



MISSOURI. Conservationist

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[NOTE TO OUR READERS]

Facing Challenges

The new moon made the summer night pitch black. Despite the darkness, the night was alive with the sounds of cicadas and other insects, whip-poor-wills and hoot owls. Probably the most

memorable sound of the night was the sudden, unnerving and loud braying of an upset mule. It was one of those nights made for frog gigging. My buddy Webb, his Uncle Dan and I headed to the local farm ponds to try our luck. While the gigging was good, the opportunity to be with good friends made it one of my more memorable outdoor adventures. Uncle Dan had the wisdom and insight of a local landowner. He lived his entire life in the area so he knew his fellow landowners.

Uncle Dan reminds me of those special landowners that I have had the privilege to work with during my career. These landowners have been connected with the land and understand the balance of making a living from the land while providing for critical habitat for wild creatures. It is not an easy task to make a living feeding a hungry world while protecting soil, water and wildlife. However, these landowners found a way to get it done.

Each generation of landowners has their own set of challenges. The Dust Bowl years and our state's history of exploitation of forest resources in southern Missouri are examples of past challenges to and abuse of natural resources. Leo Drey recognized what was at stake and began acquiring forestland in the Ozarks. This was an important step in the recovery of a significant Missouri natural resource. Today, Leo Drey and the L-A-D Foundation are internationally recognized for their management of forestland that not only sustains forest resources but provides critical habitats for wildlife and protects significant water features.

Today, Missouri landowners are not without challenges. This year's drought brings home how tenuous a landowner's existence can be given the vagaries of weather. Landowners in a six-county area of north Missouri face the important challenge of managing the culturally, socially and economically important white-tailed deer herd given the recent discovery of chronic wasting disease (CWD) in the area. This



is a critical challenge that will take a long-term, dedicated approach to keep Missouri's white-tailed deer herd as healthy and vibrant for the future as it is today. Department staff are actively engaged in developing short- and long-term management strategies that will engage landowners, sportsmen and citizens alike to address this important challenge. In addition to active management strategies, communication efforts

are being developed to keep Missourians up-to-date on developments that will address this important conservation effort. Managing for and containing CWD will take a sustained effort from everyone involved for the foreseeable future.

The past 75 years of conservation in Missouri has been an arduous journey led by Missouri citizens. Conservation challenges have not disappeared and the next 75 years promise to be as challenging as the last 75 years. Management of CWD, allocation of water resources, invasive species and growing human populations that demand much from natural resources are just a few of the challenges we will face.

Landowners like Uncle Dan understood that a healthy natural landscape with all the important pieces in place was imperative, not only for themselves but future generations as well. The good news is Missouri landowners, sportsmen and citizens have always stepped up to those conservation challenges and found the way forward that sustained our state's important natural resources. There has not been full agreement on conservation approaches during the past 75 years, nor will there be for the next 75 years. While disagreement on approach will occur, I have great faith in the collective wisdom of Missourians. I look forward to working with citizens as we address important conservation issues.

Tom Draper, deputy director



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by Brett Dufur

MDC is celebrating the 75th anniversary of putting the state's citizen-led conservation efforts into action. In this issue, we highlight the Department's conservation education efforts.

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story and photos by Larry R. Beckett

A leisurely way to catfish.

Cover: Glade coneflower, by Noppadol Paothong.

📷 100mm lens • f/2.8 •

1/500 sec • ISO 160

Above: Students learn in an outdoor classroom following the Department's Discover Nature Schools curriculum, by David Stonner.

📷 16–35mm lens • f/4.5 •

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JUMPIN' JACK SPLASH

Jim Low's article in the July issue [Page 22] brought back many fond memories since, as a child and youth in northwest Missouri, I grew up hooking, shooting and gigging bullfrogs and proudly taking the legs home so that mom could fry up a feast.

After a hiatus of several years, my pursuit of "Jumpin' Jack Splash" resumed in my early 20s when my late father-in-law suggested that we go frogging on his Howard County farm. After our first successful outing, I began to cut off and skin the legs when my father-in-law walked up and said, "What are you doing? You don't just eat the legs, you cut off the head and then skin and fry up the whole frog." He went on to explain he and his nine siblings always did it this way as they struggled to get by on their family farm in the earlier years of the 20th century. And you know what? There really are a few good

bites of meat on the parts of Jumpin' Jack that we usually throw in the garbage!

Jim (PJ) Pettijohn, Springfield

Author's Note: Several folks who read my article were kind enough to educate me about more efficient use of frogs. Cutting off the legs is how I was taught, but I'm not too old to learn a better way!—Jim Low, news services coordinator

BARRED OWLS

Being an amateur birder for over 25 years, imagine my delight as I opened July's *Conservationist* to Danny Brown's photo and story on barred owls [Page 28]. I will never forget first hearing the nocturnal call of these "jewels of the night" on the Current River. Hats off to Danny for his marvelous photograph of these rarely seen dark-eyed beauties. And thanks to property owners

such as Art Tilley in Chesterfield who enjoy sharing the wildlife in their own backyard. The *Missouri Conservationist* has again offered the most beautiful nature photography in the state!

Debra Stevenson, Holts Summit

MYSTERIES OF THE DEEP

After reading *Four Fishing Records Fall* [Page 6; July] and seeing that there are 26 open categories for fish records, I had to look into that and see what I could catch or maybe have caught that may have qualified.

I am a lifelong outdoorsman and was shocked to see how many fish I didn't recognize. I even had to Google some, having no idea what they looked like. Some of the species I had to look up included: burbot, eel, warmouth, mooneye, bowfin, skipjack, white and yellow perch and a few others. I am an avid fisherman in Missouri streams and lakes but have only ever targeted bass, bluegill, goggle-eye, crappie and catfish with a line and pole and gar and carp with my bow.

Nathan Leiwewe, via Internet

BIG PINEY, BIG TIMES

The picture on Page 2 [Letters; July] of Big Piney River was taken on our family farm. In 1952, when it was hot and dry our family would walk to the area where the photographer was standing, carrying a gas lantern. We would swim until dark, when the air would cool, and then walk back to our house for a good night's sleep.

Richard Hicks, Houston, Mo.

MORE TURTLE TIPS

I read your editorial comment about turtles [Letters; July]. Here are some of the wildlife rehabilitation facilities in the state: Lakeside Nature Center, 4701 E. Gregory, Kansas City, MO 64132; Wildlife Center of Missouri, 1128 New Ballwin Rd., Ballwin, MO 63021; and Wildlife Rehabilitation Center, 1864 Little Brennan Rd., High Ridge, MO 63048. Most are near Kansas City and St. Louis, but your readers may find their locations helpful.

If the wounds on injured turtles can be cleaned and made safe from flies and maggots, that would save the turtle from unnecessary suffering. We all want to help these creatures from injury on our roads and highways.

Sharon Goff, Friends of Lakeside Nature Center, Inc.



Reader Photo

SNAKES ALIVE

John Stephenson of Afton captured this image of a prairie ring-necked snake. "I'm a huge fan of reptiles and have been since I can remember," says Stephenson. He said he frequently takes trips to various natural areas within a couple hours of his home to search for and photograph reptiles. "This particular photograph was quite an experience," says Stephenson. "Ring-necked snakes are very common and we see dozens during some trips. I had always read about the behavior where they display their bright belly to warn off predators, but never saw one do this until this photo. Reptiles and amphibians are often small, overlooked and misunderstood. With my photography, I try to show how colorful and interesting Missouri's reptiles and amphibians truly are."



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Blue Catfish Open-Houses

Three open houses this month will give anglers a chance to learn about blue catfish regulation changes being considered for Truman Reservoir and Lake of the Ozarks.

The open-house format will allow participants to ask questions of MDC staff and express their ideas about the potential changes. The changes would affect blue catfish at the two lakes and their tributaries, including the no-boating zone below Truman Dam.

Since the early 1990s, anglers and MDC biologists have had concerns about the declining number of larger blue catfish being caught from Truman Reservoir. In a survey, more than a third of Truman Reservoir anglers said they think the quality of catfishing has declined. Similar concerns have emerged more recently at Lake of the Ozarks. A reward tag study at Truman Reservoir during 2004–2009 confirmed anglers' concerns, showing that blue catfish 24 inches and larger were being harvested at an extremely high rate.

Both lakes contain adequate to excessive num-

bers of smaller blue catfish, but the high harvest of intermediate sized fish, 24 inches and larger, isn't allowing blues to grow to the larger sizes desired by many anglers. The potential regulations are designed to increase harvest on smaller blue catfish by doubling the daily limit from five to 10, while still protecting the most vulnerable sizes of blue catfish. Blue catfish can easily grow up to 60 pounds with the potential to exceed 100 pounds.

In response to these facts, MDC developed potential regulation changes to address the problem and presented those ideas during 2010 at stakeholder meetings held in Camdenton, Clinton and Warsaw. Most public comments at that time favored implementing the potential changes. Taking into account suggestions received at the stakeholder meetings, MDC modified the previous proposal designed to reverse the decline and increase the number of larger blue catfish while still permitting substantial catfish harvest.

