

MISSOURI. Conservationist

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Wild About Wetlands

Wetlands are dynamic, complex ecosystems that benefit both people and wildlife, and they serve as a cornerstone for Missouri citizens' progressive and proactive conservation philosophy.

For decades, Missourians have worked to improve and enhance this critical habitat.

Missouri's wetlands are featured in this issue of the *Conservationist*, highlighting some of our state's great conservation successes. Missouri's Golden Anniversary Wetland Initiative has produced significant improvements at some of Missouri's oldest managed

wetlands including Montrose, Ted Shanks and Fountain Grove conservation areas (CAs). Wetland improvements are also occurring on Duck Creek CA and will occur on Schell Osage CA. They are all being renovated to improve their capability and capacity. Retired Wildlife Manager Dick Vaught said it well when he stated, "No two wetland areas were alike when we built them, and no two will be alike as we return to give them new life." This initiative will improve these great early wetlands and ensure they remain vital threads in our state's wetland fabric.

Partnerships are extremely important in wetland development. Missouri citizens play a key role along with organizations like Ducks Unlimited (DU) and several federal agencies. In a joint project with the U.S. Army Corps of Engineers, wetland enhancement work will begin on Ted Shanks CA this spring. DU and the U.S. Department of Agriculture (USDA) have had tremendous success protecting wetlands, especially in the Missouri and Mississippi River confluence area. DU is a longtime wetland partner whose mission of habitat conservation fits perfectly with the wetland vision Missouri citizens are working to implement in the state.

Do Missouri landowners support wetland restoration? Absolutely! Missouri landowners have enrolled 141,200 acres in the USDA's Wetland Reserve Program over the past several years. The USDA's Conservation Reserve Program has added thousands of additional acres of wetlands to Missouri's landscape. Many of these private wetlands occur in the floodplain of Missouri's rivers and streams. These wetlands act as filters as water cycles through them, and they can serve as storage for excess floodwater that might otherwise damage communi-



ties and rural ground. Across the nation communities are attempting to restore natural wetlands to reduce flood damage. People are realizing the value of these wetlands and trying to preserve them.

Federal agencies, such as the U.S. Fish and Wildlife Service, are great partners to Missouri's citizens and wetlands. Missouri is home

to six National Wildlife Refuges (NWR) that provide important wetland habitat across the state. Mingo, Squaw Creek and Swan Lake NWRs are legendary waterfowl areas that also support many different species of fish and wildlife. The Big Muddy, Clarence Canon and Great River NWRs all provide both habitat and recreational opportunities for Missouri citizens. NWRs provide some of the best bird-watching opportunities in our state and the nation.

Missouri's wetlands improve water quality, serve as stopovers during fall and spring migrations of millions of birds and provide critical habitat for many fish and wildlife species. Enjoy this month's wetland features, including the Reader Photo of a sandhill crane at Eagle Bluffs Conservation Area on Page 2; the feature article, A New Day Dawns for Missouri Wetlands on Page 11; a list of state wetlands on Page 14; Noppadol Paothong's feature and photo essay, Eagles on the Mississippi on Page 23; and the back cover highlighting Steve Fisher mentoring his son Corey, "the Next Generation" of conservation.

Help your Department celebrate its 75th anniversary this year by getting involved, learning more about Missouri conservation and visiting one of Missouri's many wetland jewels. Every Missourian is a partner in conservation. Missourians' passion for fish, forest and wildlife help define the conservation philosophy and ethic that Missourians are famous for throughout the nation. An engaged citizenry means a higher quality of life for all Missourians!

Tim D. Ripperger, deputy director



FEATURES

10 **A New Day Dawns for Missouri's Wetlands**

by Brett Dufur

The Missouri Department of Conservation is celebrating our 75th anniversary. In this issue, we highlight the conservation and restoration of important public wetlands throughout the state.

18 **A Quest for Quail**

by Mark Goodwin, photos by Noppadol Paothong

Even in a year of strong populations, bagging a few of these challenging game birds is anything but guaranteed.

22 **Eagles on the Mississippi**

by Noppadol Paothong

Winter is a hot time for bird watching.

Cover: Mallard by Noppadol Paothong

Above: B.K. Leach Memorial Conservation Area
in Lincoln County by Noppadol Paothong

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WILD ONES, TOO

I enjoyed the article describing Frances Mathews' and her friends' efforts to promote foraging for edible wild plants [*Eat Your Weedies*; October]. Her Wild Ones group should not be confused with the national organization, Wild Ones: Native Plants, Natural Landscapes, or its St. Louis chapter, both of which go by the shorter name of Wild Ones. Our mission is to promote the use of native plants in landscaping.

In cooler months the St. Louis chapter often holds its monthly meetings at Powder Valley. Warmer months find us meeting in members' yards or public spaces that incorporate natives in their landscapes. Plantings we create in our yards, or help create in public spaces, provide habitat for insects, birds and other wildlife.

In 2010, the St. Louis chapter was awarded the Grow Native! Ambassador Award "in recognition of a generous commitment of its members' time, talent and ongoing effort to promote the use of native plants in home landscapes."

*Ed Schmidt, president
St. Louis Chapter of Wild Ones*

ROADSIDE FLOWERS

I was interested to read your "Agent Notes" [September] on collection of plants along roadsides. I thought a response was necessary, as the information that you provide is not quite accurate.

The pertinent section of the Missouri statutes is 171.6, RDS(E7): Plant Collection from Right of Way: "No person shall dig or remove any plants or plant parts from any real property

of the Commission or the right of way of any state highway or roadway without permission. Special permits covering the collection of plants and plant parts from highway rights of way may be issued by MoDOT. Provided that such plants or plant parts are not offered for sale, the collection of seeds, fruits, nuts, berries, edible wild greens or flowering parts of plants, or the occasional collection of plants for the purposes of scientific research or education may be permitted."

You will note that the law specifically regulates digging up of wild plants, not removal of the above-ground portions. In fact, it is entirely legal for citizens to pick wildflowers along public rights-of-way, as long as doing so is not counter to other special regulations for a particular roadside. This came about not to restrict the public's enjoyment of roadside plants, but as a way to control the rampant excavation of cone flowers and a few other herbs from roadsides for commercial sale.

*George Yatskievych, Ph.D.
Curator, Director—Flora of Missouri Project
Missouri Botanical Garden, St. Louis*

Ombudsman's note: Dr. Yatskievych is correct that the state law does not prevent the picking of roadside wildflowers as long as it is not done for commercial purposes.—Tim Smith

DEER KIDS

Seven years ago, my deaf son had the once-in-a-lifetime opportunity to attend MDC's Deer Camp [*The Deer Camp Kids*; October]. I told my husband "one of us has to go." I was the chosen one, lucky me.

What an outdoors opportunity for both of us! The commitment and mentorship of the MDC agents and Boys Scouts of America's H. Roe Bartle Scout Reservation volunteers were astounding. My son and I share many outdoor adventures now; it's our special time together. He, too, is sharing the whole outdoor experience with his younger twin sisters.

Now we can mentor a new generation in Missouri's great outdoors. Thanks for a lifelong adventure.

Sheri Cerame, Florissant



Reader Photo

CRANE SPOTTING

Dan Rackley, of Callaway County, captured this image of a sandhill crane at Eagle Bluffs Conservation Area in Boone County. The sandhill crane is a rare migrant through Missouri. Rackley is an avid photographer who frequently visits Eagle Bluffs and other conservation areas to photograph wildlife. "That's what's so nice about Eagle Bluffs," says Rackley, "you have the opportunity to see so many different species of wildlife throughout the year." Rackley says this is his first photo of a sandhill crane.



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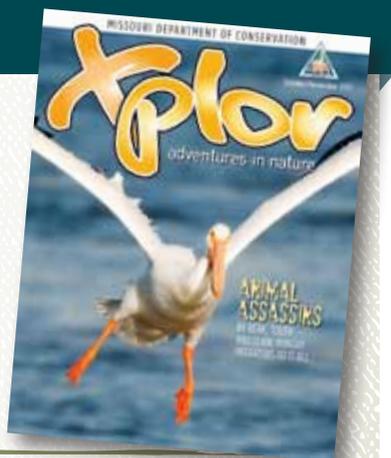
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Seedlings at the George O. White State Forest Nursery near Licking.

Special Seedling Bundle Celebrates 75th Anniversary

The Conservation Department is 75, and the George O. White State Forest Nursery is observing the anniversary with a special bundle of trees that can live 75 years or longer.

The 75th Anniversary Bundle consists of two seedlings of 10 species, including flowering dogwood, bald cypress, black walnut, white fringetree, red oak, white oak and shortleaf pine.

Another special deal this year is the Extra-Large Nut-Tree Bundle with 30 trees all more than 30 inches tall. Species in the bundle are pecan, walnut and butternut. Besides the special bundle, the nursery has extra-large seedlings of nine species—red oak, bur oak, pin oak, shumard oak, black walnut, pecan, tulip poplar, butternut and bald cypress.

Two of last year's most popular bundles are back again. The Nut Tree Bundle has five each of five nut-producing species. The Wild Edibles

Bundle includes five each of 10 species that produce edible berries.

