

INSIDE

PLANNING OUR CONSERVATION FUTURE

WISCONSIN NATURAL RESOURCES

wnrmag.com
June 2016 \$3.50

LEAVING A HEALTHY LAKES LEGACY

From brownfield to brewery
Bringing back the northernns
Outdoor foods and forays

Back in the day

Memories of Camp Meenahga.

Kathryn A. Kahler

The Old Station Wagon

*The faithful old station wagon – it's ten years or more.
It's window-less windows and rusty door.
It takes the sailors to Fish Creek to sail up on the bay,
Which they think is a lot more fun – than staying in camp all day.
And it's just as good as a sail when it comes rattling in with the mail.
We have a newer station wagon which may be the best.
But still the old one's busy and never has a rest.*

– Kelly Brent, from the *Pack and Paddle* (Camp Meenahga yearbook), 1944

Affectionately known as the “Camp Meenahga Woody,” the rusty old 1931 Model A wood-sided station wagon Kelly Brent wrote about 72 years ago is getting an overhaul, thanks to its owner Gene Rosera, owner of ACAR Restorations in Reedsville, and Bob LeMieux of Green Bay. The woody was a fixture of the girl's summer camp located on Peninsula State Park's grounds from 1916 to 1948. This summer marks the 100th anniversary of Camp Meenahga's founding and a better mascot for the celebration would be hard to find.

Rosera and LeMieux are both proud owners of 1931 woodies. LeMieux's restoration took 5 years to complete.

“It took years and years of collecting quality parts,” said LeMieux. “The chassis is the same as other Model A body styles, but the wooden body makes the station wagon very unique, and challenging to restore. It's rare to see a woody wagon today. Weather, time and critters are not kind to woody wagons. The original wood is only good for patterns to make new wood pieces.”

A serendipitous discovery

Chance played a big part in the Meenahga woody's discovery. Dick Wilcox, retired Peninsula State Park landscape employee, noticed the woody at the shop where it was being restored. He heard the story that it had once belonged to “a girls' camp in Door County.”

Wilcox in turn told Peninsula Naturalist Kathleen Harris. With a decade's worth of knowledge about the camp, she went to inspect the rusted Model A in the shop. As she climbed in the open side, she noticed graffiti on the interior referencing “purples” and

“yellows” along with a girl's name. Knowing that purple and yellow were the camp's colors, Harris phoned park headquarters on the spot and asked colleague Jane Barnowsky to search the roster in the back of the *Pack and Paddle*. The name inside the woody and in the camp yearbook matched.

“Oh my goodness,” Harris exclaimed. “The ‘Camp Meenahga Woody’ lives on!”

Camp Meenahga's roots

From its beginning in 1916 until it rolled down its flaps for the last time in 1948, the summer camp on the shores of Green Bay between Fish Creek and Ephraim saw a couple thousand girls take part in its programs. At a time when women saw Victorian mores making way to more modern athletics, founders Alice Orr Clark and Kidy Mabley had to balance society's expectations of femininity with their young clientele's yearnings for freedom, choice and responsibility.

The 1922 camp brochure listed this purpose: *Camp life, with its regularity, its good food, healthy activity, and long hours of sleep, is recognized as the right kind of summer for the school girl. Our aim at Camp Meenahga is to give, to a limited number of girls, a wholesome, happy vacation under the guidance of councilors of culture and refinement. It gives our girls a vacation from fashions and abnormal excitement. It creates a love of nature and the out-of-doors. The lack of conveniences and conventionalities develops unsuspected ingenuity. Camp Meenahga is the emblem of loving comradeship, gentleness and courtesy, as well as promptness and neatness.*



The Camp Meenahga “Woody” as it looks today before restoration.



Bob LeMieux with the 1931 Model A, wood-sided station wagon.



A geared-up camper at Camp Meenahga.

The girls came from all over the country, many from St. Louis — Clark and Mabley's home city — and where they conceived of the idea for the camp. Both women were without husbands (one a widow, the other a divorcee) in search of a means of income that would support them and their children.

The site they chose at Peninsula was the former Simon Evenson farm on Shore Road. The barn and outbuildings were deemed suitable for their purposes and soon converted into a dining room, recreational hall, living quarters for the women and their families, and office space for the camp. Local laborers did much of the work and park crews assisted by building platforms and hanging canvas for tents where the campers slept.

Clark and Mabley were able to make a go of it through both world wars and the Great Depression, in large part perhaps because the camp accommodated girls from upper class families. Fees were \$300 for the 9-week 1922 session, which translates to almost \$4,000 today. The revenue supported not only the camp directors and their families, but two assistant directors, 20 counselors and eight cooks and kitchen workers.

The girls' days were filled with activities like singing, dancing, drama, hiking, swimming and horseback riding, and organized sports like basketball, tennis and baseball. As noted in camper Kelly Brent's poem, one of the wholesome activities open to campers was sailing, and many who were strong

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FRONT COVER: Recreational opportunities such as kayaking and boating on Lake George in Oneida County are benefiting from the Clean Boats, Clean Waters program to tackle aquatic invasive species.

STEVE APPS

BACK COVER: The floating bog mat at Grandma Lake Wetlands State Natural Area in Florence County. **INSET:** Colorful dragon's-mouth orchids amid alpine cotton-grass. For more information about the SNA Program visit dnr.wi.gov and search "SNA."

BACK COVER AND INSET PHOTOS BY THOMAS A. MEYER, DNR

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Editor-in-chief Natasha Kassulke
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Art Direction Thomas J. Senatori
Printing Schumann Printers

Wisconsin Natural Resources magazine (USPS #34625000) is published bimonthly in February, April, June, August, October and December by the Wisconsin Department of Natural Resources. The magazine is sustained through paid subscriptions. No tax money is used. Preferred Periodicals postage paid at Madison, WI. POSTMASTER and readers: subscription questions and address changes should be sent to Wisconsin Natural Resources magazine, P.O. Box 7191, Madison, WI 53707. Subscription rates are: \$8.97 for one year, \$15.97 for two years, \$21.97 for three years. Toll-free subscription inquiries will be answered at 1-800-678-9472.

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Printed in Wisconsin on recycled paper using soy-based inks in the interest of our readers and our philosophy to foster stronger recycling markets in Wisconsin.

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PUBL-OC-016
ISSN-0736-2277

Let's make healthy lakes together!



Native plant landscaper Lisa Reas and UW-Extension lakes specialist Patrick Goggin discuss the Thornton family shoreline.

LAKESHORE PROPERTY OWNERS IMPROVE HABITAT AND WATER QUALITY WITH SIMPLE AND INEXPENSIVE PROJECTS.

By Pamela Toshner, Amy Kowalski, Shelly Thomsen and Patrick Goggin

As a Chicago kid, Dan Butkus reveled in the opportunity to head north to Squash Lake in Oneida County where his parents owned a cabin. He filled his days fishing and swimming with his sister in the clear water and looking for critters in the grasses, shrubs and trees in the yard between the lake and the family's beloved home-away-from-home. He still remembers that fateful day over 50 years ago when his dad cleared the woods. Butkus' childhood stomping grounds, where his creativity simultaneously thrived with the frogs and songbirds depending on that habitat for food and shelter, haven't been the same until he took advantage of Healthy Lakes over the past couple years.

"Back then my parents wanted to see us playing by the shore, as well as have a vista of the lake. My sister and I were crushed," says Butkus, of the lot clearing.

After their parents' passing, the opportunity arose to bring back childhood memories and help fish and wildlife. Partnering with Oneida County Land and Water Conservation, Butkus and his sister swiftly made plans to replant the native vegetation suited to their sandy lakeshore, including wild strawberries and blueberries they picked back in the day. They also designed and installed an infiltration pit — a simple rock-filled area that captures dirty runoff before it makes its way to the lake. A new state-wide initiative — Healthy Lakes — provided pivotal funding to help get the job done.

Wisconsin boasts more than 15,000 lakes. Ask any outdoor enthusiast how

frequently he or she plays on our lakes and you won't be surprised to learn just how important lakes are to Wisconsin's culture and economy. According to the American Sportfishing Association, fishing generates a \$2.3 billion economic ripple in the state, not to mention the additional revenues from other tourism activities and shoreland property taxes.

The Environmental Protection Agency's National Lakes Assessment identified lakeshore habitat loss as the major stressor for declining lake health across the United States. Lakes with poor habitat are more likely to also have poor water quality.

To combat this trend in Wisconsin, the Department of Natural Resources worked closely with citizens, University of Wisconsin-Extension, counties and business partners to develop Healthy Lakes, promoting five simple and inex-

pensive best practices that improve habitat and water quality. Lakeshore property owners may choose to do the practices on their own or reach out to their local lake group and other partners for technical and funding assistance.

>>> THE FIVE HEALTHY LAKES BEST PRACTICES

1. **Fish sticks create fish and wildlife habitat.**
Fish sticks are feeding, breeding and nesting areas for all sorts of critters — from fish to song birds. They can also prevent bank erosion, protecting lakeshore properties and your lake.
2. **350-square-foot native plantings improve wildlife habitat, natural beauty and privacy, and decrease runoff.** Native plantings include grasses and wildflowers with shrubs and trees. Lakeshore property owners choose a prescribed option with a list of suitable plants based on the owner's property and project goals — from bird/butterfly habitat to a low-growing garden showcasing the lake view.
3. **Diversion practices prevent runoff from getting into your lake.** Diversion practices move water to vegetated areas or an infiltration practice where it can soak into the ground instead of transporting dirt and pollutants into your lake. Depending on your property, multiple diversions may be necessary.
4. **Rock infiltration practices capture and clean water runoff.** Rock infiltration practices fit in nicely along roof drip lines and driveways and provide space for water runoff to filter into the ground. Infiltration pits and trenches work best if your soil is sandy or loamy.
5. **Rain gardens create wildlife habitat and natural beauty while capturing and cleaning water runoff.** Rain gardens multi-task — they improve wildlife habitat and filter water runoff while providing a naturally beautiful view.

A statewide partnership

Forty-eight property owners on 15 lakes throughout the state received grant funding to implement 100 best practices in 2015 — Healthy Lakes debut year. The projects range from the Minong Flowage in Washburn and Douglas counties in the north, to Nagawicka Lake in Waukesha County in the south, and other lakes in between. The department provides Healthy Lakes grants to eligible applicants, including qualified lake associations, lake districts, nonprofit conservation organizations, tribal nations and local governments.

These groups, in turn, reach out to interested property owners or vice versa to install Healthy Lakes practices on their properties. Butkus worked with the Squash Lake Association to get the ball rolling for his grant. Conversely, Shawano County's Cloverleaf Lakes Protective Association members reached out to the Town of Belle Plaine and the Belle Plaine Sportsman's Club while also surveying property owners to gauge participation interest.

"We were originally interested in doing just fish sticks to get back some of the woody habitat in the Cloverleaf Lakes," says Dennis Thornton, association president and town supervisor. "So we met with DNR fisheries biologist Al Niebur and lake biologist Brenda Nordin. Brenda introduced us to this new program Healthy Lakes and encouraged us to think more broadly about lakeshore habitat — to envision projects on the land adjacent to the shore, as well."

And that they did. In a matter of a couple months, the association recruited 12 interested property owners, the town and club committed to join forces, and DNR water resources and fisheries integrated to provide project support. This community-based partnership resulted in the town serving as grant applicant, the association as project and people managers, and the club as construction crew.

Working together to improve wildlife habitat and water quality in this small chain of three lakes — Pine, Grass and Round — the Healthy Lakes project forged new alliances where there was historically discord.

"I had to hold the guys back because they wanted more, more, more..." says Craig Ford, the club president, on members helping to install fish sticks on the chain. "Most of them don't live on the lake, but they use the lake as much as anyone else. They have the chainsaws

and other equipment to get the work done."

The Belle Plaine Sportsman's Club has installed most of the fish sticks clusters along the permanently protected Gibson Island — another example of community partners leveraging grant funding for the benefit of the lakes and people and critters that depend on them — with plans to add as many as 35 clusters of whole trees, as the permit and grant funding provide for, when the project is done.

Most property owners committed to terrestrial shoreline restoration worked with native plant landscaper Lisa Reas of L.J. Reas Consulting to plant 350-square-foot native plant gardens along their lakeshores to improve wildlife habitat, natural beauty and privacy, and to decrease water runoff.

"Healthy Lakes is great for business. We can use the simplified guidance to work with landowners to create attractive sites that still meet the goals of Healthy Lakes," says Reas.

One of the Healthy Lakes measures of success is to increase property owner participation by 100 percent between 2015 and 2017. The Healthy Lakes team developed a detailed survey to prioritize the five best practices within the initiative's framework. Each of the best practices relies on existing technical guidance linked to the best current science available.

For example, the 350-square-foot native planting options prescribe a plant list that includes ground cover, shrub

and tree species at specific planting densities based on a state standard. Studies in Wisconsin and from around the country repeatedly show that as lakeshore development increases, natural habitat decreases. The end result is fewer fish, frogs, loons and other features that draw us to lakeshores in the first place, as well as declining privacy and water quality.

Dennis Thornton and his wife Jan are not installing any Healthy Lakes projects. As you approach their property by boat, it's clear why. The songbird cacophony can be heard over the hum of the pontoon's motor. As the boat teases the dock with its graceful landing, finches, chickadees, woodpeckers, warblers and red-winged blackbirds make their way from the lush layers of vegetation hugging the hillside between the Thornton home and Grass Lake. A bald eagle lingers nearby, and Dennis shares the story of the nesting mallards who call the Thornton shoreline "home."

A glimpse into the clear water showcases turf-like plants such as quillwort, which is particularly sensitive to runoff and sediment coming off the land, but rarely noticed because of its diminutive size and appearance. The quillwort is thriving at the Thorntons' because their yard is almost entirely vegetated, providing habitat and preventing polluted water from making its way to the lake.

"We've been doing this (restoring the lakeshore) for years," explain the Thorntons. "It's good to see other people getting excited about it, too, and that the state is making it easier for us all."



Healthy Lakes workshop participants tour the Dan Butkus property three months after the initial restoration planting.

PATRICK GOGGIN



Dave Schleusner, who operates the district weed harvester, reviews a restoration plan of the Apple River Flowage Protection and Rehabilitation District.