The regulations being considered call for increasing the daily limit from five to 10 blue catfish, implementing a protected slot-length limit and setting a daily limit of one or two blue

catfish above the upper end of the slot.

The open houses will be held:

- Aug. 21 from 5 to 8 p.m. at the Midcounty Fire Protection District meeting room, 184 N. Business Rt. 5, Camdenton.
 - Aug. 23 from 5 to 8 p.m. at the First Baptist Church Gymnasium, 209 E. Jefferson St., Clinton.
 - Aug. 25 from 1 to 4 p.m. at the Warsaw Lincoln EMS Station, 1206 Medic Dr., Warsaw
- Participants can come and go any time and express their ideas about the potential regulations at the open houses. They also can take comment cards and send them in later or express their preferences at mdc.mo.gov/node/18097/submission/17932.

Grow Native! Moves to Prairie Foundation

Grow Native! has a new home. Launched in 2002 by the Missouri departments of Conservation and Agriculture, Grow Native! has done much to promote the use of locally adapted plants for landscaping. However, Grow Native! needed more freedom to work with commercial enterprises and found the right fit with the Missouri Prairie Foundation.

Grow Native! is dedicated to promoting the use of native plant varieties. Missouri Prairie Foundation's mission is conserving the diverse plant and animal communities of Missouri's native prairies. These closely related missions make them natural partners.

Since its formation in 1966, Missouri Prairie Foundation has built a membership of 1,400. It has protected more than 3,000 acres of prairie and supports prairie research and an active outreach program that includes a newsletter, workshops, prairie tours and grassland wildlife advocacy programs.

Missouri Prairie Foundation President Stan Parrish said his group is delighted to welcome Grow Native!

"We are a hands-on organization with numerous volunteers who are enthusiastic about protecting original landscapes and about native-plant gardening," says Parrish. "We're eager to get started."

The Grow Native! website, grownative.org, continues to offer information about developing native-plant landscape plans and about farm

and business opportunities related to native plants. The site even has a "plant picker" to help select the right plant for your particular needs.

Missouri Prairie Foundation also hopes to work with county and city governments and other local organizations to organize native-plant sales and landscaping projects.

For more information, contact grownative@moprairie.com.

2012 Tree Farmer of the Year

John Heckmann, owner of Bear Valley Tree Farm near Hermann, is Missouri's Tree Farmer of the Year.

Wildlife, wood products and recreation are Heckmann's top considerations in managing his family's 800-acre farm. His management plan focuses on creating more browse, cover and acorn

production to benefit wildlife. It calls for selective tree thinning to improve forest health and stimulate understory plant growth. The plan also calls for glade restoration through the removal of invasive cedars and maples and prescribed burning to encourage native grasses and forbs for wildlife food and cover.

With MDC help, Heckmann got cost-share help through the federal Wildlife Habitat Improvement Program and the Environmental Quality Incentive Program. He also entered a conservation-easement agreement with the National Wild Turkey Federation to protect the farm from development or poor wildlife management. The easement provides a perpetual plan that will help guide Heckmann's children when they inherit the farm.

The Tree Farm Program helps landowners manage woodlands for wildlife and timber production, and helps connect participating landowners with similar interests.

Elk Released

Missouri's free-ranging elk herd got a boost in June with the release of 33 elk at Peck Ranch Conservation Area (CA) and another 14 on neighboring land owned by The Nature Conservancy in the elk-restoration zone. The goal with moving a small group of elk to The Nature Conservancy property is to establish another nucleus of elk within the center of the restoration zone.

MDC launched the elk-restoration program in 2011, when it brought 34 elk from Kentucky. This year's releases bring Missouri's free-ranging elk



ASK THE OMBUDSMAN

Q: My friend and I were walking through a creek bottom after dark and noticed something glowing on the ground. A skidder had recently pushed a trail through the area, and the broken up pieces of rotting wood were glowing

with a pale green light. I took a piece home and it glowed through the first night, more dimly the second night and had stopped glowing by the third night. Why did it glow, and why did it stop glowing?

A: What you observed is called foxfire, an example of the phenomenon of bioluminescence. That is the emission of light by the conversion of chemical energy to light energy. Most bioluminescent organisms are deep sea creatures but certain fungi, such as the wood-rotting fungus that you found, also give off light. Fireflies are



our most commonly observed examples of bioluminescence. Another Missouri example is the poisonous mushroom called the jack o' lantern, which has gills that emit a greenish-yellow glow when fresh. I expect that your wood fragment stopped glowing when the wood dried to the point that the rotting fungus within it became less active.

Q: I read that waterfowl lose all of their feathers at one time during molting. I've never observed any great amount of feathers around wetlands or any naked waterfowl. Why is that?

A: While many waterfowl do experience synchronous molting, they lose their feathers over a period of a few weeks rather than all at once. The birds never appear naked because the new feathers are coming in as the old ones are shed. The birds are rendered temporarily flightless, and more susceptible to predators, during the process because the new replacement wing feathers are at first too small to allow flight. There will be more feathers around lakes and ponds during the molting period but the feathers are more spread out than they would be if they were shed all at once. While adults of most duck species go through two molts each year, geese only molt once annually.

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or email him at Ombudsman@mdc.mo.gov.

(continued from Page 5)

population to approximately 85. The elk brought from Kentucky this year were in better physical condition, thanks to experience gained last year. Mild weather and excellent care provided by MDC caretakers also contributed to a successful second year for the restoration program.

Hot, dry weather has reduced the movement of Missouri's free-ranging elk. They have been using natural forage available in shady portions of the 221,000-acre elk-restoration zone in Shannon, Carter and Reynolds counties. A few of the elk

even come back to the holding pens periodically.

The 12,000-acre central refuge area of Peck Ranch CA was initially closed to the public to minimize disturbance of cow-calf pairs as they settled into their new surroundings. The elk viewing auto tour route reopened 1 July.

Missouri's elk-restoration program has relied heavily on partnerships with other government agencies and citizen conservation groups. Major funding has come from the Rocky Mountain Elk Foundation, whose volunteers have provided

substantial assistance with labor to build holding pens at Peck Ranch CA. The Big Game Hunters Foundation also has donated funds for the project. More information about elk restoration in Missouri is available at mdc.mo.gov/node/9182.

Landowners Creating Elk Habitat

Ron and Sandy Morton probably don't think of themselves as being linchpins in Missouri's elk-restoration program. Nevertheless, their efforts to create habitat that benefits elk—and a wide range of other wildlife—could make the difference between success and failure of Missouri's latest conservation saga.

The Mortons are among 120 landowners from Reynolds, Shannon and Carter counties who have attended workshops to learn how to make their land more productive for deer and turkey and maybe even elk eventually. They were surprised what they learned.

"Everything they talked about, from glades to woodlands, we've got that on our property," says Sandy. Ron called the event "very informative on what elk habitat is," and said he hopes his children and grandchildren will get to see elk on their land one day.

The help of citizens like the Mortons is a critical part of Missouri's elk-restoration effort. Elk are grazing animals, with different habitat requirements than white-tailed deer. Elk can subsist on foods found in forested landscapes, but they need some open areas to thrive. The Ozarks landscape 200 years ago had much more open glades, savannas and grassy woodlands where elk grazed than exist there today.

In recent years, MDC and federal agencies with large Ozarks landholdings have worked to create landscapes more closely resembling pre-settlement conditions. This laid the foundation for elk restoration, but much remains to be done.

MDC shares the cost of some elk-friendly management practices on private land. So far, it has partnered with 26 landowners on 1,600 acres. MDC plans to continue offering elk-habitat workshops and cost-sharing arrangements for landowners in the elk-restoration zone.

Priority habitat practices include woodland restoration, prescribed burning and food plots designed for elk and other wildlife. That is in line with what's been done on the property of Phil



New Hope for Prairie Chickens

Greater prairie chickens are strutting and booming at Wah'Kon-Tah Prairie again, offering hope for a species that has been missing from most of its historic range in Missouri for decades.

Since 2008, MDC has trapped 425 prairie chickens in Kansas and moved them to Wah'Kon-Tah Prairie, north of El Dorado Springs. With the completion of that effort in April, biologists began a period of hopeful monitoring of the newly established prairie chicken population.

"Hopeful is the right word," says Grassland Bird Coordinator Max Alleger. "The question now is whether intensive management can provide enough grasslands to support prairie chickens in Missouri."

The relocated birds carry leg bands and tiny radio transmitters that help biologists track their movements and reveal where they prefer to feed, nest and roost. Prairie chickens at Wah'Kon-Tah Prairie used three courtship and mating sites this spring. This and the fact that some courting males and females were hatched on the area are encouraging signs that the population is increasing.

One surprise from the radio tracking is that prairie chickens move 20 to 30 miles across rivers, roads and wooded fencerows. They won't feed or roost near tree lines but they will cross them on long journeys. One bird flew to Kansas and then returned. Another spent the winter in a crop field in northwestern Vernon County and then returned to Wah'Kon-Tah for spring. Prairie chickens also have moved to other prairie remnants or traditional booming grounds that have not had birds in recent years.