In all, the nursery has more than 70 species of trees and shrubs to help Missourians create wildlife habitat. Most bundles consist of 25 seedlings and cost \$8. Prices for the seven special bundles offered this year vary. For prices and ordering information, visit mdc.mo.gov/node/3328, or call 573-674-3229. The nursery accepts orders through April. However, many bundles and individual tree and shrub species will sell out before then. Orders are shipped starting in February.

Call Before You Cut!

Caring for your woodland is a long-term process where one decision can have impacts for decades. A new outreach effort, Call Before You Cut, provides information to help Missouri woodland owners conduct tree harvests wisely.

Although woodland owners know a lot about their woods, they often don't know how many trees they can cut, how much the trees are worth and what the woods will look like after the harvest is completed. Call Before You Cut gives all Missouri forest owners a place to go for free information about sustainable timber harvesting. Visit callb4ucut.com or call 877-564-7483 toll free. Live operators are available from 8 a.m. to 5 p.m. weekdays, except holidays.

Questions About Ruffed Grouse

Jason Isabelle wants to know if the ruffed grouse has a future in Missouri. The Quail and Upland Wildlife Federation wants to help Isabelle answer that question, and other states are watching.

Isabelle's duties as a MDC resource scientist include studying ruffed grouse—handsome, forest-dwelling birds three or four times the size of bobwhite quail. MDC tried restoring the species as early as the 1940s, transplanting more than 4,000 grouse from other states to the best available habitat here. Ruffed grouse persist in small numbers in a few of the original restoration areas, including an area known as the River Hills Conservation Opportunity Area in Callaway, Montgomery and Warren counties. However, grouse numbers have dwindled almost to the vanishing point. The most likely cause of their decline is inadequate habitat.

When the Quail and Upland Wildlife Federation approached MDC about giving ruffed-grouse restoration another try, Isabelle set aside earlier discouragements and considered the possibilities. He will evaluate potential grouse habitat within the River Hills Conservation Opportunity Area to determine whether another attempt at grouse restoration makes sense.

MDC Director Robert L. Ziehmer said he views cooperation with the Quail and Upland Wildlife Federation as the first step in what could be a significant restoration effort in the future.

"Grouse are a special, unique part of Missouri's natural heritage," said Ziehmer. "We don't want to lose them if we can help it, but we face some big challenges. Missouri's landscape has changed dramatically over the course of the last several decades, and grouse population declines elsewhere show this is a widespread and complicated issue with lots of uncertainty."

New Record Fish and Tree

Missouri has a new champion white mulberry tree and a new record spotted gar.

The tree towers over a farm fence on land owned by Phillip Moore near Pleasant Hill. It has a girth of 23 feet, stands 48 feet tall and has an average crown width of 57 feet. Foresters use a formula combining these measurements to determine state-champion trees. The Cass County mulberry scored 338 points to beat out the old record holder, a 284-point tree in nearby Lafayette County.

White mulberry trees are native to China. They were brought to the southeastern United States in Colonial times in a failed attempt to start a silk industry. They are the preferred host

for the Chinese silk worm. But the trees can also be prolific berry producers with white or sometimes reddish or blackish fruit. Those berries carry seeds, and wildlife eating the fruit and spreading the seeds caused white mulberries to become naturalized in the United States.

A list of Missouri state champion trees is available at mdc.mo.gov/node/4831.

The new fishing record belongs to Eric Whitehead of Puxico. On Oct. 8, he was bowfishing with his wife, Sara, from a boat on Wappapello Lake in Wayne County at 11 p.m. when he shot the 9-pound, 15.5-ounce spotted gar. It measured 38 inches from snout to tail.

Whitehead, 30, has been hunting and fishing since he was 5 years old. He said it was unusual

for him to be fishing without his 9-year-old son, Hunter, but not unusual to be out with Sara. "If my boat's in the water, my wife's in it with me," he said.

Missouri's previous alternate-methods record spotted gar also was taken from Wappapello Lake by archery. It weighed 9 pounds, 2 ounces and was taken by Jason Rhodes of O'Fallon in May 2007.

Spotted gar are native to North America and range from Lake Erie and southern Lake Michigan to the Gulf of Mexico. Like other gar species, they have long bodies and elongated mouths full of teeth. Adult spotted gar typically grow 20 to 30 inches long and weigh 4 to 6 pounds.

More information about Missouri fishing records is available at mdc.mo.gov/node/5190.



ASK THE OMBUDSMAN

Q: I always thought that the rich, dark coloring of a bass or other fish meant the fish was healthy. The largemouth bass where I grew up in northeast Missouri were typically dark. Now I'm catching bass in St. Charles and Warren counties

that seem to be much lighter in color. What causes the color differences?

A: Fish can change their colors like chameleons for two main reasons—mood and camouflage. They communicate with each other by the intensity of the color and pattern that they display. They also choose colors and patterns that will blend into their environment. Fish in darker water may deepen their colors so they do not stand out to predators or prey. They would do the opposite in lighter-colored water. The intensity of sunlight on the water, or the presence of shadows, can cause a fish to adjust its coloration.

Q: What is going on when coyotes howl? Is it just a greeting or are they about to share a meal?

A: Coyotes are social animals and howling in unison is one aspect of their social behavior. Howling by

a family group is a way to identify their territory and make other coyotes aware of their presence. It can also serve to reassemble a group whose individuals have been hunting on their own. Coyotes tend to howl more during the mating period in February or early March and less when they are tending young in May and June. Howling is most often heard at night but daytime howling also occurs, sometimes triggered by a storm or a noise like a siren or whistle. I expect that coyotes derive some pleasure from a howling chorus but I can't say for sure.



Coyote

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.

CWD Found in Captive Deer Herd

The U.S. Department of Agriculture announced in October that a captive white-tailed deer in Macon County from a captive-hunting preserve operated by Heartland Wildlife Ranches, LLC, tested positive for Chronic Wasting Disease (CWD). The animal that tested positive for CWD was inspected as part of Missouri's CWD surveillance and testing program. Preliminary tests were conducted by the USDA National Veterinary Services Laboratory in Ames, Iowa.

In response, the Missouri departments of

Agriculture, Conservation (MDC) and Health and Senior Services initiated the CWD Contingency Plan developed cooperatively in 2002. MDC gathered tissue samples from deer taken by hunters in the area around Heartland Ranch during the November deer season to check for CWD in free-ranging deer.

CWD is a neurological disease found in deer, elk and moose. State Veterinarian Dr. Linda Hickam said there is no evidence that CWD poses a risk to humans, domestic livestock, household pets or food safety.

This is the second case of CWD confirmed at a facility operated by Heartland Wildlife Ranches, LLC. The first was in February 2010 at a captive hunting preserve in Linn County. The remaining deer at that facility were euthanized and tested for CWD. No further infection was found. The current case was identified through increased surveillance required by the management plan implemented from the previous CWD incident.

CWD is transmitted by animal-to-animal or soil-to-animal contact. The disease was first recognized in 1967 in captive mule deer in the Colorado Division of Wildlife captive wildlife research facility in Fort Collins, Colo. CWD has been documented in deer and/or elk in Colorado, Illinois, Kansas, Maryland, Michigan, Minnesota, Montana, Nebraska, New Mexico, New York, North Dakota, Oklahoma, South Dakota, Utah, Virginia, West Virginia, Wisconsin, and the Canadian provinces of Alberta and Saskatchewan.

More information about CWD, including a PDF of a brochure to download, is available at mdc.mo.gov/node/3920.

Ozark Hellbender Gets Endangered Status

In October, the U.S. Fish and Wildlife Service designated the Ozark hellbender as endangered under the federal Endangered Species Act. Endangered species are in danger of extinction throughout all or a significant portion of their range. The Ozark hellbender, which grows to lengths up to 2 feet, inhabits the White River system in southern Missouri and northern Arkansas. Hellbender populations have declined an estimated 75 percent since the 1980s, with only about 590 individuals remaining in the wild. Factors contributing to the hellbender's decline include degraded water quality, habitat loss, ore and gravel mining, sedimentation, collection for the pet trade and a fungal disease.

The Endangered Species Act makes it illegal to kill, harm or otherwise "take" a listed species. The Endangered Species Act also requires all federal agencies to ensure that their actions don't jeopardize listed species, and conduct recovery efforts.

To learn more about endangered species in Missouri, visit mdc.mo.gov/node/4067.

Good News About Zebra Mussels

The latest news from the war on invasive species in Missouri is good—most Show-Me State waters are free of zebra mussels.

This year's zebra-mussel screenings of selected Missouri lakes and streams showed none of the invasive mussels at Smithville, Table Rock, Stockton, Norfork, Clearwater, Bull Shoals, Mark Twain, Pomme de Terre, Moberly, Montrose, Hazel Creek, Forest, Thomas Hill, Blind Pony, Hunnewell, Springfield, Hazel Hill, Maple Leaf, Binder, D.C. Rogers, Blue Springs, Longview, Little Dixie and Watkins Mill State Park lakes, and the Gasconade River.

MDC Invasive Species Coordinator Tim Banek says this good news is important for Missouri boaters and anglers.

"If people feel like zebra mussels are all over the place, they have no reason to take precautions to avoid spreading them," he said. "They need to know where zebra mussels are, so the Conservation Department publishes those bad-news reports, but people need to know where zebra mussels aren't, too."

