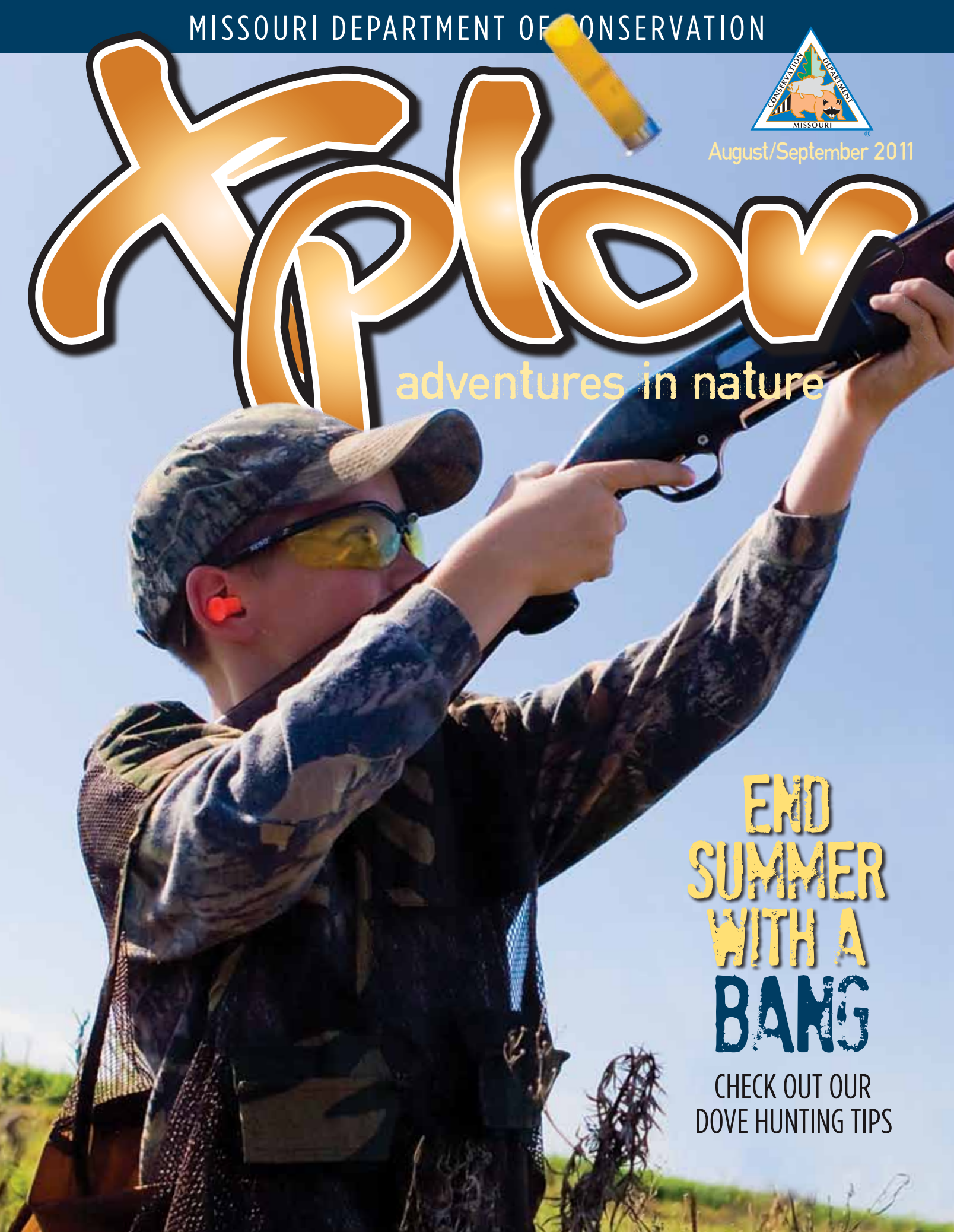




August/September 2011

# Xplor

adventures in nature



**END  
SUMMER  
WITH A  
BANG**

CHECK OUT OUR  
DOVE HUNTING TIPS

# COMMENTS



Badger

## Xplor

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# PHOTOS

with Nop & Dave



## Starry Night

photo by Dave Stonner

**D**ave Stonner reached the summit of Stegall Mountain at sunset. He'd been hiking since daybreak, up and down 15 miles of hilly Ozark terrain. The straps of his backpack, weighted by heavy camping and photography gear, dug into his shoulders. His feet hurt. His legs wobbled. Dave was tired.

At this point, most people would scarf down supper, snuggle into their sleeping bags and promptly fall asleep. But Dave had something else in mind.

He set his camera atop a tripod, pointed it toward where he thought the North Star would appear and snapped a photo. Ten minutes later, without moving his camera even a millimeter, he shot a second photo. Every 10 minutes throughout the night—while wind whispered through the pines, while coyotes yipped on a nearby ridge, while the Earth slowly turned under the stars—Dave arose and took a photo.

