

Yellow root of the woodlands



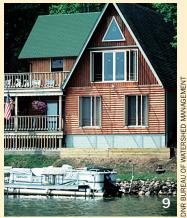
Less well-known than ginseng, goldenseal is another perennial favorite with a long history as an herbal curative.

y interest in goldenseal (*Hydrastis canadensis*), or "yellow root" dates back 30 years when, as a five year old, I explored the hills of southern Indiana with my dad digging its roots and seeking another highly valuable plant, American ginseng. These were the first two plants I learned as a child. Gathering these plants was a family tradition and, like his father before him, my dad and all of his brothers would accompany my grandfather roaming the mountains of east Tennessee each fall searching for these coveted plants that provided much-needed income in the economically depressed area of Appalachia. For me, this pastime turned from an opportunity to make some extra cash into a passion for learning about rare plants and animals, and now a career as an ecologist.



April 2010 Volume 34, Number 2







Yellow root of the woodlands

Ioe Henry

Goldenseal is less well-known than ginseng, but also prized as a natural curative.

Getting from lost to found

Kathryn A. Kahler

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A delicate balance where land meets water

Kathi Kramasz and Gregg Breese

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Round up swans, track a bat, make a difference

Jeffrey Potter

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FRONT COVER: Teams in canoes and kayaks capture, band and collar swan cygnets each August at Crex Meadows near Grantsburg, Burnett County. Join this field trip. See how on pages 14-16.

JOHN LOE, Oshkosh

BACK COVER: Morning light illuminates emerging ostrich ferns at Interstate Lowland Forest in Polk County. INSET: Fern fiddlehead. For more information, or to order a guidebook to State Natural Areas, contact the State Natural Areas Program, Bureau of Endangered Resources, DNR, P.O. Box 7921, Madison, WI 53707 or visit dnr.wi.gov/org/land/er/sna.

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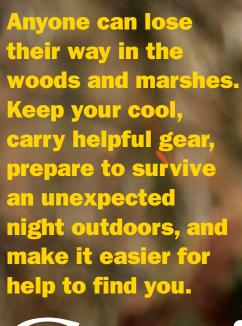
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Getting from State of the found

You are unlikely to remain lost for long if you leave notes of where you went and when you expect to return. If lost, stay put, relax, gather enough wood to keep a fire going, pull out your survival kit and leave enough time during daylight to construct a simple shelter.

I. HALAWI

Kathryn A. Kahler

t may seem like a thing of the past, from a time before the days of cell phones and GPS devices, or something that happens in the vast wilderness of the West, not in Wisconsin. But face it, the more time you spend in the outdoors —whether it's hunting, hiking, mountain biking or snowshoeing — the better your chances of getting lost.

"Actually, people can get lost in 40 acres," says Dick Thiel, a DNR educator who teaches orienteering and survival skills at the agency's Sandhill Outdoor Skills Center near Babcock. "So Wisconsin has plenty of places into which people might disappear!"

Take, for example, the more than 1.5 million acres of the Chequamegon-Nicolet National Forest, or the 2.4 million acres of county forests and wildlife areas, like Crex Meadows Wildlife Area in Burnett County. That was where Conservation Warden Chris Spaight assisted in a search and rescue for a 60-year-old hunter in the closing days of the deer season in 2008.

"The gentleman had become separated from his hunting party and got turned around in the woods," said Spaight. "That area of Crex Meadows is very flat and there's little in the way of landmarks to get your bearings. There were about 35 people involved in the search, including county sheriff's departments, local fire departments and a volunteer canine search and rescue team. Apparently when it got dark, he sat down to wait out the night and I found him at about 3:30 that morning. That was the smartest thing he could do—stay put!"

In a typical nine-day deer season, DNR wardens get involved in about a dozen searches for lost hunters. County sheriffs call on local wardens to assist them because they have knowledge of the area, and often have the gear and equipment to help in those situations.

Another recent incident shows why it's important for everyone who spends



time outdoors to be prepared for anything. In late December 2008, two young Wisconsin women vacationing in Arizona set out hiking in the Coconino National Forest. After four hours of hiking, they realized they were lost. They were ill-prepared for an overnight stay, without jackets or any kind of survival gear. They did, however, have a cell phone and called the county sheriff's communication center. Rescuers told the hikers to stay put, coached them on building a signal fire, and found them in good condition within about three hours.

Next to carrying a cell phone, of all the strategies lost people use to get "unlost," the best one is to stay put and wait to be found. Unfortunately, it's also the one hunters and hikers — the subjects of most search and rescue (SAR) missions — use the least. Even so, statistics show that more than 95 percent of all searches end successfully within the first two days.

"Hunters and hikers are the subject of almost 40 percent of all searches," says Robert Koester, a national SAR expert and author of Lost Person Behavior. "Hunters tend to focus on pursuit of their game and follow it into unfamiliar territory. They are also more likely to 'self-rescue,' perhaps to avoid embarrassment or the fear of paying rescue fees. A third of them find their way out on their own. Because they rely on GPS, radios and cell phones, many lack outdoor skills. And unlike hikers, they're more apt to abandon a trail and strike out cross-country if they think they're headed in the right direction.

"Hikers, on the other hand, are trailoriented and tend to get lost as the result of a navigational error, such as taking the wrong trail, reading a map upside down, or not even noticing that they've left the trail."

So don't get lulled into thinking that it can't happen to you — even the most veteran outdoor enthusiast can get lost. Your comfort — even survival — can depend on how well you are prepared.

Prevention and preparation

It won't prevent you from getting lost, but the most important thing to assure you will be found quickly should be done before you even leave home for a hunt, hike, pedal or paddle. Tell someone *exactly* when you are leaving, *precisely* where you are going and when you expect to be home. Then, *stick to your plan*. Be specific so that if you are reported lost, the SAR folks can narrow their search and quicken your rescue.

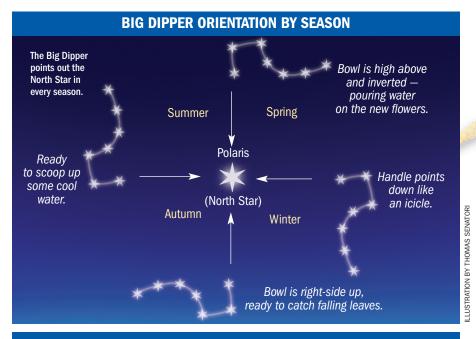
Tell family members or friends to contact the local sheriff's office who will mobilize other official and volunteer searchers.

"If you haven't planned ahead, it's a good idea to leave a note in your vehicle saying 'Gone for a two-hour hike to the west at 2 p.m. on June 1,'" says Chuck Keuhn, an active member of

Headwaters Search and Rescue based in Eagle River. He and his group of two- and four-legged volunteers are regularly called upon to find lost hunters and hikers. They are one of about a dozen SAR teams statewide.

Here are some further steps you can take to prepare yourself:

- Travel with at least one other companion so you can help each other.
- Get a GPS unit and learn to use it before going into the woods. Before setting off, set a waypoint for your vehicle.
- Learn to use a compass. GPS units and cell phones don't always work.
- Take an orienteering class.
- Pack a reliable map of the area, preferably on durable, waterproof paper.
 Learn to interpret topographic contours and symbols and know what landmarks to look for.
- Check weather forecasts and wear appropriate clothing for season and conditions. Be prepared for changing conditions.
- Learn basic first aid. Know how to tell the signs of heat exhaustion, heat stroke, hypothermia and dehydration, and how to treat them.
- Practice starting a fire with something other than matches or a lighter, like magnesium and steel.
- Ask a search and rescue group to give a presentation to your sporting club, school or civic group.
- Visit a sporting goods store or go online to get ideas for the best survival kit to suit your needs. Pack your kit and keep it replenished and up-todate on an annual basis. Keep it in your vehicle's glove box so you don't forget to take it. (See sidebar for suggested items.)
- When hiking, biking, skiing or snowmobiling, stay on marked trails. Look around for features and landmarks along the trail that will remind you of where you have been; stop often and look back to see what the trail looks like from the opposite direction.



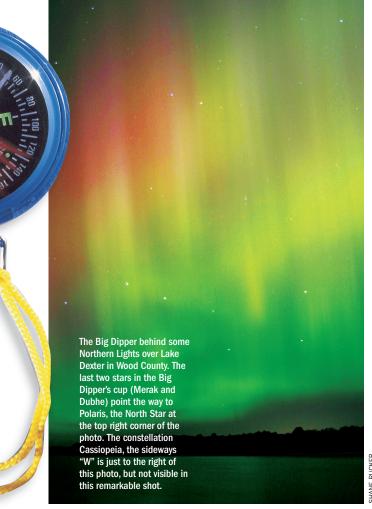
GEAR UP AND KEEP IT SIMPLE

A good survival kit should be compact, lightweight and contain the bare necessities. Ideally, much of what you pack should serve more than one purpose. Look around your home and use your imagination. Prescription medication bottles make nifty waterproof containers, and mint tins hold an amazing array of small items. Here are some things to consider:

- Charged cell phone. Whether you keep it in your pocket or backpack, enclose it in a waterproof plastic bag.
- Compass
- Whistle
- Fire starting materials disposable lighter, waterproof matches, magnesium and steel, candle, fire starter cubes, cotton balls soaked in petroleum jelly (all packed in a waterproof container). Bring three different kinds of fire starters in case a method fails to work.
- Orange plastic trash bag can be used as poncho, ground cloth, shelter or to signal your location.
- Mini-flashlight
- Signaling device mirror, foil, glow stick, plastic neon-colored tape
- Knife or multi-tool

- Poncho, space blanket or tarp
- Parachute cord or rope (about 25 ft.)
- Water purification tablets
- Several waterproof bags in varying sizes
- to keep things dry and segregate items that get wet
- Prescription medication
- First-aid kit: antiseptic wipes, assorted bandages, tweezers, pain reliever, insect repellent, suncreen, lip balm, tablets for diarrhea/upset stomach, safety pins

Other personal items to consider if you have room in your backpack are high energy foods like granola bars, candy and fruit; sunglasses; extra socks; rain gear; hat; and gloves. Bikers should always carry a basic repair kit to fix flat tires and make minor repairs.