The only Missouri waters currently known to have zebra mussels are Lake of the Ozarks, Lake



Ozark hellbender

Taneycomo, upper Bull Shoals Lake, Lake Lo-tawana, the Missouri and Mississippi rivers, the lower Meramec River and the Osage River below Bagnell Dam. Knowing these lakes and streams have zebra mussels empowers Missourians to avoid spreading the invasive mussel and the ecological and economic damage it can cause.

Please remember the following points:

Clean—Remove all plants, animals and mud, and thoroughly wash everything, especially live wells, crevices and other hidden areas. Wash boat bilges, trailers, motor drive units and live wells with hot water (at least 104 degrees). Most commercial car washes meet this standard.

Drain—Eliminate all water before leaving the area, including live wells, bilge and engine cooling water.

Dry—If boats and equipment can't be thoroughly washed, allow them to dry in the sun for at least five days before launching in other waters.

Dispose—Anglers can also avoid spreading zebra mussels and other invasive pests by obtaining live bait locally and disposing of leftover bait properly.

For more information on zebra mussels and other invasive species, visit mdc.mo.gov/node/4086.

Arbor Day Poster Contest

Time for Missouri fifth graders to prepare for the 2011 Arbor Day Poster Contest. The theme is "I like trees because..." Winners receive a \$50 savings bond. Each school can submit a winning poster. The statewide winner gets a tree planted at their school and a chance to attend the Arbor Day Proclamation signing at the Capitol. The contest is sponsored by MDC, the Missouri Community Forestry Council and Forest ReLeaf. For more information, visit tinyurl.com/2011postercontest.

Entries must be postmarked no later than Feb. 6, 2012, to Nickie Phillips, nickie.phillips@mdc.mo.gov, Poster Contest Coordinator, PO Box 180, Jefferson City, MO 65102.

Fall Youth Harvests Up

An increase in this year's fall firearms turkey harvest could be the first concrete evidence that Missouri's wild-turkey population is recovering. Meanwhile, youths reaped the benefits of a delayed deer season.

Hunters checked 7,077 turkeys during the fall firearms turkey season Oct. 1 through 31. That is a 19.4-percent increase from last year and an early indication that a return to drier weather allowed Missouri's turkey flock to begin recovering from losses suffered in recent years. The increased fall harvest confirmed reports of improved nest success.

More good news came in from the early portion of the youth deer season Nov. 5 and 6. Hunters age 6 through 15 checked 16,392 deer, a 13-percent increase from last year's figure.

MDC Resource Scientist Jason Sumners said the main reason for the harvest increase was the fact that the early youth season occurred a week later than usual.

"In response to hunter requests, we pushed the youth hunt back to avoid conflicts with Halloween," said Sumners. "That meant kids were hunting closer to the peak of deer rutting activity. Your chances of shooting a deer are better when bucks are on the move, chasing does."

Missouri held its first youth hunt in 2001. The season was two days long, and the harvest that year was 6,277. For the first seven years, the youth hunt consisted of a Saturday and Sunday before the main firearms deer season, and the harvest averaged around 10,000 deer.

Starting with the 2008–2009 hunting season,



MDC doubled the length of the youth season by adding a two-day late portion in January. For the past three seasons, the early youth harvest has averaged a little more than 13,000. This year's early youth harvest is larger than the total youth harvest for any previous year.

The Conservation Department makes it easy to create a lasting reminder of young hunters' first deer or turkey. Official First Deer and First Turkey certificates, complete with congratulations and signature by Conservation Department Director Robert L. Ziehmer, are available at mdc.mo.gov/node/10469.

Hunters spend more than 5.7 million days pursuing deer in Missouri each year. The approximately \$700 million they spend on their sport annually generates \$1.1 billion in business activity and supports 11,000 jobs.

Did You Know?

Conservation pays by enriching our economy and quality of life.

MDC County Assistance Payments

- » **\$1,478,695** was paid to Missouri counties for levee and drainage district taxes, forest cropland payments, payments in lieu of real estate taxes and county aid road trust payments last fiscal year.
- » **\$15.7 million** has been paid to Missouri counties in lieu of real estate taxes since 1980.
- » MDC makes payments in lieu of real estate taxes on land as long as we hold the land in public trust.
- » The county aid road trust program is designed to support maintenance of roads accessing Department areas. This program enables MDC to cost share roadway maintenance with counties and other local area governments throughout the state. Cost share is usually 50 percent with a county's match being in-kind services.
- » **About \$400,00** is provided annually statewide through the county aid road trust program.

Hatchery Improvements

Hatcheries work to ensure world-class fishing throughout the state. by Bruce Drecktrah and Mike Mitchell

Conservation Department hatcheries have been in production for more than 75 years and annually produce millions of fish. In addition to raising sport fish, MDC hatcheries also participate in research and breeding of rare or threatened animals such as mussels, Topeka shiners and hellbenders. Recent improvements to these facilities will ensure that their role in Missouri's management of aquatic animals will continue into the future.

Cold Water Hatcheries

Bennett Spring, Maramec Spring, Montauk, Roaring River and Shepherd of the Hills

Improvements to the five cold water hatcheries focused on facility efficiency and increasing production space for early development stages of trout.

To increase the number of fish they can produce, Shepherd of the Hills, Roaring River and Montauk installed liquid oxygen systems. Montauk combined their liquid oxygen system with a recirculation pump and a backup power source. During flooding events, the combination of these systems protects existing trout production from muddy water with low oxygen levels. The liquid oxygen system at Roaring River is used with a recirculation pump that maintains oxygen levels in raceways during periods of low spring water flows and oxygen levels. At Shepherd of the Hills, a liquid-oxygen system is used to combat low-oxygen levels from water received from Table Rock Lake before turnover.

Roaring River, Maramec and Bennett Spring renovated and repaired existing raceways that allowed water loss, thus making them more efficient. Shepherd of the Hills installed covers on raceways to prevent fish loss from kingfishers, green herons and great blue herons. Maramec also installed covers that keep fish from leaving raceways during flooding.

Shepherd of the Hills and Bennett Spring each had a new facility built. The Shepherd of the Hills facility is dedicated to producing brown trout. The Bennett Spring facility is dedicated to producing rainbow trout eggs, fry and fingerlings.

Warm Water Hatcheries

Blind Pony, Chesapeake, Hunnewell and Lost Valley

A variety of improvements are underway at all four warm water facilities that will increase fish production, reduce costs and ensure that hatchery infrastructure will last many years to come. Paddlewheel aerators will be installed at all four warm water hatcheries. These aerators provide high levels of oxygen in the pond water while reducing fresh water needs.

Pond water control structures and harvest kettles are being replaced at Blind Pony and Hunnewell hatcheries. These structures control water into and out of the pond. When a pond is drained, the harvest kettle is where all the fish are collected, counted and weighed prior to being loaded on a delivery truck.

Expansion of the hatchery production room at Blind Pony will begin in the near future. This improvement will provide needed egg, fry and fingerling production space.

Modifications have been made on several ponds at Lost Valley to eliminate groundwater under the pond liners. This will allow the pond to drain out totally and the fish to reach the harvest kettle. Bird netting is being installed on several ponds at Lost Valley to protect fish from bird predators.

At Chesapeake, a diesel-powered pump was replaced with an electric pump to supply a more consistent and less expensive water supply for the hatchery. A monitoring/alarm system and flow meters have been installed to monitor water flows, water temperatures, heat pumps and water supply pumps.