"It's very important that all the habitat pieces are lined up right," says Alleger. "Prairie chickens are a worthwhile species. We're trying to do our level best to keep them in Missouri."

PRAIRIE CHICKEN: NOPPADOL PAOTHONG

and Charlotte Moss, who also attended an elk-habitat workshop. Their family has owned land in Shannon County since the 1940s. They already have a cost share agreement with the MDC.

"We've disked up an area and are working to turn it into a wildlife food plot area and we're really looking forward to seeing more wildlife, hopefully elk, on our land," says Phil.

The Moss and Morton families see benefits from Missouri's new elk herd that go far beyond their personal interest in the project.

"We see how the elk are increasing revenue through tourism," says Ron Morton, adding that he and Sandy regularly meet visitors to the community who come just to get a glimpse of the elk at Peck Ranch CA.

"We're glad to see elk coming to Missouri," says Moss.

For more information about elk in Missouri, visit mdc.mo.gov/node/9182.

Grouse Study Enters Second Phase

Biologists have habitat data in hand and are diving into the task of analyzing it to determine whether further grouse-restoration efforts in east-central Missouri are justified.

MDC launched the habitat study last year in response to a request from the Quail and Upland Wildlife Federation to restock ruffed grouse in east-central Missouri. MDC transplanted more than 4,000 ruffed grouse from other Midwestern states to suitable habitat in the central Ozarks, north-central and east-central Missouri between the 1940s and the 1990s.

Ruffed grouse numbers have declined dramatically since then. They persist in very small numbers in the river-hills region of southern Boone, Callaway, Montgomery and Warren counties. Quail and Upland Wildlife Federation expressed interest in partnering with MDC to bring the river-hills populations back. Before investing resources in further restoration work, the Conservation Commission wanted to know if the area has enough suitable habitat to justify the effort. Last year, MDC partnered with the Missouri Resource Assessment Partnership and the USDA Forest Service to design a two-year study to answer this question.

The first year of the study used cutting-edge LIDAR (light detection and ranging) analysis

Did You Know?

Missourians care about conserving wildlife

Hellbenders

» **Ozark and eastern hellbenders** are

large aquatic salamanders that prefer shallow, swift-flowing streams and rivers.

» **State endangered species**—both

subspecies are listed on the state endangered species list, and the Ozark hellbender is listed as an endangered species under the Endangered Species Act.

» **What caused their decline?** Factors likely contributing to their decline include habitat alteration and degradation, water quality degradation, predation, illegal harvest and disease.

» **Taking action**—MDC's Shepherd of the Hills Hatchery in Branson, and the Ron Goellner Center for Hellbender Conservation, WildCare Institute, St. Louis Zoo are devoted to long-term reproduction efforts of the species. Both of these facilities are hatching eggs collected from the wild to head-start young for release and to breed the species in captivity.

» **MDC's Shepherd of the Hills Hatchery** has hatched more than 2,700 eastern and Ozark hellbenders. Currently, the hatchery is rearing about 780 larval and 80 juvenile eastern hellbenders to be released in the future.

» **The St. Louis Zoo** is rearing nearly 1,550 larval and juvenile Ozark hellbenders.

» **The world's first captive breeding of the Ozark hellbender** occurred in the autumn of 2011 at the St. Louis Zoo and resulted in more than 150 larval Ozark hellbenders. This achievement will not only buy time to further address the decline of the species, but could save the species long-term.

» **To learn more** about hellbenders in Missouri, visit mdc.mo.gov/node/982.



Ozark hellbender

of satellite data to reveal details of vegetative land cover. Habitat work on conservation areas and habitat partnerships on private land in the river-hills region have focused on providing early-successional habitats ruffed grouse need. LIDAR provides a cost-effective way to measure the results of such management practices as timber-stand improvement harvests and even-aged timber harvests.

Resource Scientist Jason Isabelle says he and biologists from the USDA Forest Service will wade into the LIDAR data in the coming year.

"The maps created with LIDAR will give us a good idea of the density of forested habitats on a fine scale," says Isabelle. "The land-cover map will allow us to differentiate between cover types,

and then with the canopy-height map we will be able to dig even deeper. We know we're going to be looking for deciduous forest and old-field habitat, but LIDAR is going to allow us to dig deeper still and get at woody stem densities, which are an important factor in determining the quality of grouse habitat. We have the data we need. Now it's just a matter of working with it."

He said MDC will work with the USDA Forest Service to predict how a restocked grouse population would respond to available habitat. They also will conduct landscape simulations to determine how continuing habitat work might affect the success of grouse restocking. Then it will be time to decide whether further restoration efforts should be undertaken.



M

ANY OF US CAN STILL remember the teacher, friend or family member who first inspired our love for the outdoors. It often takes root

in our hearts and our minds. Over time, it becomes a part of who we are and guides our actions.

Today, we enjoy a conservation legacy nurtured by many generations before us, who shared their love of the outdoors and made it a part of our heritage. The Department continues to work with Missourians, and for Missourians, to conserve the fish, forest and wildlife of the state, as well as preserve our outdoor heritage and quality of life.

Central to the Department's mission is making sure every Missourian has opportunities to learn about and enjoy nature. "We promote Missouri's passion for conservation through hands-on activities and education with people throughout the state," says MDC Outreach and Education Division Chief Mike Huffman.

"The Department helps educate and empower citizens in many ways: by offering outdoor programs to people of all ages at nature centers, by working with schools to teach top-notch curriculum that engages students in the outdoors, by sponsoring archery in schools, by coordinating the state's successful hunter education program, and by providing shooting ranges and conservation areas to enjoy," Huffman says.

"The Department also teaches outdoor skills and supports community conservation efforts in every county through agent outreach. A wide variety of publications, such as the *Missouri Conservationist*, our exciting new *Xplor* kids' magazine, a number of go-to nature guides, as well as the MDC website, also help connect Missourians with nature," says Huffman.

NATURE CENTERS

Conservation education centers offer a huge range of programs touching on all aspects of the outdoors and conservation, from fishing workshops to presentations about wildlife and habitat. They are free and open year-round. Each year, the Department's nature centers connect almost a million people with the outdoors.

"At Burr Oak Woods Conservation Nature Center, we focus on helping people build the outdoor skills neces-



Conservation nature centers offer a range of programs touching on all aspects of the outdoors and conservation, from fishing workshops to presentations about wildlife and habitat. They are free and open year-round.

sary to confidently explore the wild and beautiful habitats of Missouri with their friends and family," says Lisa Lacombe, nature center manager.

Since Missourians passed the Design for Conservation sales tax in 1976, the Department has provided more outdoor education opportunities for Missourians, including seven nature centers located around the state. Those nature centers are:

- Anita B. Gorman Discovery Center, Kansas City
- Burr Oak Woods Conservation Nature Center, Blue Springs
- Cape Girardeau Conservation Nature Center, Cape Girardeau
- Powder Valley Conservation Nature Center, Kirkwood
- Runge Conservation Nature Center, Jefferson City
- Springfield Conservation Nature Center, Springfield
- Twin Pines Conservation Education Center, Winona

Other Department facilities that offer opportunities to learn about and enjoy Missouri's diverse outdoors include August A. Busch Memorial Conservation Area near St. Charles, Kirksville Regional Office in Adair County, and Shepherd of the Hills Fish Hatchery Conservation Center near Branson. Many other regional offices, conservation



MDC has developed free curriculum materials for grades K–12, called Discover Nature Schools. Along with free teacher training, student books and teacher guides for each unit, the Department provides grants for exploration equipment, outdoor classroom materials and field experiences.

areas and hatcheries also offer exhibits. Find a nature center near you by visiting mdc.mo.gov/node/4439.

DISCOVER NATURE SCHOOLS

Children are the key to Missouri’s conservation future. By working closely with the Missouri Department of Elementary and Secondary Education, MDC has developed free, widely adopted curriculum materials for grades kindergarten through 12, called Discover Nature Schools (DNS).

“Discover Nature Schools is a science and conservation education program at its best,” says Kevin Lohraff, the Department’s education programs and curriculum supervisor. “DNS is packed with exciting and engaging hands-on activities designed to bring students in grades K–12 outdoors and closer to nature.”



“DNS builds on kids’ natural inquisitiveness, giving them opportunities to get outdoors and closely observe the world around them,” Lohraff says. “Students learn to ask questions, form hypotheses, come up with ways to find answers, collect data, and find out if their hypotheses are right—all while recording observations, sketches and reflections in their science notebooks. Kids learn science by becoming scientists, and they learn about nature while being in nature. This is the best way to learn—to learn by discovery.”

With DNS, students learn about Missouri plants, animals, their habitats, and how they all fit together. In becoming familiar with the outdoors just outside their classroom, students learn to value natural resources close to home.