Back home, he used a computer to combine 35 of the shots into a single star-laced image. It was a technique he had never tried.

"Sometimes you have to experiment and see what you get," Dave says.

It seems that his shots in the dark paid off.

To see some of the photos used to make this image, visit [xplormo.org/node/15520](http://xplormo.org/node/15520).

## ON THE COVER



YOUTH DOVE HUNT  
photo by David Stonner

**8** The Underworld  
Some creatures are hidden just inches below the surface.

**12** Having a Blast  
For end-of-summer fun, nothing beats a dove hunt.

## DEPARTMENTS

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Red milk snake

## ON THE WEB

Visit [xplormo.org](http://xplormo.org) for cool videos, sounds, photos, fun facts and more!

# Y'all discover

With summer winding down and autumn gearing up, there's plenty to discover outside in August and September. Here are a few ideas to get you started.

## GROW some SLIME.



Have you ever found yellow slime on a dead log or in the mulch around your house? It may look like dog vomit, but it's likely a strange, harmless creature called a **slime mold**. Want to grow some at home? Cut off a chunk and put it in a container lined with a moist paper towel. Drop in a flake of old-fashioned oatmeal (not instant), snap on a lid, and put the container in a dark place. Keep feeding the slime mold oats, and it will grow to blob-like size.

## SEEK A CREEK.

If summer's heat has you beat, seek a creek. It's fun to just splash in the water, but there's tons more to do. Flip rocks to see what lives underneath. Have a stone-skipping contest or stick-raft race. Bring a mask, snorkel and dip net to catch minnows and crayfish. Or, for a real thrill, ask a parent to tie up a rope so you can swing out and plunge into a cool, deep pool.



## Write a FIELD GUIDE.



For a fun way to learn about critters living in your backyard, make a field guide. Snap photos or draw pictures of every animal or plant you find, then use keen observation skills to write a description for each. What does the pattern on that butterfly's wings look like? Where do robins nest? How does a treefrog sound? Don't forget to include the animal's name, when and where you found it, and any neat facts you learn through research.

## ROPE a DINOSAUR.

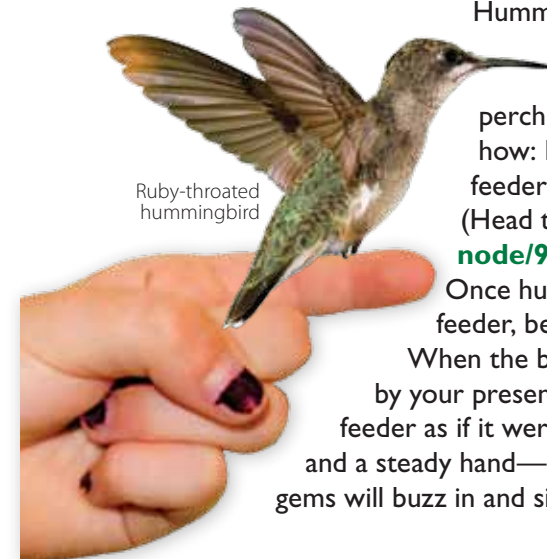
Gar—skinny fish with beak-like jaws—have survived, generation by generation, since before dinosaurs ruled Earth. It's easy to catch these hard-fighting, prehistoric fish, but don't bother with a hook. A gar's bony jaw is too tough. What you need is a piece of frayed rope. The rope gets tangled in the gar's teeth, and the fish can't shake free. All you have to do is reel in the monster. To make a gar lure, swim over to [xplormo.org/node/15519](http://xplormo.org/node/15519).



## Make SUMAC JUICE.

When life gives you lemons, make lemonade. If you're lemonless, find some sumac. Sumac is a shrub that forms thickets along roadsides and fencerows. In September it produces cone-shaped clusters of rusty red berries. Collect a dozen sumac clusters and shake out all the bugs. Submerge the clusters in a large bowl filled with water, and rub them until the powder that coats the berries turns the water pink. Strain the water through an old (but clean) tea towel into a pitcher. Add sugar and ice, then toast the end of summer with a refreshing glass of sumacade.

## Train a HUMMINGBIRD.



Ruby-throated hummingbird

Hummingbirds are so fearless, you can train them to perch on your finger. Here's how: Keep a hummingbird feeder stocked with nectar. (Head to [xplormo.org/node/9026](http://xplormo.org/node/9026) for a nectar recipe.)

Once hummers are frequenting the feeder, begin sitting quietly beside it. When the birds are no longer bothered by your presence, hold a finger close to the feeder as if it were a perch. With patience—and a steady hand—one of the energetic little gems will buzz in and sit on your finger to sip nectar.

