WISCONSIN NATURAL RESOURCES

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Wyalusing
A century of splendor

Latest from the bat beat

Hunter education turns 50

Wild parsnip revisited

Back in the day

When trees met rivers, battles ensued.

Tony Welch

AMERICAN FORESTRY ASSOCIATION

An 1886 log jam at St. Croix Falls on the Wisconsin-Minnesota border drew large crowds of spellbound visitors. Some 200 lumberjacks spent six weeks untangling 120 million feet of logs extending 2 miles downriver.

When my great-grandfather was the editor and publisher of the Eau Claire Telegram in the early 1920s, his newspaper featured dozens of first-person accounts from Wisconsin lumberjacks dating back to the mid-1800s. It was a time of spectacular "traffic jams," when countless thousands of harvested virgin white pine logs raced down swollen rivers and loggers found themselves right in the middle. What follows are stories from two of those daring lumberjacks; we invite readers to come aboard for the ride.

Charles M. Kirkham

I was born in St. Lawrence County, New York. After the Civil War ended, my brother T.A. Kirkham traveled to Eau Claire. He sent back such favorable reports that I decided to follow him. I was 16 years old. That first winter I joined a crew of 15 men as a sawyer. Come spring, I helped drive the logs down to the mill. I continued this routine for several years.

I've been asked many times to describe the breaking up of a log jam. The principal implement used, and with which all the log drivers were supplied, is the "peavey." It has a wooden handle about 5 feet long, hard maple. Attached to the tip is a hook, used to roll logs. A heavy steel pike projects at an angle at the end of the hook, for prying purposes.

No two log jams are alike, though they appear to roughly imitate one another. A jam in a stream where there is not much current is fairly breakable. Rolling or swinging a few of the center logs — called "keys" — will usually do the trick. In places like Big Falls on the Eau Claire River, however, the breaking of a jam is a far different proposition.

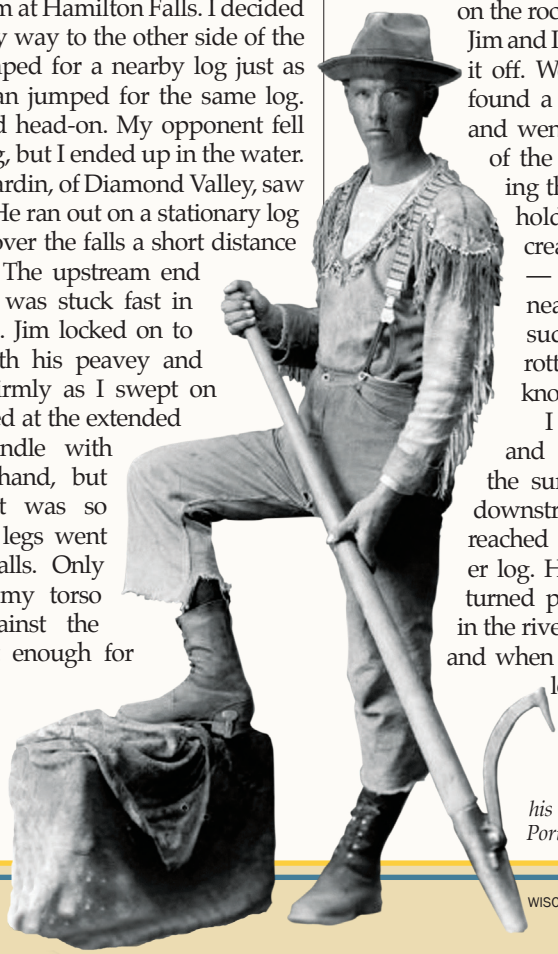
In such places the lighter logs stay on top. The "shaky" (rotting) logs soon become water-soaked, and along with a number of sap-heavy logs, they are sucked under. As the submerged logs continue to multiply, the lighter logs on top are forced upward — often well above the water level. As the pressure increases, the jam grows tighter and taller. It is now a "damn jam," as some call it.

A crew generally unloads the front by rolling off the top logs and then sluicing them downstream. Each man then forces the point of his peavey between the cracks that separate the chosen key logs. When the foreman hollers, "Ho! Ho!" the crew instantly starts rotating and tugging until the water begins flowing freely again.

I once helped to break up a 2-mile-long jam at South Fork Falls. When it went out, the crash was heard at the upper dam on Hay Creek — 4 miles away. Some of the green logs were peeled free of all their bark. Logs 12 inches in diameter were snapped in two like toothpicks. Some power!

One spring, on a drive to the boom (sawmill), I had an experience which nearly cost me my life. We were breaking a log jam at Hamilton Falls. I decided to make my way to the other side of the river. I jumped for a nearby log just as another man jumped for the same log. We collided head-on. My opponent fell onto the log, but I ended up in the water.

James Hardin, of Diamond Valley, saw me fall in. He ran out on a stationary log that hung over the falls a short distance below me. The upstream end of this log was stuck fast in some rocks. Jim locked on to the log with his peavey and braced it firmly as I swept on by. I grabbed at the extended peavey handle with my right hand, but the current was so strong my legs went over the falls. Only a part of my torso swung against the log — just enough for Hardin to grasp. Without a doubt, I owe my life to Jim.



WISCONSIN HISTORICAL SOCIETY

A peavey tool was essential for breaking up log jams.

Ivory Livermore

I am one of the earliest settlers now living in this vicinity. I came to Wisconsin with my parents in 1856, from Broome County, New York. I first went to work for Russ Hackett, skidding logs with a team of oxen. Over the next 12 years, beginning in 1865, I went from riding logs to driving them. In plain English, I fought them tooth and nail to do what they didn't want to do.

Jim Terry and I usually worked together. One time, while driving on the North Fork, a large log became saddle-backed on the rocks at Hamilton Falls. Jim and I were sent out to ease it off. We took our peaveys, found a suitable log to ride, and went out to the middle of the river. We were easing the big log off — one holding while the other created a twisting grip — when my peavey near the end of the log suddenly tore off a rotting slab and I was knocked into the river.

I shot over the falls and finally struggled to the surface about 100 feet downstream. Jim quickly reached me by riding another log. He said my lips were turned purple. When I went in the river I was fully dressed, and when I came out all I had left were my torn shirt and trousers. Gone were my boots.

Tony Welch writes from his woodland retreat outside Portland, Oregon.

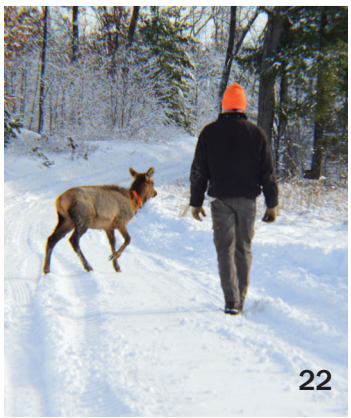
WISCONSIN NATURAL RESOURCES

ANNA N. HESS

June 2017 | Volume 41, Number 3

DAVID J. EAGAN

DNR FILES



BEN GRUBER

June is Invasive Species Awareness Month as designated by the Wisconsin Invasive Species Council, a 12-member panel created by the state Legislature to work jointly with DNR. See our stories on pages 7 and 20. For more on the council and ISAM, see invasivespecies.wi.gov.

FRONT COVER: Wyalusing State Park, at the confluence of the Wisconsin and Mississippi rivers, has something for everyone. Canoe the river sloughs, delight in the scenic vistas or hike the 14 miles of trails. This climb on the Bluff Trail leads to Treasure Cave where the adventurous can explore a small limestone cavern.

PHOTO BY TRAVELWISCONSIN.COM

BACK COVER: The flowers of yellow pond-lilies stand above their floating leaves on the calm waters of Red Cedar Lake State Natural Area in Jefferson County. For more information about the State Natural Areas Program visit dnr.wi.gov and search "SNA."

PHOTO BY © THOMAS MEYER, WDNR

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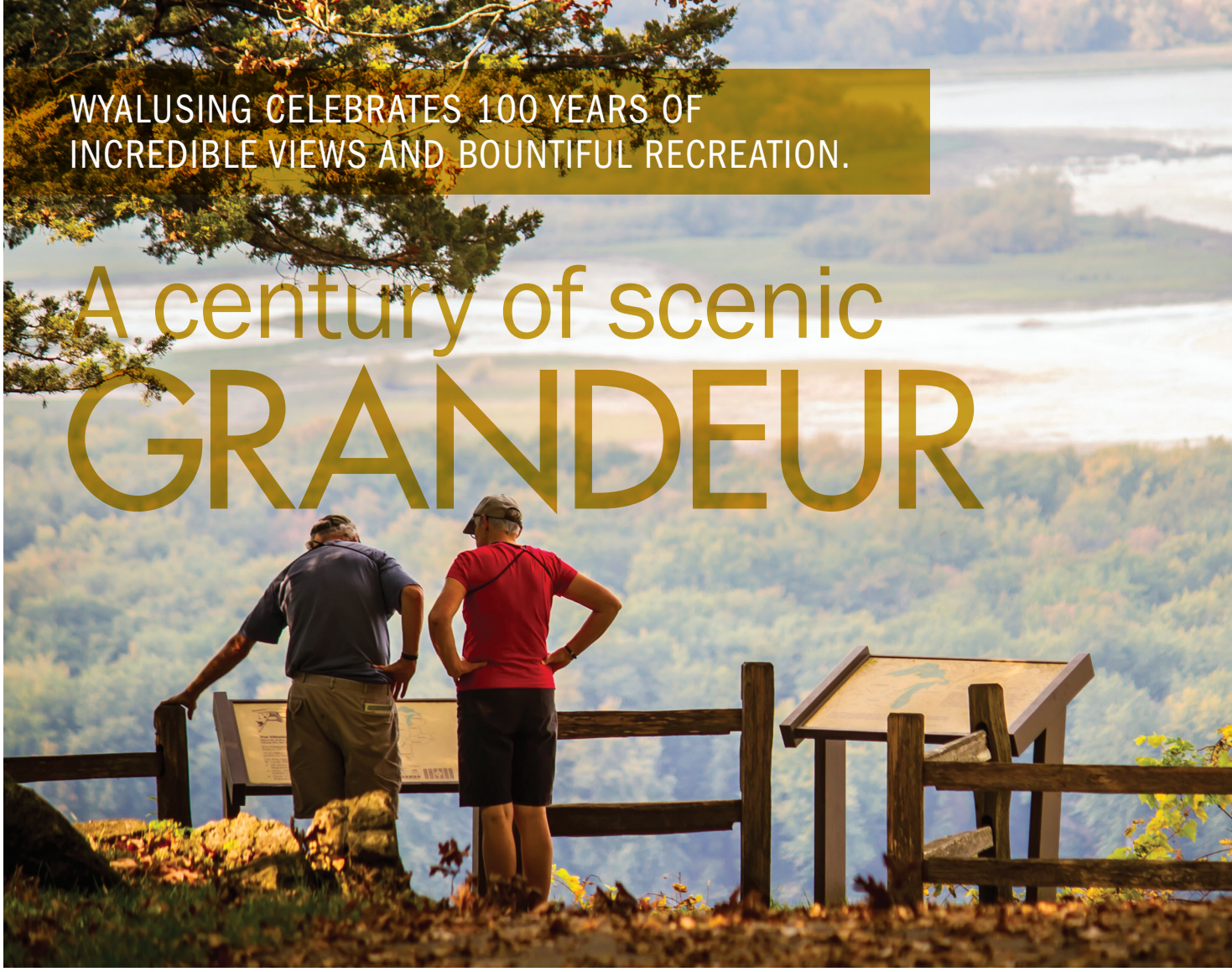
WYALUSING CELEBRATES 100 YEARS OF INCREDIBLE VIEWS AND BOUNTIFUL RECREATION.

A century of scenic GRANDEUR



Paul Holtan

Standing on the bluffs overlooking the confluence of the Wisconsin and Mississippi rivers 500 feet below, it's pretty easy to see why John Nolen recommended Wyalusing as one of four locations for Wisconsin's first state parks in a 1909 report to the State Parks Board.

In his report to the board, Nolen, then a renowned landscape architect who had studied under Frederick Law Olmsted Jr. at the Harvard School of Landscape Architecture, wrote of Wyalusing:

> *Judged by the point of scenery alone it is equal to any site under consideration. It would be a surprise to most people to wander through its exquisitely beautiful coulees and grottoes or to stand upon its heights and view the broad island-dotted, majestic scenery of the "Father of Waters."*

It took eight more years, but in 1917 Wyalusing became Wisconsin's fourth state park following Interstate in 1900, Peninsula in 1909 and Devil's Lake in 1911.

This June, the park and its friends group, the Friends of Wyalusing State Park, will celebrate the 100th anniversary of the park.

Due to its prime location at the confluence of two major river systems, the area where the park is now located has a rich history. Various Indian cultures occupied the region as early as 9,000 B.C. There is an outstanding procession of 28 Indian mounds along Sentinel Ridge overlooking the Mississippi River. Historically, Native Americans considered the region near the mouth of the Wisconsin River a "neutral" land. At least 14 different tribes lived in the area or visited to trade.

The modern history of the area began in 1673, when Father Jacques Marquette and Louis Jolliet arrived at the Upper Mississippi River after a four-day journey on the Wisconsin River. A monument at Point Lookout is dedicated to the two explorers.

Nolen notes in his report that it "has been already suggestively termed, Marquette Park." But the park was actually first named Nelson Dewey State Park and changed to Wyalusing in 1937 after the present Nelson Dewey State Park, south of Wyalusing, was created in 1935. That park preserves the first governor's restored home.

According to park historian and friends group member Randall Paske, the name Wyalusing is an English version of a Native American word that means "where an old holy man dwells."

With the bluffs providing a significant landmark for the meeting of two major

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Spectacular vistas from atop the bluffs await visitors to Wyalusing State Park, located where the Wisconsin River joins the Mississippi in southwest Wisconsin. Those scenic views make Wyalusing's campsites some of the most coveted in the state park system.

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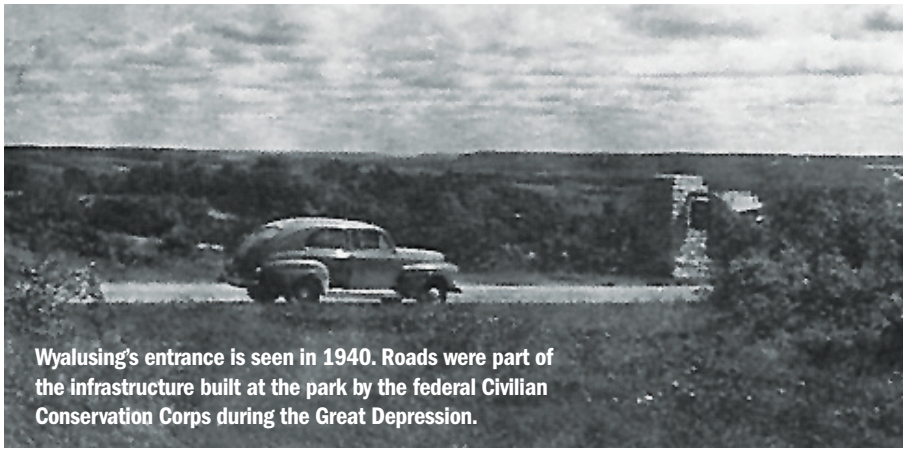
transportation corridors, the area near the park became a key trading location during the peak of the fur-trading period.

Wyalusing becomes a park

The State Parks Board recommended acquisition of the property, which the Legislature approved in 1912. Development of the property took a few more years and the park officially opened in June of 1917.

Unlike Devil's Lake State Park — which required acquisition of properties from multiple landowners and the removal over time of many structures — thanks to the Robert Glenn family, who settled on the land that would become Wyalusing State Park in the 1840s, the property was mostly intact as Nolen described in his report:

> *It appears to be the best Wisconsin site on the Mississippi for park purposes because of its large and well preserved groves of native trees and because the land required to form an accessible park is practically in the possession of one man. Mr. Robert Glenn, the owner of the property, has held it intact for years in the firm belief that it would some day become a public park. He is unselfishly interested in the project and has shown himself ready to cooperate with the Board.*



Wyalusing's entrance is seen in 1940. Roads were part of the infrastructure built at the park by the federal Civilian Conservation Corps during the Great Depression.

FRIENDS OF WYALUSING

Some of the park's more iconic developments occurred during the Great Depression when the Civilian Conservation Corps, or CCC, put more than 3 million youths and adults to work. There was a CCC camp at the park that built park roads and trails and started the Peterson Shelter, which was finished by another federal program, the Works Progress Administration. They built stone fireplaces in shelters and picnic areas and the stone walls along Point Lookout and the four other lookouts that offer expansive views of the bluffs and rivers below.

A bronze plaque located in a large rock at the entrance to the Outdoor Group

Camp commemorates the Civilian Conservation Corps at Wyalusing State Park, and an original kiosk built by the CCC with information panels describing the "Days of the CCC" is located near the park's original office.