DNS lessons are closely aligned with state education standards in science and biology. Activities involving recording, communicating and presenting new information integrate with math and language-arts class work. The program began in 2006. By 2012, more than 78,000

The Missouri National Archery in the Schools Program (MoNASP) was created to teach kids the basics of archery as a part of school curriculum for grades 4–12. The Department certifies teachers with the required Basic Archery Instructor training at no cost to the teacher. In partnership with the Conservation Federation of Missouri, it also offers \$500 grants to schools for equipment.

Missouri children were connected with nature through various DNS instructional units and grants.

There are four units for various school-age groups. *Nature Unfolds* was developed for kindergarten through second grade. *Nature Unleashed—The Untamed World of Missouri Ponds, Forests and Prairies* is for grades 3–5. Middle school students (grades 6–8) work with *Conserving Missouri’s Aquatic Ecosystems*. *Nature Unbound—The Impact of Ecology on Missouri and the World* was developed for high school students.

Funding for *Conserving Missouri’s Aquatic Ecosystems* comes in part from the Federal Aid in Sportfish Restoration Program, which distributes some fishing-related taxes towards sportfish conservation and education.

Along with free teacher training, student books and teacher guides for each unit, the Department provides grants for exploration equipment, outdoor classroom materials and field experiences. Conservation grants supporting Discover Nature Schools totaled \$268,909 in 2011. Learn more at mdc.mo.gov/node/9019.



AGENT EDUCATORS

Conservation agents provide law-enforcement services to the public for protection and conservation of Missouri's fish, forests and wildlife, as well as for safe and proper public uses of conservation areas. Conservation agents also provide conservation education in a broad range of settings:

- » Prepare radio and television programs, newspaper articles, and meet with civic groups, schools, church groups and a wide variety of other organizations
- » Help administer the Department's Hunter Education Program, along with volunteer instructors and other MDC staff
- » Provide habitat-planning information and food-plot seed to landowners

» Coordinate and support the Conservation Federation of Missouri's Share the Harvest program, providing a way for hunters to donate deer meat to those in need

» Help stop poaching through the Operation Game Thief/Forest Arson hotline, which allows citizens to anonymously report poaching and forest arson

» Support programs such as Missouri's National Archery in the Schools, Discover Nature Girls Camps, and take conservation on the road with both a cooking trailer to teach high school students the tastier side of hunting and fishing, and a trailer equipped to teach students about trapping

» Partner with organizations and businesses, in programs such as the Juniors Acquiring



Knowledge, Ethics and Sportsmanship (JAKES) Program sponsored by the National Wild Turkey Federation; Ducks Unlimited groups and their Green Wings Program; and the Wonders of the Ozarks Learning Facility (WOLF), a partnership between the Springfield Public Schools and Bass Pro Shops.

ARCHERY IN THE SCHOOLS

The Missouri National Archery in the Schools Program (MoNASP) was created to teach kids the basics of archery as a part of school curriculum for grades 4–12. The program, part of the National Archery in the Schools Program (NASP), began in Missouri in 2007. Today more than 38,000 Missouri students from 227 schools participate in MoNASP. The 2012 state tournament drew more than 1,150 competitors from 55 schools.

Students of all sizes and abilities learn archery together, and at competitions, boys and girls are at the shooting line together. “You don't have to be athletic, fast, big or strong to be good at archery,” says NASP's co-founder, Roy Grimes.

When teacher Tracy Flood heard about the archery program, she knew it would be a good fit for her outdoor education class. Flood, a teacher at Crane Middle School, now has a waiting list of kids who want to take her class. “Archery is the most popular class in middle school. Once they're hooked, they're hooked. Kids want to shoot, so they make sure they keep their grades up.”

“Kids love archery, and archery helps kids excel,” says the Department's MoNASP Coordinator Eric Edwards. “Statistics show that school archery programs improve school attendance, increase participants' self-confidence and physical activity, they can better relate to what they are learning, it appeals to a great variety of students, it gets kids outdoors to discover nature, and for many, it can become an after-school activity.”

Communities are seeing the archery program as a great investment in their future. Local sporting clubs,

conservation groups and civic organizations often donate archery equipment to schools, volunteer to help support after-school archery clubs and organize local competitions. In Missouri, the National Wild Turkey Federation, Whitetails Unlimited, Pheasants Forever, Quality Deer Management Association, Bass Pro Shops and the Friends of National Rifle Association are just a few of the groups that have donated equipment or funds to support schools.

“Success breeds success,” says Conservation Commissioner Don Johnson, who helped bring the archery program to Missouri. “Once kids succeed in archery, they find they can succeed in other parts of their lives.”

The Department certifies teachers with the required Basic Archery Instructor training at no cost to the teacher. In partnership with the Conservation Federation of Missouri, it also offers \$500 grants to schools for equipment. Learn more at mdc.mo.gov/node/3813.

HUNTER EDUCATION

Missouri's Hunter Education Program offers many benefits to Missourians. “This safety program produces individuals who are responsible, knowledgeable, safe and involved in the outdoors,” says MDC State Hunter Education and Range Coordinator Tony Legg.

More than 1,600 volunteer and staff instructors provide training and certification through traditional classroom hunter education classes and through a combination online and field day course.

“The Missouri Hunter Education program is a prime example of government and volunteers working suc-

cessfully together to save lives, promote conservation and keep the hunting heritage alive for generations to come,” says James Robertson, president of the Missouri Hunter Education Instructor’s Association, and volunteer instructor since 1991.

Missouri’s first formal hunter safety training was created in 1957 as a voluntary course. The Department’s official statewide range program began in 1972 with the passage of the Dingell-Hart excise bill, amendment to the Pittman-Robertson Act of 1937, which provided funds for hunter education and target range development from excise taxes on handguns and archery equipment. Now known as the Federal Aid in Wildlife Restoration Program, this federal funding continues to support Missouri’s hunter education program.

In 1987, Missouri approved a mandatory hunter education requirement for all hunters during the firearms seasons beginning in 1988, for anyone born on or after January 1, 1967. This regulation marked the beginning of a new era in Missouri’s Hunter Education Program. To date, more than 1.1 million Missourians have completed the course. Due to the success of the program, Missouri’s model has become a standard-bearer, and has been widely adopted by many other states.

Mandatory hunter education has dramatically decreased and prevented many injuries and deaths. The



The Department supports 1,200 Missouri Master Naturalists in 12 chapters, who provide more than 44,000 hours of volunteer service to habitat restoration and conservation efforts each year.

number of hunting incidents began dropping dramatically in 1992, when any hunter under the age of 26 would have attended a hunter education course, and have declined steadily since.

The Department also offers free bowhunter education courses and a free, 15-minute online tree-stand safety course. Learn more at mdc.mo.gov/node/3095.

VOLUNTEERS VITAL FOR SUCCESS

The Department partners with tens-of-thousands of individuals to improve Missouri’s fish, forests and wildlife.

“Volunteers are the lifeblood of conservation in Missouri,” says Syd Hime, MDC volunteer and interpretive programs coordinator. “Thousands of volunteers provide tens of thousands of hours of volunteer service at our hatcheries, nature centers, offices and shooting ranges, each year. Their passion and enthusiasm are contagious, and Missouri is a better place for it.”

Most volunteers contribute in one of these areas:

» Hunter education: Approximately 1,400

volunteers donated more than 34,000 hours last year as primary instructors for Missouri’s mandatory Hunter Education Certification and voluntary Bowhunter Education Certification courses.

» Staffed ranges: About 160 people donated more than 12,500 hours last year offering primary support for public firing line safety, shooting and hunting related programs.

» Nature centers: More than 450 volunteers at hatcheries and nature and interpretive centers throughout the state donated more than 12,300 hours last year. Volunteers develop and conduct programs, work with school groups, lead hikes, assist with area management and more.

» Master Naturalists: The Department also supports 1,200 Missouri Master Naturalists in 12 chapters, who provide more than 44,000

hours of volunteer service to habitat restoration and conservation efforts each year.

» Forest Keepers: More than 2,500 Forest Keepers volunteer almost 18,000 hours observing and reporting on the condition of rural and community forests.

» Stream Teams: More than 3,800 active Stream Teams improve and protect their adopted stream of choice. Teams perform dozens of activities like litter pickup, water quality monitoring, tree planting and storm drain stenciling. Last year, volunteers contributed more than 145,000 hours to our state’s stream resources.

The Department has many other volunteer opportunities to explore. If you’re interested in playing a role in keeping Missouri’s nature green, clean and healthy, learn more at mdc.mo.gov/node/4668.



SHOOTING RANGES AND OUTDOOR SKILLS

Your outdoor recreation can be safer and more satisfying if you increase your knowledge and hone your skills. The Department operates five staffed shooting ranges and outdoor education centers designed to improve outdoor skills and develop safer hunters.

These facilities are located in Platte, Jackson, Greene, Jefferson and St. Charles counties. They offer target shooting, as well as numerous outdoor skills programs, such as archery, map and compass reading, and wildlife identification. The Department also has more than 70 unstaffed ranges. Check for upcoming events at shooting ranges and outdoor education centers at mdc.mo.gov/node/6209.