PAMELA TOSHNER

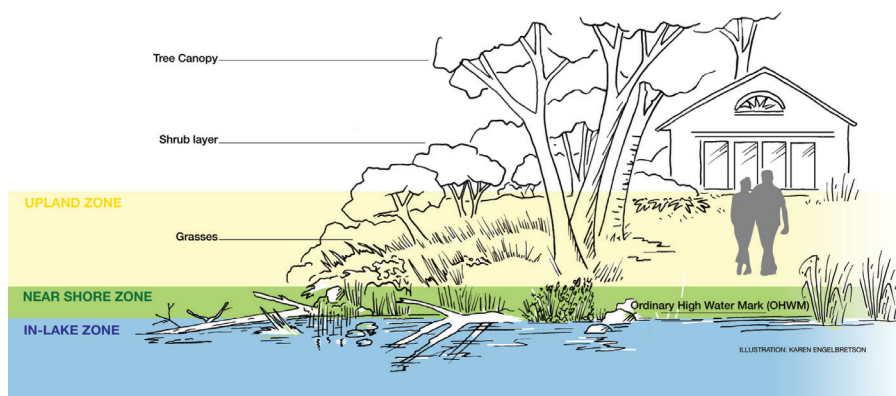


ILLUSTRATION BY KAREN ENGELBRETTSON

Leading by example

Walking the talk about protecting and improving lakes is a strong theme for Healthy Lakes early adopters.

“The Apple River Flowage Protection and Rehabilitation District asked for volunteers to participate in Healthy Lakes projects, and I figured someone’s gotta do it — I might as well be that person,” explains Dave Schleusner, a state wrestling champion who operates the district’s weed harvester. Schleusner and his wife Billie Jo own a former resort with relics of higher use times, including small cabins lining the water’s edge and expanses of lawn and mowed hillsides on the impounded river system in Polk County.

The Apple River Flowage has complex management challenges, both because of its lake type and location. Flowages, in general, are more difficult to manage because they tend to be shallow and have larger areas of land draining to them — 111,000 acres, including other lakes, and urban and agricultural lands in the case of the Apple River Flowage. Aquatic invasive species are easily

transferred to flowages via the river connection and difficult to reduce because of the water currents moving through them. The district decided to become a catalyst for the change they would like to see around their lake. These changes include more fish and wildlife habitat and cleaner water.

Says District Chair “Pete,” or Roland Peterson, “We know there are bigger challenges like ag out there, but until we do what we can on our own properties, we can’t expect others to change.”

Peterson’s sage words ring true when it comes to lake management, which becomes more complex the lower the lake moves in the landscape. Fortunately, in areas like the St. Croix River basin where the Apple River Flowage is nested, there are other new initiatives like farmer-led councils that build trust-based relationships to identify and implement innovative solutions to sophisticated issues like agricultural runoff. After all, farmers prefer to keep important nutrients like phosphorous and nitrogen on their fields to grow crops instead of losing them via water runoff to lakes where nu-

trients fuel algae.

Five Apple River Flowage property owners installed Healthy Lakes 350-square-foot native plantings in 2015, and many more participants are stepping forward to follow their lead. Schleusner made his own sign to showcase his project because so many folks cruising past on boats and crossing the nearby road bridge were curious to learn what he was up to.

“People are driving by and waving all the time. They pull up their boats when I’m out and ask me all about it. I saw hummingbirds right away, more butterflies, all sorts of stuff,” Schleusner exclaims. “I can’t wait to do more. I’m just happy I didn’t put my phone number on that sign. I probably wouldn’t get any sleep!”

Assistance is available but do-it-yourselfers encouraged

The team that designed Healthy Lakes originally did so to streamline grant funding. As it turns out, they also made it much easier for lakeshore property owners, or in the case of some of the best practices — any landowner — to install Healthy Lakes practices on their own. Each best practice includes an accompanying fact sheet describing cost ranges and averages, a materials list, time necessary to complete the project and general step-by-step instructions. If the facts seem reasonable, folks can turn to the more detailed technical guidance referenced in the fact sheet to complete a project. You can access all of these materials at healthylakeswi.com.

Eligible grant applicants can apply for up to \$25,000 in Healthy Lakes grant funding on behalf of multiple lakeshore property owners. Each lakeshore property can get up to \$1,000 per best practice to help with installation costs from the sponsor’s grant.

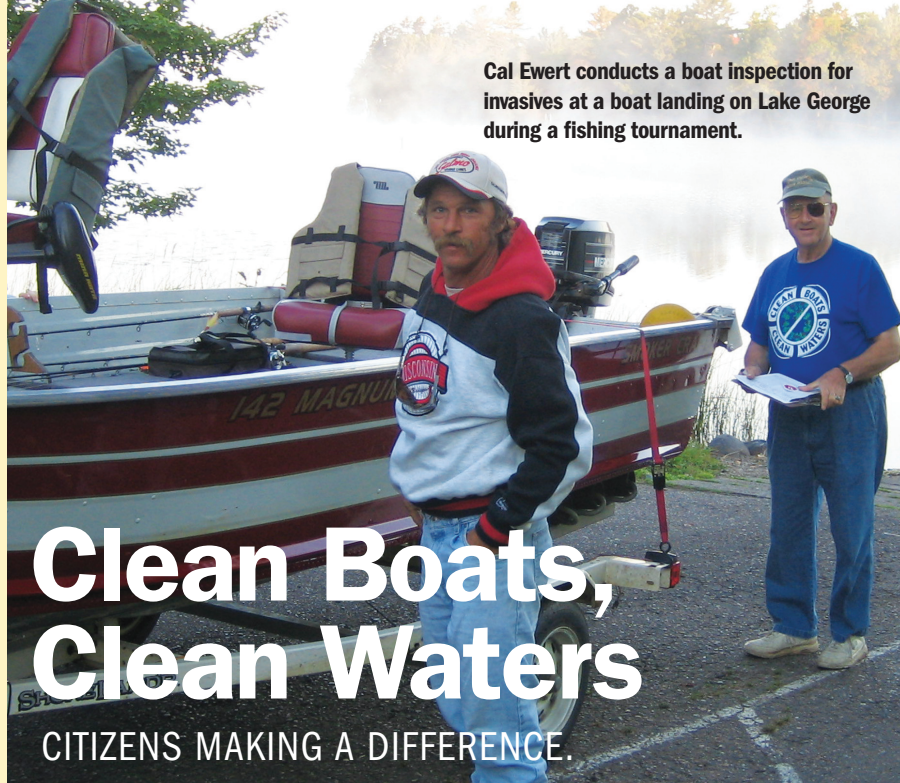
Take it from Butkus who knows firsthand that you can help improve lake health while retaining the view.

“It turns out our Squash Lake property slopes to the water. My dad probably didn’t need to clear it in the first place. But by choosing low-growing plants (a Healthy Lakes 350-square-foot native planting option) for the viewing and access area, we’re sure to see the water, the kids swim, and explore the area in between,” he says.



Pamela Toshner and Shelly Thomsen are DNR water resources management specialists, Patrick Goggins is a UW-Extension lakes specialist and Amy Kowalski works for UW-Extension.

Cal Ewert conducts a boat inspection for invasives at a boat landing on Lake George during a fishing tournament.



BOB MCVEY

Clean Boats, Clean Waters

CITIZENS MAKING A DIFFERENCE.

Erin McFarlane

Drive by the Lake George boat landing in Oneida County most any weekend during the summer and you are likely to find folks in blue T-shirts talking with boaters about fishing spots, their weekend plans, and, most importantly, how to prevent the spread of aquatic invasive species (AIS).

These dedicated citizen volunteers are part of a statewide boat inspection program, known as Clean Boats, Clean Waters (CBCW). Through CBCW, citizens learn about aquatic invasive plants and animals and how easily they can be spread from lake to lake on boats and equipment. CBCW inspectors know what actions should be taken at the boat landing to prevent the spread of AIS, how to share prevention steps and AIS laws with boat landing visitors, and how to assist boaters in inspecting their watercraft.

When they first began conducting inspections in 2004, members of the Lake George Lake Association CBCW program were primarily motivated by a desire to protect their lake.

"We watched nearby lakes become infested with invasive species," recalls Doug Ceranske, the first president of the lake association and longtime CBCW volunteer.

Ceranske and his wife, Shirley, became residents on the shores of Lake George in 2003. Interested in getting to know their neighbors they organized a monthly

breakfast for lake residents which led to their involvement in the lake association and CBCW.

The Ceranskes have been active in preserving and protecting their lake ever since. Doug has devoted many summer weekend hours to talking with boaters and anglers about cleaning plants off their boats, trailers and fishing equipment and the issues caused by aquatic invasive species.

He explains, "We try to get peak days and times, like Fridays, Saturdays and Sundays covered. But, we still feel the need to man the landings more effectively."

Ceranske and about 15 other residents have been CBCW volunteers at the Lake George boat landing for more than 11 years.

In addition to providing fundamental AIS outreach to boat landing users, CBCW watercraft inspectors record important data during inspections. While the Lake George Lake Association inspectors spent time at the landing, Shirley Ceranske volunteered her time to the CBCW program by entering the valuable data collected into a statewide database.

For nine years, she totaled the data collected by her lake group and entered it online, where Lake George's information was compiled along with results submitted by hundreds of other watercraft inspectors around the state. The Department of Natural Resources has summarized all the landing information to better understand boater knowledge of AIS, traveling patterns and which AIS prevention steps boaters are taking. The data from volunteers has helped guide AIS decision-making on a statewide level since the CBCW program began.

Wisconsin's watercraft inspection program would likely not exist in the form that it does today if it had not been for the vision of three students from Minocqua/Hazelhurst/Lake Tomahawk Elementary School.

Concerned by an invasive plant called Eurasian watermilfoil that was causing problems in their local lakes, Maree Stewart, Luke Voellinger and Janell Zajicek, along with their teacher, Lisa Ahlers, brainstormed a plan to educate boaters and lake residents about the plant and how to keep it from spreading from lake to lake. In 2002, their Milfoil Masters project garnered top prize in a national competition by the Christopher Columbus Fellowship Foundation, giving them \$25,000 to see their project come to fruition.



THE TROUBLE WITH AQUATIC INVASIVES

Aquatic invasive species can cause major issues in lakes, threatening the diversity and abundance of native plants and animals, negatively affecting ecosystems and hindering recreation. They can also pose a major threat to economic development, through reducing fisheries production, clogging industrial pipelines and decreasing property values.

Unfortunately, humans play a key role in spreading these aquatic invasives among inland lakes, thanks to the invasive's hardiness and ability to hitch a ride on boats, trailers and fishing equipment. Tiny plant fragments from Eurasian watermilfoil, an aquatic invasive plant, are easily transported in water or on boats, trailers and other equipment. Each small fragment of Eurasian watermilfoil can grow into an entirely new plant. Other aquatic invasives, such as zebra mussels or spiny water fleas, are microscopic and invisible to the naked eye in their early life stages. These AIS can also hitch a ride on boats and trailers, but are even more likely to be transported in water contained in boats, such as in livewells and coolers.



STEPHANIE BOISMENUE

Inspectors remind boaters on Squash Lake to check key points on their boats and equipment for plants and mud, including propellers, trailers and anchors.



UW-EXTENSION LAKES

Jennifer Filbert, DNR lakes and aquatic invasive species database specialist, trains citizens on how to enter and access data. To find out more about CBCW, go to uwsp.edu/cnr/uwexlakes/cbcw.

Working with the Department of Natural Resources and the University of Wisconsin Extension's (UWEX) Adopt-A-Lake Program at University of Wisconsin-Stevens Point, the students used the grant to further develop the program and create educational tools, such as boat landing stencils, Eurasian watermilfoil fact sheets, identification cards and aqua viewing scopes to help lake users check for signs of milfoil.

In 2003, around 150 education kits were distributed to boater education teams, comprised of lake organization members, students and other engaged citizens, in 25 Wisconsin counties. The newly re-titled Clean Boats, Clean Waters program was launched on opening fishing day in May 2003, with teams of adults and youth in place at more than 65 lakes to alert lake users about Eurasian watermilfoil and how to prevent its spread. Boat landing visitors were

very receptive to the prevention message shared, and the success of the first summer allowed this grassroots project to flourish.

Once they are in a waterbody, costs of managing AIS populations can easily prove prohibitively high, with no guarantee of success. While Wisconsin's AIS goals have long included prevention, the CBCW program was the first cost-effective option to present itself.

The Wisconsin Lakes Partnership, comprised of the Department of Natural Resources, UWEX Lakes and Wisconsin Lakes, adopted the CBCW watercraft inspection program in 2004, developing new resource tool kits, manuals and publications to guide communities in developing their watercraft inspection teams.

UW-Extension and the Department of Natural Resources offered a series of training sessions to deliver these materi-

als in lake rich parts of the state where AIS were most likely to take a foothold. That same year, the department and UW-Sea Grant also began devoting employees to the CBCW effort and hired watercraft inspectors to work in strategic areas during the boating season. The Department of Natural Resources also began recommending involvement in a CBCW effort for all projects seeking state AIS grant funding.

Since expanding the program in 2004, UW-Extension and other partners have trained more than 1,000 people from a wide variety of groups to conduct inspections. Clean Boats, Clean Waters inspectors include county board members, tribal community members, representatives from county park and forest programs, boat marina operators, scout troops, nonprofits and realtors.

Along with the increase in active inspectors has come increased staff to support them, by way of county and regional AIS coordinators, mostly funded through DNR grant funds, and other county staff who spend time training and assisting CBCW inspectors on top of their already crowded workloads. In 2013, the department introduced a new streamlined grant process for groups seeking funding for their CBCW programs, and it has been extremely popular.

Two lake-rich counties in northern Wisconsin — Oneida and Vilas — lead the state in number of CBCW inspections reported each year. Many groups active in the northern part of the state use watercraft inspection as a protective tool to keep their lakes free of AIS.

However, CBCW is just as effective, if not more so, at keeping AIS from spreading out of the lakes where they are already found.

One such example is the CBCW program on Lake Delavan in Walworth County. The Community Park boat landing in Delavan has had a CBCW program present for most of the past 10 years.

Mary Knipper, member of the Delavan Lake Improvement Association and Wisconsin Lakes president, began the effort in 2005 as a volunteer, and the Town of Delavan Community Park began hiring several inspectors a few years later. The Walworth County lake specialist also devotes significant hours during the summer to watercraft inspections.

"I can't imagine where we'd be without the CBCW program. Community Park boat landing receives 17,000-22,000 boats annually, as well as overflow traffic from Lake Geneva," Knipper says.

