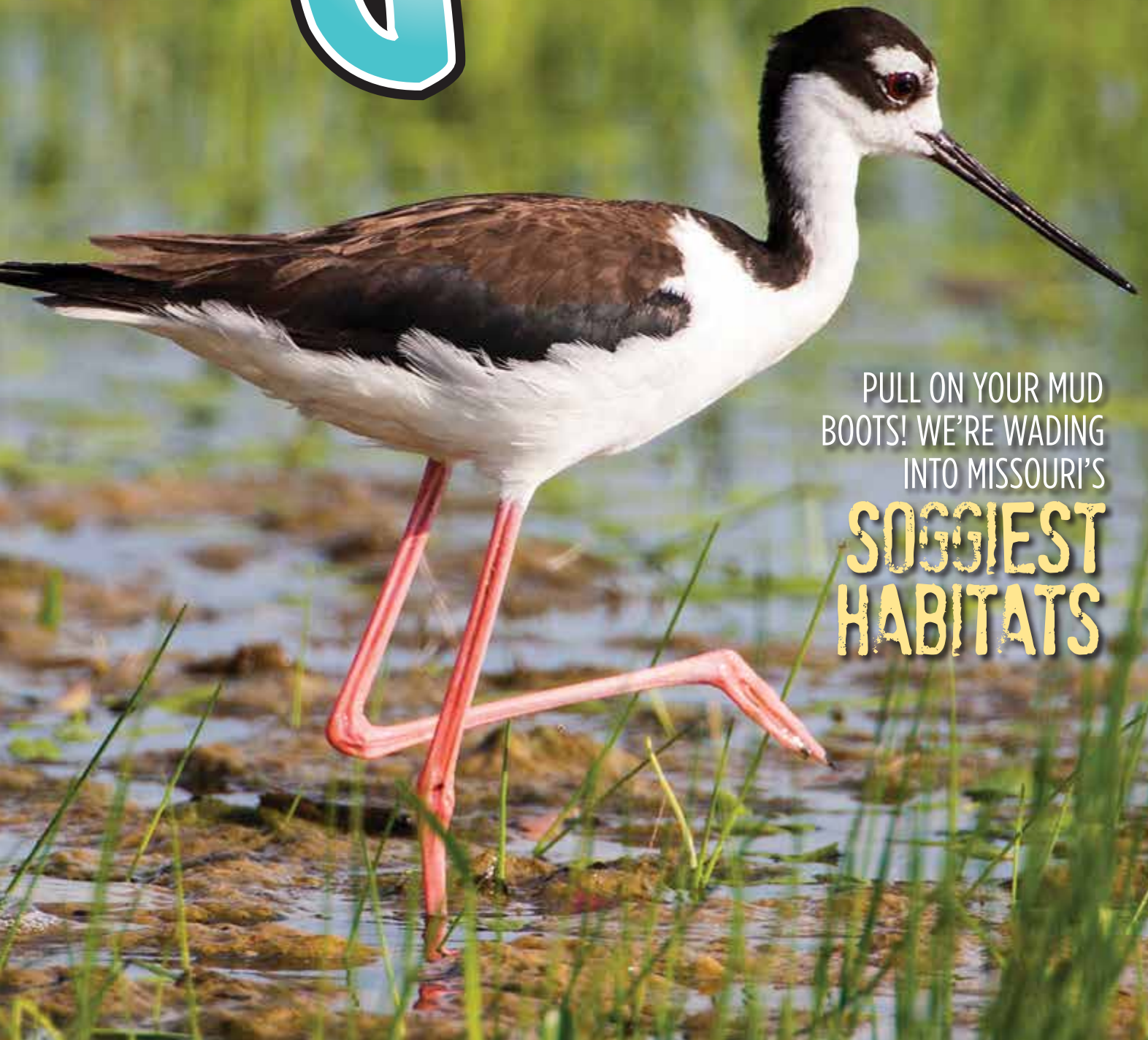




March/April 2017

# Xplor



PULL ON YOUR MUD  
BOOTS! WE'RE WADING  
INTO MISSOURI'S

**SOGGIEST  
HABITATS**

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