CITIZEN-LED CONSERVATION EDUCATION

Educating and involving future generations in the excitement of outdoor recreation and conservation opportunities involves the efforts of many partners. Any attempt to list them all could never be complete—but include Missourians who volunteer their time and expertise to a variety of Department programs (see sidebar on Page 14), The National FFA Organization, the 4-H Youth Development Program, Ducks Unlimited's Green Wings, AmeriCorps volunteers, National Wild Turkey Federation, Conservation Federation of Missouri's Conservation Leadership Corps, and a va-

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riety of important state and nationwide hunting and fishing organizations.

"Regardless of the organization, all of these individuals share a common bond, which is that they each donate an incredible amount of time and energy to share their love of the outdoors and to help preserve our outdoor heritage," says Tim Ripperger, deputy director.

For the past 75 years, education has been a major focus of the Department. "Part of our mission is to provide the opportunity for all citizens to use, enjoy and learn about the forest, fish and wildlife resources of the state," says MDC Director Robert L. Ziehmer. "It's a partnership with Missourians, and for Missourians. It is gratifying to see so many Missourians sharing their love of the outdoors by teaching and mentoring tomorrow's conservation leaders. The work we do today sows the seeds for a stronger connection to the land and the outdoors tomorrow." ▲

Blending Farming



Steve and Sharon Oetting — Lafayette County

Steve and Sharon Oetting have taken advantage of programs offered through multiple agencies to both improve the farm's efficiency and to conserve the land.

and Conservation

Good land stewardship benefits both
nature and the bottom line.

by KENDALL COLEMAN, STEVE HOEL *and* STAN SECHLER
photos by DAVID STONNER



CONSERVATION AND COMMERCE ARE compatible. With help from the Department of Conservation and other agencies, conservation can even make farms more successful. Here are just a few examples of how good stewardship and resources can improve nearly any type of farming operation.

Coexisting With Wildlife

One mile south of Interstate 70 in southeastern Lafayette County, lies a farm that has been in the same family since 1839. The 700-acre farm, owned and operated by Steve and Sharon Oetting since 1979, is located near Concordia and produces mostly corn and soybeans and up to 2,400 hogs annually.

Along with the farm's growth, the Oettings have made a concerted effort to implement a wide range of conservation practices aimed at protecting soil, water and wildlife, proving that production agriculture and stewardship of natural resources can go hand in hand.

As the Oettings put it: "Caring for the environment is not only the right thing to do for our family but [also] for the community and future generations. We feel strongly that it is our opportunity to leave one of the greatest legacies in the world: land that has been used for what it can provide but responsibly cared for and in a condition to continue to provide for generations yet to come."

The Oettings are clearly passionate about family farms and natural resources, and their activities and achievements speak to their commitment to both. Sharon serves on the Missouri Farm Service Agency's State Committee and actively promotes family farms through multiple avenues. Steve served on the Missouri Department of Conservation's Quail and Grassland Bird Council and is an avid quail hunter. Their farm won the National Pork Board's Environmental Stewardship Award and Missouri Master Farmer Award.

The Oettings have taken advantage of programs offered through multiple agencies to both improve the farm's efficiency and to conserve the land. The Lafayette County County Soil and Conservation District provided cost-share funds to design terrace and waterway systems that reduce soil erosion on row crop acres. The

terraces slow the flow of water across a field, and the waterways channel water through a stable grass strip that filters water before it enters a stream. The terrace and waterway system acts to conserve soil for future generations that will farm this land.

The Oettings have also used the Environmental Quality Incentives Program (EQIP), funded through the Natural Resources Conservation Service (NRCS), to help make their hog operation more efficient and environmentally sound. Hundreds of native trees were planted around the hog barns, forming a windbreak to capture and divert odor from the barns. A fertilizing system uses GPS and previous soil sample tests to feed precisely controlled nutrients that correspond with the soil's changing needs across each field. Additionally, equipment upgrades allow the Oettings to more accurately apply lagoon effluent from the hog operation as a natural crop fertilizer.

The majority of the Oetting's conservation practices have been funded through the U.S. Department of Agriculture (USDA). Local USDA staff from NRCS and the Farm Service Agency (FSA) helped the Oettings install field buffers through the Conservation Reserve Program. These buffers were planted to either wildlife friendly native grasses or native tree species to provide wildlife cover, reduce soil erosion and protect water quality. Over the years, the Oettings have planted nearly 10,000 trees and more than 35 acres of native grass buffers. The Oettings receive annual rental payments for taking these environmentally sensitive areas out of production, making the conservation practices pay their way for the farming operation.

The Oettings completed management practices serve to protect and improve the natural resources for future generations while adding to the farm's bottom line. The farm is an example of how a successful production agriculture operation can thrive, while also incorporating land stewardship practices.

Steve and Sharon sum it up best: "In our day-to-day operations, we don't believe that we have ever made a conscious effort to be environmental stewards, but rather that it is something that has been instilled in our hearts, our minds and our production practices in being responsible workers of the land."

“With a farm that has been in the family almost 174 years, thoughts of passing our land, our values and agricultural opportunities on to future generations is a given—it's a legacy.”

—STEVE AND SHARON OETTING



Robin and Debbie Frank — Harrison County

Grasslands

Restoring prairie ecosystems requires collaboration between state agencies and local residents. In Harrison County, 30,000 acres have been designated as a focus area for tallgrass prairie protection and restoration. This area is commonly known as the Grand River Grassland Conservation Opportunity Area. With Dunn Ranch and Pawnee Prairie near the center, the geography has special significance.

Within this grassland, Missouri conservationists are working to restore populations of the greater prairie chicken. Hundreds of thousands of these birds once populated Missouri, but those numbers have dwindled to the hundreds. The relentless loss of prairie, the introduction of tall fescue and the encroachment of trees added to losses of prairie chicken populations. About 93 percent of their original range is now gone.

In response, several conservation organizations identified the Grand River Grassland Conservation Opportunity Area for protection.

Landowners with property within the area can take advantage of conservation opportunities, including a cost share to enhance and expand prairie chicken habitat.

Robin and Debbie Frank have been especially active in conservation programs in the area. The Franks are cattle producers in the northwest corner of Harrison County. Their 3,000-acre ranch is home to 800 cow/calf pairs. The Franks work with local Conservation Department staff to implement practices that benefit wildlife, as well as their cattle business.

Grassland wildlife rely on large areas, and the support of private landowners is critical to the expansion and preservation of their living spaces. Tree removal, legume interseeding, prescribed fire, native warm-season grass establishment, exotic species control and fencing benefit both prairies and producers.

Other vegetation, such as red clover and alfalfa, can add nutrition to a producer's grazing or hay rotation. Many wildlife species also benefit from

Robin and Debbie Frank are cattle producers in the northwest corner of Harrison County. Their 3,000-acre ranch is home to 800 cow/calf pairs. The Franks work with local Conservation Department staff to implement practices that benefit wildlife, as well as their cattle business.

interseeding legumes. Prairie chicken broods are attracted by the insects that usually accompany legumes. About 500 acres of interseeding has been implemented on the Frank Ranch, improving forage and brooding habitat.

The Franks have focused on removing unwanted woody vegetation from fence rows, from around ponds and from the upper reaches of several headwater streams. Besides reducing potential lightning rods, tree removal enables the growth of more valuable forage. If you combine the harvest of commercially valuable trees, fence row renovations and timber thinning, the Franks have removed more than 100 acres of trees during the past 5 years.

Prairie chickens prefer a habitat that offers a diversity of plants and a mixture of plant heights. A mosaic of vegetation from 6 to 18 inches high is ideal. Fields that are never grazed eventually get too tall and too thick. Grazers like cattle provide this patchwork structure. Warm-season grasses are well adapted to north-west Missouri soils and offer nutritional forage in the warmer months of June, July and August when cool-season grasses are less abundant.

To provide better nesting for prairie chickens and to offer alternative forages for cattle, Robin Frank has used several programs to convert 400 acres of fescue pasture to warm-season grasses. He plans to convert about 20 percent of his available grazing acres to native plants. "Cattle do well on this summer native warm-grass forage," he said. "I have experienced increased conception rates and gains when compared to normal fescue pasture."

Cattle Country

Richard and Tina McConnell's 80-acre farm near Morrisville combines fields of lush cool grasses and native warm-season grasses with a shaded stream flowing across the property. Their cow/calf herd, consisting of 21 cows, is content grazing across the fields.

In June 1993, they purchased the land, which had a mix of pastures, small woodland and a stream. "When I purchased the property, it was nothing but overgrown fence rows and sprouts, and the pastures were nothing but broomsedge," Richard said.

Bob Howe, district conservationist with the Natural Resources Conservation Service (NRCS),

completed an inventory of McConnell's new farm and developed a conservation plan for the property. That plan provided the road map the McConnells have followed for the past 19 years.

The McConnells knew the broomsedge was an indication of poor soil fertility. They conducted the first soil test in 1994 and began applying lime and fertilizer. "I knew the pH of the soil would be low, but one thing that really struck me was how low the percent of organic matter was," said Richard. In 1994 the organic material was 1.9 percent and below for all the fields. In 2011 the organic material ranged from 5.4 percent to 7.3 percent for all the fields. The pH readings now range from 6.3 to 6.5, which is a significant increase.