"While inspecting one morning, I talked with a group of anglers who said Delavan Lake was the fourth lake they'd visited that morning! That conversation was pivotal in helping me recognize the vulnerability of our lake to new AIS and its potential to spread AIS."

Clean Boats, Clean Waters inspectors range from dedicated volunteers to paid staff. The Lake George Lake Association, whose CBCW program has been completely volunteer-based since 2004, is planning to hire inspectors for the first time ever in 2016, thanks to funding from a DNR AIS grant and the Sokaogon Chippewa Community.

"This will allow our volunteers to work primarily on Thursday and Friday afternoons and have paid inspectors covering the weekends," explains Joan May, the Lake George Lake Association president. "Our volunteers will be able to enjoy some time with their families on weekends."

For waterbodies like Lake Delavan, where the presence of various AIS requires yearly management, the cost-effectiveness of paying for a CBCW program is clear.

Knipper asserts, "We spend about \$175,000 annually on AIS management, including chemicals, harvesting and monitoring. The costs of paying inspectors to do CBCW are not even close to the cost of management for our Sanitary District."

At the commonly used rate of \$12 per hour, the value of CBCW volunteer hours reported by citizens since 2004 totals nearly \$1.5 million.

Almost all of the long-term watercraft inspectors are affiliated with a lake organization. Wisconsin is extremely fortunate to have a wealth of passionate citizens. The majority of watercraft inspections are conducted by citizens, either volunteering or receiving grant funding, and most lake monitoring data is collected by citizen volunteers. Other states, such as Minnesota, also have active watercraft inspections programs, but none of them rely primarily on citizen action. This raises the question: what motivates our CBCW inspectors to continue their efforts?

For the folks on Lake George, Squash Lake and Delavan Lake, the most common responses indicate that seeing their efforts make a difference for Wisconsin's legacy of lakes is a driving factor.

Doug Ceranske on Lake George explains, "It's been good. At the start of our program, people were ignorant about



Maree Stewart, Janell Zajicek and Luke Voellinger initiated the aquatic invasive species education effort at boat landings.

UW-EXTENSION LAKES

AIS. Now, people know what the problem is. It's neat to see. Overall, I think the educational effort is making an impact."

May agrees and adds that being active in CBCW has opened up other opportunities for the Lake George Lake Association. "CBCW got us to go beyond just outreach at the boat landing. It was a good jumping off point and led to more eyes on the lake looking for AIS. Lately our goal has been to engage property owners in learning about and identifying vegetation in the lake."

Not all lake groups are able to engage members the way Lake George has, but CBCW does offer them an opportunity to take action on a local level and have real conversations about the welfare of our lakes.

"One-on-one education isn't common anymore, and inspectors are the first line of science that boaters encounter," ex-

plains Knipper. "CBCW was born of and creates a grassroots effort of its users."

The local ownership and passion the citizen watercraft inspectors show is the key element that makes the CBCW program successful and unique in Wisconsin. Regardless of whether they are volunteering or grant-funded, it is the commitment and energy of the citizens that drives our watercraft inspection effort.

For Marj Mehring, a longtime CBCW volunteer on Squash Lake in Oneida County and likely for many of our citizens who do great things for our lakes, her motivation is simple. "I love the water. Keeping it clean is important and spreading that environmental message is important."



Erin McFarlane is the statewide CBCW Educator for UW-Extension Lakes.



TAKE THESE STEPS TO PREVENT THE SPREAD OF AIS:

- **INSPECT** your boat, trailer and equipment.
- **REMOVE** any attached aquatic plants or animals.
- **DRAIN** all water from boats, motors and all equipment.
- **NEVER MOVE** live fish away from a waterbody.

UW-EXTENSION LAKES

A boatload of volunteers



Eurasian watermilfoil is one invasive that volunteers are trained to monitor for.

PAUL SKAWINSKI

WISCONSIN'S CITIZEN LAKE MONITORING NETWORK CELEBRATES 30 YEARS.

Paul Skawinski, Carolyn Rumery Betz and Sandy Wickman

These volunteers embody the spirits of volunteerism. They are mentors to new volunteers and an inspiration to those who have been around awhile. They are friends to Wisconsin lakes and are involved in a boatload of volunteer activities.

They are Citizen Lake Monitoring Network (CLMN) volunteers.

The network, which is celebrating its 30th anniversary this year, provides opportunities for nearly 1,000 volunteers to monitor water clarity, temperature, phosphorus and chlorophyll-A concentrations, dissolved oxygen, aquatic invasive species, native aquatic plant communities and ice cover.

Some also are participating in a pilot project to monitor lake levels, as well as an advanced lake temperature study, deploying continuous-read temperature loggers to record changes in water temperature throughout the open-water season.

Since CLMN began in 1986, volunteers have contributed over \$4 million worth of donated time (based on a value of \$12/hour). Five of these volunteers have been monitoring their lakes for the full 30 years.

CLMN is supported by the Department of Natural Resources through staff support and a contract with the University of Wisconsin-Extension.

Most volunteers obtain equipment and training from CLMN staff at no cost. Some volunteers conduct many types of monitoring, and some even monitor multiple lakes. Large lakes with many bays and/or inlets may have multiple volunteers collecting infor-



Amy Kowalski, of UW-Extension Lakes, taking a Secchi disc measurement from a canoe.

PAUL SKAWINSKI

mation at various points. Interested volunteers work closely with CLMN staff to determine which types of monitoring would yield the most important information, and to determine how they could complement their lake's existing monitoring activities, if any already exist.

Wisconsin's Citizen Lake Monitoring Network (formerly called the Self-Help Monitoring program) began in 1986 as a successor to the Inland Lake Renewal Program (ILRP). The ILRP focused on improving water quality of impoundments throughout the state, back before there was a clear understanding that a lake is a reflection of its watershed.

During the first year of Self-Help Lake Monitoring, volunteers were solicited through a publicity campaign and by word-of-mouth. Carolyn Rumery Betz was working for the Department of Natural Resources at the time, and was responsible for building the program. She networked with other states whose citizen monitoring programs had been established earlier — New Hampshire, Rhode Island, Florida and Illinois.

Taking the best concepts from those states, Wisconsin's program was born, and 126 volunteers on 113 lakes were trained on how to take a water clarity reading during sessions at each lake. The sessions were taught by Betz or the regional lake specialists, many of whom still work for the department or have had long careers there, including Bob Wakeman, Tim Rasman, Buzz Sorge, Mark Sesing, Susan Graham and others.

A key tool early on — and continuing today — was the Secchi disc, used to take water clarity readings. The first discs used in the program were handmade by a man in the Milwaukee area, who painted each disc and marked each rope in one-foot increments.

The training manual consisted of hand-drawn pictures of a person leaning over the side of a boat using a clothespin to mark two readings, from which an average was calculated. Thousands of postcards were filled out and mailed in, and the data were entered into a database by work-study students at University of Wisconsin-Madison, including Becky Scott and Brad Wolbert, who are now DNR employees.

Within five years, the program ex-

panded, and volunteers collected not just water clarity readings, but chlorophyll and phosphorus samples that were analyzed by the State Lab of Hygiene.

Water samplers were handmade by retired chemist Paul Anderson, who carefully poured concrete into Mason jars and cleverly used the shells of Bic pens to create a one-way valve system to measure dissolved oxygen and temperature at different depths. A rigorous quality assurance program proved that the data the volunteers collected were worthy of uses such as reporting on Wisconsin's water quality to the U.S. Environmental Protection Agency.

New volunteers are able to participate in most CLMN activities — water chemistry is the exception. Although these data are important, water chemistry equipment and analysis of the samples are expensive, and CLMN is limited in how many chemistry volunteers it can financially support. For this reason, only a few new chemistry lakes tend to be added each year, and these lakes are chosen because they have demonstrated needs for water chemistry data.

All water quality data collected by CLMN volunteers are entered into the same database, known as the Surface Water Integrated Monitoring System (SWIMS). These data are used by the Department of Natural Resources, university researchers, sanitary districts, fishing guides, lake organizations, consultants and others to guide lake management activities.

Find current and historical data collected from any lake participating in CLMN at dnr.wi.gov/lakes/clmn.

Feedback from volunteers plays a major role in determining how the CLMN program evolves. As a result of volunteer input, the CLMN website was recently overhauled and an interpretive guide was created to help translate data reports. Additional monitoring activities may be added as the need for more data becomes evident, and the list of aquatic invasive species monitored may change based on new research or additional species showing up in Wisconsin waters.

You can learn more about becoming a CLMN volunteer at uwsp.edu/cnr/uwexlakes/clmn.

Paul Skawinski is the Statewide CLMN Coordinator. Carolyn Rumery Betz is a former Statewide CLMN Coordinator and works at UW-Madison. Sandy Wickman is the Regional CLMN Coordinator for North Central Wisconsin.

30-YEAR CITIZEN LAKE MONITORS



SUBMITTED BY MARY JANE BUMBY

MARY JANE BUMBY is a lifelong resident of big Green Lake and has been monitoring its water quality for over 30 years. She routinely measures transparency and dissolved oxygen, identifies phytoplankton and more. Bumby has degrees in biology, botany and zoology, and spent many years as a high school biology teacher. Her master's thesis

involved comparing Green Lake's aquatic plant community to the same measured 50 years earlier.



SUBMITTED BY DALE JALINSKI

DALE JALINSKI is the CLMN volunteer on Bear Lake in Oneida County. He monitors water clarity, chemistry and dissolved oxygen. He has also been a Clean Boats, Clean Waters volunteer for many years, and is a member of the Bear Lake Protection and Rehabilitation District Board. His data collection on Bear Lake has enabled

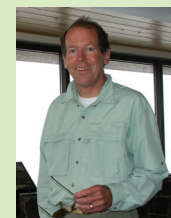
the local DNR lakes coordinator and Lake District to make better management decisions on this 312-acre seepage lake.



SUBMITTED BY BOB KIRSCHNER

BOB KIRSCHNER monitored Crystal Lake in Langlade County until 2006. He found a replacement to continue his monitoring activities, and moved to Emden Lake in Oneida County. Kirschner monitors water clarity, water chemistry and dissolved oxygen. Kirschner is responsible for managing the aquatics

program at the Chicago Botanic Garden, which includes water quality and aquatic habitat enhancement.



SUBMITTED BY TOM RULSEH

TOM RULSEH lives in Three Lakes, but has been monitoring McDonald Lake in Vilas County since 1986. Between Tom and his father, Roy, they have collected nearly 200 clarity readings and 75 water samples for chemistry analyses. The baseline and historical data collected by the Rulsehs are the only public data available for this

lake. Rulseh also is Vice President of the Three Lakes Historical Society, and President of the Three Eagle Trail Foundation, which has been involved with the planning and construction of a non-motorized trail that connects Three Lakes and Eagle River. In 2015, Rulseh and his wife, Vicki, completed a 3,400-mile tandem bicycle journey from Astoria, Oregon to Portland, Maine.



SUBMITTED BY KAY SCHARPF

KAY SCHARPF was honored with a Citizen Lake Stewardship Award in 2006, and has been a Citizen Lake Monitoring Network volunteer on Franklin Lake in Forest County since 1986. When chemistry monitoring was offered to the volunteers, Scharpf was one of the first to volunteer her time. She also monitors

dissolved oxygen levels in Franklin Lake and watches for invasives. Scharpf also participates in a volunteer breeding bird survey, and was the first Loon Ranger in the state. While Scharpf is a first-rate naturalist and limnologist, her greatest asset is her ability to teach. She has trained countless new water clarity and chemistry volunteers on other lakes.

Beetles are winning the battle against purple loosestrife

The *Galerucella* beetle was released in Wisconsin starting in 1994 and is showing success in reducing purple loosestrife.

PAUL SKAWINSKI

IT'S A BIOCONTROL SUCCESS STORY THAT NEEDS YOU.

Brock Woods

Beautiful killer! Purple scourge! An attractive, but deadly threat! These are past descriptions of an invasive plant that threatened so many wetlands in Wisconsin by the 1980s that land managers had practically given up on any sort of control. Sure, herbicides could kill purple loosestrife, but no amount of practical control work could keep pace with its spread.



UW-EXTENSION LAKES

Purple loosestrife — pretty but dangerous.

Purple loosestrife (*Lythrum salicaria*) is an herbaceous, perennial plant from Europe that was first reported in Wisconsin in the 1920s. Arriving here without predators or diseases that keep this plant in check at home, these uncontrolled plants can reach 8 feet in height and overtop most native wetland plants.

Purple loosestrife drives out the diverse native plants and animals necessary for healthy wetlands, and reduces the wetland services that help keep our lakes and streams clean, and floodwaters out of our towns and villages.

Each loosestrife plant can have dozens of stems with flower branches several feet long that annually produce over 2 million seeds. The tiny seeds are easily dispersed into new wetlands everywhere by water, careless humans and an-

imals — especially waterfowl on whose feet mud turns out to be a great hitchhiking medium. So many seeds, sent to so many new places, and sprouting so fast into new seed-pumping plants: it's easy to see how purple loosestrife sent chills into every wetland owner and manager.

Fortunately, a consortium of state and federal agencies combined to search for the natural, biological controls that keep purple loosestrife in check in Europe. After finding its natural predators, and doing follow-up research to identify which predator would be the safest and most effective to introduce, four types of beetles were imported into the United States as a management strategy. The imported beetles were expected to devote so much of their feeding on loosestrife that hope fell on these little beetles to do what people could not: stem the "purple tide."

Two types of beetles were released in Wisconsin starting in 1994, and what a success they have been! We now fondly call them "Cella" beetles — short for *Galerucella pusilla* and *Galerucella californiensis*. Cella beetles feed ravenously on the leaves of purple loosestrife, and have

proven so effective at reducing both the size and seed output of the plants, that over 31 million of these two species of beetles have now been released in troubled wetlands across the state. The other two beetle species introduced the following year feed on loosestrife roots and seeds, but their effects are less well known.

Cella beetles overwinter so well that a small population introduced into a wetland usually builds over time into enough insects to reduce even massive infestations of loosestrife. Some even fly to find loosestrife elsewhere, spreading the wealth of control, and making wetland lovers everywhere yearn for biocontrol of other invasive plants.

Cella beetles have indeed changed the plant mix at most release sites. Their young larvae feed so voraciously on stem tips where the flowers normally develop that growing points die, flower buds don't form and stems don't elongate.