Wyalusing also is home to the only monument in the United States dedicated to the passenger pigeon, a now-extinct bird that once flew over Wisconsin in such numbers that their passage would darken the skies. The last passenger pigeon died in 1914. The monument was unveiled at the 1946 Wisconsin Society of Ornithology convention with Aldo Leopold giving the dedication speech and was installed at the park at a dedication ceremony on May 11, 1947. WSO later restored the monument, which was rededicated in May 2014, in observance of the centenary of the pigeon's extinction.

One of only two astronomy observatories located in Wisconsin state parks also is found at Wyalusing (the other is at Harrington Beach State Park on Lake Michigan). The observatory is situated on a knoll that affords an excellent view of the night sky and includes a 16-inch telescope with attached camera. It was built and is run by the Starsplitters of Wyalusing, a local nonprofit group of astronomy enthusiasts.

In addition to the observatory, the Starsplitters built the Lawrence L. Huser Astronomy Center, which was dedicated on June 8, 2003. It is named after Lawrence Huser, who worked as a park ranger at Wyalusing for 30 years. The center and observatory allow local astronomers to conduct sophisticated computer imaging and also provide space for group presentations and astronomy classes. The Starsplitters hold regularly scheduled astronomy programs at Wyalusing throughout the summer.

Recreational opportunities abound at Wyalusing

With its spectacular views from atop the river bluffs, the Wisconsin Ridge campground has some of the most sought-after campsites in the state park system. The park also has the Homestead campground, offering a total of 114 campsites. The park has one of the few indoor group campgrounds in the state park system. The Hugh Harper Indoor Group Camp has four separate buildings, each accommodating 27 people with bunk beds and bathrooms with indoor showers and flush toilets. A separate building serves as mess hall and recreation hall, with modern kitchen facilities.

Wyalusing has more than 14 miles of hiking trails with varying difficulty. Steep climbs or descents and stairways may be encountered. Sand Cave trail travels past Big Sand Cave and Little Sand Cave, two of four caves located within the park. Both are washed-out areas of limestone with small waterfalls. A marked, 6-mile canoe trail winds through the backwaters of the Upper Mississippi River National Wildlife and Fish Refuge. The canoe trail starts at the boat landing — where boaters can also launch motorboats — and continues through the Mississippi River backwaters to the main channel. Canoes and kayaks can be rented from the park concession in season.

During winter, Wyalusing offers a number of cross-country ski trails for all levels of skiing abilities with trails groomed for classic and skate skiing.

While passenger pigeons may no longer fly over the park, Wyalusing remains a prime destination for bird watchers, with more than 90 bird species living at the park during the summer months and 100 more observed during spring and fall migrations. The area from Wyalusing to Nelson Dewey state parks is listed as one of the "Wisconsin Important Bird Areas" by the Wisconsin Bird Conservation Initiative, which notes:

> *This area supports high breeding populations of numerous high-priority species, including red-shouldered hawk, Acadian flycatcher, yellow-throated vireo, Bell's vireo, cerulean warbler, Kentucky warbler, Louisiana water thrush, and, is one of the few breeding locations for the state endangered, yellow-throated warbler. Golden eagles use the area in winter and tens of thousands of landbirds and raptors pass through during migration.*

The Mississippi and Wisconsin river backwaters offer excellent fishing for panfish, bass, northern pike and walleye. There's an accessible fishing pier at the boat landing.

The park offers numerous picnic areas, three with reservable shelters, and two playgrounds. The park naturalist offers a variety of interpretive programs including guided bird walks and nature hikes, and guided canoe trips in the Upper Mississippi River National Wildlife and Fish Refuge.

Paul Holtan works for the DNR Office of Communications, editing the DNR's weekly news and outdoor report packets and serving as public affairs manager for the Bureau of Parks and Recreation.

>>> JOIN THE FRIENDS OF WYALUSING STATE PARK FOR 100TH ANNIVERSARY CELEBRATION

The Friends of Wyalusing was formed in the late 1990s with the mission of supporting the visitor experience by enhancing the connection between nature and the park visitor.

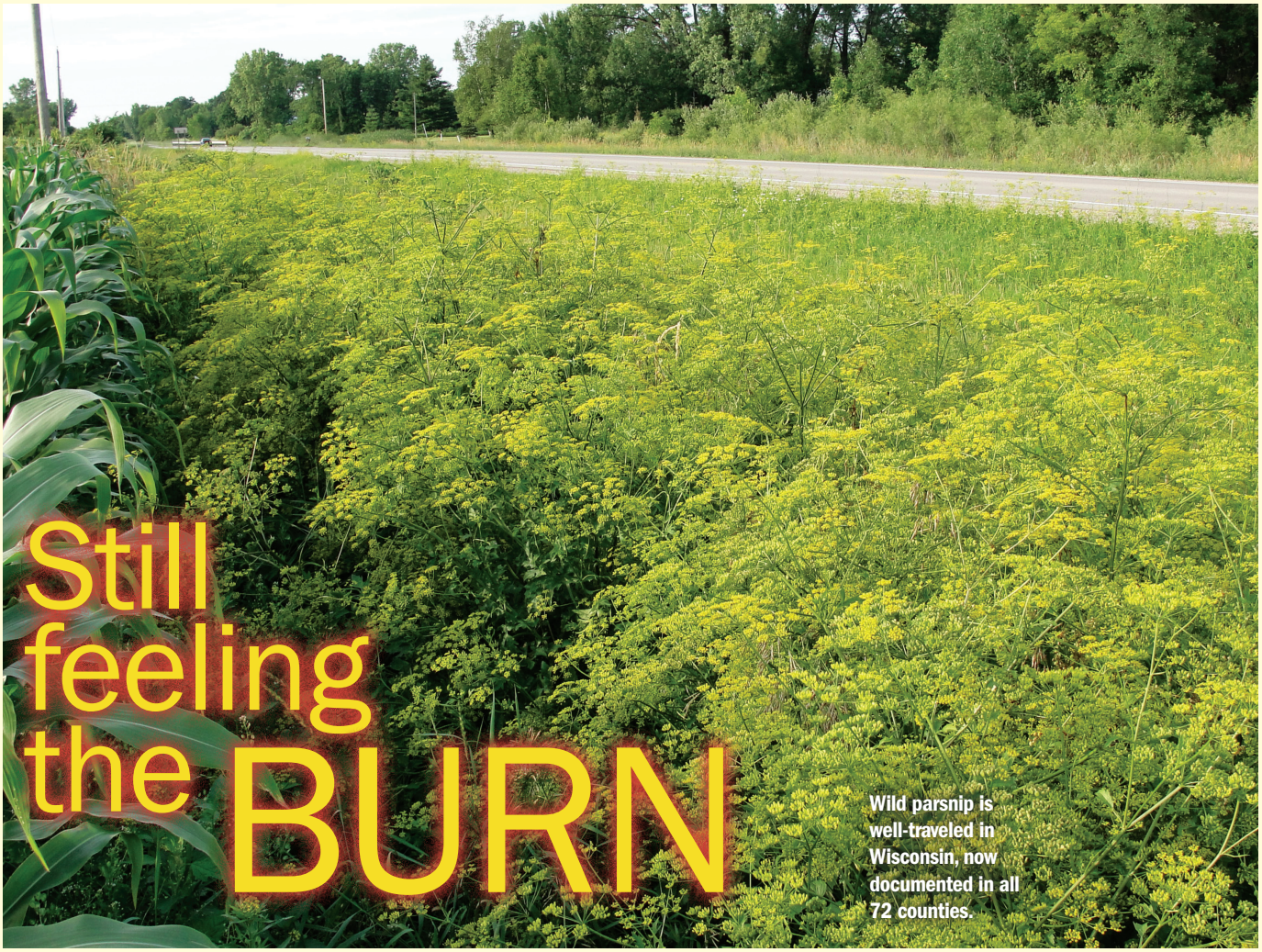
The Friends of Wyalusing and Prairie du Chien Area Chamber of Commerce along with the Department of Natural Resources will be holding a 100th Anniversary Celebration on Saturday, June 3. This coincides with Free Fun Weekend in Wisconsin, when entrance fees and trail passes are waived at Wisconsin State Park System properties.

The schedule includes:

- **9 a.m.: 5K trail walk, with registration beginning at 8:30 a.m. at the visitor center.**
- **10 a.m.: Wyalusing History Hike, starting at Peterson Shelter, with Friends of Wyalusing.**
- **10 a.m. to noon: Kids events with the Grant County Sports Alliance at the Outdoor Heritage Education Center.**
- **Noon: Guest speakers at the Peterson Shelter. Keynote speakers include DNR Deputy Secretary Kurt Thiede, Parks and Recreation Management Director Ben Bergey and Department of Tourism Secretary Stephanie Klett.**
- **1 p.m.: Lunch at the Peterson Shelter.**
- **2 p.m.: Wyalusing History Hike, starting at Peterson Shelter, with Friends of Wyalusing.**
- **2 p.m.: Open house at the Lawrence L. Huser Astronomy Center with Starsplitters of Wyalusing.**
- **3-5 p.m.: Music at the Peterson Shelter.**
- **5 p.m.: History of the Passenger Pigeon presentation at the Passenger Pigeon Monument with Stanley A. Temple, University of Wisconsin-Madison Beers-Bascom professor emeritus in conservation and senior fellow of the Aldo Leopold Foundation.**
- **6-8 p.m.: Music at the Peterson Shelter.**
- **8:30 p.m.: Starsplitters of Wyalusing program at the Lawrence L. Huser Astronomy Center.**

For updated times and changes check www.wyalusingfriends.org

Still feeling the BURN



Wild parsnip is well-traveled in Wisconsin, now documented in all 72 counties.

DAVID J. EAGAN

A WILD PARSNIP WARRIOR REVISITS THE NASTY INVASIVE, JUST IN TIME FOR ITS WARM-WEATHER RETURN.

David J. Eagan

Over the years, I've become "Mr. Wild Parsnip" to friends, colleagues and even total strangers. It's not such a bad rap; there are few plants I find more interesting and under-appreciated than wild parsnip.

The reason for that moniker is simple. Eighteen years ago, in June 1999, I wrote "Burned by wild parsnip" for this magazine, with a follow-up article, "Wild parsnip II," in 2000. (See sidebar for these and other recommended resources.)

The first article was reprinted in several magazines, and borrowed and repeated on many websites, bulletins, posters and news outlets. Better Homes and Gardens magazine even called me to contribute to a story in 2006.

For most of those years, an internet search for "wild parsnip" brought up my article at or close to the top. It continues to drive traffic to this magazine's online archives, with "Burned" generating the most views for five straight months in 2014. As recently as August 2016, it brought seven times the page views as the next highest-viewed article.

Why all the fuss? Well, to anyone who has been burned by this plant or has seen the blistered skin of someone else who has, the answer is obvious. For many people around the world, wild parsnip has made quite an impression.

Time for another article

Since 1999 there is a new generation of outdoor enthusiasts — and readers — who may never have heard of wild parsnip. Among those who do possess some knowledge, I've found that many hold sketchy or inaccurate information.

The redness and blistering response to wild parsnip is basically a second-degree burn and should be treated as such.

KEVIN ALBERT

To be fair, a lot more people know about wild parsnip now than 18 years ago. But each year, the plant is spreading into new places and putting more skin at risk. Plus, there is much new information to share about wild parsnip's biology, distribution in Wisconsin and methods of control.

Another reason: My inbox holds more than 1,000 emails from readers who, over the years, have generously responded to my invitation to share their wild parsnip stories — telling where it grows, how they got burned, suggestions for skin treatment, questions about control and much more.

My sincere thanks to all who have written to me about wild parsnip, including those responding to my June 2015 query in this magazine. Several of the 2015 writers helped me to locate wild parsnip populations in Wisconsin that confirmed the plant's presence statewide. One writer was alarmed at its rapid spread in their area, noting it had gone from a few plants to a half-mile stretch along a road in three years.

No surprise, most people reported learning about wild parsnip the hard way. A writer from Ticonderoga, New York, was classic: "I wish I had read your articles over the 'net *before* I had my experience with wild parsnip!"

Unfortunately, there isn't room here for even a tiny fraction of these reports and photos sent from across the U.S. and overseas. But this new article will address some of their collective questions and concerns, and will help readers better understand wild parsnip's complicated relationship with us.

Wild parsnip 101

Wild parsnip (*Pastinaca sativa)* is a member of the parsley or carrot family. In the U.S., it is an alien, a non-native species with Eurasian origins. It's thought to have escaped from colonial-era gardens, eventually becoming wild in all but four southeastern states.

Worldwide, this family has many edible members — carrot, parsley, celery, fennel — as well as many that are deadly poisonous, including water hemlock and poison hemlock, which both grow wild in Wisconsin. Wild parsnip is the same plant as garden or cultivated parsnip. Both are equally edible, and equally capable of causing burns on exposed skin.

So how to identify wild parsnip? Here are some key characteristics:

- There are two growth stages. The first year features non-flowering "rosettes," a whorl of several leaves at ground level. That is followed usually in its second year by flowering plants 3 to 6 feet tall, with long-stalked flower clusters branching out and upward.
- Compound leaves have a central stem and five to seven pairs of stemless, toothed and lobed leaflets.
- The flowers are yellow, with five tiny, curled petals in flat-topped clusters called compound umbels.
- Flowering stems are green, hairless and deeply grooved.
- It blooms mid-June to mid-July, with flowers and ripening seeds often on the same plant.
- Flowering plants turn brown and die in late summer, scattering flat oval seeds.

About those burns

Anyone can be burned by wild parsnip, though some tend to be more sensitive to the chemicals than others. "Burned by wild parsnip" has details on the sunlight-mediated burn reaction, as well as how it differs from poison ivy's immune-response rash.

Here is a quick review of the basics and some "news you can use" about the plant's hazards:

Plant juice, sunlight and time: If fresh juice/sap from a broken stem or leaf gets on bare skin exposed to sunlight, even for only a few minutes, the reaction can happen. Wild parsnip juice makes skin hypersensitive to the sun, which can lead to phytophotodermatitis (plant caused and ultraviolet light-activated skin inflammation). Within 24 to 48 hours — not right away — redness and blistering can occur. The reaction is basically a second-degree burn and should be treated the same. Affected skin will heal as with any burn, but likely will cause a noticeable change in pigmentation (pinkish/brownish skin color) for a while, even up to a year or two.

Not an oil: When dry, wild parsnip's watery juice is no longer a hazard. It doesn't spread from pet fur or clothing like the oils found in poison ivy. Remember, you can touch the plant without harm if no juice is released. Dry, dead plants are harmless.

Burns from wild parsnip occur when areas of skin are touched by plant juices and subsequently become exposed to sunlight. Note how socks offered protection here.

STEVEN ZORONSKI

If you are burned: As with other such burns, Dr. Paul Biere of Iowa County recommends "symptomatic care." This means keeping the rash and blisters cool and clean, away from heat and sunlight. If blisters leak or pop, remove loose skin and clean with soap and water, then apply Vaseline or moisturizing cream and cover with a non-stick pad to seal in moisture and speed healing. For most burns, antibiotics are not needed. Products that dry the skin do not help, as many readers have noted.

Biochemical warfare: Wild parsnip sap is most potent when the plant is flowering, with increased amounts of psoralens (the active chemicals) throughout the plant. Why? That's when it most needs to protect itself from munching insects, which usually are killed by the reaction of sap in the presence of sunlight. Continue reading, however, to learn about a nemesis of the plant, parsnip webworms.

Readers write: Some who have contacted me reported what can only be interpreted as an allergy to wild parsnip. These are rare cases, but humans can develop allergies to just about anything. Also, writers mentioned that the residual bruise-like hyperpigmentation from parsnip burns on children have been mistaken for evidence of child abuse. For both issues, keep good records of plant exposure and its evolving reaction.

What's new?

Wild parsnip is now nearly everywhere in Wisconsin, documented in all 72 counties. In 2015, I collected specimens in the 20 counties not already in state records. Wild parsnip is especially common — and spreading — in southern and southeast counties where it thrives in alkaline/limestone soils. Complete records of wild plants collected in the state are kept by the Wisconsin State Herbarium at the University of Wisconsin-Madison.

A new project to map occurrences of wild parsnip and many other existing and new plant invaders is underway through UW-Extension, led by weed scientist Mark Renz. Plant data is used to create maps showing exact locations of plants throughout the state. Sightings from citizen scientists are invited. Species can be reported through the Great Lakes Early Detection Network.

On the internet, you can find an

Handling wild parsnip, which can grow more than 5 feet tall (this overachiever was 10 feet), requires being well-covered with long pants and sleeves, socks, and gloves that cover the wrists. Work at sundown is ideal to further reduce the chance of developing a reaction.

ROB BALLER

Damage to wild parsnip can be caused by caterpillars of the parsnip webworm, which feed on the plant's flowers and developing seeds.