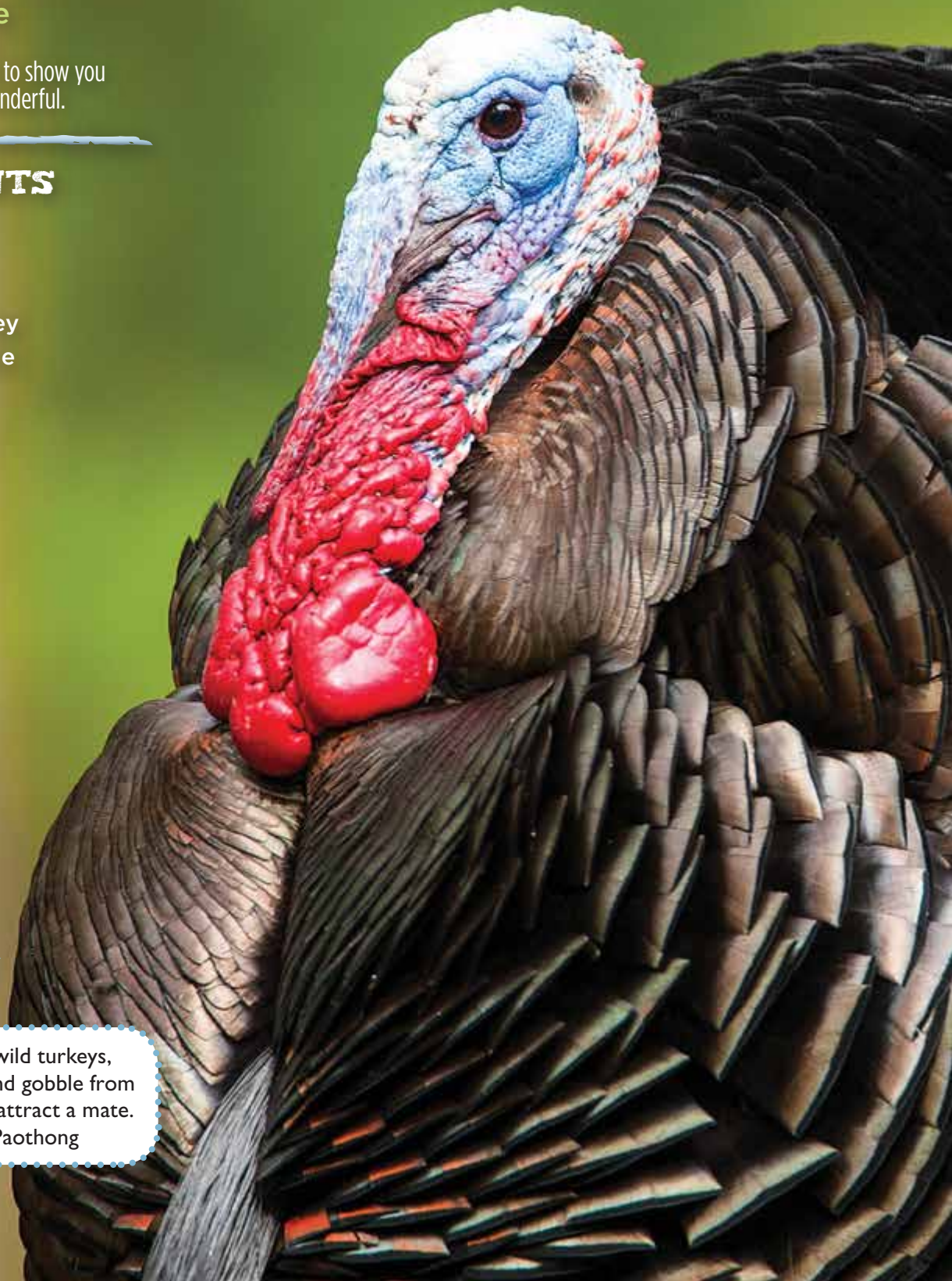
Visit your nearest woods to spot the first frilly signs of spring.

### 10 Frank's Guide to Wetlands

Meet Frank. He's here to show you why wetlands are wonderful.