With a few hungry beetles, the main stem is killed, and many side branches grow, which form flowers of their own. But as more beetles appear on a site, they produce even more larvae and the side branches suffer the same fate as the first. The older larvae and adult beetles riddle leaves with enough feeding damage that plant vigor is reduced. Controlled sites have candelabra-shaped plants half their normal size — about waist height, with up to 80 percent fewer seeds from shorter flower stalks. Thus, dispersal declines and native plants can begin to recover.

A crucial part of this control story is how all these beetles have found their way to new homes in wetlands across

Wisconsin. In short, hundreds of citizen “cooperators” have run Cella rearing projects by digging a few local loosestrife plants in early spring, and potting them for backyard, school yard or workplace fun. They install fabric cages they’ve sewn onto the plants to keep predators away, and add “starter” beetles they receive in the mail from the Department of Natural Resources in late May.

The protected beetles eventually multiply to a hundred times more than at the start. When the first newly produced adults appear on the plants in mid-summer, hardy cooperators carry two or three beetle-laden plants to each patch of local loosestrife — often where they dug up their initial plants. They pull off the cages and hordes of hungry little hummers fly out to home in on just one plant: the most succulent loosestrife they’ll ever see.

Where conditions in the local wetlands are good, a couple thousand deposited beetles typically grow into ever larger numbers, capable of reducing even the largest loosestrife population.

Who are some of these cooperators who have given their time and energy to help keep our wetlands safe from the “purple scourge?” There have been too many to name who have rescued a local wetland from this lethal loosestrife after rearing beetles for just a couple seasons or for as long as 10 years.

Others have sent beetles to wetlands throughout their local landscapes by recruiting amazing numbers of volunteers to join in the beetle-rearing fun. Local conservation group leaders have been especially good at organizing others to join in — groups like the Friends of the Little Wolf and the 4-H Go Getters in the Sheboygan area whose crews raise beetles in both small scale and mass cage set-ups, and plant native species to replace declining loosestrife.

Local organizers have also come from Master Gardeners groups, private companies, Lions and Rotary clubs, and many other organizations. Teachers are especially valuable for introducing students to

invasive species and biocontrol while raising beetles to save their local wetlands.

Yet many wetlands still need Cella beetles and you can help. Some wetlands have never gotten beetles and the loosestrife still grows over head-high. It’s crucial to start beetle populations on such sites. Other sites may have received beetles in the past, but the insects have disappeared, resulting again in tall plants and many seeds. In fact, all purple loosestrife sites should be checked periodically after beetle releases to be sure there are plenty of beetles to keep doing their job. Adding more beetles usually helps, and never hurts, given their strict diet.

How can you become your area’s latest cooperator? Check local wetlands for need, then search the DNR website for “Purple Loosestrife Biocontrol.” There you’ll find a video detailing the loosestrife problem and how biocontrol can help. You’ll also find a link to a detailed program description and application form. Send in the latter to indicate how many plants you’ll pot up — often from two to 10 the first year, which indicates how many beetles you’ll need (100/plant). Most gear you’ll need is free from the department.

On the same web page, educators

can also download “See Cella Chow,” a biocontrol manual for teachers that has 15 activities to make involving students easy and learning their curricular lessons hands-on and a lot more fun. In fact, raising beetles with students is a valuable education even if local loosestrife seems under control. And raising beetles is always a lot more fun if you do it with your friends and neighbors, students at school or even your workplace mates.

After all the biocontrol work to reduce the invader is done, it’s important that native plants regain control of every wetland. This will occur naturally if native species are still present, but in other wetlands cooperators should pursue the important and satisfying task of restoring them. The web page has guidance for this, as well, and it can be the nurturing side of each biocontrol project: another satisfying way for citizens to be an integral part of keeping their local landscape healthy.

Now is the time to befriend a local wetland beleaguered by this “beautiful killer.” Contact the Department of Natural Resources, get involved and join in the beetle fun!



Brock Woods is the Wisconsin purple loosestrife and wetland invasive plant program coordinator.



A purple loosestrife biocontrol volunteer.

UW-EXTENSION LAKES

A war on water lettuce

Fritz Funk, longtime Mississippi river rat, spearheaded efforts to recruit volunteers to remove water lettuce from the time it was discovered in October to early December.

HOW COMMUNITY AND MULTI-AGENCY ACTION ERADICATED THIS AQUATIC INVASIVE.

Ruth Nissen

The sun was just disappearing behind the bluffs along the Mississippi River when Dave Jensen turned his jon boat into the Brice Prairie channel on his way back to the boat landing. He had spent this Tuesday evening in early October fishing for bass and pike on Lake Onalaska without much luck. Wild celery, an abundant aquatic plant, was releasing its long green tape-like leaves as it does every fall, and the leaves were accumulating into mats on the water's surface. Almost every cast had involved removing a tangle of decomposing leaves from his line.

As he motored up the channel, aggravated, Jensen noticed a half dozen plants floating on the surface of the water near the edge of the channel.

"They were mixed in with duckweed, rice plants and other aquatic plants," Jensen recalls. "Sort of like water lily, but the leaves were different. Then I saw a couple more and one here and one there so I stopped to collect a few, putting them in an empty pail."

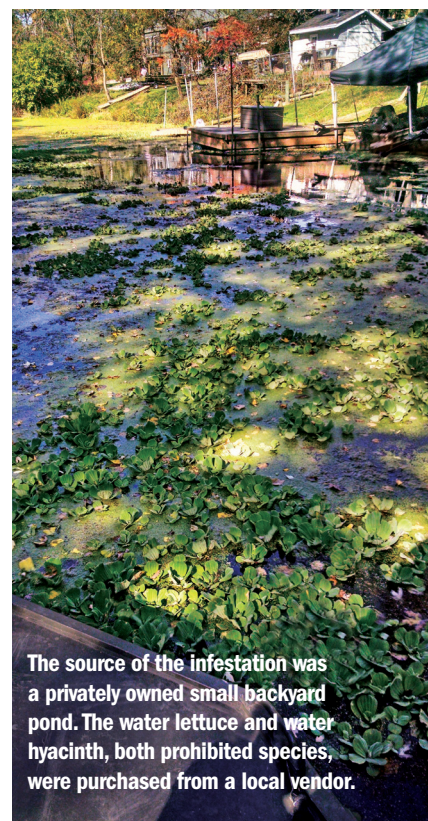
Fortuitously, he also took a couple of photos with his cell phone.

Once home, he went online to try to identify the odd looking plants. When he realized the plants were invasive water lettuce he became concerned.

"If there was a stiff north wind it could blow a lot of those floating plants out into the lake and along the shore," Jensen says.

His next search was to find the invasive species contact for the La Crosse area. His search led him to Jodi Lepsch, a DNR water resource specialist in Eau Claire. Jensen's investigation set the wheels in motion and was a critical step in controlling the water lettuce infestation — at least for one year.

Water lettuce is an invasive perennial aquatic plant that is sold for use in backyard ponds. The plant floats on the surface and spreads rapidly, forming dense mats that make fishing and boating difficult.



The source of the infestation was a privately owned small backyard pond. The water lettuce and water hyacinth, both prohibited species, were purchased from a local vendor.

In Wisconsin, water lettuce is a prohibited plant, meaning that it is illegal to sell, give away, transport or possess it. It is temperature sensitive and it is assumed the plants cannot survive Wisconsin winters. But a water lettuce infestation on Pool 5 of the Mississippi River

near Winona, Minnesota was detected in 2011 and 2012, which suggests that the seeds may overwinter.

Lepsch contacted Scott Caven, aquatic invasive species coordinator with the River Alliance of Wisconsin. Caven serves La Crosse, Trempealeau and Buffalo counties and his role is to prevent, contain and control aquatic invasive species, and coordinate the La Crosse Area Aquatic Invasive Species Partnership; a collaboration of agency and non-agency organizations that have teamed up in the battle against aquatic invasive species.

Caven lives on Brice Prairie, so that evening he kayaked down the channel toward the lake to check out the situation. In short order, Caven confirmed it was water lettuce and easily collected a trash bag full before calling it quits for the evening.

The Brice Prairie Channel, barrier island and Lake Onalaska are part of the backwaters of Pool 7 of the Mississippi River and are located within the Upper Mississippi River National Wildlife and Fish Refuge-La Crosse District. The first phone call Caven made the next morning was to the La Crosse District Office, located on Brice Prairie.

Wednesday was volunteer work day at the La Crosse District, which provided an opportunity for Kendra Niemec, deputy La Crosse District manager, to spread the word that many volunteers would be needed to remove invasive water lettuce on Lake Onalaska.

The water lettuce infestation that had been found on Pool 5 in 2011 and 2012 — Winona District of the refuge — had required plant removal over the course of two summers by staff from the refuge, Wisconsin Department of Natural Resources, Minnesota Department of Natural Resources and numerous volunteers, including a local kayaking club. Niemec expressed the same concern as Jensen — winds from the north could move the newly discovered lettuce over a much larger area — with an ultimate possibility of the current moving the plants downstream into Pool 8.

Fritz Funk, one of the volunteers, lives along the Brice Prairie Channel and qualifies as a “long time river rat.” Funk retired from Alaska Department of Fish and Game several years ago and returned to this area where he spent his childhood, hunting and fishing on the river and doing “river rat things.”

Funk checked the weather forecast and quickly realized that they weren’t going to have much time to mobilize as



Volunteers such as Amy Cooper were a key component of a successful water lettuce removal campaign.

SCOTT COOPER

high winds were predicted for Monday out of the worst possible direction. Funk started contacting everyone he knew on Brice Prairie.

“I pulled out all stops while it was still something we could control, otherwise it was going to be Pandora’s Box,” Funk recalls.

He quickly organized a Saturday spot cleanup of the shoreline by Brice Prairie residents using the Brice Prairie Conservation Association’s email list. He later expanded this communication effort by developing a chronology of lettuce collection efforts which was posted on the Lake Onalaska Protection and Rehabilitation District website. This readily-available source provided daily updates for agencies and media, but more impor-

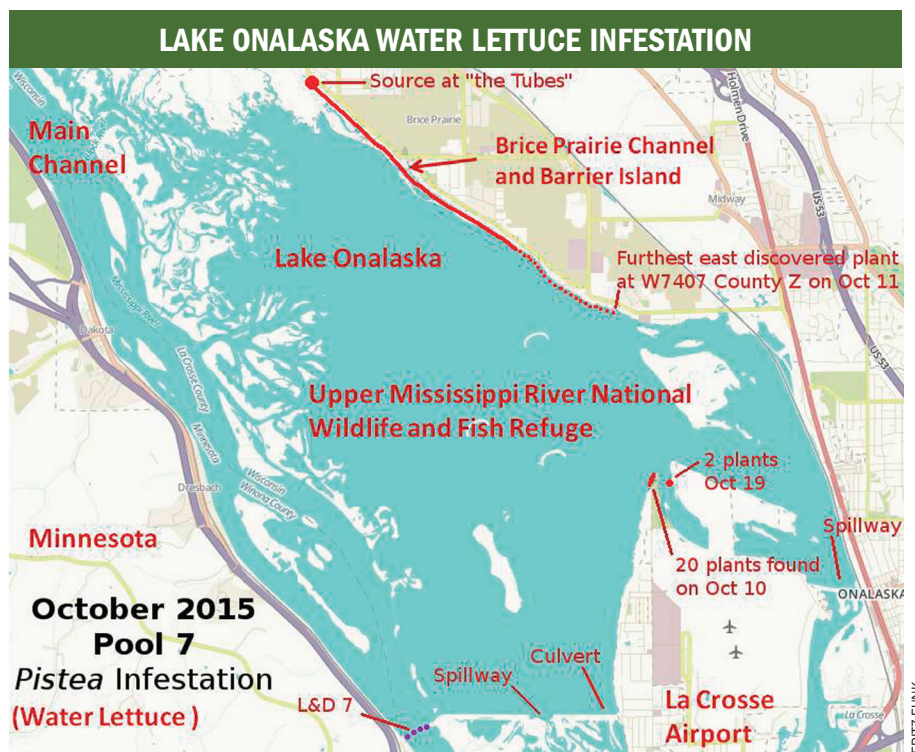
tantly served as a way to recruit volunteers over the next three weeks.

On Friday, Caven and Niemec conducted an airboat survey to determine the extent of the lettuce infestation and find the source. As they headed out from the landing into the channel they turned north to search for where the water lettuce had been introduced to the channel. An extensive mat of water lettuce and water hyacinth filled the water between and around several docks at the north end of the channel and appeared to be foci of the infestation. It was later confirmed by law enforcement that a nearby home owner with a small pond 20 feet uphill from the water’s edge was the source of the introduction. The small pond had overflowed and carried the



A narrow barrier island is all that separates the Brice Prairie Channel from Lake Onalaska. Without it the water lettuce infestation would have spread over a much larger area.

RUTH NISSEN



Water lettuce plants were collected all along the east side of Lake Onalaska, a major backwater of Navigation Pool 7, Mississippi River. The buoyant lettuce plants floated over a mile from Brice Prairie to the opposite shoreline near the La Crosse Airport.

decorative pond plants into the Brice Prairie channel. The resulting thick carpet of lettuce and water hyacinth was the result of one summer's growth.

After spinning the airboat around in the narrow channel Caven and Niemec headed back to finish mapping the extent of the infestation. On the south end of the channel they discovered the infestation had spread beyond the shelter of the barrier island. Thin stands of wild rice stalks and mats of floating wild celery leaves caught in the rice had acted as a giant net preventing the lettuce from drifting with the wind out into Lake Onalaska.

Upon returning to the landing they checked the weather forecast and came to the same conclusion as Funk. The high winds forecasted for Monday would widely broadcast the large numbers of lettuce plants entrapped in the rice and floating mats of vegetation. A multi-agency and volunteer cleanup event was planned by Niemec, Caven and Funk for Sunday morning (less than two days away) using refuge volunteer lists and Funk's local contacts to spread the word.

"The local newspaper was contacted on Saturday and they went all out to get the notice that volunteers were needed in the Sunday morning edition," Funk says.

When volunteers heard the call to action they showed up Sunday morning

at the boat landing with their kayaks, canoes, pontoons and jon boats. Other volunteers brought chest waders and knee boots to work the shoreline. They came from cities and towns bordering the Mississippi River in Wisconsin and Minnesota.