DAVID J. EAGAN

ever-expanding collection of fact sheets, articles, medical details, field guides and YouTube videos, plus hundreds of images of the plant and its burns (many not very pleasant to see). However, there also is much misinformation online, so beware of "fake facts" about wild parsnip.

One recent article said the burns are "third-degree." Wrong. As noted, they are second-degree burns and hence much less dangerous. Another article said all that is needed for the skin to burn is "contact" with the plant. Again, only the juices from broken stems or leaves, with exposure to sunlight, can result in burns.

Some websites still insist that the wild plant is poisonous to eat. Actually, parsnip roots can be safely harvested and eaten. While wearing gloves and long sleeves, dig first-year plants (rosettes) in autumn or early spring. Scrub the roots and use like store-bought parsnips. With all wild foods, be sure you know exactly what you are eating. Most of wild parsnip's cousins have white taproots — and some are deadly.

A notorious invasive

Not just an innocent "weed," wild parsnip ranks high on the list of plants that can invade high-quality natural areas, driving out desirable species. In Wisconsin, it now is classified as a "restricted" plant under NR 40, the DNR's invasive species rule. This means plants and seeds cannot intentionally be spread into non-infested areas. Wild parsnip is high on the hit list of many state and local agencies and weed-management organizations that target problem plants.

How to eliminate wild parsnip? I am often asked the best ways to control populations of the plant. Manually, it can be mowed, the flowering tops cut off and disposed of, pulled, dug up or its taproot severed. A favorite tool for digging or slicing the root below-ground is the Parsnip Predator, a narrow-bladed spade with a notched tip developed by members of The Prairie Enthusiasts.

Herbicides, typically containing glyphosate or 2,4-D, can be applied during the rosette stage or when plants begin to bolt, but timing is important. Whatever the method, take care to avoid getting plant juice on skin during daytime. The best time to work is at sundown because by the next morning any exposed skin will no longer be sensitized.

Whenever working with parsnip in the daytime, always wear long pants, socks, long sleeves and gloves that cover the wrists.

Some patches of wild parsnip are damaged by the caterpillars of a non-native moth, the parsnip webworm *(Depressaria pastinacella)*. They spin webs to conceal themselves in the flower heads, feeding on flowers and developing seeds. Unfortunately, they rarely seem to kill the plant, preventing only a few flower heads from going to seed.

Still a medical mystery

Although better known lately, relatively few medical professionals understand the full story about the burns from wild and garden plants, including wild parsnip. Fewer still can identify the plants in the field. Parsnip burns are still mistaken for poison ivy, leading to incorrect treatment.

But some medical folks have become experts. To help new physicians learn about phytophotodermatitis during their residencies in Wisconsin, Dr. John Beasley, a UW-Madison clinical professor, has a unique approach. He brings large, freshly pulled flowering parsnip plants to mentoring sessions, which, he says, "always gets their attention."

Wild parsnip appears to be here to stay, but like most other hazardous plants, it has its charms. Tackle it where you can, and always take the right precautions. Learn more about wild parsnip and other plants that can cause the same sun-induced burns, such as the natives cow parsnip and angelica, garden plants gas-plant and rue and the notorious but uncommon invasive giant hogweed. And, as always, help spread the word.

David J. Eagan is a freelance writer, naturalist and botanist based in Shawano who consults with homeowners and others to help them discover and value the wild "nature" of their land.

>>> RECOMMENDED RESOURCES

- **"Burned by wild parsnip," by David J. Eagan**
  dnr.wi.gov/wnrmag/html/stories/1999/jun99/parsnip.htm
- **"Wild parsnip II," by David J. Eagan**
  dnr.wi.gov/wnrmag/html/stories/2000/jun00/parsnip.htm
- **Wisconsin DNR fact sheet and photo gallery**
  dnr.wi.gov/topic/invasives/fact/wildparsnip.html
  dnr.wi.gov/topic/Invasives/photos
- **Wild parsnip video, by Mark Renz of UW-Extension**
  www.youtube.com/watch?v=ozqdU6_T1uU
- **Management of Invasive Plants in Wisconsin: Wild Parsnip**
  learningstore.uwex.edu/Assets/pdfs/A3924-15.pdf
- **Great Lakes Early Detection Network (GLEDN)**
  www.eddmaps.org/Midwest
- **Online Virtual Flora of Wisconsin**
  wisflora.herbarium.wisc.edu
- **Invasive Plants Association of Wisconsin (IPAW)**
  www.ipaw.org

Survivors and silver linings

WHITE-NOSE SYNDROME TAKES A HEAVY TOLL ON BATS BUT SPURS RESEARCH AND PROTECTIONS TO AID RECOVERY.

Paul White, a DNR mammologist who leads the Wisconsin Bat Program, swabs a little brown bat for evidence of the fungus that causes white-nose syndrome.

JENNIFER REDELL

A BR

2006	2008
First incidence of white-nose syndrome detected in New York state	First reports of mass mortality in hibernating bats

DNR conservation biologist Heather Kaarakka uses radio tracking to help learn more about the habitat bats need during the summer.

MICHAEL KIENITZ

Lisa Gaumnitz

While white-nose syndrome has raced through Wisconsin's cave bat populations pretty much as state bat biologists expected and feared, they didn't expect the response they'd get from people like Bev Paulan, Kent Borcherding and Jim Edlhuber.

Each summer, Paulan logs 300 miles on her car recording bat calls to identify and tally bat species; Edlhuber counts bats emerging from the bat house on his property; and Borcherding builds another bat house for Yellowstone Lake State Park, bringing his total to more than 100 houses at that site and 1,000 in Wisconsin and other Midwestern states.

These three are among the hundreds of volunteers who have helped Wisconsin prepare for the arrival of white-nose syndrome (WNS), a bat disease that has killed millions of beneficial insect-eating bats in North America since its discovery in New York in 2006.

Working with DNR and partners, volunteers were able to significantly advance knowledge about Wisconsin bat species, their locations and their abundance before the disease arrived. Now that WNS is here, these volunteers are documenting its toll on bat populations and counting survivors.

"Wisconsin has a long and storied history of wildlife conservation and we are so fortunate that deep-seated passion has carried over to bats for countless Wisconsin residents," says Paul White, a mammologist who leads the Wisconsin Bat Program for the Department of Natural Resources.

White-nose syndrome, named for the powdery white fuzz that develops on

IEF HISTORY OF WHITE-NOSE SYNDROME AND BATS IN WISCONSIN

2010	2014	2015	2016	2017
Wisconsin Bat Program starts bat survey to gather baseline data about state bat populations	White-nose syndrome first found in Wisconsin; UW-Madison and Wisconsin Bat Program begin bat diet study	First declines in hibernating bat populations observed in Wisconsin; 14 caves and mines infected; first evening bat caught in Wisconsin	Wisconsin conducts its first white-nose syndrome treatment trials; first declines seen in summer bat populations in the state	Only two of 60-plus Wisconsin bat hibernation sites surveyed are free of WNS

THINKSTOCK

DNR biologists discovered a new bat species, the evening bat, while conducting research spurred by white-nose syndrome.

HEATHER KAARAKKA

Cave and mine specialist Jennifer Redell, in red, leads a tour of a Door County cave as part of outreach and education efforts of the DNR's Wisconsin Bat Program.

DOOR COUNTY PULSE

hibernating bats' noses, ears and wings during infection with the fungus *Pseudogymnoascus destructans*, causes bats to wake more often during hibernation, thus burning up critical stores of fat they need to survive winter.

Since WNS was documented at a single Wisconsin site in April 2014, it has spread to more than 50 mines and caves in 24 of the 28 Wisconsin counties with known bat hibernacula. Bat populations in Wisconsin hibernacula where WNS has been present two or more years have declined 30 to 100 percent.

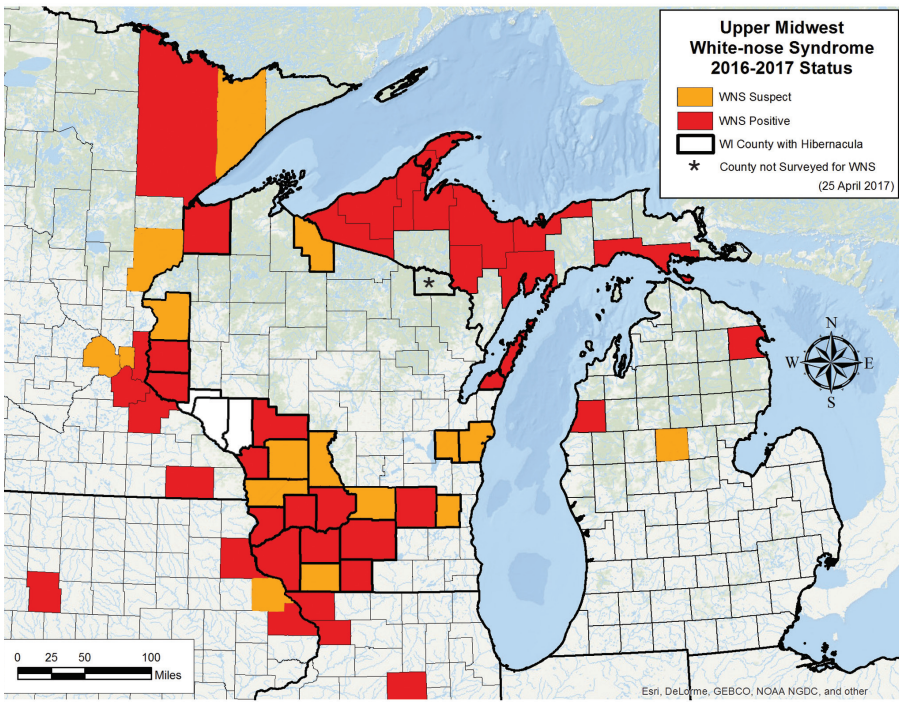
How to help surviving bats this summer

It's too early to know if or how these cave bats — little brown bats, big brown bats, northern long-eared bats and eastern pipistrelles — will rebound and how their loss will affect people, agriculture and ecosystems. A single bat can consume thousands of insects each night, and researchers have estimated that bats save Wisconsin farmers alone $600 million to $1.5 billion on pesticides every year.

"It's unlikely the disease will kill every single bat in the state, so now is the time for everybody to help surviving bats stay healthy and help rebuild bat populations over time," says Heather Kaarakka, a conservation biologist who forms the core of the Wisconsin Bat Program along with White and Jennifer Redell, a cave and mine specialist.

People can help by building and installing bat houses; avoiding disturbing bat roosts between June 1 and Aug. 15, when bats raise their young; helping to monitor bat populations; and donating money for bat work, Kaarakka says.

Most importantly, people can report the bat roosts (buildings, bat houses or trees) where bats are present in summer as well as sites where bats are no longer showing up. Bats continuing to return to summer roosts are likely survivors of WNS. Email location information to DNRbats@wisconsin.gov.



Knowing those locations can help DNR and partners investigate why bats from certain hibernaculum may have survived at higher rates, and understand if certain bats are genetically more resistant to the disease than others. These surviving bats are what will help species rebound after white-nose syndrome, White says.

Wisconsin's actions to prepare for WNS — from placing cave bat species on the state threatened species list to trigger special protections, to building a robust volunteer network, to hosting annual educational bat festivals — increase the odds of bats' recovery. Perhaps most importantly, WNS has accelerated bat research, education and awareness and created partnerships among scientists, cave and mine owners, citizens and recreational cavers.

"The disease is pretty bleak," Redell says. "But the human part of you always has to hope, and the silver lining is if we can channel the increased awareness and enthusiasm about bats to help the other 1,200 species in the world."

In fact, there has been one bit of good news to emerge recently. DNR biologists discovered Wisconsin's first new bat species in more than 60 years while researching summer habitats for WNS-vulnerable bats.

The newcomer is an evening bat, a beetle-eater that flies to the southeastern United States in winter and returns north in the spring. And more good news: It is not known to be vulnerable to white-nose syndrome.

Lisa Gaumnitz is a natural resources educator and program and policy analyst for the DNR.

>>> RESEARCH, PROGRESS AND DISCOVERIES FROM THE WISCONSIN BAT PROGRAM

Here are condensed updates of 2016 research, progress and discoveries from the Wisconsin Bat Program; check the program's website, http://wiatri.net/inventory/bats, for longer versions in the January 2017 Echolocator newsletter. Volunteer efforts involving bats are described in "Citizen-based monitoring is critical for Wisconsin," in the June 2016 *Wisconsin Natural Resources* magazine.

URGENT SEARCH UNDERWAY FOR VACCINES

Wisconsin scientists have been racing the clock to create vaccines to prevent white-nose syndrome in bats. Their task is daunting: Few vaccines have been developed for fungal diseases, even for humans or domestic animals. In addition, the vaccine must be placed in something the bats can ingest, and traditional methods and timelines for testing don't transfer well to bats.

Results are mixed so far. Fungal experts at the University of Wisconsin-Madison School of Medicine identified and are testing a protein for its ability to induce an immune response to WNS in bats, and UW veterinary experts are testing how to deliver that protein in a gel that bats ingest and transfer as they groom one another.

In a preliminary trial of these potential vaccines last winter, DNR biologists captured and immunized bats, treated bats infected with fungal spores, and placed them in an environmental chamber intended to mimic hibernation conditions. These lab tests delivered promising preliminary results but maintaining bats in captivity under artificial conditions is not ideal for judging real-world efficacy.

Whether or not the team's search for a vaccine succeeds, methods developed in this study are being applied to other bat diseases where vaccines could be useful.

– Tonie Rocke, USGS National Wildlife Health Center, Madison

GUANO SHOWS MORE MOSQUITOES IN BAT DIETS

All of Wisconsin's bat species consume insects, but their favorite foods and seasonal appetite changes are largely a mystery. Do certain bats mostly munch on moths or prefer a buffet of beetles?

A UW team has been analyzing bat guano in collaboration with DNR, the U.S. Forest Service Center for Forest Mycology Research and citizen scientists to better understand the diets of little brown and big brown bats and possible impacts of their foraging on insect populations.

The insects consumed by bats are digested and excreted but their DNA remains in guano. UW researchers have extracted and sequenced the genetic material so they can compare DNA in bat guano with known genetic sequences to determine the kinds of insects bats are eating.

Based on guano samples collected by citizen scientists and DNR staff in 2014, preliminary results indicate that big browns prefer beetles and little browns favor a variety of moths and flies. Some exciting results also suggest that during certain times of the year both species consume a variety of aquatic flies such as mosquitoes and midges, perhaps in much greater quantity than previously thought.

Bat diets also appear to change depending on landscape composition. Guano samples from 2015 and 2016 are now being analyzed and will soon provide an even better understanding of Wisconsin bats and the benefits of their snacking habits.

– Amy K. Wray, UW-Madison

CREATING WINTER HOMES FOR VULNERABLE BATS

An underground water reservoir that once served the Badger Army Ammunition Plant near Baraboo has been repurposed as a new winter home for bats. It's part of experimental efforts to entice species vulnerable to white-nose syndrome to use artificial, fungus-free hibernating sites.

In fall 2016, resource managers from the Ho-Chunk Nation and DNR took first steps to encourage bats to move into this new home, removing invasive shrubs and building and installing bat-friendly gates to the cistern. The gates allow bats to freely access the site on Ho-Chunk land while limiting access to humans. Foam-board baffles added to the ceiling inside the cistern provide "traps" for rising warm air, creating a range of temperatures for bats to select.

The partners, along with USDA-Dairy Forage Research Center and the Town of Sumpter, have been monitoring bats at Badger for many years. They worked from what little information is known about hibernation sites in general to create this potential winter home.

Partners are carefully monitoring the cistern for signs of winter residents and also are keeping an eye on a site in Madison where Dane County converted a tunnel beneath a former county building into an artificial hibernaculum.

– Randy Poelma, Ho-Chunk Division of Environmental Health, and Jennifer Redell, DNR

BATS ROOSTING IN TREES MORE ADAPTABLE THAN THOUGHT

Two Wisconsin bat species vulnerable to white-nose syndrome may be more adaptable in their summer habitat needs than previously thought and can benefit from sustainable forest management.

Those are preliminary conclusions of DNR research that is part of a multi-state, multi-year project funded by a federal grant to learn more about several hibernating bat species that use forests extensively in summer. The information will inform a habitat conservation plan to help biologists manage bats on the post-WNS landscape.

DNR researchers captured and outfitted female northern long-eared bats and eastern pipistrelles with small radio transmitters and tracked the bats back to the trees where they roost. Their research has revealed that northern long-eared bats are quite adaptable. They use many different tree species, both live trees and dead trees, and are found in the crevices or under bark that is sloughing off the trees.

"We do think they can positively respond to sustainable forestry," says Paul White, who leads DNR's Wisconsin Bat Program.