## DEPARTMENTS

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Gobble, gobble. Male wild turkeys, called gobblers, strut and gobble from March through May to attract a mate.

by Noppadol Paothong



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**ON THE COVER**

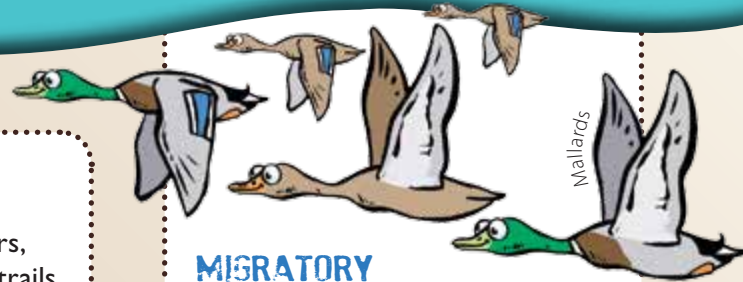
Black-Necked Stilt  
by Noppadol Paothong

# GET OUT!

FUN THINGS TO DO  
AND GREAT PLACES  
TO DISCOVER NATURE



**HIKE A TRAIL** to enjoy the sights and sounds of spring, especially wildflowers, butterflies, and birds. Find trails at your nearest MDC nature center or conservation area.



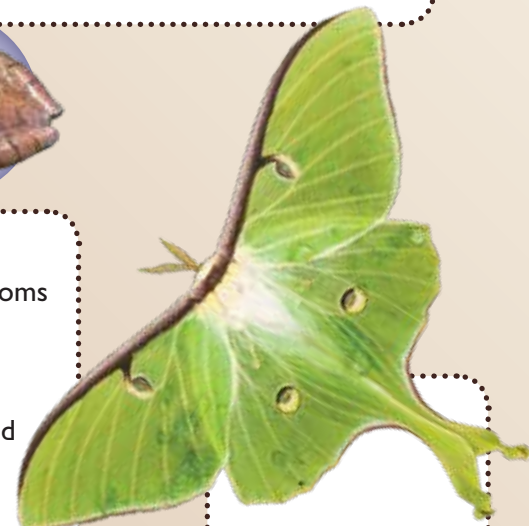
## MIGRATORY BIRDS ARE RETURNING.

Watch for V-shaped formations of geese and ducks, and keep an eye out for the aerial stunts of purple martins and swallows.

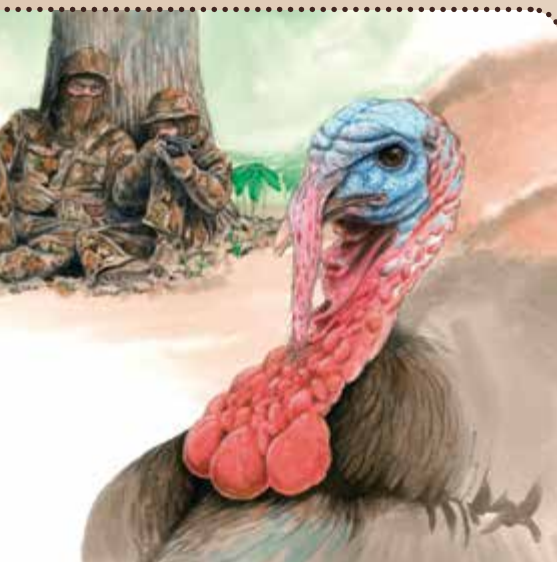
**LISTEN FOR SPRING PEEPERS** when the temperature stays above 40 degrees for a few days.



**LOOK FOR MORELS.** These delicious, deeply dimpled mushrooms begin popping up on forest floors in mid-April, and they're just as much fun to hunt as Easter eggs! To be safe, go with an experienced mushroom hunter. Never eat a mushroom unless you're sure it's edible.



**LOOK FOR LUNA MOTHS** around your porch light. These big beauties emerge from their cocoons in spring and fly from early April through August.



Listen for wild turkeys calling, and **TRY A SPRING TURKEY HUNT.** The youth portion (ages 6–15) of Missouri's spring turkey season is April 8 and 9. Ask your favorite turkey-hunting grown-up to help you get started.