"Over 40 volunteers were present during the day, many of whom stayed until late afternoon when all visible lettuce plants had been removed from the beds of rice and mats of vegetation along the south end of the channel," Funk says.

On Monday, as predicted, high winds struck with gusts over 40 mph, breaking up the vegetation mats that had been holding back lettuce plants.

"Only small numbers of plants that were overlooked during the Sunday cleanup moved east along the Brice Prairie shoreline," Funk recalls.

Although no further large scale cleanup events were scheduled, refuge staff and Shawn Giblin, DNR's Mississippi River water quality specialist, continued cleaning up at the "source."

Caven and Giblin, spent many hours searching along the shoreline and islands of Lake Onalaska. Funk, with other volunteers, kept the pressure on in the channel by checking daily for three weeks, diligently searching the mats of vegetation still remaining among the

rice stalks, the edges of the channel and around the numerous docks which also harbored the floating plants.

Despite the daily searches, lettuce plants continued to be discovered each day for three weeks until Oct. 27.

At that time Funk finally felt confident that, "We have been able to contain the risk of additional plants escaping downwind/downstream out into the lake and river."

Nevertheless, weekly checks continued on into early December covering the channel and the south shore with occasional lettuce plants still being collected.

Giblin praised the volunteers' persistence. "This was much less about resource agency response than it was about Funk, the local organizations and the incredible efforts of all the volunteers. The whole experience made me very proud to live in the La Crosse area where the citizen environmental and work ethic is very strong."

It appears for now that the lettuce infestation was successfully averted, but plans are being made to continue surveillance for the presence of water lettuce. Those involved, are keenly aware that one of the drawbacks of a mild winter is it increases the possibility of seeds, and potentially invasive plants, successfully overwintering.

One thing is for sure, though. The partnership of volunteers, Caven and agency staff that formed last October will be ready.

"The effort and coordination put forth by volunteers for this response has been exemplary and should be looked at as a model for how the Department of Natural Resources and local partners can work together to help protect Wisconsin's waters from the impacts of invasive species," says Shelley Thomsen, DNR's Land and Rivers Team Leader, Bureau of Water Quality.



Ruth Nissen is stationed in La Crosse and works with the DNR's Mississippi River Team.



HOW CAN YOU HELP

Keep your eyes peeled when boating, hunting, fishing or trapping. If you see something suspicious go on the DNR website at dnr.wi.gov and follow directions for contacting the Department of Natural Resources, or contact the River Alliance of Wisconsin at 608-257-2424, or email info@wisconsinrivers.org.

Center for Limnology
Ph.D. student Michael
Spear casts a net to
detect invasive species in
Madison's Lake Mendota.
Soon, however, nets could
be replaced with test tubes
and genetics machines.

CSI: MENDOTA

HOW SCIENTISTS ARE USING DNA TO DISCOVER INVASIVES.

Michael Spear

The sun rises over the skyline. A boat speeds across the open water. Music by The Who blasts in the background as a young scientist looks through an iridescent green test tube.

No, it's not the opening sequence of your favorite TV crime drama. It's just another day at the University of Wisconsin-Madison Center for Limnology, where professors and students are bringing crime scene investigation technology to the environmental crises that face our community, country and planet. They say nature mimics art, and for these intrepid scientists, nature has cooked up a Hollywood-caliber villain: invasive species.

Once invasive species establish in an ecosystem, it's nearly impossible to control their harmful effects. But there is a soft spot in their brute-force takeover, a chance to neutralize the threat.

When the invasion has just begun and one or two individuals are lurking beneath the water's surface, management actions could thwart a species' attempt to build its population for a total ecosystem overthrow. Invasive eradications have suffered some high-profile failures in recent history, bringing into question its feasibility. But with early detection and action, an eradication effort's probability of success increases exponentially.

When an invasive species becomes abundant enough to see, it's usually too late to eradicate it. The trouble is, these organisms are almost impossible to detect at low, manageable levels. Until now.

Faced with this daunting challenge, a few rogue scientists at the Center for Limnology are ditching their nets and traps for cutting-edge forensic science. Like sweeping a crime scene for a perpetrator's DNA, these limnologists can sample the water for genetic fingerprints of invasive species, potentially well before traditional surveillance would spot

an invader.

They used to rely on dragging a small net through the vast lake, then picking by hand through algae and innocent animals to find one or two bad guys, a true needle-in-a-haystack scenario. But now, in a cup of water, they can pick up the genetic signal broadcast by secretive invaders through shed skin, feces and even sperm. It's called environmental DNA, or eDNA, and it's the smoking gun left behind by even the most scarce and secretive organisms.

These exotic organisms come in all shapes and sizes, arriving "undercover" from the four corners of the earth. There's the tiny spiny water flea, billions of which voraciously consume the life of Lake Mendota like hordes of zombie sea monkeys, triggering algae blooms in their wake. And the menacing lamprey, which literally suck the blood out of game fish in Lake Michigan with their circles of vampire teeth.

Of course, it's not these animals' fault. They were harmless, important parts of their home ecosystems before being accidentally, or sometimes purposely brought here by humans. But now, in the absence of their natural predators, these invaders can wreak havoc on the delicate balance of life in Wisconsin, which is why researchers are scouring aquatic habitats for telltale genetic markers.

It works like this: instead of spending lots of time and money hauling nets through a huge lake, trying to capture an actual organism, the researchers rely on the natural diffusion of DNA in the water to disperse the signal of the invader throughout the lake.

That way, instead of looking for one

tiny or elusive individual, they can target a much larger cloud of incriminating evidence as the animal constantly emits a DNA signal of its presence. Just by scooping water from the lake, they drastically improve their chances of collecting proof of an invasive species, with significantly less time, effort and money than traditional sampling methods.


After returning to the lab, they filter that water and extract the DNA that it contained. This includes DNA from anything nearby in the water: bacteria, fish, plants — even human swimmers who were having too much fun to get out of the water to find a bathroom.

But DNA is like a fingerprint, not only among individuals but among whole species. So the researchers can pick out the DNA of the invader, if it's there, by looking for genetic sequences unique to that species, just like a prosecutor pins a crime on a suspect with their personal DNA signature. They can even get an idea of the amount of DNA present, giving indications of how far along an invasion might be.

With advanced detection of an invasion, we can do more than assign blame for past ecological destruction, like forensic evidence incriminates a criminal. We can head off invasions before they happen, sparing thousands of ecosystems and billions of dollars.

We can even apply this technology beyond invasive species, monitoring low-level populations of concern like endangered species, or rapidly assessing the species composition of whole lakes based on the DNA instead of intensive, expensive and intrusive netting.

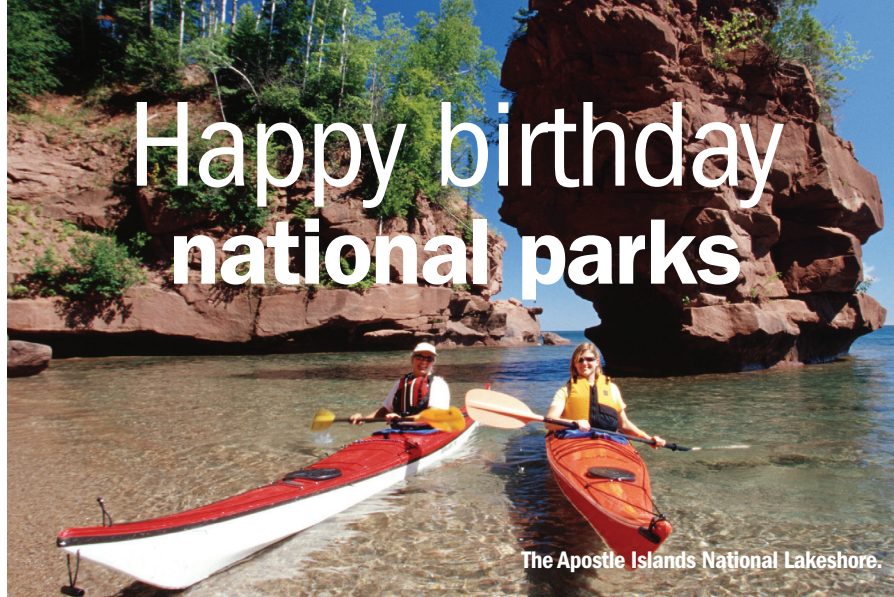
Advancing technology is often at odds with the environment, but the scientists at the Center for Limnology are showing how we can employ technology for conservation instead of exploitation. As with any new method, there are kinks to be worked out, but eDNA is a promising new part of the ecological toolbox used to answer questions about the environment.

So while they may lack the suave, tinted sunglasses and pithy one-liners of the TV detectives they evoke, these scientific investigators do use state-of-the-art forensic tools to fight these invaders, and eDNA might just be the leg up they need to help them bag the perp. 

Michael Spear is a Ph.D. student working with Dr. Jake Vander Zanden of the UW-Madison Center for Limnology and Dr. Patrick Krysan of the UW-Madison Genome Center of Wisconsin.

KATHERINE SPEAR

Happy birthday national parks



WISCONSIN DEPARTMENT OF TOURISM

LET'S GET OUTDOORS AND CELEBRATE AMERICA'S BEST IDEA.

Joseph C. Warren

The National Park Service turns 100 this year. But the story of our national parks begins well more than a century ago.

In 1872, Yellowstone National Park was established as America's first national park in Wyoming and parts of Idaho and Montana. Yellowstone was also the first of its kind in the world and the founding of Yellowstone began a worldwide national park movement.

After the establishment of Yellowstone, several other U.S. national parks and monuments were established, mostly in the western states. However, no single agency provided management of all the different federal park properties.

Because of this, many individuals recognized a need to consolidate management of a national system of parks for the preservation of existing parklands and for lands that had yet to be protected.

"...I have done the best I could to show forth the beauty, grandeur, and all-embracing usefulness of our wild

mountain forest reservations and parks, with a view to inciting the people to come and enjoy them, and get them into their hearts, that so at length their preservation and right use might be made sure," wrote John Muir in the preface to *Our National Parks* in 1901. Muir, who emigrated from Scotland, but grew up in Wisconsin, was one of the most influential voices for the preservation of America's wild places.

It wasn't until 1916 that the National Park Service was officially created. In the act that established the agency within the U.S. Department of the Interior, the purpose of the National Park Service was identified to "conserve the scenery and the natural and historic objects and the wild life" and to leave the land and resources "unimpaired for the enjoyment of future generations."

The National Park Service still works to meet these goals, while also working with communities and partners across the country to create local recreation opportunities. Even from the beginning, Stephen Mather, the first director of the National Park Service, recognized that the states and the federal government needed to work together to develop a great national system of parks.

Today, the National Park System consists of more than 400 areas in all 50 states, including national parks, monuments, lakeshores, seashores, rivers, recreation areas and trails, protecting some of the most beautiful and ecologically diverse places in the country.

Wisconsin is home to several National Park System properties: Apostle Islands National Lakeshore, the Ice Age and North Country National Scenic Trails, the St. Croix National Scenic Riverway, as well as the Ice Age National Scientific Reserve. The Ice Age Reserve is administered by the Wisconsin Department of Natural Resources and was created to protect, preserve and interpret outstanding examples of glaciation in Wisconsin. The reserve consists of nine units, including Interstate, Mill Bluff and Devil's Lake state parks and the Northern Kettle Moraine State Forest.

In this centennial year, let's celebrate what Muir, Mather and so many visionaries understood — that the value of parks cannot be quantified. Whether it's a national, state or local park — get out to the parks and they'll get in your heart.

Kayak to the Apostles. Paddle the St. Croix. Navigate the North Country. Discover the Ice Age. Camp. Hike. Learn. Explore. Enjoy. It's why these special places have been set aside for us and for generations to come.



Joseph C. Warren works in DNR's Bureau of Parks and Recreation.



COURTESY NATIONAL PARK SERVICE



GET OUTDOORS IN 2016

- National parks centennial events are planned throughout 2016. For more information, see: nps.gov/iatr/planyourvisit/calendar.htm.
- For a list of events and nature programs at Wisconsin's State Parks, go to dnr.wi.gov and search "get outdoors."



Bringing northerns back to Green Bay

A 6-week-old 4-inch northern pike fry is a sign of success.

CAROL LARSCHIED

OVERCOMING IMPEDIMENTS TO MIGRATION AND SPAWNING YIELDS SURPRISING RESULTS.

Charles Larscheid

It was early on March 31, 2015 and near freezing as Mike Mushinski, my co-worker and I walked through a flooded stand of invasive phragmites to reach our fyke net. The net was set in a lower stretch of an unnamed stream known locally as Willow Creek, located in the greater Green Bay metropolitan area (only 3 miles from Lambeau Stadium).

Someone had driven an all-terrain vehicle through the stand of 15-foot-tall weeds and knocked down a trail. Walking through the mat of reeds, we broke through the ice with each step.

We were hoping our net had caught adult northern pike or “northerns,” as old-timers like to call them, on their way to their spring spawning wetlands. Northern pike are the second largest predator fish in the bay of Green Bay.

The bay is a fertile estuary of Green Bay’s Fox River and an arm of Lake Michigan. Department of Natural Resources’ fishing creel surveys, netting results and other observations have noted the once robust northern pike population on Green Bay has fallen precipitously.

Successful early ice northern pike fishing on Green Bay has become only a fond memory. Walleyes have been a success story but the depleted northern pike population, along with the recovering but still small population of muskellunge, has led to an unbalanced predator/prey balance on the bay, strongly

tipped toward forage fish such as gizzard shad or white perch.

Green Bay northern pike have evolved generally to leave the bay each spring and attempt to spawn in inland wetlands. They sometimes travel miles up flooded road ditches and small streams to reach a suitable wetland during March and April.

Along the way they often encounter impediments to passage, such as dams or poorly positioned culverts. They are also vulnerable to natural and human predators. If the fish are able to pass through or over the obstacles, they may find that there are no suitable wetlands in which to congregate and spawn at the end of their journey.

In 2007, the Brown County Land and Water Conservation Department received a grant from the National Fish and Wildlife Foundation to restore the bay’s declining northern pike population. Then, we received a four-year grant from the U.S. EPA’s Great Lakes Restoration Initiative (GLRI) and additional

funding from the Green Bay/Fox River Natural Resources Damage Assessment Trustee Council, U.S. Fish and Wildlife Service, Ducks Unlimited and other sources.