## GO TEAL hunting.

If icy weather, frozen toes and snotsicles hanging from your nose have turned you off to winter duck hunting, give September's teal season a try. Teal are the buzz bombs of the waterfowl world. They fly fast and dart unpredictably over the marsh, and they're a lot of fun to hunt. For season dates, bag limits and other rules, visit [mdc.mo.gov/node/3641](http://mdc.mo.gov/node/3641).



## Build a FORT.



Everyone needs a secret hideout. You can build one in the woods (or your backyard) without using a single nail. Just gather dead branches and lay them over a fallen log to build a lean-to. Or, weave limbs through upright trees to form walls. Your new hideout will offer peace from pesky little brothers, and animals will soon get used to the structure, allowing you to sit quietly inside and watch them up close.

MDC  
**DISCOVER  
nature**

Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at [xplormo.org/node/2616](http://xplormo.org/node/2616).

# WILD JOBS

## Darter Diver

THIS SCIENTIST SEARCHES STREAMS FOR ONE OF MISSOURI'S RAREST FISHES.



Niangua darter

**D**oug Novinger floats facedown in the water, breathing through a snorkel while he scans the pebble-strewn stream through his diving mask. He spies a small fish darting between the rocks, and with a bubbly sweep of his arm, deftly scoops it into an aquarium net.

The pinkie-sized fish, a Niangua darter, is as brilliant and rare as a gemstone. With an orange belly, bluish-green stripes, red spots and two jet-black dots at the base of the tail, it looks like you should find it swimming around coral reefs in the Caribbean. But Niangua darters are found only in Missouri. Part of Doug's job is to keep tabs on how these rare fish are faring.

So from May to September, Doug, fellow biologist Jamey Decoske and their crew of researchers—they call themselves "Team Niangua"—don snorkels to search streams for darters. To avoid clouding water ahead of them, they work their way upstream by pulling from rock to rock or swimming like mad. It's thrilling, exhausting and full of surprises.

"I've stuck my arms in leech nests and had to pull off dozens of bloodsuckers," says Doug.

Despite leeches, Doug thinks he has the world's best job. "I get to swim in beautiful Ozark streams, see tons of amazing animals and study one of the world's rarest fishes," he says. "What could beat that?"

# Yuck!

YOUR GUIDE TO ALL THE NASTY, STINKY, SLIMY AND GROSS STUFF THAT NATURE HAS TO OFFER

If you're a soft, yummy caterpillar, how do you keep pesky predators from picking you apart? Fall webworms spin tangly, silky webs around the tips of tree branches. The caterpillars live inside the webs and munch leaves nonstop. Webworms aren't tidy, though. Their homes soon become littered with chewed leaves, shrunken skins the caterpillars shed as they grow, and frass—a polite term for caterpillar poop.



Some snakes hunt for food. Baby copperheads wait for dinner to come to them. These sneaky snakes coil quietly on the forest floor doing their best to look like dead leaves. When a frog or other small animal comes by, the copperhead wiggles its greenish-yellow tail, trying to make it look like a tasty caterpillar. If the frog takes the bait, the snake strikes, and the frog becomes a meal instead of eating one.

