

SEPTEMBER / OCTOBER 2012

# IOWA OUTDOORS

THE DNR'S MAGAZINE OF CONSERVATION

IN THIS ISSUE:

## FIERY KISS OF RENEWAL

*Long suppressed with adverse effects, fire returns to the woods*



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# IOWA OUTDOORS

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*Iowa Outdoors* (ISSN 0021-0471) is published bimonthly by the Iowa Department of Natural Resources, Des Moines, Iowa 50319-0034. Periodicals postage paid Des Moines, IA. SUBSCRIPTION RATES: \$15 FOR ONE YEAR, \$24 FOR TWO YEARS AND \$30 FOR THREE YEARS. PRICES SUBJECT TO CHANGE WITHOUT NOTICE. Include mailing label for renewals and address changes. POSTMASTER: Send changes to *Iowa Outdoors*, P.O. Box 37831, Boone, IA 50037-0831.

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# Contributors

## CORNELIA MUTEL

has written or edited a dozen books, many of which describe Midwestern natural communities and how to restore them to health. She regularly lectures on these subjects across the state. She spends her days as a science writer at the University of Iowa's IIHR-Hydroscience & Engineering, then returns home to wander the oak-hickory woodland that she and her family are restoring.



## DAVID B. HEUSINKVELD

has spent years capturing images of Amana. "My entry into nature photography evolved from the tragic loss of my son. On our way to Iowa City, a careless driver struck us head-on, killing Jordan upon impact. I nearly bled to death on the highway. This loss of blood changed my life forever," says Heusinkveld who now has memory and judgement impairment as a result of his injuries. "I've coped by immersing myself in nature photography. I've found solace, relief and peace by photographing beautiful landscapes." His new book, *The Amana Landscape*, can be purchased at [Amazon.com](http://Amazon.com).



## STAN BUMAN

has experienced many spectacular wildlife events through photos. He has photographed wildlife across the nation, but focuses in his home state of Iowa. Nature inspires, thrills and rejuvenates him. Stan is also part owner of Agren, Inc., an agricultural and environmental consulting firm. See more of his work at [fencelinephotos.com](http://fencelinephotos.com).



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# Contributors

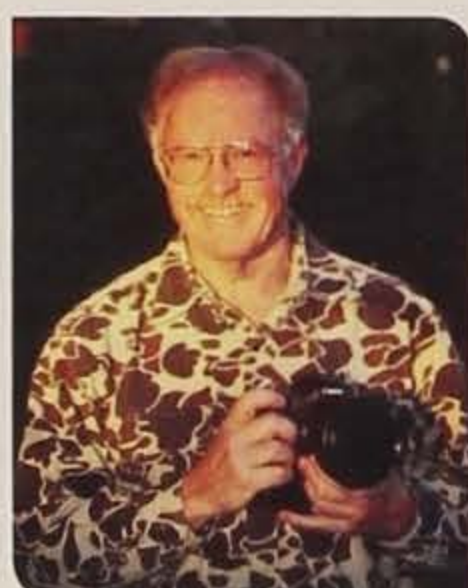
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## JAMES BARNHART

has spent his life exploring the outdoors. He has a bachelor's degree in fisheries and wildlife biology, a minor in entomology and a master's in business administration from Iowa State University. He developed a passion for macro photography 12 years ago and one of his favorite pastimes is getting up at first light

and walking through any overgrown field or natural area to photograph small creatures he happens to find. When not exploring with his camera, he can be found wading the shores of Iowa lakes and streams indulging in his other passion—fly-fishing. He lives and works in Des Moines.



**TY SMEDES** is a full-time writer and photographer from Urbandale. Published in more than 25 magazines, his work includes images of wildlife, wildflowers and scenics, along with photography of Iowa's cultural events and attractions. He teaches photography classes and leads photo tours to the Eastern Sierras and Africa. His recent

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#### ABOUT THIS PHOTO

A drip torch ignites a prescribed woodland fire. Oaklands require the natural fire cycle to remove shrubby, brushy growth to restore the ecological balance. Prescribed fire in wooded areas are gaining in popularity across Iowa.

#### ABOUT THE COVER

Iowa State University doctoral student Leanne Martin ignites a prescribed woodland burn at the Hitchcock Nature Center in Pottawattamie County in 2006. Photographer Stan Buman captured the action and says these fires are "completely different in behavior than prairie fires. It is a slow, creeping burn that meanders and has short flames." The result is an open, sunlit forest floor that benefits fire-resistant oaks which have been losing their foothold to shade tolerant trees such as maples and basswoods. The latter species are overtaking oaks due largely to 160 years of fire suppression.

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## Admiration & Legacy

BY JESSIE ROLPH BROWN

### PUTTING DOWN ROOTS

#### BUCHANAN COUNTY PHEASANTS FOREVER

Group focuses on habitat, education



The Buchanan County Pheasants Forever chapter is planting the seed for conservation, quite literally and figuratively. Through its land acquisition, education and habitat improvement efforts, the group works to better the land. Since its founding in 1988, the chapter has provided cost-share funding assistance for 10 public areas, totaling 754 acres. It has provided landowners with cost-share funding for habitat plantings, bought seeds and helped purchase a seed drill for

the Buchanan County Conservation Board. "It's part of our mission," says Loren Hamilton, chapter president and newly inducted member of the Iowa Pheasants Forever Hall of Fame. "Protect our wild areas and educate our kids on the ethics of taking care of nature." Chapter members serve as hunting mentors, helping kids bag their first deer or pheasant when they don't have someone to take them hunting. The chapter buys shells for the East Buchanan High School trapshooting team and donates books, like Aldo Leopold's *A Sand County Almanac*, to area science classes. "We supply materials for the conservation board's Archery in the Schools program, provide scholarships for youth to go on wilderness trips, college scholarships for youth interested in natural resources," says member Dan Cohen, adding that the chapter pays the way for kids to attend conservation and outdoor skill camps. "It's enjoyable to take a kid out and get them involved," says Hamilton.

### SAVANNA STEWARDS

#### BAUER FAMILY, PETERSON

Family restores savanna, wetlands and prairie while helping young hunters

Historically, an oak savanna was an oasis on the prairie. Today, the Bauer family's Cherokee County farm has become a refuge in itself. The land hasn't been in the family long—maybe seven or eight years—but long enough for them to return oxbows to wetlands, clear invasive cedars from 25 acres of savanna and revive native prairie. "The whole thing was farmed and the savanna was grazed with cattle," says Jon Bauer about the farm, also prone to flooding from the Little Sioux River. "It was just to take a small piece of northwest Iowa and bring it back to how it used to be," says Jim Bauer, Jon's father. "Back to the way it should be," Jon adds. The family actively farms only 34 acres, and food plots often help animals during hard winters. "You never saw anything before. Now there's animals all over the place," says Jon, ticking off songbirds, turkey, deer and pheasant he's seen. "The Bauers are great people with a genuine interest and involvement in conservation, fisheries, wildlife and recreation," says Maury Muhm, DNR wildlife technician. "They are enthusiastic about showing their property and projects to others, and have generated interest in conservation and habitat programs from other landowners. The world needs more people like them." Habitat improvements make the farm good hunting land, which the family opens up for mentored hunts. Working with Special Youth Challenge of Iowa, the Bauers volunteer their time and farm for children with disabilities to hunt. "You get to spend two days with them outside. It's a lot of fun. If I were in their shoes, I would want someone to take me," says Jon.



### A MAP TO THE PAST

#### IOWA 4-H, AMES AND OSKALOOSA

Teens use GIS to mark native savanna species

Standing amidst the tall grasses of the Neal Smith National Wildlife Refuge near Prairie City, one can easily imagine Iowa as it was hundreds of years ago, even with iPhone in hand, as about a dozen 4-H members have found. In the hands of these diligent teenagers, the smartphones and other handheld GIS units transmit data that help refuge biologists mark native trees and the invasive plants that threaten them. About a dozen 4-H members from Iowa's Southeast Area and Central Area tech teams began traipsing the refuge in 2011, mapping bur oak and shagbark hickory trees in what's left of a native savanna. The other trees and plants may be native to Iowa, but not the savanna—they make it hard for oaks and hickories to survive. "It's overgrown with trees that don't belong," says Karen Viste-Sparkman, wildlife biologist at the refuge, who will use the data to open up the canopy, allowing new oaks to grow. "We just don't have the staff to do this kind of thing. We're happy to have the 4-H'ers on the refuge." The students also walk the prairie looking for invasive Chinese bush clover (*Lespedeza cuneata*), which chokes out native prairie and has become resistant to prairie fires. A grant from the U.S. Fish and Wildlife Service for GIS mapping projects made the Iowa project—one of four states awarded the grant—possible. "It's a good opportunity for youth to learn about the wildlife refuge system, to get community service and learn issues of managing a refuge like this," says Debbie Stevens, 4-H volunteer leader. Adds 4-H'er Rachel Morgan from Knoxville, "This project has been a fun experience and has allowed me to expand my horizons."



ACTIVITIES, TIPS AND EVENTS FOR THE WHOLE FAMILY

# Find Late Season Fall Color

Head southeast to Van Buren County to catch late season fall colors after the rest of Iowa's leaves peak. Take part in the Scenic Drive Festival, anchored around the quaint dozen Villages of Van Buren, scamper in a fun run at Lacey-Keosauqua State Park and get some Indian fry bread at the buckskinners rendezvous. Events outside the park include arts, parades, crafts and more.

The family-friendly activities take place the weekend of Oct. 13 and 14.

The sixth annual Lacey-Keosauqua Fall Run and Trail Walk offers a 5K or 10K run on Saturday or a 2-mile trail walk on Sunday. Breakfast and t-shirt included. Races begin at 9 a.m. Entry fees: Pre-registration (by Oct. 10) \$15, walk-up \$20, and family \$50. Registration 8:15 to 8:45 a.m. on Sunday at the park lodge or register online at [Keosauqua.com](http://Keosauqua.com). Proceeds help support the park.

The Lacey-Keosauqua State Park Buckskinners Rendezvous has demonstrations of knife and tomahawk throwing, a black powder shoot, archery, basket weaving, traders with period goods, food vendor, candy cannons and more for free. Both days: 10 a.m. to 5 p.m.

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Lacey-Keosauqua State Park cabins and electric sites typically fill, but non-electric tent camping sites are usually available.

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For additional lodging options and complete event listings visit: <http://villagesofvanburen.com> or call 800-868-7822 • 319-293-7111



Lacey-Keosauqua State Park





## Explore The Amana Landscape With New Book

Known for its rich cultural heritage, few are accustomed to hearing of the Amana Colonies' natural realm. With images from photographer David B. Heusinkveld, and insight from local historian Peter Hoehnle, *The Amana Landscape* is the first photo book to focus on the area's natural beauty and interaction of humans with the landscape.

The Amana Colonies consists of seven villages set against 26,000 acres of marsh, wetlands, farmland, oak savanna, forested meadow, river bottom and hills. Here is Iowa's largest private forest, owned since 1855 and nearly as large as Yellow River State Forest. Heusinkveld spent years walking the Amanas and photographing natural areas through the seasons.

"My entry into nature photography evolved from the tragic loss of my son, Jordan Hans Heusinkveld. On our way to Iowa City, a careless driver struck us head-on, killing Jordan upon impact. I nearly bled to death on the highway. This loss of blood changed my life forever," says Heusinkveld. "I've coped with these issues by immersing myself in nature photography. I've found solace, relief and peace by photographing beautiful landscapes."

With more than 200 color images, view the seasonal colors and changes of Lily Lake, the Mill Race, fields, forests and hills overlooking the Iowa River valley.

Amana's landscape is as vital to the story of the colonies as its communal past. Here the people used fertile soil, stone, wood and

water to build a society of their dreams. For 80 years, using local resources and skills, a self-sufficient local economy relied on very little from the outside.

### **The Amana Landscape**

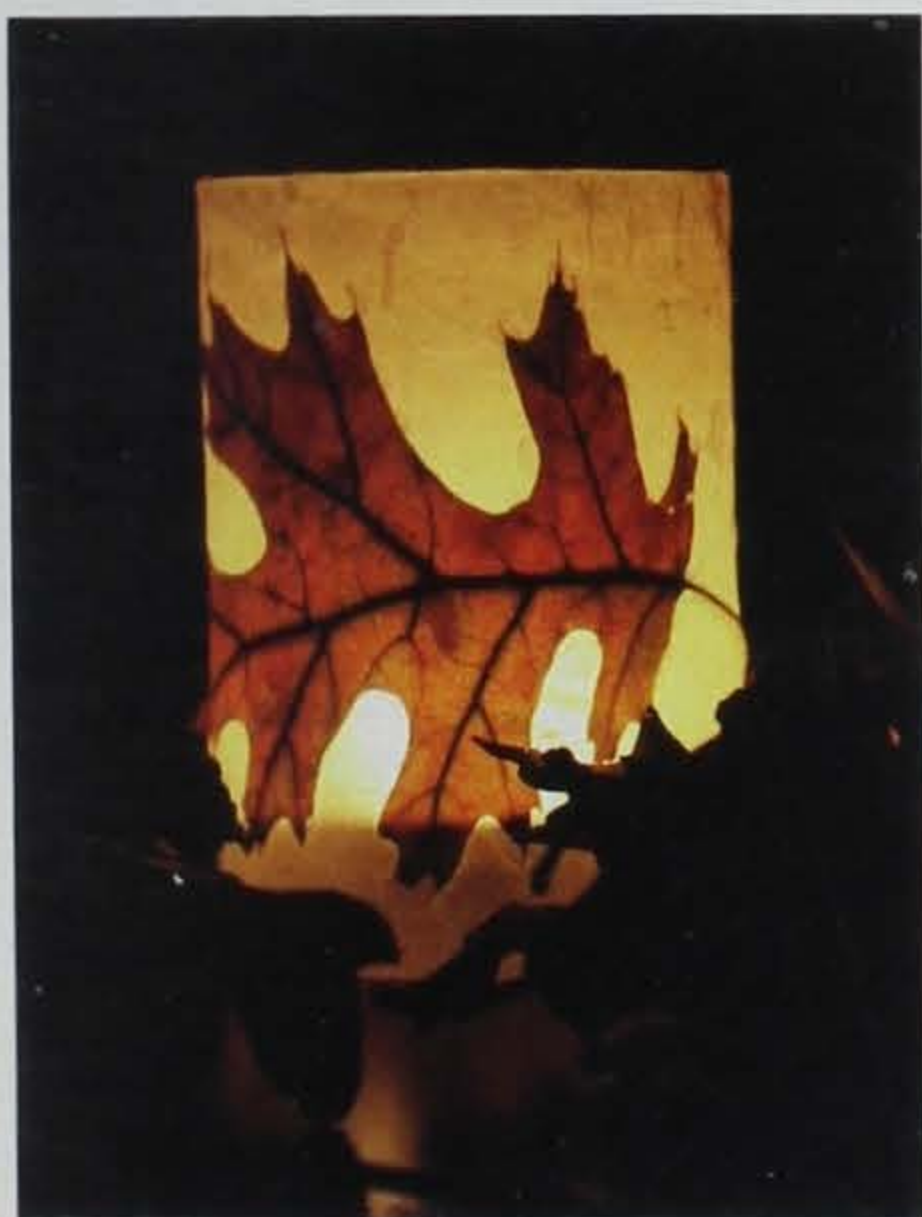
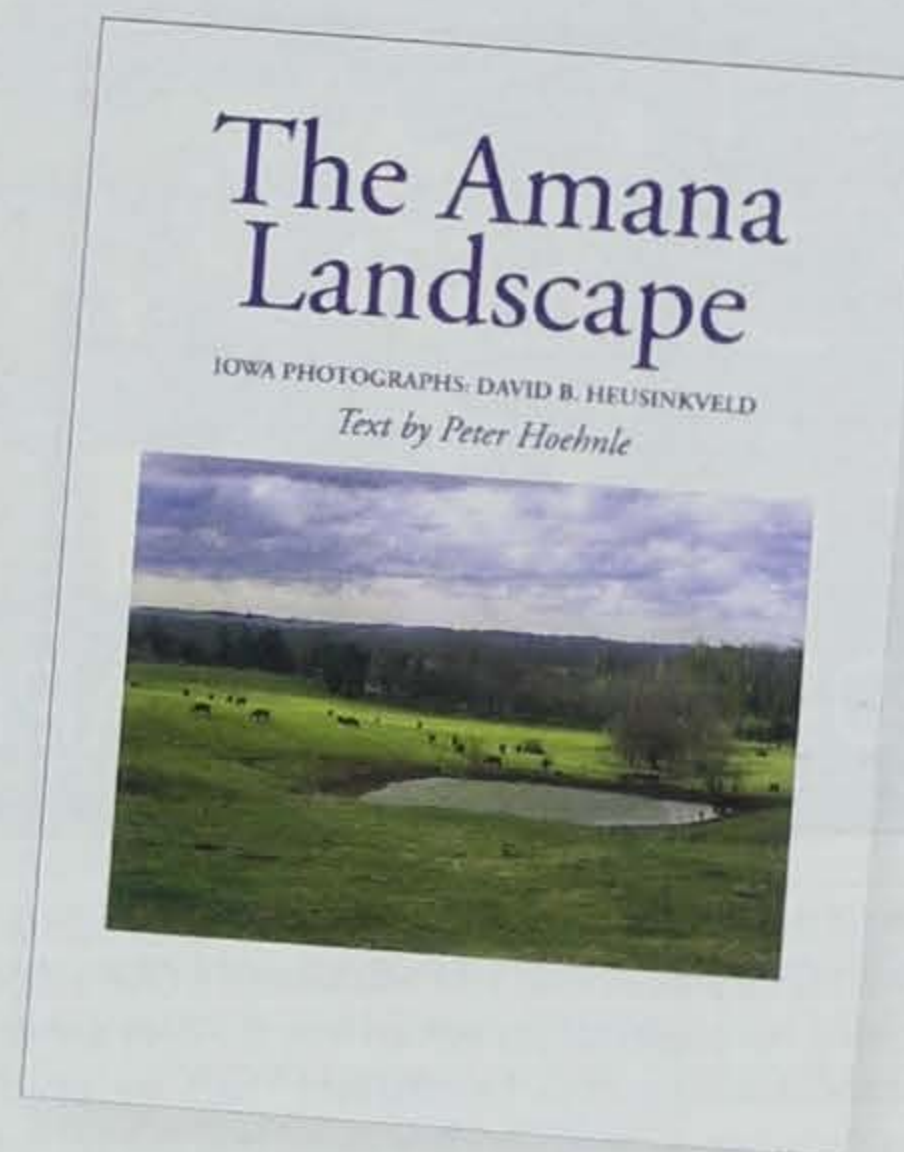
Photographs by David B. Heusinkveld, text by Peter Hoehnle

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ISBN 9781932043808

Available in *the Amana Colonies*, [Amazon.com](http://Amazon.com) or 1-800-728-9998



## Let the Warmth of Fall Color Brighten Your Home

BY MEAGAN SAVAGE

### **What you need:**

- Various small leaves, somewhat fresh and not too dry
- White tissue paper
- White craft glue or découpage glue
- Water
- Paintbrush
- Tea light candles
- Glass candle votives or small jars

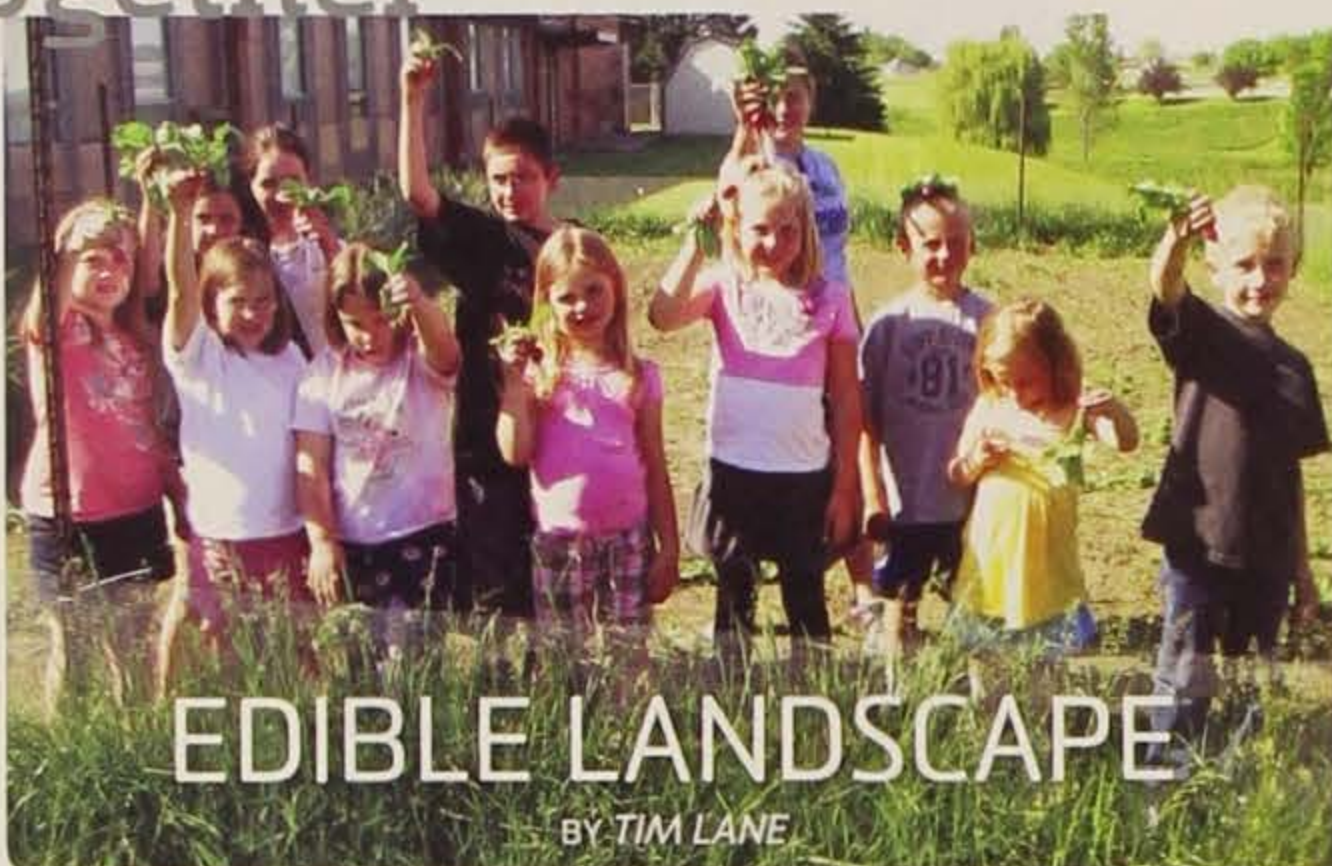
### **How to make it:**

After you collect leaves, press flat between two heavy books for several hours. Then, use a paintbrush to coat the outside of the votive with glue. Gently press leaves onto the votive, making sure all leaf edges are stuck down. Let dry one hour.

If you're not using découpage glue, mix equal parts white craft glue and water together to make a runny paste. Rip the tissue paper into one- or two-inch squares and use the paintbrush and paste to glue the squares over the leaves, covering the entire votive. For best results, overlap the tissue paper squares and carry them just over the lip of the glass, being sure to glue the tissue paper down to the inside.



# Together



I wish to applaud the efforts of northeast Iowans. Earlier this year I attended a workshop provided by Scot Michelson, a DNR officer based in Fayette County. His presentation was on how the DNR and other area organizations are striving to grow healthy kids. There are, of course, many things to consider when designing a community that fosters healthy kids. In northeast Iowa, they are focusing on two of the most important—good food and physical activity.

This is an ambitious project. By Northeast Iowa, I am referring to an area bigger than some states. The counties are Allamakee, Chickasaw, Clayton, Fayette, Howard and Winneshiek and all are working together to create vibrant communities where the healthy choice is the easy choice.

At one point in his discussion Michelson mentioned developing an “edible landscape.” That phrase released a flood of memories from my youth. I remember sitting in various mulberry trees eating the almost black berries until I had purple fingers. Another memory involved absolutely delicious apples, eaten in a tree, and of course picking raspberries.

In adulthood the best sweet corn I ever had was offered by the 4-H at a concession during RAGBRAI. The boiling pot of water was set up under a shade tree on a farm lawn next to a fence line. As I ordered my corn the youth reached over the fence and harvested the ear. Since then it has lodged in my mind as the definition of both fresh and delicious—right up there with wild raspberries that I now spend \$3 on for six ounces.

For the record, an edible landscape is the planting or placement of food plants in an ornamental or decorative setting. This approach replaces various unproductive plants with lettuces, blueberries, vegetables and fruit trees. So the plant is both ornamental and healthy. It can also be aesthetic and economical. Imagine a yard that included vegetables, fruit and herbs that would allow your neighbors to say that it looked and tasted great. Such efforts could take the locally grown effort to the absolute pinnacle.

Just imagine being able to tell your children to go outside and play and graze. I can hear the parents now... “Yes, that’s my little Brian on the swings near the produce aisle.”

In northeast Iowa, adults are also visiting schools and “doing” lunch with the children, striving to show them that walking around town, to school or around their neighborhood, can be enjoyable. Youth are involved in picking out food, planning meals and cooking, and volunteering with school gardens. For more details on other great strides being made to make healthy choices easy, visit [www.iowafoodandfitness.org](http://www.iowafoodandfitness.org).

While handing out kudos, let me include the W.K. Kellogg Food & Community Program. Funding from that foundation helped support this effort and eight others across the U.S.

**TIM LANE** is a nationally recognized authority on public health and physical activity. In 2010, he and his buddies rode bicycles across Iowa, river to river, in 21 straight hours.

## But Why?

Helping adults answer children's nature questions

BY A. JAY WINTER

A. Jay Winter educates up to 20,000 Iowa children each year as the DNR's training specialist at the Springbrook Conservation Education Center.

ETHAN, AGE 7, IN DES MOINES ASKS:

**What is the Biggest Bug in Iowa?**

From alderflies to zorapterans, insects outnumber all other animals 4 to 1. Therefore, it is no surprise that during their outdoor adventures children observe and ask about these flying, crawling and creeping creatures. A common question children have revolves around which insect has the dubious distinction of being Iowa's biggest bug. Because the term “big” is subjective, explain to your child there are varying definitions. Ask what their perception of big is. Is that the fattest bug, the longest bug or the bug with the largest wingspan? Once you establish the criteria you can answer more accurately. Establishing the criteria has not been easy. According to Iowa State University entomologist Donald Lewis, “Not everyone agrees on how to measure or weigh an insect and entomologists have been arguing about this and publishing opinions since 1874.” Because of this, and considering that an estimated 10,000 new species are found throughout the world on an annual basis, the accuracy of the answer is probably not as significant as the educational opportunity the discussion allows.