In 1994, fencing was constructed for the rotational grazing and alternative water system. State cost-share funds from the Polk County Soil and Conservation District (SWCD) and Missouri Department of Conservation's Landowner Assistance Program were used for this project. The initial grazing plan was designed with five fields. The McConnells have the farm split into 14 paddocks that range from 2 to 8 acres. They move the cattle daily so they are always grazing on new grass.

In 1995, the McConnells used the SWCD cost-share program to interseed legumes into his pastures. They drilled a mix of four species of clover into 21 acres. Their goal was to reduce the amount of nitrogen required in the fertilizer because the legumes would add nitrogen to the soil. The legumes also became a food source for deer and turkey.

As that was completed, the McConnells were ready to address the summer slump of pasture from their cool-season grasses by converting two fields to native grasses. In 1997, they planted 9 acres to switch grass. That seeding never took off; so in 2000, they replanted the switch grass and also planted 7 acres of eastern gamma grass.

The warm-season grasses are vital to their farming operation. The summer of 2007 was very dry, and most of McConnell's neighbors were feeding hay during July and August. However, the 16 acres of warm-season grass provided 53 days of grazing during July and August. "When the neighbors were feeding hay, all I was doing was moving a poly wire to provide new grass," Richard said.

“I have the best of both worlds. My farm provides the ability for me to raise my cattle and also the mixtures of the grasses and cover [that] provide [for] good wildlife habitat.”

—RICHARD
McCONNELL



Richard and Tina McConnell — Polk County

Reducing the amount of soil erosion occurring along the stream also became a priority. They noticed that the amount and diversity of aquatic life seemed to be on the decline. Although the rotational grazing system had reduced the effects the cattle were having to the streambanks, the McConnells wanted to expand the riparian corridor and make that area more wildlife friendly.

They followed the conservation plan that included fencing off a half-mile of stream from cattle, restoring a 50-foot-wide riparian corridor along the stream, constructing two rock stream crossings and enrolling the riparian corridor area into the Conservation Reserve Program.

Now, nearly 15 years later, the riparian corridor is dense and thick, providing shade for the stream and much cooler water temperatures. During most of the summer there are pools of water full of minnows and crawdads. Before the modifications, the stream would normally dry up in June. Deer and turkey are regularly seen using the riparian corridor as a travel lane and

to drink water. The McConnells also noted that now during heavy rain, the stream will rise but not with the same violent force that it did before. The water color will be milky but not the deep brown it once was. These changes mean that the soil particles are staying on the streambanks and not being carried downstream.

When asked if there is anything else they have planned for the farm, Richard said, “No, I finally have it pretty much how I envisioned it 19 years ago when I purchased the farm.” He then added, “Without the technical assistance from employees of the NRCS, SWCD and MDC and various cost-share programs through these agencies, I would have never been able to achieve this dream.”

Visit us online at mdc.mo.gov/node/2089 to learn more about resources for landowners and farmers, or see Page 3 for regional contact information. Discover how conservation can benefit your farm, our economy and everyone’s quality of life. ▲

Richard and Tina McConnell fenced off a half-mile of stream from cattle, restored a 50-foot-wide riparian corridor along the streambanks, constructed two rock stream crossings and enrolled the riparian corridor area into the Conservation Reserve Program.

Get *the* Drift

A leisurely way to catfish · *story and photos by* LARRY R. BECKETT







AS THE BOAT ROCKED GENTLY with the waves, I leaned back in the lawn chair, soaked up the sunshine and sipped an ice-cold sweet tea. The wind blew just enough to keep the boat moving at a snail's pace and a masseuse could not have put my muscles into a more relaxed state. Even my fingers had loosened their once tight grip on the spinning rod, which was now only held in the palm of my hand by gravity. I was nearly asleep when something at the bottom of the lake decided it was hungry for the smelly shad attached to the end of my line. It attacked the bait with the force of a semi, and I went from unconscious to cardiac arrest in the blink of an eye. I lunged and grabbed the rod as it was going over the side of the boat. A quick set of the hook and the fight was on. After a few minutes of rod bending and line stretching, a pot-bellied blue catfish was hoisted into the boat.

Drift fishing is the process of letting your bait bounce along the bottom while a gentle wind blows your boat slowly across the lake. Using this method to pursue catfish during August and September can provide exceptional results in any body of water inhabited by these bottom-dwelling, whiskered fish. During the late summer and early fall, catfish will spread out onto large, open flats in lakes. Finding the catfish can be difficult and drifting allows you to cover a large area and increase your odds of putting the bait in front of fish. Although flat-head catfish can occasionally be caught drifting, channel catfish and blue catfish are more likely to engulf your bait. The widespread distribution of these fish and their willingness to eat just about anything make them a great source of fun for beginning and experienced anglers alike.

Catfish don't care about fancy bait presentations or high-dollar fishing gear. If you can push the button on a reel and let the bait drop to the bottom, you can drift for catfish. You

You never know what size of fish is going to strike, so it is best to use 17–20 pound test line. Any medium-heavy rod equipped with a reel that will hold at least 100 yards of whatever line that you choose will work for drift fishing.



Fishing Permits and Regulations

Be prepared for your next fishing trip, buy your permit online and review the current fishing regulations at mdc.mo.gov/node/89.

never know what size of fish is going to strike, so it is best to use 17–20 pound test line. Catfish are not particularly finicky and are more concerned with the smell of the bait than the size of the line. If the body of water you are fishing produces larger fish, using a stronger line will not likely reduce your success. Any medium-heavy rod equipped with a reel that will hold at least 100 yards of whatever line that you choose will work for drift fishing.

One of the best methods for rigging your line for drifting is by using a three-way swivel.

Attach one point of the swivel to the line from your rod. Add an 18- to 24-inch piece of line to the second leg of the swivel. At the end of this, tie on a weedless sinker. You want to use one that is large enough to stay on the bottom while drifting but not too heavy to discourage the catfish from swimming off with the bait. A 4-ounce bell sinker is a good place to start. Tie an 18-inch piece of line to the third leg of the swivel. To the end of this line, attach a snap swivel and the appropriate hook. One of the most important tools in a successful fishing trip is having the right type of hook and ensuring that it is razor sharp. Depending upon the type of bait that is being used, circle hooks and treble hooks usually bring more fish to the boat than most other types.

Half of the fun of catfishing comes from the variety of pungent baits that can be used. Many catfish anglers experiment with dif-

Catfish don't care about fancy bait presentations or high-dollar fishing gear. If you can push the button on a reel and let the bait drop to the bottom, you can drift for catfish.



Cut shad is a commonly used bait for drift fishing. To prepare a whole shad, lay it on a cutting board and cut it into vertical strips about an inch wide. Attach a 2/0 circle hook to the snap swivel and thread the hook twice through one of the shad strips.

ferent odors and flavors, and some result in closely guarded secret recipes. Although it is exciting to come up with your own concoction, most catfish will gladly engulf a few readily available baits.

Probably the most commonly used bait for drift fishing is cut shad. They can be caught with a casting net or purchased in the store. To prepare a whole shad, lay it on a cutting board and cut it into vertical strips about an inch wide. Attach a 2/0 circle hook to the snap swivel and thread the hook twice through one of the shad strips.

Many other types of bait, including hot dogs, worms, shrimp and stink bait, will also catch catfish. By using a different type of bait on each rod in the boat, you can determine which one the fish prefer on that particular day.

To locate flats, obtain a contour map of the lake. Look for large areas with little change in depth, preferably in the range of 15- to 25-feet. To begin drifting, position the boat on the upwind side of the flat. The ideal wind conditions will move your boat at about ½ mile per hour. If the boat is moving slower, you can use a trolling motor to increase your drifting speed. If the wind is stronger and you need to slow the boat down, it can be done in a couple of ways. Wind socks are available that attach to the side of the boat and work well at slow-

Drift fishing is the process of letting your bait bounce along the bottom while a gentle wind blows your boat slowly across the lake. One of the best methods for rigging your line for drifting is by using a three-way swivel. Attach one point of the swivel to the line from your rod. Add an 18- to 24-inch piece of line to the second leg of the swivel. At the