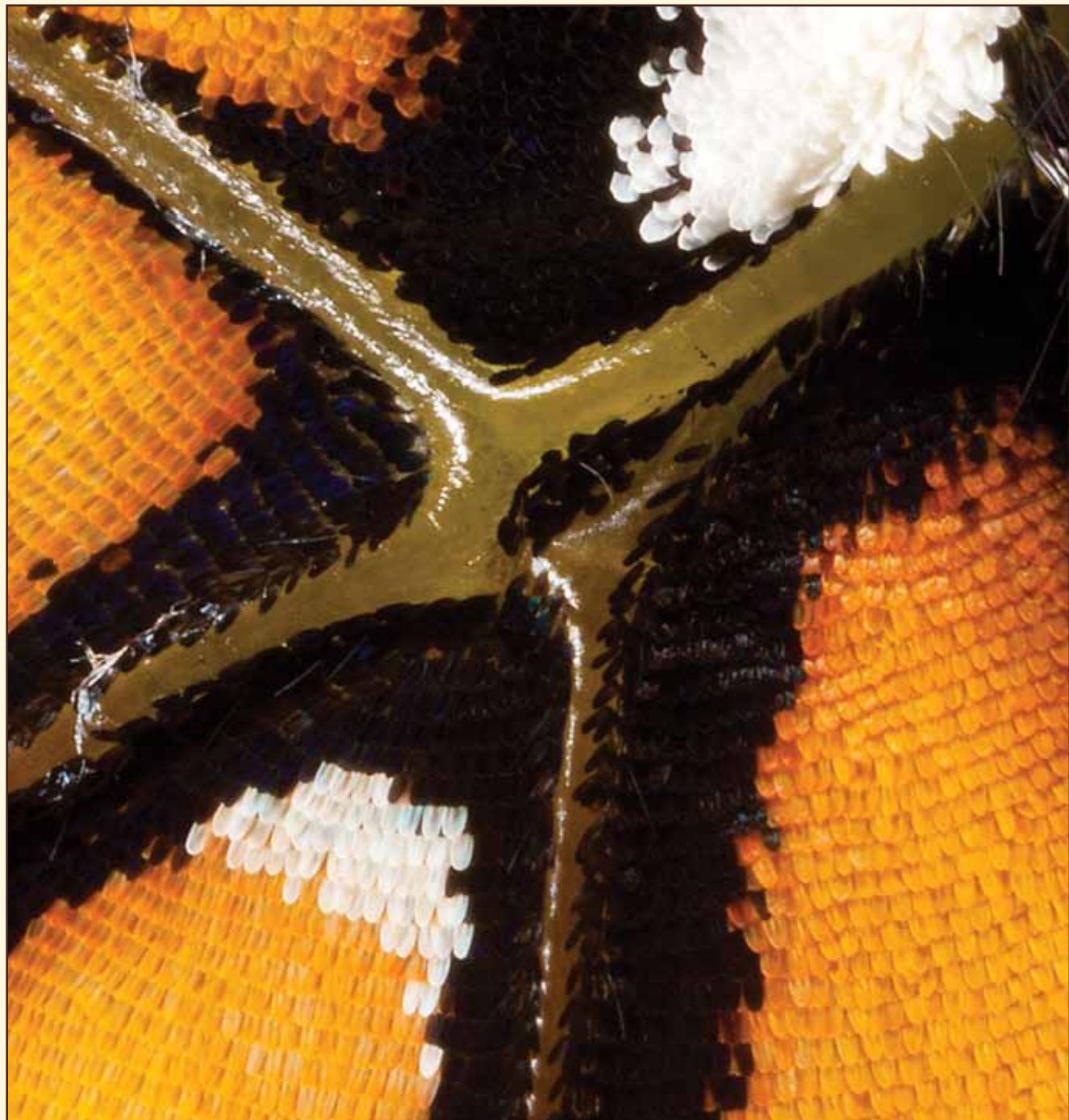
# Strange BUT TRUE

Baby copperhead



# WHAT IS IT?

DON'T KNOW?  
Jump to Page 16 to find out.



My bright orange scales are tough as nails.  
Flower power fuels my flutter.  
I'm really lucky to taste so yucky.  
When it comes to migration, I'm the king.

# NEW OUTDOOR ADVENTURE

BY JACOB MOORE, AGE 12

Jacob Moore prowled the fields and creeks around his house looking for frogs, lizards and snakes. He wanted to be a reptile and amphibian biologist when he grew up.

Jacob spent his free time reading everything he could about the reptiles and amphibians of Missouri. These efforts paid off when one day he spotted a snake slithering across the road. With its brilliant red pattern, Jacob knew it was a harmless red milk snake.