The real biggies of the insect world don't live anywhere near the Midwest. But as far as Iowa's biggest bug, Lewis says on a good day we might find a 1.75-inch cockroach. Larger still is the praying mantis, which can measure upwards of 4 inches. The giant water bug can measure up to 2.5 inches in length and reach almost 1 inch in width. The even larger river bug—the dobsonfly—a “skinny” bug, can measure up to 3 inches in length, primarily consisting of their wings. Iowa's largest moths are the cecropia and polyphemus moths. Both of these winged wonders have wingspans of 5.5 to 6 inches. For spiders, the largest in Iowa are fisher spiders. When their legs are spread out, they can cover as much as 4 inches.

If throughout your Iowa outdoor adventures you and your child find what you think might be a record breaker, please report it to the Iowa State University entomology department. Contact information and other insect related resources can be found at [www.ent.iastate.edu](http://www.ent.iastate.edu).



## Hunting and fishing licenses help support parks



Iowans and visitors are hooked on the boundless hunting and fishing opportunities available here, but there is a myth that hunting and fishing license buyers also help support state parks. However, this myth is off target.

All Iowa hunting and fishing license fees are forwarded to the constitutionally protected **Fish and Wildlife Trust Fund**. This DNR-managed fund expands hunting and fishing opportunities, supports game management, land acquisition, fish hatchery operations and law enforcement while ensuring current and future sportsters can bag memories in Iowa's diverse hunting and fishing venues.

While the DNR Fisheries Bureau uses license fees to improve park lakes for fishing, the day-to-day operational costs to run parks such as staffing, utilities, mowing, campgrounds, buildings and trail maintenance are not supported by license fees.

With this myth clarified, those hunters and anglers wishing to support parks can do so by buying natural resources license plates—a portion of those funds do support parks—or donating to a park friends group. Another way to support parks is to visit. Receipts from camping and lodge and cabin rentals make up a significant portion of park funding.



### GET INVOLVED

Mother Nature needs friends, too. Luckily, Iowa's beloved state parks have a wealth of good friends—dedicated volunteers who raise funds, make park improvements and give support through friends groups for specific parks.

Across Iowa, these coalitions of concerned citizens work to improve, protect and preserve state parks, lakes and other treasured natural resources. Friends groups encourage businesses, civic groups and individuals to volunteer their time on behalf of state parks, monuments, historic sites and trails.

### BE A PART OF IT!

Start, join or donate to a friends group and help care for and give back to your favorite natural resource area.

*Projects usually fall into one of three categories:*

- **Building/facility improvement projects:** Volunteers help restore hiking trails and build picnic tables, trail benches, creative play areas and picnic shelters.
- **Resource management projects:** Volunteers improve prairie and forest landscapes by planting trees, picking prairie seeds and getting rid of noxious plants.
- **Educational projects:** Volunteers help park visitors understand the unique ecosystems in the park. Projects include making interpretive signs, brochures and fundraising for kiosks.
- Citizens may also make **financial contributions** to projects they care about. As a park partner, groups and individuals can give money, materials or labor for specific efforts. Typically projects vary in cost from \$1,000 to \$5,000.

*Contact individual friends group leaders or park staff for more information or visit [iowadnr.gov](http://iowadnr.gov) or call 515-242-5074.*

## Ask The Expert

BY JULIE TACK

David in Scott County asks:

Is it true I can hunt on certain private land in Iowa without asking permission?

**Yes.** Hunters have access to land enrolled in the Iowa Habitat and Access Program. Through the program, landowners sign up to receive funding for habitat improvements in exchange for opening their land to public hunting from Sept. 1 to May 31. Currently, more than 40 different locations, with 7,000 acres, are enrolled.

The areas have the same hunting laws as Iowa's public wildlife areas.

According to the DNR's Kelly Smith, who manages the Habitat and Access program, "This has been a great way to increase habitat development on private land, while providing hunters with some new places to go hunt. It's been a beneficial situation for everyone."

To help the program be successful for hunters and landowners, Smith encourages hunters to be respectful of private areas.

"Be sure to hunt only in designated areas by following signs and maps, pick up after yourself including spent shells, and be courteous to landowners and other hunters," says Smith.

To learn more about the program, including maps of designated areas, visit [www.iowadnr.gov](http://www.iowadnr.gov). Under the Hunting tab, go to "Places to Hunt and Shoot" and click the tab for the Habitat and Access program.



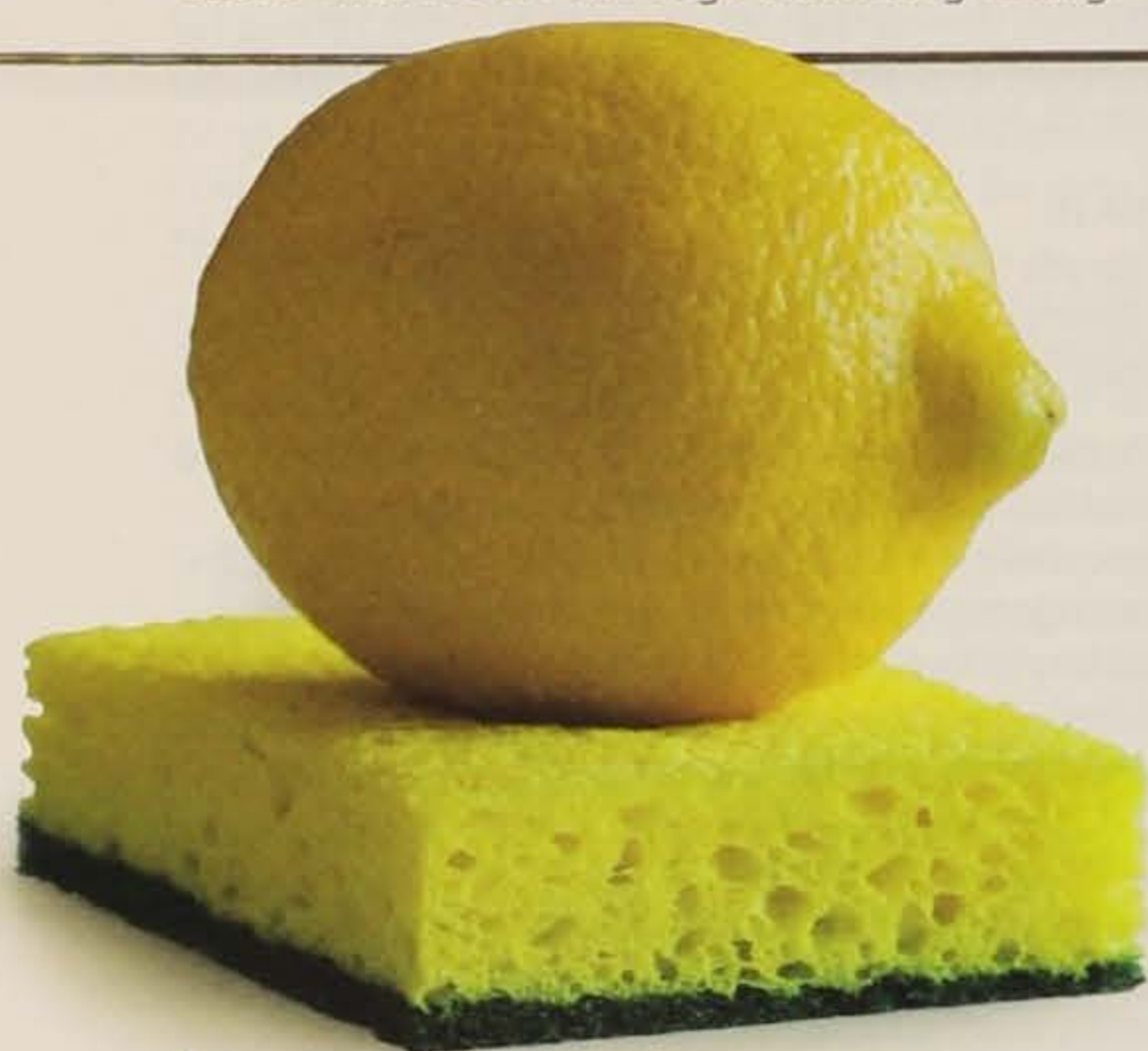
# Outdoor Skills

BY BRIAN BUTTON PHOTOS BY JAKE ZWEIBOHMER

TIPS, TRICKS AND MUST-KNOWS TO ENHANCE YOUR OUTDOOR FUN

## Stay Warm

Keep the loft in your sleeping bag by hanging it up for the season in a dry closet. Avoid storing in stuff sacks, which breaks down fibers and reduces the bag's insulating ability.



## Lemon Fresh Moldbuster

Getting ready for a fall camping trip? If you last used your tent on a humid summer day and packed it damp, chances are increased for mold. Nix that mold smell by mixing a cup each of salt and lemon juice into a gallon of hot water. Use a sponge and scrub the tent, then let it air dry. This stops mildew growth and kills the smell, but the mold stain will remain as a permanent reminder to thoroughly dry your tent before storing.



## Avoid Beetlemania

The first 70-degree-plus day following a fall cold front is when Asian lady beetles start heading into houses to hibernate. Use caulk to seal up cracks and openings around windows, doors and foundations to keep them out while also reducing utility bills.

## Treestand Safety Backup Plan

Carry a suite of emergency signaling devices such as a whistle, flashlight and cell phone on your person. If you leave these in a bag attached to the tree stand and you fall, they are useless.





## CRUISE THE MISSISSIPPI IN STYLE

Experience a majestic overnight cruise through the Heartland of America on the mighty Mississippi River. Step back in time aboard the beautiful Victorian-style riverboat *Twilight*.

Rechristened in May to mark its 25th anniversary, the *Twilight* begins its journey north from LeClaire, the boyhood home of "Buffalo" Bill Cody, toward the Port of Dubuque. The two-day journey covers 166 miles of ever-changing scenery, including towering bluffs, historic river towns, bald eagles, river otters, white pelicans and any number of the 325 bird species that inhabit the river corridor. Captain Kevin Stier serves as your expert river guide pointing out interesting sites and the many eagle nests along the way.

Enjoy it all from one of three decks and salons on a comfy chair while sipping a beverage from the boat's full bar. Hungry? Breakfast, lunch and dinner are included,

featuring fresh fruits, pastries, pork loin, chicken and prime cut roast beef. Finish off your meal with a specialty dessert and a good cup of joe. Morning and afternoon snacks keep hunger at bay.

Overnight accommodations in the Port of Dubuque are at the riverfront Grand Harbor Resort. A shuttle bus runs continuously the following morning, allowing you to explore the history, architecture, attractions and shops of Iowa's oldest city. Included is admission to the National Mississippi River Museum and Aquarium, Iowa's No. 1 Tourist Attraction.

The *Twilight* departs LeClaire every Sunday, Tuesday and Thursday morning and returns the following evening, from the end of May through October. Cost ranges from \$159 to \$409 per person, depending on age, time of travel and single or double occupancy. For more information, go to [www.riverboattwilight.com](http://www.riverboattwilight.com) or call 800-331-1467.

### *Cruising the Heartland of America*

#### Affordable 2-Day Mississippi River Cruises

Fast, elegant and quiet as she slips through the water, the *Twilight* is the most richly appointed Riverboat to be launched in a hundred years. Reminiscent of the Riverboats Mark Twain called "Floating Palaces", the Victorian steamboat architecture inside and out pleases the eye. There are three decks with comfortable dining salons, and sundecks with lounge chairs for those who wish to sightsee or snooze in the sun. Air conditioned or heated for comfort in any season.

**Call 1-800-331-1467**

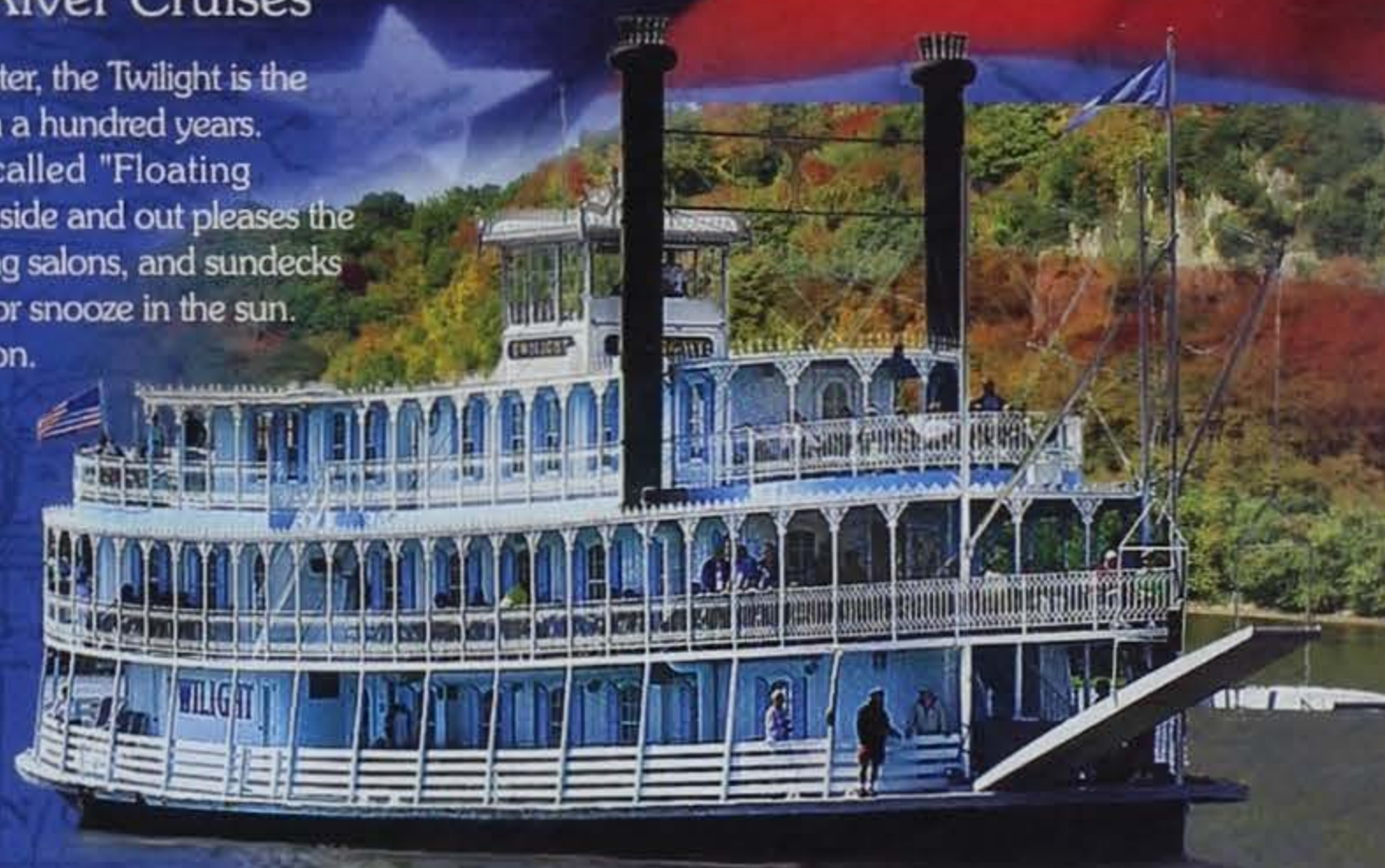
[www.RiverboatTwilight.com](http://www.RiverboatTwilight.com)

**ONLY \$359\***  
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INCLUDES: Overnight Accommodations at the new Grand Harbor Resort, Port of Dubuque; plus Admission to the National Mississippi River Museum & Aquarium, Iowa's #1 Tourist Attraction.



ABOARD THE RIVERBOAT  
**TWILIGHT**  
CRUISING MAY THROUGH OCTOBER





# Lost In Iowa

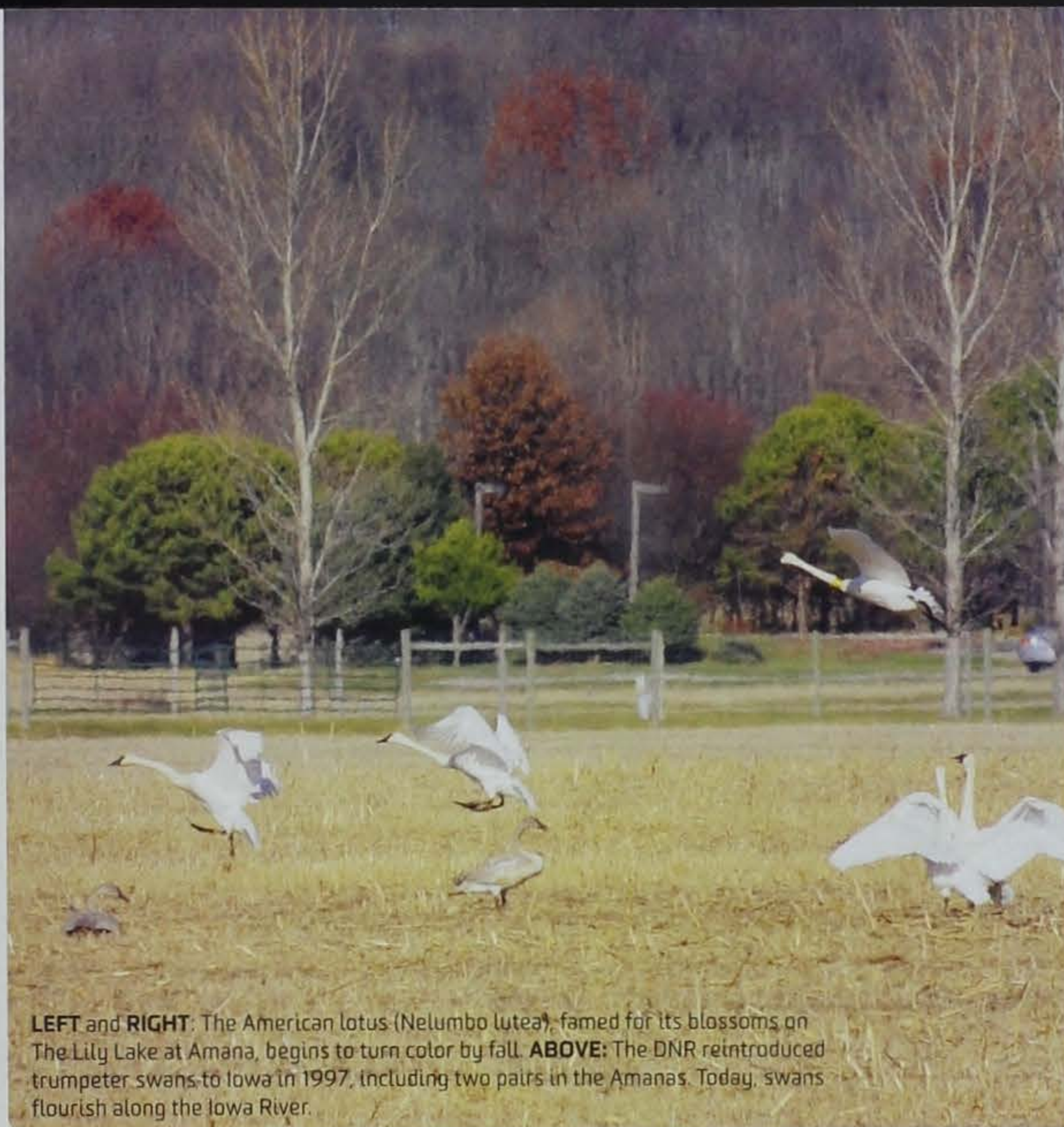
BY JENNIFER WILSON PHOTOS BY CLAY SMITH



## A CLOSER LOOK AT THE AMANA COLONIES

Whether you're walking off the sweet wine samples or giving your shopping spouse a few hours of peaceful browsing, the Amanas' wild side is worth investigating as a fine example of well-managed private habitat.





**LEFT and RIGHT:** The American lotus (*Nelumbo lutea*), famed for its blossoms on The Lily Lake at Amana, begins to turn color by fall. **ABOVE:** The DNR reintroduced trumpeter swans to Iowa in 1997, including two pairs in the Amanas. Today, swans flourish along the Iowa River.

**A wedge of swans skims the sky** above the Lily Lake, and Maria Koschmeder is ecstatic.

For the long-time Iowa County naturalist who now leads Amana Colony nature tours, the presence of these 30-pound giants is nothing short of a miracle.

Amana Forestry and the DNR reintroduced two mated pairs of trumpeter swans in 1997, she says, raising binoculars to watch them land softly in a fallow autumn cornfield. Trumpeter swans were Iowa's largest waterfowl before the turn of last century when wetland drainage and the market for their meat and plumage wiped out the species. Now they're regular visitors every spring and fall.

"The fact that we're seeing native flying swans is," she pauses, lowering her binoculars. "It's just amazing to me."

Visiting swans join the hordes of tourists in the seven Amana Colonies, a group of settlements that lived a religion-based communal life 20 miles northwest of Iowa City beginning in 1856. People generally visit the Amanas to shop the main colony and eat family-style bowls of cottage cheese at popular restaurants. Then they leave.

But this is Grant Wood country. Upon closer inspection, the iconic Iowa River valley landscape gives the shopping scene a run for its money. It rolls with prairie, timber, low bluffs and country creeks. Though the area contains working forest that provides a profit to the Amana Society,

it's also managed to maintain a diverse ecosystem to encourage and maintain habitats for a variety of wildlife.

Two public trails lead visitors past the high points, from a landmark floodplain restoration project, to the largest privately held forest in the U.S., to Native American burial mounds, to the simple pleasure of viewing once-endangered wildlife that's been nurtured back to safety.

Koschmeder turns her gaze toward the Lily Lake. Muskrat dens lump up the water—the smaller ones are feeding piles made of discarded lily stems where geese will rest during migration. The lake is fed by the Mill Race and the Iowa River, an original DNR release site for otters in 1987. Like the swans, their natural population has rebounded, joining beaver, raccoon and those muskrats.

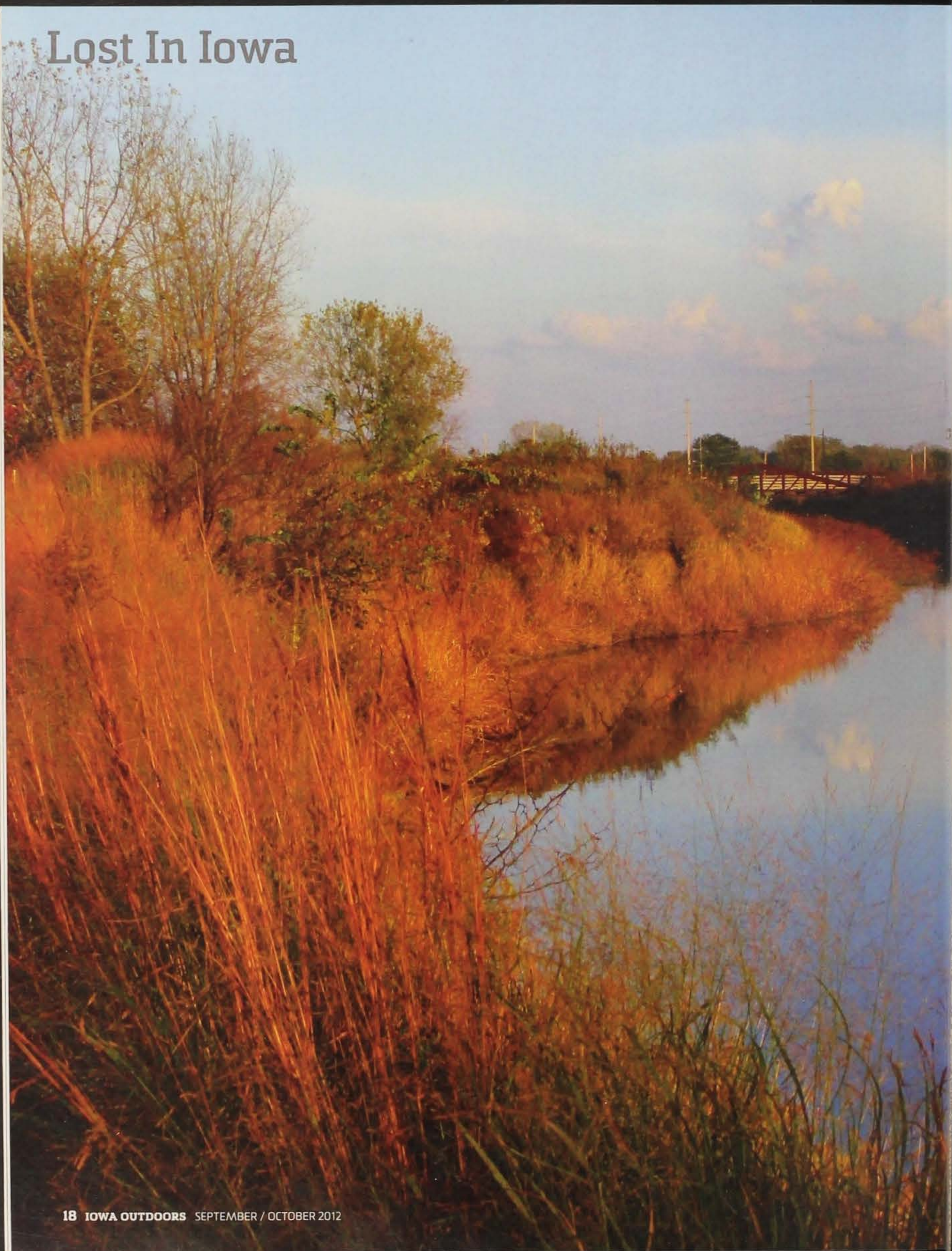
Conservation advocates like Koschmeder favor the Amanas' natural beauty above all. "This place," she smiles. "It's just amazing."

### Off Ye Olde Shopping Path


One of the longest running communal living societies in the United States is largely private property, held by stockholders since the Amana Colonies abandoned its religion-based communalism to create a joint-stock company for business enterprises in 1932.



# Lost In Iowa







From 1865 to 1869, the Amana Colonists built a 7-mile-long canal from the Iowa River near West Amana, through Middle Amana, then through Amana and into Price Creek, just past town, where it continued to the river. Dug with human, oxen and steam power, it provided water power for two textile mills and one flour mill. Today it powers a generator at the Woolen Mill and is a popular scenic sight along the Kolonieweg Trail. The Mill Race embankment helped protect the colonies from record floods in 1993 and 2008.

## The River Corridor

**A**long a 50-mile stretch from Belle Plaine to the Amana Colonies lies a reclamation project of impressive scale and scope.

The Iowa River Corridor Project started after the devastating 1993 flood of the Iowa River. Now encompassing 50,000 acres of land along 45 miles of river in Tama, Benton and Iowa counties, this project reverted cropland back to its former habitat of wet meadow, oxbow wetlands, grassland and bottomland forest with a mixture of scrub and shrub openings.