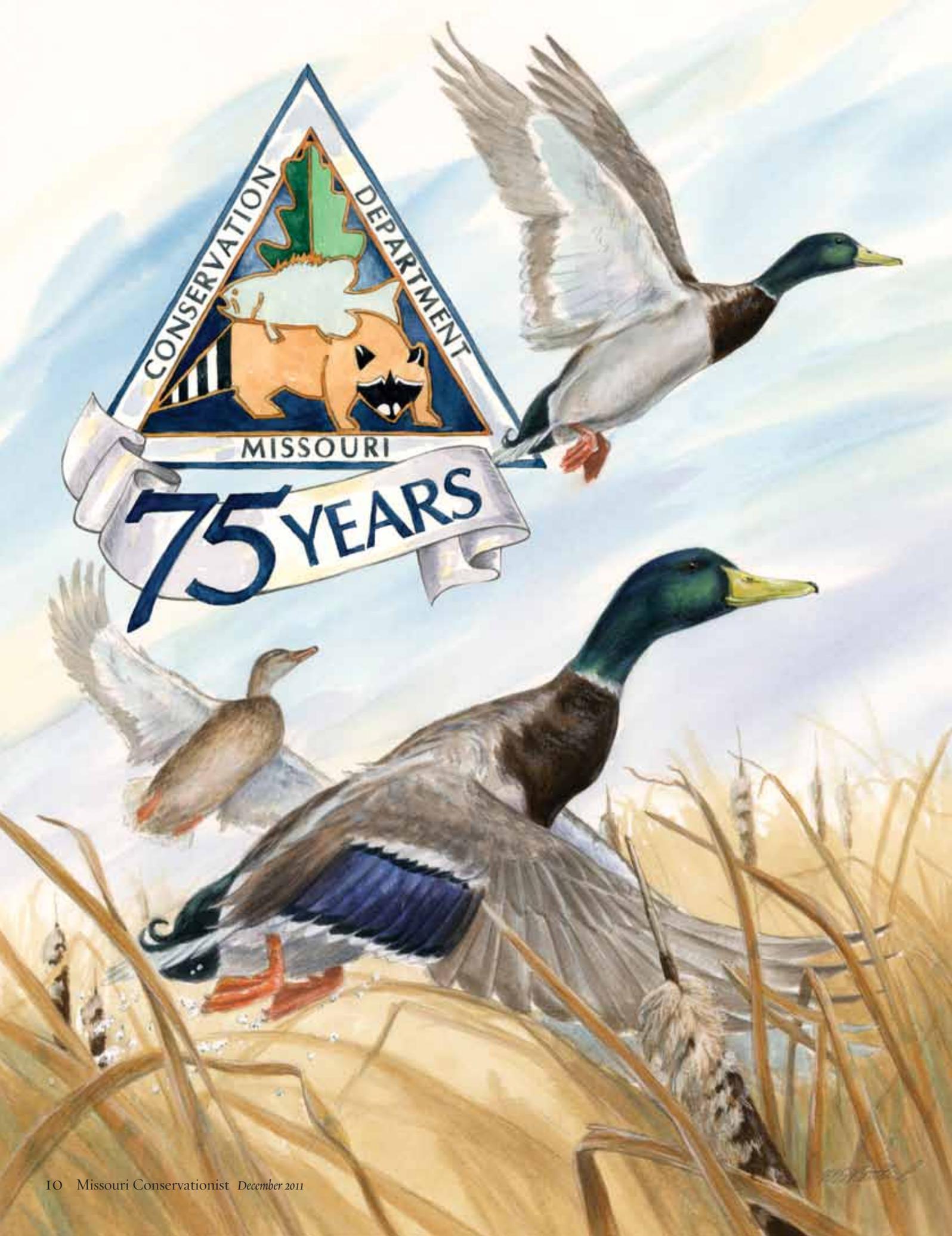
Funding

MDC partnered with the U.S. Fish and Wildlife Service to use Sport Fish Restoration Act funds to help with up to 75 percent of the total construction cost. These improvements will allow MDC hatcheries to operate much more efficiently, making the best use of available production space while conserving water and energy demands. With these improvements, our hatcheries are ready to produce fish for another 75 years for Missouri anglers. ▲

To learn more about fish hatcheries in Missouri, including visitor information, go to mdc.mo.gov/node/4457.



Brown trout at the Shepherd of the Hills Hatchery



W

HEN YOU SEE A SUNRISE AT a wetland, it will change your perception of the place forever. From the darkness, liquid light pours forth and fills the wetland. The world takes on

a golden hue. The sound of thousands of gabbling waterfowl electrifies the air. You'll get pulled right into the pulse of the wetland.

These dynamic interchanges between land and water have long held a special place in the hearts of Missourians. As they should. Wetlands are the most productive ecosystems in the world. Because of their value to countless species of plants and animals, conserving and restoring wetlands is a primary goal of MDC.

"Our mission is to conserve fish, forest and wildlife resources. And wetlands are very productive in terms of all three," says Gene Gardner, MDC's wildlife diversity chief. "Even Missourians who never visit wetlands are better off because healthy wetlands exist. Wetlands improve water quality, help reduce flood damage to farms and communities, and help recharge local water supplies."

WETLANDS BENEFIT WILDLIFE

Wetlands are biologically rich, with a greater mix of plant and animal species than is found in drier habi-

tats. They provide excellent habitat for all kinds of waterfowl, shorebirds and songbirds. More than a third of the birds that regularly nest in, or migrate through, the state depend on wetlands for part of their life cycle. More than 200 rare or endangered wildlife species use wetlands as their primary habitat. Wetlands along streams and rivers are important as fish spawning and rearing areas, too.

Managed wetlands benefit from vegetation and water-level management because waterfowl, migrating shorebirds and hundreds of other wetland-associated wildlife require a variety of wetland habitats and water depths. Some migratory birds require deep, open water. Others require shallow water or newly exposed mud flats.

Just as each species of bird has different migration times, they also have different habitat needs during migration. Raised hills or mounds in a wetland can increase the attractiveness of the area for shorebirds. Vegetation on these mounds attracts nesting birds. Varying water depths result in greater wildlife diversity.

THE EBB AND FLOW OF MISSOURI'S WETLANDS

Missouri once had about 4.8 million acres of wetlands, created by the state's two major river systems and their tributaries. Today, about 90 percent of Missouri's historic wetlands have been lost through filling, draining or by changing the flow of groundwater.

More than 50 years ago, MDC began developing conservation areas to recreate a small portion of the wetlands lost in the previous 150 years. Fountain Grove and Ted Shanks conservation areas (CAs) in the north, Duck Creek CA in southeastern Missouri, and Montrose and Schell-Osage CAs in the west, were the vanguard of Missouri's wetland restoration.

Beginning in the 1940s and 1950s, wetland managers began restoring wetlands through engineering. Low areas that were formerly wetlands were excavated so they would hold more water. Levees were built, not to keep water out, but to hold water in. Water control structures, such as valves, screw gates and culverts, were built so managers could manipulate water levels. Where natural flooding was lacking, pumps were installed to ensure water supplies.

Today, many of these early wetland areas are facing significant challenges. Not only are original working parts, including levees, water control structures, canals and pumps beyond their life expectancy, but extreme



A black-necked stilt wades along a shore, in search of food. Wetlands provide excellent habitat for all kinds of waterfowl, shorebirds and songbirds.



Better water management infrastructure is at the heart of managing Missouri's wetlands. Above, a Fountain Grove dam in 1949. Right, the new main outlet structure for Fountain Grove's west side. Guiding principles of these improvements include developing ecologically based rehabilitation concepts and to avoid "continual repair" issues.

landscape changes including severe flooding and heavy sedimentation have had unforeseen and devastating effects on certain areas.

INITIATIVE IMPROVES MISSOURI'S OLDEST PUBLIC WETLANDS

Today, we know far more about the science of wetland ecology and management. MDC's Golden Anniversary Wetland Initiative allows us to put that knowledge to work at Missouri's oldest wetlands to benefit wildlife and the people that enjoy these areas.

"No two wetland areas were alike when we built them, and no two will be alike as we return to give them new life," says Dick Vaught, retired MDC waterfowl research biologist.

These improvements are diverse and serve the unique



needs and demands of local wildlife habitat and different water management challenges. Guiding principles of these improvements are to develop ecologically based rehabilitation concepts, to incorporate 21st century engineering and science-based approaches, to avoid "continual repair" issues, and to assemble diverse partnerships with an eye toward innovation.

The interactions between plants, animals, soils and water within wetlands are intricate and complex.

“Variety is not only the spice of life, but in wetland systems, it is also the glue that binds it all together,” says Frank Nelson, project manager for the Duck Creek CA renovation. “It is the overall number of different species that allows the food webs to be connected, keeps nutrient cycles churning, and allows Missouri’s wetlands to stay healthy.”

To get that biodiversity, wetland managers need subtle control over the water that ebbs and flows over wetlands. Better water management infrastructure is at the heart of managing Missouri’s wetlands.

One tool that has led to a greater understanding of how water flows through these areas is LIDAR radar mapping from low-flying aircraft. Area managers and project engineers study LIDAR maps to better understand slight elevation changes and topography details. This lets them do a better job of placing water control structures to mimic natural water flow while reducing infrastructure.

“This is incredibly important for areas in wetlands such as mud flats, where a few inches of water can spell the difference between successful feeding for migratory waterfowl, or something akin to leaving the back door open for invasive species that can quickly inundate an area,” says Nelson.

WETLANDS BENEFIT PEOPLE

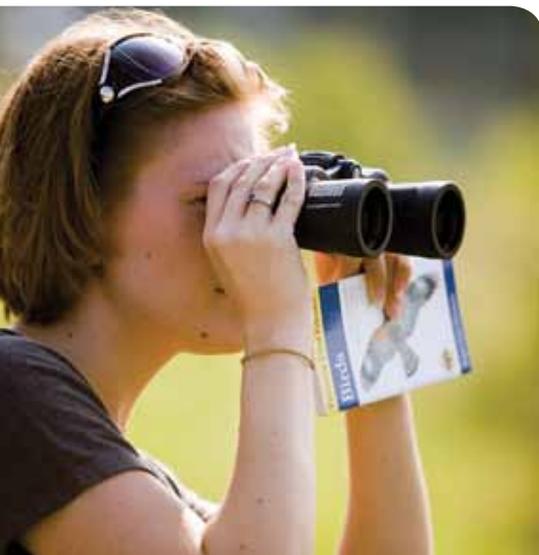
MDC now manages more than 112,000 acres of diverse wetland habitats throughout the state. Missouri’s citizen-led efforts have helped to restore waterfowl populations to levels that rival the plentiful 1970s. Although waterfowl are sometimes the most visible of Missouri’s wetland achievements, the value of these areas reaches far beyond ducks and geese.