# WHAT IS IT?

**DON'T KNOW?**  
Jump to Page 20 to find out.



- ❶ I'm hard on the outside, and I look like a brute.
- ❷ I dig deep tunnels way under the ground.

- ❸ I eat little critters when the water is high.
- ❹ But I share my home when drought comes around.

# Into the WILD trout stream

Even if you aren't an angler, it's tons of fun to wade around in a cool, clear trout stream.



**Northern parulas** are tiny, brightly colored birds that sing from the tippiest top of trees along streams. They're hard to see, but easy to hear. Listen for a buzzy trill that sounds like someone zipping up a zipper.



## What Happened Here?

Swallowtails, sulphurs, and other butterflies often cluster over wet areas on gravel bars. They gather to sip up sodium and other minerals that are important to their diet.

## LOOK

You'll need good eyes to spot these fish. Although some of them are brightly colored, they become all but invisible against the gravel at the bottom of a stream.



*Northern hog sucker*



*Banded sculpin*



*Rainbow darter*



*Longear sunfish*



*Smallmouth bass*



If you like splashing around in streams, consider joining a Stream Team. Volunteers check water quality, pick up litter, and improve stream habitat. Learn more at [mostreamteam.org](http://mostreamteam.org).

Fish: Lance Merry

## Where to Go

Trout survive best in spring-fed Ozark streams that stay below 70 degrees year-round. If you're chasing rainbows (trout, that is), here's where to find them.

- 1 Bennett Spring State Park
- 2 Montauk State Park
- 3 Roaring River State Park
- 4 Mamec Spring Park
- 5 Current River
- 6 Eleven Point River
- 7 North Fork of the White River



## Take a Closer Look

Pick up a rock from the stream bottom and look closely. You'll likely notice small tubes made of pebbles cemented to the rock's surface. These "cases" were built by caddisfly larvae. They protect the baby insects' soft, squishy bodies.

Caddisfly larva

## LOOK

The Conservation Department stocks two kinds of trout in Ozark streams. Rainbow trout have an olive-green back, a silvery white belly, and a pink stripe along their sides. Brown trout have a brownish-green back, yellowish-white belly, and orange or red spots on their sides.



## Take a Closer Look

Green herons often stalk stream edges, hunting for fish. Watch a heron long enough and you might see an interesting behavior.

The wily birds use bait — such as insects, feathers, or twigs — to lure jittery fish into striking range.

Green heron



# WOODLAND

# Wildflower

# CHALLENGE

by Bonnie Chasteen

In early March, most of Missouri's woods are still gray and bare. But if you take a walk, you might find some signs of spring poking up through the leaf litter. This March and April, take the **Woodland Wildflower Challenge**. Every week, visit your nearest woods and keep track of the different wildflowers that pop up.

The best way to "collect" wildflowers is with your sketchbook or smartphone. You can even make notecards from your drawings or photos. Send them as handmade Earth Day greetings to your family and friends!

Woodland wildflowers are beautiful, and you may be tempted to pick them. But leave them so the butterflies, birds, bees, and other wild critters can feed on their pollen, nectar, and seeds.

## Spring Beauty

These little star-shaped flowers have five white petals with pink veins. You may see them growing in sweeping white masses in woods or on lawns.

### WHEN TO LOOK

February–May

### WHERE TO LOOK

Open woods, fields, and lawns

Spring beauty is also known as "fairy spud" because its edible root looks like a tiny potato.







This flower gets its name from the red sap in its roots and leaves. In earlier times, Native Americans used the sap as an emetic, which means it makes you throw up. So don't eat it!

## Trout Lily

Keep your eyes peeled for a single white flower that looks like a pointed hat nodding from a single stem. The narrow, spotted leaves resemble a trout's shape and coloring.

### WHEN TO LOOK

February–May

### WHERE TO LOOK

Wooded slopes and valleys



Also known as "thousand leaf" because it can form large colonies of thousands of leaves.