A cooperative venture between the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service (NRCS) and the Iowa DNR, the goal was to solve the continual crop devastation issues along the Iowa River.

"The Iowa River is notorious for flooding," says Rick Trine, Central District Wildlife Supervisor for the DNR. He was the DNR wildlife biologist at the time of the project's inception. "The river has flooded 28 of the last 30 years. And in some years, multiple times."

Trine worked with landowners to enroll affected land into the Emergency Wetland Reserve Program, which bought out cropping rights to farmland. In the agreement, farmers would own the land but could no longer farm it. Under an easement contract, landowners received a lump sum payment covering approximately 80 percent of land value in return for allowing it to become grassland trees or similar habitat.

It was a win-win situation: Farmers could get out from underneath floodplain properties, and the government could get away from paying out millions in disaster funds each year. "It was cheaper in the long run," says Trine.

The project has paid for itself in less than 10 years. Another massive benefit is the 12,000 acres of contiguous public land are open for recreational use.

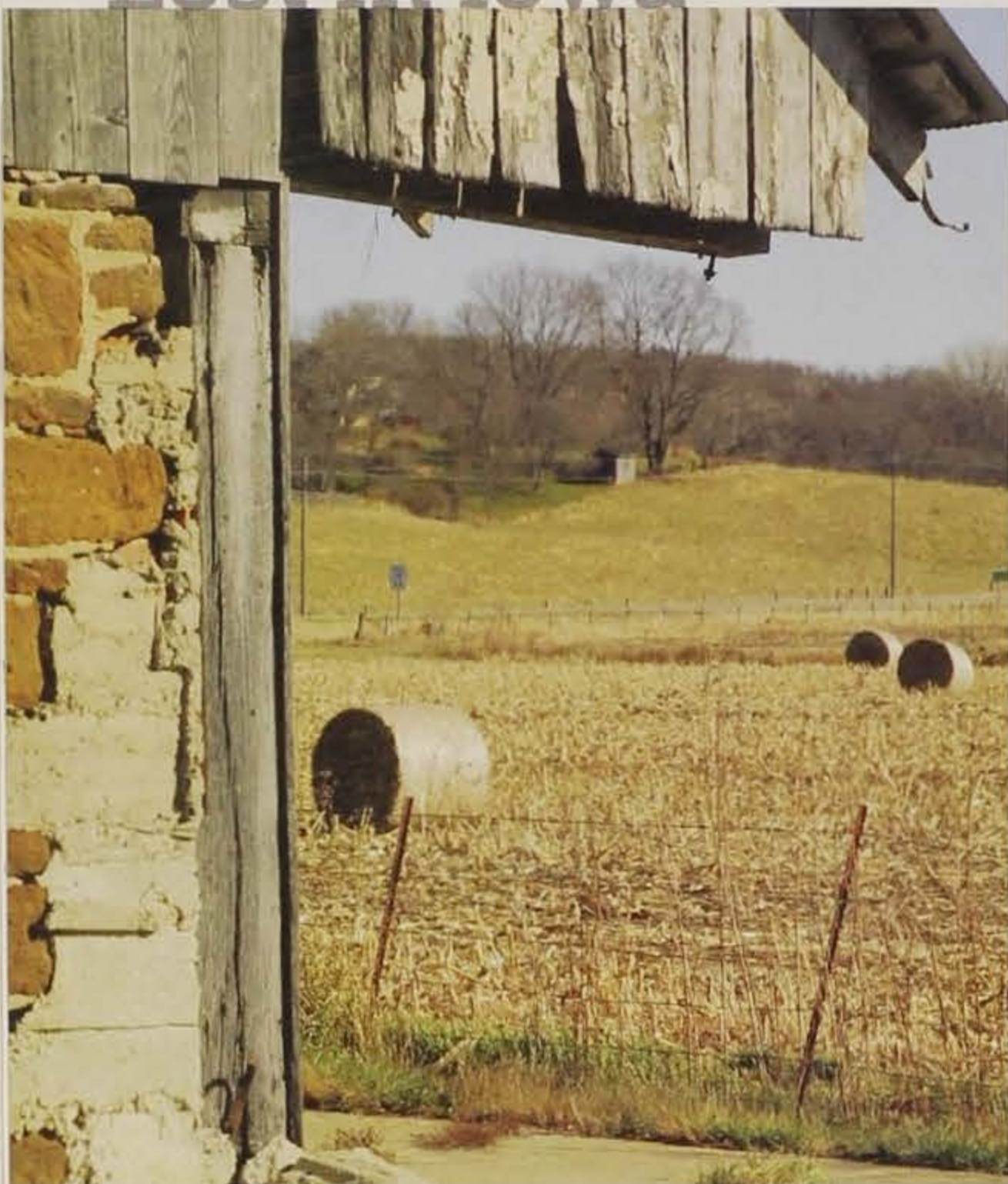
The Iowa River Corridor is part of the National Wildlife Refuge System, though not a refuge itself. It's governed by their rules and regulations, but open for hunting and fishing. It's also a haven for bird-watching, wildlife photography, trapping, hiking and other recreational uses.

Refuge lands on the corridor are managed primarily for waterfowl and other migratory birds. It's a designated birding spot, with grassland songbirds, hawks, owls, several nesting eagles, osprey and sandhill cranes. In fact, Otter Creek Marsh, also part of the project, was the first place sandhill cranes nested in Iowa since the 1800s—they were gone for about 70 years. You can see them in spring and fall during migration.

Look for parking lots with brown access signs that say "Wildlife Area." The DNR website lists each of them.



# Lost In Iowa



Original colony buildings against the well-preserved landscape make even a casual drive or bike ride through this area a roll through times past. Home cooking makes the restaurants one of the state's favorite tourism destinations. The Amana Colonies also offer trails, rivers and forests and are fun to explore beyond the typical tourist areas.



But two good public trails provide access to how things are done around here. Koschmeder often takes travelers by bike on the Kolonieweg Trail, meaning "The Colony Way" in German, the original language of the colonists. The 3.1-mile trail starts at the depot in Amana, and travels along the Mill Race, a 7-mile canal stretching along the Iowa River. The Mill Race provided waterpower to area textile and flour mills.

But today, Koschmeder is hiking the Amana Colonies Nature Trail, a three-loop system at the intersection of highways 6 and 151 in Homestead. It travels oak savanna, wet prairie, natural oak/hickory timber, and passes the ancient remains of a fish weir in the Iowa River and burial mounds, leading through a section of the 7,000 acres of Amana Forest.

The team of men who manage that forest are joining her. First item of note: that team is two guys. That's how the Amana work ethic rolls. Larry Gnewikow (pronounced "GENEVA-koe") is the Amana forester, a big guy with an even bigger mustache. Assistant Tim Krauss is descended from an original 1850s colony family.

"We're very sensitive to timing, and to perpetuating any wildlife we can," says Gnewikow, as he and Krauss

join Koschmeder. Though there's evidence of logging in the woods and pastures—including the original logging road this trail is built on—the selective removal of trees appears to have only improved the land. Wildlife inhabit snags and stumps. Woodland fauna thrives in open pockets of canopy. Controlled burns remove invasive species and make room for fall grasses and spring flowers.

Krauss and Gnewikow baby along the walnut, red oak, white oak and cherry in the timber, which supplies some of the lumber for the Amana Furniture Shop, but they don't solely focus on these species. The forest is diverse with hackberry elm, shagbark hickory, sugar maple and a few American chestnut.

"When the colonists came over, they kept their craftsman skills. Everything was of value," says Koschmeder. "Whether it was woodworking or ironwork, they needed all these resources as a whole."

Amana Forestry can still see evidence of the Amana Church Society's impact on the forest when, in the late 1800s, the church ordered residents to transplant evergreens from their yards to the surrounding woods and plant fruit trees at home instead. (In some areas, Norway Spruce still reproduce naturally—the only place





The Indian Fish Trap State Preserve



Tucked behind the High Amana store is the shop of Harvey Jeck, a white-haired wonder whose woodturning creations elevate craft into art. Rounded wren houses are truly beautiful, ranging around \$100, made from Amana woods—mostly white oak and soft maple. No direct number, call Amana Forestry for assistance, their office is right across the way: **319-622-7554**.



outside of northeast Iowa where this is documented.)

These woods remain largely unchanged today—an absolute rarity in Iowa—supplying the Amana Furniture Shop and Amana lumber sales.

“The land was bought for a communal society, so it remains in a large tract, rather than a bunch of small farms,” Gnewikow says.

Earlier, Gnewikow stood before an Amana Forestry aerial map, and if you compare it to the forest map of 1846 Amana, they look nearly identical.

Second item of note: you will be hard-pressed to find a better example of a private commercial forest. The hike itself is a lesson in good management.

Gnewikow and Krauss plant 5,000 to 6,000 trees each year. They do 70 percent of their own harvesting to control the impact of the cutting. They have worked with Iowa State University on biomass research and cooperate with the National Wild Turkey Federation to improve habitat. They help along studies on birds, mushrooms, poplar trees and monitor emerald ash borer, gypsy moths and other invasives.

“Keeps us busy,” says Gnewikow, rearranging his worn Iowa State baseball cap and zipping up his Carhartt. “This is about the company’s German heritage and the love for

their timber resources.”

Gnewikow and Krauss also tend this hiking trail, overhung with bent trees like witch’s fingers. It’s financially supported by the Amana Colony Corporation.

“Minus the 10 dollars we get in the donation box at the trailhead,” Krauss notes. He thinks for a moment, a handsome blue-eyed kid breaking into a grin. “Maybe five dollars.”

### A closer look at a healthy woods

Koschmeder, Gnewikow and Krauss stand around a patch in the timber, admiring several oak trees that the men have been watching over for the past few years. They are impressed with the progress, admiring their stature and general health.

The oaks stand about 6 inches off the ground. It’s little stuff like this—mellow victories, as oaks are hard to grow—that indicate the level of care this forest gets.

“We’ve had our forest operation since the 1940s. We will take steps that won’t show results for 10 or 20 years,” says Gnewikow. “Our charge is to perpetuate and improve our resources in the long run. Here, we look to the future.”

On a hike, you have to know what to look for to understand the robust habitat that lures neotropical birds

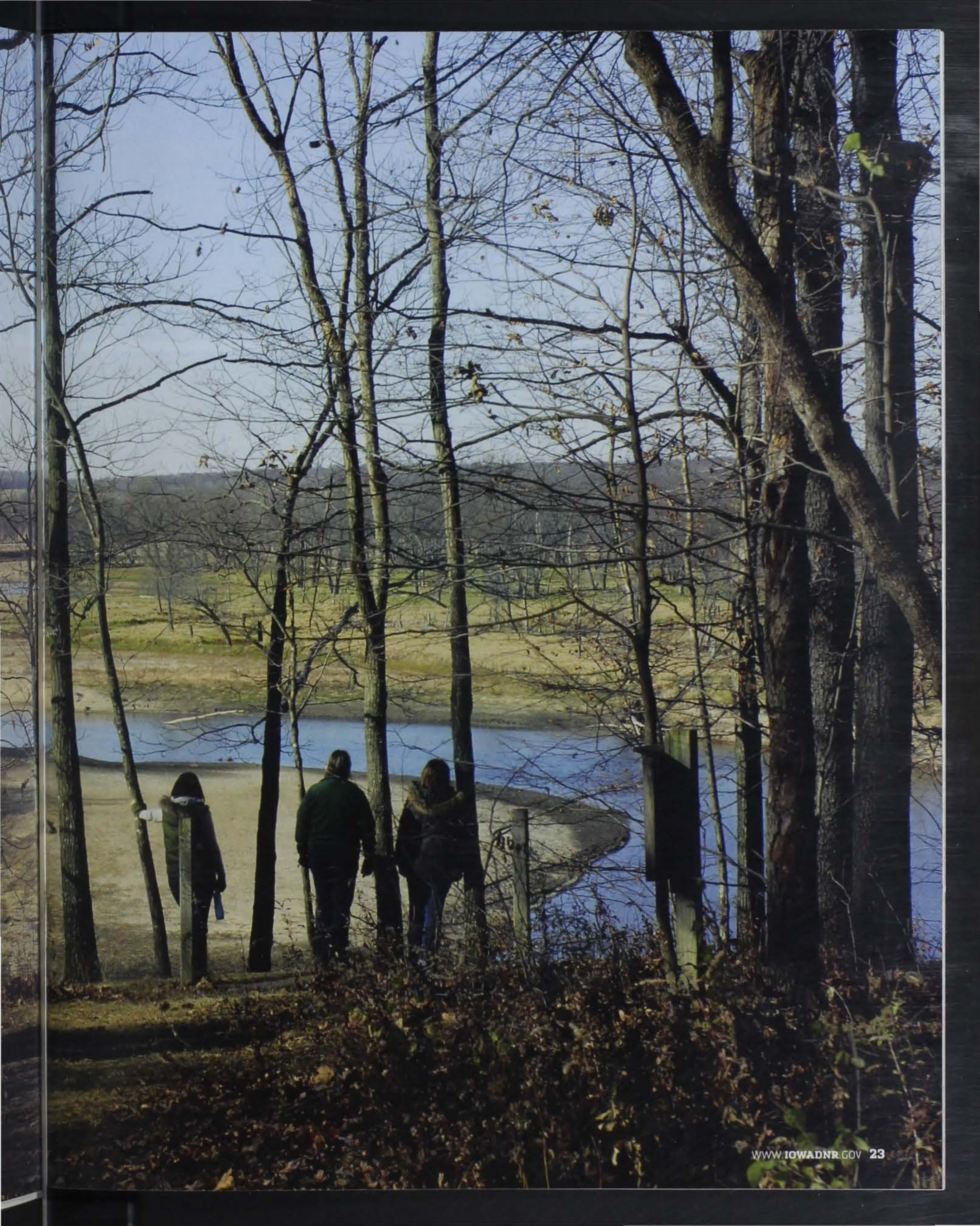


# Lost in Iowa

Visitors hike to an overlook of the Indian Fish Trap, a 1-acre state preserve on the Iowa River two miles northwest of Homestead. The weir was discovered by early pioneers and constructed less than 1,000 years ago using glacial boulders. The low barrier of piled rock and stick stretches across the river in a v-shape that points downstream. Each wing of the dam is 150 feet long. Just downstream is a line of rocks that forms a circular enclosure that likely served as a holding pool for fish. Fish were driven into the funnel of the weir by people wading in the river. The fish were speared, netted or caught in a basket or by hand as they funneled through a narrow opening, then placed in the holding pool. The structure is not as high as it once was and many stones are strewn downstream. Today the pool of Coralville Reservoir partially inundates the preserve, making the weir less visible. To get there, a mile trail leads north from a parking area off Highways 6 and 151.









# Lost In Iowa



**ABOVE:** Hikers scamper down the Amana Colonies Nature Trail which passes three burial mounds built perhaps 1,000 years ago. At the trail end is the Indian Fish Trap State Preserve, the only such structure in Iowa. Past the donation box, the trail crosses a commercial forest operated by the Amana Society for over a century. **RIGHT:** A muskrat swims the Iowa River, the leaves of hepatica or liverleaf (*Hepatica americana*) protrude through the leaf litter and hands explore the cork-like bark of a hackberry tree (*Celtis occidentalis*). A finger points out a raccoon track in the sand with weasel tracks in the foreground.



Amana forester  
Larry Gnewikow

in spring and fall. Koschmeder sees bobcat scat on the wood's floor. She names fall mushrooms like a chef with an ingredient list: sulphur, chicken of the woods, cottage cheese, puffballs. Some of the bigger white oaks have sizes that indicate they're about 150 years old.

"Ooh! Ooh! Orchid!" Koschmeder calls, directing the hikers her direction, and pointing out a puttyroot (brownflower) leaf. "Orchid is a sign of a healthy forest. There's a specific bacteria in the soil that they need to survive. Here, there are three kinds of orchids that I know of. It tells me this is healthy, undisturbed land for the most part."

She scrambles down a ridge and into the creek bed, where the tracks of raccoon, skunk and mink pock the mud. The ridges here are windblown loess from 40,000 years ago; erosion of the Iowa River valley has left behind giant rocks that are actually glacier rubble from the last ice age.

Three Native American mounds lie just off the trail. The group of three crest an overlook of the river, bald eagles watching from the tree line. A Native American fish weir occupies the river bend. A weir is an ancient fish trap—a rock enclosure shaped like a "V" to trap fish next to a holding pool for easy harvesting. The fish weir was

damaged in the past decade of flooding, and though it's on the National Historic Register, it's now almost entirely covered with silt. Rocks on the shore remain the only clue among a riverbank otherwise barren of stone.

Whether trekking the Amana Colony trails, or just driving to see the forest or the Lily Lake, when you look closely, you'll see the Colonies' natural state.

And when you do, it might just give that bowl of cottage cheese a run for its money.

"This type of forest provides opportunities for the birdwatcher, the hiker, the backpacker and the camper," says Gnewikow. "Anyone who enjoys the solitude of the deep woods, but the proximity of urban life, will find a good place here."

## If You Go

**AMANA COLONIES VISITORS CENTER.** In Main Amana, located in a renovated corn crib. Get trail maps, as well as paddling, birding and sportsman guides, developed by the Iowa Valley Resource Conservation and Development. The area history is fascinating; you can dive in through the historical museum movie or the free self-guided history tour using your cell phone at designated stops, with maps





found here. There's a \$15 per person van tour that leaves here weekdays at 10 a.m. **800-579-2294; [amanacolonies.com](http://amanacolonies.com).**

**WALKING STICK ADVENTURES.** Maria Koschmeder leads hands-on nature explorations, including daily field trips in summer. Tickets at the Amana Colonies Visitor Center, \$17 per person for two hours. You choose theme and activity level from several offerings. **319-329-9821; [walkingstickadventures.com](http://walkingstickadventures.com).**

**KOLONIEWEG RECREATIONAL TRAIL.** Mostly paved, with some crushed limestone. Access at the Lily Lake parking area on Highway 220 between Amana and Middle Amana or at the Amana Depot. **[amanacoloniestrails.org](http://amanacoloniestrails.org).**

**AMANA COLONIES NATURE TRAIL.** Unpaved woodland trail with prehistoric Native American mounds. Trailhead parking north of Homestead near the intersection of Highways 151 and 6. Do the guys a favor and throw a few bucks into the donation box. **319-622-7554.**

**AMANA FURNITURE & CLOCK SHOP.** "The people who work here are perfectionists," says assistant forester Tim

Krauss. Amana Forestry supplies some of the wood for rocking chairs, mantle clocks, tables and more. **[Amanafurniture.com](http://Amanafurniture.com); 800-247-5088.**

**TO BUY LUMBER.** You can purchase directly from Amana Forestry—soft maple, red and white oak, ash lumber—and you'll probably meet the guy who cut it down, too. **319-622-7554.**

**CANOE ACCESS.** There are two public canoe access points on the Iowa River. One in South Amana by the River Bridge, the other in Homestead, also by the River Bridge. 🐾





# Why We Hunt

BY BILL KLEIN PHOTOS BY ROGER HILL



**W**hen the alarm clock clangs us to consciousness at 5 a.m., rudely announcing it's time to get up and go hunting, it's a defining moment for the oft-repeated riddle: why do we hunt? If we don't have a ready answer the temptation to not answer the bell might be overpowering. As in: freezing outside, warm bed.


It's what was going through our minds when we set that alarm that provides the answers. If it's whitetails causing us to arise at such an undignified hour, we can clearly see, in our mind's eye, that eight-pointer as we spin the clock's shortest hand to number five. He's stepping out into our shooting lane with the just-risen sun illuminating him. We fight back the trembling effects of buck fever long enough to make a clean kill-shot. We wait the interminable 15 minutes before climbing down from the tree stand on wobbly legs. All our hunting buddies, having heard the shot, rush to the scene and agree he's a wall hanger. Photo ops follow with the deer's rut-thickened neck across our lap, tines held high. Then, as we click the little alarm clock button to on, the delicious, if imagined, smell of a back strap coming off the barbecue goes wafting past our nose. This is why we hunt.

If it's geese we're trying to beat to the picked corn in the morning, other images go through our mind as we fiddle with the alarm clock. A pair of giant honkers twist their necks when they hear our call. They twist their primary feathers, like the ailerons on a plane, for final approach into our decoys. Our index finger feels for the safety on the 12 gauge in anxious anticipation.

Our mind's-eye magic works for pheasants too. We see our setter standing on a carpet of combine-shattered corn stalks looking into a clump of grass. He's steady as a brick with his tail at 12 o'clock. A cackling, iridescent missile explodes from the covert flying straight away for a gimme shot. In our imagination, we never miss. And our dog always makes a stylish retrieve to hand.

When we're setting the clock for spring-time gobblers, we nudge the alarm hand off the 5 and towards the 4. We know we need the cover of darkness to get to our blind unseen by Mr. Tom, who is roosted high in a tree. Finally, after an hour of sitting statue still, our calls are answered. The gobblers are distant, at first, but getting closer. Suddenly, there he is in all his passionate glory. We struggle to control our nerves until he struts into range. Every nuance of color on the bird's body is clear in our mind's eye.






If our mom or dad hunted, the answer to why we hunt is likely genetic. Right there along the DNA spiral, it's the obligation gene. Because our dad shook us awake at 5 a.m. to go hunting when we were 14, we feel obligated to do the same for our own teenager. The same gene is at work when we think about our buddy down the street who's been hunting with us for decades. We know if we're five minutes late our cell phone will be ringing. And then there are our dogs. They were born and bred to hunt. We've invested in their training. But they can't strut their stuff in the kennel.

The outdoor retailer Gander Mountain has a slogan that says "We Live Outdoors." But we don't really. We live indoors. But our prey lives out there. And that gives them the home field advantage in a fair chase hunt. They can see better, hear better and smell better than we do. Plus they know the territory like the back of their feet. When we win it's an upset. We love to win and to have that chance we must go hunting.

Our early morning sense of obligation fades as we look at the faces around the evening campfire. These are the chosen few we want to be with to share the intriguing graces of nature. These are the sons, daughters and friends who delight in the quiet

conversations with us about shots made and missed, about heroic dog work, about the delicacies of camp table fare. These are the hunting buddies we want with us as we admire a stratus cloud deck resplendent in end-of-day hues. Call it camaraderie or call it love, it makes the pain of the early morning wake-up call seem trivial now. 🐾





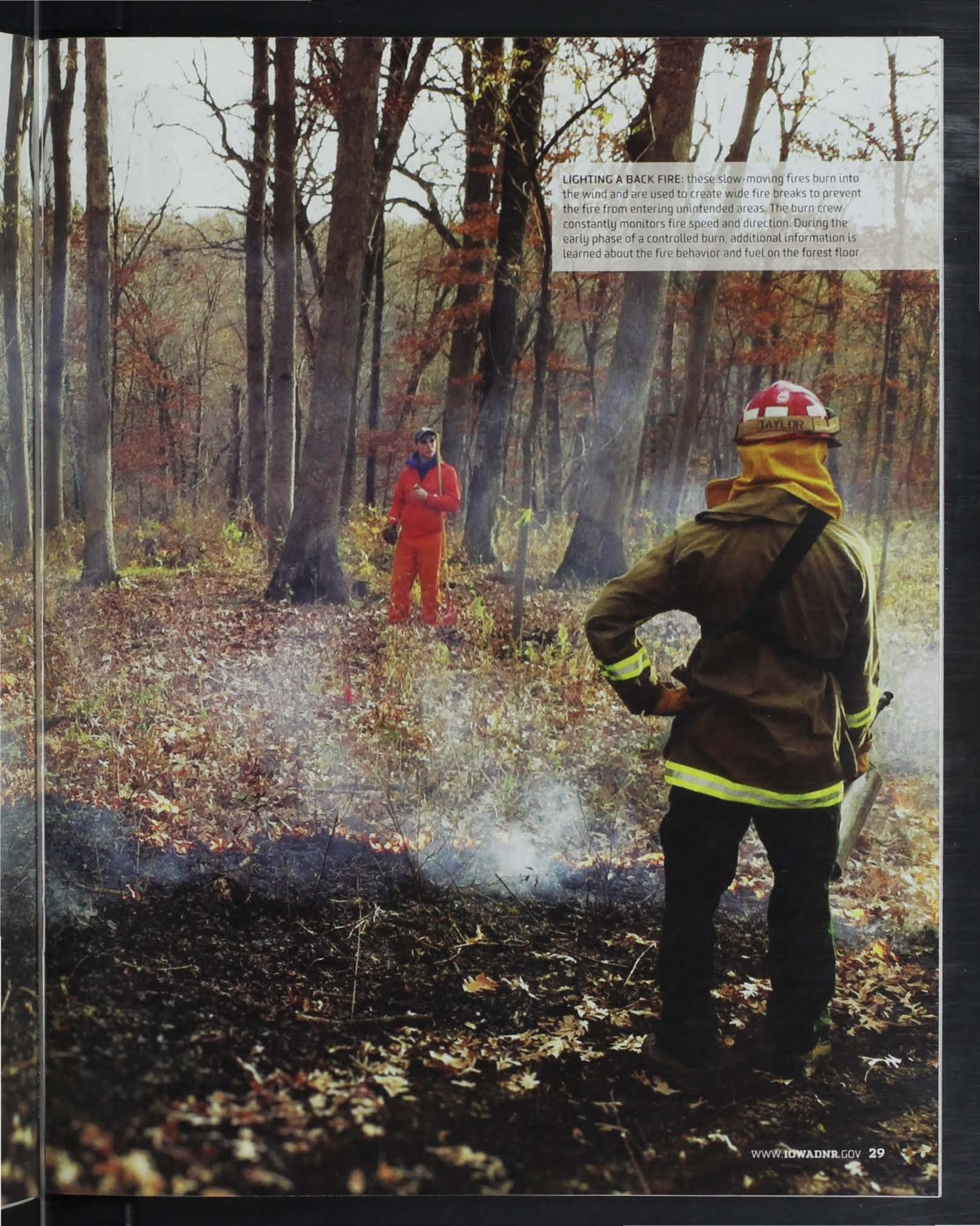
# FIERY FRIEND OF THE FOREST

BY CORNELIA F. MUTEL PHOTOS BY CORNELIA F. MUTEL AND BEN HILL

Long suppressed, with  
adverse effects, fire is back.