It's happened: despite your best efforts and intentions, you're lost. What to do now? It might help to remember a common tip — the STOP method:

- **STAY PUT!** Moving around wastes precious time and energy, increases your anxiety and makes you even harder to find. Sit down and stay calm.
- Think! Take inventory of what you have with you, what you can find and use around you, and what you need to do to make yourself safe and comfortable. Remember the rule of three: you can live three minutes without air, three hours without warmth, three days without water and three weeks without food.
- Observe! Use your compass and map and try to determine your location and heading. Look for landmarks that you can identify on the map. This may help you re-orient and get headed in the right direction. If not, check how much daylight is left and what the weather is doing.
- Prepare! Plan what you need for an overnight stay to keep warm and dry. Based on the rule of three, decide

whether you need to build a fire or shelter. Gather tinder, kindling and fuel. If you followed the basic rule of the outdoors and told someone your plans before leaving, you can plan to be found within a day or two and food may not be your top priority.

Dick Thiel recommends a two-pronged survival plan, based on whether or not you followed that first basic rule.

"The first and most difficult thing is to not panic," says Thiel. "Stop, catch your breath and determine if you are probably going to have to spend the

night in the woods. If so, find a sheltered spot out of the wind and give yourself enough daylight hours to gather enough wood to start a fire, keep it burning all night, and build a shelter.

"Your next step depends on whether or not you told someone when and where you were going. If you did, you should settle down, sleep, stay put the next day and wait to be found.

"But if nobody knows where you are and when you left, you're probably better off making plans to walk out in the morning. You'll need to know what direction to walk and make sure you walk a straight line. Here's one way of figuring that out, and the next step you should take in your plan."

First, place a stake in the ground near enough to your fire that you can see it, but can also locate stars. Have another stake handy. Under darkness and provided it's a clear night, says Thiel, locate the pointer stars of the Big Dipper. Hold your hand in the sky, place your index finger and thumb over them and "walk" your hand in the air in the direction they point to; walk seven "fingerthumb" distances away and you'll arrive at the North Star. Align yourself so that the stake you put in the ground is between you and the North Star; drive the other stake in the ground so the North Star, stake #1, you and stake #2 are aligned in a straight line pointing north and south.

"In Wisconsin, roads surround all wooded terrain no matter how large the forested expanse," says Thiel. "So in the morning, you should walk out in one of four cardinal directions by aligning yourself to the two stakes you put in the ground. Decide which direction you will take, face that direction and look for something unique like a stump in direct alignment with them. Walk to it and look back to make sure you are still in alignment with the stakes. Then look ahead to another unique object and walk to it. Look back to the first object and repeat this process until you literally walk out onto a road."

Building shelter

If it's already dark and building a shelter isn't an option, try to find a large spruce or fir tree with branches to the ground and huddle at its base. Gather or cut green boughs and whatever soft



You can pack a lot of safety essentials in a small, light survival kit. From lower left, this one contains a credit card-sized survival tool with a stainless steel blade, can opener, bottle opener, flat-head screwdriver, 4 cm metric ruler, 4-point wrench, two-position wrench, a butterfly wrench and a saw edge. The reverse side is highly polished for use as a signal mirror. A space blanket, safety pins, saw blade, fire starters, candle, clips, matches, rope, monofilament line and compass round out the kit that stores in a waterproof container.

dry material you can find as insulation to sit or lie on.

One of the easiest shelters you can build is a debris hut. Look around for a natural structure to use as a base, like a fallen or uprooted tree. Make sure the tree is sturdy and won't shift and fall on you once your shelter is built. If you have to, make your own base by propping a long sturdy branch on a stump or in the crotch of a tree about waist-high.

Here's where a tarp, space blanket or poncho comes in handy. Drape it tent-like across the base and use rocks to hold it secure to the ground. If you don't have a tarp, lay sturdy branches along the base as close together as possible.

Then search the woods for whatever kind of insulating material you can find to add to the roof — green spruce or pine branches, sticks of varying sizes, and any other kind of debris you can find. The thicker the insulation, the warmer your shelter will be. You can



This simple survival shelter was built against a fallen tree stump. Branches shingled with pieces of bark provide shade, wind and rain protection.

also use large chunks of decayed leaf litter from the forest floor placed like shingles across your roof. Start at the bottom and work your way up so water will run off and not leak through

> your structure. If there's snow on the ground, use it to pack on top of your roof. Line the floor of your shelter with a thick pile of pine boughs to insulate you from the ground.

> Don't build your shelter any larger than your body. If there is a lot of air space around you, it won't be as effective in keeping you warm.

Equip your child to survive in the woods

Chuck Keuhn of the Headwaters Search and Rescue Team, recommends that all children who spend time in the out-of-doors — whether it's camping, hiking or picnicking with their family — learn the basics of survival. One program that does just that was developed specifically for kids age 7-12. It's called the Hug-A-Tree and Survive Program and here's how it works.

- Always carry a folded large orange trash bag and whistle with you when you are hiking or camping. Have your parents make a hole in the sealed end just big enough for your
- Once you think you are lost, hug a tree! Make the tree your friend, talk to it. This will calm you down and keep you in one place so you won't be injured. It will also make it easier for people to find you.
- If you need to keep warm or dry, sit down and pull the bag over your entire body, with your head sticking out the hole.
- Blow the whistle three times every 5-10 minutes. The whistle can be heard from farther away than your voice and doesn't take much of your energy.
- Don't be afraid that your parents will be angry with you. Anyone can get lost so don't be ashamed or try to avoid people who are searching for you. They will be proud of you for using your head.
- Make yourself big if you hear an airplane or helicopter. Go to a clearing near your tree and wave your arms or lie flat with your arms and legs out, like you do when making a snow angel. If you can, make a big SOS with sticks, branches or rocks.
- Don't be afraid of noises at night. If you hear a noise, yell at it! If it's an animal, it will run away. If it's a searcher, you'll be found!
- There are hundreds of friends searching for you, so if you stay in one place it will be much easier to find you.

Parents and teachers — want to share this advice with others? Contact your local law enforcement or a search and rescue organization in your area to schedule a "Hug-A-Tree" presentation for your school or scouting group. Visit nasar.org/nasar/hug_a_tree_program. php for more information. To find a search and rescue group in your area, search online for "Wisconsin search and rescue."

STARTING A FIRE

Pick a sheltered spot out of the wind and at least six feet from any fuel source - especially your shelter! Clear the area of debris and surround it with rocks, if you can find them to contain the fire. Rocks will also retain heat for several hours and radiate it to a nearby shelter.

Gather dry tinder, kindling and fuel:

- Tinder has a low flash point and is easily ignited. Things like dryer lint, cotton threads, dry wood powder, sawdust, wood shavings, unraveled string, wool fuzz, dry shredded bark, crushed fibers from dead plants, cotton balls smeared with petroleum jelly, steel wool and foam rubber make good tinder. Always carry some tinder with you in a waterproof container.
- Kindling has a higher combustion point and should be mixed with tinder. Paper from your wallet, dollar bills, pine cones, pine needles, dry twigs, wood shavings, dry bark and dry grass make good kindling.
- Fuel ignites and burns slowly. It's best to use dry, dead wood like the insides of fallen trees and large branches. Green wood will work, but will produce a lot of smoke; split it if you can and mix it with dry fuel.

Build a teepee of small dry twigs and branches with an opening in one side. Shelter the tinder in a small ball of dried grass. The easiest igniter is a disposable lighter. When the tinder catches, shove it under the teepee and add bits of tinder and small kindling until the fire is burning. If you chose to pack a candle, it can be a life-saver for starting a fire. Add fuel and keep replenishing it until the fire is well established.

Writer and hunter Kathryn A. Kahler researches and crafts feature stories from Madison.

DNR BUREAU OF WATERSHED

Adelicate Dance WHERE LAND MEETS WATER

Guidelines on building and renovating waterfront property have been updated for the first time in 40 years.

Kathi Kramasz and Gregg Breese

hether your home turf is still thawing out, you're getting ready to put out your pier or you are looking forward to spring melt waters that bring great paddling and fishing, you know we are at the front end of another sweet season along Wisconsin's waters.

More than 40 years ago, the State Legislature recognized the need to adequately protect the shores that so many lake property owners enjoy. It was an era of relative prosperity when many people had the means to convert simple family cabins and summer cottages along the lakeshore for year-round use. Old lakeside resorts were

going out of business and parceling off their summer rental properties to individuals. Shoreland property was still a reasonable buy, and lots of new homes, remodeled cottages, and cabin expansions were under construction at the water's edge.