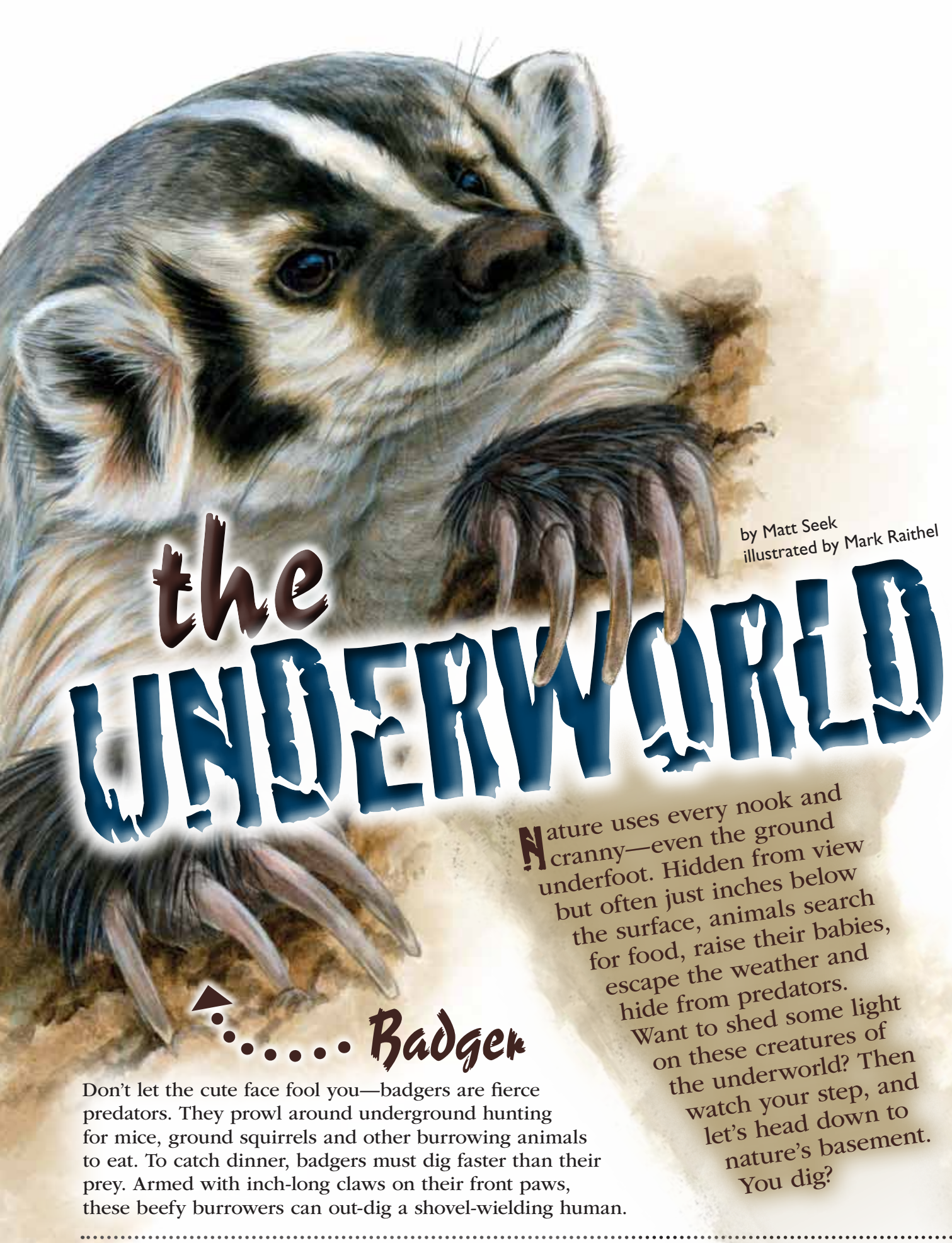
As soon as the car stopped, Jacob popped out. It took some fancy footwork, but he finally caught the snake. His mom found a pillowcase, and Jacob dropped the serpent inside.

Part of his mom's job is teaching kids about Missouri's wildlife.

She turned the snake into a celebrity, showing it to classrooms throughout northeast Missouri.

When he's not catching snakes, Jacob loves to hunt and fish.

For more on Missouri's fascinating snakes, visit [xplormo.org/#wildguide](http://xplormo.org/#wildguide).



by Matt Seek  
illustrated by Mark Raithel

# the UNDERWORLD

## ..... Badger

Don't let the cute face fool you—badgers are fierce predators. They prowl around underground hunting for mice, ground squirrels and other burrowing animals to eat. To catch dinner, badgers must dig faster than their prey. Armed with inch-long claws on their front paws, these beefy burrowers can out-dig a shovel-wielding human.

Nature uses every nook and cranny—even the ground underfoot. Hidden from view but often just inches below the surface, animals search for food, raise their babies, escape the weather and hide from predators. Want to shed some light on these creatures of the underworld? Then watch your step, and let's head down to nature's basement. You dig?



## Tarantula .....

Missouri's biggest, hairiest (and some might say scariest) spiders inhabit glades in the south half of the state. Tarantulas don't spin webs, but they do line their burrows with a silken "welcome mat." The silk trembles when an insect skitters by, alerting the spider that dinner is at the door. If nothing triggers its silky tripwire, the spider creeps from its hidey-hole at night to hunt for prey.

## Eastern mole .....

Put your ear on a molehill, and you might hear the little tunneler's tummy growl. Moles eat half their weight each day, stuffing their bellies with worms, grubs and other creepy-crawlies. Although their eyes are nearly useless—their eyelids are fused shut and covered by fur—a mole's nose knows where to find food. Using oversized front paws, they tunnel quickly along, following their snouts from morsel to morsel.



## Belted kingfisher

Before starting a family, kingfishers find a steep riverbank near a good fishing hole. They use their beaks to dig a burrow, then the mother kingfisher lays five to seven eggs inside. Life gets hectic once the eggs hatch. Each chick eats about eight fish a day, so parents stay busy plunging beak-first into water to snag food. When the chicks grow up, parents coax them from the nest by waving fish from nearby perches.



## American toad

When it's wet, toads can absorb water through their skin. But when it's dry, they can lose water, too. To avoid withering to a warty crisp, toads take shelter in shallow burrows during the heat of the day. They venture out when it's cool at night to snag insects with their long, sticky tongues. In the fall, the chunky amphibians burrow farther underground, digging nearly an arm's length down to spend winter where frost can't nip them.