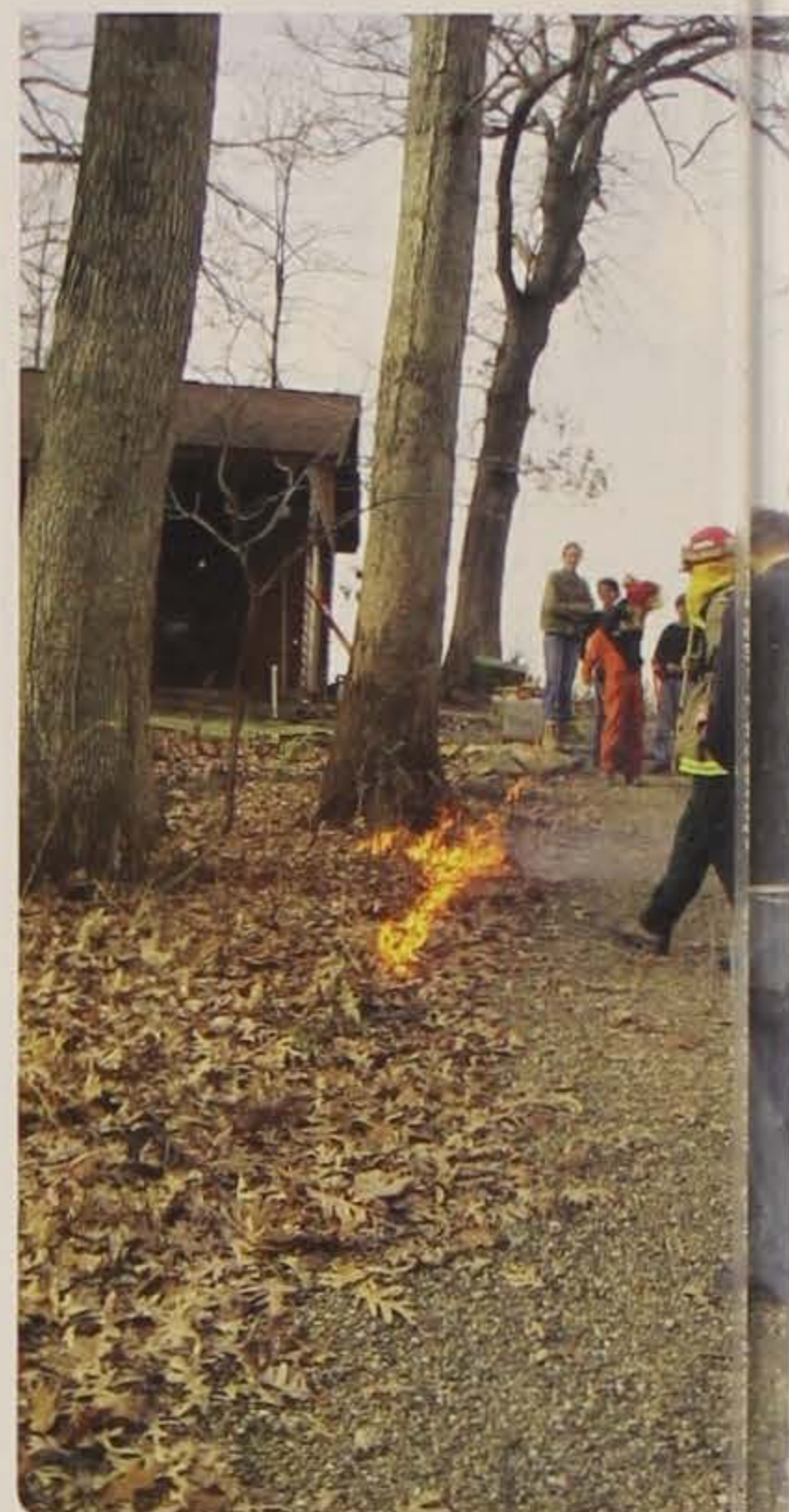
**M**y husband and I moved to Iowa from the Colorado Rockies in 1975. We brought along memories of the mountain cabin we'd called home, a small log structure surrounded by towering ponderosa pines that ceded to flower-speckled meadows. So it wasn't surprising that once in Iowa, we soon were searching for a wooded lot where we could again immerse ourselves in nature. We found it in a 16-acre woodlot in the rolling hills near the Coralville Reservoir, within easy commuting distance of our Iowa City jobs. We were thrilled to think that we were only the third owners of this land. Originally used as a settler's woodlot providing the farmer with fuel, fenceposts and lumber, it had been deeded to a farm helper in payment for her services. We bought it from that helper's elderly daughter. Other than performing a single partial logging in the 1930s, she and her mother had let the land sit. We felt privileged to find a chunk of Iowa that had escaped plowing, intensive logging and heavy grazing. Our land was cheap as well





**LIGHTING A BACK FIRE:** these slow-moving fires burn into the wind and are used to create wide fire breaks to prevent the fire from entering unintended areas. The burn crew constantly monitors fire speed and direction. During the early phase of a controlled burn, additional information is learned about the fire behavior and fuel on the forest floor.





Crew from Transition Ecology, the Iowa City company hired to conduct the burn, assess fire breaks around the perimeter and ensure their ATV has complete access. **CENTER:** Raking brush away from small oak trees protects them from the fire. Larger oaks are largely fire-resistant to low-intensity fires, having evolved to become dependent on fire to create open, sunlit conditions required for successful growth. A leaf blower is used to cast aside leaves and other lightweight fuels to reinforce fire breaks. **RIGHT:** The burn crew ignites the back fire, a small, well-controlled fire used to create a wide fire break to protect property and structures. Successful prescribed burns are highly planned, and done by staff with wildland fire training.

as beautiful and, most importantly for us, full of wildlife and native wildflowers.

I am a botanist by training. But I'm embarrassed to think back on how little I understood our land those first years. I could see it was dominated by mature, huge red and white oaks with a scattering of equally large shagbark hickories. I could see younger trees of many species were filling in between the oaks, with ironwood coming in en masse, forming patches of pole timber that made passage difficult. And I could see that sugar maples were slowly establishing themselves, with a few mature and many more young maple trees in our woods. But young oaks were absent. I assumed all this was "natural" and thus good. I didn't take these ongoing changes to their obvious conclusions, or realize that our woods, like others across the Midwest, were subject to patterns and processes that were steadily wiping out our oaks.

Shortly after Euroamerican settlement in the mid-1800s, oaks had been Iowa's most ubiquitous and abundant trees, with two-thirds or more of all trees in many counties being oaks. They had been the standard bearer for the Midwest—indeed, for much of the eastern U.S. Their acorns, along with nuts from associated hickories, had fed much more wildlife than any other tree species. Many mammals and birds had depended on the protein and fat from these nuts to keep them alive through long snowy winters. Moreover, open oak woodlands provided a sun-dappled forest floor that

fostered a highly diverse understory and also provided homes for abundant insects, reptiles and amphibians. Thus oaks are dubbed "keystone species," or plants responsible for the survival of numerous other species.

Today we can barely imagine how these woodlands must have appeared and sounded a few hundred years ago, with their wandering elk and occasional lumbering black bear, gray fox and other smaller mammals peering down from trees, myriad insects and great numbers of diverse, colorful nesting birds, including huge clouds of passenger pigeons—now extinct, but once the most abundant land bird in North America—flowing like rivers through the sky, landing in the oaks to nest and feed on acorns. And because we can't know what these woods were once like, we will never know all that we have lost.

Iowa's presettlement oak woodlands lay mostly in eastern and south-central Iowa. They ranged from very open savannas (with a small number of oaks per acre) to much denser forests of oaks, with a full range of intermediate densities. However, for the most part, historic oak woodlands were airy, two-layered communities that were much more open than they are today. How do we know this? In part from historical data and descriptions, for example early explorers' journals, and in part because of the behavior of oaks: they need light to reproduce. Shade a young oak, and its growth is stunted or it dies. This is especially true of the most light-demanding species that were also the most



abundant oaks in Iowa, bur and white oak. Allow shade into a mature oak woodland and its character will change dramatically, the oaks ceding to trees that flourish in dark conditions.

### Rethinking Smokey Bear

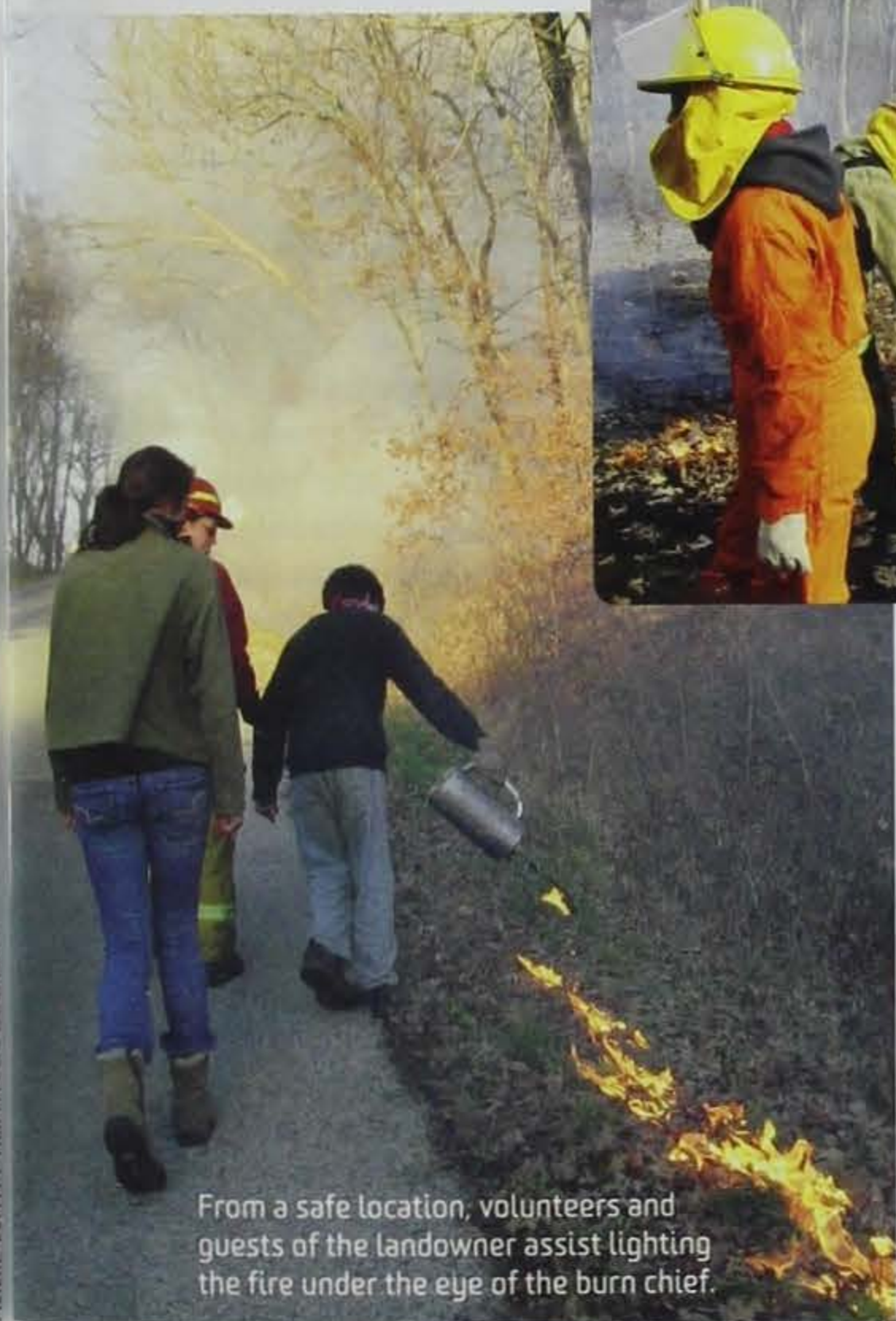
Within a few years of buying our land, we had built a home and started a family. Soon our boys were bobbing through the woods in search of adventure. Our family delighted in the woods. The boys learned the names of birds at the feeder and those of spring wildflowers, the bloodroot and rue anemone, jack-in-the-pulpit and Jacob's ladder. They found treasures on their expeditions: a tree cavity with baby raccoons peeking out, a young opossum crawling through the litter, a luna moth exiting its chrysalis. Our family became accustomed to the disturbing nighttime "scream" of barred owls and the occasional glut of ticks and mosquitoes. We laughed when a walking stick crossed the path in front of us, or a gray treefrog hunted insects on the window screen, revealing its bright orange thighs. All are a part of the bigger whole, I taught my boys. We are guests in this amazingly complex assemblage of woodland life. We should be observers, not actors. The woods can take care of itself.

Nature caring for itself—that was the

mantra back then. And so for many years I did nothing to our woods, other than eliminating problematic exotic invasive plants: aggressive species that are not native to Iowa such as bush honeysuckle and the occasional multiflora rose, barberry and European buckthorn. When garlic mustard first appeared in the neighborhood, I started monitoring our woods with a vengeance. But other than that, I held back. Leave nature alone and it will be fine. That's what I thought back then. That's what we all thought.

Well, nearly all of us. But in 1990, the Iowa DNR started to burn woodlands. Minnesota, Missouri and Wisconsin had been doing this for years already, and burns were by then a routine element of prairie management. But burn a forest? Some people viewed this as crazy. We'd been raised on the Smokey Bear philosophy: fires were a disaster that killed trees and woodland creatures. They were something to be fought, not perpetuated. We didn't realize that the majority of Earth's ecosystems had evolved with fire set either by lightning or by early humans. In Midwestern woodlands, Native Americans had set fires to open the woodlands and ease travel, increase visibility, control pests and aid in the gathering of acorns and nuts.

With time, oak woodlands and other regularly fired landscapes not only had become fire-tolerant,



From a safe location, volunteers and guests of the landowner assist lighting the fire under the eye of the burn chief.

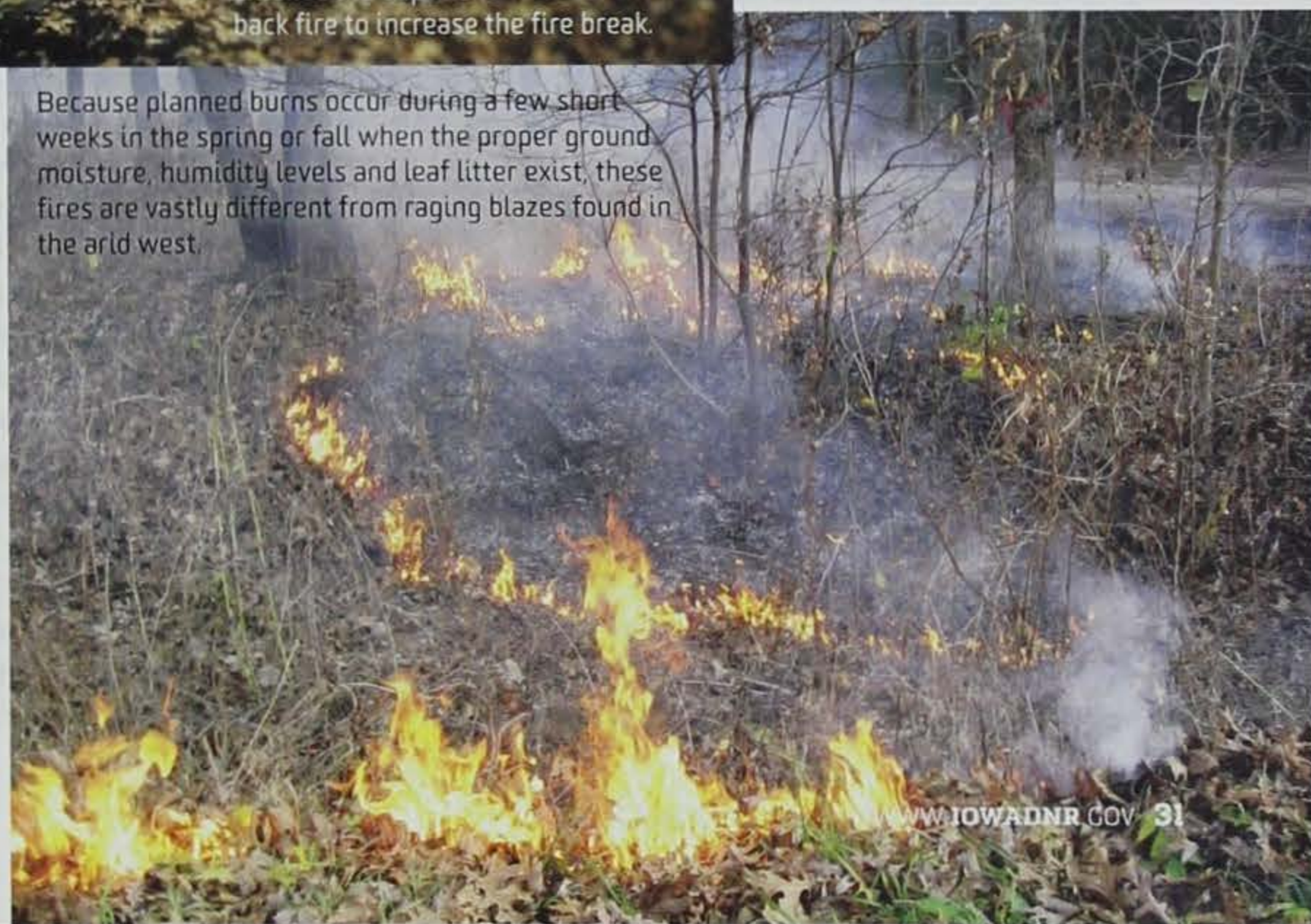


The fire crew from Transition Ecology extends the depth and width of the back fire to increase the fire break.

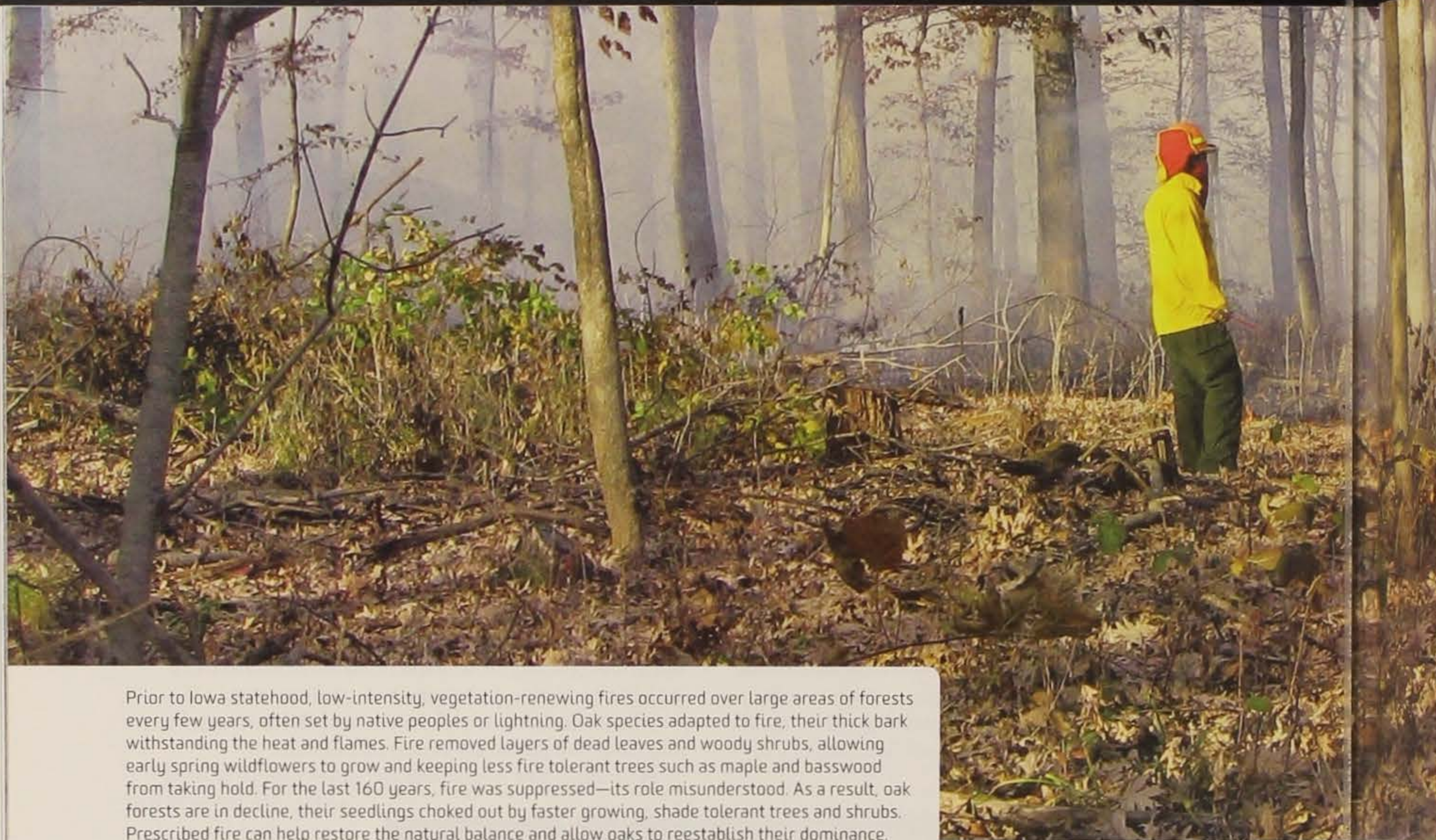


Writer Connie Mutel and burn boss Liz Maas brief before the fire.

Because planned burns occur during a few short weeks in the spring or fall when the proper ground moisture, humidity levels and leaf litter exist, these fires are vastly different from raging blazes found in the arid west.







Prior to Iowa statehood, low-intensity, vegetation-renewing fires occurred over large areas of forests every few years, often set by native peoples or lightning. Oak species adapted to fire; their thick bark withstanding the heat and flames. Fire removed layers of dead leaves and woody shrubs, allowing early spring wildflowers to grow and keeping less fire tolerant trees such as maple and basswood from taking hold. For the last 160 years, fire was suppressed—its role misunderstood. As a result, oak forests are in decline, their seedlings choked out by faster growing, shade tolerant trees and shrubs. Prescribed fire can help restore the natural balance and allow oaks to reestablish their dominance.

they had become fire-dependent. In Iowa, woodland fires were neither as frequent nor as hot as prairie wildfires, but they were crucial for creating open, light-filled communities where oaks could reproduce successfully. Mature oaks are shielded from fire's heat by their thick bark. Fire might burn back young oak shoots, but root masses survive to sprout robust new shoots. Give young oaks sufficient light and several years without fire, and the trees grow large enough to repopulate the woodland. Fire also fostered the growth of a diversity of understory grasses, sedges and flowering plants that bloomed throughout the summer, plants that loved the dappled light of open woodlands. Fire was supplemented by animal actions such as the browsing, stamping and rubbing of elk, which were once widespread in Iowa. The result: Iowa's easily traversed oak woodlands, which settlers claimed could be crossed anywhere by a horse-drawn wagon or by a rider on a galloping horse.

Then, starting in the 1830s, settlers started to pour into Iowa, bringing with them a fear of fire. This was not surprising: fire could in a few minutes destroy all that a farmer had struggled to establish—home, barn and outbuildings, crops, livestock. Broad swaths of plowed prairies provided sites to plant crops even as they protected human structures from the forces of destruction. New settlers wiped fire from the landscape as quickly and as thoroughly as possible.

### The Slow, Silent Death of Iowa's Oaklands

But suppressing fire produced unexpected consequences. For thousands of years, fire restricted the great majority of Iowa's trees and shrubs to the moister valleys and floodplains that didn't burn as often as uplands. There, these thin-barked species, which were easily killed by fire, formed dense multi-layered forests that differed dramatically from the airy upland oak-dominated woods. Now, with fire gone, the lowland species began to creep up the hillsides. Massive slow-growing upland oaks and shagbark hickories were joined by young, more-shade-tolerant elms, hackberry, ironwood, basswood, sugar maple, bitternut hickory, black cherry and others. These shade-tolerant species started to transform the previously open sunny oak woodlands into dark, closed forests. As these other trees increased, the oaks disappeared. They could not successfully reproduce in the shade, nor could young oaks survive; indeed some of the invading shade-tolerant trees overtopped and killed even mature oaks. Other savanna-loving plants and animals started to disappear.

Today, researchers are finding that oaks are declining dramatically across the eastern U.S., ceding to dense, shade-tolerant maple-basswood forests or other plant communities. In the eastern U.S., almost no white oak reproduction has been successful for the past century. U.S. Forest Service inventories show that from 1954 to 2000, oak-dominated woodlands dropped from 50 percent to 37 percent of all Iowa uplands, while maple-





basswood timberland increased from 3 percent to 34 percent. Without focused restoration efforts, Iowa's oak woodlands may disappear by 2060. As the "keystone" oaks go, many other species are bound to disappear with them. The combination of losses would produce dramatic shifts in the structure and integrity of Iowa's remaining woodlands, leaving a landscape with significantly less biological diversity and stability.

This sea change was already underway when my husband and I moved into our woods. By the 1990s, it was too obvious to ignore. I grew to dread the suffocatingly dark wall of leaves just outside our windows. One summer, looking out at an oppressive thicket of young ironwoods and hackberries, I asked my teenaged sons to take their bow-saws and hatchets out into the woods and clear the young trees. They quickly made a garage-sized pile as tall as they were.

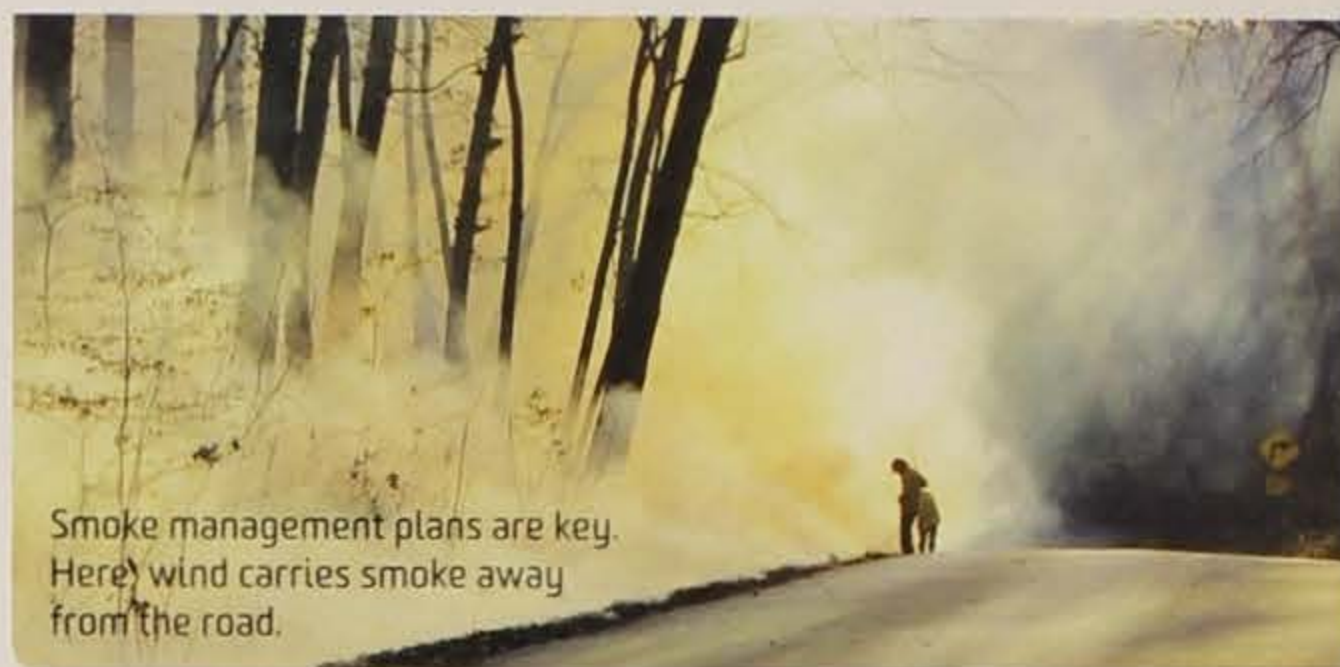
A few years later, as more Iowans were beginning to burn their oaklands, I proposed to my sons that we give it a try. As boys who had been raised burning nearby prairie plantings, they responded with enthusiasm: a fire right outside their door? Sure! We started to burn small patches on calm fall days. At first I feared that these fires would explode into infernos. But soon I realized that woodland fires are far different than racing prairie fires. If performed with careful attention to weather conditions and possible dangers such as standing dead trees, woodland fires typically rise inches rather than feet. I would clear a break

around a small plot and then spend the afternoon watching the flames creep through the oak leaves. These slow burns sometimes brought unexpected delights, such as the few dozen migrating bluebirds that once swooped down and stayed with me for two hours. They perched in the trees and jumped into the ashes of just-burned leaves, eating exposed insects on the freshly bared soil. Eastern bluebirds are savanna species; somewhere in their genetic memory, they remembered that fire and smoke meant food.