Radio-tracking of eastern pipistrelles started in 2016 and will continue next year. First-year results revealed that bats were roosting in leaf clusters in hardwood trees in small groups of six to 14 bats and that live spruce trees were one of their habitats.

– Lisa Gaumnitz, DNR

Waters run deep in LAKE WAZEE

WHAT BEGAN AS AN IRON MINE IS NOW A POPULAR COUNTY PARK.

When iron ore mining operations at the spot known as Red Mound ended for good in the 1980s, subterranean waters were allowed to rise into the pit (inset), creating a 150-acre lake more than 350 feet deep.

BLACK RIVER AREA CHAMBER OF COMMERCE

ROBERT HESS

Julie A.M. Hess and Anna N. Hess

Nestled in the jack pine barrens east of Black River Falls lies the deepest inland lake in Wisconsin. Lake Wazee — which means "tall pines" in the native Ho-Chunk language — is of artificial origin, but the isolated mound of schist rock at the lake's edge has been around for millions of years.

Known locally as Red Mound and sacred to the Ho-Chunk, it has endured eons of geologic events and centuries of human endeavors. The remnants of this mound stand at the north end of Lake Wazee, a monument to the iron ore deposits that bolstered the local economy for more than a century.

Geology and early mining interests

The Jackson County Lake Wazee site was a strange geological formation, far removed from the principal Mesabi and Keweenaw ranges of Minnesota and Wisconsin. Here, a volcanic island formed 2.5 billion years ago, spouting ash and lava. The sea floor oozed traces of iron and silica minerals, layered upon each other. Eventually, due to the earth's natural tectonic movements, this island tilted, setting the iron and silica mineral deposits on edge and forcing the minerals into an iron ore formation of banded rock.

Once covered by sandstone and limestone, ancient geologic action eroded away most of the sedimentary rocks. Millions of years later glaciers melted and spewed their sand outwash, seen today as predominant undulations on the landscape. Only Red Mound and a few other minor mounds (such as Tilden Mound) remained protruding from the surrounding sands.

Not only did Red Mound hold iron ore, it also contained other mineral deposits including almandine garnet and sillimanite crystals — both sought after by mineral collectors — quartz, biotite and chlorite.

Discovered in 1839 by Jacob Spaulding at nearby Tilden Mound, the low-grade iron deposit inspired a group of German settlers to begin a mining operation around 1856 near the Black River. In

1860, carrying capital he had raised for expansion, the superintendent in charge of developing the smelter business traveled to Milwaukee to invest the money.

Fatefully, he took a pleasure cruise on Lake Michigan aboard the Lady Elgin, a wooden-hulled steamship. But the Lady Elgin sank after colliding with the schooner Augusta off the shores of Illinois, losing 286 passengers, including the superintendent and all of his Black River mine capital.

A new era of mining

The next 80 years saw continued iron exploration in the Jackson County area. Eventually, Inland Steel Co., headquartered in Chicago, purchased the mining interests in 1940, including parcels just east of Black River Falls at Red Mound. Inland Steel expanded exploration and testing in 1961 at the future Lake Wazee site and shareholder approval was given in 1967 to build a $25 million taconite facility.

This open-pit mining operation was called Jackson County Iron Co., a subsidiary that sourced iron ore for Inland Steel. The ore was used to form flat-rolled steel for use in appliances and cars, bars for use in making machinery and steel for use in building construction.

The mine was Inland Steel's only year-round source of ore, shipping taconite pellets by rail when Great Lakes shipping was closed for winter. An average of 850,000 tons of taconite pellets were loaded annually onto train cars and sent 285 miles south for production at the Indiana Harbor Works in East Chicago, Indiana.

Mining began at the site by opening the pit directly above the schist rock formation. As operations dug deeper, the pit expanded and deepened, eventually reaching nearly half a mile long. In the process of excavating to the southeast, miners ran out of schist rock and hit more porous rock formations filled with subterranean water that began flowing into the pit.

To keep the pit from flooding, the company installed huge pumps, removing millions of gallons of water per day from the pit during the mine's operation. The company projected that when the mine finally closed, the open pit would fill, creating a deep reservoir of crystal-clear water — a prediction that would prove correct some 40 years later.

Approximately 9 tons of material had to be removed to generate 1 ton of viable iron ore. As mining operations continued, several dump areas of waste rock and overburden were built near the open-pit mine. These waste sites were formed into steep-sided hills with successive stair-like steps. A tailings basin — a circular dike a mile across — was designed to accept a watery slurry of pulverized, nonferrous residue pumped from the taconite processing plant to settle and dry.

Mindful of reclamation during the mine operation, and with the help of the University of Wisconsin and plenty of fertilizer, Inland Steel began seeding these areas with non-native plant mixes. Their intent was to stabilize the area and make it useful for other purposes after the close of mining operations.

Because of the erodibility of the waste materials, the company attempted to establish vegetative cover to stabilize the slopes, using legumes, grasses and trees, plus a mix of wet-water plants around the tailings basin. This set the stage for native legumes including wild blue lupine to move onto the slopes from the surrounding landscape.

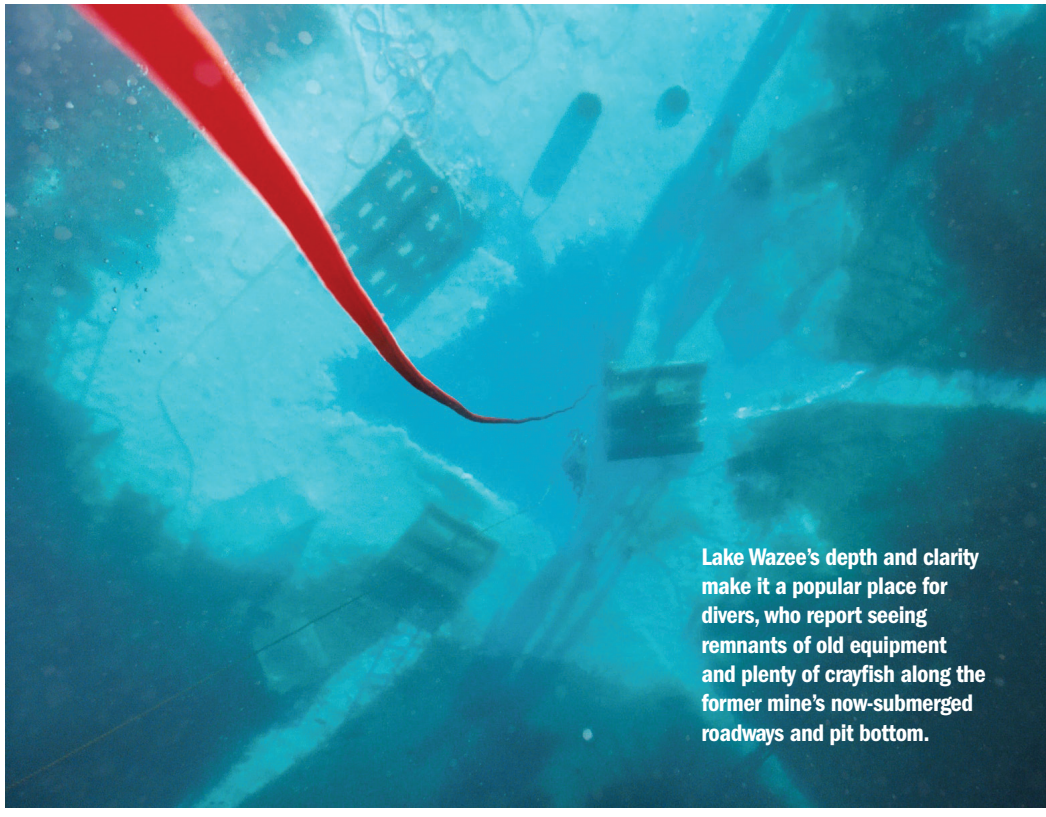
A park is formed

During 1982-1983, economic pressure from foreign steel imports and a decline in the U.S. economy forced Inland Steel to cease mining operations at the Jackson County mine site, 10 years earlier than originally planned. That year they turned off the pumps and let the waters rise, taking over two years to fill the lake with crystal clear water. Unable to find buyers, Inland Steel ceased operations, removed all equipment and dismantled the plant site.

On a summer morning in Black River Falls, Robert Hess, the Jackson County Forest and Parks Administrator with a mind for geology, and Keith Ferris, then the county board chair, made a trip to the top of the waste-rock pile farthest from the new and yet-unnamed lake to talk about the future of the site. Discussions began with the county board in short order to acquire and turn the now-full reservoir into a county park. The lake, at 355 feet deep and about 150 acres, would be unlike any other county recreation area in the state.

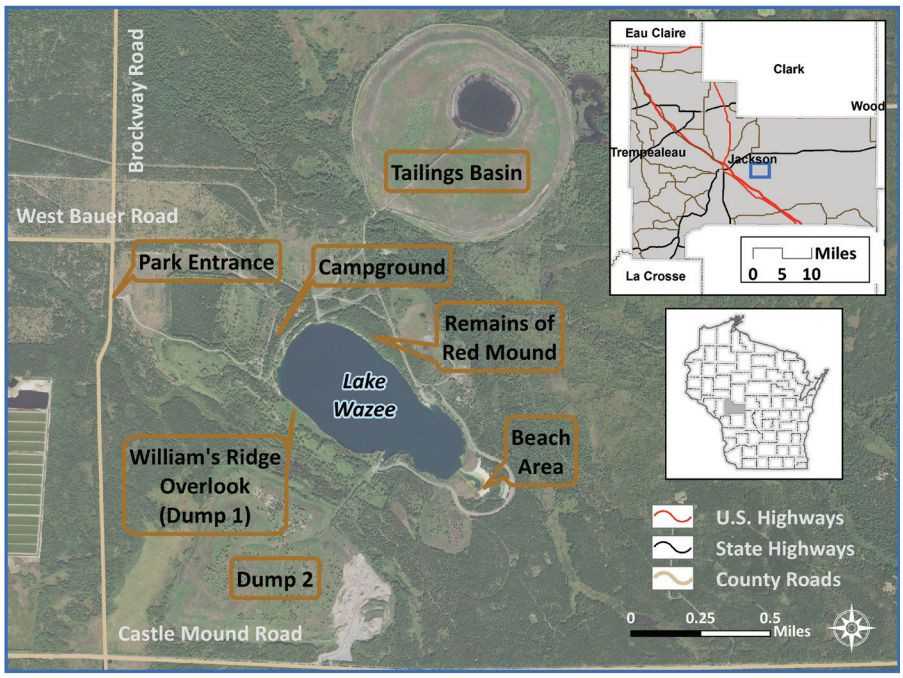
Discussions were successful and approximately 1,300 acres were acquired and turned into Wazee Lake Recreation Area.

Because the original mine reclamation plan would not allow preserving foundations or any other reminders of the ore-processing facility, all remnants of the former mine buildings were demolished. However, the road infrastructure and equipment staging areas remained, leaving a platform for the development



BLACK RIVER AREA CHAMBER OF COMMERCE

Lake Wazee's depth and clarity make it a popular place for divers, who report seeing remnants of old equipment and plenty of crayfish along the former mine's now-submerged roadways and pit bottom.



ANNA N. HESS

of a rustic county park.

Mining roads were converted into park roads and a small contact station was established at the base of a waste dump pile on the edge of the lake. A dry campground was built on the northwest side of the lake, while boat launches were established at locations around the lake where the mining roads had descended into the vast pit.

BLACK RIVER AREA CHAMBER OF COMMERCE

A variety of fish can be found at Lake Wazee, but no boat motors per park rules.

Building a better beach

As the mine owners had predicted, the lake was clear, cold and deep, allowing up to 40 feet of visibility during the summer months and more in the winter. In the mid-1990s, a beach was excavated away from the deep pit at a shallow inlet on the south end of the lake. The project required clearing of trees and brush.

The first summer after brushing, the newly endangered Karner blue butterfly was discovered at the site, delaying development for a full season. Negotiations with the U.S. Fish and Wildlife Service created a mitigation site at another location. Karner blues still inhabit the area.

With mitigation approved, bulldozers began removing stumps, but within days the vibration of the heavy equipment triggered a slow collapse of the sand banks into the mine pit, making equipment operation highly dangerous along the shoreline. A blaster dynamited several hundred yards of shoreline to accelerate the sloughing process.

Eventually, the shoreline stabilized and earth-movers excavated the inlet to form a shallow beach area safely removed from the deep waters of the pit. Natural bone-white, clean silica sand at the beach site created a local "swimming hole" popular to this day. Efforts to remove the invasives introduced during the Inland Steel reclamation activities — including crown vetch, alfalfa and phragmites — allowed native vegetation to establish in the park area.

As time went on, other park buildings were commissioned, including a shower-house and shelter at the beach area and bathroom facilities throughout the park. Fish cribs were installed at boat launches, resting on the old mining roads. Two overlooks were established, one atop the waste-rock dump directly adjacent to the lake (Williams Ridge), and one atop the remains of Red Mound, now a scarred cliff face overlooking the lake. The park also hosts many miles of trails, both graveled and paved, that wind around the lake and tailings basin and through the surrounding jack pine and oak savanna habitat.

Lake Wazee today

Without an outlet, the lake is slowly eutrophying and building sediment. Anglers can find rainbow, brown and brook trout, catfish, bluegills and bass. Huge carp also can be seen swimming in the shallows around the edges of the lake. Boat motors are not allowed on the lake, and ATVs and motorcycles are prohibited in park areas, all adding to the surrounding quiet.

Diving is very popular at Lake Wazee. The mix of slowly descending underwater roadways, steep cliff faces and deep waters provides opportunities for divers of different experience levels, who report finding remnants of old equipment, flooded stands of trees and a profusion of crayfish along the roadways and bottom of the old pit.

The success of the reclamation at Wazee was due to the type of iron ore and mining techniques conducted at the site. Mining of iron sulfide ores can result in the formation of acid runoff. The Jackson County operation was an iron oxide magnetite deposit, a strongly magnetic oxide generating no acid runoff, and also allowing magnetic extraction to remove the iron from the pulverized ore. When the pumps were turned off and the water filled the mine pit, there were no water-quality issues in the area, allowing the resulting lake to be stocked with fish.

Today, remnants of what excited the early German settlers are still visible in the park. Taconite pellets line the trails and strange mineral deposits are scattered among the red- and black-striped rocks. Red banks bleed color along the cliff faces and edges of the lake.

Large expanses of native oak savanna surround the park, home to birds, pollinators, turkeys and wolves. From swimming to fishing to hiking through nature, Lake Wazee is a great place to enjoy the history and wilds of west-central Wisconsin.

Julie Hess is a senior paper process engineer, moonlighting as a naturalist during her spare time. Anna Hess is a natural resource manager for the Minnesota DNR. *They'd like to thank Robert Hess for letting them bother him with questions about how the park was formed. Bob has more than 45 years of experience in resource management and worked at the Jackson County Forest and Parks Administration for more than 10 years. Thanks also to the Jackson County Forestry and Parks office for access to their archives.*

BRENDA VONRUEDEN

FIFTY YEARS of hunter safety

WISCONSIN'S EMPHASIS ON EDUCATION DATES BACK FIVE DECADES, EVOLVING WITH THE TIMES TO KEEP THE SPORT SAFER.

Brenda VonRueden and John Motoviloff

Given Wisconsin's strong conservation history, it should come as little surprise that it also has been a pioneer in the field of hunter safety. Following a dramatic increase in hunting accidents in Wisconsin in the 1950s and '60s, the Wisconsin Legislature enacted the state's first hunter safety program in 1967.

Assembly Bill 872 was signed into law by Gov. Warren P. Knowles and the story of hunter safety in Wisconsin unfolded in the 50 years that followed. While tools have changed over the years, the focus remains the same: to teach safe, responsible and ethical hunting. Come along on the journey and help celebrate this milestone.

The plaid years

Hunter safety history was made on the evening of Aug. 24, 1967, under the state's first Hunter Education Administrator Dale "Swede" Erlandson. Two girls and eight boys ranging in age from 12 to 14 received their embroidered emblems as graduates of the first Wisconsin hunter safety course.

It's interesting to note that the course content then was very similar to what it is now. Using various visual aids, volunteer instructors taught students to clean, store, safely carry, transport and handle firearms in all conditions and situations. Ammunition information, general sportsmanship, etiquette, landowner relations and discussion of rules and regulations also were included.

The effects of this new program soon were felt. In the decade before hunter education began, the 10-year average incident rate was 30 per 100,000 licensed hunters, while in the first 10 years after the start of hunter education, the incident rate fell to an average of 22 per 100,000 licensed hunters. As a further sign of the accomplishments of volunteer hunter education instructors over the past 50 years, the incident rate dropped in 2016 to a 10-year average of 3.6 per 100,000 licensed hunters.

The dedication of volunteer instructors was — and continues to be — the major factor in preventing hunting incidents. The other cornerstone of the education program is its funding from the Pittman-Robertson Act of 1937, which generates conservation monies via an excise tax on sporting arms, ammunition and certain archery equipment.