To begin our work, we found surprisingly little research on Green Bay’s northern pike. We relied on past work from Dick Rost, retired DNR fish technician, and others to form specifics of our restoration plan.

We set two goals. The first was to find and remove impediments to fish migration in streams and road ditches leading from the bay to potential spawning wetlands on Green Bay’s west shore. The second was to restore wetland destinations that have become degraded and lost the ability to provide suitable spawning habitat.

Since 2007, we have completed 50 wetland restorations or impediment removals on streams and road ditches on Green Bay’s west shore, primarily in the Village of Suamico and Town of Pittsfield. We’ve found that completed wetland restorations benefit many species of amphibians, waterfowl, reptiles and other fish species. They either live in the restored habitat or use it to reproduce.

But northern pike spawning success in some of our early projects had been disappointing. The flat topography of the area leads to flashiness or quick rises and falls in stream and ditch water flow. That can strand adult fish or dry out developing eggs and young fry.

Still, we continued and learned some valuable lessons. Many fish spawning events are chancy at best so we learned to try to mimic a natural wetland that



Mike Mushinski checking nets at Bower Creek.

CHARLES LARSCHIED

maintains a flat gentle flow throughout the spawning and egg development time period. Sometimes that condition requires a water control structure that holds the falling water levels just a little bit longer to save the developing eggs, especially during a low precipitation spring.

With that knowledge and experience we began producing some restorations that have been widely successful.

On one site off of Brown Road in Suamico, we trapped 10,500 northern pike fry in 2013 leaving the wetland and continuing to the ditch to begin their journey to the bay. Many other sites have shown impressive success rates.

In 2015, we decided to expand our efforts. We believe there might be an untapped spawning potential on tributaries of the Green Bay's Fox and East rivers. But many of these waterways are small and turbid. Their watersheds originate in areas of heavy soils and suffer from agricultural and residential nonpoint pollution.

To access Willow Creek, migrating northern pike would have to enter from the bay, travel up the Fox River, then up the muddy East River to Willow Creek. If we found them there, we could add Willow Creek's watershed to a list of those within which we are considering sites for additional potential wetland restorations. If not, we might be able to find what is preventing them from getting here.

I had a 22-year career with Brown County as its Port and Solid Waste Di-

rector and retired in 2011. I have lived in the area for most of my 62 years. I am an amateur naturalist and hunt and fish, so when Mushinski asked, I came out of retirement to take over for him as Project Manager of the Pike Habitat Restoration Project after he was promoted to department head.

I was nervous because we had set our net in Willow Creek on a hunch (my hunch) that adult northern pike might be using these waterways to reach upland wetlands in the watershed. Research and our past observations show that northern pike begin ascending waterways for their spawning run when the water temperature approaches 40 degrees. They begin spawning when the temperatures climb towards 50 degrees.

With reduced visibility, we needed a way to locate adult northern pike moving in the streams. We turned to fyke nets, a series of hooped net funnels leading fish into a pot or holding area in the net.

We reached the creek and looked at the net. Since the net was mostly submerged in the cloudy water, we couldn't see what was in it. Mushinski and I stepped down from the bank and waded waist-deep to the purse-like end of the net. We untied it from the fence post anchoring it in the middle of the creek and lifted the net. We immediately got a face-full of icy water from a net-full of splashing, excited fish!

We looked at each other and started laughing. It was the first time we had set and raised a fyke net, and now we had a

mess of fish on our hands.

Immediately we got to work. We began to count, identify and release the non-target fish. That day we had many, including common shiners, brown bullheads, yellow perch and white suckers. Thankfully, we also had six beautiful adult northern pike. We determined their sex, measured them, floy tagged them, recorded the unique number and released them upstream of the net to continue their journey.

The next day we found 34 northern pike in the net at that site. We also caught 50 northern from nearby Bower Creek. This continued at these and four other sites for about a week until the run began to slacken. During the entire spring 2015 season, we netted six sites from March 31 through April 23. Willow Creek tallied the highest with 104 northern. Next was the Bower Creek site with 92. The total for all sites was 272 northern pike.

We set our fry traps in the same locations following the end of the northern pike spawning migration but unfortunately found no young of the year. We suspect the adults either encountered impediments in the streams that prevented them from accessing wetlands further upstream, or the wetlands were poor and unsuitable for spawning use.

Continued research should allow us to narrow down some of the problems northern are encountering in these watersheds. We will then develop plans to correct some of those problems. The need to provide spawning habitat continues.

"The accomplishments of Brown County Land and Water Conservation Department and other partners such as Oconto County LWCD, Ducks Unlimited, The Nature Conservancy, Oneida Tribe and University of Wisconsin (Green Bay and Madison) over the last several years will continue to benefit northern pike and other wetland-associated species for many decades to come, and ultimately make the area a better place to live and recreate in," says Tammie Paoli, DNR's Green Bay fisheries biologist.

And finally on the Willow Creek site where we first found the northern — we are proposing two wetland spawning complexes for 2016!



Charles (Chuck) Larscheid is the project manager for the Brown County Land and Water Conservation Department's West Shore Northern Pike Habitat Restoration Program.



To view a video on the project, visit:
<https://www.youtube.com/watch?v=SelwQL4cvXM&feature=youtu.be>



The author's daughter, Jane Stevens, finds the panfish are biting.



A worm is Jane's bait of choice today.

Kid fishing

IT'S ALL ABOUT THE ATTITUDE.

Story and photos by Jessie Stevens

Fishing. It's a pastime that can engage multiple generations out in nature and, if you are so inclined, can put dinner on the table at the end of the day. What better way to engage with a young one than to head outside, fishing poles in hand, for an evening of fun?

Imagine a kid sitting on a bank next to his or her parent, hat pulled low over his eyes, line in the water, relaxing and waiting for a bite. Now, bid that imagination a fond farewell. Patience is a virtue, one that we should strive to teach our children, just not when we are looking to foster a love of fishing.

There are two main truths to fishing with kids. The first is that there will be chaos.

Lines will tangle, poles will be dropped — in and out of the water — fingers will be hooked, squeals will be heard all up and down the bank, fish will fly through the air, worm buckets will dump and chances are good that at least one kid will take an inadvertent swim.

The other truth, is that if the fish aren't biting, kids will be bored. Bored kids never turn into fishermen.

The key then, is to go when the fish will be biting. The best opportunity for this is when the panfish spawn in the spring. The males come into the shallow water to make their round pebbly nests on the bottom and the females, of course, follow. There they are, nice and shallow, hungry from all that reproductive work and ready to eat anything that hits the water. Time it right and on a nice evening any worm that sinks below the surface will be swallowed up by a brightly colored fish. A few may be "monsters" as big as your hand and all will bring a smile to a kid's face.

Of course, there are times that, despite our best plans, fish will be fish and sometimes they just don't bite. Remember, nobody has time to complain of boredom when they are having fun. Play with the worms, poke in the shallows, throw stick "boats" in the water, do all the things your dad would have frowned upon



The author's daughter, Ivy Stevens, maneuvers a cane pole that is bigger than she is.

during a serious fishing expedition. Keep it fun and leave a line out, just in case.

It is in the nature of those of us who are fishermen to want to bring the stuff, the bells and whistles and fancy poles and bait. Remember, this is kid fishing; leave it all behind. A cane pole is ridiculously long in the hands of a child but the lack of any moving parts makes it perfect. Even a tiny pole with your cartoon character of choice will do. Leave the adult-sized spinning rods, fly reels and fancy tackle home for another day. Instead, get the shovel, grab the kids and go dig worms.

Picking worms with an adult manning the shovel brings an excitement all its own. When mom is digging in the dirt even squeamish kids get excited about finding worms! Turn over dirt until you think you have enough for your evening of fishing and then dig that much again. You don't want to run out of worms. Kids go through worms at a remarkable rate. Sometimes the fish eat them, sometimes they mysteriously fall off the hook, and sometimes they need to be played with or dropped. Sometimes the whole



It's not always about chaos. Sometimes fishing with kids is about the moments that are quiet.


container ends up in the drink. Take a deep breath, prepare yourself for the chaos and keep digging.

Once you've got an ample supply of worms, rig your lines with a simple bobber, sinker and hook — grab a hemostat on your way to the lake for unhooking fish that were allowed to nibble at the worm for too long and you are ready to begin.

So long as the parents come mentally equipped for the chaos, the squeals as the lines tangle will be happy and wet arms will be forgotten in the excitement of the newest "monster fish." A new fisherman just might bud before your very eyes.

Fry up the filets of all those "monsters" for dinner and those kids, hungry from the afternoon, will dive into their plate and, along with their meal, accidentally devour a lesson in just where their fish dinner comes from.

A few sessions of panfishing in the spring and you'll have enthusiastic young fishermen on your hands.

Just remember, the fish need to be biting and there will be chaos. 

Jessie Stevens writes from Edgerton.




SAFE EATING GUIDELINES

Some waterways have fish consumption advisories. The good news is that panfish have short lives that they live out near the bottom of the food chain, two things which mean they'll have less time to absorb toxins into their bodies before you bring them home for dinner. Often, they are among the least restricted fish when it comes to safe eating. To find safe eating guidelines for fish in Wisconsin, go to dnr.wi.gov/topic/fishing/consumption/index.html.



BAIT AND SWITCH

While the pictures here show kids hauling in bluegills and pumpkinseeds, if they aren't in your area, don't give up! Even carp can be caught one after another in the spring. Just switch your worms for canned corn, though you might have to give the kids a hand pulling them in. If you aren't sure what the fish are biting on, ask around. Local bait shops are always in the know and can provide you with any licenses needed for your area. Find out what your local fish are, keep the set up simple and head out with a smile.



Sometimes the trophies from our hunt aren't found on the mantel. They live in our memories of the hunt.

The 2-year tom

SPRING TURKEY HUNTING TURNS INTO A QUEST FOR ONE MAN'S WHITE WHALE.

Ron Weber

The gobble startled me as it shattered the predawn silence. A few soft hen yelps from my slate call had incited the response, which in turn, excited me. It was the first morning of my spring turkey season and it seemed as though it might be a short one. I knew I had a tom close — easily within 60 yards.

As I impatiently waited for light, I couldn't help myself but to throw out a few more soft calls, each answered by a booming gobble. I know many "experts" would say that one should avoid calling too much to a tom on the roost. But for me, gobbling is the kick that makes spring turkey hunting so special.

First light came and went, but the tom remained roosted somewhere just out of sight down the field edge, most likely in a large white pine which served as a favorite roost tree.

Finally, the flapping of wings signaled his descent into the field to begin another day of strutting, gobbling and searching for hens. He glided about 150 yards into the field and began walking — pecking the ground as he did. I tried a series of soft yelps and purrs, which prompted another gobble and a brief display of his fan, but he seemed intent on walking up a small rise in the field.

Once he reached his destination he puffed himself into full display and with a very distinctive thick beard strutted back and forth in full glory along the rise, every so often letting loose a gobble.

I was still confident that it was just a matter of time before he would notice my decoy positioned in the field 20 yards from the woods line where I was concealed under the branches of a large white spruce. My confidence was shaken, however, when I heard yelps from over the rise and across the field.

Eventually, the tom started moving in the direction of the yelps. I tried to persuade him with a variety of calls, but he disappeared over the rise. It can be hard to compete with real hens and after no sign of him for a half hour — save a few gobbles from the other side of the field — I figured that was the end.

I never imagined, though, that was only the beginning.

Over the rest of my week-long first season, I had several more long-range encounters with the thick bearded tom whose gobble I had come to distinguish from other toms in the area.

Though he was often quick to respond to my calls, he never showed any real interest in coming in to my decoys. I took this indifference as a slap to my hunting skills and he soon became my single target, my “white whale.”

As my first season ended, I passed up several toms waiting for that one tom that eluded me. Still, I had tags for two more week-long seasons and felt confident that sooner or later he would be mine.

That feeling of certainty was starting to fade by the middle of my last season. Though I had heard him almost daily, I had not even caught a glimpse of

him over that time. He seemed to have taken to the woods and as far as I could tell was rarely in a field. I, likewise, had changed my tactics and was trying to position myself in areas of the woods where I heard him gobbling. He seemed

to have a pattern of moving along a trail that ran through one section of woods towards a small field that was tucked into the woods.

It was there that I found myself early in the afternoon of my last day of spring turkey season. There had not been any gobbles since early in the morning and I was dozing in the warmth of the mid-May sun.

Suddenly, I was brought out of my impending slumber by a gobble. For a few moments I was thinking maybe I had just dreamt it. But then another gobble rose above the sound of the wind rustling the freshly hatched leaves. It wasn't just any gobble, it was That gobble. A series of seductive yelps brought a response that told me he was in the direction of the small field but not in it.

As the sun sank on the horizon my season drew to a close with my tom still somewhere out there.

When you are a child a year seems like a lifetime. For the rest of us, a year has a way of passing like a summer day. Soon, I found myself looking forward to another turkey season. This year, though, I only had one tag so my season would be limited to a single week.

A few days before my season was set to begin I went out early one morning to see what type of gobbling activity I could hear in the woods and fields around my house. There was assorted gobbling in just about every direction as the dark faded into light. Just as the sun was creasing the tops of the trees I heard it. That gobble.

I had long since moved on from the quest to get my tom last season. He had won and I assumed it was likely that a fall hunter, a predator or an unusually harsh winter had taken him. But there he was. His gobble had awakened my memory and there was no doubt it was him.

Unlike the season before, he seemed much quieter. I never saw him and only heard him twice over the first five days of my season. Maybe the winter had been hard on him or maybe he was no longer the dominant bird I saw on that small rise the year before. It didn't matter why, I just knew that I missed his gobble.

Early in the afternoon of the second to last day of my season it began to rain — light at first, but steadily increasing in intensity. I went to my rainy day spot, protected under the spreading branches of the big white spruce where I had first seen my tom. It had been one of those

days — little gobbling in the morning and none since. I had not seen a turkey all day and was losing my drive to keep going. A hot shower and warm meal sounded very good about then. I convinced myself to stay until 5.

A little after 4 p.m., as I stared blankly into the field, out of the corner of my eye I caught the unmistakable jerky movement of a turkey walking along the edge of the field to my right. With a shift of my eyes a hen came into view about 30 yards away. She seemed to be walking right towards my decoy. My eyes followed her and I again caught movement to my right. There he was. There was no mistaking the paintbrush thick beard which hung almost to the ground.