The construction boom was noticeable on the water and in local economies. Wisconsin needed a way to balance the rights of shoreland property owners with the public rights for those who also enjoyed fishing, boating and swimming on local lakes. Legislators took steps to minimize consequences of shoreland construction by giving local zoning offices the

Shoreland development can provide a fine view of the water and access to the water-front while filtering runoff and protecting shallow water habitat. That's the aim in the shoreland zoning rules updated for the first time in 40 years.

means to apply more consistent guidelines on how properties could be developed. Local shoreland zoning ordinances were enacted to protect fish and wildlife habitat, water quality, and natural scenic beauty of shorelines along lakes and rivers.

Starting in 1965, state statutes were updated requiring counties to adopt ordinances on shoreland zoning that included limits on how close structures could be placed to the water's edge, minimum lot sizes on new subdivisions within the shoreland zone, and the first requirements to minimize clear-cutting of trees in the nearshore area. Additional zoning guidelines were added on a county-by-county basis to address the kinds of developments, improvements and modifications those communities were seeing at the waterfront.

When shoreland codes were originally written in the late sixties and early seventies, there was a dichotomy

of development patterns between northern and southern Wisconsin. Many of the lake lots in the southern part of the state had already been developed with smaller seasonal cottages. The more undeveloped lakeshores in the north were seeing new construction of weekend cabins on wooded lots on lakes and rivers. Lawmakers did not foresee that these patterns of development would change significantly. During the last 40 years, many small seasonal family cottages have been greatly expanded into three-season or yearround homes. Now it is not uncommon to see shorelines dominated by palatial homes and condominiums in the pines.

"The shoreland rules never anticipated the amount or the scale of waterfront development that we have all experienced over the years," says Lori Grant of the River Alliance.

Development pressures have expanded in four directions.

- Toward the water, property owners have wanted to upgrade boathouses, extend larger piers, expand private boat ramps, anchor big docks and swim platforms, install sea walls, augment sand beaches and replace natural shorelines with grassed lawns.
- Along the shoreline, in many areas the prime lakeside lots are already developed and property owners have tried to engineer more marginal lands including wetlands, lowlands and bluffs to form a stable base for homes and additions.
- Landward of the shoreline, rows of homes two and three parcels deep farther up hillsides and deeper into the woods create pressure to provide access to boat launches, piers and the water from those who do not actually own waterfront property.
- From the cabin foundation up, owners want to expand the height and width of their original buildings on the lot.



Some shoreland issues are more clear when seen from the water. Homes, boathouses and sheds allowed under old rules on small, tight-packed lots were built right to the water's edge and over the water. It looks and feels congested.



Disturbing the ground between homes and the water allows silt and soil to wash into the water. Even silt fences and riprap rocks can't hold back the sediment, fertilizers and nutrients. Zoning and vegetation can better protect this shore.



When a structure is built close to the water there is no room for a vegetated buffer. Not only is that less pleasing to look at from the water, but there is no fish or wildlife habitat and all the stormwater runs quickly into the lake with no treatment. The new rules clarify the guidelines for protecting the buffer area.



Houses on pilings in the floodplain of the Mississippi River backwaters still flood occasionally when spring melt raises the water level all the way up to the house. Building in such sloughs is costly and rebuilding flooded structures is even more costly and can be dangerous for the homeowner and any needed rescue crews.

Under the past regulations, if the existing dwelling was closer than 75 feet to the water's edge, a variance was needed to expand, tear down and rebuild, or to do a major renovation on these structures. Hundreds of variances were being granted to allow extensive modifications of existing structures. For zoning administrators and the boards that oversee them, the pressure to grant a lot of variances was a red flag that the zoning standards needed to be revised, particularly as neighboring communities and neighboring counties adopted very different requirements.

At the same time, study after study was documenting that zoning codes and changing development practices on Wisconsin waterfronts were failing to meet the goals the Legislature and Congress had agreed to in the 1960s. Habitat had been degraded, water quality was getting worse and the rules were not accomplishing the stated purpose of:

- maintaining safe and healthy conditions
- preventing and controlling water pollution
- protecting spawning grounds for fish and aquatic life
- controlling where building sites, structure placement and land uses would be allowed to preserve shore cover and sustain natural beauty

One compelling study of lake development showed that between the 1940s and the 1990s the amount of polluted runoff entering lakes had more than tripled due to increases in the amount of paved surfaces draining into lakes. The additional rain water and nearshore development caused a fivefold increase in sediment entering the lakes. Along with sediment during and after construction, the phosphorus load entering the lakes during this period was 10 times greater in 1990 than in 1940.

The picture was no better nationwide. An Environmental Protection Agency assessment of lake conditions across the country that was released last December shows that only 56 percent of the nation's lakes support healthy biological communities, anoth-



Stormwater runoff rushes off roads and other impervious surfaces in subdivisions built right along the water. Look at the plume of soil and sediment that washed into the water following a storm. Proper zoning and mitigation measures can reduce such sediment, protect the immediate nearshore area and require buffering plantings to help absorb pollutants.

er 21 percent of lakes are in fair condition, and 22 percent are in poor biological condition. Lakeshore habitat is rated as "poor" in 36 percent of the nation's lakes.

Lots of ideas and lots of review

Knowing it was likely to be controversial, in 2001 the DNR committed to a rule revision process to bring the shoreland zoning code into the 21st century. The revisions took seven years. The advisory committee identified areas that needed to be considered. Listening sessions around the state gave waterfront property owners, lake users, communities, developers and builders time to review the recommendations. There was widespread support for the advisory committee's priorities. Next, a draft rule was written and a series of public hearings held throughout the state. More than 20,000 oral and written comments were submitted and more revisions were incorporated in a second rule draft. Another series of public hearings brought thousands more public comments and additional revisions following legislative review. The recently adopted shoreland rules reflect public concerns at every step and fill in some gaps in the older 1960s version.

"This proposal achieves a solid bal-

ance between the public interest in protecting Wisconsin's beautiful lakes, rivers and streams and the rights of shoreland owners to enjoy their property," DNR Secretary Matt Frank said. "Modernizing these rules ensures that as Wisconsin grows and develops, we are protecting our most precious natural resources so fundamental to our economy, recreation and our quality of life."

Frank's comments were echoed by others who had participated in shoreland rule revisions, including builders and realtors.

Mike Mulleady, board chairman of the Wisconsin Realtors Association, called the revisions to shoreland zoning laws "both reasonable and necessary."

"As realtors who work every day with buyers and sellers of waterfront property, we know firsthand the important role shoreland zoning regulations play in protecting water quality, the scenic beauty of our waterways and the ability of waterfront property owners to use and enjoy their property," Mulleady said.

Key revisions change the way that existing homes previously constructed within 75 feet of the shore (the setback distance) are treated. Once the new rules are adopted, a property owner with an existing cottage that is closer to the waterway will be allowed to do un-

limited maintenance and repairs on that structure, in some cases add a second story, and in other cases completely tear down and rebuild the house, as long as it remains within the same foundation footprint. If the existing dwelling straddles the setback line (part is closer than 75 feet and part is not) the homeowner will even be allowed to expand the structure, as long as the expansion is back, away from the shoreline.

To help offset some of the consequences of allowing these "non-conforming" structures to remain so close to the shore, the new code follows a successful pattern some counties already require to compensate for some of the potential runoff, sedimentation or habitat loss. These "mitigation standards" will be set on a county-by-county basis depending on local conditions like the land slope, local soil types and shoreland plant communities. In addition, counties can use a computer program developed for DNR to estimate such runoff.

Accounting for sediment and pavement

Sediment flowing into a lake system doesn't move downstream, it settles to the bottom and covers fish spawning, rearing and feeding areas, and other aquatic plant life. Healthy plants are critical parts of any lake system because they produce oxygen, stabilize the lake bottom and protect the sediment from re-suspension. Some fish and wildlife eat plants and others feed on the invertebrates that eat the plants. Sediment also carries nutrients that increase nitrogen and phosphorus in a waterbody and can cause dangerous algal blooms in the summer — just at the time of year when these lakes and shores have the highest use. And sediment running into a clean body of water is visually disturbing — muddying up the water.

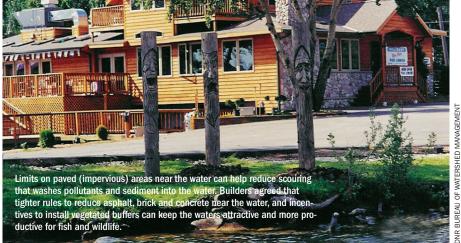
The amount of stormwater running into waters can be quantified. And runoff rates are much higher where rain and snow melt quickly reach the water by flowing over paved areas, scouring silt, soil and nutrients rather than filtering and slowly seeping through grasses, brush and wetlands. That's why the new code sets numerical limits on the amount of impervious surface adjoining the shoreline. In the past, paved driveways, sidewalks and patios, and piers weren't considered in the code when built at grade. On large lots with small cottages, runoff might not cause a problem. But, as cottages became yearround residences and multiple family condos, the average size of the lakeside homes and businesses increased greatly. Add a driveway, parking area for a few cars, and a patio, and you quickly find that some lakeshore lots have 50 percent or more paved area. A lot of fast, hard rainfall is channeled right into the water and is not percolating into the ground where it can be cleaned before it reaches a lake or river.

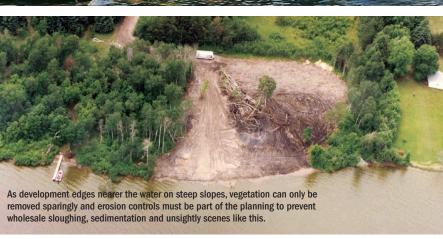
Research shows that runoff problems are less severe where less than 10 percent of the shoreland is covered with a layer of asphalt, concrete, brick or another impervious surface. However, given current housing designs and existing development, meeting that 10

percent level is not achievable. So, for new development, the rule sets a limit that owners can include up to 15 percent impervious surfaces on building sites or up to 30 percent if the owner lessens the impact by installing rain gardens, infiltration basins, grassed parking areas, or other measures like restoring shoreland plantings.

