20-acre fields – near the river. I usually go there bird watching."

–Mudpuppy CA Manager Steve Paes

### WHAT TO LOOK FOR WHEN YOU VISIT



Red-shouldered hawk



Hooded merganser



Swamp rabbit



White oak



## Red Admiral Butterfly

*Vanessa atalanta*

### Status

A common Missouri butterfly. In the same genus as American lady and painted lady butterflies.

### Size

1½–2¼ inches long; larvae to about 2 inches

### Distribution

Statewide



### Did You Know?

The species name, "atalanta," comes from a character in Greek mythology. The orphaned Atalanta was raised in the woods by a bear and grew up to be an awesome and independent huntress.

**H**ere today, gone tomorrow. That's the way of the male red admiral. Because they roam widely when feeding, a male rarely uses the same territory for more than one day. The best perching sites and surrounding territory tend to be selected by different males each day. Though they are common in woods, edges of woods, and grassy, open areas, especially gardens, the red admiral you see today might not be the red admiral you see tomorrow, especially if it's a male on the prowl.



### LIFE CYCLE

The red admirals arrive from the south in March and continue to fly into November. Females lay eggs singly on leaves of host plants. Larvae roll the leaves, using silk to bind the edges together, constructing a little shelter for themselves. Hibernation occurs in the adult or pupal stage, though they do not survive very cold temperatures. Regions with cold winters are recolonized by new butterflies arriving north in spring.



### FOODS

Caterpillars eat plants in the nettle family, including wood nettle (*Laportea*) and stinging nettle (*Urtica*). Adult red admirals drink tree sap, juices from decaying fruit, and moisture from animal droppings. Secondly, they visit flowers, including milkweeds, clovers, and asters. They are also found at mud puddles and in damp places along creek beds and lake shores.



### ECOSYSTEM CONNECTIONS

In fits of itchy discomfort, we've all wondered "Why are there stinging nettles?" That question is answered in part by this beautiful butterfly, which requires nettle plants in order to live. This is a wonderful reminder that nature is interconnected, and it doesn't revolve around us.

# Outdoor Calendar

MISSOURI DEPARTMENT OF CONSERVATION

## FISHING

### Black Bass

Impounded waters and most streams north of the Missouri River:  
Open all year

Most streams south of the Missouri River:  
May 27, 2017–Feb. 28, 2018

### Nongame Fish Gigging

Streams and Impounded Waters,  
sunrise to midnight:  
Sept. 15, 2017–Jan. 31, 2018

### Paddlefish

On the Mississippi River:  
Sept. 15–Dec. 15, 2017

### Trout Parks

Catch-and-Release:  
Nov. 10, 2017–Feb. 12, 2018

## TRAPPING

### Beaver, Nutria

Nov. 15, 2017–March 31, 2018

### Other Furbearers

Nov. 15, 2017–Jan. 31, 2018

### Otters, Muskrats

Nov. 15, 2017–Feb. 20, 2018

### Rabbits

Nov. 15, 2017–Jan. 31, 2018

### Free MO Hunting and MO Fishing Apps

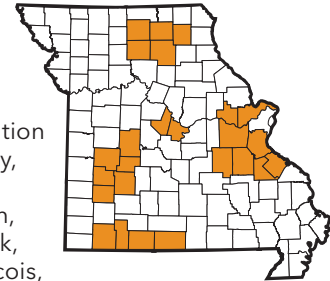
MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at [short.mdc.mo.gov/Zi2](http://short.mdc.mo.gov/Zi2).



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).

### Reminder to Deer Hunters

MDC is conducting mandatory CWD sampling of harvested deer in 25 select counties opening weekend of the fall firearms deer season, Nov. 11 and 12. Hunters must take deer to a sampling station if harvested in the following counties: Adair, Barry, Benton, Cedar, Cole, Crawford, Dade, Franklin, Hickory, Jefferson, Knox, Linn, Macon, Moniteau, Ozark, Polk, St. Charles, St. Clair, St. Francois, Ste. Genevieve, Stone, Sullivan, Taney, Warren, and Washington.



Find mandatory CWD sampling stations and other related information about CWD online at [mdc.mo.gov/cwd](http://mdc.mo.gov/cwd) and in our 2017 *Fall Deer & Turkey Hunting Regulations and Information* booklet, available where permits are sold and online at [short.mdc.mo.gov/ZZf](http://short.mdc.mo.gov/ZZf).

## HUNTING

### Coyote

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

Open all year

### Crow

Nov. 1, 2017–March 3, 2018

### Deer

Archery:

Sept. 15–Nov. 10, 2017

Nov. 22, 2017–Jan. 15, 2018

Firearms:

▶ November portion:

Nov. 11–21, 2017

▶ Late Youth Portion (ages 6–15):

Nov. 24–26, 2017

▶ Antlerless Portion (open areas only):

Dec. 1–3, 2017

▶ Alternative Methods Portion:

Dec. 23, 2017–Jan. 2, 2018

### Dove

Sept. 1–Nov. 29, 2017

### Groundhog (woodchuck)

May 8–Dec. 15, 2017

### Pheasant

Regular:

Nov. 1, 2017–Jan. 15, 2018

### Quail

Regular:

Nov. 1, 2017–Jan. 15, 2018

### Rabbit

Oct. 1, 2017–Feb. 15, 2018

### Sora, Virginia Rails

Sept. 1–Nov. 9, 2017

### Squirrel

May 27, 2017–Feb. 15, 2018

### Turkey

Archery:

Sept. 15–Nov. 10, 2017

Nov. 22, 2017–Jan. 15, 2018

### Waterfowl

See the 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, 2017

### Woodcock

Oct. 15–Nov. 28, 2017

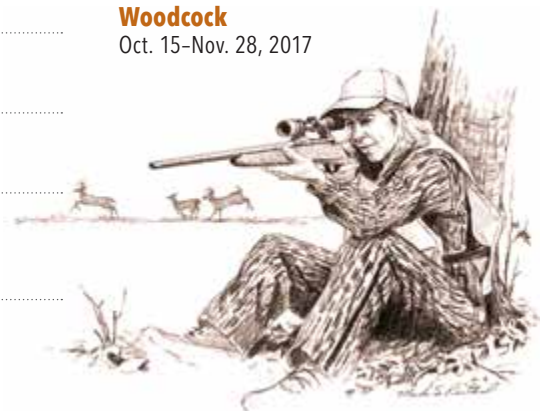


ILLUSTRATION: MARK RAITHEL



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@moconservation

Our gaze is often fixed on nature's beauty at eye level – a majestic tree, a bold-colored flower, or an unusual bird perched at a nearby feeder. Next time you're outdoors, train your eyes to the forest floor where blankets of beauty and wonder, like these lichens at Hughes Mountain Natural Area in Potosi, are waiting for you to discover.

📷 by **Kevin Muenks**