Joseph OBrien, USDA Forest Service, Bugwood.org

Steven Katovich, USDA Forest Service, Bugwood.org

Wendy VanDyk Evans, Bugwood.org

## Bloodroot

It's hard to say what's more awesome about this little flower — the delicate white petals or the single, funny, hand-shaped leaf.

### WHEN TO LOOK

March–May, depending on the weather

### WHERE TO LOOK

Slopes along wooded streams. Check these areas often because the bloodroot flower lasts only a day or two.

## Dutchman's Breeches

It's easy to see how this frilly little flower got its name. It looks like a pair of inflated white knee-pants hanging upside down. The finely cut, fern-like leaves are pretty, too.

### WHEN TO LOOK

March–May

### WHERE TO LOOK

Slopes of woods along streams

This flower gets help from ants, which spread its seeds.



David Cappaert, Bugwood.org

## Wake Robin

Also known as trillium, this flower's leafy parts are stacked in groups of three — three purple petals rise from three little leaflets called sepals, which sit atop three main leaves.

*This flower stinks, but the odor smells like lunch to flies and other pollinators.*

### WHEN TO LOOK

April–June

### WHERE TO LOOK

Wooded slopes and bottomlands



Ruby-throated hummingbird

## Columbine

The five long, hollow peaks on this red-and-yellow flower are called nectaries — little chambers that hold nectar, which attracts pollinators.

**WHEN TO LOOK**  
April–July

**WHERE TO LOOK**  
Rock ledges and rocky slopes in woods, often in shady locations

*The spiky columbine needs pollinators like hummingbirds that have long beaks or tongues. Not surprisingly, it blooms about the same time hummingbirds migrate back to our state.*





## Wild Sweet William

This tall blue-violet flower smells sweet and provides early spring nectar for hummingbirds and butterflies.

### WHEN TO LOOK

April–June

### WHERE TO LOOK

Open woods, thickets, wet stream sides, and bottomlands

Sweet William is also known as “stinking Billy” to those who don’t like its fragrance.



Eastern tiger swallowtail

## Mayapple

You may have to get down on your hands and knees to see the single white flower nodding under this plant’s wide, umbrella-shaped leaves.

### WHEN TO LOOK

April–May

### WHERE TO LOOK

Forms large colonies in shady woods

Mayapples produce a single egg-shaped fruit that turns yellow when it’s ripe. Some people gather mayapples in mid-summer to make jelly. Other parts of the plant are poisonous.





**Hi,** I'm Frank. I study wetlands. Wetlands can be muggy and buggy. They're often soggy and stinky. You might get stuck in the muck. But wetlands aren't wastelands. They're wonderful places! Pull on your rubber boots and slather on some bug spray. Let's wade in.

# Frank's Guide to WETLANDS

## EMERGENT MARSH

Marshes, swamps, fens, and wet prairies are types of wetlands. One thing they all have in common is that they're covered with shallow water or have soggy soils at least some part of the year. Wetlands are home to all kinds of amazing plants and animals. Let's explore this marsh and see what we find.



### Cattails

Marshes have tons of plants (literally!) but not many trees. Since soils are soggy, wetland plants need ways to get oxygen to their roots. Cattails have tiny tubes in their leaves and stems that transport oxygen downward.



## Black-necked stilt



The oozy mud and mucky water in a marsh is jam-packed with insects, worms, and snails. Leggy shorebirds like this black-necked stilt wade around and use their long bills to pluck up creepy crawlies for a snack.



## Mink

*Uh-oh.* That muskrat better watch out! A sneaky mink is slinking around hunting for something to eat. These feisty, pint-sized predators feast on frogs, fish, ducks, and anything else they can catch.



## Muskrat

If you see a mound made of mud and cattails, that's a muskrat's house. Muskrats are well-equipped for a watery lifestyle. They have thick, waterproof fur, their webbed feet are perfect for paddling, and they can hold their breath for more than 15 minutes.

If you smell something stinky, it wasn't me. Marsh bottoms pass gas. A handful of muck contains billions of bacteria and other microscopic organisms. Some of them break down dead plants and animals. As they do, they release gases that smell like rotten eggs. Pee-yoo!