In 1973, the state saw two more firsts: The position of recreational safety specialist was created by the Department of Natural Resources and Wisconsin completed a fatality-free deer season for the first time in its hunting history.

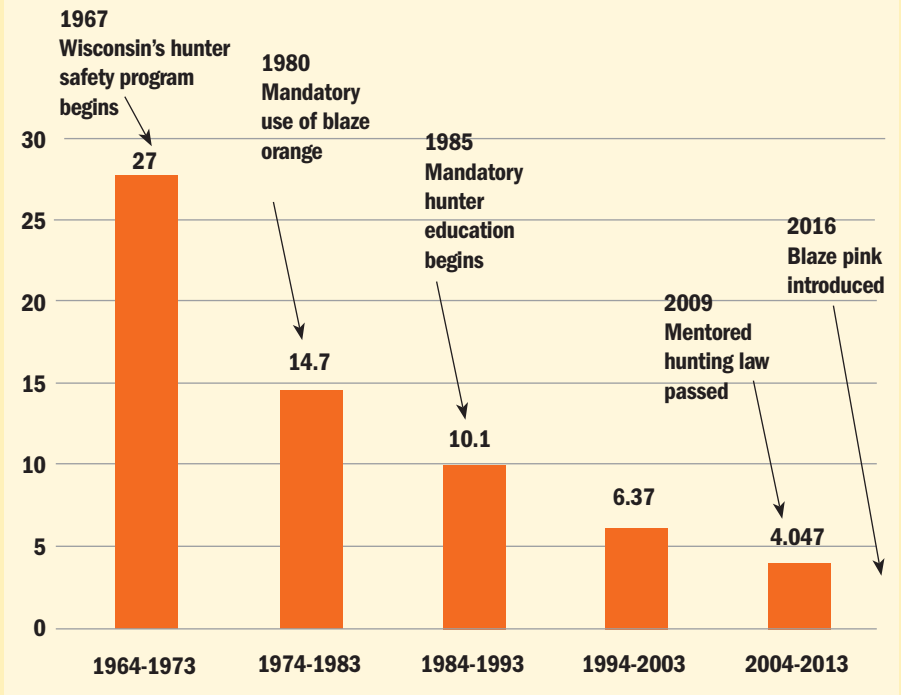
Six new recreational safety specialists were hired to help administer the DNR's safety education programs, including hunter education. These specialists — who remain today — were conservation wardens who served as law-enforcement safety specialists responsible for coordinating a recreational safety, educational and enforcement program within their assigned area, along with recruiting, training and monitoring the services of volunteer safety program instructors.

The blaze orange years

While hunters continued to pursue deer in traditional haunts, things were changing in the hunting world. In 1976, John Plenke Sr. was appointed to the role of hunter education administrator. Formal training workshops for volunteer instructors, which had been held only as time allowed, now were offered on an annual basis under Plenke's leadership.

"Realizing the goal of our program was to reduce accidents, it was time to

>>> HUNTING INCIDENTS SINCE 1964 (RATES PER 100,000 HUNTERS)



PENNY KANABLE

Hands-on learning has been emphasized in hunter education in recent years, including this 2015 class at McMiller Sport Center in Eagle. These students also were taking advantage of newer online options, completing their training as part of the Waukesha County Hunter Education Association's Internet Field Day.

step up our efforts to better equip the volunteer instructors with the necessary training aids to adequately teach our new hunters," Plenke said recently in recalling early hunter education efforts. "With the help of the district recreational safety specialists, more instructor workshops were formally held to address this need. With our guidance and training, the volunteer instructor corps grew in numbers and the program grew in terms of credibility."

In 1980, red-and-black plaid was replaced by blaze orange as the color Wisconsin law required hunters to wear while afield during the deer season. Studies have shown this simple change became the second most important factor, behind mandatory hunter education, in preventing hunting deaths and incidental shootings.

Mandatory hunter education came in 1985. Those born after Jan. 1, 1973, were required to attend and successfully complete a hunter education course. It was the first safety education certification program offered by DNR, and the importance of the requirement cannot be overemphasized.

Passage of this law led to a long-term decline in hunting incidents. In the following decade, incident rates per 100,000 licensed hunters steadily decreased — from 10.6 in 1985 to 4.8 in 1995.

The electronic age

Hunter education saw its share of changes in the 1990s, mostly related to the course materials used. In 1992, a new manual with redesigned graphics was published. In 1993, the acronym TAB was introduced to replace the previous "10 commandments" of firearm safety.

TAB reminded hunters to: T, treat every firearm as if it were loaded; A, always point the muzzle in a safe direction; and B, be certain of your target and what's beyond. The letter K was later added to the acronym, standing for keep your finger out of the trigger guard until ready to shoot.

The Junior Instructor Program also began in the early 1990s, allowing graduates of the program from ages 12 to 17 to assist adult instructors. The hunter education program took an exciting step into the electronic age in 1996, when Hunter Education Administrator Timothy Lawhern and Recreational Safety Warden John Plenke Jr. led the first CD/ROM hunter education course and field day.

Plenke Jr., who was closely involved in hunter education like his father before him, recruited 12 veteran hunter education instructors from Waukesha and Milwaukee counties to assist with the course, held at the Oconomowoc Sportsmen's Club. Students completed the classroom portion of the course on their own time, borrowing computer CDs from DNR service centers, before being tested on the content and completing hands-on exercises at the club.

Interestingly, this effort seemed to foreshadow later developments in both its pioneering format and the makeup of attendees, who were adults from 18 to 55. Both of those themes — alternative format of materials and adult attendees — would continue in the hunter education world in years to come. To this day, instructors note they are seeing many adults trying hunting for the first time.

Plenke Jr., a safety warden for more than 18 years and a proponent of the computer-based program format, credits volunteer instructors with being the bedrock of Wisconsin's hunter education efforts.

"It became apparent that the success of the program would rest on the shoulders of the volunteer instructors who were tasked with teaching it," Plenke Jr. said recently. "Basically, the program would not survive without the invaluable service, dedication and sacrifice of these men and women. To this day, the fact remains that the volunteer instructor is a critical piece of the overall program."

The instructor corps has worked in all 72 Wisconsin counties, offering some 1,200 courses a year, Plenke Jr. added. Between 1967 and 1997, for example, more than 600,000 students received their hunter education certification.

Lawhern, the DNR's longest-serving hunter education administrator, began his tenure in 1994 and spent 16 years in

the position, with notable accomplishments. Lawhern brought the CD/ROM-based course to the International Hunter Education Association (IHEA), which turned it into the first online hunter education course. He twice served as president of the IHEA and also was inducted into the organization's hall of fame.

"It was about what we got done in the program. This job was the perfect match for me and my talents, which worked best for both me and the state," Lawhern recalled. "I was fortunate enough to share a corner of my life with such quality people in the hunter education program and in the DNR. I was fortunate to be a partner with everyone involved."

Hands-on learning

In 1999, the hunter education program began to deliver a new method of instruction, drawn from multiple teaching styles and hands-on learning. The style is known as EDOC: E, educate or tell students what you want them to know; D, demonstrate the proper skill so students know the preferred way of doing things; O, observe each student as they verbally explain and physically demonstrate what has been taught; and C, congratulate every student as they perform the lesson properly.

DNR FILES

Red-and-black plaid was the look of choice for hunters before blaze orange became required attire in 1980.

DNR FILES

Certified volunteer instructors such as Joseph Petryk were instrumental in getting Wisconsin's hunter safety efforts off the ground. Petryk is shown here with students Brenda Biggart, left, and Deborah Sykora at the state's first hunter education class in August 1967.

The following year saw the first-ever Instructor Training Academy, held at the Wisconsin State Patrol Academy, with 40 instructors in attendance. According to Plenke Jr., now retired from his recreational safety warden duties: "The amount of initial skepticism I observed with volunteer instructors attending those training sessions to show them a better way to teach was amazing. However, when they left the training, many returned to their courses and implemented more hands-on and less lecture."

In 2004, 986 basic hunter education courses and 146 archery courses were offered in the state, certifying slightly more than 33,000 students. Of these, 91 percent were male. From 2004 to the present, the program holds the record for the largest volunteer instructor corps in the United States.

Changes come quickly

Rapid-fire change has been the rule for hunter education policies and procedures since the beginning of the 2000s. In 2007, the hunter education program held its first Hmong Vietnam Veteran instructor academy at the MacKenzie Center in Poynette. The next year, mandatory instructor recertification was put into place to keep credentials current, and the "Instructor Corner" on the DNR's website — dnr.wi.gov/volunteer/instructorcorner/ — became a central place for volunteers to find resources to manage their classes.

In 2009, the "mentored" hunting bill was passed. This authorized a licensed hunter age 18 or older to introduce hunting to anyone at least 10 years old. Approximately 12,000 new hunters participated during the pilot year, and mentored hunting license sales have continued to grow.

The year 2009 ended with 18 reported hunting incidents, shattering the previous record low of 31 incidents in 2007. A year later, 2010 became the first fatality-free gun deer season since 1973; 2011, 2013, 2014 and 2016 followed suit.

A million milestone, and more

In 2011, the hunter education program reached a major milestone when it certified its one-millionth graduate. The passage of 2011's Wisconsin Act 168 — which tasked the DNR hunter education program with developing an alternative way for adults to earn certification — prompted the advent of an online hunter education test-out option. New online course materials were introduced, allowing adult students to complete hunter education on their own time before attending an in-person test-out session.

In 2012, Jon King was named the DNR's seventh hunter education administrator and continues to hold the position at the writing of this article.

DNR FILES

Young hunters learn the proper way to cross a fence with a firearm under the watchful eye of their adult instructor during hunter safety training in Washington County in 1969.

Over the last five decades, hunters, volunteer instructors, the conservation warden service and other DNR staff have adapted to change and have grown the field of hunter education in Wisconsin. No doubt in the next 50 years the efforts will continue to evolve to meet the demands of the public, while maintaining the high standards the program has always followed.

Brenda VonRueden is the hunter education natural resources program specialist for the DNR, a position she has held for the past 10 years. John Motoviloff is the hunting and shooting sports program specialist for the DNR and writes the "Keeping It Wild" column for Wisconsin Natural Resources *magazine.*

Stemming the tide

STUDY SHOWS NO INCREASE IN SPREAD OF AQUATIC INVASIVE SPECIES.

Krista Kamke from Golden Sands Resource Conservation and Development, a central Wisconsin nonprofit group, finds a banded mystery snail while snorkeling in Porters Lake in Waushara County.

PAUL SKAWINSKI

Maureen Ferry

For five years, wielding rakes, nets and snorkels, teams of researchers and citizen scientists spread out across Wisconsin lakes searching for evidence of aquatic invasive species (AIS). Their purpose: to find out if occurrences of species like Eurasian watermilfoil, spiny water fleas, zebra mussels and purple loosestrife were stabilizing. Their findings: yes, there are signs that they are.

The effort was the largest of its kind and involved 150 volunteers and professionals who searched 1,000 lakes over a combined 3,000 hours. What they found is good news because it shows invasive species prevention outreach programs — like the Clean Boats, Clean Waters watercraft inspection program and the annual Fourth of July Landing Blitz and Drain Campaign — are working.

Invasion rates tend to increase, stabilize and then decrease. It is possible the stabilized rate of spread the study identified is because the number of lakes in Wisconsin that can be invaded has become saturated, but more research is needed to make this distinction.

The project was funded largely by federal money under the Great Lakes Restoration Initiative, which supports efforts to protect and restore the Great Lakes. Boaters are known to be the primary pathway for AIS spread in Wisconsin so researchers concentrated on lakes with public boat access.

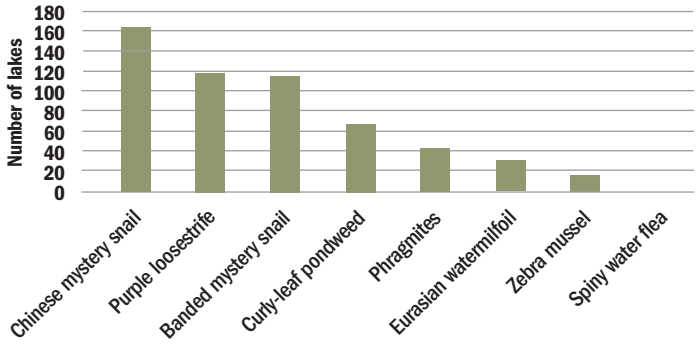
In addition to rates of spread, the study revealed some other surprising facts. Nearly 75 percent of the lakes surveyed had at least one AIS, which is more than researchers expected. While that number may seem high, not all AIS are equally problematic or damaging and many of the new discoveries were of the easier-to-handle variety.

Most detections were purple loosestrife, which has an effective biocontrol agent — insects that eat only it — or mystery snails, whose level of negative impact is unclear.

The most problematic invasive species — like Eurasian watermilfoil, zebra mussels and spiny water flea — were uncommon. The data show that 75 percent of the lakes monitored don't have Eurasian watermilfoil, more than 90 percent of lakes don't have zebra mussels and 99 percent of lakes don't have spiny water flea. Since these species can impact recreation and be difficult to manage, their relative absence from most lakes is a welcome discovery.

Another important outcome was the discovery of 550 previously unrecorded AIS populations, most of which were found in lakes that had never before been monitored, reflecting a need for

>>> NEW DETECTIONS 2011-2015



more people searching for and reporting AIS.

Early detection is key

Importantly, few of these new detections would be considered early or "pioneer" populations, or species that are newly established in a lake. In fact, they may have been there for a long time without being noticed (see sidebar). For example, of the 31 new Eurasian watermilfoil detections, only five were actually pioneer populations. This suggests two things: Invasive species are widespread and an increase in early detection monitoring capacity is needed.

However, the few early detections enabled quick responses to remove these pioneer populations and stop them from spreading to other lakes. DNR researchers are finding that early detection is critical for more effective control of invasive species. Wisconsin is well-poised to respond to pioneer populations with Early Detection and Response (EDR) grants, which fund efforts to manage newly established AIS populations to prevent them from spreading throughout a lake or to other lakes.

The new detections showed, most importantly, that DNR needs to better target monitoring to catch AIS early. Citizens play an important role in monitoring and reporting early populations. The DNR is identifying public access waterbodies near known occurrences of prohibited invasive species, making them vulnerable to their spread. The DNR will be working with the Citizen Lake Monitoring Network to increase citizen involvement.

When DNR staff, partners and volunteers know what species look like and work together to find these populations early on, the potential for eradication increases. DNR works to continue to foster those partnerships.

Bob Wakeman, the statewide DNR AIS program coordinator, sees the findings of a constant rate of spread as encouraging, but also an indication that more work needs to be done.

"While the stable invasion rate might suggest that our AIS prevention efforts are having an impact, we would like to see a decline in the rate of spread," Wakeman says. "Our next steps are to identify gaps in our education and outreach program to boaters and others that transport and introduce invasive species so we can decrease new introductions."

Those efforts include the streamlined Clean Boats, Clean Waters watercraft inspection grants and the annual Fourth of July Landing Blitz and Drain Campaign, which are crucial to stop AIS from reaching new lakes. Wakeman also notes that new efforts to reach previously uncontacted water users, such as waterfowl hunters and water gardeners, can further limit the spread.

DNR will refine outreach to boaters to remove sediment from anchors and equipment to stop the spread of small-bodied AIS like spiny water flea and Asian clam. These prevention efforts could be evaluated during future rate-of-spread studies.

While the five-year monitoring project may have come to a close, the lessons learned will continue to help AIS staff and volunteers. The Citizen Lake Monitoring Network will adapt these early detection methods to kick off a Snapshot Day program to provide citizens training and resources to join the early detection campaign and help detect AIS in their area. Check out the Wisconsin Citizen Lake Monitoring Network at www.uwsp.edu/uwexlakes to learn more. You can also participate in the statewide AIS Snapshot Day this August, where volunteers will be trained to recognize AIS and sample a local lake or stream from a public access point.

Visit the DNR's AIS website (dnr.wi.gov/lakes/invasives/) to find out more about the distribution of AIS in Wisconsin and how to prevent their spread.

Maureen Ferry is the aquatic invasive species monitoring coordinator in DNR's Bureau of Water Quality. The design for the rate-of-spread study discussed here was developed by the Bureau of Water Quality's Scott Van Egeren, lake and reservoir ecologist, and Alex Latzka, Wisconsin Water Resources Policy Fellow. Also contributing to the story were: Ellen Kujawa and Alison Mikulyuk, from the Bureau of Water Quality; Paul Skawinski, UW-Extension Lakes' Citizen Lake Monitoring Network educator; Tim Campbell, UW-Extension AIS communications specialist; and Jenny Seifert, UW-Extension AIS outreach specialist.