## Devil crayfish

Crayfish need water to breathe, but not all of them live in streams or ponds. Some, such as the devil crayfish, burrow down from dry land to find water underground. While digging their tunnels, these crayfish carry blobs of mud in their pincers, stacking it up to form tiny earthen towers at the surface.



## Long-tailed weasel & Eastern chipmunk

Chipmunks stuff their cheeks with seeds and nuts then scamper underground to stock their nests with food for winter. This chipmunk better scamper fast because a hungry weasel is on its tail. Weasels are long and skinny predators, perfectly shaped to pursue prey through tight places. Will the chipmunk escape in its maze of tunnels? Or, will the weasel eat squirrel for supper? Who knows? It's just one more hidden drama that plays out in the underworld.



# HAVING A BLAST

FOR END-OF-SUMMER FUN, NOTHING  
BEATS A DOVE HUNT.

by Matt Seek



Imagine sitting on a bucket tucked along the edge of a weedy field.

A few rows of sunflowers, bleached gray by the sun, reach high into a bluebird sky. Bright yellow goldfinches flit about gathering seeds, katydids whine in the undergrowth and the peppery smell of dried-out vegetation hangs in the air.

SUDDENLY a wad of sleek gray birds *streaks* into view. You snap from the bucket, shoulder your shotgun, swing the barrel to catch up with the flock. **BANG!** The birds swoop and scatter. **BANG! BANG!** On your third shot, you see a puff of feathers, and a bird tumbles from the sky. You can't help grinning at your luck. You just bagged a mourning dove.

## SEED-EATING, GROUND-FEEDING, BABY FACTORIES

Mourning doves are grayish-brown birds with a pinkish tint. You've probably seen them pecking at seeds beneath your bird feeder or perched on a telephone wire. Doves swallow seeds whole and store them in a little pouch in their throat called a crop. Then they fly to a perch to digest their meal.

In March, dove couples begin piecing together a flimsy jumble of sticks for a nest. Females usually lay two eggs, which hatch in about two weeks. Both parents feed their babies "pigeon milk," a thick liquid produced in their crops. A couple of weeks after hatching, young doves can fend for themselves, and parents lay more eggs. In Missouri, doves nest through September, which means a single pair can produce 14 or more babies!





## AMERICA'S MOST POPULAR GAME BIRD

Hunters bag more mourning doves than any other migratory bird, and for good reason. Doves are incredibly common—about 350 million live in the United States. Dove hunting doesn't require a lot of special gear. Dove season, which opens September 1 in Missouri, usually offers beautiful fall weather. And, most importantly, dove hunting is just plain fun.

## SLEEK GRAY STREAKS

Mourning doves can zip along at 40 miles per hour, streaking into and out of gun range in seconds. But speed alone isn't what makes dove hunting such a thrill (and so much of a challenge). Doves twist, swoop and corkscrew through the air in ways that would make a stunt pilot reach for a barf bag. Trying to bag a limit of 15 doves requires keen eyes—and plenty of shotgun shells!

## THINK LIKE A DOVE

Finding a place to dove hunt is easy. You just have to think like a dove. Doves need seeds on the ground, water to drink and perches to rest upon. Any place with these three things will draw doves. Harvested crop fields, sunflower fields and weedy pastures are dove magnets. Many conservation areas are managed for doves, also. Check [mdc.mo.gov/18183](http://mdc.mo.gov/18183) to find a conservation area to hunt.

## DOVE HUNTING 101

Doves are most active in the morning and late afternoon. If you have the place all to yourself, you can walk around and try to flush doves off the ground. Most hunters, however, find a spot at the edge of a field where they sit and wait for doves to fly by. Should a flock come your way, shoulder your gun and wait for the birds to get within 30–40 yards. Never shoot at low-flying doves! Always aim at least 45 degrees above the horizon to avoid hitting other hunters. Pick out a single dove and track just a bit ahead of it with your shotgun. Squeeze the trigger and continue to swing the shotgun even after the shot. If you miss, shoot again. If you hit a bird, watch it all the way to the ground.

## KNOW BEFORE YOU GO

Pay attention to safety and follow the law, or your hunt might go south faster than a migrating dove. Learn to safely handle a gun, and always hunt with an adult. Before heading afield, read the rules in the *Migratory Bird Hunting Digest*. Pick up a free copy where permits are sold, or find it at [mdc.mo.gov/node/3641](http://mdc.mo.gov/node/3641).

# GEAR UP

Most dove hunters use a 12- or 20-gauge shotgun.

A semiautomatic—one that shoots and reloads each time you pull the trigger—is good for the quick shooting dove hunting requires. Regardless of which shotgun you use, it must be plugged so it can hold no more than three shells.