During the past half-century, wetland restoration efforts have focused on increasing habitats, restoring floodplains and managing for a greater diversity of species. Today, the value of these areas is more apparent because they provide recreation for millions of people through hunting, fishing, boating and wildlife viewing.

Wetland ecosystems also play an important role in water quality, pollution control and flood control. Wetlands improve water quality by acting as settling basins for upland runoff. Because of their low gradient and thick vegetation, wetlands slow the flow of water, allowing suspended soil particles to settle out. The filtered water is then released into adjacent streams and aquifers.

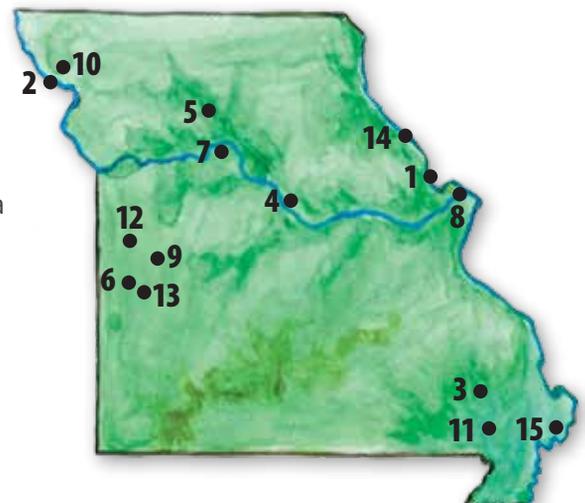
Wetlands reduce pollution levels by absorbing some of the soluble nutrients in the water flowing through them. In partnership with MDC, wetlands at Eagle Bluffs CA accept wastewater from the City of Columbia as a sec-

VISIT MISSOURI’S PUBLIC WETLANDS



Enhancing Missouri’s wetland areas continues to be a primary goal of MDC. These areas provide critical habitat for migratory and resident wildlife, as well as creating excellent opportunities for a host of outdoor recreation activities. Learn more at mdc.mo.gov/node/4222.

1. B.K. Leach Memorial Conservation Area
2. Bob Brown Conservation Area
3. Duck Creek Conservation Area
4. Eagle Bluffs Conservation Area
5. Fountain Grove Conservation Area
6. Four Rivers Conservation Area
7. Grand Pass Conservation Area
8. Marais Temps Clair Conservation Area
9. Montrose Conservation Area
10. Nodaway Valley Conservation Area
11. Otter Slough Conservation Area
12. Settle’s Ford Conservation Area
13. Schell Osage Conservation Area
14. Ted Shanks Conservation Area
15. Ten Mile Pond Conservation Area





ondary wastewater treatment. The effluent provides water and nutrients for wetland habitats.

Wetlands also play a vital role in flood control. Wetlands act as giant sponges made up of organic matter and specialized plants—some of which can absorb up to 18 times their weight in water. During periods of heavy rains, wetlands hold water and release it gradually back into the watershed. This helps reduce peak water flows and diminish flood risks for communities and farmland downriver.

Following the devastating flood of 1993, some badly damaged areas were purchased as public lands and restored to wetlands, such as the Big Muddy National Wildlife Refuge. These restored areas provide not only wetland wildlife habitat, but additional water storage during times of peak flow and flooding.

PARTNERSHIPS MAKE FOR WETLAND CONSERVATION SUCCESS

The renovation and expansion of Missouri’s public wetlands requires funding and partnerships as diverse as the wetland habitats themselves. Waterfowl hunters continue to support wetland conservation by purchasing hunting permits, “duck stamps,” and by paying federal excise taxes on guns and ammunition. In addition, funding for wetland habitat restoration in Missouri also comes from permit sales and the one-eighth of 1 percent conservation sales tax. The dedicated sales tax provides consistent, long-term funding for the conservation of our fish, forests and wildlife resources and preserves Missouri’s outdoor heritage.



During the past half-century, wetland restoration efforts have focused on increasing habitats, restoring floodplains and managing for a greater diversity of species. Today, the value of these areas is more apparent because they provide recreation for millions of people through hunting, fishing, boating and wildlife viewing.

Key partnerships helped achieve a partner-driven wetland management plan for Missouri. MDC partners with the U.S. Fish and Wildlife Service, the North American Wetlands Conservation Council, U.S. Army Corps of Engineers, U.S. Department of Agriculture, Ducks Unlimited, Missouri Waterfowl Association and many others. The tireless efforts of many conservation-minded citizens, local duck clubs and many other partners have also helped to make wetland restoration a reality.

Since 1989, the North American Wetlands Conservation Act (NAWCA) has also provided funding to improve and expand Missouri's wetlands. To date, more than \$14 million in project funding has conserved more than 86,000 acres of wetland habitat in the Show-Me State. Many partnerships that include

B.K. Leach Conservation Area near Elsberry is one of 15 public wetlands in Missouri. "Even Missourians who never visit wetlands are better off because healthy wetlands exist," says Gene Gardner, MDC's wildlife diversity chief.

state agencies, private landowners, corporations and other nongovernment organizations continue to work together to develop projects to conserve Missouri's wildlife habitat through NAWCA grants.

The Farm Bill's Wetlands Reserve Program (WRP) and Conservation Reserve Program also help Missouri's landowners protect, restore and enhance wetlands on their property. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) provides technical and financial support to help landowners restore wetlands. Missouri is one of the top ten states in the nation in acres of wetlands restored through the WRP. Currently, there are more than 140,000 acres of WRP in Missouri, with the majority of these acres enrolled in permanent easements. These wetlands will remain on the Missouri landscape indefinitely.

THE FUTURE OF OUR WETLANDS

As human populations increase, the pressure for converting wetlands to less "natural" uses will continue. To support the conservation of our remaining wetlands, we



DUCKS UNLIMITED

Ducks Unlimited (DU), a key partner in wetland conservation, also celebrates its 75th anniversary this year. DU is the world's largest nonprofit organization dedicated to conserving North America's continually disappearing waterfowl habitats.

"The Missouri Department of Conservation and Ducks Unlimited are natural partners. Our missions emerged from the visions of conservation leaders in 1937, and it is most fitting that we mobilize forces to revitalize the crown jewels of Missouri's storied wetlands," says Ken Babcock, DU's national headquarters senior director of operations, and former MDC assistant director.

Like MDC, DU was founded in 1937 during the Dust Bowl era when habitat conditions were very bleak. The organization has since blossomed into the model for hunter-based conservation organizations, completing more than 20,000 projects, conserving more than 12 million acres and raising more than \$3.1 billion for conservation.

Missouri continues to be one of the top states in Ducks Unlimited with more than 19,600 members statewide. Last year, more than 90 Missouri DU chapters held 140 events and raised nearly \$950,000 for habitat conservation. To date, these Missouri DU chapters have helped conserve 105,000 acres in Missouri.

"The MDC partnership with Ducks Unlimited

is one of the strongest and most effective in the nation," says Mark Flaspohler, DU manager of conservation programs for Missouri. "Ensuring these critical habitats are forever protected from development is a significant step in the right direction for wildlife, waterfowl, flood protection and water quality."

MDC and Ducks Unlimited work together to conserve critical waterfowl habitat in Missouri as well as the Prairie Pothole Region of Canada, known as the "duck factory," where the majority of Missouri's migratory waterfowl come from each year. Providing important wetland habitat from Canada to Mexico is a vital part of achieving the goals of the North American Waterfowl Management Plan. To make this possible, contributions from the states are matched by North American Wetlands Conservation Act (NAWCA) funds, as well as DU, Inc., and DU Canada.

With this year's contribution of \$275,000, MDC has reached the \$5 million mark for donations to waterfowl breeding grounds in Canada. With the support of MDC during the past five years, Ducks Unlimited has conserved, enhanced and restored 235,059 acres of prime breeding habitat and positively influenced an additional 1.2 million acres.

"It is the committed support of partners like DU that makes waterfowl conservation and the North American Waterfowl Management Plan a success," says DeeCee Darrow, MDC wildlife division chief.



A flock of mallard ducks fly over Squaw Creek National Wildlife Refuge.

In Canada, DU uses a combination of strategically targeted programs, agricultural extension and public policy efforts to advance conservation goals. Direct habitat programs such as land acquisition and conservation easements help secure the remaining habitat base and provide restoration opportunities. Agricultural extension programs focus on adding nesting cover and improving wetland conditions, while the promotion of waterfowl-friendly agricultural practices provides positive economic benefits to producers.

"MDC's investment in Canadian waterfowl habitat yields direct, tangible returns for Missourians," says MDC Director Robert L. Ziehmer. "Leveraging our contribution and money from other states four-to-one lets us put \$2 million into protecting critical nesting habitat that sends millions of ducks winging down the Mississippi Flyway to Missouri and beyond each fall."

must continue to seek a better understanding of how wetlands work to benefit wildlife and people.

That job has gotten easier with science-based research and a decade of wetland renovation projects. However, attempting to manage highly erratic water flow in an altered landscape, as well as predicting and attempting to reduce invasive species, is a never-ending mission.

"One of the challenges for conservation area managers is that plant and animal communities never sit still. There is always a group of species on the rise while others are on the fall," Nelson says. "Management is the art of trying to tweak the system in a way to get a reliable response to benefit public use while serving resource needs. For every one of our actions there is a response. Some of these can be anticipated while others cannot. No doubt nature will

always have a new challenge for us tomorrow."