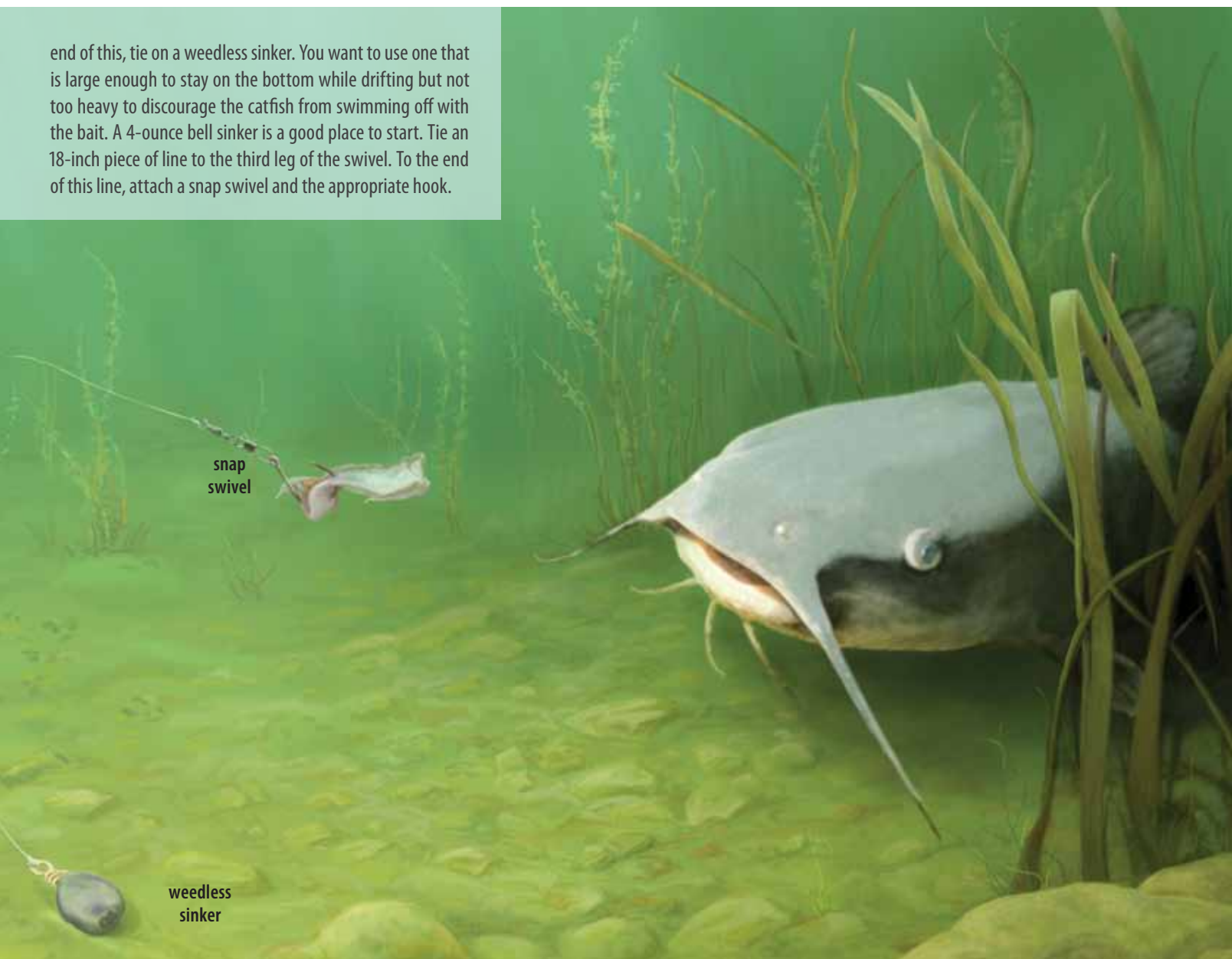


three-way swivel

ing the boat's speed, but it is sometimes just as easy to use two five-gallon buckets. Attach a 4- to 8-foot section of rope to each one and tie them to opposite ends of the boat. They will fill with water and provide the same type of drag as a wind sock.

Once you begin drifting across the flat, it is best to hold onto your fishing rod. When drifting, strikes can be lightening fast and if the rod is in a rod holder, the fish will often be missed. Once a strike occurs, try to mark the location with a marker buoy, a GPS or by shoreline landmarks. After drifting the entire

end of this, tie on a weedless sinker. You want to use one that is large enough to stay on the bottom while drifting but not too heavy to discourage the catfish from swimming off with the bait. A 4-ounce bell sinker is a good place to start. Tie an 18-inch piece of line to the third leg of the swivel. To the end of this line, attach a snap swivel and the appropriate hook.



length of the flat, you can maneuver the boat upwind of the strike zones and target the areas that produced fish.

As summer winds down, lasso a few shad with a casting net, throw a couple of five-gallon buckets in the flat-bottomed boat and head to the lake. Enjoy the cool breeze blowing the boat gently across the water, but try to keep a tight grip on the rod. It can be yanked over the side of the boat in an instant and sink to the bottom among the many other fishing rods of those unprepared for the powerful strikes of catfish while drift fishing. ▲

Find MO Fish

MDC now has a free smart phone application that shows you a map of Missouri with the locations of public boat ramps to major lakes, rivers and streams. The map also shows you the exact location of underwater fish structures MDC has established over the years. These fish-attracting structures act as habitat for fish. With the geo-location feature, you can guide your boat right up to your favorite fish attractor and start fishing. For links to find this application for your phone, go to mdc.mo.gov/node/15421.

Glade Coneflower

Bees, butterflies, birds and humans all welcome this graceful summer resident.

MISSOURI ABOUNDS WITH lovely wildflowers of every shape and color but none are more elegant than the glade coneflower. Its beauty is subtle but its architecture stops nature lovers in their tracks. Maybe it's the plant's lavender straps, which hang loosely from a rufous crown like ears on a basset hound, streaming delicately in the wind. Typically found in glades, hence the name, glade coneflowers add grace to Missouri's natural landscape.

Coneflowers of glades and prairies are represented by two closely-related species, the glade coneflower, *Echinacea simulata*, and the pale purple coneflower, *Echinacea pallida*. Plant taxonomists distinguish the plants mainly by pollen color. *E. pallida* has white pollen and is more widespread while *E. simulata*, also called the glade coneflower, has yellow pollen and is more common in glades. The glade coneflower's hairy stem grows unbranched to 3 feet tall with a terminal flower. A perennial, with lance-shaped basal leaves, it blooms from May to July. The spiked flower head inspired the genus name of the coneflower, *Echinacea*, which is Greek for "hedgehog," a spiny mammal. As with other plants of the genus *Echinacea*, the glade coneflower is valued for its medicinal qualities, but it is important to remember that digging up native plants on public land or even along roadsides in Missouri is illegal. Coneflowers are valued by insects, including butterflies and bees, for their pollen and nectar. Also, a variety of birds can be found foraging in late summer and early fall on coneflower seeds.

Coneflowers are a wonderful addition to native landscaping projects, especially where direct sunlight is available. They are easily transplanted in the fall but can also be planted from seed if you are willing to wait a few years for the plant to mature and bloom. My wife and I grow a variety of cone-flowers around our home in Franklin County. To expand our garden we simply cut entire seed heads from selected plants and save them for planting in new locations. Plants can also be divided for replanting or sharing with friends and family.

One of the things I love about cone-flowers is the way they attract American goldfinches in late summer after their heads go to seed. Every day when I return home from work, a dozen or more golden jewels are feeding voraciously on coneflower seeds. As a photographer, I'm always excited to capture a new pose as one of the male finches, a black-capped lemon drop, hangs from a withering flower, eyeing me carefully to determine my intentions. The interaction between cone-flowers and goldfinches has become an annual event at our home, signifying the end of summer and the beginning of the cool, crisp days of fall—my favorite time of year.

—Story and photo by Danny Brown

📷 70–200mm lens • f/7.1 • 1/160 sec • ISO 200

We help people discover nature through our online field guide. Visit mdc.mo.gov/node/73 to learn more about Missouri's plants and animals.



James A. Reed Wildlife Area

For great fishing, trails and all-day outdoor adventures in the Kansas City region, this area is a must-visit.



PACK UP YOUR tackle and head down the trail to one of James A. Reed Memorial Wildlife Area's (WA) many fishing lakes. Located in Jackson County, this diverse 3,083-acre area features 650 acres of woodlands along with hundreds of acres of grassland, wetland, cropland and old fields.

The area's 252 acres of lakes and ponds, ranging in size from 1 to 42 acres, make for a lovely landscape and great fishing. Most fishing lakes contain good populations of largemouth bass, channel catfish, crappie, bluegill, green and redear sunfish, and bullheads; and striped bass hybrids have been stocked in several lakes. Two boats are available for rental and use on Gopher Lake, James A. Reed Memorial WA's largest body of water. The area also provides outdoor learning opportunities with Prairie Hollow Lake, a reservation-only lake for educational group activities, and Honker Pond, a kids-only fishing spot.

If you'd rather exercise your legs than your casting arm, try taking in the scenery on one of James A. Reed Memorial WA's trails. The area boasts 15 miles of multiuse trails for hiking, bicycling and horseback riding, along with the 2.5-mile Shawnee Trace Nature Trail for hiking. You can even take a rest after a day of exploring with a comfortable picnic at a table shaded by one of three on-site pavilions.

While no general camping is permitted, James A. Reed Memorial WA offers a reservation-only primitive campsite for organized youth groups with special-use permits. The area also offers excellent hunting in season for deer, dove, small game including squirrels and rabbits, and some waterfowl. Waterfowl hunting at James A. Reed Memorial WA is available by reservation only. Archery hunters can pack in their bows and practice on site at a 29-station archery range.