>>> SUCCESS FOLLOWS EARLY DETECTION

The five-year effort to determine the rate of spread of aquatic invasive species (AIS) also unveiled several discoveries of newly established AIS populations that if left undetected could have expanded, making management more challenging and costly. These early detections offered opportunities to implement management, like hand-pulling, engaging AIS grants and evaluating new prevention techniques.

For example, the early detection of yellow floating heart, a released water garden plant, in the Nicolet National Forest's Lake Gordon in 2013 allowed managers to jump to action. We are confident this population of yellow floating heart will be eradicated due to efforts of local partners and DNR to hand remove the plants and raise awareness of releasing garden plants.

Other water garden releases, like water hyacinth and water lettuce, were found and removed by volunteers, partners and DNR staff in the Mississippi River, Lake Winneconne and Lake Mendota. Results are encouraging so far; citizens and DNR will continue surveillance. Similarly, volunteers in Porters Lake near Wautoma discovered several acres of scattered Eurasian watermilfoil in 2012. Thanks to quick action by Citizen Lake Monitoring Network volunteers, partners and an AIS Early Detection and Response grant, the plant was nearly eradicated in less than a year's time.

Not all new invasions found can be eradicated but their spread can be prevented. Asian clam was discovered for the first time within state borders in four lakes in southeast Wisconsin during this five-year study. This species can harm the food web more than zebra mussels and can be transported in sediments attached to anchors.

Volunteers and partners work to promote awareness of these species and contain them in the newly invaded lakes. For example, the Friends of the Mukwonago River received an Early Detection and Response grant from DNR to implement regional Asian clam monitoring and outreach.

Such also was the case with the discovery of spiny water flea at Star Lake in Vilas County. This harmful species can be transported in leftover water from bilges, livewells or mud on anchors. Lake associations throughout Vilas County have been receiving Clean Boats, Clean Waters grants to help stop the spread of this and other AIS.

Likewise, faucet snails, which can host parasites known to kill waterfowl, were identified in a southeast Wisconsin lake and the Winnebago System. These snails attach to plants and rocks and burrow in sediments. The discoveries of these new species identify the need to go beyond simple removal and adapt prevention messages to target more specific behaviors, such as cleaning anchors and draining livewells. The rate of spread of these species could be determined in the future to evaluate the success of revised prevention campaigns.

Moving forward, DNR, the Citizen Lake Monitoring Network and other partners will target vulnerable sites to increase early detection and response and learn from experiences to adapt and evaluate prevention techniques.

It's elk country once more

BLACK RIVER HERD GETS SETTLED IN.

With encouragement from biologist Scott Roepke, elk calf #274F leaves a DNR trailer on her way to rejoin the herd in Jackson County.

Story and photos by Ben Gruber

Six inches of fresh, heavy snow covered the gravel town roads and paved state roads as I began an early-morning trek to the Black River State Forest last December. My old Ford truck was locked in four-wheel drive for all 60 miles.

I saw few critters and even fewer signs of humans in the frigid forest and marsh country. With snowshoes, layers of wool hunting clothes and camera at the ready, I could have been in Montana. Except it's pretty flat here in west-central Wisconsin and about 1,000 miles to the Rocky Mountains. This was a different kind of elk country, but elk country nonetheless.

I'd been meaning to make the trip to Jackson County and check in on its newest residents for a while. Only an hour away from my central Wisconsin farmhouse is a herd of elk, introduced in 2015-16 and still exploring their new forest home.

When I contacted Kevin Wallenfang, DNR's state deer and elk ecologist, about trying to get a view of them, he directed me to Scott Roepke, DNR wildlife biologist stationed in Black River Falls. Roepke was accommodating and we set a date, although he cautioned that we might not actually see an elk.

"Meet me at the office in Black River Falls at 8 a.m.," his email said. His agenda called for a drive through the herd's core area, where he would use radiotelemetry equipment to conduct mortality checks.

A shoebox-sized monitor detects radio signals transmitted from collars worn by the elk. Each collar has its own frequency, a unique signal that identifies an individual elk. An elk's collar also has the ability to identify when it hasn't moved in four hours — when the cadence of the signal changes — indicating a potential mortality.

In inclement weather, Roepke said, elk will often curl up in a tight ball for at least four hours to conserve energy and warmth, which triggers a mortality signal. On cold days, he makes a note of mortality signals and investigates the following day if the elk still hasn't moved.

About 20 miles from the Black River Falls DNR Service Center, I came upon the first roadside sign proudly proclaiming "The Elk Are Back in the Black River Country." Growing up in southwest Wisconsin, I dreamed of hunting elk in the Rocky Mountains, so it was a captivating feeling knowing I was in "elk country." I imagined around the next corner could be a bull elk following his herd.

My pickup truck prevailed over the snowy roads and I arrived at Roepke's office with time to spare. We shook hands and Roepke said he had just gotten off the phone with a concerned landowner reporting a wayward elk calf on his property. Locals have largely been accepting of their new cervid neighbors and are quick to call when they find them in unexpected locations.

Roepke was able to pull some relevant data and GPS locations from his computer and had a good idea which calf this was. He suspected the calf had somehow gotten separated from the herd and was about 5 miles from its mother. Away from the herd, the calf's chances of survival were questionable. Because it was one of the first elk born in these woods in 150 years, we were going to do our best to reunite the family.

Scott Krultz, a DNR wildlife technician out of the Black River Falls office, was ready to go with a gooseneck stock trailer hooked to his truck. Roepke readied some sedatives in case we managed to get close to the calf. A student from a nearby high school showed up for a job shadow, and the four of us were ready to head out. For freelance writers and high school job-shadowers, the day looked promising.

A quick 15-minute drive to the southeast and Roepke slowed as we neared the area where one group of elk had been spending a lot of time. Elk tracks were visible from the road in the fresh snow; clearly they were grazing here late last night or early this morning. We spotted a lone cow elk, casually grazing on some evergreens near the road.

A few miles further we pulled into the driveway of the person who had reported the calf near their home. They pointed out the direction the calf had last been spotted a few hours earlier. Unfortunately for us, the calf's tracks showed it had headed into some very thick tag alder swamp.

Krultz headed one way to find a safe

place to park the trailer while Roepke and I headed the other way, our eyes peeled for an elk calf. We'd gone less than 100 yards when we spotted the youngster 25 paces off the road. Roepke channeled his inner sniper and snuck a tranquilizer dart through the tag alders, connecting with the calf in one shot. She — Roepke confirmed by her ear tag it was, in fact, the female calf he had suspected — laid down right there and we slid down the steep, snowy ditch bank to her.

Krultz covered her eyes with a hood and held her head gently to maintain an open airway. An ice fishing-type sled was produced, we loaded her in and scrambled up the steep bank, sled and elk in tow.

Working against time, Krultz jumped in the sled with the calf, and the rope was secured around the tow hook of Roepke's truck. With the road snow-and-ice covered, he simply backed slowly down the road to where the trailer was parked and pulled the sled right into the trailer, gently rolling the calf out. The DNR staff gave her a quick once-over, determined she appeared healthy and administered an injection to reverse the sedative.

I was feeling pretty satisfied at my experience thus far — pulling elk calves in sleds behind trucks hadn't been on my radar that morning. Judging by the ear-to-ear grin, there was a high school student who was pretty impressed with his experience, too.

Once the drug wore off and elk calf #274F was able to stand and balance on her own in the trailer, we headed off to the last known location of the rest of the herd, based on what Roepke's telemetry equipment indicated. About a 15-minute drive had us in the general area. We got as close as we could, opened the trailer door, and the calf calmly exited the trailer. After a little persuasion, she headed down the trail in the direction of the herd.

With that mission completed, Krultz headed back to the office with the trailer while Roepke and I continued with the planned mortality checks. These checks are a good way to monitor the herd without being intrusive and the drive allowed us plenty of time to talk elk.

Roepke told me he took this job because of a desire to work with elk. He attended UW-Stevens Point's College of Natural Resources and did his master's work on Wisconsin's Clam Lake elk herd. He's also an avid elk hunter, taking regular trips west to hunt the regal mountain bulls.

He seems content with how the reintroduction efforts in the Black River State Forest are going so far. Public support has been high, with 85 to 90 percent of local folks happy to see the elk back. It's a multi-agency effort with involvement from the Ho-Chunk Nation, the Jackson County Wildlife Fund — a local nonprofit conservation group — and nationally, the Rocky Mountain Elk Foundation.

The latest elk being reintroduced in Wisconsin have come from Kentucky. A team from the Wisconsin DNR travels south to assist Kentucky Department of Fish and Wildlife Resources with the trapping. They erect a round, pen-like trap and bait the elk. Using remote cameras when possible to see when there is a large enough group of elk in the pen, they trigger a remote gate closer. However, in most cases a trip wire is used.

The work entails sleepless nights, travel on remote mountain roads and sometimes days on end without a capture. In 2016, the capture crews encountered very warm conditions, heavy rain and a record acorn crop, all of which made enticing elk to baited sites difficult.

Now that the elk are back in the wild in Jackson County, Roepke keeps tabs on their whereabouts with GPS and telemetry. Ninety-five percent of the GPS pings come from inside "elk range." If a group wanders too far outside the designated range for too long, DNR staff work to move them back, either via trapping or tranquilizing.

DNR wildlife technician Scott Krultz holds a sedated and masked elk calf in a sled during efforts to relocate the animal.

At the time of this magazine's publication, the cows should be calving. Roepke, Krultz and other DNR staff work with volunteers to find the newborn calves and fit them with radio collars and ear tags. Throughout the year, crews do habitat work to maintain current open meadows and create new ones through brush clearing and controlled burning, Roepke said.

On that December day, we finished our morning by checking on a few other small elk groups. The telemetry signals didn't give any indications of mortality and we didn't see any more elk. We did, however, see plenty of signs of their presence.

Elk are once again roaming the woods and meadows of central Wisconsin, and that makes me happy. I'll be back in the fall, hoping to hear a rutting bull elk bugle in Wisconsin's central forest.

Ben Gruber is a freelance writer who calls a small farm in central Wisconsin home. He also is the vice president of Kids and Mentors Outdoors, or KAMO, and can often be found exploring the outdoors with his 3-year-old daughter. He can be reached at bwgruber@gmail.com.

>>> CLAM LAKE HERD GROWS

The new elk of the Black River State Forest in Jackson County are just part of the population being reintroduced in Wisconsin, a process that is ongoing. In Ashland, Price and Sawyer counties, the Clam Lake herd dates to 1995, when elk were brought from Michigan. In late March, 28 more elk arrived in Sawyer County from Kentucky to make their home in the Flambeau River State Forest.

"The task of actually bringing elk to Jackson County is complete, and we are now shifting our relocation efforts to the northern herd," said Kevin Wallenfang, DNR deer and elk ecologist. "Our hope is to deliver up to 75 elk to the Clam Lake area over two years, but we have an option to return for a fifth year if necessary."

Adding elk from Kentucky to the Clam Lake herd — done in cooperation with the Kentucky Department of Fish and Wildlife Resources — is expected to boost herd growth and introduce new genetics. The latest efforts mark the third year in the DNR's current five-year plan to bring elk back to Wisconsin, a program with funding support from partners including the Ho-Chunk Nation, Rocky Mountain Elk Foundation, Jackson County Wildlife Fund, Chippewa tribes and others.

For more on the DNR's elk reintroduction efforts, including a video of the March elk release in the Flambeau River State Forest, visit dnr.wi.gov and search keyword "elk."

The Fish and Wildlife Account Report

Tackling the funding gap

Fish and wildlife management provides critical support for hunting, fishing, trapping and other outdoor recreation while benefiting Wisconsin's economy, image and quality of life. Demographic, cultural and land use changes are contributing to a license sales decline and reducing funds available for management work.

In the 2015-17 budget, lawmakers directed DNR to address the $4 million to $6 million annual gap in the Fish and Wildlife Account between revenue and authorized conservation work. DNR has submitted a report to the Legislature outlining options to increase revenue as well as close the funding gap if no new funds become available.

The DNR has also undertaken a major strategic alignment effort to prioritize workload and align functions to be as efficient with funding and staff as possible in order to accomplish priority work with existing resources.

Outdoor recreation destination

TOP 10

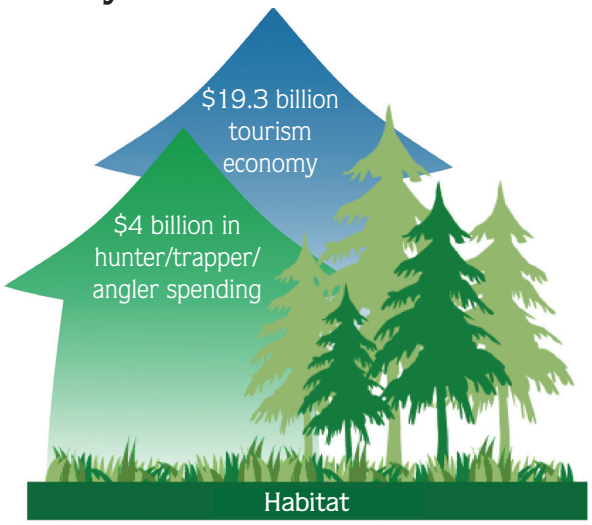
Wisconsin ranks among the top 10 states in multiple categories.

- → #1 in Boone and Crockett and Pope and Young trophy bucks
- → #1 in bear harvest
- → #2 in total number of hunters and #3 in number of trappers
- → #3 in total number of visiting anglers, behind Florida and Michigan
- → Top 10 in total number of deer, turkey, Canada geese and ducks harvested
- → Top 10 in number of bass and walleye
- → #1 in the world for largest lake sturgeon population

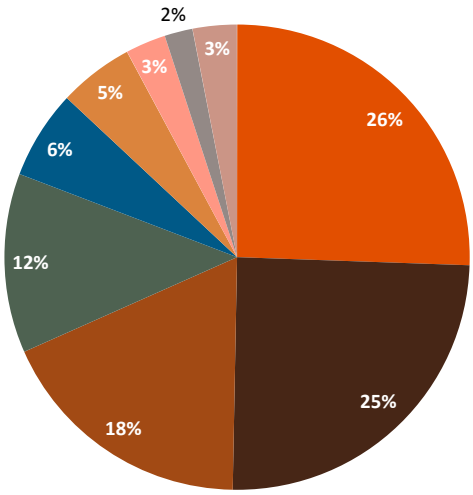
Source of conservation revenue

Hunters, anglers and trappers fund 90 percent of fish and wildlife management in Wisconsin through license fees and excise taxes.

Economy and environment



Programs funded by the Fish and Wildlife Account



- Law Enforcement (26%)
- Fisheries Management (25%)
- Wildlife Management (18%)
- Support Programs (12%)
- Debt Service (6%)
- Facilities and Lands (5%)
- Program Management (3%)
- Science Services (2%)
- Natural Heritage Conservation, Development, Aids, Administration and Acquisition (3%)

Conservation for All

Ninety-six percent of respondents to a statewide survey agree that thriving fish and wildlife populations boost the economy.

Addressing the gap

DNR's report to the Legislature identifies options to increase revenue as well as options to minimize the need for additional revenue through greater efficiency and prioritization.

Many of the options below would require approval by the Natural Resources Board and Legislature. No single option would solve the gap and DNR looks forward to working with stakeholders to find sustainable solutions.

Options to increase revenue

Link license fees to increases in the Consumer Price Index or other costs.

Enact a one-time license fee increase to reflect recent inflation or bring underpriced licenses in line with comparable fees in other states.

Set uniform discount rates for similar groups of licenses such as Junior, Senior or combination licenses. A simpler fee structure could increase revenue and establish consistency for the public.

Eliminate or reduce first-time buyer licenses, which provide discounts of up to 75 percent for residents and 50 percent for non-residents. Recent analysis shows these discounts are not effectively recruiting new participants but are significantly reducing revenue.

Offer new and flexible license packages. New combinations of licenses and other options may better respond to today's customers given that sales of Conservation Patron and Sports licenses have dropped more than 40 percent over the past decade.

Offer customer engagement and loyalty programs. This option might include loyalty discounts for repeat buyers, automatic renewals and other options recommended by the Sporting Heritage Council to retain and reactivate hunters, anglers and trappers.

Individual access fee for state wildlife, fisheries and natural areas. Wildlife watchers, hikers and others would pay admission to access the more than 600 DNR state natural, fishery and wildlife areas. Access would be included with regular license purchases.

Non-motorized watercraft registration fee. Fees for kayaks, canoes and paddleboards could help cover the costs of boating facilities, safety and enforcement activities. Wisconsin owners now voluntarily register some 18,000 non-motorized craft, paying $11 for a three-year cycle. An estimated 335,000 non-motorized craft use Wisconsin waterways each year.

Gift cards and e-license gift certificates. Gift cards and online gift certificates would respond to customer interest and could help increase revenue.