When adding to, remodeling, tearing down or reconstructing an existing cottage, the shoreland rules allow property owners to "keep what they have," says Russ Rasmussen, director of DNR's Bureau of Watershed Management. On current structures within the setback area, property owners can perform unlimited maintenance and repair. Likewise impervious areas within the setback area can be replaced with like surfaces. For instance, an existing patio can be replaced with a new patio, but a patio area could not be converted to a building with walls.

If the developed area is farther back from the shore than 75 feet, then the



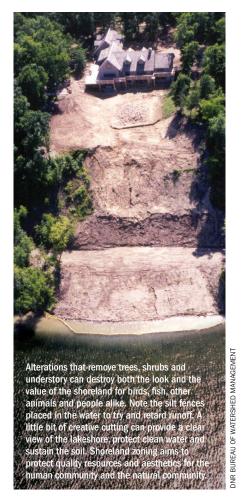


structure can be modified or moved to a different location without having to go through the variance process.

A clearer understanding of clear-cutting

Commenters also let DNR know that the old code language on clear-cutting trees did not provide adequate guidelines.

The land immediately adjoining the shore provides the most important cover and protection for wildlife, just as the very shallow waters at the shore are the most used spawning areas for fish. This zone also defines the scenic beauty that attracts us to the shore. Development and manmade "improvements" often destroy this natural value and studies show that developed lakeshores have at least 30 percent fewer trees than undeveloped sites. Less than half the varieties of shrubs and understory plants are found at developed sites than at undeveloped sites. Replacing this natural mix of trees, shrubs, grasses and sedges with





The program provides grants, expertise and opportunity to restore a mix of trees, shrubs and plants between buildings and the shore. Natural cover can greatly increase the mix of birds, mammals and fish you can attract that add value to your property.

manicured lawns, boathouses and docks provides far less habitat for wildlife, far less filtering capacity to retard pollutants, far less beneficial spawning ground for fish in the shallow waters and attracts far less birdlife. Bird counts for species like warblers, thrushes, vireos and ovenbirds along undeveloped shorelines are more than twice as high as counts of more common birds. In developed waterfront areas, not only do the numbers of these uncommon birds significantly drop, but the counts of more common species like grackles, catbirds, chickadees, blue jays and goldfinches more than double.

Clear-cutting standards set in the 1960s code intended to limit vegetation removal right at the shoreline where plants provide this critical buffer between water and land. The buffer stems erosion, filters pollution, holds back nutrients, provides food and offers cover for wildlife, and serves as screening between shoreline buildings and boaters. The code's vague language was too hard to interpret and, consequently, the goals of maintaining shoreline plant cover were not met. Language in the revised code discusses maintaining vegetation and limits plant removal within 35 feet of the shoreline with a few exceptions. It allows for a clear path from homes to docks and it permits up to a 30-footwide swath of cleared space to provide a clear view of the water from lakeside homes and businesses.

The shoreland rules also allow routine maintenance of established properties, Rasmussen explains. If a parcel has

a grassy lawn, it can stay as lawn. If there are shrubs along the shoreline, they can be maintained. If the shoreline is currently wooded, it can't be changed except to allow that 30-foot-wide viewing and access corridor. The code provides a permit process to encourage land-

scaping changes that remove invasive species, provide better habitat, or improve plant health. Many counties will also provide incentives to convert mowed grass areas and restore a mix of native low grasses, shrubs and trees.

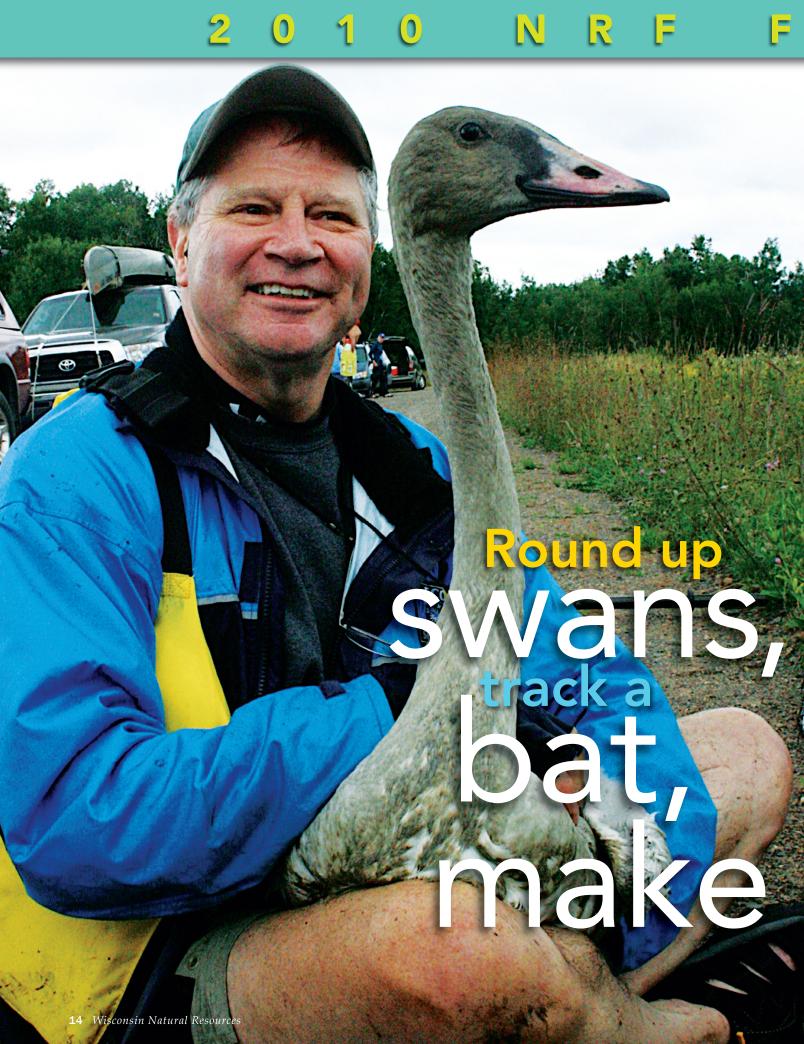
There are a few other changes. Owners won't need a variance to construct a building on a smaller lot, as long as setback and impervious surface standards are met. There are exemptions from setback limits for utility poles and structures like boathouses that need to be located closer to the shoreline to be useful.

Incentives to shore up the shoreline

For those willing to restore more natural shorelines, local agencies will be eligible to provide grants to property owners for demonstration projects, shoreland buffers and work to contain stormwater. There's plenty of work to be done and continuing interest in shoreland development that looks good and preserves natural habitat.

A study of 235 Wisconsin lakes documented that the number of dwellings along lakeshores had more than doubled from the 1960s to 1995. The shoreland is still prized and the rules aim to preserve both its economic and natural values. The revised standards should help waterfront property owners maintain that value while preserving the public's rights to clean water, natural shorelines, and swimmable and fishable lakes and rivers.

Kathi Kramasz and Gregg Breese are specialists with DNR's Water Regulation and Zoning program.



IELD TRIPS

Grasp the nature of wild Wisconsin on field trips spring through fall.

Jeffrey Potter

ead to Crex Meadows in northwest Wisconsin this summer and you might see a strange sight: dozens of people on foot, in canoes and kayaks, and even overhead in planes, chasing trumpeter swans through the marsh. Part rodeo, part ballet, and all in the name of science, the Trumpeter Swan Round-Up is just one of more than 85 field trips offered in the thawed-out seasons by the Natural Resources Foundation of Wisconsin (NRF).

DNR Avian Ecologist Pat Manthey, who leads the swan round-up trip for

the NRF, touts the benefits of the trips for both the participants and the swans. "It's always a high point of my field season," Manthey says. "When someone has a hands-on experience with nature, it makes them care in a deeper way and, in the case of the swan banding, the participants are doing real field work that helps us track and care for these beautiful birds," she concludes.

"It's the personal touch and the scientific perspective that makes these trips special," notes Christine Tanzer, field trip coordinator for the Founda-





a difference



tion. "People who join our trips have fun while they learn about Wisconsin's natural wonders from some of the best ecologists in the state," Tanzer says.

This year, the Foundation offers a variety of experiences, including 30 different birding trips, 25 trips to state natural areas, 12 canoe and kayaking adventures and 18 family-friendly trips. "The physical requirements of each trip vary and we rate them for participants ranging from easy walks to rugged offtrail hikes," Tanzer notes. "Some of our most popular trips include a train ride into Tiffany Bottoms State Natural Area, kayaking bays, estuaries and backwaters near Lake Superior, and banding a variety of birds such as saw-whet owls, American kestrels, bald eagles and golden-winged warblers," she adds.

For the 2010 season, the Foundation is promoting "citizen science" by providing opportunities for participants to learn about and participate in scientific research that will benefit our understanding of Wisconsin's wildlife. With global warming on the rise, the need for this type of background data tracking is more important than ever and the average citizen can make an important contribution. These trips include opportunities to monitor Wisconsin's bat populations, tag monarch butterflies, and track the state's growing population of elk.

John Loe, who joined the swan trip in 2009, recalls citizen science as a rewarding experience. "We splashed, slogged and paddled our way through the marsh to corral the swans for capture," he recounts. Participants helped collect and hold the young swans,



Tag monarch butterflies for tracking during their annual migration.