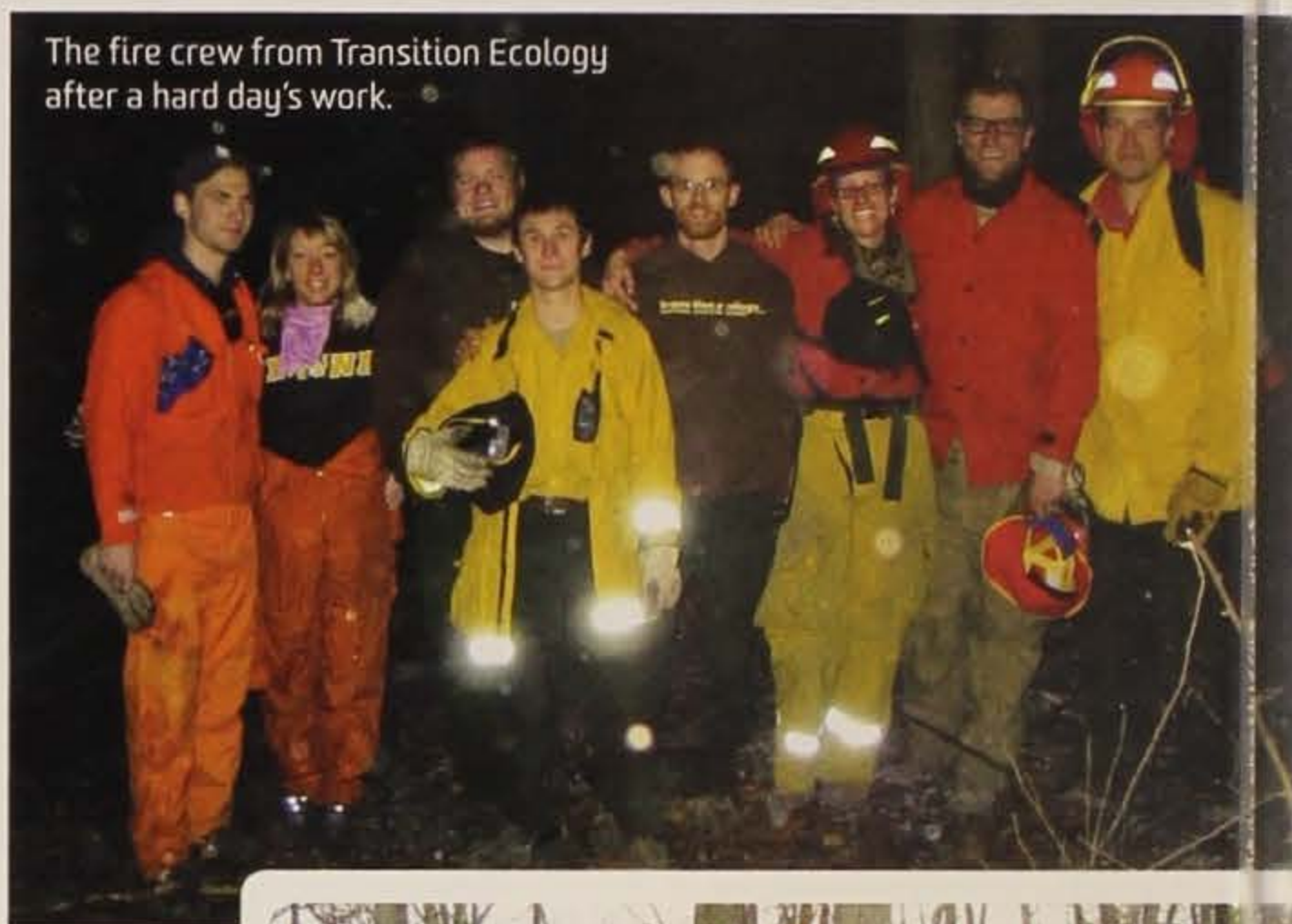
My boys and I continued our limited, small-scale thinning and burning efforts, but before long my sons were grown and gone. I wasn't comfortable burning alone. My unease was heightened by my husband, who continued to see prescribed fire as an aberration rather than an aid. I would joke that I would set fires, and he'd follow along and put them out. Sometimes this was literally true.

But I was also starting to see amazing changes in the burned, open sections of our woods. Responding to increased sunlight, woodland grasses—bottlebrush, Virginia wild rye, wood reed—increased in number. Patches of sedges grew in height, produced more seeds, and extended outward. Our woodland flowers increased similarly, with summer- and fall-blooming species—Joe Pye weed, American bellflower, woodland sunflower, ground nut and horse gentian—blooming after the spring wildflowers had withered. In autumn, ever larger expanses were covered with the golden spikes of

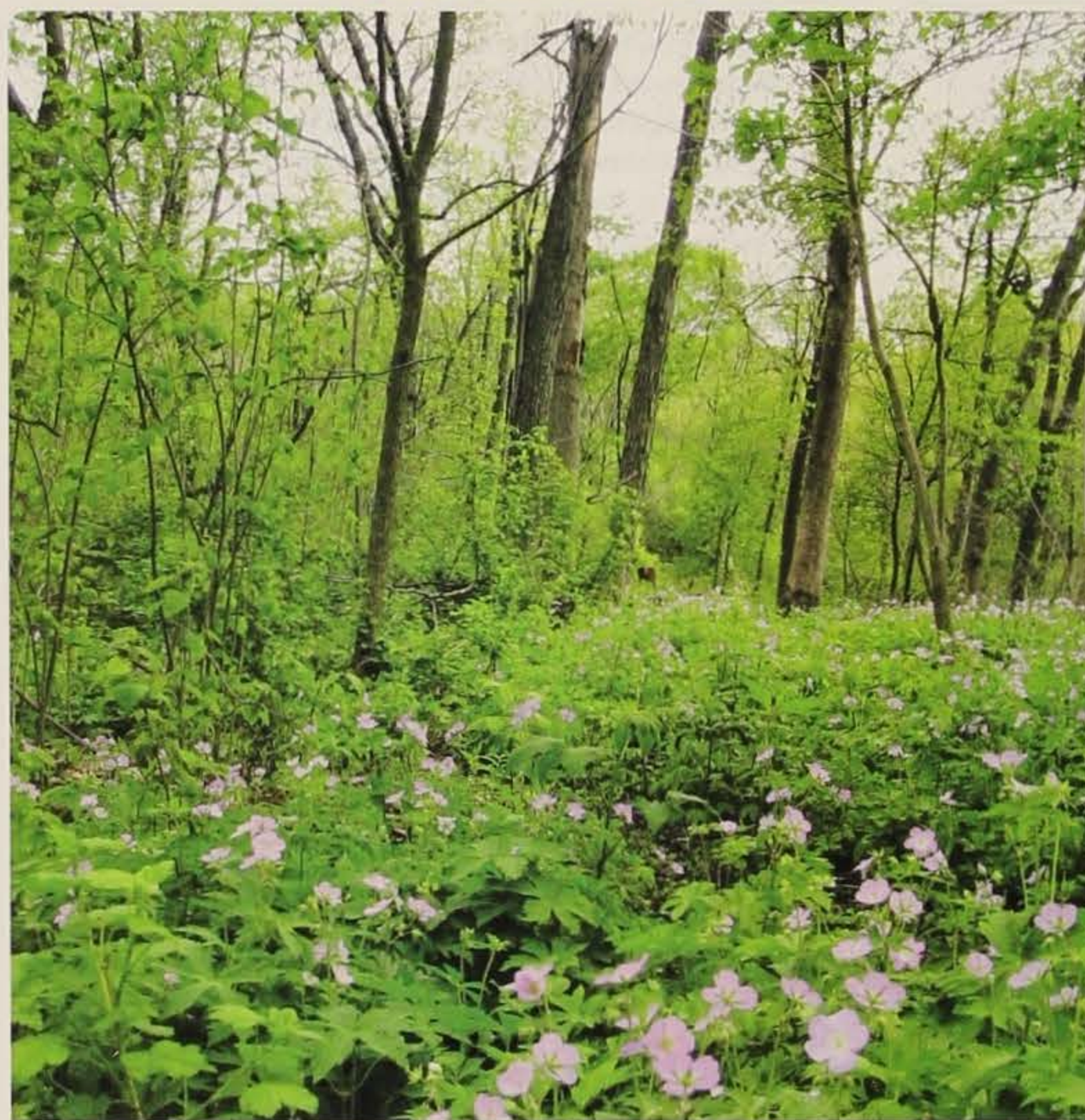




Smoke management plans are key. Here, wind carries smoke away from the road.



The fire crew from Transition Ecology after a hard day's work.



The burn crew discusses the burn plan and preps gear before lighting the fire.

**TOP LEFT and CENTER:** The day after the fire, the woods is blackened, but by early next spring, lush green sedges proliferate. The presence of sedges indicates good restoration potential in woodlands.

**BOTTOM LEFT:** By late spring, the oakland is awash with lavender blossoms of wild geranium. Note the sharp line that marks the unburned shrubby area on the left, and the open, sunlit areas covered with flowers on the right. As testament to nature's post-burn handiwork, these flowering species were not planted by people, but just laying in wait for fire to open up the forest floor to reemerge.



elm-leaved goldenrod. My first identification of Poke's milkweed was a particular thrill. It had been identified as rare in Johnson County back in the 1950s. Yet here it was, blossoming and spreading in the burned patches. I also noted oak seedlings that were growing to knee height. I caged the best of these to protect them from the deer.

### Enlisting Fire's Kiss of Renewal

To extend these positive changes beyond my small tended patches, I was going to need help. Finally, in 2010, I started to act. I contacted my DNR district forester, who walked our woods and drew up a management plan with woodland restoration in mind. I hired someone to cut or girdle specified ironwood, hackberry, bitternut hickory, basswood, elm and green ash. The girdled trees, with two encircling cuts through their bark and underlying conductive tissues, would die but remain standing for wildlife habitat. And I contracted a trained and experienced burn crew to conduct a prescribed burn of five acres of our most promising woods—a chunk dominated by white oaks, with plenty of sedges and diverse flowering plants on the ground. Then we waited for the right weather.

The burn crew arrived on a breezy November Saturday, when crunchy oak leaves invited incineration. After walking the woods one last time, the crew started with a cautious and slow "back fire" (burning into the wind) that formed a very wide fire break. Then the burn boss said "Let it rip!" and the crew used their drip torches to form a "ring fire" around the designated 5 acres, and also lit parallel lines of "flank fires" within the woods. Lines of red and orange and yellow flames hugged the ground, crisscrossing the woods.

At some point, the fire took on a life of its own. Lines of back fires and "head fires" burning with the wind collided and whooshed upward, the pulses of white and gray smoke crashing, mingling and forming whirlwinds and curlicues, lunging forward and then ebbing back, performing an unchoreographed dance of pure energy, all under an azure sky. Everyone involved watched in awe. I felt that I was privy to the inner workings of Earth's elementary power, like I was standing in a tidal wave or volcanic eruption. I realized I was watching the point at which the forces of creation and destruction become inseparable.

Soon the flames died and the smoke settled enough so I could peer into the woods once again. The rivulets of orange flame were now reduced to short lines eating up scattered remnants of leaf-litter fuel. Then those too died, and only a few stumps and downed logs emitted sparks or smoke. Crew members wandered through the woods with their backpack sprayers, squirting these with water. By the time they were done, dusk had fallen, and we all went inside to share lasagna that I'd prepared the night before and revel in our profound sense of accomplishment.

We agreed that the burn had been an unmitigated

success. The fire had been a way of returning natural processes to the land, so that our woods could once again write its own operating instructions. But one of the day's most amazing results was my husband's response. He'd agreed to stay and watch the fire with reluctance, fearing destruction and chaos. But even while the burn crew was first preparing equipment, I could sense his tension melting into relaxed observation. "They really know what they're doing, don't they?" he commented, viewing the well-equipped Nomex-clad crew of nine checking in with each other on their walkie-talkies, confirming the weather and predicted wind speeds, and circling the land with their water tanks. "I can't believe how organized they are, how well they are doing this," my husband added as we marveled at the power and beauty of the event.

My husband has started bragging to others about our woodland burn. He's told me that he's looking forward to seeing what flowers we'll see this coming spring. Others have wondered the same thing. I just smile in response. Our woods lay without fire for more than 150 years. Healing changes may come slowly; a single burn is just the beginning. But I believe that with time, the native understory plants will increase in vigor and diversity, the soils will become richer in organic matter and their water absorption capabilities will rise, and I'll see more small oak trees grow and join the ranks of their progenitors. I trust that native insects and fungi will thrive here in increasing numbers. I'll do what is needed to help them out: I plan to burn annually, at least for the next few years. I'll monitor for exotic invasive plants and take steps to control proliferation of native increasers such as raspberry brambles. Then I'll wait for each passage of the seasons to bring surprises and let nature (with a little help from me) really "do its own thing," but on its own terms, not ours. In my estimation, our oak woodlands deserve nothing less.

### FIRE SAFETY

Fire is a good forest management tool, but it can be dangerous. Poorly planned or managed fires or fires set under the wrong conditions can threaten personal property and safety, and can damage individual trees and woodland health. Fire goals and a burn plan should be developed in advance, and fires should be executed by trained personnel. Burn only under the right situation and conditions. Notify the local fire department, local sheriff and neighbors before the fire is set.

Many Iowa oak woodlands have high restoration potential. But not all will respond well to restoration or prescribed fire. For evaluation help, contact your DNR district forester or a private restoration consultant.

For more information on oak woodlands and Iowa's other native ecosystems, their changes in the last 200 years, and what we can do to restore them, see the author's book *The Emerald Horizon: A History of Nature in Iowa* (University of Iowa Press 2008). 🐾



CHRONIC WASTING DISEASE  
AND IOWA'S DEER

# WHAT'S NEXT FOR WILDLIFE MANAGERS?

BY MINDY KRALICEK

**CWD SYMPTOMS IN DEER** include extreme thinness, unawareness or no fear of people, shaking or inability to walk normally, drooling and drooping head and ears. Excessive drinking and urination are common as the disease progresses. Infected deer do not display these symptoms until near death.

If you suspect that a deer or captive elk is displaying CWD symptoms, do not contact, disturb, kill or remove the animal. Accurately document its location and immediately contact the nearest DNR conservation officer or wildlife biologist.



## CWD SURVEILLANCE 2002-2011



# Recent tests confirm CWD at a shooting preserve in Davis County.

*Is this an isolated event or a prelude to what may come?*

One of the joys of living in Iowa is watching in awe as deer navigate broken terrain with speed and grace, leaping over obstacles and disappearing like magic into the timber. On the opposite spectrum, it's unnerving to see a deer with chronic wasting disease (CWD): legs spread in a wide stagger, bones protruding sharply from under a thin layer of skin and hair, saliva drooling from its mouth, ears fallen and head drooping.

Once contracted, CWD is progressive and always fatal.

"The problem that thwarted efforts to stop the disease in other states is that it had already spread further than wildlife officials realized. And then they didn't go after it aggressively enough," says DNR Wildlife Bureau Chief Dale Garner. "Their attempts to contain the disease by depopulating or thinning deer or elk herds didn't work because we've learned disease contraction takes place months, even years before deer and elk show symptoms—even before lab tests can show disease presence."

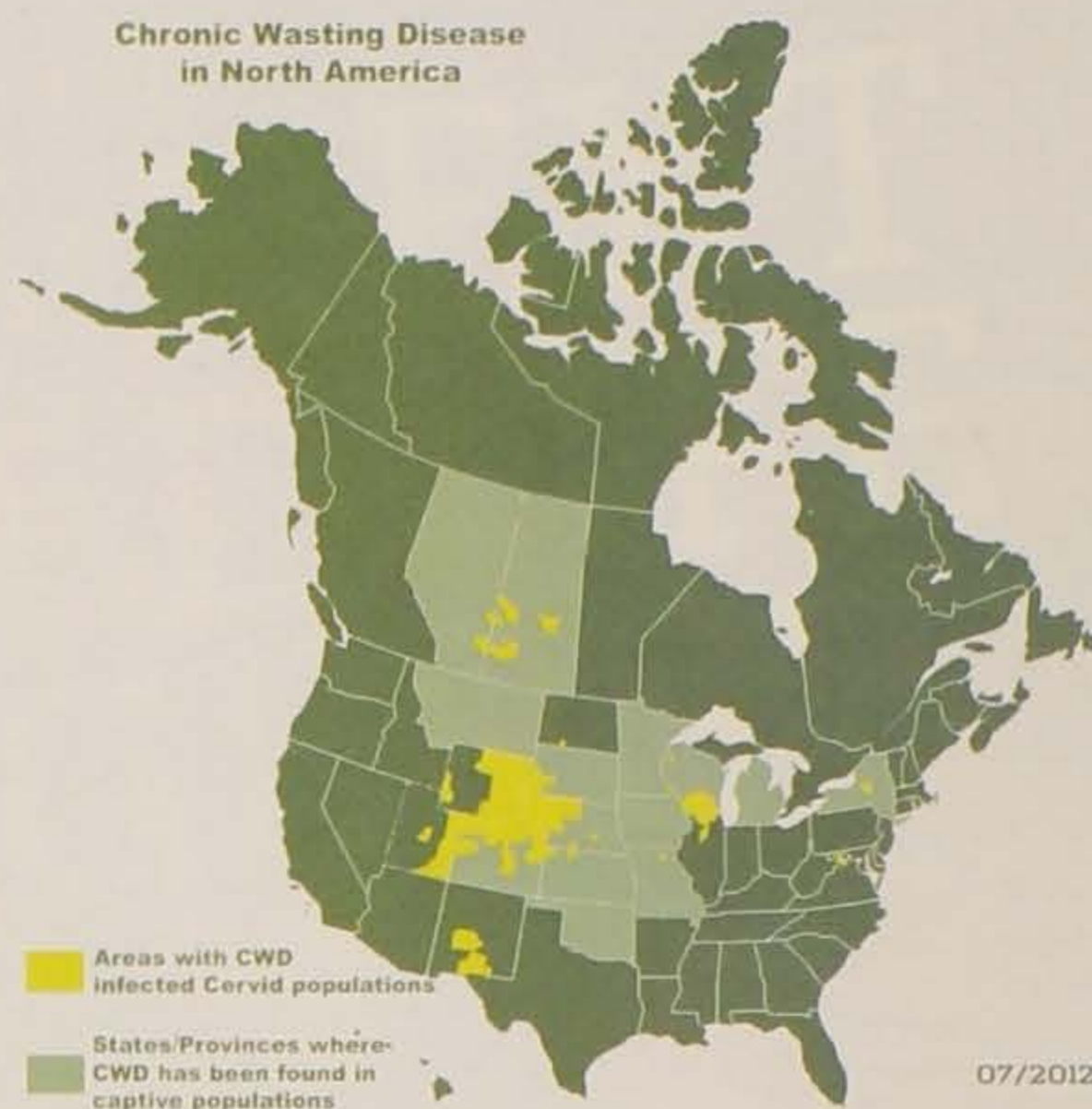
Dr. Garner sits at his desk contemplating the next steps after a deer harvested in December 2011 at a Davis

County hunting preserve tested positive for CWD. The focus is making sure this isolated case is kept from spreading beyond the perimeter. The preserve has been cooperating with DNR inspections the last five years, and more than 100 deer have been tested for the disease. Learning where the animal came from before joining the preserve herd will help Iowa's surveillance efforts.

A hunter himself, Garner feels the weight of responsibility for keeping Iowa's deer disease-free. With a wildlife research background, he closely follows CWD research and monitors the experiences of 16 states and two Canadian provinces with CWD. "We must err on the side of caution. CWD is a formidable foe," he tells staff, state leadership, hunters and legislators alike.

"A lot of people view depopulating or thinning deer herds as too severe or too cruel to be used as disease management tools. Experiences in other states show that full implementation of these tools won't be tolerated and efforts made have not been implemented sufficiently to impact the disease. What is more cruel?" Garner asks. "CWD at high prevalence or using these management tools?"





#### States Where CWD has been Found

Iowa joins the list of states and Canadian provinces with CWD cases: Colorado, Illinois, Kansas, Maryland, Michigan (captive only), Minnesota, Missouri, Montana (captive only), Nebraska, New Mexico, New York, North Dakota, Oklahoma (captive only), South Dakota, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming, Alberta-Canada, Saskatchewan-Canada. Korea has reported outbreaks in captive cervids imported from Canada, as well as in offspring. CWD in moose is confined to *Colorado and Wyoming*.

### Deadly, Infectious Agent To Blame

The origin of CWD is unknown, but it may have been in wild herds for decades before its discovery in 1967 in captive mule deer in Colorado wildlife research facilities.

Scientists classified the disease in 1978 as a transmissible spongiform encephalopathy (TSE): "transmissible" as it spreads from one victim to another; "spongiform" because it leaves brain tissue looking like sponge; "encephalopathy" because it is a brain disease. It affects ruminant mammals of the Cervidae family such as deer, elk and moose. When a cervid gets the disease, an abnormal protein-like agent—called a prion—causes normal proteins to change shape. Prions cannot be broken down by the body and collect in the central nervous system and other tissues. They destroy nerve cells, leading to a loss of brain function.

Other TSE diseases are scrapie in sheep, Creutzfeldt-Jakob disease (CJD) in humans, and Bovine Spongiform Encephalopathy (BSE or "mad cow disease") in cattle. A variant of CJD has been strongly linked to humans who consumed BSE-contaminated beef.

The minimal time span between infection and visible symptoms of CWD is 14 to 16 months, but in 2004,

Colorado researchers reported some deer lived more than six years in captivity after exposure. There may be a difference between exposure and actual disease.

### A Formidable Foe

CWD appears to be transmitted by both direct and indirect contact to other cervids. The infectious agent—the prion—can be found in feces, urine, saliva, blood and antler velvet. Elk can transmit the disease to mule deer and white-tailed deer, and mule deer can pass the disease to white-tailed deer.

Moose with CWD were found in Colorado in 2005 and in Wyoming three years later. Because moose are solitary or in cow-calf pairs, not herds, CWD in moose is rare.

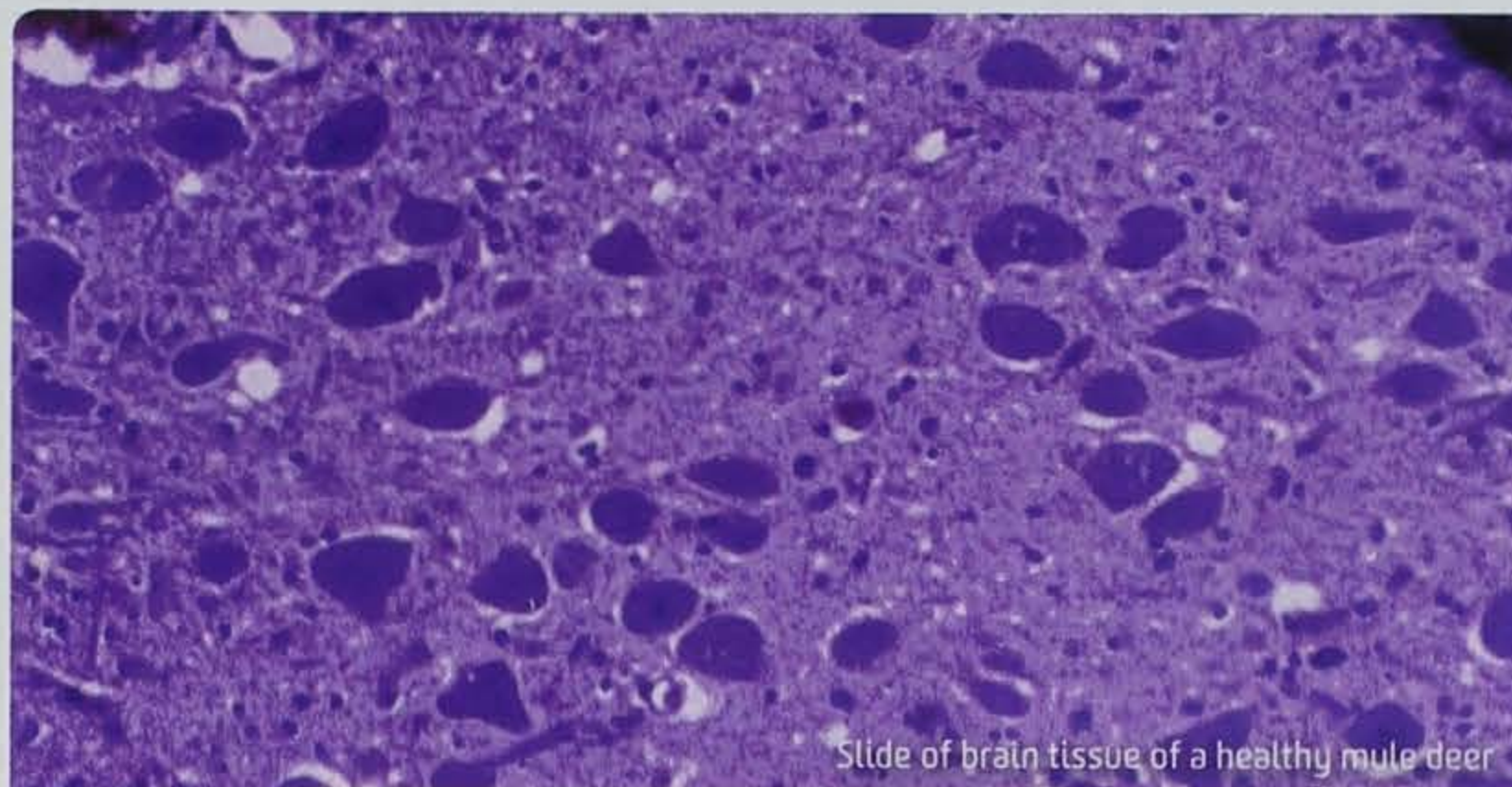
"CWD prions have proven to be extremely resistant in the environment," says Garner. "Deer reintroduced years later onto land where infected deer had lived and had been thought to be sanitized developed CWD."