Other options to address the funding gap

- → Continue to prioritize work and focus on core needs as part of DNR's strategic alignment effort.
- → Reduce collaboration with conservation groups on habitat development and management projects.
- → Decrease habitat management and invasive species control, which would result in less game produced on public land.
- → Reduce pheasant stocking by 50 percent.
- → Cap enrollment in the Deer Management Assistance Program.
- → Reduce trout habitat work and fish stocking.
- → Continue to leave 2,000 acres of wetland impoundments unmanaged, reducing waterfowl reproduction.
- → Reduce acquisition of stream bank easements.

Keeping it wild:
Outdoor food and forays

TROUT DEMYSTIFIED

John Motoviloff

On the stream

It's true that trout have been the subject of a lot of printer's ink over the last 400 years — from Izaak Walton's "The Compleat Angler" in 1653 to Norman Maclean's "A River Runs Through It" in 1976 and well into the present. It's also true that these beautiful fish demand cold, clean water to survive.

But this is where the thinking can go wrong. From these fish facts, anglers and writers have often shrouded trout in a mystique that seems to put them beyond the reach of average anglers. In fact, nothing could be further from the truth.

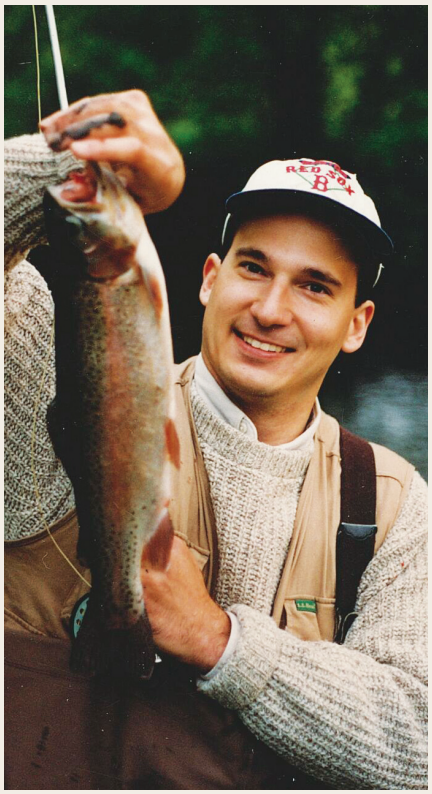
Stream trout fishing in Wisconsin requires only basic gear, a fishing license and a trout stamp. What's more, our state boasts more than 13,000 miles of streams. Translation: You've landed in the right time and place to be a trout angler!

Stealth, stealth and more stealth

Like many old stereotypes, there's truth to the notion that trout can be hard to catch. They live in clear water and have excellent eyesight as well as a very sensitive lateral line — they're experts at sensing movement. But this isn't as daunting as it sounds.

To counteract the trout's wariness, anglers can fish in low light conditions or when the water is slightly off-color, such as after a rain. This helps flip the odds from "advantage trout" to "advantage angler." Mornings, evenings and cloudy days are all productive fishing times. If a gentle rain "colors" the stream, so much the better.

You can, however, catch trout on a sunny day while fishing clear streams. You'll just have to slow your approach and minimize noise and disturbance. Fish upstream instead of downstream, and stay out of the water. Avoid casting your shadow over the creek by keeping a low profile. Use the streamside cover to your advantage.



STEPHEN M. MILLER

Trout may not be the easiest to catch, but the right approach will help land a prize.

Less is more

Light line is also crucial to trout fishing success. Spinning anglers should use 2- or 4-pound test line on an ultralight rod. These short rods are helpful while fishing in the thick tree canopy, and ultralight action helps detect soft strikes. Lures and bait on light line also sink more realistically — there is less resistance in the water. Fly anglers should use a 5x or 6x leader on a 4- or 5-weight rod.

As far as streamside gear, less is definitely more, as you will be moving through dense cover. Lightweight hip boots or waders are musts for crossing creeks or getting within casting range. Tennis shoes and long pants — to protect your legs from skin-irritating streamside plants — do the trick in hot weather.

If you plan on keeping trout, a creel that allows for air circulation and water drainage is a must. Old-fashioned wicker creels fit the bill, but can be cumbersome in the woods. I carry a small burlap bag (which formerly held Basmati rice) fitted with a shoulder strap. Mesh citrus or onion bags also will work.

Canvas shoulder bags commonly found at military surplus stores make good creels; don't hesitate to make a few small holes in the bottom to allow for drainage. A sharp Rapala or folding knife is all you need to clean trout.

Worms and spinners and flies, oh, my!

Much — perhaps too much — is made of the different methods of trout fishing. These divisions, like many in the outdoors world, are superficial. A limit of ducks can be secured through jump shooting, pass shooting or decoying; one method is no better than another. The trick is to match the approach to your preferences and to the conditions at hand.

With trout, worms and minnows work well early in the season and in slightly roiled water, when the fish are feeding aggressively. Use a size 8 or 10 hook, with one or two split shots clipped above it, and let the current carry the bait in a natural way.

Artificial lures that represent minnows, worms or crawfish perform well in these same conditions. Lures can be worked upstream, across the stream or downstream, depending on cover and conditions. Traditional favorites are small spinners, plugs and jigs.

Flies have the advantage of being able to imitate the entire spectrum of trout prey — from small nymphs and mayflies to large baitfish and crawfish to terrestrial insects. Large streamer patterns such as a Woolly Bugger and Marabou Leech are good during early season or times of high water, when fish are less wary. An excellent go-to fly, especially in the spring creeks of southwest Wisconsin, is a size-16 scud in pink, olive or tan. A Pheasant Tail Nymph of the same size is another standby.

Otherwise, an approach of match-the-hatch is best — observing insects in the air and emerging from the water and matching your fly choices to them. Reliable dry flies include an Elk Hair Caddis, Bluewing Olive and small midge patterns such as a Griffith's Gnat. For the Hexagenia hatch — a large nighttime hatching mayfly that emerges in June and July — a light-color pattern in a size 6 or 8 is about right. Grasshopper and cricket patterns can be deadly in late summer and early fall.

Streams, streams everywhere

Wisconsin has an embarrassment of

trout-stream riches. The spring-fed streams of southwest and western Wisconsin produce both numerous and large trout. Notable here are Castle Rock Creek, the Big Green and Blue rivers in Grant County, as well as the coulee streams of Crawford, Vernon and La Crosse counties. Western Wisconsin standouts are the Rush and Kinnickinnic in Pierce County.

Central Wisconsin streams worthy of mention include the Mecan River in Marquette County, the White River in Waushara County and the Tomorrow River in Waupaca County. Leading the pack in the state's Northeast are the Wolf, Prairie and Plover rivers. The storied Bois Brule in Douglas County and Namekagon in Sawyer County are tops in the Northwest.

Thanks to streambank ownership and easements throughout the state secured by the Department of Natural Resources, there is easy public access to many streams. However, the vast majority of streams are found on private land.

Always secure landowner permission before entering private land, and never hesitate to thank landowners. However, as trout streams are navigable waters, they are open to fishing and other forms of outdoor recreation. Anglers seeking to fish streams where they don't have permission from the owner of lands adjacent to the stream must keep their feet wet and enter at bridge crossings or other legal access points.

In the pan

Just as trout are challenging quarry on the stream, they make for unparalleled eating on the table. The pink flesh tastes like a delicate version of salmon — a change from the usual white-fleshed suspects like panfish and walleye.

Bathed in poaching liquid, rolled in cornmeal and crisped in bacon drippings, or grilled Teriyaki style, they are equally good. To do them justice, however, a few points need to be kept in mind.

Keep it cool

While most gamefish and panfish to be eaten are kept in ice chests or livewells, this isn't practical on the tight, brushy quarters of a trout stream. To ensure good eating, trout you plan to keep should be quickly dispatched by a quick strike to the back of the head on a rock or with a stout stick.

The trout should then be gutted as soon as possible by running the knife from the anal fin to the gills and pulling out the offal and gills. Rinse the fish in the stream, using your thumbnail to remove any blood matter from the cavity. Keep in a cool and breathable creel.

Eyes on the prize

You are now in the enviable position of choosing what to do with your trout. Ask yourself the following questions: Will the fish serve as an appetizer or main course? Are they large or small? Hatchery or wild? This will help guide your meal choices.

The culinary gold standard, in this angler's opinion, is one medium-sized, pink-fleshed trout per diner. These will likely be brown or brook trout; there's little natural reproduction among rainbow trout in Wisconsin streams. Select fish in the 9- to 12-inch range. Smaller and they seem scant; larger and they don't crisp properly.

Inspect your catch inside and out and remove any stray blood or debris. Run the fish under cold water, blot dry and set it on a clean platter.

Rub them inside and out with a cut lemon. Season with sea salt and fresh-ground black pepper. Let these flavors sink in for a half hour, then dredge the fish in your breading of choice, shaking off any excess.

A mixture of half cornmeal and half flour — seasoned with Old Bay Seasoning — is my favorite. The variety of breading and seasoning is limited only by your imagination: panko, flour, breadcrumbs, savory herbs, paprika, Cajun seasoning or a pinch of cayenne. Just bear in mind that you want to enhance the taste of the fish, not overpower it.

Before heating your skillet, consider the ratio of cooking space to fish. A 10-inch skillet will comfortably fry three pan-sized trout. If you have fewer fish, use a smaller skillet. If you have more fish, heat two skillets or cook in batches, removing the cooked fish to a warm (250-degree) oven.

As with seasonings and breading, there is a universe of shortening out there for cooking. I've settled on a mixture of peanut oil and butter. Bacon drippings, canola oil and sunflower oil also work well. Add your choice of cooking grease to the skillet and heat to medium.

Place the fish in the bubbling drippings. Cook until golden brown and about to flake, then flip. Repeat for the other side. Depending on your skillet, stove and fish, this will take anywhere from 4 to 8 minutes per side.

Have your sides — cornbread and greens, fried potatoes and salad, wild rice and asparagus — ready, and serve hot trout right from the pan. To debone, gently grasp the spine just below the gills, with the inside cavity facing up. "Comb" the meat away from the bones using a fork or fingers.

There are plenty of other ways to cook trout. The oilier flesh of larger trout takes well to slow smoking or poaching in an herbed broth. Trout this size — 14 inches or larger — can also be filleted, then baked or grilled.

When appetizers are desired, the sweet flesh of trout can be substituted for crab in any crab cake recipe. Simmered with bacon, corn and potatoes, trout also makes first-rate chowder.

John Motoviloff is a hunter, fisher, forager and proud Wisconsin transplant. He also wrote "Wild Rice Goose and Other Dishes of the Upper Midwest" (University of Wisconsin Press, 2014).

PAN-FRIED TROUT

SHUTTERSTOCK

Three 9- to 12-inch brown or brook trout, gutted

Salt and fresh-ground black pepper to taste

½ cup white flour and ½ cup yellow cornmeal or breading of choice

1 tablespoon Old Bay Seasoning, or seasoning of choice

2 tablespoons peanut oil and 2 tablespoons butter

Lemon wedges

1. **Clean fish well, season with salt, pepper and lemon and allow to marinate at room temperature for 30 minutes.**
2. **Combine flours and seasoning; dredge fish, shaking off extra breading.**
3. **Heat a 10-inch skillet over medium heat, about 5 minutes. Add oil and butter.**
4. **Cook fish until brown and nearly flaking from bone — about 5 minutes per side.**
5. **Serve hot with lemon wedges.**

Readers Write

HILDA'S BEHAVIOR EXPLAINED

I read with interest the story about the pet grouse, Hilda, in your April issue ("Hilda, the unmuffled grouch"). I have dozens of photographs of a grouse that has followed my activities during daylight hours. She has been spotted 31 times on our acreage from May 2016 to March 2017. It's uncanny how similar the stories are. I observed the grouse charging at my dropped gloves, following the truck and tractor on the trails, coming to the ground deer stands and hanging around when we hoed the garden. Family members have also watched in fascination as she carefully came closer to them. She did not allow contact.

Robert Oelke
Hatley

Mark Witecha, Upland Wildlife Ecologist in DNR's Bureau of Wildlife Management, replies: Certain grouse species are known to occasionally exhibit this type of "tame" behavior. Oftentimes, it is juvenile males or a bird that inhabits an area where grouse are not heavily hunted. Regarding the tracking of vehicles, they may be interpreting the engine noise as drumming. They may also be acclimating to humans that are feeding them, which we strongly discourage. These birds tend to not be truly tame, as they will still exhibit strong survival instincts when encountering predators such as hawks.

FEBRUARY ISSUE A "KEEPER"

The February 2017 issue of your magazine was a real gem. I'm forwarding it to my granddaughter at UW-Stevens Point, majoring in recycling, but I want it back as a "keeper." Several articles will be of great interest to her. For me, the groundwater section is a great comprehensive section, which I'll keep until you publish another one. The magazine has been important to me for many years.

P.S. I'm 88, graduated in 1951 in chemical engineering.

Vern Ziegler
Menomonee Falls

MUSHROOM MISIDENTIFIED

On page 30 of the April 2017 issue of your magazine, the picture of what was identified as a "hen of the woods" mushroom looks nothing like what I harvest every fall. The interesting thing is I have never seen this variety of mushroom in central Wisconsin. I think it's a northern tooth (*Climacodon septentrionale*) which is NOT edible! I am not an expert on mushrooms and only hunt and eat certain varieties that I am familiar with. I am pretty sure that it is neither "hen" nor "chicken" of the woods.

Gary Kunz
Fall Creek

*Our thanks to you and other readers for pointing out this misidentification. It illustrates the difficulty of confirming the identification of species from photos, and in this case, the risk it sometimes involves. Sources say the northern tooth is not poisonous but is considered inedible because it is tough and bitter, especially when mature. On the other hand, the mushroom commonly called hen of the woods (*Grifola frondosa*) and species from the genus* Laetiporus *(commonly called chicken of the woods) are commonly hunted because of their "choice edible" rating with wild mushroom hunters. Most field guides and websites devoted to mushroom identification caution that if you have any doubt about a mushroom's edibility, it's best to refrain from eating it.*

SAW-WHET OWL

Last fall while walking around a customer's property, I came across an area of the yard with an extreme amount of bird activity. Their chatter was very intense. While looking for the source of their concern I came across this little owl tucked into a large burning bush. It was so fixed on the other birds, I could get my camera within 3 feet before it flew off. This is only my second encounter with a saw-whet owl. The last was about 30 years ago while bow hunting. I had one light on a branch a couple of feet from my face.

Rob Schulz
Wausau

REGAL COYOTE

Occasionally, we've seen coyotes in the field behind our home in Greendale, which backs up to a Root River floodplain. However, we had never seen one in such a regal pose in our backyard. This photo was taken in December 2016 right from our patio door. We think it is classic.

Claudia Porter
Greendale

HUNTER TURNED WATCHER

Being a long-time past hunter, I'm now just a watcher. I have continued to enjoy for years the articles and photos in your magazine. I remember when turkey hunting was first introduced to Wisconsin and even attended a class on the habitat and the art of calling, but I never did the hunt. Today I enjoy more of what's around me on camera. This photo was taken right on my front stoop last spring.

Jerry Rosenwing
Delavan

POTATO LAKE RESIDENTS
This photo was taken last year on Potato Lake (Washburn County) outside of Spooner where we have a cabin. I didn't know the turtles were there when I took the picture, it happened so fast trying to get the goose shot.

Edward N. Tredinnick
Onalaska

WHO COOKS FOR YOU-ALL?
I wanted to share these photos of a barred owl, taken on Picnic Point on the UW-Madison campus in mid-December, and to tell you that I love your magazine. They're easy to identify with their brown eyes (most others have yellow).

John Keckhaver
Madison

Thanks for sharing, John! Couldn't help but title your letter after the barred owl's distinctive call — "Who cooks for you? Who cooks for you-all?"

KINGFISHER REHAB
In July, this belted kingfisher struck our picture window and couldn't fly. I placed it on our bird bath and gave it some crappie minnows. Later in the day someone from the Dane County Humane Society's wildlife center picked it up for rehab.

Stephen Lang
Madison

KUDOS FOR POETIC WRITING
The article "Picturing Wisconsin lighthouses" (February 2017), by Joseph Warren, has the following first sentence: "Whether photographed in the gales of winter near ice-encrusted piers, through canopies of brilliant fall colors or when the sun dips behind the horizon, Wisconsin's lighthouses have always provided dramatic backdrops where the fluidity of lake waves meets the solidity of shore."

Who writes like that — someone who "works in DNR's Bureau of Parks and Recreation"? I don't think your average DNR worker is all that Joseph Warren is. What he is, instead, is poetic, and a great writer. Thank you, and thank him, for capturing the three top occasions when people take photographs of nostalgic scenic objects like lighthouses, and capturing them with pithy, evocative words in vivid visual imagery. And then thank him for concluding with the poetry of "the fluidity of lake waves" meeting "the solidity of shore."