Learn about kestrel hawks, our smallest falcons that hunt in open fields and cities.

known as cygnets, while they were measured, examined and banded on shore. "All of us were at once exhausted, giggly and completely in awe of those magnificent birds in our arms,"

Loe continues. Once the data were recorded, the birds were released back into the wild where their progress continues to be monitored.

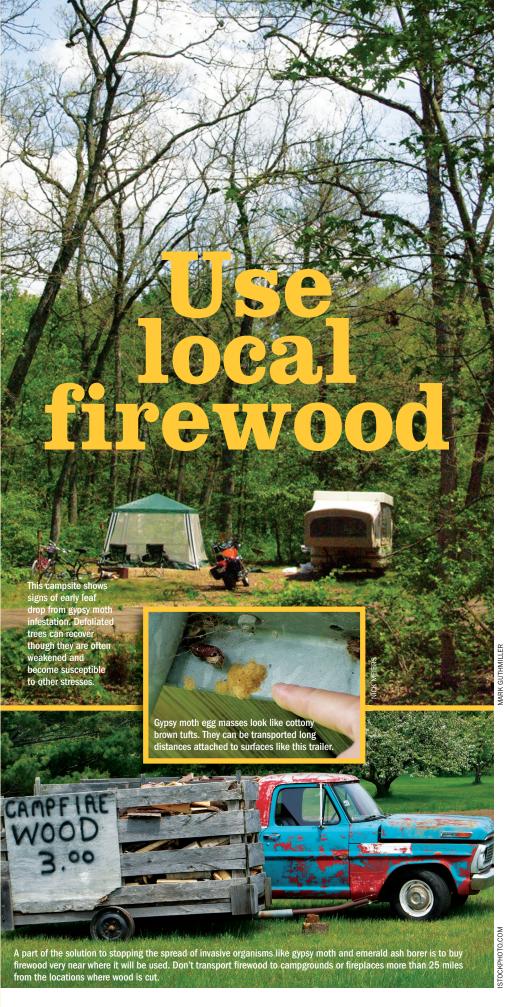
"Our trips give participants an opportunity to be a field ecologist for a day," Tanzer notes. "And especially for people who work in an office all week, it's a nice break from the routine," she adds. This is the sixteenth year that the Foundation has offered seasonal field trips. Over the years, thousands of Wisconsin residents and tourists have attended Foundation trips. According to Tanzer, "the program has been successful because we keep prices low and provide experiences you can't find anywhere else in the state." Tracking Wisconsin bats with the state's bat ecologist, Dave Redell, is a perfect example.

"There are usually one or two individuals who get a little squeamish, but by the end of the night they have settled in to view the bats in a new light," Redell says. He uses the trips to dispel common myths about bats and to recruit volunteers for the Wisconsin Bat Monitoring Program — a citizen science effort to improve our understanding of bat population trends. "My hope is that, through the trips, more people will understand the benefit of bats and be inspired to get involved," Redell concludes.

If you've never attended a Foundation field trip, now is a great time to start. Registration is open for the general public. Trips run from late April through October and are filled on a first-come, first-served basis. Space is limited and some trips fill very quickly so Tanzer recommends early registration. Unless otherwise noted in the descriptions, trips fall on Saturdays.

You will find a complete list of trips and online registration link on the Foundation's website, www.Wiscon servation.org/. Online registration is fast, secure, provides up-to-the-minute details on whether space is still available to join a trip, and gives instant confirmations. Registration fees and any additional fees to offset transportation, equipment rental and meal costs, where provided, are also listed.

Jeffrey Potter writes, plans special projects and conducts public outreach for the Natural Resources Foundation of Wisconsin.



Limiting the movement of firewood is a key to slowing the spread of invasive forest pests and diseases.

Colleen Robinson-Klug

he warmth, smell and light from a wood fire is soothing, protective and primal; small wonder that it is a treasured comfort at campsites and in fireplaces alike. The flip-side of that experience is we know fires release pollutants and we have to be careful to avoid being burned. These days, there is another downside — transporting invasive bugs and fungi. Unless we are careful, insects like the emerald ash borer beetle or gypsy moth travel and spread much farther and much faster in transported firewood. Left on their own, these insects might move only a mile or two from where they hatched in a year. When carried in firewood, these diseases can move in cars, trucks and airplanes much greater distances in little time to infest areas where they've never been seen before. We need to be aware, and we need to take precautions with firewood to keep from giving invasives a quick ride to new turf which could be your neighborhood or favorite campground.

The message that firewood can be an efficient insect and disease carrier is becoming more familiar each season. Foresters, arborists and park managers are encouraging everyone to use firewood more wisely. How? Either don't move it far from where it was cut or buy wood treated specifically to kill pests and diseases lurking inside it. By using wood within 25 miles of where it was cut you can reduce the risk of bringing in pests that aren't already es-



Bill McNee, DNR's regional gypsy moth suppression staffer in Green Bay, talks with campers about searching for and destroying the egg masses that hatch and grow into gypsy moth caterpillars.

tablished in your area. Wood can also be treated by approved firewood dealers who meet set guidelines by heating, aging, debarking or spraying it with certain fumigants to kill pests or diseases inside the wood. The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) inspects and certifies firewood dealers who treat their wood in one of these ways. Wood certified by DATCP will have a seal on its label. Don't move uncertified wood more than 25 miles for heating homes, cabins, occasional campfires or for any other purpose. The risk of spreading tree-killing invasive species from place to place on the surface or under the bark of firewood is high. Many invasive killers gain an aggressive foothold and destroy the natural balance in native habitats after hitching a ride and being introduced to a new area. These invaders often do not have native predators and can increase rapidly.

The impacts reach far beyond the woods or parks. As trees die, local economies fall too if we lose the value of timber, pulpwood, protective cover, a food source for wildlife, erosion protection and aesthetics. Healthy trees are important features in maintaining quality outdoor recreation, bolstering property values as well as providing shade and wind protection that cut energy use. Dead and dying trees also become a public safety concern and a costly liability for homeowners. Oak wilt, gypsy moth, emerald ash borer and beech bark disease are just a few of the tree diseases borne on firewood that are already in our midst in Wisconsin. On the horizon and near our borders are other species such as the Asian longhorned beetle.

"Though the battle against invasive species is long-term and can seem difficult, changing our firewood habits is actually very easy," says Andrea

Diss-Torrance, invasive insect specialist with DNR's forestry program. "Far fewer invasive species can gain a foothold without human help," Diss-Torrance says. "These beetles, moths and fungi would naturally spread their range at a very slow rate. We stand a much better chance of containing invasive species and preventing new disease introductions when firewood stays put."

While containing invasive outbreaks is costly, simple inexpensive steps can prevent a lot of problems. Both Wisconsin residents and visitors are helping by:

staying updated on restrictions on moving firewood in the state. State and federal land managers limit what firewood is allowed onto their properties; so do many county and private campgrounds. For updates on Wisconsin state lands regulations and currently quarantined areas, go to emeraldash borer.wi.gov. Contact other properties directly for their regulations.

2 buying or harvesting firewood within a few miles of where you plan to burn it.

3 buying Wisconsin certified wood that has been treated to kill internal pests and diseases. You can find a list of certified firewood dealers online at: emeraldashborer.wi.gov.

Firewood quarantines

Forest protection agencies institute quarantines when and where pest or disease infestations are found. Emerald ash borer and gypsy moth are two such federally quarantined pests. Restrictions on moving raw wood and wood products help prevent the speedy spread of invasives. For instance, products that can carry gypsy moth, such as firewood, tree nursery stock, mulch and Christmas trees must be certified clear of the pest before being taken out of the eastern half of the state quarantined for gypsy moth. Hardwood firewood, ash logs, nursery



stock and wood products made from species of ash are not allowed outside of counties quarantined for the emerald ash borer. To prevent a variety of woodborne pests and diseases from spreading to state lands, no uncertified firewood harvested from more than 50 miles away has been allowed onto Wisconsin state-managed properties since 2007. Due to the emerald ash borer and beech bark disease finds in 2009, the Natural Resources Board at its January 2010 meeting authorized even tighter firewood restrictions. Only certified firewood cut within 25 miles of a state property can be brought in by campers and day users. Federal lands and many county parks and private campgrounds also restrict firewood on their properties. Campers and picnickers should be clear about the rules before bringing firewood along on their travels to avoid having their firewood confiscated at the gate. To make sure that campers can still enjoy a campfire, both public and private campgrounds sell local firewood onsite and at nearby locations.

Those who handle nursery stock or wood for a living are already onboard where quarantines have been issued. Garden centers, nurseries, landscapers, timber and pulp industries are well organized and want to sell quality products that do not pose a risk of introducing an invasive pest. Thanks to their diligence and swift compliance along with Wisconsin regulations and inspections, merchants helped quickly stop movement of emerald ash borer on nursery and wood industry products. This left only firewood as the main way the ash borer was being moved by people.

Preventing movement of uncertified firewood has been a greater challenge because the public doesn't always hear about new restrictions or they figure it does not apply to them and the small amount of firewood they pack in on a weekend trip. They are wrong. A lot of firewood is moved in every direction among homes and weekend cabins, campgrounds, picnic areas, boat docks and other recreation sites, and pests moving in this wood are introduced right into the areas we



Firewood isn't the only potential carrier of invasive terrestrial species. This camper is inspected for signs of egg masses so pests are not transported between parks or to new regions.

value most. Getting the message out about firewood and getting compliance from people who may only handle firewood a few times a year is much more difficult than dealing with businesses that handle wood on a daily basis.