Researchers at the University of Wisconsin-Madison found the infectivity of prions increases when bound to certain soil minerals, helping the disease spread among cervids.

Dr. Christopher Johnson, a scientist with the U.S. Geological Survey's National Wildlife Health Center, says prions are not killed by most detergents, cooking or

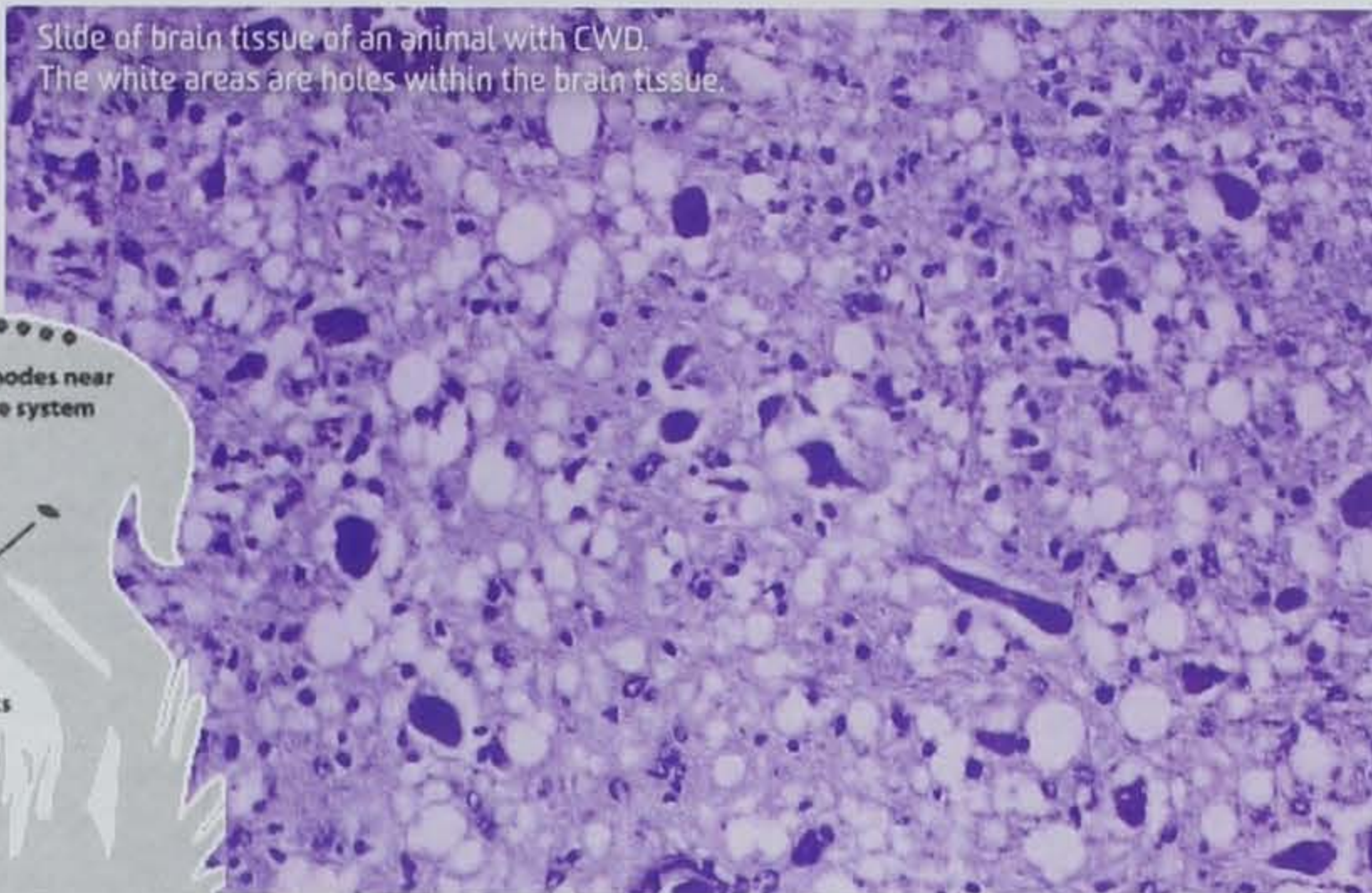
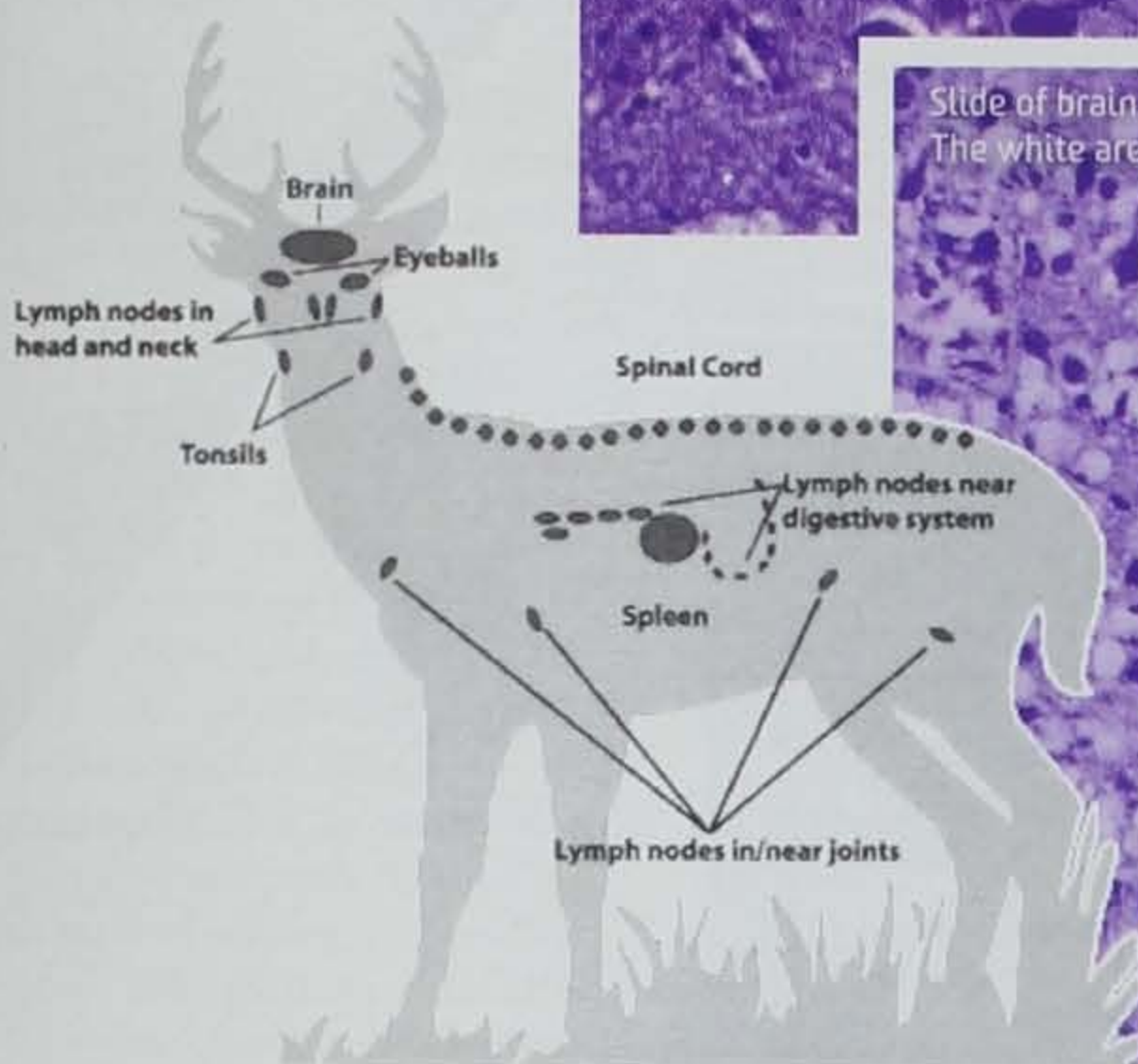


CWD prions are odd in that they are "not alive in the way we understand the term," says DNR deer biologist Tom Litchfield. They convert existing benign proteins into the damaging prion form. Eventually, the change in billions of protein molecules results in tiny holes in the brain. CWD prions collect in the eyes, spinal cord, tonsils, spleen, lymph nodes and brain, the latter two are collected for testing.



Slide of brain tissue of a healthy mule deer

Slide of brain tissue of an animal with CWD. The white areas are holes within the brain tissue.



freezing. University of Alberta research says prions are still viable after being incinerated at 1,562 degrees.

Experts in Colorado and Wyoming, where CWD is endemic, feel eradication is unattainable there. Prions persist outside and it is hard to identify where they are in the landscape. There is no way to detect healthy animals from disease carriers without testing carcass tissue. Carriers may move long distances and gather with large wintering herds, spreading infection before they succumb. With 50 years of disease in their herds, CWD looms far and wide in the western ranges.

In 2011, CWD was identified in Minnesota and Maryland for the first time. In 2012, Missouri announced two CWD-positive free-range deer 70 miles south of Centerville, Iowa. The deer were harvested by hunters during Missouri's 2011 season, and subsequent disease testing in the area found three additional infected deer.

### Threats To Deer Hunting

"Rules to prevent introduction of cervids possibly carrying CWD and surveillance for the disease is so much cheaper, less controversial and far less difficult to carry out than trying to stop CWD once it's here," cautions Garner. "We've spent about

\$200,000 a year for CWD surveillance—\$85,000 for tissue testing this year—and the rest for travel to collect samples, supplies, shipping and other expenses. After an outbreak in Pine Lake, Minn., that state spent \$750,000 in one county.

"Deer hunting brings \$200 million into Iowa's economy, and an additional industry centers around captive herds. If CWD spreads in Iowa, fewer hunting licenses may be purchased short term, and the captive cervid industry would be paralyzed. The more drastic consequences could come in 40 to 60 years when Iowa's herd could be seriously impacted, sharply reducing hunting and distressing many rural businesses that depend on the influx of hunters," says Garner.

For the DNR, funding for other programs would shift to containing CWD, at a time when the Iowa Fish and Wildlife Protection Fund is facing depletion in only a few years under current funding levels. Lost revenue from hunting licenses would decimate other wildlife programs.

### Hunter Precautions

CWD prions accumulate in the brain, eyes, spinal cord, lymph nodes, tonsils and spleen. Hunters in CWD areas are advised to wear rubber or latex gloves and bone out deer afield and







not cut or consume organs where prions accumulate. Leftover deer parts should be disposed of in a landfill.

The World Health Organization reports there is no scientific evidence to date that CWD is transmissible to humans. There is also no known incident of CWD infecting livestock. However, the WHO recommends that, as a precaution, no part of a deer, elk or moose diagnosed with CWD be consumed by people or other animals.

"There is always a chance the disease could jump species and infect either humans or other animals," says Garner. "It happened with mad cow disease."

## Tracking The Disease

"The movement of live animals is one of the greatest risk factors in spreading the disease into new areas," says David Schmitt, State Veterinarian for the Iowa Department of Agriculture and Land Stewardship (IDALS).

"Natural movements of wild deer contribute to the spread of the disease, and human-aided transportation of both captive and wild animals greatly exacerbates this risk factor."

By Iowa law, IDALS is responsible for the importation, transportation and disease control of farmed deer and elk. From 2002 through 2011, IDALS submitted samples from 4,402 animals for testing, reports Dr. Schmitt. "Requirements are that animal fatalities over 16 months of age and slaughtered animals be tested," he says. "Due to a loss of federal funding, beginning in 2012, deer and elk farm owners are responsible for testing" costs.

The DNR's surveillance program for wild deer and deer in private shooting preserves began in 2002. Through the 2010-2011 hunting season, the DNR tested 38,031 wild deer and 2,257 captive deer at private hunting preserves for CWD. Not one positive test occurred until July 2012. During the 2011-2012 hunting season, tissue samples were taken from another 4,903 deer, including a few captive elk.

Surveillance tissue sampling in 2011-2012 included 15 deer per county, except in counties near CWD hotspots in Minnesota, Wisconsin, Illinois and Missouri where 500 deer were sampled. Garner says intensive testing will occur next hunting season in counties along the Minnesota border where CWD was found.

"What we're after is the testing of deer herds which are made up of family groups," says Tom Litchfield, DNR deer biologist. "We don't take 15 samples from one herd and call

that good for a county. Hunters are asked to document where they shoot each deer and we make sure to collect samples from different herds. Without hunter cooperation, this effort would not be possible," he says.

DNR field staffers also work with deer meat processors, those with hanging sheds and taxidermists to acquire tissue samples. "We test suspect wild deer as well, those that are displaying symptoms similar to CWD," adds Litchfield. Road-killed deer are also tested.

## Additional Risks—Baiting and Feeding

Baiting deer for hunting is prohibited, but there is no state ban on feeding wild deer. Concentrated feeding intensifies the risk of one CWD-carrier infecting others. Its like sending a sick child to school and causing a disease outbreak.

The DNR recommends not feeding wild deer to avoid concentrating deer in abnormally small areas that significantly increase deer-to-deer exposure rates.

"There is no need to provide deer additional food in Iowa. We have land that produces ample habitat for healthy deer," says Garner.

## Importation Regulations

With the spread of CWD, IDALS worked with the Iowa Farm Deer Council, the elk and whitetail deer associations, the Iowa DNR and USDA Veterinary Services to establish a voluntary CWD Certification Program for the captive cervid industry.

Similar to other states, IDALS' rules prohibit cervids originating from or having been within 30 miles of a CWD hotspot from

being imported into Iowa, including any cervids on the same premises as a cervid herd classified as CWD-infected.

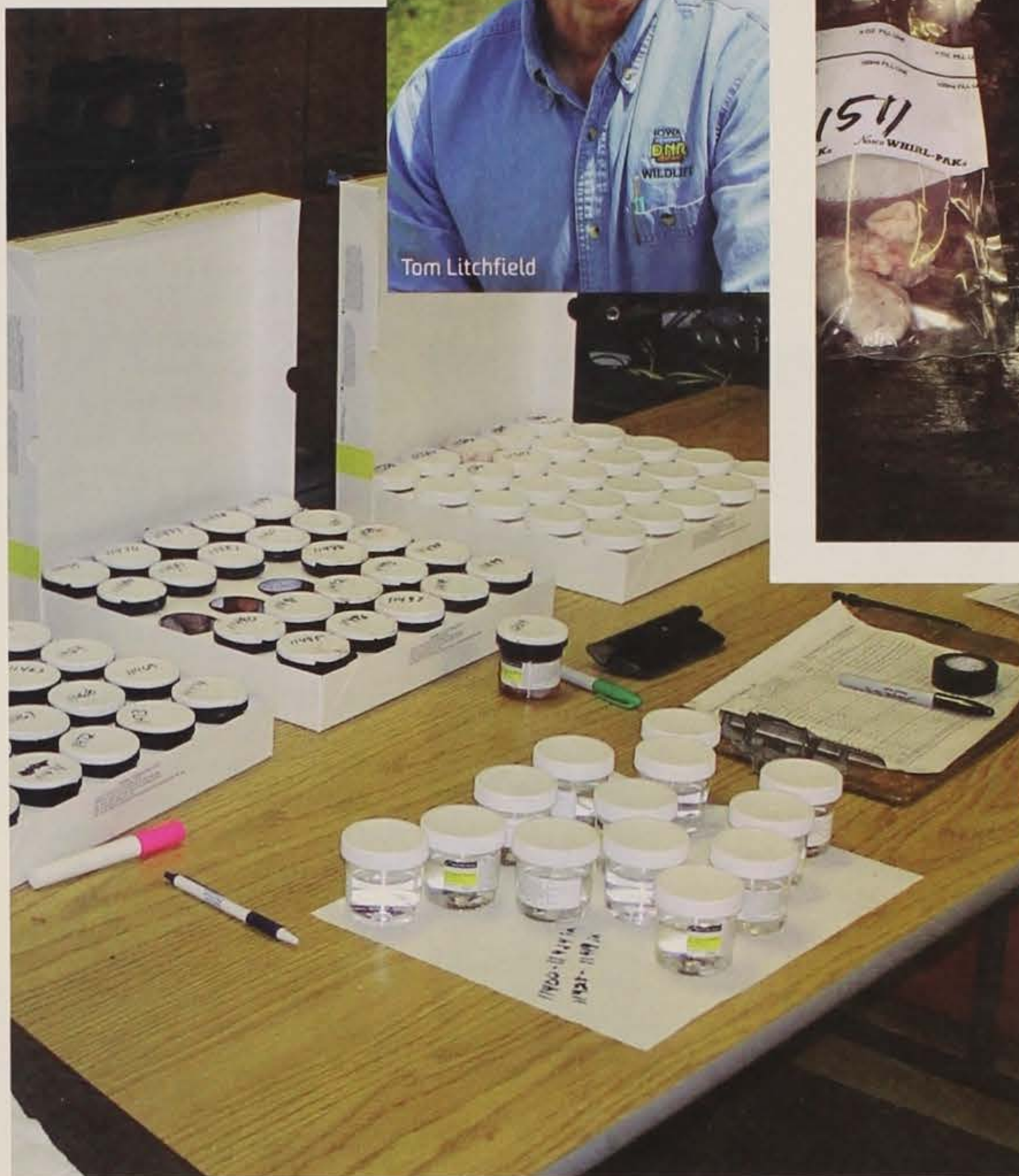
Cervids that have spent part or all of the last three years in a zoo, animal menagerie or like facility may not be imported into Iowa, even if they have not been exposed to CWD.

All susceptible cervids must come from a herd that successfully completed at least five years in a state CWD certification program and have a permit for importation. The CWD herd number, anniversary date, expiration date and herd status for each animal in the herd must be listed on the Certificate of Veterinary Inspection and that information will be verified.

"Federal CWD rules for farm deer and elk will be released soon," says Schmitt. "We don't expect these rules to preempt Iowa's current regulations."







Tom Litchfield

SINCE 2002, MORE THAN 45,000 Iowa deer have been tested for CWD. None have come back positive until the positive test result at a private shooting preserve in Davis County. While samples are taken from across the state, emphasis is placed on animals collected near the borders of Minnesota, Wisconsin, Illinois and Missouri where CWD has been detected. The Iowa Department of Agriculture and Land Stewardship also requires testing of farmed elk and deer that died naturally or were slaughtered.

### Feeding Wildlife / Baiting Wildlife for Remote Cameras

"It's a dilemma for Iowans," says DNR deer biologist Tom Litchfield. "There are industries that produce and promote products that help hunters attract deer. These products are on television shows and they show hunters getting excited about how well they work. The products are produced and packaged and legally sold in stores and shops. A lot of people make choices based on the belief that if it is legal to sell, it must be the thing to have or use, or it wouldn't be legal."

"These products are not what are best for wildlife sustainability. If the intent is to feed wildlife to draw them to where you can enjoy observing them, or to where you have a camera set up to take photos, you're creating a spot where wildlife are abnormally concentrated."

"Feeding stations or the placement of mineral and salt blocks will change the normal behavior patterns of deer or other animals. Instead of interacting primarily

within family groups, all of the deer in the area are drawn to a specific, discrete location. The mixing of saliva, feces and urine at these sites increases deer herds' susceptibility to catching and spreading diseases, whether it is CWD (which also contaminates the soil for disease spreading) or other animal diseases."

"Predators will be drawn to feeding sites as well. How many people have set up bird feeders to attract song birds, only to soon find hawks hunting at the location?"





### Escaped or Non-native Cervidae Found Free-ranging in Iowa

Occasionally the DNR is advised about a non-native cervid running loose in Iowa. In the past this has included elk, sika deer, fallow deer and red deer. DNR's first response is to check with IDALS to see if an escaped cervid has been reported from a private herd.

Captive cervids are considered livestock by Iowa law. The owner of livestock is liable for any damage caused by escapees. Sometimes a non-native cervid is not claimed because of this legality, even though it is obvious that the animal is native to another continent and needed human assistance to get to Iowa.

Because the DNR and IDALS have no way of knowing the cervid's history, they must act on the side of caution for CWD and a variety of other damaging diseases. With no live test for CWD, the animal must be killed and its tissue sent to the ISU lab to determine if the animal has CWD. If the test proves the animal is clear of CWD and it was in overall good health, the meat is given to a charity to distribute.

Elizabeth Williams (now deceased) of the University of Wyoming's Department of Veterinary Sciences, who did much of the early research on CWD, reported that within CWD endemic areas, more than 97 percent of CWD cases in free-ranging deer and elk detected in the course of surveillance activities were subclinical—meaning the animals showed no outward signs of having CWD when tested. Symptoms of the disease only show up when the animal is near death.

### CWD Response Plan

DNR and IDALS have action plans ready now that CWD has been found in tested deer tissue from Iowa.

"While DNR tissue sampling computes to a 95 percent chance of detecting a 1 percent infection rate, it's not a defense against the disease," clarifies Garner.

"We will go to the area where the infected deer was taken and begin more intensive sampling to establish infection rates and geographic extent before determining the next step.

"All actions will be taken after DNR, IDALS, the Governor's Office, the Natural Resource Commission and the Iowa Department of Health are on board with the decisions. We'll also make sure stakeholders, university collaborators, local officials and those who need this information are contacted as soon as we are aware of the presence of CWD. Then we will make a public announcement."

#### MEASURES IDALS AND DNR ARE LIKELY TO TAKE WILL BE:

- A statewide prohibition of movement of live captive cervids without a permit issued by IDALS.
- Mandatory reporting of escaped captive cervids within 24 hours.
- Prohibition of movement of cervid carcasses, except for boned out meat or antlers attached to a clean skull plate.

- Prohibition of placing feed for wildlife accessible to deer other than that from normal agricultural practices.
- A statewide prohibition of any deer rehabilitation and release into the wild.

"Our response goals are to contain and control the disease with the presence of CWD confirmed within Iowa's borders," asserts Garner. "Actions Iowa may take include allocation of additional deer tags during normal hunting seasons in areas affected by CWD, depopulation of susceptible deer from selected areas outside of normal hunting seasons and the safe disposal of carcasses.

"We don't want to upset people unnecessarily with this article," says Garner. "But this is a serious disease with the potential for long-term consequences to Iowa's deer, the state's hunting legacy, the rural economy and funding to sustain other wildlife goals. It's important residents understand why CWD surveillance is so important and if further action is necessary, those actions should be taken with the goal of preserving the long-term health of Iowa's deer.

"Fortunately, Iowa has been able to learn from other states' experiences. We're in a much better position to control the disease than the states battling it currently." 🐾



A photograph of a park with bare trees and a picnic table in the foreground. The title 'Iowa's GREENEST Resort' is overlaid on the image. 'Iowa's' and 'Resort' are in a black serif font, while 'GREENEST' is in a large, yellow-green, all-caps sans-serif font.

# Iowa's GREENEST Resort

Charitable Gift Powers a Lasting Legacy

BY MINDY KRALICEK PHOTOS BY CLAY SMITH AND MINDY KRALICEK

**C**hris Desjardins, a lifelong engineer at Pella Corp., was passionate about renewable energy and had a deep environmental ethic. He was identified by his quiet, yet energetic demeanor, work ethic and adventurous spirit. When he passed away at the age of 47 in 2009, his family decided the best way to honor his memory would be to create a fund for renewable energy projects.


When Desjardins passed away, he left a generous gift from a life insurance policy to the DNR. The funds

formed the Chris Desjardins Memorial Fund. The family and the DNR then conceived a vision of building a significant renewable energy project, leveraging matching funds from other sources.

Even after his death, Desjardins is making a difference. His dream is awakening people to the power of renewable energy for a sustainable future.

Thanks to the Desjardins family, guests at Honey Creek Resort State Park can see renewable energy at work firsthand while learning at educational kiosks.





New solar panels power up to half the electrical needs of five cabins at Honey Creek Resort State Park. The Chris Desjardins Memorial Fund was leveraged with other funding to add the panels, a wind turbine and a solar hot water heating system. Readers can help leverage these efforts by contributing to the new Share the Land Fund.

"Honey Creek Resort was selected as the center for these demonstration projects because it is already showcasing examples of good stewardship of Iowa's natural resources," says Tammie Krausman, one of the driving DNR forces in making the project a reality. "A big part of this project was demonstrating the different types of renewable energy that can be used by homeowners. At Honey Creek Resort and the other project locations, we have the ability to get lots of visitors to experience these technologies up close."

Today a new 10 kilowatt per hour (10kWh) wind turbine helps power the resort, and guests can bathe and shower in water heated by the sun and relax in cabins that sport new solar photovoltaic cells.

These realistic scale projects fit with the Desjardins' vision that the project be something people could experience and visualize as being generated and used in their own homes.

Besides the new wind turbine, which supplies a share of the power needs of the resort lodge, five south-facing



Workers install a new 10 kWh wind turbine at Honey Creek Resort State Park. The turbine and other new features were the result of a charitable gift in memory of Chris Desjardins.

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Chris Desjardins with his dog Gossip on a winter hike in Oregon.

cabins are now powered by solar photovoltaic (PV) panels. The solar energy is converted into alternating current and provides up to half of the electric power needs. Their heating and cooling is geothermal.

Two solar LED lightpoles now brighten a parking area, saving ongoing lighting costs and requiring no expensive wiring to install.

### Getting Into Hot Water

Every drop of hot water used in the lodge's 105 guest rooms and suites is heated by the sun.

A 400,000 BTU solar thermal hot water system is on the south-facing lodge roof. The system, the largest in Iowa, uses rows of 72 tubes filled with a nontoxic antifreeze solution that can get as hot as 270°F. At such temperatures, the liquid becomes a gas, which is pumped through a heat exchanger where energy from the hot antifreeze warms the water inside storage tanks. The solar hot water system not only meets the hot water needs for each guest room, but assists in heating the massive indoor water park. The highly efficient system has a payback time in 11 years and helps greatly reduce one of the resort's largest expenses—propane gas. Since installation of the solar thermal system, two of the resort's eight propane tanks have been removed.