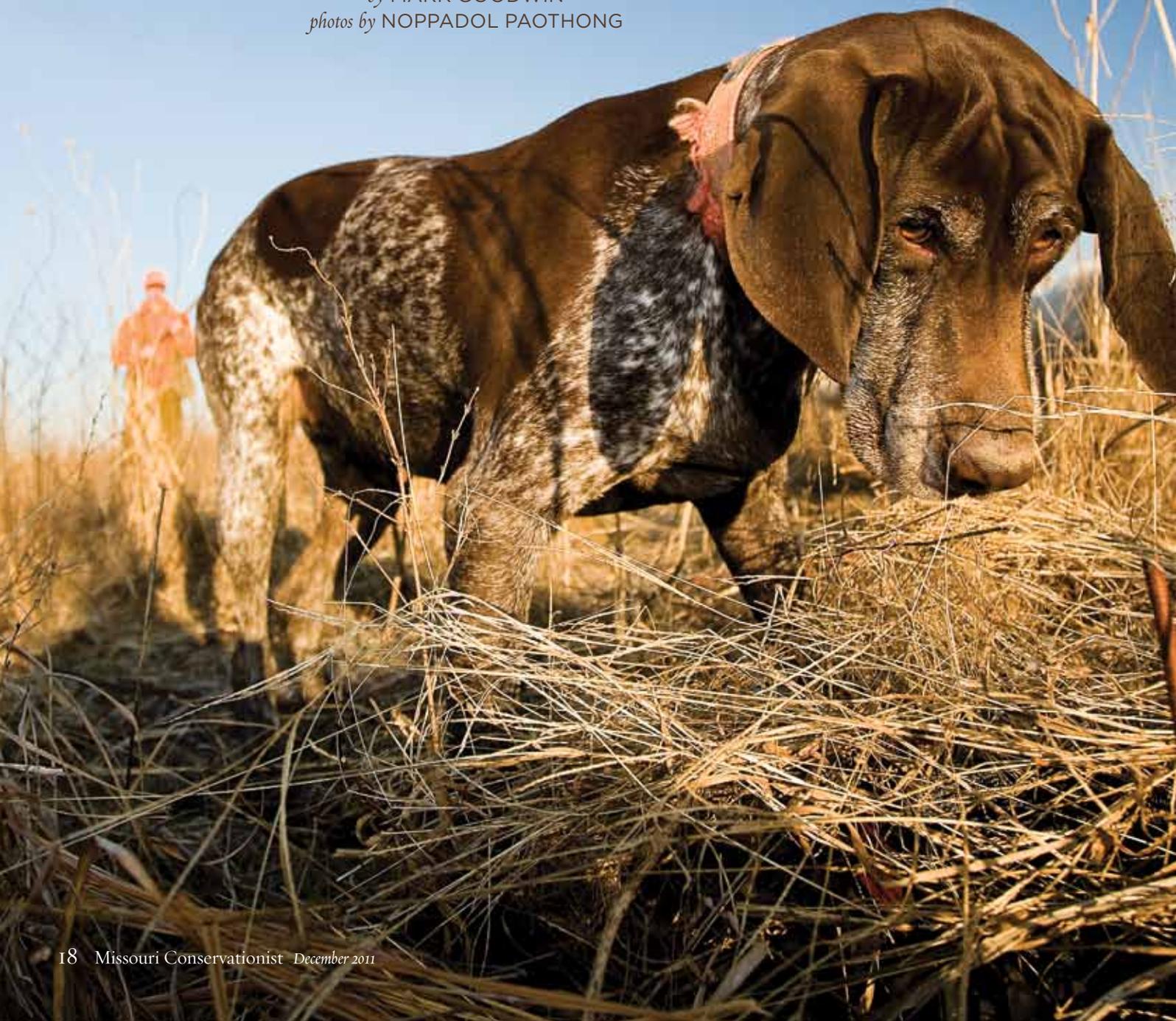
Gardner echoes Nelson's acknowledgment of the tough job of managing Missouri's wetlands in the future. "In managing wetlands, challenges will become even greater. We've already seen that in 2011, with elevated river levels and local drought conditions. Continued population growth and changing land use also influence our wetlands and how they function. It is up to us to find a balance so these wetlands will continue to benefit people and wildlife."

But Gardner is proud of where state wetlands have been and where they are going. "Generations of Missourians have enjoyed these for more than 50 years, and it's our job to ensure these areas are here for their kids and grandkids to enjoy." ▲

A QUEST FOR QUAIL

Even in a year of strong populations,
bagging a few of these challenging game
birds is anything but guaranteed.

by MARK GOODWIN
photos by NOPPADOL PAOTHONG





IT'S EARLY EVENING, JANUARY 12, 2010. WITH THREE DAYS OF QUAIL SEASON remaining, I read through my hunting and fishing journal. The journal records a good season. Quail numbers on most of my hunting spots are up. (I hunt mostly private ground in Cape Girardeau, Bollinger, Perry and Scott counties.) I've hunted 58 times, and on 90 percent of my hunts this year my two pointers have found quail. Covey sizes have averaged between 10 and 20 quail—plenty big enough to bag a few.

The past five seasons, on most of the farms I hunt, quail numbers had been down. The 2004–2005 season offered so few quail that halfway through the season, though I continued to hunt, I quit taking a shotgun. I was finding few coveys, and those often held fewer than eight birds—just enough to provide breeding stock for the next year. My dogs got used to my not shooting when they pointed. The no-shoot hunts kept my dogs in shape and sharp on finding quail. But that did little for their skill at finding and handling downed birds. I also missed having family and friends over for quail dinners.

What made for more quail on my hunting spots for the 2009–2010 season? I don't know. Habitat—the essential key to healthy populations of all wildlife—had not changed much. Maybe the mild spring and summer made for better nesting and chick survival. Quail populations can rebound with one good nesting season.

I close my journal and my thoughts turn to tomorrow's quail hunt. I plan to hunt a private farm not four miles from my house. The farm, of several hundred acres, is managed mostly for cattle. Where there are cattle, the fields and fences are kept clean, and there are few quail. But on the east

side of the farm, the landowner grows grain crops on about 60 acres, and this spot offers classic quail habitat: hilly, no-till grain fields under 20 acres, flanked by small woodlots and surrounded by fencerows so overgrown with brush that they stand as 30-foot-wide hedgerows. One of the grain fields holds two strips of wet ground that extend for almost the length of the field. The farmer lets these strips grow up in weeds and sprays or brush hogs them every other year or so to control woody sprouts. Quail have everything they need in this small area: food, water, nesting habitat, bare ground for quail chicks to get around in, and escape cover for the quail to avoid predators.

This year I have found two coveys living in this spot, one of 12 birds on the north side, and one of about 20 birds on the south side. I've hunted the area seven times and taken a grand total of three quail. My dogs have pointed at least one of the coveys every time I hunted the place, but usually on the edge of the escape cover—the overgrown fencerows and the woodlots—and these spots were so thick that I had no way to raise my gun to shoot.

My strategy for hunt number eight is to bring a friend of mine, Mark Haas. Mark is a retired MDC fisheries biologist for our region and a longtime hunting and fishing buddy. At least if we get a point along the overgrown fence rows, one of us can be in good position to shoot when the other fights his way into the brush to flush the birds.

The weather for tomorrow is forecast to be clear with a low temperature in the 20s and highs in the mid-30s. About an inch of snow remains on the



Bobwhite quail

ground from a moderate snow a few days earlier. I tell Mark to meet me at my house at 8:30 a.m. and that we will hunt all morning and then have lunch at my house. Starting a little later in the morning should allow the snow and ground to thaw, which will be easier on my dogs' feet.

THE BUDDY SYSTEM

As always, Mark arrives right on time.

"How you doing, Mark!" he booms, over a big smile and a handshake. "Long time no see!"

That, of course, is a joke. Like Mark, I'm retired, and we hunt and fish together—lots. Our last quail hunt was a couple of days ago.

At our hunting spot, with guns uncased and loaded, I put my dogs at heel and begin the 200-yard walk to the area that holds quail. When we get there I release the dogs, and then watch them carefully. My dogs are pointers. As with most, they run hard and range out, often a couple hundred yards or more, particularly at the beginning of a hunt when they are brimming with energy. The east side of this cornfield, a little more than 200 yards away, is bordered by a state highway. It doesn't see a lot of traffic, but the traffic it does see is moving 60 miles an hour—a deadly hazard for dogs. I've trained my dogs to come to my whistle, but I still want them in sight. In a matter of minutes, the dogs run all the way down the north woods' edge, all the way to the road and along its edge, and all the way up the closest swath of grass.

"Good dogs!" I praise as the dogs run to me and then turn and start down the overgrown fencerow to the west. Fifty yards ahead, Wendy, my oldest dog, out of a dead run, spins to a stop and points at the base of a modest-sized Osage orange growing out of the fencerow. Belle, seeing Wendy point, also locks on point—what quail hunters call "honoring." I tell both dogs "whoa," a command that gives me control over their pointing instinct.



I whistle the dogs in and tell them "birds!" They put their noses to the ground, then head to the thicket and hunt thoroughly—with no luck.