"We can't overemphasize the importance of citizen help to contain invasives," says Diss-Torrance. "Limiting ourselves to using locally harvested firewood or treated wood offers longterm benefits. We can slow the spread of pests that are already here and help prevent future introductions of harmful pests and diseases that haven't reached Wisconsin. We need to change our habits and our mindset to maintain these benefits. It will be hard to see the effects of our efforts immediately as we continue to find populations of emerald ash borer and other invasive pests that may have been introduced years ago. Eventually though, we will make headway.

"It's a long term process and preventative defense. Due to global trade and travel, we move goods faster and farther than ever before. Invasive species move with these items and as a new reality, we must prepare for and adjust to these changes."

How can I make sure I have firewood for my camping weekend, hunting trip, or home heating?

Cut your wood locally or find a local supplier near your destination. If you are camping, nearly every state property has wood for sale. Call your destination for hours, availability and information about nearby private firewood sellers. A contact list for state properties is online at: dnr.wi.gov/org/land/parks.You can also search for fire-wood retailers near your destination in the Yellow Pages online or by calling the area's chamber of commerce.

What does the park do with confiscated wood?

Some properties burn confiscated wood immediately, before any spores or other life-stages of invasive species have a chance to exit the wood. At properties where this is not possible, confiscated wood is double-bagged in thick, loose plastic bags. Research found that when properly done, this technique was completely successful in containing emerald ash borer. These bags are left for the season to bake in the sun. Emerging adult insects and larvae are trapped inside, overheat and die. Property staff then chip the wood to specific dimensions at the end of the season and use it for mulch on-site.

Colleen Robinson-Klug writes about invasive pest management for DNR's Division of Forestry.

FIREWOOD RESTRICTIONS

For up-to-date information on firewood restrictions:

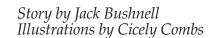
- Phone: 1 (877) 303-WOOD. Online information on emerald ash borer quarantines: emeraldashborer. wi.gov
- Online information about gypsy moth quarantines: gypsymoth. wi.gov
- Details about the types of firewood allowed on state properties and maps showing allowable distances firewood can originate from each property: dnr.wi.gov/invasives/firewood

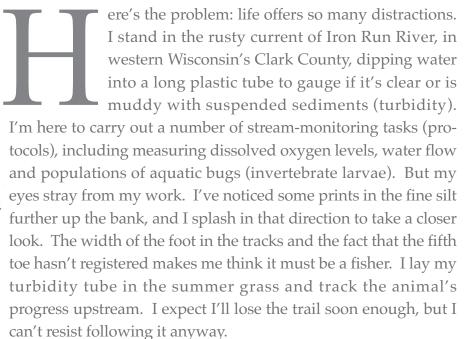
Fitful

To the curious mind, things learned along the

science

way are as wonderful as the task at hand.





Or I'm helping on a cold morning with the bird-banding project at Beaver Creek Reserve, near Fall Creek. With each bird caught in our mist nets, we must extract the bird, record data about species, sex, age and weight, and we fit the captive fluffball with a shiny numbered anklet that it will wear for the rest of its life. I know this is important work for assessing avian populations, migration patterns and longevity, but when you hold a small bird in your hand, a goldfinch or a nuthatch, you forget

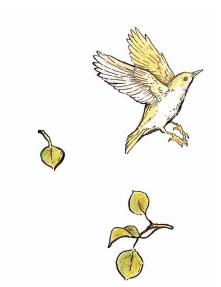
about the science of it. At least, I do. The moment is all. A wild creature no bigger than your palm, is still, alert and frightened. Its legs and toes are astonishingly fine, its heart thrumming insistently beneath your fingertips, whirring like the flywheel of a tiny watch. Just holding it is addictive. I crave the joy of it, data be damned.

When I can keep my mind on my work, I am doing something called "citizen science," a fancy label for a range

of volunteer programs across the country, and an initiative in which Wisconsin has taken a leadership position. I and others like me have been trained in certain procedures by local biologists or naturalists. In these times of increasingly limited budgets, we help accomplish the widespread gathering of data that are then made available to state resource management agencies and universities. At Beaver Creek Reserve, the home of Wisconsin's ambitious NatureMapping project, I've attended workshops not only in stream monitoring and bird banding, but in mammal ecology, amphibian surveys and identification of woodland and prairie exotics. I'm not a scientist, but when I'm in the field with my equipment I feel like one. Sometimes.

You see, there's at least one crucial difference between science and citizen science. Having grown up with a biologist-father, and having often accompanied him in the field, I know the tedium of the research project, the repetitive weeks, months, even years needed to choose sites, conduct work, and analyze findings. It's how science does what it does; it's how it moves forward. And I know that citizen science works in the same way, slowly

gathering data until there's enough of it to draw conclusions about the health of particular habitats or the distribution of certain species. But the fact is I'm never required to be a scientist. Most of the time, I'm just a citizen. Instead of staying on the trail, I'm free to wander from it. To be distracted. And, generally, that's what I do.





Scouting an unfamiliar county forest in spring, I leave the path and cut into the trees. I find myself on a deer trail, the prints clear and deep in the moist soil. It winds down a steep slope toward a distant creek bottom and I follow it, noting the recent beaver activity, white-tipped stumps and honed branches. On the bank I see raccoon tracks, toes spread like fingers in the sand. Occasionally, along the way, I find a ragged hole several inches deep, where a raccoon has dug furiously, hunting crawfish perhaps. By the time I return to the managed trails, having slogged through high marsh grass, stagnant backwaters and tangled undergrowth, I am soaked from the waist down and scraped by thorns. It is as if I have stepped from a jungle.

In winter, the effect is even more pronounced. Tracking back through the woods against a small mammal's trough in the snow, I am struck by the odd side-to-side markings of its tail, like ribs feathering the straight backbone of a fish. I'm not sure what I'm following, though the tail's narrowness suggests an opossum. I look for scat, I walk with my eyes to the ground, and soon I'm deep in the trees. Everything is white and leafless and the same. I have come here to record animal activity. But I have been lured from my purpose, seduced by the stories written in the powder at my feet, the orange urine sprays of a leaping, courting jackrabbit, the lazy hopping prints of a squirrel, the fur-and-flesh remains of a sudden death. Too much to chronicle in a checklist.

There are times out there when I feel, not lost exactly—not with a compass and a map—but far away, disconnected from any sort of world that I can take for granted. Every step brings with it a surprise. Every mark, like a word on a page, pulls me along, draws me into the patterns, the rhythms, the interlaced minutiae of life at its simplest and most fundamental. I return from these journeys clean and startled, as if scoured by snow, cold and the rushing water of a stream.

Before moving to Wisconsin in the

early 1990s, I lived almost 20 years in New Jersey, the most densely populated state in the country, where you can drive from one town to the next without a hint of open road in between. So much of it is a single, contiguous, sprawling city with more than 1,100 people jammed into every square mile.

For many of those years I commuted into Manhattan, where I worked as an advertising executive. Nature and I were not on good terms. The weather always interfered, soiling or drenching my suits and polished shoes. At bus stops and on crowded train platforms, I grumbled about the seasons. Too hot. Too cold. The first slushy snow annoyed me. Summers meant sweat stains on my dress shirts, and spring generally came and went on the other side of a pane of glass, somewhere far below my high-rise office building. All the paths were beaten

paths; there was little chance of surprise.

Now, it's impossible for me to have too much space, too much field, too many trees. In Wisconsin, there's room for distractions. And I let them turn me happily this way and that.

One early fall day, I am charmed by the acrobatics of countless vellow warblers in the understory above me. They leap, flit and rush through the branches of poplars and birches, the bright sunlight speckled and glowing behind them. Meanwhile, dead and dying leaves, knocked loose in the dance fall like slow rain, pattering on the forest floor. As I watch the birds, I have forgotten why I came to the woods that afternoon. More accurately, they have become my reason.

On a different afternoon, this time in late winter, I look for wolf sign in a large forest about 25 miles from my home. There are actually two small packs here, their territories spanning two counties, and I'm not the only one keeping tabs on them. I've traced them

before, but today I'm not having any luck finding evidence of their whereabouts. That's when I come upon the regally precise prints of a huge bird, three forward-facing toes evenly spread, one toe straight back, all sharply etched in the snow, each stride equidistant. Cutting across my path, out of the trees on one side and into the trees on the other, its tracks tell a story of exactness, care and purpose. A wild turkey is an impressive animal close up; its large print is likewise impressive. So I follow it, at least for a while. The tracks are fresh. Perhaps I'll surprise it, as it surprised me.

Seen from above, a winter hard-wood forest is a white page of antic grids and intersecting trails. Mammals and birds. Predators and prey. Rodent, canid, raptor, ungulate, human. There are no straight lines in nature, for each diverges onto another. Each path offers alternative paths. Every story meshes with every other story, season after season, making it impossible to tease them apart. Nor should we try.

This is what I've learned: Distractions are not really distractions. They're the whole point. In the name of science, I am disciplined and rigorous, setting up on a creek bank to mix reagents in glass vials or, stopwatch in hand, timing the progress of a lazy current between two flags. I calculate indices, record data. But also in the name of science, I have learned to pay attention. I move from one project to another, or to no project at all, on a whim, in answer to a distant bird call, the snap of a twig or a dainty fox print in new snow. I allow those intersecting lives to carry me off because I can and because I should. The return of the goldfinches in spring moves me now in ways it never did before, not because I know how many were banded in western Wisconsin last year, but because they have texture and weight in my memory. I can feel them in my hand, eye to eye, pulse to pulse. When I come upon a river or stream, I know what it takes to evaluate its health, but mostly I think of the stories written along its sandy shore, the prints of the covote that drank there in the early morning mist, or the heron that stood motionless and alert, waiting for something small to swim or hop or scurry within reach.