Interactive educational kiosks with touch screens in the lodge explain the renewable energy and green components of Honey Creek Resort. Comparisons are made to traditional costs of energy and maintenance.

### Cabins in the Sun

Solar panels on five cabins are powered by 1.38 kW PV panels, where solar energy is converted into AC

## CHRIS DESJARDINS: A Memorial to Accomplish His Renewable Energy Vision

In 1981 at age 19, Chris Desjardins wrote his career objective in his application to the University of New Hampshire. "I would like to work with alternate energy sources such as wind and solar power. I think these will be important to the nation in the future."

That young man went on to an exemplary 23-year career as an engineer with Pella Corp., a company renowned throughout North America as designers, manufacturers and installers of energy efficient windows and doors. At the time of his death, May 5, 2009, he was living in Tennessee, working as engineering manager for Pella Corporation's Murray, Kentucky, manufacturing operations.

"Chris was a prize jewel that you wanted to have on your team," said Jim Meyer, vice president of operations at Pella and longtime coworker. He was regarded as a high-energy, intelligent, humble leader with an unmatched work ethic.

The quiet-natured, independent man was also very athletic. He ran 17 marathons during his life, including two in one week. He enjoyed traveling, hiking and hunting and incorporated all three during an African safari. He was also dropped from a helicopter into remote Alaska to bow hunt bear, and the outdoorsman had numerous game and fishing trophies displayed in his home.

His brother Pete says he showed a lifelong passion for alternative energy. Chris drove a 1989 Volkswagen Jetta that he converted to run on popcorn grease which he filtered in his garage. The "grease mobile" boasted an astounding 375 miles per gallon of diesel fuel (the remaining power coming from grease). "He drove that car to work every day," Pete remembers. "It stuck out like a sore thumb."

An unfinished project was the erection of two vintage Jacob engine wind turbines to be used at Desjardins' Tennessee home to generate energy. The family donated one of the turbine engines to Murray State University in his name.

As part of his estate, the family left a portion of an insurance policy to the DNR. Then, DNR staff worked with the Desjardins family to conceive a creative, renewable energy vision and project. Subsequently, this gift was matched with other grant funds to develop renewable energy and education projects at Honey Creek Resort and four other state parks.

Another portion of the memorial is set aside to seed future renewable energy grants, Pete Desjardins said. "We want Chris's legacy to stand for renewable energy and educating people about how to make their own homes and lifestyles more sustainable and energy-efficient. That's what he would have wanted."

Chris was the epitome of the saying, "still waters run deep." His quiet countenance covered a passionate soul that found a way to show people how we all can make a difference for a sustainable future.

electricity. Two of the cabins are single bedroom, one has two bedrooms and two are four-bedroom cottages.

Two off-grid, solar LED lights were also installed at the resort. Each 25-foot light pole is wrapped in a thin-film solar collector to produce electricity which is stored in batteries inside the pole. Because they are solar powered, the poles are simply installed, requiring no wiring—a major cost savings. The fixtures are dark sky





### SHARE THE LAND FUND

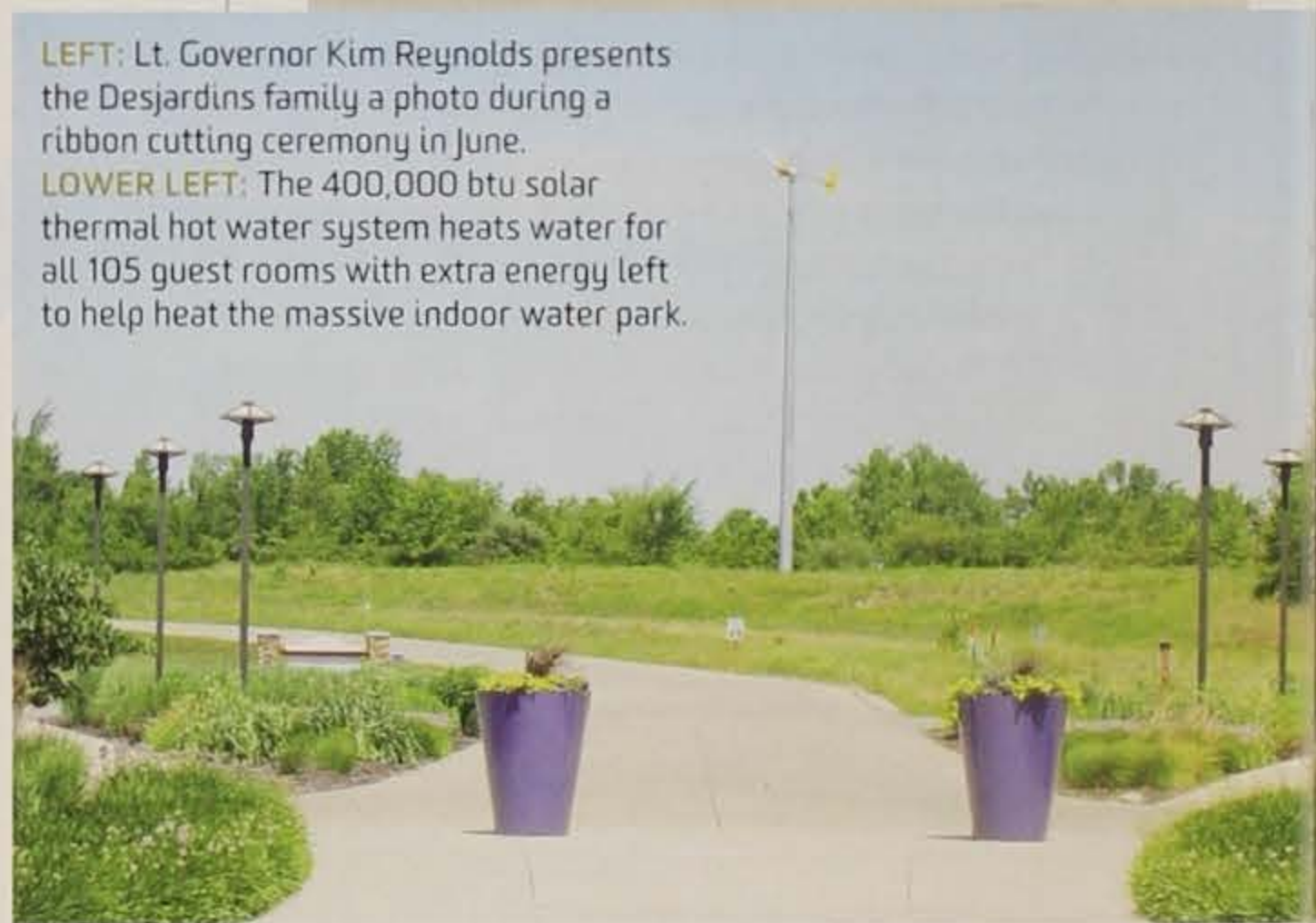
Want to support renewable energy? You can contribute to the "Share the Land" fund at the Iowa Natural Heritage Foundation, which was launched with gifts in memory of Chris Desjardins. The first use of the fund will be to help more public parks and wildlife areas in Iowa demonstrate renewable energy technology. Your gift is tax-deductible. Learn more at [www.inhf.org/sharetheland.cfm](http://www.inhf.org/sharetheland.cfm) or 515.288.1846 ext 18.

Donations can be given through [www.inhf.org](http://www.inhf.org) or mailed to INHF at 505 Fifth Ave, Suite 444, Des Moines, IA 50309.



**LEFT:** Lt. Governor Kim Reynolds presents the Desjardins family a photo during a ribbon cutting ceremony in June.

**LOWER LEFT:** The 400,000 btu solar thermal hot water system heats water for all 105 guest rooms with extra energy left to help heat the massive indoor water park.







While relaxing at Honey Creek Resort State Park in Appanoose County, guests not only benefit from green features, but can learn at the same time with numerous interactive kiosks indoors and out. From landscaping to help reduce runoff to Lake Rathbun to solar powered cabins, sustainable practices are the norm. Many features are designed not only to inform, but inspire guests to follow suit once they return home—rested and relaxed. Learn more at [honeycreekresort.com](http://honeycreekresort.com) or make lodging reservations at 877-677-3344.







compliant, designed to reduce impact on the nocturnal environment and serve as “way-finding” lights.

### A Greener Way to Stay

As a state park, Honey Creek Resort’s goal is to be a leader in green practices. A unique feature is that guests can participate in green practices and learn more about the resort’s environmental ethic through kiosks and naturalist programs. The DNR is proud to showcase these features:

- The resort is one of Iowa’s only hotels to receive LEED certification.
- Rain garden bioswales and a canopy roof garden reduce water runoff and add beauty. Prairie-style, drought-resistant landscaping reduces irrigation, maximizes soil retention, and prevents erosion and runoff into streams and ponds.
- Exterior lighting is designed to reduce light impact on the nocturnal environment. Rainwater is collected for flushing toilets.
- Building design optimizes daylighting, and lamps use LED and fluorescent compact bulbs. A high efficiency HVAC system recovers 60 percent of heat from exhaust.
- All of these and more energy efficient or generating practices at Honey Creek Resort are explained in an interactive touch screen kiosk in the public area of the Honey Creek Resort Lodge.

- The Preserve golf course at Honey Creek Resort uses several environmentally sustainable practices. Rainwater collection areas on the golf course keep fairways dry and allows water to soak into the ground to reduce runoff. Fairways are planted with grasses that require low water consumption, less frequent mowing and less fertilizer. Native plantings and short prairies require less water. Greens are watered with reclaimed water. Habitat for native wildlife is abundant. Houses have been built for bats, bluebirds and wood ducks. Caretakers also remove invasive species in wooded areas.

### Other State Parks Receive Renewable Energy

**E.B. Lyons Interpretative Center** in Dubuque County has a new 2.76 kWh solar photovoltaic system on its south-facing roof that contributes to the center’s power needs.

**Lewis and Clark State Park** in Monona County received a 5.56 kWh solar photovoltaic system that produces electricity for the lodge as well as three solar LED way-finding lights at the lodge entrance and exit and over a walking path.

**Brushy Creek State Park** in Webster County received four solar LED way-finding lights.

**Big Creek State Park** in Polk County received three solar LED way-finding lights. 🐾



## More Renewable Sources of Energy and Sustainable Practices at Honey Creek Resort



The resort's activities center was originally built by students at Iowa State University to compete in the U.S. Department of Energy's Solar Decathlon in 2009. It was a sustainable living demonstration home, with kitchen, bath and living areas. The building was then purchased by Cargill and donated to the DNR.

As visitors enter the 800 sq. ft. home, which is ADA compliant, they are greeted by a solar paneled roof and windows with louvers. The louvers are covered with thin film PV to absorb the heat from direct sunlight and bounce light into the building without solar gain in the summer.

In winter, an enclosed sun porch with a black stone floor collects thermal energy during the day and releases it at night. The sun porch features a custom-designed movable glass wall system from NanaWall that increases ventilation and extends the living space to the outdoors. Plants thrive in the light and help humidify winter's

dry inside air.

"The solarium has reached 115 degrees in the winter," says activities director Hannah Wiltamuth.

The entry door, from Pella Windows and Doors, has a vacuum seal and an R-value of 45.

The home is insulated with spray polyurethane foam, manufactured from soybean oil.

The exterior siding was harvested from cedar trees by ISU students, who then replanted the land with seedlings.

The structure is filled with sensors to track illumination, energy use, moisture and air flow as part of ongoing research by Iowa State University students.

Many other features of the home are interpreted by park staff on Wednesday and Saturdays from 3:30 p.m. to 4:00 p.m., or visitors are free to tour the building on their own.

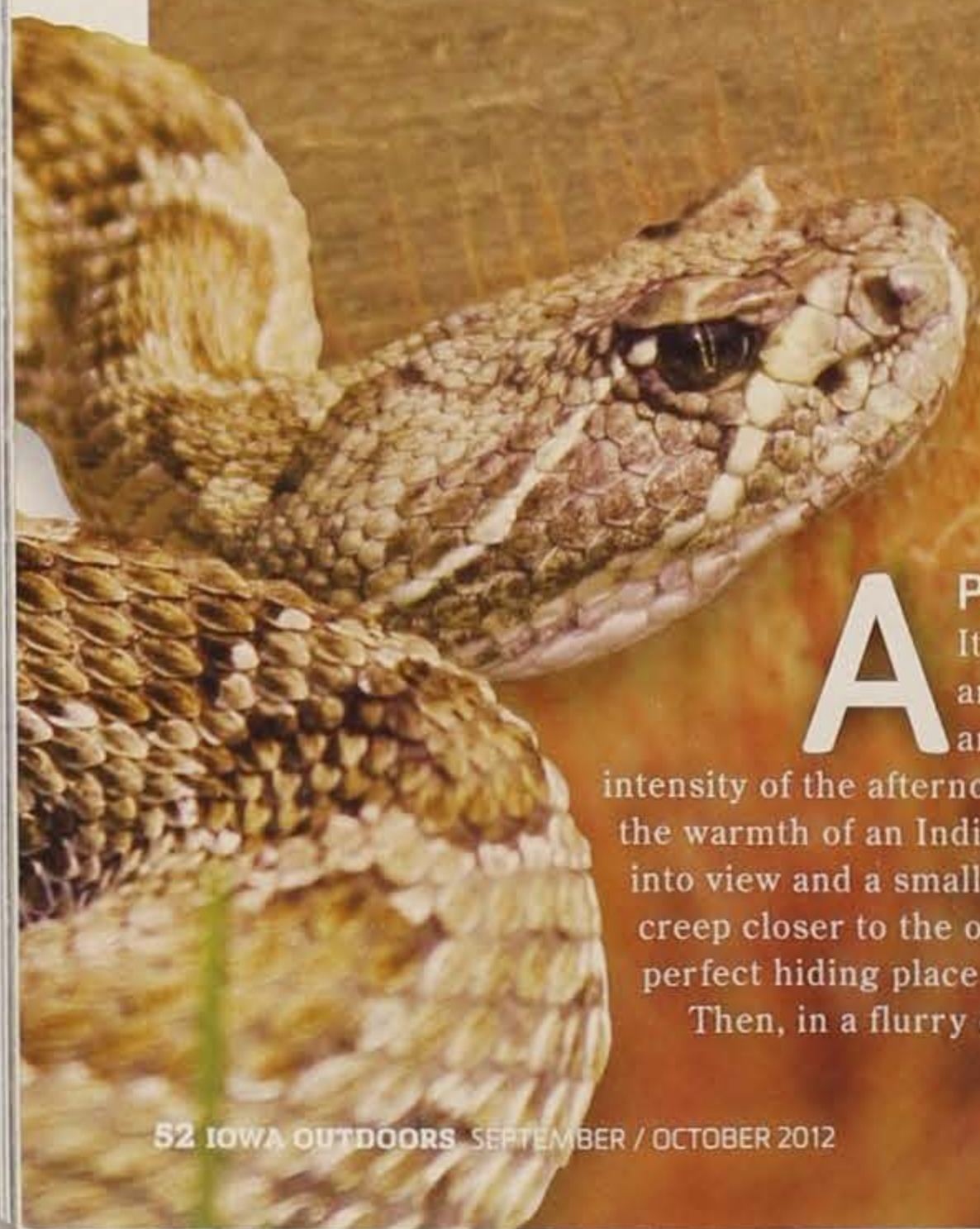




## IOWA'S LOESS HILLS

# HOME OF THE UNUSUAL

STORY AND PHOTOS BY TY SMEDES




### A Prairie Survivor

It's a sunny mid-October afternoon in Iowa's northern Loess Hills—and it's 65 degrees—perfect conditions for finding one of Iowa's rarest animals. I'm hiking a southwest-facing slope that catches the full intensity of the afternoon sun, making it an ideal sunning spot for an animal soaking up the warmth of an Indian Summer day. As I climb the hill, a limestone outcropping comes into view and a small mound at the opening of an animal burrow takes shape. I slowly creep closer to the opening—surrounded by grass and other ground cover—it's the perfect hiding place for the animal I'm seeking.

Then, in a flurry of movement—a large snake shoots quickly through the vegetation,



A man wearing a blue hoodie, light blue jeans, and a tan cap is walking through a field of tall, dry grass. He is holding a long, blue-handled tool, possibly a snake hook or a probe, and is looking down at the ground. The background shows a rolling landscape with some trees and a small white building in the distance under a cloudy sky.

Clad in a vest and carrying a backpack, herpetologist Dan Fogell and Broken Kettle Grasslands manager Scott Moats search hillside dens, or hibernacula, for prairie rattlesnakes that have moved in for the winter.

LEFT: A well-camouflaged prairie rattlesnake blends wonderfully with the dense ground vegetation. A large snake is about 3 feet in length.



This adult prairie rattlesnake has eight rattles. Rattlesnakes have a forked tongue that they flick up and down. The tongue picks up microscopic airborne particles and gases. When slipped back into its mouth, it touches a sensitive spot on the roof of the mouth called the vomeronasal organ, or Jacobson's organ. This organ then picks up the particles collected by the tongue and sends messages to the snake's brain identifying the scent as food, enemy, mate or other object or substance.





plunging into the den. As quickly as it appears, it's gone. A second flurry follows as two snakes poise momentarily at the mouth of the den—opposite each other—before dropping into the depths of the hill. Startled by the outburst of activity, I freeze in my tracks—just five feet from the opening.

A careful scan of the surrounding vegetation yields results in the form of eye-shine from yet another snake. This well-camouflaged animal blends wonderfully with the dense ground vegetation, but its form slowly begins to take shape as I peer into the thick foliage. I'm hoping to capture a photograph, but when my slow-motion move to a new position is attempted, the fourth snake glides quickly to the edge of the hole. It's apparent that although I'm nearly within striking distance, this shy animal is only interested in making its escape. The snake pauses for a moment, creating the opportunity for a few photos, and quickly makes its way into the subterranean depths. As its tail whips around the sharp curvature of the opening and into the hole, I hear a single but distinct noise.

I've just experienced an encounter with Iowa's rare prairie rattlesnake—an endangered species here.

The Nature Conservancy's Broken Kettle Grasslands located 15 miles north of Sioux City—home of this exceptional creature—offers perhaps Iowa's most scenic landscape. In many ways, it is more reminiscent of the drier prairie landscapes more commonly found in western states. This unique environment supports several animal species found nowhere else in Iowa.

Herpetologist Dan Fogell is a faculty member at Southeastern College in Lincoln, Neb., and studies the reproduction rates and population dynamics of the Broken Kettle rattlesnake population. He provides management recommendations for Broken Kettle and visits one to two times each spring and summer—returning each fall to look for snakes at basking spots and hibernacula, seasonal dens where one or more snakes will spend the winter.

Having studied Broken Kettle rattlesnakes since 2000, he knows the serpents face many challenges.

"Rattlesnakes are preyed upon by hawks, badgers, coyote, fox and anything that can make a meal of them. A young rattlesnake has just a one in 10 chance of surviving its first year," he explains.

It wasn't always that way.

"The local rattlesnake population was more widespread throughout the area, and a 50-cent bounty was offered back in the 1950s," recalls Broken Kettle next-door neighbor and farmer Ed Schoenfelder.

In recent years, however, the remnant population seems to be confined to Broken Kettle, with the closest neighboring population of prairie rattlesnakes located near Verdel, Neb.—about 80 miles to the west. To track the population, Fogell has microchipped roughly 100

young snakes, and although Broken Kettle's rattlesnakes have been difficult to locate the past two years, Fogell believes the population is stable.



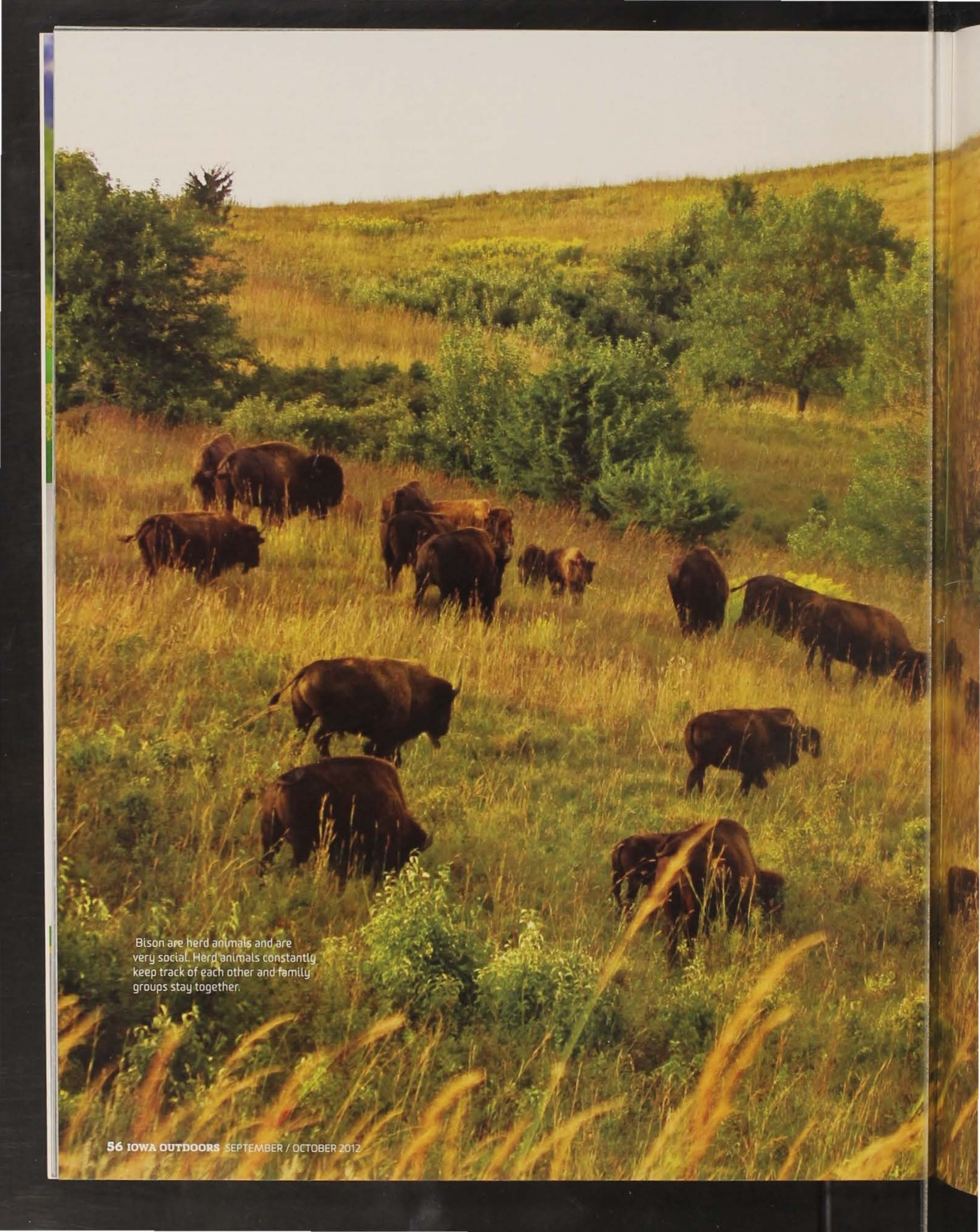
A search uncovered other snake species as well. Here, herpetologist Dan Fogell photographs a fox snake found beneath a limestone rock.

## The Return of a Prairie Icon

In October 2008, 28 genetically pure bison were trucked from western South Dakota's Lame Johnny Creek Ranch to the Broken Kettle preserve. Bison once thrived in the Loess Hills—through the early 1800s—and these new arrivals took quickly to their former territory, prospering over the past 3½ years. There are other bison herds in Iowa, but the Broken Kettle herd and Neal Smith National Wildlife Refuge herd have no cattle genes in their lineage.

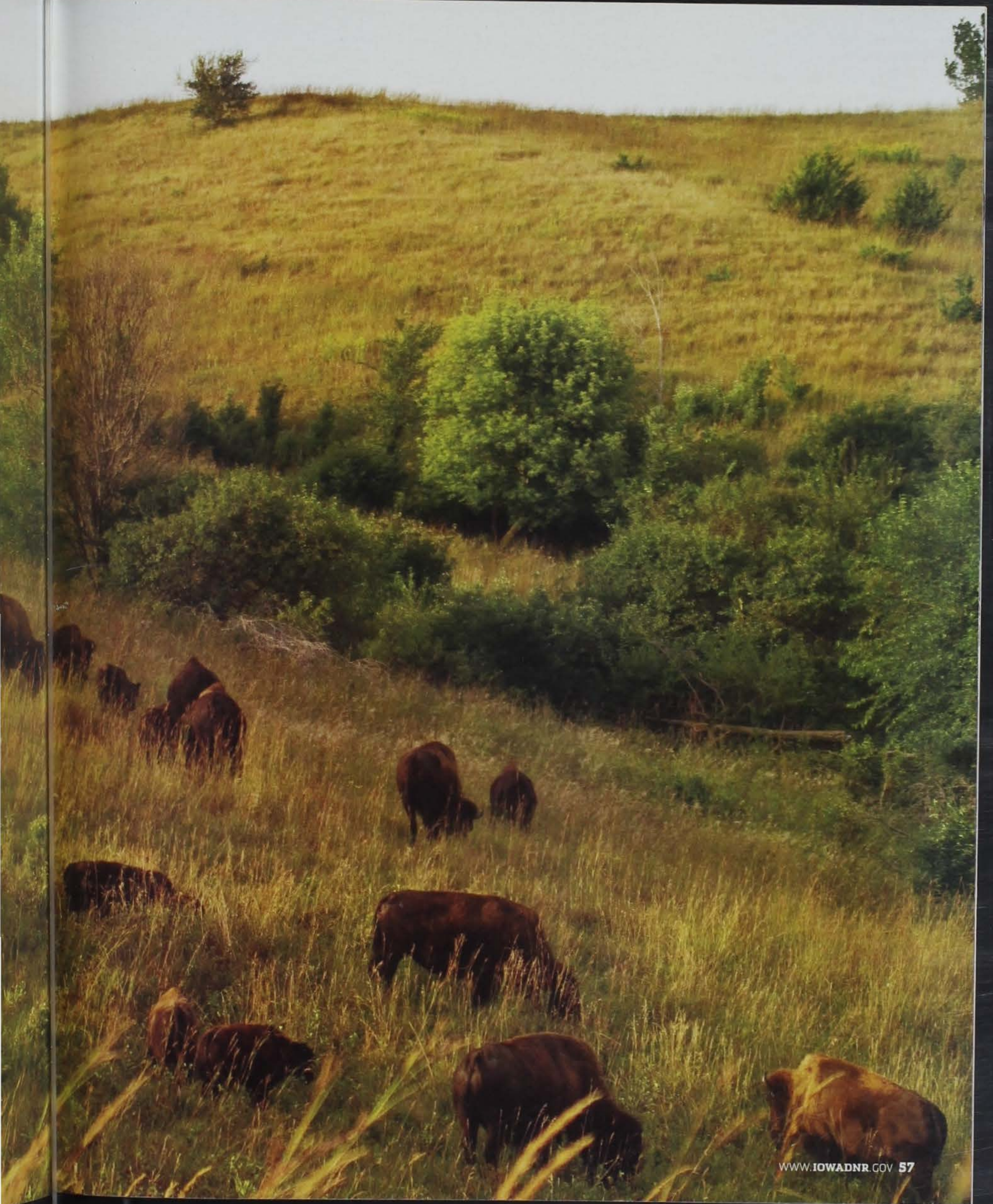
"Most bison on various private ranches throughout the U.S. contain cattle mitochondria due to experimental cattle crossings initiated between a female cow and a male bison back in the late 1800s," explains The Nature Conservancy's Bob Hamilton, a bison expert from Oklahoma. "Mitochondria are responsible for energy production within each animal's cell structure, and the introduction of cattle mitochondria causes an energy reduction in bison with cattle genes in their background."