## Pied-billed grebe

You might think this is a duck, but it isn't. It's a pied-billed grebe. When a grebe gets spooked, it sinks underwater like a feathered submarine. Watch closely. The grebe will resurface a few moments later when it thinks the coast is clear.



# CYPRESS SWAMP

Cypress swamps are found in the southeastern corner of Missouri.



## Mudsnake

Mudsnakes eat slimy, eel-like amphibians called amphiumas and sirens. These slippery critters squirm into a ball when threatened. But they're no match for a mudsnake, which uses its pointy tail to poke its prey, causing it to uncoil for easier eating.



## Bowfin

Sometimes wetlands dry up. Animals that live here have figured out ways to roll with the changes. Take this bowfin for example. When oxygen in the water gets scarce, bowfins gulp air at the surface to stay alive.

## Bald cypress

A bald cypress tree breathes with its knees. Bald cypresses have bumpy stumps that stick out of the water. The stumps act like snorkels to carry air down to the tree's waterlogged roots. The knees also provide a wide base to keep the tree upright in the goeey mud.



## Prothonotary warbler

Wood ducks aren't the only birds that nest in tree cavities around wetlands. Prothonotary warblers do, too. The bright, beautiful birds hop from branch to branch, plucking insects from leaves as they go.

## Alligator snapping turtle



When an alligator snapping turtle gets hungry, it simply opens its mouth and wiggles its pink, worm-shaped tongue. Hungry fish mistake the tongue for an easy meal and learn too late where the name "snapper" comes from.



## Swamp rabbit

This isn't an ordinary cottontail. To escape predators, swamp rabbits hop, skip, and dive into deep water. They are strong swimmers and often come to the surface under roots to hide out until danger has passed.



## Wood duck

Mama wood ducks nest in holes high up in trees. A day after they hatch, the ducklings bail out of the nest. *Geronimo!* The little fluffballs can fall more than 250 feet without being injured.



# EXPLORE!

What are you waiting for? Get out and explore one of these amazing wetlands.

## MARSH

- 1 B.K. Leach Conservation Area
- 2 Fountain Grove Conservation Area
- 3 Eagle Bluffs Conservation Area
- 4 Nodaway Valley Conservation Area
- 5 Chloe Lowry Marsh Natural Area
- 6 Swan Lake National Wildlife Refuge

## SWAMP

- 7 Mingo National Wildlife Refuge
- 8 Duck Creek Conservation Area
- 9 Otter Slough Conservation Area
- 10 Allred Lake Natural Area
- 11 Hornersville Swamp Conservation Area
- 12 Big Oak Tree State Park

## FEN

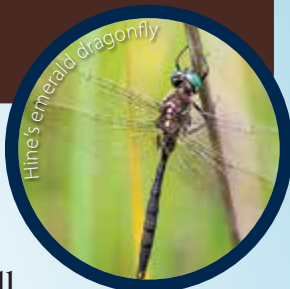
- 13 Grasshopper Hollow Natural Area
- 14 Big Buffalo Creek Conservation Area
- 15 Canaan Conservation Area
- 16 Johnson Shut-Ins State Park

## WET PRAIRIE

- 17 Douglas Branch Conservation Area
- 18 Ripgut Prairie Natural Area
- 19 Loess Bluffs National Wildlife Refuge
- 20 Pershing State Park

# UNSUNG WONDERS

Not all wetlands look wet. Some are so full of grasses and flowers that you don't notice the soggy soil until you step onto its squishy surface.



Hine's emerald dragonfly

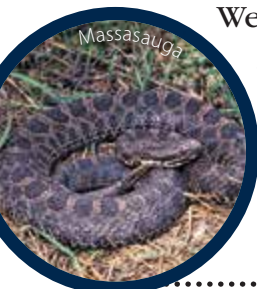
## FENS

Fens are unique wetlands found mostly in the Ozarks. They form where springs spill across the land, keeping the soil mucky for most of the year. Hine's emerald dragonflies love these conditions. Keep your eyes peeled for the bug-eyed predators patrolling for insects to eat.



## WET PRAIRIES

Wet prairies overflow with grasses and wildflowers. Even under this thick green carpet animals thrive. The massasauga is a small, timid rattlesnake that hibernates in crayfish burrows.