Reading the signs they've left behind, I can't help but wonder what happened next. Perhaps I'll nose around for a bit and see what I can see. If I lose one trail, there's bound to be another. With water and a sandwich in my pack, I have plenty of time. And no place I need to be but here.

Jack Bushnell writes from Eau Claire.







A strategic plan to manage invasives

Courtney A. LeClair

ome of you may be able to give an example of an invasive species, but can you tell me what they are? In Wisconsin, they are defined as non-native species whose introduction causes or is likely to cause economic or environmental harm or might harm human health. Invasive species disrupt and intrude on many aspects of our lives. They can crowd out or kill native plants and animals in waters, woods, prairies, parks, gardens and back yards. They can contaminate agricultural crops and, if ingested, may be toxic to livestock, pets and humans. Several invasive species alter soil chemistry and slow plant growth. As plant composition is changed, populations of animals that rely on a plant species for food, cover or nesting sites are displaced. Invasive insects, such as emerald ash borer and Asian long-horned beetle, can weaken or kill trees through girdling and burrowing.

In addition, most people who enjoy the outdoors view invasive species as annoyances that make it more difficult to reach or enjoy the places they hold dear. In the absence of natural predators or controls, invasives can overrun and blanket native species. They destroy parts of what make places special by altering the environment.

Outbreaks of invasive species are becoming more prevalent in news reports when they are first discovered or when they make the jump to a new area. Policy debates about them have recently gone all the way to the Supreme Court regarding closing locks in Chicago to prevent the spread of Asian carp into Lake Michigan. So many different non-native species have been documented on land and in water that you might think there is no hope that invasives can be contained or controlled, but that is not the case for all species. Resource managers have made great efforts in recent years in learning the most effective ways to control some of these species. Preventing new species from getting established and slowing their spread are critical. Wisconsin now has a new tool to help do just that.



NON-NATIVE FISH AND CRAYFISH ARE A SPECIAL CASE

After five years of hard work, Wisconsin's Invasive Species Identification, Classification and Control Rule (NR 40) became effective September 1, 2009. This rule was developed by a team of DNR staff specialists and the Wisconsin Council on Invasive Species working with an advisory group. They assessed species for possible listing in the rule and provided extensive opportunities for public comment, after which many revisions were made. This rule identified over 120 species as being invasive and grouped them as plants, fish and crayfish, aquatic invertebrates other than crayfish, terrestrial invertebrates and plant diseasecausing microorganisms, terrestrial and aquatic vertebrates other than fish, algae and cyanobacteria. Each organism was classified as either prohibited or restricted warranting different actions.

Prohibited species are those that are not yet known to be established in Wisconsin or are present in small infestations and, if reported, may warrant control efforts. These species would likely cause serious problems if left unchecked. As a prevention strategy, no person may transport, possess, transfer or introduce any of these species without a permit. When a prohibited species is found, the goal is generally to eradicate it if feasible or at least prevent it from spreading. Wisconsin DNR staff will work with the landowner to determine the best method of control and where possible, will seek to find funding, equipment, volunteers or other assistance to help with the control. Control of most invasive species takes several years, so monitoring the site and nearby areas is critical.

If you suspect you have found a prohibited species, please contact the DNR invasive species team promptly. Send an e-mail: Invasive.Species@Wisconsin.gov or call 608-267-5066. Explain where you found the plant or animal, the population size, when you found it, and who owns the land (federal, state, other public land or private parcel), and tell us how we can contact you. It is also very helpful if you send pictures or a specimen of the species. With this information, the identification of the species can be verified and mapped.

Unlike the other species detailed in the rule, all non-native fish and crayfish are regulated. Below are guidelines on what is considered prohibited and restricted.

- All non-native fish and crayfish are prohibited unless they are:
 - a) considered to be established species and are listed specifically as restricted.
 - b) part of an established aquaculture industry.
 - c) non-native viable fish species legally sold in the aquarium trade.
 - d) considered to be a nonviable fish species. (See #3)
- 2. All of these species listed a-d above are classified as restricted.
- Fish and crayfish are "viable" if eggs, fry, and adults can survive in water temperatures below 38°C (100.4°F) and can survive in fresh water.

Restricted fish and crayfish cannot be transported, possessed, transferred or introduced without a permit. Exceptions include Koi carp and goldfish that are not used for bait or not introduced into public waters. Koi and goldfish may only be introduced into artificial ponds that are entirely confined and retained on private property where there is no chance that the fish might escape (no flooding potential and no connection to other water systems).

Rusty crayfish, non-native viable fish species, and nonviable fish in the aquarium trade can be possessed or transported without a permit if kept in a safe facility like an aquarium or container that does not empty into a water body or water system with any chance of escape. They cannot be kept in an open pond. In addition, non-native fish species used for aquaculture may be transported and possessed in a safe facility or transferred without a permit. None of these exceptions allows introducing any non-native fish or crayfish species into water systems.

Restricted species are usually fairly widespread throughout a region or are found statewide and the chance of statewide eradication is low. Many of these species have already caused substantial economic and environmental damage. Some also harm human health. No person may transport, transfer or in-

troduce any of these species without a permit with the exception of fish and crayfish (see left). If a restricted species is present on your property, control is encouraged but is not required.

Some plant species are listed in both categories — *restricted* where the species is already established and *prohibited* in large portions of the state where it has not been found.

Along with this new invasive species rule, the state legislature recently passed a bill called Act 55 that helps to fill in the gaps in existing invasive species laws that the Department of Natural Resources did not have authority to cover. One such change exempts prohibited and restricted species from yard waste as many of these plants have seeds that can survive in municipal compost piles. These plants can be landfilled as long as they are not mingled with other yard waste.

Act 55 also expanded existing laws and NR 40 regarding transportation of aquatic plants and animals.

Together, Act 55 and NR 40 also set preventive measures in place making it illegal to transport or launch vehicles, watercraft or any other equipment (except weed harvesters) that have aquatic plants or animals attached. Conservation wardens and other law enforcement officials can order the removal of aquatic plants and/or animals and can issue citations for violations.

Some people wonder why the regulations cover invasive species that seem to be "everywhere." Even widespread species have not yet spread to all parts of the state. Keeping these species contained and minimizing their spread is the intent of the restricted category. In addition, many species have not been found in Wisconsin and others only occur in smaller local pockets. These are the species where early detection and control can make a big difference. Your actions may prevent a species from invading new lakes, prairies, fields or forests.

So what is going to be different now that rules to contain invasive species are in place? For one thing, education is critical. In order for the public to watch for and report these species, they need help to identify the invasive species and

Don't let invasives hitch a ride on you. Scrape dirt from the treads in your boots and pick any burs and seeds off your pants or fleece jack after hikes or hunts. Check your pets too.

to learn how to report those sightings. The more people who are trained to recognize these species, the more likely that control plans will be developed and work crews organized to contain, control or eradicate them. Training sessions are being held throughout the state for people who spend a lot of time outdoors such as Master Gardeners, naturalists, landowners, outdoor enthusiasts, utility and highway workers who maintain rights-of-way and land managers who oversee parks, trails, and forests.

Trail and park users will see some changes as well. You may notice signs, posters or other educational material at trail heads warning of common invasive species found along the trails. Outdoor enthusiasts can play an important role in preventing the spread of invasive species by staying out of infested areas and reporting prohibited species they see. One important step everyone can take is disposing of hitchhikers you may have picked up along the way seeds can stick to your clothing or plant fragments and small organisms can get caught in the treads of your bike tires or in the soles of your shoes. Some trails may provide boot brushes to clean off your footwear before moving on, but you could also carry one with you.

A good general rule is to leave plants and animals where you find them to lessen the risk of transporting an invasive species to new places.

Courtney A. LeClair is an AmeriCorps member who is funded through the Natural Resources Foundation of Wisconsin and is working on early detection of invasive plants with DNR's Bureau of Endangered Resources.

BEST MANAGEMENT PRACTICES

GUIDANCE FOR LANDOWNERS, LAND MANAGERS AND OTHERS WHO SPEND TIME IN THE OUTDOORS

Under the direction of the Wisconsin Council on Forestry, a diverse group of stakeholders recently developed voluntary guidelines to prevent the spread of invasives in forests, recreational areas, transportation and utility rights-of-way and urban areas.

General recommendations to limit the potential of introducing and spreading invasive species include:

- Avoid traveling through or working in small isolated populations of invasive plants.
- Minimize soil disturbance. Many invasive species gain a competitive edge when the ground is disturbed and cover plants are removed.
- Know what you are planting so you don't introduce an invasive plant.
- Clean equipment, shoes and clothing when leaving infested areas.
- Post signs and other information to inform and educate people using the parcel or corridor about invasive species that are commonly found there.
- Train staff, contractors and volunteers to identify invasive species that may be found in an area.

Detailed manuals are available that provide more specific recommendations to slow the spread of invasive species. You can find the Best Management Practices manuals on the web at council.wisconsinforestry.org/invasives.



Signs remind boaters to wash down their craft before launching and before moving to another water.



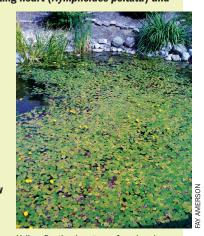
This stand of invasive wild chervil was recognized on a public right-of-way.