Where did these birds go?

"Okay, Mark," I tell my hunting buddy. "Cross through the fence here below the dogs and position yourself on the other side directly across from the dogs. That way, if the birds fly through, you'll be in position to shoot if birds fly either left or right."

I hold Mark's gun then hand it to him after he fights his way through the thick cover and crosses the fence. With Mark in position, I walk in front of the dogs. Nothing flushes. I walk further and stomp in the brush. In the light snow that still covers the ground I see no quail tracks. I give the dogs their release command and, with tails wagging a fast beat, they nose their way into the cover. Nothing flushes.

Sometimes my dogs point animals other than quail, such as squirrels or rabbits or mice. I call these false points. Some hunters reprimand their dogs for these points, but I don't. I just never shoot any game over my dogs other than birds.

The dogs have slowed and are now carefully hunting the fencerow cover, which extends close to 300 yards. Mark stays on one side, me on the other. As we walk, we check each other's pace so we're not ahead or behind one another. Hunter orange hats and vests help us keep track.

FENCEROW BLUES

Mark and I and the dogs work up and down the fencerow—twice—and find no quail. So we walk to the south cornfield—the spot the 20-bird covey calls home. This area has a 15-acre woods that borders to the west, which was logged heavily three or four years ago. The woods floor is a tangle of downed and decaying treetops, overgrown with weeds—a perfect place for quail to hide and find food. It's so thick I've found no way to walk through it.

A draw, more than 40 yards wide and grown up in trees and thick brush, splits the cornfield on the east side and offers another place for quail to find refuge. An overgrown fencerow forms the border of the property to the south. Though my dogs have pointed the big covey in this area several times, I've only managed to take two quail out of it. We cover the ground carefully but find no quail—not even tracks. I do find one fresh roost—a circular pile of quail droppings at the edge of the draw. My guess is the covey is in the woodlot that's too thick to walk through.

I put the dogs at heel, and Mark and I cross the state highway to hunt another promising section of the farm. As we walk, we comment how people who know little about hunting often assume that it is easy. Hunters know better. The quail we are hunting today are masters of survival. They face the threat of predation 24 hours a day, 365 days a year, and they are highly skilled at avoiding being killed and eaten.



So far today, Mark and I have walked for more than two hours, with mature dogs that have been specifically trained to find quail, over ground that I know holds quail, and we've seen not one. Even if we find quail at this last spot, bagging a few is anything but guaranteed. Quail flush with tremendous speed and often quickly get brush between them and hunters. Cooper's hawks—masters at hunting birds—don't kill every quail they chase. And we don't hit every quail we shoot at.

GOOD HUNTING

This last spot offers two cut soybean fields with several thickets and a railroad track on the east side flanked by trees and thick brush. At the north edge of one of the bean fields, I finally find fresh quail tracks in the snow. The tracks wander here and there, not far from the thicket, and I can see where, in search of beans, the quail picked at stubble. I whistle the dogs in and tell them "birds!" They put their noses to the ground, then head to the thicket and hunt thoroughly—with no luck. Where did these birds go? I look at my watch. It's closing in on noon and time to head home.

The quail we hunt today are masters of survival. They face the threat of predation 24 hours a day, 365 days a year, and they are highly skilled at avoiding predators.

Again, I walk the dogs at heel as we cross the highway on the way back to my truck. As a last effort, I let the dogs run through the north woods patch that they just edged at the beginning of the hunt. They find no quail.

Back home I kennel and feed my dogs, then warm up leftover lasagna and rolls. I mix up a little coleslaw, and Mark and I enjoy these along with strawberry-rhubarb pie for dessert. As we eat and chat we review the hunt.

What a morning! It would have been nice to bring home a few quail. But, hey, we were outdoors on a crisp winter day, and it's not over. Tomorrow, Mark and I will hunt ducks at Ten Mile Pond Conservation Area. The next day, the last day of quail season, we plan to quail hunt in Scott County with another good friend—making the most of every moment as we live and enjoy the challenge of the hunt. ▲

Eagles *on the* MISSISSIPPI

Winter is a hot time for bird watching.

by NOPPADOL PAOTHONG





▼ A symbol of grace and strength, an American bald eagle scans open water for signs of food during the first rays of sunlight.

📷 600mm lens + 2.0x teleconverter
f/8 • 1/250 sec • ISO 400

THE BALD EAGLE, CHOSEN AS A NATIONAL SYMBOL in 1782, has long been admired for its grace, strength and power. Today, birders and photographers are still drawn to these impressive birds. Those willing to brave a frigid morning at Lock & Dam No. 24 on the Mississippi River in Clarksville may be rewarded with hundreds of bald eagles performing a spectacular, acrobatic air show and diving for fish.

While the successful restoration of bald eagles makes it possible to see eagles year-round throughout Missouri, witnessing the high concentration along the Mississippi during the winter months is a dramatic experience.

In January, when the temperature drops to single digits and the river begins to freeze up, Lock & Dam No. 24 is the place to be. Here the Mississippi River runs through a hydropower plant and creates an open, ice-free area, which makes it easier for eagles to dine on floating and disoriented fish.

At sunrise, bald eagles leave their night roosting area to search for their favorite food, gizzard shad. With eyesight 5 to 6 times better than a human, eagles can spot fish from afar. An eagle dives to catch fish and then carries them off to eat. On a cold, clear day, there may be as many as 700 eagles (January 2009 bird count) on the river.

Not long ago, these symbolic birds were on the verge of extinction. In 1963, only about 500 nesting pairs of bald eagles were reported in the lower 48 states. Habitat loss, shooting, lead poisoning and pesticides contributed to the birds' near demise. In 1978, bald eagles were declared an endangered species by the federal government in 43 states, including Missouri. It gave the birds the protection they needed and populations slowly began to bounce back.

Today, the birds have recovered, with more than 10,000 nesting pairs in the lower 48 states and more than 200 nesting pairs in Missouri. In winter months, when most lakes and rivers up north are ice covered, 2,000–3,000 bald eagles fly south to the ice free zones in Missouri where they can forage for fish and carrion.

The name bald eagle comes from the whiteness of the eagle's head. The scientific name, *Haliaeetus leucocephalus*, means white-headed sea eagle. Their head and tail feathers begin to turn white at the age of 3, and they become mature at the age of 5. On average, females weigh about 15 pounds; males weigh about 10 pounds. Their wingspan can reach up to 8 feet. Eagles may live up to 30 years in the wild and 50 years in captivity.

There are several eagle hot spots in Missouri, areas that have 50–250 eagles each winter, including Lake of the Ozarks, Table Rock Lake, the Mississippi and Missouri rivers, Squaw Creek National Wildlife Refuge, Eagle Bluffs Conservation Area, Mingo National Wildlife Refuge, Lock & Dam 24 in Clarksville, Lock & Dam 25 in Winfield and Riverlands Migratory Bird Sanctuary Area near West Alton, Mo. Visit one of these areas this winter for an amazing show. ▲

To learn more about eagle watching in Missouri, find Eagle Days events, hear audio of an eagle or watch a video of an eagle, visit mdc.mo.gov/node/3478.



▲ With a wingspan up to 8 feet wide, this large female bald eagle prepares to catch a gizzard shad on the icy waters of the Mississippi River in Clarksville.

📷 500mm lens +2.0x teleconverter
f/8 • 1/800 sec • ISO 400



◀ An immature bald eagle prepares to eat its prize fish while perched on a tree along the Mississippi River.

📷 500mm lens • f/8
1/160 sec • ISO 800





◀ An adult bald eagle prepares to land on floating ice on a river while an immature bald eagle defends its territory. In contrast to an adult, a young bird has a white streaked wing lining. It reaches maturity by its fourth or fifth year.

📷 600mm lens +2.0x teleconverter
f/11 • 1/800 sec • ISO 400



▲ Wintering bald eagles gather along the Mississippi River early one morning. Large numbers of eagles normally peak around early January when the rivers up north freeze.

📷 600mm lens +1.4x teleconverter • f/8
1/500 sec • ISO 400

▲ A bald eagle calls for its mate early in the morning. Their calls consist of weak chirping whistles.

📷 500mm lens +2.0x teleconverter
f/8 • 1/500 sec • ISO 400

Common Merganser

Winged master anglers, these diving ducks can be seen fishing Missouri's big rivers this month.



Male common merganser

EVERY WINTER I head to my favorite location along the Upper Mississippi Conservation Area in St. Charles County to photograph common mergansers (*Mergus merganser*). When I discovered the spot a few years ago, I was actually searching for American white pelicans. I was delighted to find both species at the site. After returning for four years, I've decided it is no coincidence that

pelicans and mergansers are often found together. I'll explain later.

The common merganser is a large, slender diving duck with a burnt orange, serrated bill that it uses to catch fish. The drake has an iridescent green head that is darker than that of a mallard, more of a forest green, with dark eyes that are barely visible. Its body is brilliant white with a gray back and tail and white wings with black primary feathers. The contrasting colors of the male merganser are a formidable challenge to wildlife photographers, even in good light. The female common merganser has more reserved coloration but is as beautiful as the male, in my opinion. The hen's head is rusty with matching eyes and a backswept crest. The feathers of the wings and body are gray, fading to white on the breast and lower neck. Its flanks and chin are white.