Massasauga





# MIGRATION STATIONS



Missouri is the halfway point on the Mississippi Flyway. Think of the flyway as a highway in the air that ducks, geese, and other waterbirds follow to get from northern nesting grounds to southern wintering areas. Wetland water is a virtual “duck soup” packed with seeds, snails, worms, aquatic insects, tiny fish, and plankton. Travel-weary birds rest in wetlands and feast on this soup to fuel up for long flights.



## GOOD FOR PEOPLE TOO!

From bulrushes to beavers, wetlands provide homes to thousands of plants and animals. But do wetlands do anything for people? You bet!

### WETLANDS SLOW EROSION.

Because they're fairly flat, water slows down and spreads out when it flows through a wetland. This allows soil to settle out of the water before it reaches streams and rivers.

### WETLANDS CONTROL FLOODS.

Wetlands act like giant sponges, soaking up heavy rainfall and releasing the water s-l-o-w-l-y into rivers and streams. This cuts back flooding for downstream cities and farms.

I wish everyone knew how wonderful wetlands are. That's where you come in. Now that you know, you can show others why wetlands must be protected.

### WETLANDS FILTER POLLUTION.

Wetland plants and soils trap chemicals that cause water pollution. This helps to keep water clean and safe to drink.

### WETLANDS OFFER PLACES TO PLAY.

Wetlands are a great place to have fun outside. Many people visit wetlands to fish, hunt, and watch wildlife.



THIS ISSUE:

# EASTERN MOLE VS NIGHT CRAWLER

Illustrated by David Besenger

**Sleek Fur**  
makes it easy to slip through the soil.

**Power Shovel**  
paws are good for plowing through the dirt like a machine and pinning prey like a pro wrestler.

**A Sensitive Snout**  
helps sniff out a worm's whereabouts.

**Sharp Teeth**  
are good for cutting big, slippery worms down to size.

**Built for Speed**

A slim, slimy, tube-shaped body and fast, accordion-like locomotion gives most moles the slip.

**Wired for Sound**  
Worms can't hear, but their highly sensitive bodies feel the vibrations of tunneling moles, often in time to split the scene.

**AND THE WINNER IS...**

The night crawler is fast, but the mole is bigger, faster, and stronger. Several swift chomps still the worm's squirm, and the mole wins.

# STRANGE but TRUE!

YOUR GUIDE TO ALL THE  
UNUSUAL, UNIQUE,  
AND UNBELIEVABLE STUFF  
THAT GOES ON IN NATURE



Bunches of bunnies: Biologists estimate that a female **COTTONTAIL** can raise 35 young in a year. If winter ends early, mama cottontails start having babies in mid-March and may produce seven more litters through September.

**PADDLEFISH** may grow 7 feet long and weigh 150 pounds. What does a fish that big eat? Itty-bitty animals that drift as plankton. A paddlefish swims with its mouth open, and plankton gets trapped in the fish's throat in an organ that acts like a strainer.



Have a heart — or five. Inside an **EARTHWORM** are five organs called aortic (ay-or-tick) arches. The arches work like hearts to pump blood throughout an earthworm's long, skinny body.



Don't mess with **BLISTER BEETLES**, buster. When threatened, the insects release a toxic liquid that causes painful sores. The beetles sometimes feed on alfalfa, a crop used to make hay. If a horse eats hay with too many beetles in it, the horse may die.



If you think all **THREE-TOED BOX TURTLES** are three-toed, you'd be *toe-tally* wrong. Missouri's state reptile normally



sports three toes on each hind foot, but some individuals have four per foot.

**PRAIRIE CHICKEN** hens like a mate who knows how to dance. To show off for females, a male droops his wings, fans out his tail, inflates orange air sacs on his neck, and stamps his feet. Now that's one funky chicken!



A male **RED-WINGED BLACKBIRD** may have as many as 15 mates nesting in his territory. But defending all those nests is a ton of work. Blackbird dads often spend more than a quarter of their waking hours chasing away other males.