Charles Shifley
Chicago

INTRICACY OF NATURE
My wife and I enjoy sitting out on our deck and watching the birds come in to feed and drink. We also have plants and shrubs that attract hummingbirds. We always thought it would be interesting to see a hummingbird nest but we could never see where they were nesting. Then one day this summer we noticed a female collecting nesting material but she would fly out of sight over the house. Finally my wife said, "Why don't you wait in the front yard and I will let you know when she is coming." It wasn't 10 minutes and the hummingbird came over the house and I saw her land in our locust tree about 15 feet off the ground. There was this beautiful nest so intricately constructed. How amazing is nature? We watched the nest every day for a few weeks until the two babies fledged.

The first photo shows the nest under construction and it looks like the finishing touches were with spider web. The next one is the female hummer sitting on the eggs and the last one is the two babies about one week before they fledged. To put everything in perspective, the inside of the nest is slightly larger than a quarter. This is probably a once-in-a-lifetime experience so I thought I should share it.

Jeff Baker
North Prairie

WHY NO MAP?
While I enjoyed your article "Preserving pine relicts a prescription for good health" (February 2017), I was disappointed to note that no directions were given to the site and no map was shown. Omissions of this kind make me wonder about the sincerity of the stated goal of the DNR to make these state natural areas accessible to the public. Please include good directions and a map with all future articles of this kind.

Loren Wagner
Mazomanie

COMMENT ON A STORY?

Send your letters to: Readers Write, WNR magazine, P.O. Box 7921, Madison, WI 53707. Or email letters to dnrmagazine@wisconsin.gov. Limit letters to 250 words and include your name and the community from which you are writing.

NO ACCESS TO THE WEB?

Don't have access to a link we mention in a story? Let us know when you want to follow a link we list. We'll do what we can to get you a copy of the material if it is available free of charge and is relatively short in length.

Traveler

List of parks to conquer makes for happy hopping

Visit every Wisconsin state park in one year? Oh, you betcha!

Story and photos by Nate Ewanowski and Chelsea Plamann

We are Nate and Chelsea, high school sweethearts and Wisconsin natives. Becoming Wisconsin Badgers always seemed to be the ultimate goal. As we became UW-Madison alumni and landed dream jobs, "settling down" was never part of the plan. We craved adventure and pined for the gratification of something big to work toward. We needed a purpose, a new goal. We needed to get outside — together.

Canine friends can enjoy Wisconsin's many state parks, including Hartman Creek in Waupaca.

In warmer weather, Door County locations like Peninsula State Park are fun to explore by bicycle, while winter brings its own beauty to places such as Devil's Lake (below right).

The journey began on Jan. 3, 2016, with a cold, snowy hike through **New Glarus Woods State Park.** (W5508 CTH NN, New Glarus; 608-527-2335) The forest was quiet, the snow was crisp and the wind was nippy. We celebrated that first park outing with a tour and a pint at the adjacent New Glarus Brewing Co., a pleasant end to the first of what would be many exciting state park adventures.

Yes, we went to all of them — 50 to be exact. To prove it, we took a picture in front of every state park entrance sign. Our journey spanned the entire year. It included visiting some parks on warm summer days with friends and family, and seeing others in the dead of winter when we shared the park with only the wildlife. Sometimes we camped in the park if time permitted, and other times we made day trips.

Wisconsin's state parks have so much to offer, no matter what season you visit. Whether it's hiking trails, beaches, overlooks, fishing spots, canoe areas or historical artifacts, there is something exciting to see at every one.

We could go on forever with details of our many unique and wonderful travels. Instead, we will highlight some of our best and most recommended experiences from our 2016 trips.

Winter wonderlands

Blue Mound State Park, Jan. 17: The highest point in southern Wisconsin is breathtaking, literally, when there is a minus-22-degree wind chill. Smart to be out there then? Probably not. Memorable? No doubt. Climbing both of the park's lookout towers was all we had in us for that frigid trip. (4350 Mounds Park Road, Blue Mounds; 608-437-5711)

Ice skating on **Devil's Lake,** Jan. 23: It can be tricky to coordinate, considering conditions need to be just right — cold enough without snow, or a recent rain followed by a freeze. Devil's Lake State Park is well-loved in the summer for its hiking and majestic rock cliffs. But try it in the winter. Aside from a couple of friendly ice fishermen, it was just the lake and us. Incredible. It was one of the best moments of the year. (S5975 Park Road, Baraboo; 608-356-8301)

Roche-A-Cri State Park, Jan. 30: We noticed this park from miles out. It is the one hill in an otherwise pretty flat portion of the state. Walking into the park there is a prairie, followed by a woods and a pretty, little meandering creek. We spent several hours hiking here on a winter day and found a lot of evidence that the place was teeming with wildlife. There is an observation deck with a great view. The pictographs and petroglyphs were fascinating. This park is a must-see. (1767 State Highway 13, Friendship; 608-339-6881 summer, 608-565-2789 off-season)

Governor Dodge, Feb. 6: Did you know you can climb an ice waterfall at this state park? Yep. You can. (4175 State Highway 23 N, Dodgeville; 608-935-2315)

Biking Door County

In late May, we went on a five-day, self-sustained bike tour of Door County and visited all five of the state parks located in Wisconsin's thumb. We averaged about 30 miles of biking per day. Our family joined us and we met some new friends along the way.

No need for fancy gear — we bought cheap panniers and used trash bags for waterproofing. The equipment we carried on our bikes included a tent, sleeping bags and pads, snacks,

bike tools, clothes, toiletries, daily essentials, sunscreen, water, flashlights, tarp, ropes, fishing poles and bricks. Kidding about the bricks, but it sure felt like it.

We started at **Potawatomi State Park** where we had driven and camped the first night. (3740 County Road PD, Sturgeon Bay; 920-746-2890) Granola bars for breakfast, then we set out on our great tour. We rode on Bay Shore Drive (County Highway B) for most of the day. This was one of the better bike-friendly roads on the trip and a highly recommended route.

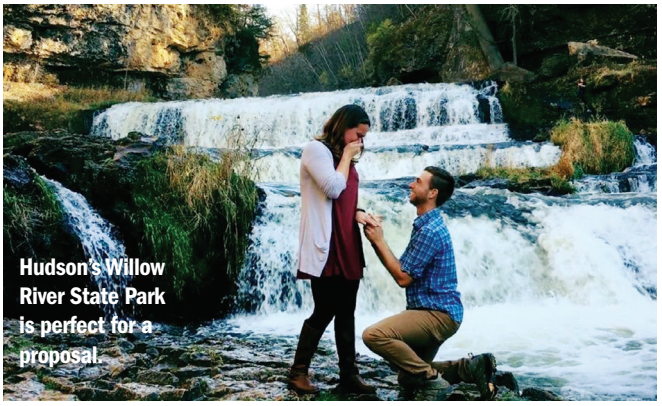
Next stop, **Peninsula State Park.** (9462 Shore Road, Fish Creek; 920-868-3258) We popped in at Julie's Café for coffee before setting up camp at Peninsula. Julie's is a great and friendly little spot where you can get some of the best java around. Wild Tomato was our restaurant choice for dinner, a neat place with delicious pizza.

The next morning, we set out on our bikes and headed for the top of Door County. We island-hopped via ferry, first to Washington Island (where we had to leave our bikes), then to **Rock Island State Park**. (1924 Indian Point Road, Washington Island; 920-847-2235)

Rock Island is such an amazing place! It has Viking-style buildings, a spectacular boathouse, a historic lighthouse, rugged hiking, backpacking, camping and more. No bikes, cars, skateboards or even your favorite Segways are allowed on the island. But that lack of transportation gives it a nice rustic feel.

After a long day of biking and hiking, we ferried back to Washington Island and had a massive dinner at Nelsen's Hall Bitters Pub. We then biked back to our campsite at the Washington Island Campground for the night. We managed to have a site near a farm and were lulled to sleep by soft horse neighs.

In the morning, we bid the horse farewell and took the ferry with our bikes back to the mainland. Once on shore, we biked down to **Newport State Park**. (475 County Highway NP, Ellison Bay; 920-854-2500)



Hudson's Willow River State Park is perfect for a proposal.

Although Newport is known for some of the best rustic camping, there were no available spots at the time of our trip — so remember to reserve early. We headed back to Peninsula for night No. 4.

On our final day, the agenda featured **Whitefish Dunes State Park** (3275 Clark Lake Road, Sturgeon Bay; 920-823-2400), along with Cave Point County Park. Both parks offer beautiful views of Lake Michigan.

When our trip came to an end, we had more than 100 miles on the bikes. We also had sunburns, wet gear, sore rear ends — and fantastic memories. Even if it's just for a day, biking in Door County is a highly recommended activity.

Summer and fall

Copper Falls, June 27: There is a hiking loop with a waterfall around every corner at this park, one of the most rustic in the state. (36764 Copper Falls Road, Mellen; 715-274-5123)

Lake Kegonsa, Aug. 20: We adopted a sweet dog named Sparrow, and this was his first state park. He trotted through the forested paths and checked out the dog beach — an area adjacent to the actual state park beach. (2405 Door Creek Road, Stoughton; 608-873-9695)

Amnicon Falls, Sept. 24: The scenic rapids and waterfalls are easily accessible by car and absolutely beautiful! (4279 South County Highway U, South Range; 715-398-3000)

Wildcat Mountain, Oct. 15: We canoed the Kickapoo River and ended in Wildcat Mountain State Park with family. There are several canoe outfitters that are ready to provide a great water experience. We went up the mountain to take in the fall colors from above. It is a wonderful park with much to offer. (E13660 State Highway 33, Ontario; 608-337-4775)

An old quarry filled with water is one of the hidden secrets of Harrington Beach State Park, on Lake Michigan south of Sheboygan.

Fantastic foursome

In early November, we headed to northwest Wisconsin and were able to hit four great parks in one day. At **Straight Lake State Park,** we planned a sunrise hike on the Ice Age Trail that runs through the park. The way the sun gleamed through the fog on the glass-smooth lake was a truly amazing sight. (About 12 miles northeast of St. Croix Falls; 715-483-3747)

At **Interstate Park,** we hiked the Pothole hiking trail, discovering really neat geology and great views of neighboring Minnesota. (1275 State Highway 35, St. Croix Falls; 715-483-3747) We also spent some time at **Kinnickinnic State Park**. (W11983 820th Ave., River Falls; 715-425-1129)

The best stop of the day, though, was **Willow River State Park**. (1034 County Highway A, Hudson; 715-386-5931) This is our favorite state park, for good reason. Nate proposed in front of the waterfall and Chelsea said yes — we are getting married next year! It was a picture-perfect engagement.

December to-do list

Snowshoeing at **Buckhorn,** Dec. 11: One of our last park trips of the year took us to Buckhorn State Park, which lies on the banks of Castle Rock Lake. The park was empty, just the two of us and the soft plop of our snowshoes on several inches of fresh powder. We thought we were totally alone until we noticed the deer, about a half dozen of them, silent and observant. Nothing clears and refreshes the mind like a quiet, snowy forest. (W8450 Buckhorn Park Ave., Necedah; 608-565-2789)

We ended our journey on Dec. 30 at **Merrick State Park** (S2965 State Road 35, Fountain City; 608-687-4936), knowing Wisconsin state parks are wonderful treasures that deserve our utmost respect, love and support. We are all shaped by our experiences and by the people we choose to share them with. Life is an adventure, and Wisconsin is beautiful. Get out there and explore!

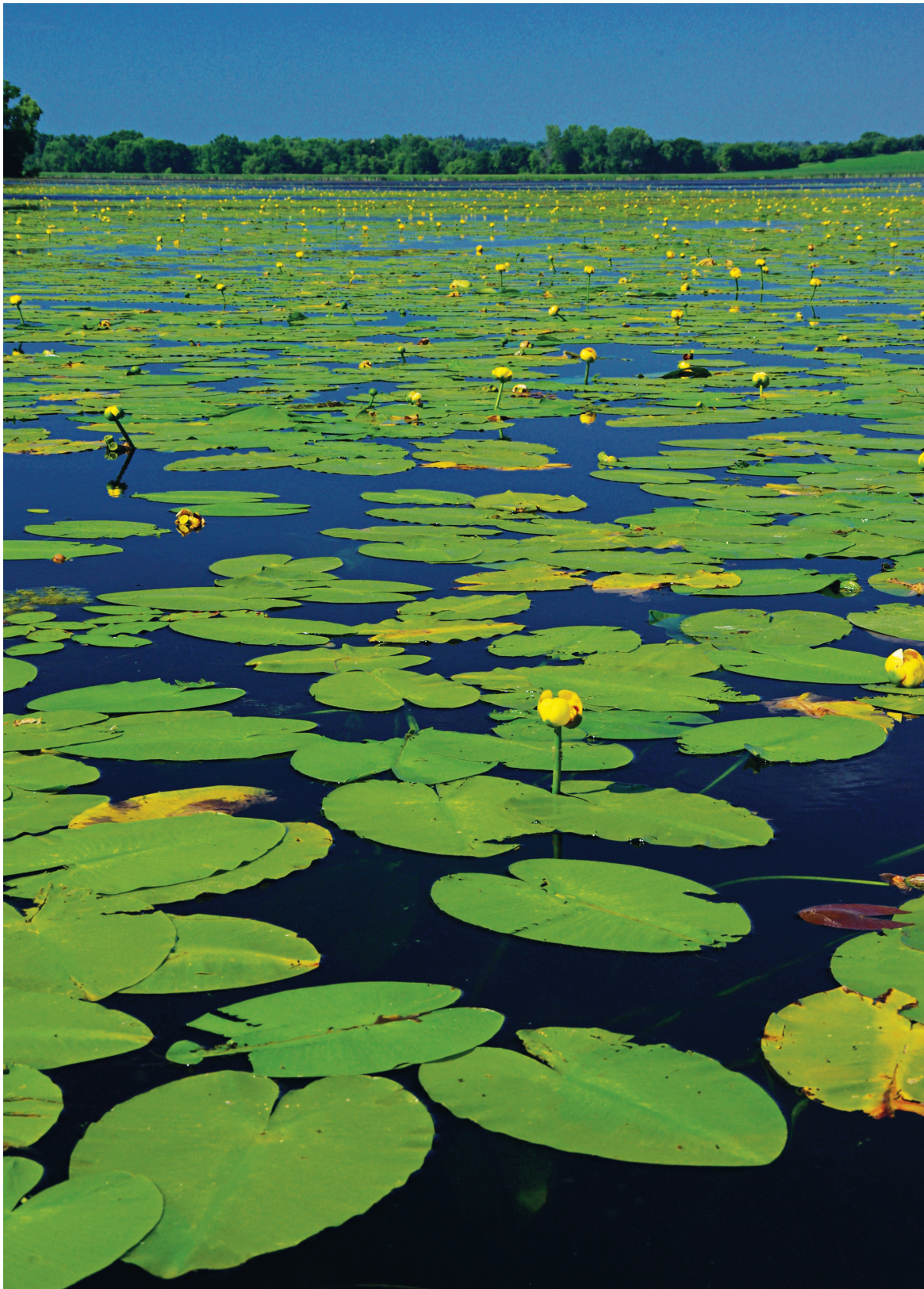
Nate Ewanowski and Chelsea Plamann live in Fitchburg and enjoy a variety of outdoor pursuits throughout the state.

Wisconsin, *naturally*

RED CEDAR LAKE STATE NATURAL AREA

Thomas A. Meyer
State Natural Areas Program

Bull-head pond-lily, spatterdock, yellow pond-lily, brandy-bottle. These are some of the creative common names applied to the plant known to botanists by its scientific name, *Nuphar variegata*. Red Cedar Lake State Natural Area in Jefferson County is a great place to see this and other emergent and submerged aquatic plant species in a wild setting. The natural area is dominated by a 344-acre hard-water seepage lake lying in a marshy pocket of a poorly drained landscape that was scoured and shaped by the last advance of glacial ice. The soft, mucky bottom provides excellent substrate for water plants such as water shield, pickerelweed, fragrant white water lily, whorled watermilfoil, and common bladderwort, a carnivorous plant that traps tiny water-borne invertebrates to supplement its intake of nutrients. Bands of soft-stem bulrush and cattails ring the lake's perimeter. The lake is a haven for amphibians, reptiles (especially turtles) and a host of deep-water marsh birds including yellow-headed blackbird, American bittern, green heron and terns. Waterfowl use is extensive. Panfish, along with largemouth bass and northern pike, make up the fishery. The area is accessible to watercraft via a boat landing, but the thick beds of aquatic vegetation make outboard motors somewhat useless as spring progresses. Paddlers of canoes or kayaks will find greater success exploring the lake.



Red Cedar Lake is owned by the DNR and was designated State Natural Area number 215 in 1984. There are no designated trails or other facilities on the property other than a shallow boat landing on the northern end. Visit dnr.wi.gov and search "Red Cedar Lake" for a map, access directions and more information about this site and the State Natural Areas Program.

STATE NATURAL AREAS