Interpretive displays throughout the area give visitors a look at the habitat present and various management practices in use, such as native grass and shrub plantings and crop fields that provide year-round food and cover for wildlife.

James A. Reed Memorial WA is located 1 mile east of Lee's Summit on Ranson Road, 1 mile south of Highway 50. As always, visit the James A. Reed Memorial WA website (listed below) for an area brochure and map.

—*Rebecca Maples, photo by David Stonner*

 24–70mm lens • f/5 • 1/500 sec • ISO 200

Recreation opportunities: Archery range, bicycling, bird watching, fishing, hiking, horseback riding, hunting in season, trapping and youth camping

Unique features: This area features 12 fishing lakes or ponds, a 29-station archery range, 15 miles of multiuse trails and three pavilions for comfortable outdoor picnicking.

For More Information

Call 816-622-0900 or visit mdc.mo.gov/a5501.





Hunting and Fishing Calendar

FISHING

	OPEN	CLOSE
Black Bass from Ozark streams	5/26/12	2/28/13
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/12	10/31/12
Nongame Fish Giggling	9/15/2012	1/31/2013
Trout Parks 3/01/12	10/31/12	

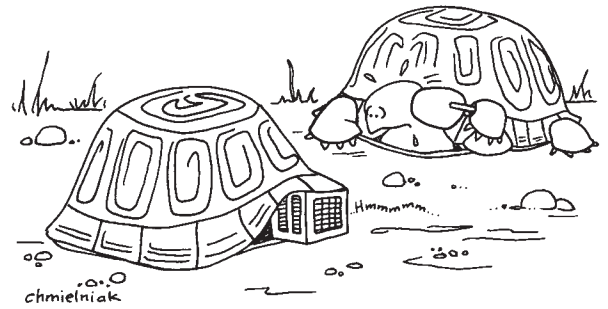
HUNTING

	OPEN	CLOSE
Coyote	5/07/12	3/31/13
Deer		
Archery	9/15/12	11/09/12
	11/21/12	1/15/13
Firearms		
Urban Zones	10/05/12	10/08/12
Early Youth	11/03/12	11/04/12
November	11/10/12	11/20/12
Antlerless	11/21/12	12/02/12
Alternative Methods	12/15/12	12/25/12
Late Youth	12/29/12	12/30/12
Dove	9/01/12	11/09/12
Furbearers	11/15/12	1/31/13
Groundhog	5/09/12	12/15/12
Pheasant		
Youth (North Zone Only)	10/27/12	10/28/12
North Zone	11/01/12	1/15/13
Southeast Zone	12/01/12	12/12/12
Quail	11/01/12	1/15/13
Youth	10/27/12	10/28/12
Rabbit	10/01/12	2/15/13
Rails (Sora and Virginia)	9/01/12	11/09/12
Squirrel	5/26/12	2/15/13
Turkey		
Archery	9/15/12	11/09/12
	11/21/12	1/15/13
Firearms	10/1/12	10/31/12
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see mdc.mo.gov/node/3830	
Wilson's (common) Snipe	9/01/12	12/16/12
Woodcock	10/15/12	11/28/12

TRAPPING

	OPEN	CLOSE
Beaver and Nutria	11/15/12	3/31/13
Furbearers	11/15/12	1/31/13
Otters and Muskrats	11/15/12	2/20/13

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* or the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit mdc.mo.gov/node/130 or permit vendors.



"Beating the heat"

Contributors



LARRY BECKETT is a writer, photographer and videographer from Bentonville, Ark. He grew up in southwest Missouri, where he spent much of his youth chasing the plentiful whiskered bottom dwellers of the state.

KENDALL COLEMAN is a private land conservationist. He has been an avid hunter, trapper and fisherman since childhood and spends as much time as he can outdoors. He enjoys helping Missouri landowners reach their land management goals.



BRETT DUFUR, an MDC editor, is writing a history of the Department for its 75th anniversary. He has authored numerous books on Missouri's outdoors including the Katy Trail, wine country and the Lewis and Clark Trail. He lives in Rocheport with his family and loves to paddle the Missouri River and explore wild places.

STEVE HOEL is the private land conservationist for Johnson and Lafayette counties. He enjoys helping landowners manage their fish, forest and wildlife resources. He lives in Warrensburg with his wife, Heather, and enjoys fishing, hunting and improving the wildlife habitat on his farm near Chillicothe.



Private Land Conservationist STAN SECHLER has worked for the Conservation Department for 21 years. He enjoys assisting landowners in the southwest region with land and habitat improvements. Stan grew up on his family's Century Dairy Farm in Polk County, which encouraged his interest in the outdoors and hunting.

AGENT NOTES

Community-Oriented Policing

SOME PEOPLE THINK the only aspect of a conservation agent's job is to enforce the *Wildlife Code of Missouri*. While law enforcement is an important part of what we do, there are many other facets of the job. One major aspect of our profession is community-oriented policing, which includes educating the citizens of Missouri through avenues such as hunter education classes and fishing clinics. These activities allow us to be seen as law enforcement officers and yet interact as a part of the community. Seventy-five years ago, conservation agents were known as game wardens in Missouri. In 1937, Director Irwin T. Bode coined the term conservation agent to show the agent's job was not just law enforcement. We are expected to perform conservation education work as well.

I remember the first time I helped at a fishing clinic—a kindergartner was trying to learn how to cast a hook without catching himself. He was having a hard time with the concept of letting go of the button on the reel. I showed him the proper technique and, sure enough, he cast to the perfect spot and caught his very first fish.

School programs are an important outlet that we use for educating folks. I recently did several programs about the importance of snakes in Missouri. Most of the youngsters were hesitant about touching the snakes. Some even said their parents kill every snake. After educating them that snakes are important to the balance of nature and that they won't bite you for fun, almost every kid wanted to come up and touch the snake and said they were going to tell their parents not to kill snakes.

While enforcing the *Wildlife Code* is a critical component of an agent's duties, it is the story of a youth's first deer or an adult learning to successfully pattern a shotgun that keeps us going out every day to protect the wildlife resources of Missouri.



Matt Markley is the conservation agent for Marion County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.

Wingshooting Workshops

Free workshops to help hunters develop wingshooting skills start this month and continue through Oct. 20. These are hands-on events, including range time with expert shooting coaches and ammunition provided. Topics include choke and load selection for nontoxic ammunition, shooting skills, range estimation and shotgun patterning. Events are scheduled for:

- Ashland, Sept. 22 at Charles W. Green State Wildlife Management Area, 573-884-6861
- Bollinger County, Oct. 6 at Duck Creek Conservation Area, 573-290-5730
- Green County, Oct. 20 at Andy Dalton Shooting Range, 417-742-4361
- Hannibal, Oct. 6 at Salt River Gun Club, 660-785-2420
- Howell County, Sept. 1 at White Ranch Conservation Area Shooting Range, 417-256-7161
- Kansas City, Sept. 29 at Lake City Range, 816-249-3194
- Kirksville, Sept. 29 at MDC Northeast Regional Office, 660-785-2420
- St. Joseph, Oct. 13 at MDC Northwest Regional Office, 816-271-3100
- St. Louis, Aug. 14 and 16 at Jay Henges Range, 636-938-9548
- St. Louis, Sept. 19 and 20 at Jay Henges Range, 636-938-9548
- St. Louis, Sept. 28 and 30 at August A. Busch Conservation Area, 636-938-9548
- Warrensburg, Sept. 22 at University of Central Missouri, 660-530-5500

New State-Record Black Oak

Doug Sikes, of Morley, officially owns the largest black oak in Missouri. MDC's Forestry Division recently certified his tree as the record holder in the State Champion Tree Program, with a height of 75 feet, a spread of 105 feet and a trunk circumference of 246 inches.

Sikes purchased the property where the tree stands because he wanted his family to enjoy the sprawling black oak that dominates the field.

"The tree was the one main feature in the field," says Sikes. "I just really wanted the opportunity to have it, enjoy it and protect it."

The previous champion black oak stands on private property in Ripley County. It is 78 feet tall, measures 219 inches around the trunk and has a spread of 87 feet.

MDC encourages everyone to join in the search for champion trees. The owners and nominators of each champion receive mounted certificates. For more information on state-champion trees, visit mdc.mo.gov/node/4831.



Black oak leaf



Subscribe online • mdc.mo.gov/node/9087 • Free to Missouri households



I Am Conservation

Chris Whitley with her first grade classroom at St. John the Baptist Elementary School in St. Louis. Last school year Whitley's class completed the pilot program of Nature Unfolds, a Discover Nature Schools curriculum for kindergarten through second grade developed by MDC. "I liked this program because it had the students go through each season observing and recording similarities and differences of trees, nature and people," says Whitley. MDC also awarded the school a grant to plant a new garden. "By getting kids outdoors and learning in their own schoolyards, the Discover Nature Schools program helps kids learn about and value the plants, animals, and natural systems close to home," says Kevin Lohraff, curriculum and education programs supervisor for MDC. —*Photo by David Stonner*