Common mergansers winter in Missouri and are found along our larger rivers and reservoirs where they feed on fish, mollusks, crustaceans, frogs and even small birds and mammals, given the opportunity. Nesting is far north of Missouri, mostly in Canada, where mergansers line a tree cavity with down and produce a clutch of up to 15 eggs. Young leave the nest a few days from hatching and begin diving for aquatic insects under close scrutiny from their mother. Later they begin feeding on fish and larger prey. The common merganser population is stable in North America and while they are not considered a fine table duck, mergansers are legally hunted in Missouri during waterfowl season.

So why would pelicans purposefully mingle with mergansers? The answer is to steal food! I've watched the two species together for hours as the mergansers, master anglers of the avian world, dive for fish and surface with quivering prizes, their glory short-lived as a cadre of huge pelicans attack and steal every scaly morsel. Pelicans are apparently smart enough to know that mergansers will catch fish with aplomb, and they are ornery enough to plunder free meals at every opportunity. At first, I wondered why mergansers stuck around in such annoying conditions, but I soon realized that it didn't matter because the pelicans simply followed them wherever they went. As you can see from the healthy individuals in these photographs, these beautiful divers do find a way to swallow a meal or two during daily smackdowns with their pouch-billed rivals. Such is the life of the common merganser at a special place on the Mississippi River.

—Story and photo by Danny Brown



Female common merganser



Capps Creek CA

Enjoy winter trout fishing, archery deer hunting and winter birding at this diverse area in Newton County.



TAKE A LITTLE time out of this hectic holiday month to reconnect with natural Missouri. A great place to enjoy a day or two of outdoor winter recreation is Capps Creek CA in Newton County. This 724-acre area features woods, cropland, open grassland, a small wetland, a mile and a half of Capps Creek and 0.2 miles of Shoal Creek. Together, this diverse habitat supports white-ribbon trout fishing, decent archery deer hunting and good winter birding.

Capps Creek is a small stream with plenty of cover to grab a back-cast, so bring a shorter fly rod and a selection of flies to tempt rainbow and brown trout. MDC stocks the creek once a month from October to April, so your chances of landing a catch are good. The daily limit is a total of four for both trout species combined. There's no length limit on rainbows, but there's a minimum length of 15 inches for brown trout.

If you prefer hunting to fishing, you'll find a good population of white-tails for archery deer season, which runs through January 15. You can set up a portable tree stand on the area, but be sure to put your name and address or conservation identification number on it, and take it down by Feb. 1. You can also pursue quail, squirrel and rabbit in season.

Birders will find a wide range of upland birds and waterfowl, including kinglets, northern harriers, white-throated sparrows, song sparrows and various duck species.

Don't forget to carry along a camera to catch scenic winter views of Capps Creek and Shoal Creek and the area's wildlife.

Area managers use many techniques to create, restore and maintain habitats for the area's fish and wildlife. These include prescribed burning, haying, planting food plots and native grass mixes, timber stand improvement through thinning, and commercial harvest when beneficial.

To reach Capps Creek CA, travel seven and one-half miles west of Monett on Highway 60, then 1.75 miles south on Wallaby Road to its junction with Jolly Mill Road. Jolly Mill Park, a privately owned historic mill site, sits right across the road from Capps Creek CA. It's open daily and fishing is allowed.

Before you travel, check Capps Creek CA's web page (listed below) for special notices, area brochure and map.

—Bonnie Chasteen, photo by David Stonner



Recreation opportunities: Birding, winter trout fishing, hunting and nature photography

Unique features: This area occupies 724 acres in the Springfield Plateau Section of the Ozark Natural Division and features two permanent streams: Capps Creek and Shoal Creek

For More Information

Call 417-895-6880 or visit mdc.mo.gov/a9725.



Hunting and Fishing Calendar

FISHING

	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/28/11	2/29/12
impoundments and other streams year-round		
Nongame Fish Giggling	9/15/11	1/31/12

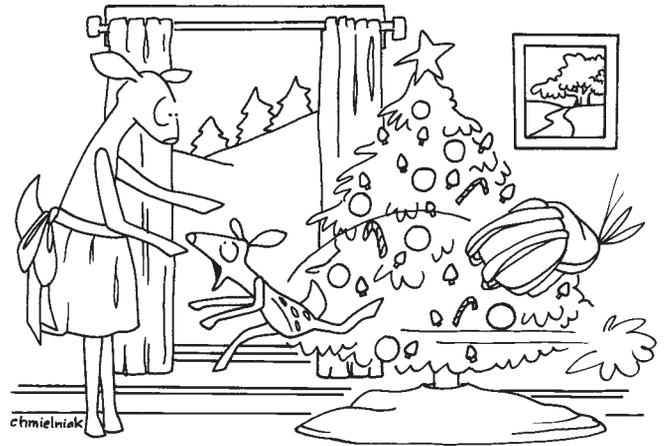
HUNTING

	OPEN	CLOSE
Coyote	5/09/11	3/31/12
Crow	11/01/11	3/3/12
Deer		
Archery	11/23/11	1/15/12
Firearms		
Antlerless	11/23/11	12/04/11
Muzzleloader	12/17/11	12/27/11
Late Youth	1/07/12	1/08/12
Furbearers	11/15/11	1/31/12
Groundhog	5/09/11	12/15/11
Pheasant		
North Zone	11/1/11	1/15/12
Southeast Zone	12/01/11	12/12/11
Quail	11/1/11	1/15/12
Rabbits	10/1/11	2/15/12
Squirrels	5/28/11	2/15/12
Turkey		
Archery	11/23/11	1/15/12
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see mdc.mo.gov/node/3830	
Wilson's (common) Snipe	9/01/11	12/16/11

TRAPPING

	OPEN	CLOSE
Beavers & Nutria	11/15/11	3/31/12
Furbearers	11/15/11	1/31/12
Otters & Muskrats	11/15/11	2/20/12

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.



"Mommomm....the kids at school said Rudolf's not real!"

Contributors



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.

MARK GOODWIN values hunting and fishing. He knows of no better way to understand nature. Afield with firearm, bow, or rod and reel, you are living nature's connections. Hunting and fishing also provide a great way to connect with friends and family. Mark looks forward to sharing the outdoors with his grandchildren.



NOPPADOL PAOTHONG discovered his passion for wildlife photography in college in 1995. Born in Thailand, he came to the U.S. in 1993 to study graphic arts before switching to journalism. When not photographing, he enjoys time at home cooking. He lives in Columbia with his family.

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Facebook is another great way to get information about nature and outdoor recreation in Missouri.

AGENT NOTES

Expanded opportunities for trappers and hunters.

FOR MANY YEARS, trappers and hunters have pursued Missouri's wildlife for their pelts. Fortunately, furbearer populations are doing well for most species throughout the state, and most regions of the state have the quality pelts desired by the fur trade. Proper fur handling and care are the key to getting the most out of your pelts. As a trapper, I certainly do all I can to maximize the profit from my pelts. It takes time and hard work, but it is very rewarding to see the end result.

Pelts can be sold either green or dried. Green fur is just the skinned pelt. Dried fur involves the entire process of fleshing, stretching and drying the pelt on stretchers. That is the way I sell most of my pelts. Typically, dried pelts bring more money.

There are several options when it comes time to sell your fur and there are fur buyers scattered throughout Missouri. The Missouri Trappers Association has two auctions in Columbia. Another option is to ship your fur to a national or international auction. These auctions are held at different times throughout the year.

In past years, trappers and hunters were required to sell their pelts by a specific date. This sometimes limited their selling options. Also, there was a Resident Fur Handlers permit, which allowed an extension to the possession date and allowed trappers and hunters more time to possess and sell their dried pelts. In July 2011, MDC rescinded this permit and made code changes allowing trappers and hunters with a valid permit to possess, transport and sell furs throughout the year. This new regulation change allows trappers and hunters more time and opportunity to sell their furs.

To find more information on trapping in Missouri including seasons, regulations and classes, visit mdc.mo.gov/node/3097



Chris Chesher is the conservation agent for Chariton County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.





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



“I Am Conservation”

Steve Fisher sets an early season beaver trap with his son Corey at a wetland pool at Fountain Grove Conservation Area in Linn County. A trapper for nearly 30 years, he got his start while in grade school. “I started out tagging along with my three older brothers as we trapped raccoons in the creek on our family’s and neighboring farms,” says Fisher. “Early on, it was a way for me to earn a little money and be like my older brothers.” Fisher says he enjoys many different outdoor sports, but trapping is his favorite. “You’ve got to learn everything you can about your intended quarry, their haunts, habits, instincts and natural tendencies,” says Fisher. “It is a challenge, and just when you think you have it figured out, some really smart specimen throws you a curve and you can’t get him caught! For an outdoorsman and nature lover, trapping is just a whole lot of things all wrapped up in one activity.” Fisher says he is teaching Corey how to trap because it was such an important part of his own childhood. “It was the first consumptive outdoor sport I could take part in when I was too little to shoot guns or bows and couldn’t really go fishing in the winter,” says Fisher. “It builds character and develops your problem solving skills.”—*Photo by David Stonner*