A 5-gallon bucket is great for packing in your gear, water and snacks. It also makes a good seat and helps collect all your spent shotgun shells and other trash.

Bring lots of shotgun shells—you'll need 'em. For lead shot, use sizes 8 or 9. For nontoxic shot, use sizes 6 or 7. Some places require you to shoot nontoxic shot. Even in areas that don't, consider using nontoxic shot. When lead shot falls to the ground it can be eaten by doves and other birds. Lead is poisonous and can cause the birds to get sick or die.

Don't forget safety glasses and ear protection. Also bring an adult to keep you company and show you the ropes.

Camouflage clothes help later in the season when doves have been shot at a lot, but they aren't essential.

## KNOW YOUR DOVES

In addition to mourning doves, white-winged and Eurasian collared-doves are legal to shoot during dove season. Be careful, though. Other birds—such as nighthawks, kestrels, shorebirds and songbirds—might buzz past. If you're not sure, don't shoot!

### MOURNING DOVE

- most common dove
- grayish-brown
- small head, long pointed tail
- stong, fast, shifting flight



### WHITE-WINGED DOVE

- color similar to mourning dove
- same size as mourning dove, but chunkier
- flies straighter, wingbeats slower than mourning dove



### EURASIAN COLLARED DOVE

- more gray than mourning dove
- much larger than mourning dove



# XPLOR MORE

## SWALLOW SWARM



Persimmons

### Will Winter be Cold and Snowy? Ask a Persimmon.

**T**oward the end of September, in forests and fencerows throughout Missouri, plum-sized orange persimmons begin to ripen and drop from the branches of their knobby-barked trees. Animals love to eat persimmons. You probably will, too—if the persimmons are ripe. If they aren't, one bite will make your mouth pucker like you drank a whole jar of pickle juice. When a persimmon feels squishy, it's ready to eat.

#### Squishy Orange Weather Forecasters

Some people claim you can forecast winter's weather by splitting a persimmon seed into two thin halves. The white embryo inside—that's the part that would grow into a new tree—will be shaped like a spoon, knife or fork.

#### Slice a Seed, Not Your Finger

Persimmon seeds fresh out of the fruit are as slippery as buttered bullfrogs. Trying to cut one with a knife is a good way to slice your finger. To keep your digits intact, let your persimmon seeds dry in the sun for a few days. Then, use a pair of pliers to squeeze each seed. They should split right open.

*Write your persimmon prediction here and check back to see if your seeds were right.*

Use these pictures to decipher your persimmon's forecast.



A **spoon**—like a mini snow shovel—indicates there will be lots of snow.



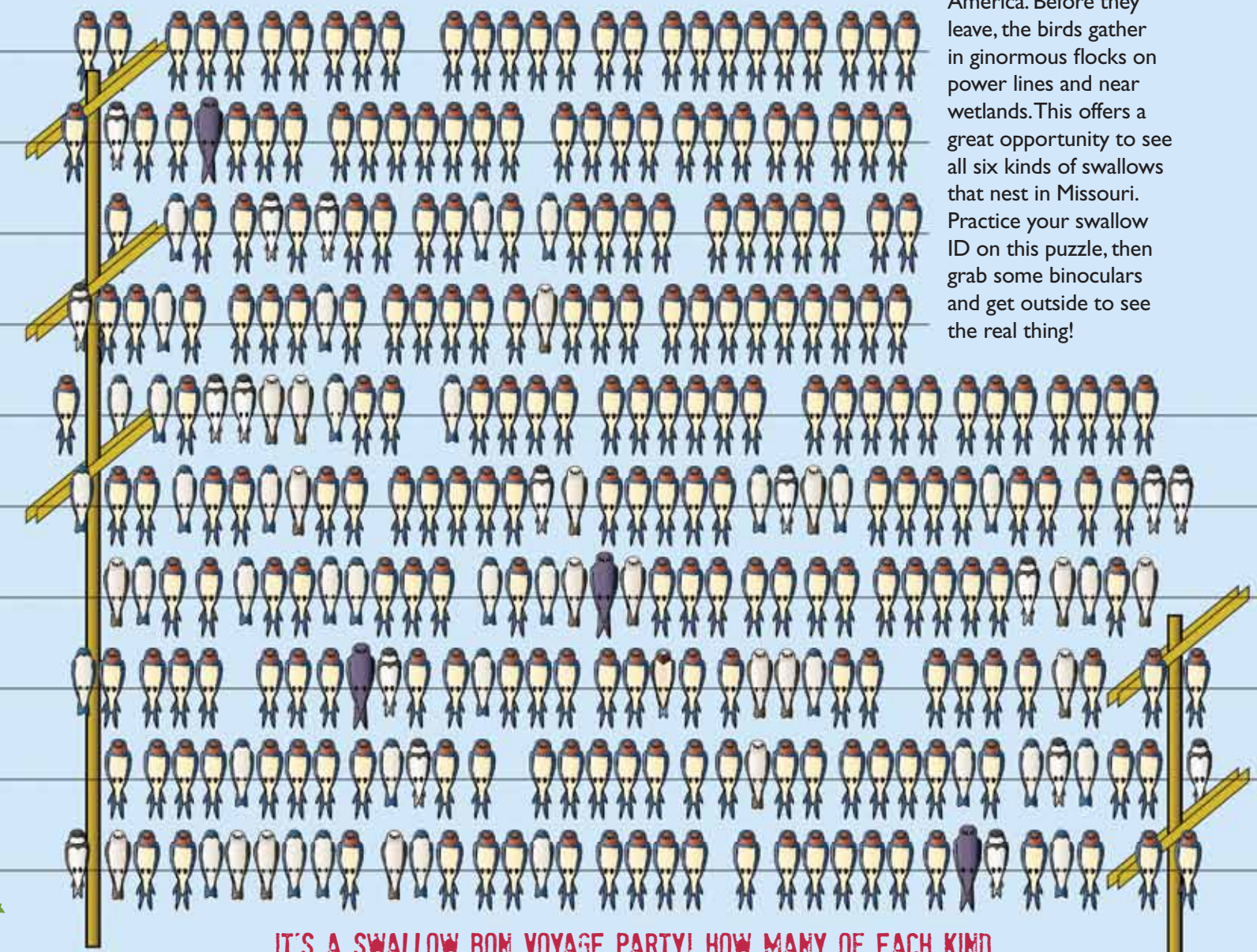
A **fork** forecasts a pleasant, mild winter. Sorry, no snow days.