I had positioned the barrel of my shotgun on my knees and secured the butt of the gun on my shoulder. The hen passed into an opening in the spruce branches directly in front of me no more than 15 yards away. The tom was following directly in her wake. The screen of spruce branches made them oblivious to my presence. Now, it was just a matter of a couple of feet.

“Boom!” At the sound both turkeys’ heads raised. “Boom!” I yelled and my voice reverberated a second time across the field sending the turkeys clucking excitedly, half running, half flying their way to the top of the rise in the field. Then they disappeared.

Back under the spruce, I contemplated what had just happened. Up until the moment I first yelled “Boom!” I really thought I would get my tom. The safety was off, my finger was on the trigger. I just couldn't squeeze it. And I knew why.

I had total respect for that bird. If he was going to die, he deserved to go out in full glory, strutting and gobbling like the first time I saw him. He didn't deserve to be ambushed like he was set up to be. Besides, the woods and fields in my world were more interesting knowing he was still out there.

The next morning I took a jake, maybe one of my tom's offspring, ensuring that we would have turkey for the table.

Though his paintbrush beard and tail fan cannot be found in the room where I keep other mounts of birds, fish and deer, my 2-year tom can be found with so many other trophies in the corners of my memory. Those are the trophies I find myself revisiting the most. 

Ron Weber writes from Weyerhaeuser.



DNR FILE

Talking with the turkeys is a most exciting part of turkey hunting.



The great horned owl is known for its long, earlike tufts, yellow-eyed stare and deep hooting voice.

Teeing up great photos

GREAT HORNED OWLETS ARE FOUND NESTING NEAR THE 9TH HOLE.

Story and photos by Tim Sweet

Pellets of snow, referred to as “*graupe*l” by my favorite TV meteorologist, were falling from the sky intermittently on April 21 last year when I went in search of a baby great horned owl my friend Dan told me about. He had seen an owlet on the ground underneath a grove of hemlock trees while preparing to chip his Titleist onto the 8th green of our neighborhood golf course.

After supper the next evening, I wandered out to see if I could locate the bird. I managed to spot an adult great horned owl perched on a branch before it flew off, and I heard some unusual chirping sounds, but the Norway spruces and hemlocks on this part of the golf course were so dense I couldn’t spy any babies or a nest.

Around 7 p.m. the next day, I heard similar bird calls coming from somewhere in this group of towering conifers. I kept circling the area trying to zero in on the source of the sounds, when I spotted a young owl at eye level perched in a Norway spruce. I excitedly snapped a couple of photos and then ran home to

return with a longer lens. When I got back the owl was gone.

Then, a moment or two later I spied a smaller sibling sitting on the ground under a large hemlock. It was covered in beautiful downy feathers and had piercing yellow eyes. I photographed it from a distance with my long lens.

Over the course of the next two weeks, the two young owls were seen in various trees in the wooded part of the golf course. In the last rays of sunlight, they were at the top of a sugar maple that was beginning to flower.

On April 24, I found them sitting together near the nest in a large hemlock.



This powerful predator can take down birds and mammals even larger than itself.



Great horned owls are at home in wetlands, forests, grasslands, cities and almost any other semi-open habitat — such as a golf course.

The camouflage of their feathers helped them blend into the forested scene.

At twilight on the first Saturday in May, a rapidly growing owlet sat staring at me from a tall maple above the elevated tee box on the 9th hole. Meanwhile, I watched a sibling flap into an ancient basswood not far away.

The highlight of my springtime bird watching came two evenings later. Dan and his son were arriving at the grove just as I was walking out to look for the owls. It took some careful searching, but we discovered one owl high in a hemlock. Then we found another. And to our great amazement, there was a third feathery sibling perched on a nearby limb! Where had this other marvelous creature been hiding for the last two weeks?

May 4 was the last time I saw any of the young ones. But what a wonderful experience it was to observe them for a few weeks in our neck of the woods. Having the opportunity to view wildlife is indeed a splendid treasure!



Tim Sweet writes from his home in Clintonville.

Clean Green Action's Choose to Reuse events encourage residents to bring in items in good working condition.

And the award goes to...

COMMUNITIES ARE LEADING THE WAY TO RECYCLING EXCELLENCE.

Story by Sherry Wise Bursaw and photos by Carol Davis

When you choose to recycle that plastic bottle or stack of office papers, do you think about Wisconsin's strong history of recycling or the cumulative impacts of recycling efforts undertaken by citizens, visitors and businesses across Wisconsin? Through recycling and composting, we keep almost 2 million tons of material out of Wisconsin landfills every year, conserving energy and resources, and protecting our environment. And, recycling is good for our economy, providing hundreds of local jobs and reusing valuable materials that would otherwise go to waste.

Wisconsin's recycling law bans disposal and incineration of certain materials and endows local government responsible units (RUs) with the responsibility for implementing and enforcing municipal recycling programs. About 1,060 RUs — including municipalities, counties, tribes, solid waste management units and other units of local government — implement local recycling programs.

While each of us plays a part in recycling, many RUs and organizations work especially hard each year to make their recycling programs effective. Through its annual Recycling Excellence Awards, the Department of Natural Resources recognizes the outstanding recycling efforts, innovation, and performance of communities and organizations, both small and large, throughout Wisconsin.

Awards are presented in four categories including overall program, projects and initiatives, special events and innovation. Meet a few of Wisconsin's recycling leaders recognized with awards in 2015:

Overall Recycling Program: City of Middleton's "Clean and Green Middleton"

Over the past seven years, the City of Middleton has offered biannual reuse and recycling events called "Clean & Green Middleton." Led by the city's Sustainability Committee and staffed by hundreds of volunteers, each event was a "one-stop shop" for residents looking to reuse or recycle all kinds of items, including: furniture and household items, durable medical equipment, eyeglasses, books, printer cartridges, electronic equipment and latex paint. Many were donated to local organizations and fundraising efforts.

In response to the success of these events, the city recently opened its new Middleton Recycling Center, a 7,500-square foot drive-through facility that is open on Saturday mornings year-round. Now, residents can conveniently drop off their reusable and recyclable items.

In addition, the city has enacted ordinances that regulate the recycling of plastic bags and construction and demolition waste.

Projects and Initiatives: City of Thorp's "14 in 14"

When the City of Thorp's Energy Independence and Sustainability Board noticed a dramatic decline in the city's recycling — from an average of about 163 pounds per person per year in 2007 to only 94 pounds per person per year in 2011 — they decided that it was time for a change. First, the board worked with city officials to select a garbage disposal company, Express Disposal, willing to partner proactively in the city's recycling efforts.

Next, the board worked to get the community involved by announcing a "14 in 14" initiative with the goal of increasing the city's recycling totals by 14 percent in 2014. To help motivate residents and measure progress, they set up gauges (provided by the high school's Technical Education class) at the City Hall and a downtown park. School competitions got students involved, and one household each month was designated "Recycling Ambassador" based on its excellence in recycling.

The City of Thorp increased its recycling weight total for 2014 by more than 24 percent — nearly twice their original goal! In 2015, they continued to increase recycling efforts, adding a poster contest and "Invention Convention" featuring new and exciting ways for students to reduce, reuse and recycle.

Innovation: Clean Green Action in Wood County's "Recycling Ranger" and "Choose to Reuse" programs

Since forming in 2008, the Clean Green Action citizen's group has worked to bring recycling, education and conservation programs to southern Wood County. One such program is the "Recycling Rangers," a group of volunteers who travel to local events like sports tournaments, fireworks shows and other community celebrations to collect recyclable materials.

Their 18 recycling containers are also available for loan to other organizations and events when the Rangers aren't using them. In 2014, the Rangers collected 780 pounds of cardboard, plastic, aluminum and glass.

Besides their recycling efforts, the Clean Green Action volunteers have initiated community "Choose to Reuse" programs in Portage, Adams and Wood counties.

These programs encourage citizens to bring items in good working condition to a central location where other residents can take them. To encourage other communities to hold these events, the organization has developed a "Choose to Reuse" program manual that's full of tips, tricks and answers to FAQs.

Special Events: Town of Metomen/Alto Fair Committee and City of Rice Lake's "Operation City Pride"

To encourage recycling, the Town of Metomen makes recycling containers available to local communities free of charge for use at community events. In 2014, the community of Alto used them at the Alto Fair and collected 47 bags of plastic bottles. The containers are also used by the Ripon FFA Alumna for their June Dairy Breakfast each year.

In April 2014, the City of Rice Lake sponsored its first city-wide cleanup,

"Operation City Pride," which provided residents with an opportunity to clean up their properties and beautify the city. Items including household hazardous waste, construction debris, appliances, electronics, brush, household items, medications, furniture and tires could be reused, recycled and disposed of free of charge. More than 700 vehicles went through the event which was funded without the use of tax dollars through the city's solid waste and recycling fund.

Is your community or organization a recycling leader? Nominate them for a 2016 Recycling Excellence Award. For information on how to place a nomination and a list of previous years' winners, visit dnr.wi.gov and enter keywords "recycling awards."

Sherry Wise Bursato is a DNR waste management specialist in Eau Claire.



Items you might find at a Choose to Reuse event include furniture, small appliances, bicycles, office equipment, books, clothes and seasonal decorations.



A Choose to Reuse event held in the Town of Grand Rapids.

DNR'S 2015 RECYCLING EXCELLENCE AWARD WINNERS:

CATEGORY	RECOGNITION	WINNERS
Projects and Initiatives	Recognizes a finite project in 2014 that demonstrated cost effectiveness or potential cost savings while increasing the overall recycling rate.	<ul style="list-style-type: none"> • Town of Cedarburg (Ozaukee County) • City of Thorp (Clark County) • <i>Honorable Mention:</i> Waukesha County
Overall Programs	Recognizes programs whose outreach efforts are robust and constantly improving and who demonstrate a commitment to improve the overall recycling program.	<ul style="list-style-type: none"> • City of La Crosse (La Crosse County) • City of Onalaska (La Crosse County) • City of Middleton (Dane County) • Village of Paddock Lake (Kenosha County)
Special Events	Recognizes effective recycling at a special event by offering recycling for the first time or expanding existing programs.	<ul style="list-style-type: none"> • Town of Metomen (Fond du Lac County) • City of Rice Lake (Barron County)
Innovation	Recognizes a program that demonstrates unique and innovative approaches to recycling.	<ul style="list-style-type: none"> • City of Milwaukee (Milwaukee County) • Waukesha County • Clean Green Action Organization (Wood, Portage and Adams counties)

Keeping it wild: Outdoor food and forays

SAVOR THE FRUITS OF YOUR LABOR.

John Motoviloff

Editor's note: This issue, we debut John Motoviloff's, "Keeping it wild: Outdoor food and forays" column. We often hear from readers who enjoy the "What's cooking" section and decided to expand on that, featuring Motoviloff's expertise and experience in the field as a hunter, fisher and forager, and in the kitchen having conducted wildfoods-cooking workshops throughout the region. Motoviloff wrote Wild Rice Goose and Other Dishes of the Upper Midwest.



Hunters dream of long seasons spent harvesting a variety of species. Yet, while Wisconsin boasts nearly a million hunters, many of them never get out for a season that lasts all summer and has a full menu of options. That's too bad. They're missing lots of fun and flavor in the form of wild berries.

Berry season in Wisconsin begins as the tree canopy is leafing out, around Memorial Day in the south and mid-June in the north. During this lush time of year, wild strawberries begin to dot the edge of forest trails and clearings. Look for tell-tale three-lobed leaves and tiny white flowers growing in sandy, well-drained soil.

These forest jewels are tiny — about the size of a fingernail. But good things come in small packages. A handful of these fragrant rubies is a treasure in its own right. Eat them on the spot. They will never taste better.

Black raspberries, or blackcaps as they

are sometimes called, are next. They begin to ripen in late June, turning from dark red to deep purple. It seems I'm always off on some fishing idyll — walking along a trout stream or unloading the canoe into a wilderness lake — when there are the blackcaps, hanging dark and heavy on the bush, and I'm thinking of two of my favorite things: fried fish and cobbler.

Of course, you don't have to be a fisher to find blackcaps. State parks and wildlife areas are good places to look. Fortunately, Wisconsin has an abundance of lands (municipal, county, federal, state, paper company, tax law and voluntary public access) open to public foraging. Hunt around parking areas, gates or trails. Blackcaps thrive in areas disturbed by mowing or burning. Some of my own best finds have been in the Lower Wisconsin State Riverway from Spring Green to Prairie du Chien.

Blueberries and closely related huck-

leberries follow close on the heels of black raspberries. They begin as tiny green nubs and ripen to a dark purple in the early part of July, and continue to ripen well into August. Sunny hillsides, forest clearings and raised streambanks are good places to look. While other wild berries are distributed throughout the state, blueberries prefer the sandy soils of central and northern Wisconsin. Necedah Wildlife Refuge and the sandy barrens of Polk and Bayfield counties are productive blueberry areas. Always secure permission if you plan to gather berries on private land.

Waiting until August and September to ripen, big, dark blackberries seem to be languishing in the heat of summer. In fact, everything is bigger on blackberry bushes — the fruits, the thorns and even the canes which can be 5 or 6 feet high. Look for blackberries growing along ditches, fencelines and sunny hillsides. If you're a rabbit or grouse hunter, you've likely picked your way through blackberry bushes.

This is thorny business, so dress accordingly. Long pants, long sleeves, a hat and garden gloves will help protect you from thorns and bugs. A plastic gallon milk jug — with the top cut off and a string run through the handle and secured around your neck or waist — keeps the hands free for picking. Store berries in the shade. You can refrigerate them, covered in plastic wrap, for several days. But they rarely last that long in our house.

Before you eat wild berries, however, you need to remove all hulls and debris, rinse them thoroughly in cold water and allow them to dry. The simplest possible thing to do is to plop your fresh find over vanilla ice cream and enjoy the contrast of tart fruit and rich, creamy dairy.

For jam, keep it simple by adding one cup of sugar for every cup of berries. Cook this mixture down in a heavy-bottom kettle until it drips slowly off the back of a metal spoon, about 20 minutes. Seal in hot, sterilized jars.

To freeze berries, spread them in single layers on cookie sheets in the chest freezer. Transfer frozen berries into zip-top bag and squeeze out excess air.

While I will never refuse a slice of berry pie, I rarely go through the trouble of making it. The gooey goodness of berry cobbler tastes every bit as good — or better — and takes a fraction of the work to make.