A photograph of a herd of bison in a grassy field. The bison are dark brown and are scattered across the field, some standing and some grazing. The field is filled with tall, golden-brown grass. In the background, there are green trees and a clear sky. The lighting suggests it might be late afternoon or early morning.

Bison are herd animals and are very social. Herd animals constantly keep track of each other and family groups stay together.







These animals have less energy than genetically pure bison. And genetically pure bison do much better in winter than cattle." Thus, the bison are as pure in ancestry as those that originally inhabited Iowa.

"Our neighbors were initially skeptical of the bison reintroduction. But a level of trust has developed over time," says Broken Kettle manager Scott Moats. "Our securely-fenced bison enclosure is currently 640 acres but will eventually be expanded to 2,500. Our goal is to eventually establish and maintain a herd of 250 animals. Bison are a natural part of the prairie ecosystem, and returning them to Broken Kettle will provide grazing and disturbance that benefits other plants and animals within the landscape. Bison grazing and interaction with the landscape is much different than cattle. They are a year-round grazer and in winter they will even push the snow away to get at the grass, exposing food for other species like deer and turkey."

The Nature Conservancy is expanding this genetically pure lineage and last year Broken Kettle bulls were trucked to the Dunn Ranch preserve on the Iowa-Missouri border and the Conservancy's Rancho El Uno preserve in Chihuahua, Mexico, to provide new breeding stock at those locations.

### A new Animal is Discovered in Iowa

It's another warm and sunny morning in early October, and a great day to be hiking the Sylvan Runkel State Preserve, a little more than an hour's drive south of Broken Kettle in Monona County's Loess Hills. I'm searching for an animal only recently discovered in Iowa, and seems to exist in just one small local population: the Nevada Buckmoth.

Tall spikes of Indian grass punctuate the steep hillside as I ascend to the top of a lofty ridge. I stop to catch my breath and use the short respite to survey my surroundings. In just a few moments I've spotted three buckmoths. Brightly colored, with black and white ringed abdomens, orange trimmed legs, males with orange-trimmed posterior, long black antenna and sleek black and white wings, these insects are simply stunning. Suddenly one of the moths departs, a male in pursuit of a mate. Down the hillside—in fast and chaotic flight—he vanishes quickly.

Aaron Brees was hiking the preserve in 2009 when he noticed a number of larvae. A butterfly aficionado, he was familiar with many common butterfly and moth

larvae, but this was like nothing he had ever seen. Brees posted a photo of the larvae on Bug Guide, a popular Internet site dedicated to insects and larvae, including identification. But it was several months before a moth expert from an eastern state identified the larvae as that of the Nevada buckmoth. Realizing the magnitude of his find—a first in Iowa—Brees began researching the insect to learn about its life cycle.

"Other U.S. populations of the Nevada buckmoth live in low, wet areas where they feed upon willow leaves. But our Loess Hills buckmoth resides along dry hilltops and feeds upon a plant called red root," explains Brees. "The Iowa buckmoth's life cycle is the same as those in other states, but their preferred habitat and food sources are entirely different."

His discovery was followed by a routine management burn of the Runkel Preserve prairie. Such burns are initiated to control the spread of woody plants that threaten the long-term health of a prairie. Controversy followed, in light of the buckmoth's susceptibility to fire, but a search of the area the following spring turned up a smaller but still viable population.

"We've monitored the population during the past two

years, in an effort to assess the moth's status on the Runkel Preserve and an adjacent state wildlife area, just to the east," says DNR botanist and ecologist John Pearson. "The burn regime for both units has been changed so that just half of each area is burned in any one year. Interestingly, both units where the buckmoth has been found are joined by a single lofty ridge that connects the two," says Pearson.

Unlike butterflies and skippers, moths are not afforded any sort of evaluation or protection. "We need to do a status assessment first, in order to identify buckmoth numbers and locations," says DNR's Daryl Howell, zoologist and environmental specialist. "Eventual genetic assessment and steps towards protection can then be considered," he says.

Western Iowa's Loess Hills offer a unique and beautiful landscape that harbors many animal species that are Iowa rarities. Along with genetically pure bison, the prairie rattlesnake and Nevada buckmoth, the black-billed magpie also makes its only Iowa appearance in Broken Kettle's northern Loess Hills. But that's a story for another time. 🐛





The orange posterior of this Nevada buckmoth identifies it as a male. His orange-accented legs and black and white ringed body is striking, along with sleek black and white wings. Males will cling to the high reaches of a tall stalk of grass, presumably so they can detect the scent (pheromones) of a nearby female they hope to mate with. **OPPOSITE:** A top view of this buckmoth shows the distinct black spot that contains a yellow crescent on each wing. His spectacular antennae are also very visible.





# 10 DISTINCTIVE TREES TO PLANT

Add Beauty to Yards by Planting These Species to Diversify, Protect Local Trees

Elm

Serviceberry

Tulip Tree



The homeowner's affinity toward maples has led to a glut of the oft-planted tree. About 40 percent of Iowa's street trees are maples—and that poses risks. “We shouldn't put all of our chips on maples” or any tree in disproportionate numbers, says DNR forester Emma Bruemmer. “Too many of one species spells potential disaster for disease outbreak and catastrophic tree losses. We want a mix of city trees for contrasting colors and shades, textures and aesthetics and forest health.”

Fortunately, many species have similar—even better—benefits and traits as popular trees. This fall, plant from these ten remarkable species to beautify while adding resilience and diversity to your community forest.

## American elm *Ulmus americana*

This elegant American icon is back with disease resistant cultivars. Once the most popular shade tree adorning the streets of nearly every town, Dutch elm disease wiped out 100 million of the vase-shaped, towering giants by the 1970s. “People older than 50 still recall with great emotion the beauty of elm lined streets,” says DNR forester Laura Wagner. “We want elms back in the urban forest canopy.” These three rapid growing, hardy cultivars feature the best branch patterns for reduced pruning: Jefferson, prairie expedition (Lewis and Clark) and Princeton.

## Kentucky coffeetree *Gymnocladus dioica*

“This is my favorite up and coming tree,” says Bruemmer.

Despite the name, the tree is native to Iowa. Rarely affected by disease or insects and tolerant of urban soils, it is a first-rate choice along streets and yards. “With thick branches and few twigs, the unique growth pattern looks amazing in winter, especially when draped in seed pods,” she says. Pod-less trees are also available. The sparse, open branching allows more solar warming of homes in winter versus other trees. In summer, the compound leaves filter light, allowing brighter conditions compared to heavy shade trees. “That makes growing a thicker, grassy yard easier.” As a nitrogen-fixing legume, this tree also improves soils.

## Tulip tree *Liriodendron tulipifera*

A relative of the magnolia, the splendid tulip tree flowers will delight the entire neighborhood. No other tree has a four-lobed leaf and come May, the hefty cream and orange tulip-like flowers are sure to please. Fast growing, yet not prone to storm damage, this relatively disease- and insect-resistant tree adds to neighborhood tree diversity.

## American hophornbeam *Ostrya virginiana*

This shade-tolerant, small to mid-size tree makes a great choice for side yards and can be planted closer to homes than most trees. An Iowa native common in upland forest understory, it provides fall color with yellow leaves and grows well in sun or shade. Tough and hardy, it is disease and insect resilient.





Blackgum



Hornbeam



London Planetree



Kentucky Coffeetree



Hophornbeam



Oak

Sweetgum

### BE SHOVEL READY!

Fall is great for tree planting. Operation ReLeaf and Plant Some Shade are two residential tree programs offering high quality trees at greatly reduced prices. Alliant Energy's Operation ReLeaf program offers 3- to 8-foot landscaping trees for \$25 each ([alliantenergy.com](http://alliantenergy.com) or call Laura Wagner at 515-281-6749) MidAmerican Energy customers can purchase trees through Plant Some Shade for \$30 ([midamericanenergy.com](http://midamericanenergy.com), 800-434-4017)

### London planetree *Platanus x acerifolia*

Make a statement and plant this fast growing, majestic shade tree that dominates the streets and parks of England. Virtually identical to the familiar American sycamore, the London planetree is a hybrid first found in London in 1663. With better resistance than sycamores to anthracnose, a fungal disease, this tree also handles wet locations. Tolerant of tough urban settings, it is often planted along streets. Recommended cultivars are bloodgood and exclamation.

### Heritage oak *Quercus robur x macrocarpa*

This relatively new species is a cross of English oak and bur oak. With faster growth than native oaks, it is thought to have better resistance to bur oak blight. "It has a great form that doesn't require a lot of pruning," says Wagner. It is a nice shade tree with a tatter-resistant canopy, outstanding vigor and dense crown. It may reach 50 feet tall.

### Serviceberry *Amelanchier spp.*

"This is my favorite native ornamental tree," says Wagner. "There is something going on with it all year." The small tree blooms with white flowers in spring, yields bright red edible berries in June and finishes with brilliant orange or red leaves in autumn. A great tree for birdwatchers, as the berries are bird magnets. Similar in size to a redbud, in either a tree or clump form variety, it is a smart choice to plant near air conditioners for shade. Good cultivars include autumn brilliance, Cole's select, cumulus, Princess Diana and strata.

### American hornbeam *Carpinus caroliniana*

This small, shade tolerant tree offers rusty, reddish orange fall color and is perfect in areas with limited space and to create privacy in yards. Native to Iowa's forest understory, it is not common in urban settings. The unique, rippled smooth bark has gray to blue undertones that provide interest during winter.

### Two Species for Southern Iowa

These two species are found in southern states, but can grow in USDA Plant Hardiness zone 5b, in southern and southeastern Iowa.

### Sweetgum *Liquidambar styraciflua*

A popular ornamental tree in the south, it explodes in a firestorm of fall colors. Its unique star-shaped leaves turn purple, orange, red and yellow—even on the same tree. A good shade provider.

### Blackgum *Nyssa sylvatica*

Common across the south where it is called tupelo, it is known for brilliant fall color—even outshining maple—with deep red to burgundy colors. It remains attractive in winter due to the wide branch angles that give it a different look. At 30 to 50 feet high, this smaller shade tree has a pyramidal shape and lustrous dark green leaves in summer. Its small berries provide an important fuel for migrating birds.



# Wild Cuisine KITCHENSIDE

BY ALAN FOSTER PHOTOS BY JAKE ZWEIBOHMER



Venison backstrap with wild raspberry sauce, wild foraged greens and rosemary roasted potatoes

Frog legs, toasted quinoa and creamed nettles



Sous Chef Eric Bill



Tucked away in a tiny, quiet business center in the northwest corner of Johnston, Mojós on 86th isn't the easiest eatery to find. But find this hidden gem, and you'll be glad you did. Serving up diverse plates of American contemporary cuisine, Mojós offers a "...a little bit of everything, a little bit of here and there," explains sous chef Eric Bill. Whether it's a lunchtime cheeseburger or eggplant and edamame ragout pasta, if it comes out of the kitchen of head chef Anthony Johnson, it's fresh, creative and a bit on the wild side. From De Bruin Brothers rabbit saddle or pan-seared rainbow trout, Johnson and his second-in-charge like to incorporate fish and game—most procured from local farms and family businesses—into menu items and daily specials.



# Johnston Eatery Puts the **Mojo** to Wild Edibles

Foraging chef keeps it fresh and simple



Few fit into an outdoor magazine's recipe feature better than Eric Bill, sous chef at Mojos on 86th in Johnston. A graduate of the Iowa Culinary Institute and an avid hunter and angler, he is as comfortable in the kitchen as he is in the woods or on the water. A budding young Euell Gibbons, he incorporates Iowa "pigweeds," like lamb's-quarter, curly dock and amaranth, into these magazine recipes. What's so unique about these dishes prepared for the magazine is that 85 percent of the ingredients were wild harvested or foraged—frogs caught at a local pond, greens foraged from a farm and venison harvested last season. While dishes served at Mojos don't contain wild edibles, most components are locally grown. Mojos works with dozens of local farmers and producers, changing menus seasonally based on what's fresh.

## GRILLED VENISON BACKSTRAP, FORAGED GREENS AND ROSEMARY ROASTED POTATOES

### RASPBERRY SAUCE

1 1/2 cups wild raspberries  
1/2 cup red wine

Place raspberries and wine in a saucepan and simmer over medium low heat until raspberries are plump. Press mixture through a strainer.

### FORAGED GREENS

3 tablespoons butter  
1/2 medium red onion, julienned  
2 tablespoons chopped garlic  
1/2 cup cattail hearts  
1/2 pound curly dock leaves, shredded  
1/2 pound amaranth leaves, stemmed  
1/2 pound lamb's-quarter  
1/2 cup dry white wine

Wash and dry greens. Caramelize onions in butter over medium heat. Add garlic and sauté one minute. Add greens and wine and cook to tender.

*Long before grocery superstores, food was garden grown or foraged. Foraged finds are often more nutritious and tastier than their store-bought cousins. Amaranth and lamb's-quarter are similar to spinach. Curly dock hints of mild lemon. Cattails are considered the "supermarket of the marsh" because every part is edible at different times of the year. Cattail hearts, taken from the interior of the stalk, taste like a zucchini-cucumber cross.*

### GRILLED VENISON BACKSTRAP

Season backstrap roast to taste. Grill over high heat about 2 minutes per side, 8 to 10 minutes, or until internal temperature reaches 135°. Let rest 15 minutes, then slice and serve.

### ROSEMARY ROASTED POTATOES

Cut potatoes into small cubes. Season with salt, pepper, about 4 tablespoons chopped rosemary and 3 tablespoons minced garlic. Roast in 350° oven until fork tender, about 30 minutes.

## CORNMEAL BREADED FROG LEGS WITH TOASTED QUINOA AND CREAMED NETTLES

### CREAMED NETTLES

3 tablespoons oil  
3/4 pound young nettle leaves  
2 tablespoons chopped garlic  
3 cups water  
3 cups heavy cream  
salt and pepper to taste

Pick nettles with rubber gloves. In a

sauce pan, sauté garlic in oil for about a minute, then add nettles, water and cream. Simmer 5 minutes or until nettles are soft. Purée in blender.

### TOASTED QUINOA

Toast three cups quinoa in a dry pan until brown, making sure not to burn. Add six cups water and simmer until water is absorbed and grain shell pulls away. Add more water if needed.

*Quinoa (pronounced keen wah) is the seed of the flowering plant Chenopodium quinoa. Cultivated in the Andes for more than 5,000 years, it is labeled a superfood as it is high in complete protein, delivering all nine essential amino acids. The fluffy, slightly crunchy texture and mild, nutty flavor make it a great substitute for grains and rice. Find it in whole foods stores and supermarkets.*

### FROG LEGS

Legs from six frogs, skinned  
2 cups buttermilk  
3 cups cornmeal

Dip legs in buttermilk, dredge in cornmeal and deep fry in 350° oil until golden brown.

## Mojos on 86<sup>th</sup>

6163 NW 86th St.  
Johnston  
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DINNER: Monday-Thursday, 5 p.m.-9 p.m.  
Friday and Saturday, 5 p.m.-10 p.m.  
Closed Sunday  
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# Warden's Diary

STORY AND PHOTO BY ERIKA BILLERBECK



## Doug

I watched as Doug Thompson presented the survival and first aid portion of the hunter education course. He knows what he is talking about. Doug honed his survival skills not only by reading dozens of books, but also through his past hunting experiences, his former occupation as a physician's assistant as well as a good chunk of time spent as a medic in the military. And while I've been lounging on the couch in front of the fireplace reading *Wilderness Survival for Dummies*, Doug has been sprinting through remote Tanzania, waving to villagers as they cheerily greet him, "Dr. Douglas!" That's right before leaping over poisonous snakes and dodging elephants to deliver a baby in a medical hut with nothing but his bare hands and his brain. OK, the part about the elephant might be an exaggeration, but you get the idea. Doug has made several trips to Tanzania to provide medical services to people who don't have electricity or running water, let alone ultrasounds and antibiotics. While Doug would be the first person to yell at me for giving the impression he is invincible (which is a bad attitude to have if you



actually want to survive in the wilderness), I still think he'd make a nice companion on a backcountry trip.

Doug finished his portion of the hunter ed class the same way he always has: by giving the students his telephone number and offering to take anyone hunting who may not have someone to show them the ropes. I asked Doug once why he gives out his number. He answered, "I just care. I know that sounds hokey, but it's true. I just care." Finally, after eight years, 14-year-old Anthony Morris from North Liberty took him up on the offer.

I met up with Doug and Anthony after their squirrel hunt at the Sugar Bottom Recreation Area on a drizzly

day in September. They had been in the woods watching for a squirrel and quietly discussing everything from hunting ethics and poison ivy identification to Anthony's background, his school classes and his ambition to become a pilot. Their conversation was stopped short when Anthony spotted, through the maze of branches, a squirrel climbing up a tree trunk. The squirrel was too far



away for a good shot, so they decided to put the sneak on it. As Anthony crept through the woods toward the squirrel, Doug reminded him to look down before each step to avoid tripping in the thick undergrowth. Just as he stepped within range, the squirrel made the fatal move of climbing into the crotch of a tree where Anthony made a perfect head shot, using a single shot .410.

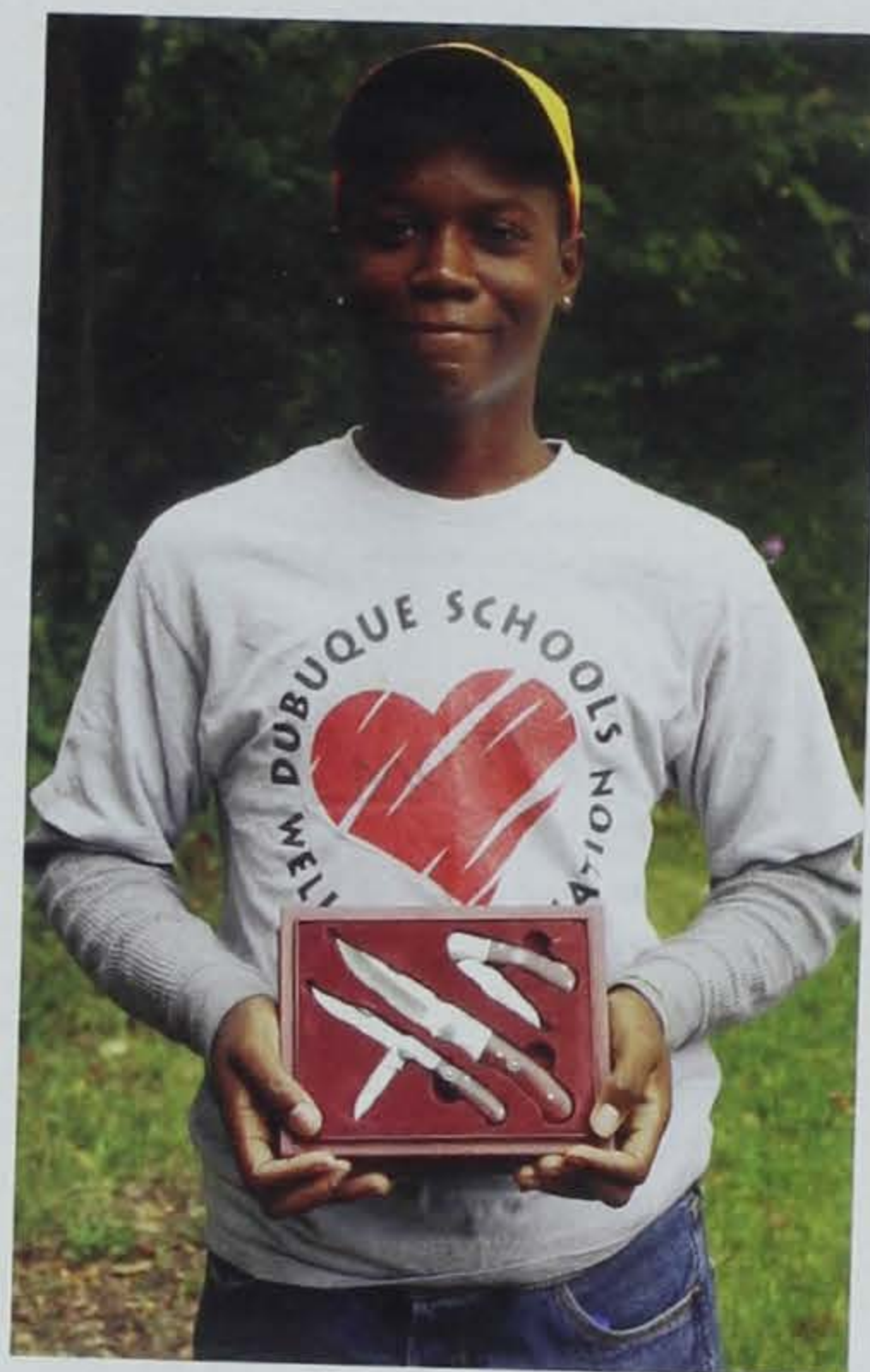
As they stepped from the woods, I noticed that Anthony was carrying a squirrel. He is a striking young man, tall and lean, who greeted me with a handshake and a quiet hello. A shy smile crept to the corners of Anthony's mouth as he showed me where the pellet hit the squirrel, right behind the eye. I told him it was a great shot, and he nodded.

I asked Anthony what his favorite part of the day had been and he was quick to answer. "It was so peaceful and quiet." Considering that he and his mother live in a mobile home along with eight other members of his extended family, his answer comes as no surprise. Anthony does not come from a family of hunters. In fact, his background is starkly different from many sportsmen. His interest in hunting was sparked after reading the book *Hatchet* by Gary Paulsen. After expressing his interest to the leaders of his church youth group, they made arrangements to enroll Anthony in a hunter education course. A few more members of the youth group have since followed in his footsteps and attended classes. "But I was the one that kind of started it," he said.

I asked Doug about his favorite part of the day. He smiled and said, "He reminds me so much of me at that age." Doug's trip down memory lane was further reinforced by the fact that the .410 Anthony used was Doug's first gun from when he was 12 years old. Doug went on, "It was fun to watch him hunt for the first time. He's a good kid."

We continued to talk about the hunt as I took some photos of Doug instructing Anthony how to clean the squirrel. He wasn't afraid to give it a try. He didn't even appear to be self-conscious as I sat off to the side pretending to be the paparazzi. I'm pretty sure that when I was 14 I wouldn't have had the guts to ask for help learning something new. Even at 35, I don't like being out of my comfort zone, especially in front of strangers. Watching Anthony reminded me that you don't look foolish asking for help with a new skill, you only look courageous.

Doug is just one of Iowa's approximately 2,100 volunteer hunter education instructors giving up their time to keep hunting safe. They seem to be rather successful. Accidents have decreased 44 percent since the hunter education course became a requirement for obtaining a hunting license. These dedicated volunteer instructors know what it means to give. Instructors statewide donate approximately



12,500 hours per year preparing for and administering classes. And many instructors, like Doug, go above and beyond the minimum requirements to maintain their instructor status.

We'll never know how many lives hunter education instructors have saved. There are no statistics to reveal how many times a hunter has realized that his finger was inside the trigger guard and took it back out. Or how many times someone double-checked what was beyond her target and decided not to shoot. Or how many times a round jumped out of the chamber of a gun the hunter believed to be unloaded, but upon remembering one hunter education commandment—treat every gun as if it were loaded—decided to rack it just to be safe.

That afternoon I watched as Doug gave Anthony a knife set he had purchased for him. I knew that I was witnessing a hunter education instructor making an impact on someone's life. Anthony wasn't the only one who benefitted. Doug was given the opportunity to step back in time and experience his youth again. By taking someone into the woods, Doug was reminded why he became a hunter education instructor to begin with.

As for Anthony? He has decided he wants to expand his hunting experience to other seasons. He narrowed his birthday wish to one item: the versatile 20 gauge Remington 870. And best of all, he sat in the woods and enjoyed the peace and quiet. 🐿️



## MUD DAUBER WASP

*Trypoxylon politum*, *Sceliphron caementarium*, *Chalybion californicum*

They may look menacing, but mud daubers are solitary, nonaggressive and typically do not defend their nests as aggressively as colony bees and wasps such as honeybees, yellow jackets and paper wasps. Despite this, they will sting if handled. During the summer, adults can often be found on flowers, feeding on nectar.

### HOME, MUDDY HOME

Mud dauber wasps are named for how they build their nests—out of mud. The pipe-organ mud daubers make a series of tubes, resembling organ pipes, while black and yellow mud daubers build a globular nest. Blue mud daubers don't make their own nests; they invade the nests of black and yellow mud daubers.

### SPIDERS AND EGGS

When laying eggs, female mud daubers capture and paralyze spiders, stuff them into individual cells in the nest, and deposit one egg on each spider. Meanwhile, males may guard the nest while the female hunts. She then seals off the cell. After two or three days, the egg hatches and the larva feeds off of the paralyzed spiders for about 10 days. It then spins a cocoon and overwinters as a prepupa.

### BLACK WIDOW DELI

The mud dauber nesting process helps control spider populations. As picky eaters, mud daubers prefer certain kinds and sizes of spiders, primarily smaller, colorful spiders. Some researchers believe the wasps focus on only a few species to become more efficient hunters. Some use interesting tactics, like "plucking" the web, to draw the spider out. The arachnid of choice is the black widow spider—one of the most venomous spiders in the country.

### DID WASPS CRASH FLIGHT 301?

According to the Aviation Safety Network, it is speculated that mud daubers may be responsible for the death of all 189 passengers and crew aboard Birgenair Flight 301. Some believe mud daubers nested inside and blocked one of three pitot tubes used to measure airspeed. The faulty readings caused the plane to stall. The plane crashed in the Caribbean Sea on Feb. 6, 1996.

### ADOBE ABODE

Nests are usually found on the sides of houses, barns, sheds and bridges because they provide the best shelter. These mud masterpieces are painstakingly built one small mud ball at a time, which can take anywhere from three hours to three days.





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