A **knife** predicts frigid winds that will cut through your coat like a blade.

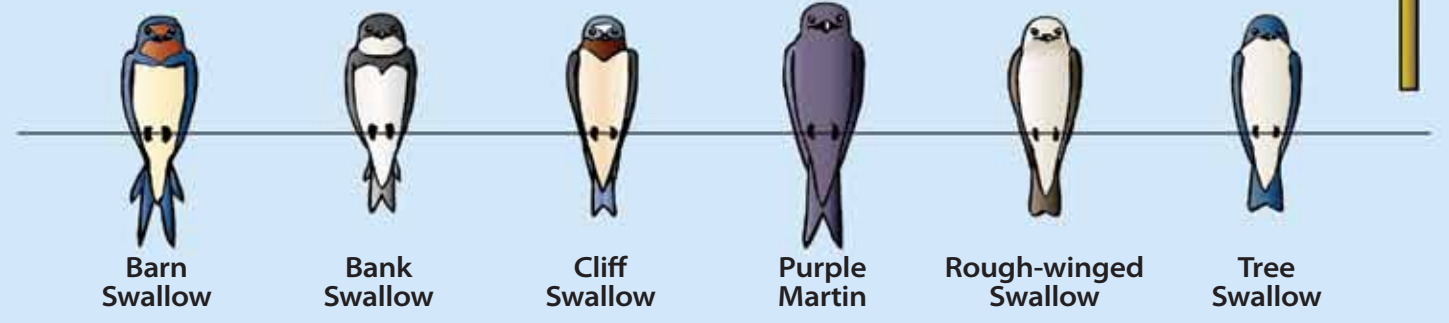
### ANSWER TO WHAT IS? FROM PAGE 6

In September, monarch butterflies flutter south to spend winter in Mexico. Nectar from flowers provides energy for their incredible 3,000-mile migration—one of the longest of any insect. As caterpillars, monarchs eat poisonous plants called milkweeds. This makes the adult butterflies taste yucky. A monarch's tough orange-and-black scales tell birds and other predators, "If you eat me, you'll be sorry!"



Hungry swallows swallow insects—and not much else. So, when bugs bug out in the fall, swallows split for Central and South America. Before they leave, the birds gather in ginormous flocks on power lines and near wetlands. This offers a great opportunity to see all six kinds of swallows that nest in Missouri. Practice your swallow ID on this puzzle, then grab some binoculars and get outside to see the real thing!

IT'S A SWALLOW BON VOYAGE PARTY! HOW MANY OF EACH KIND CAN YOU FIND IN THE FLOCK ABOVE? (HINT: THERE ARE 316 TOTAL.)



ANSWERS FROM LEFT TO RIGHT: 239, 17, 1, 4, 19, 36

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**FREE TO MISSOURI HOUSEHOLDS**

# EASTERN CHIPMUNK



Hey, chubby cheeks! In early fall, chipmunks have just one thought in their furry little heads: storing seeds and nuts for winter. They stuff their cheeks like grocery sacks and scurry to their nests, cramming in enough food to fill nine 2-liter soda bottles.