# HOW TO

## Plant a Pollinator Paradise

**B** iologists are worried because bee and butterfly numbers are dropping. Improper use of pesticides and loss of habitat are likely to blame. You can bring the buzz back by planting a patch of native flowers.

Wild bergamot



## PICK A PLANTING SPOT

**Bee sunny.** You'll attract the widest variety of pollinators if you place your garden in a sunny spot. If a site receives six or more hours of sun, it's sunny. If it gets less than that, it's shady.

**Bee near water.** Choose a location with easy access to water. Baby plants need water every day until they adapt to their new surroundings.

**Bee smart.** You don't want other plants to compete with your new flowers, so dig grass and weeds out of the area you plan to plant.



## PICK YOUR PLANTS

**Bee native.** Choose native perennials for your pollinator paradise. "Perennials" are plants that come back year after year. "Native" means they're from Missouri. Native plants are adapted to Missouri's weather, they need less water, and they provide the best food for pollinators. To find a native plant nursery, visit [grownative.org](http://grownative.org).

**Bee diverse.** Different pollinators like different flowers, so plant a variety of species.

**Bee generous.** Plan a mix of flowers so that something is in bloom from April to October.



## GET YOUR HANDS DIRTY

**Bee well read.** Each seedling should come with planting instructions. Read them. They'll tell you how to plant the seedling and how far away to space it from other seedlings.

**Bee clumpy.** Cluster the same type of flowers together instead of scattering them around. This way pollinators don't have to work hard to find what's blooming.

**Bee mulchy.** Mulch is a flower's best friend. Spread some around your new plants. It will keep weeds at bay and hold water in the soil.

**Bee chemical free.** Pesticides and herbicides kill pollinators. Avoid using them.

**Bee patient.** It may take time for native plants to grow and for pollinators to find your flowers.



## POWER FLOWERS

Here are a few native plants that are guaranteed to make your backyard buzz. They look great, too!

- \* **Butterfly milkweed**
- \* **Blue wild indigo**
- \* **Aromatic aster**
- \* **Wild bergamot**
- \* **Eastern blazing star**
- \* **Slender mountain mint**
- \* **Cliff goldenrod**
- \* **Purple coneflower**

### What's All the Buzz About?

Bees, butterflies, and other pollinators are nearly as important as sunlight and water to a plant. As pollinators fly from plant to plant, they transfer pollen from one flower to another. Flowers use the pollen to make seeds, which grow into new plants. More than 150 crops in the United States depend on pollinators. Foods such as apples, strawberries, tomatoes, and almonds wouldn't exist without these busy little flower farmers.

# XPLOR MOR

## Scrambled Eggs

Northern cardinal

Canada goose

American bullfrog

Birds aren't the only animals that lay eggs. Insects, fish, amphibians, reptiles, and many other kinds of animals are egg-cellent egg layers. See if you can find all the eggs hidden in this scene and then match them to the mama who laid them.

### WHAT IS IT?

— FROM PAGE 3 —

we call it a devil? Maybe because people once thought it burrowed into coffins. Truth is, devil crayfish "wells" can serve as temporary homes for other little water critters during dry spells.

With large, powerful claws, the devil crayfish digs deep tunnels along wooded streams and ditches. It eats plants, worms, insects, snails, and dead animals. Why do



# E



Monarch



6

7

Red-eared slider



Broad-headed skink

5

4

3

Western ratsnake



American bullfrog - 1, Red-eared slider - 2, Monarch - 3, Broad-headed skink - 4, Western ratsnake - 5, Northern cardinal - 6, Canada goose - 7

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FREE TO MISSOURI HOUSEHOLDS

## CRITTER CORNER

### Western Slender Glass Lizard



© Kc matt | Dreamstime.com

Missouri's longest lizard looks like a snake, but it isn't. Unlike snakes, it has eyelids and ear openings. Glass lizards can grow up to 26 inches long. Most of this length is tail, which can break off in a predator's (or kid's) grip. The glass lizard can regenerate its tail, but it will be shorter and darker. Look for it in pastures, prairies, and open woods on dry, rocky hillsides. Learn more at [mdc.mo.gov/field-guide](http://mdc.mo.gov/field-guide).