CLASSIC COBBLER

(adapted from Wild Rice Goose and Other Dishes of the Upper Midwest)

5 cups of washed and hulled berries

1 cup of brown sugar

1 stick of butter at room temperature, cut into pieces with wrapper reserved

$\frac{3}{4}$ cup flour

$\frac{1}{4}$ teaspoon salt

Preheat oven to 350 degrees. Grease a 9-inch pie pan with the wrapper from a butter stick. Add fruit. Cream together sugar, butter, flour and salt. Spread over fruit. Bake until topping is golden brown and berries are bubbling — about 45 minutes. Top with vanilla ice cream or whipped heavy cream.



PIKABAY

Write



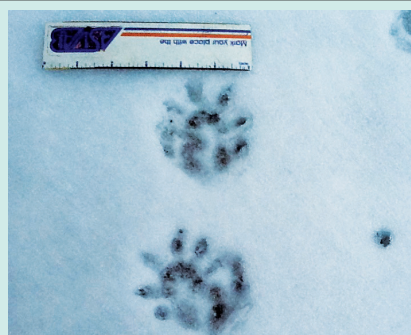
JEAN RIEKE

A FAN OF OUR SUET FEEDER

Liz Spaeth-Werner, my niece, suggested I send you these pictures of the pileated woodpecker who frequents our suet feeder. We are wondering if it is a leucistic one or an albino. It does not appear to have any black on it at all. It appeared this winter. We have had occasional sightings of a true pileated in our neighborhood, or heard one. Let me know what you think.

Jean Rieke
Town of Barton

DNR wildlife biologist Ryan Brady responds: Pretty amazing given how rare this plumage is in this species. The term leucism is often applied to any abnormally white plumage that falls short of full-blown albinism and typically shows as a splotchy plumage where fully white feathers mix with normal ones. A better term for this pileated is probably "dilution," whereby the plumage is washed out, or dilute, yielding a ghostly appearance overall. One definition is this: "In dilution, melanin cells are present (unlike in leucistic birds where affected plumage lacks melanin) but produce less pigment than normal. White feathers can also be caused by chromatophore (pigment cell) defects, rather than an absence of melanin-producing cells."



STEVE PRICE

WHOSE TRACKS ARE THESE?

Could you identify these tracks? Looks like from the cat family but too big to be a domestic cat.

Steve Price
Spring Valley

Jane Wiedenhoef, DNR wildlife biologist from Park Falls, responds: Those are opossum tracks. The photo shows indirect registration, where the hind foot fell partially over the top of where the front foot had left a print. That makes the tracks look larger than they actually are.

SOME SWEET SKIS

By coincidence, I came across Tim Sweet's article on your website (dnr.wi.gov/wrnmag/), "A lifetime of skiing" (February 2011). His homage to the wood ski is very enjoyable and it made me feel a bit nostalgic to see the photograph of a pair of Landsem cross-country skis, almost identical to the ones I had some time in the 1960s. Here's a link to the municipality's collection of Landsem skis in Rindal, Norway: <http://www.rindal.kommune.no/artikkel.aspx?Mid1=19&AId=658&Back=1>. Unfortunately the Landsem factory was closed decades ago. My regards to Mr. Tim Sweet.

Hans H. Flatøe
Fredrikstad, Norway



CARLA TIMMERMAN

FULL OF FLOWERS

We are enjoying our flower gardens.

Carla Timmerman
River Falls

PHOTO CORRECTION

A photo caption on page 10 of the April issue misidentified the person in the photo. The caption should have read: "Former DNR employee Dave Vitrano takes a close look at a trout during the Trout Management and Stream Shocking Demonstration field trip in 1996." We regret the error.

COMMENT ON A STORY?

Send your letters to: Readers Write, WNR magazine, P.O. Box 7191, 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.

Back in the day

Continued from page 2

enough swimmers took moonlight canoe trips up the Green Bay shore to Pebble Beach in Sister Bay and even the tip of the Door (Gill's Rock) for sleep-outs.

So if you're planning a trip to Door County this summer, make it a point to stop by Peninsula State Park and the Ephraim Historical Foundation to check out the exhibits and other activities. Be sure to take a drive up Shore Road to the Skyline Trail parking lot, where Camp Meenahga once stood. Get out of your car, take a stroll down to the water, close your eyes and imagine you can hear the sound of a rusty 1931 Model A woody, rattling along the road filled with laughing girls on their way "to Fish Creek to sail up on the bay."

Kathryn A. Kahler is an editorial writer for Wisconsin Natural Resources magazine.

>>> CAMP MEENAHGA SPECIAL EVENTS

For complete information visit wiparks.net, call the Nature Center at 920-854-5976 or email kathleen.harris@wisconsin.gov.

- **July 12 — Camp Meenahga Birthday Bash** featuring a period favorite — red-velvet cake while supplies last.
- **July 19 — Camp Meenahga, Ephraim Historical Foundation, 7:30 p.m.** Attendance is free and open to the public.
- **August 2-3 — Meenahga Antique Auto on Display:** See the original woody and one fully restored. Program free but state park vehicle sticker required. Program canceled if weather is severe.

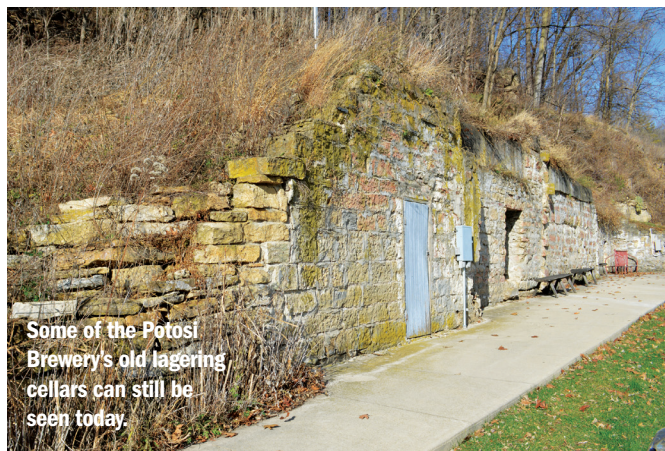
In addition, the public is welcome to see the Ephraim Historical Foundation's 2016 exhibit titled "Two Roads Diverged: Camp Meenahga and Camp Peninsular in Peninsula State Park." Camp Peninsular was the Civilian Conservation Corps camp located in the park in the 1930s. The exhibit will be on display at the Foundation's Anderson Barn Museum (3060 Anderson Lane, Ephraim) June 17 through Oct. 15. Admission is \$5 for adults, \$3 for students (6-18), and free for children 5 and under.

Sales of Friends of Peninsula State Park Meenahga memorabilia are helping to raise funds for these special events, as well as funds for properly archiving the park's Meenahga collection. Memorabilia include commemorative pins, mugs, and embossed mason jar glasses. A Meenahga history is also in the works, with a summer publication date planned. The book, published by Friends of Peninsula State Park, will include never before published interviews of Meenahga campers and counselors. Go to wiparks.net or contact kathleen.harris@wisconsin.gov for information about the publication. Merchandise is available at Peninsula State Park Headquarters and the Nature Center.

Traveler

Hops meet history at the Potosi Brewery.

Story and photos by Eric Verbeten



Some of the Potosi Brewery's old lagering cellars can still be seen today.

Carved into the hillside in the small town of Potosi, stands one of the state's oldest breweries. Located just off the main drag in the southwest Wisconsin town, the historic brewery building has been around for more than 160 years. Its weathered bricks have withstood the test of time, from construction in 1852, to near death in 1972, today the building has been revitalized as the Potosi Brewing Company.

Stepping inside, old meets new in a modern brew pub that keeps its vintage vibe. Beer enthusiasts and history buffs alike can appreciate more than just a wide selection of taps, since the brew pub is also home to the American Breweriana Association's National Beer Museum, housing three stories of beer memorabilia and a rotating stock of more than three million artifacts dating back to the 1880s.

No need to travel to Milwaukee or the Budweiser headquarters in St. Louis, Missouri since all the nation's historic beer culture can be found in Potosi, less than a mile away from the Mississippi River. Visitors can take tours and learn about the many innovations in brewing tech and the brewing industry over the years. Behind every retro sign, bottle and coaster is a



Brewmaster Steve McCoy stands at a Potosi Brewery brew kettle.

story; stories of boom and bust, fierce competition and even sabotage in the industry.

Back to life

Since reopening in 2008, the Potosi Brewery and National Beer Museum attract more than

65,000 visitors each year. The road to recovery was a long haul, but was successful due to a large community effort that began in 1999 to bring the crumbling building back to life, after sitting empty for more than 40 years.



The National Beer Museum is packed with historic artifacts dating back to the 1800s.



Frank Fiorenza is the village president of Potosi and helped lead the effort to bring the brewery back to life. For him, the key to the success was two-fold. The first being community teamwork to take on the task, and the second was partnering with local agencies like the Department of Natural Resources and other federal agencies. In doing so, the Potosi community secured a number of grants to help with the cleanup costs of the old building.

Site assessments were needed to find out what could be salvaged and whether the site was safe. Turns out it wasn't.

The brewery, like many old buildings had been constructed with toxic materials like asbestos and lead paint, that had to be removed if the building was to be reborn. In the year 2000, the Potosi Brewery Foundation was formed, turning the brewery into a nonprofit organization, the first of its kind in the

nation. The change was part strategy and part philanthropy. The nonprofit status helped the community secure additional grants to make the brewery into what it is today.

Annually, the Potosi Brewing Company gives back to the local community and others through charitable donations.

Today, the brewing is no longer done in the historic building, but just at the other end of the parking lot in a high-tech facility; complete with modern brew system, stainless storage tanks and bottling equipment. Brew Master Steve McCoy is in charge of brewery operations today and tries to keep the Potosi lineup balanced with traditional styles and more adventurous craft beers thrown into the mix.

On average, the brewery puts out around 7,500 barrels of beer each year, roughly 232,000 gallons or 1.8 million pints, with a maximum capacity of 12,000 barrels. Visitors can still get a taste of how things were done in the old days by checking out the historic lagering caves used in the days before refrigeration. Usually dug into the hillside, brewers relied on cellars for fermenting and storing beer

at a consistent and cool temperature. Historic photos lining the walls of the brewery today show the many transformations of the building as it changed hands several times.

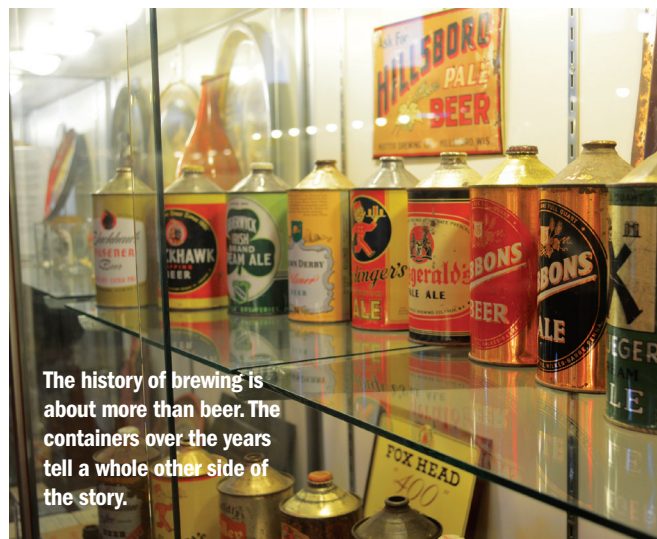
According to Fiorenza, there were approximately 2,800-3,000 breweries in the country in the late 1890s, after Prohibition ended in 1933 only 133 of those survived, Potosi being one of the survivors.

It got by selling ice, coal, root beer and bottling milk from the nearby dairy farm. Brewing kept up in a way, with a steady production of their Supreme

Lager, a low alcohol beer that was legal to brew throughout the Prohibition era.

The Potosi Brewing Company and National Beer Museum are packed with history and are a must to visit for anyone interested in breweries and their history. With its combination of modern brews and respect for the past, the Potosi Brewery is a unique experience that's sure to please the palette.

Eric Verbeten is a communications specialist and writes about science issues for the Department of Natural Resources.



>>> FOR MORE INFORMATION

To learn more about brewery tours and events, visit potosibrewery.com/.

The brewery is located at 209 S. Main Street in Potosi.

Want to know more? Check out "Beans and Brew," a video all about how Potosi Brewery was brought back to life. Visit dnr.wi.gov and search keyword "Brownfield success."



Wisconsin, naturally

GRANDMA LAKE WETLANDS

Thomas A. Meyer
State Natural Areas Program



Notable: A trek across a spongy, quaking bed of floating vegetation rewards visitors to Grandma Lake Wetlands with a truly wild experience. Imbedded deep in the Chequamegon-Nicolet National Forest is a pristine, 44-acre soft-water lake encircled by a wide zone of open bog rich in plant and animal diversity. The peaty mat is woven of sphagnum mosses, rushes and grass-like sedges that provide habitat for a suite of unusual plant species adapted to the wet, acidic ecosystem. "Carnivorous" plants, including narrow-leaved sundew, purple pitcher plant and horned bladderwort, evolved different strategies to ensnare insects using liquid-filled pitfall traps, sticky tentacles or trapdoor-like mechanisms. Chemicals released by the dissolving insect carcasses help supplement the plants in this nutrient-poor environment. Other distinctive vegetation of the bog includes members of the waxy-leaved heath family such as bog rosemary, bog laurel, leatherleaf, Labrador tea and small cranberry. Orchids find refuge in the mosses and rushes, among them the magenta-colored dragon's-mouth orchid and moccasin flower. The lake, dotted with white water lilies and water shield, is a favorite haunt of black terns, common loons and American bitterns. Grandma Lake Wetlands is owned by the U.S. Forest Service and was designated the 305th State Natural Area in 1996. It is also recognized as a "Wetland Gem" by the Wisconsin Wetlands Association.

How to get there: From the intersection of Highway 139 and Elm Street in Long Lake (Florence County), go south on Highway 139 1.9 miles, then east on Tie Mill Road (Forest Road 2402) for 3.4 miles, then south on Forest Road 2158 (Grandma Lake Road) 0.5 mile to a small pull-off on the west side of the road marked by a brown breeding bird survey fencepost. Walk west along the footpath 0.2 mile to the bog mat. Bring knee-high rubber boots or footwear that can get wet. Visit dnr.wi.gov and search "Grandma Lake Wetlands" for a map and more information.