A GARDEN WHERE A PROBLEM WAS NIPPED IN THE BUD

When meandering through the University of Wisconsin-Madison Botanical Gardens last summer after a Badger football game, a visitor saw a beautiful water plant growing in the small ponds. Its yellow flowers poked above a mat of green leaves floating on the water's surface. The visitor recognized the plant as yellow floating heart (Nymphoides peltata) and

knew it had just been listed as a prohibited invasive species under the new invasive species rule (NR 40). The visitor contacted the Department of Natural Resources and Susan Graham, DNR's Water Resources Management Specialist for the South Central Region, who contacted the garden director, Dr. Mo Fayyez. He had noticed this aggressive plant as well and had attempted to control it the previous year.

After further examination, other plants in the garden were discovered that were listed under NR 40. Dr. Fayyez was notified and immediately the plants were removed. Special care was taken when removing yellow floating heart and draining the ponds to ensure that neither seeds nor any root fragments travelled into the storm sewer. The sewer the ponds drain into connects to Lake Monona and managers wanted to prevent any infestation in the Madison lakes.



Yellow floating heart was found and carefully eradicated from ponds at a UW-Madison botanical garden.

Once identified, control of this prohibited species was dealt with swiftly, with good cooperation and at minimal cost. The garden director acted quickly to remedy the situation and is working in coordination with DNR staff to develop a long term plan for the garden ponds to contain the problem plants and monitor the gardens to prevent future infestations.

It is important to remember that results are rarely immediate; they take a plan, time, and persistence (several years) in order to be effective.

INVASIVE SPECIES REGULATED BY NR 40

■ Algae and cyanobacteria **Prohibited:**

Cylindro (Cylindrospermopsis raciborskii) Didymo or rock snot (Didymosphenia geminata) Golden alga (Prymnesium parvum) Starry stonewort (Nitellopsis obtusa) Novel cyanobacterial epiphyte of order Stigonematales spp. Ulva spp. or Enteromorpha spp.

Aquatic plants

Prohibited:

Australian swamp crop (Crassula helmsii) Brazilian waterweed (Egeria densa) Brittle naiad (Najas minor) European frogbit (Hydrocharis morsus-ranae) Fanwort (Cabomba caroliniana) Flowering rush (Butomus umbellatus) Hydrilla (Hydrilla verticillata) Parrot feather (Myriophyllum aquaticum) Oxygen-weed (Lagarosiphon major) Water chestnut (Trapa natans) Yellow floating heart (Nymphoides peltata)

Curly-leaf pondweed (Potamogeton crispus) Eurasian watermilfoil (Myriophyllum spicatum)

■ Terrestrial plants

Prohibited:

Chinese yam (Dioscorea oppositifolia) Giant hogweed (Heracleum mantegazzianum) Giant knotweed (Polygonum sachalinense) Japanese honeysuckle (Lonicera japonica) Japanese stilt grass (Microstegium vimineum) Kudzu (Pueraria montana or P. lobata) Mile-a-minute vine (Polygonum perfoliatum) Pale swallow-wort (Vincetoxicum rossicum or Cynachum rossicum)

Perennial pepperweed (Lepidium latifolium) Porcelain berry (Ampelopsis brevipedunculata) Princess tree (Paulownia tomentosa) Sawtooth oak (Quercus acutissima) Sericea lespedeza (Lespedeza cuneata) Scotch broom (Cytisus scoparius) Spreading hedgeparsley (Torilis arvensis) Wineberry (Rubus phoenicolasius) Yellow star thistle (Centaurea solstitialis)

Prohibited/Restricted:

Wild chervil (Anthriscus sylvestris)

Amur honeysuckle (Lonicera maackii) Black swallow-wort (Vincetoxicum nigrum or Cynachum Iouiseae) Celandine (Chelidonium majus) European marsh thistle (Cirsium palustre) Hairy willow herb (Epilobium hirsutum) Hill mustard (Bunias orientalis) Japanese hedgeparsley (Torilis japonica) Japanese hops (Humulus japonicus) Lyme grass (Leymus arenarius or Elymus arenarius) Poison hemlock (Conium maculatum) Tall manna grass (Glyceria maxima)

Autumn olive (Elaeagnus umbellata) Bell's honeysuckle (Lonicera x bella) Canada thistle (Cirsium arvense) Common buckthorn (Rhamnus cathartica) Common teasel (Dipsacus sylvestris or D. fullonum)

Creeping bellflower (Campanula rapunculoides) Cut-leaved teasel (Dipsacus laciniatus) Cypress spurge (Euphorbia cyparissias) Dames rocket (Hesperis matronalis) Garlic mustard (Alliaria petiolata) Glossy buckthorn (Rhamnus frangula or Frangula alnus) [Asplenifolia and Fineline (Ron Williams) are exempt cultivars] Helleborine orchid (Epipactis helleborine) Hemp nettle (Galeopsis tetrahit) Hound's tongue (Cynoglossum officinale) Hybrid cattail (Typha x glauca) Japanese knotweed (Polygonum cuspidatum or Fallopia japonica)

Leafy spurge (Euphorbia esula) Morrow's honeysuckle (Lonicera morrowii) Multiflora rose (Rosa multiflora) Musk thistle (Carduus nutans) Narrow-leaf cattail (Typha angustifolia) Oriental bittersweet (Celastrus orbiculatus) Phragmites (Phragmites australis) Plumeless thistle (Carduus acanthoides) Purple loosestrife (Lythrum salicaria) Russian olive (Elaeagnus angustifolia) Spotted knapweed (Centaurea biebersteinii) Tansy (Tanacetum vulgare) (Aureum and

Compactum are exempt cultivars) Tartarian honeysuckle (Lonicera tatarica) Tree-of-heaven (Ailanthus altissima) Wild parsnip (Pastinaca sativa)

Bighead carp (Hypophthalmichthys nobilis)

Fish and crayfish

Prohibited:

Black carp (Mylopharyngodon piceus) Eastern mosquitofish (Gambusia holbrooki) Grass carp (Ctenopharyngodon idella) Red shiner (Cyprinella lutrensis) Rudd (Scardinius erythrophthalmus) Silver carp (Hypophthalmichthys molitrix) Snakehead species (Synbranchidae spp.) Tench (Tinca tinca) Western mosquitofish (Gambusia affinis) Zander (Sander lucioperca)

Restricted:

Alewife (Alosa pseudoharengus) Arctic char (Salvelinus alpinus) Atlantic salmon (Salmo salar) Bitterling (Rhodeus spp.) Brown trout (Salmo trutta) Chinese hi-fin banded shark (Myxocyprinus asiaticus)

Chinook salmon (Oncorhynchus tshawytscha) Coho salmon (Oncorhynchus kisutch)

Common carp (Cyprinus carpio) Goldfish (Carassius auratus)

Ide (Leuciscus idus) Koi (Cyprinus carpio)

Pink salmon (Oncorhynchus gorbuscha)

Rainbow smelt (Osmerus mordax)

Rainbow trout (Oncorhynchus mykiss)

Redear sunfish (Lepomis microlophus)

Round goby (Neogobius melanostomus)

Ruffe (Gymnocephalus cernuus) Rusty crayfish (Orconectes rusticus)

Sea lamprey (Petromyzon marinus)

Sterlet (Acipenser ruthenus)

Three-spine stickleback (Gasterosteus aculeatus)

Tiger trout (a hybrid of Salvelinus fontinalis and Salmo trutta)

Tilapia (Tilapia spp.)

Tubenose goby (Proterorhinus marmoratus) Weather loach (Misgurnus anguillicaudatus)

White perch (Morone americana)

Aquatic invertebrates except crayfish

Prohibited:

Asian clam (Corbicula fluminea) Bloody shrimp (Hemimysis anomala) Chinese mitten crabs (Eriocheir sinensi) Faucet snail (Bithynia tentaculata) Fishhook water flea (Cercopagis pengoi) New Zealand mudsnail (Potamopyrgus antipodarum) Quagga mussel (Dreissena rostriformis) Spiny water flea (Bythotrephes cederstroemi) Water flea (Daphnia lumholtzi)

Restricted:

Chinese mystery snail (Cipangopaludina chinensis) Zebra mussel (Dreissena polymorpha)

■ Terrestrial invertebrates and plant disease-causing organisms

Prohibited:

Asian gypsy moth (Lymantria dispar – Asian race) Asian long-horned beetle (Anoplophora glabripennis) Emerald ash borer (Agrilus planipennis) Crazy worm (Amynthas or Amynthus spp.) Hemlock woolly adelgid (Adelges tsugae) Scale associated with beech bark disease (Cryptococcus fagisuga) Sudden oak death pathogen (Phytophthora ramorum)

European Gypsy moth (Lymantria dispar -European race)

■ Terrestrial and aquatic vertebrates except fish

Prohibited:

Feral domestic swine (Sus domestica) Monk, Quaker parakeet or parrot (Myiopsitta monachus) Russian boar (Sus scrofa)

Restricted:

Red-eared slider (with a carapace under 4") (Trachemys scripta elegans)



Readers

COMMENT ON A STORY?

Send your letters to: Readers Write, WNR magazine, P.O. Box 7921, Madison, WI 53707 or e-mail letters to david.sperling@wisconsin.gov

BIRD GUIDES "AWESOME"

Awesome!!! We received the Birding and Nature Trail Guides yesterday and can't put them down (see "Road map to the right place at the right time," December 2009). So much great information on places we have been and others we now plan to visit. We love birds and are always looking for new places. Our feeders are out all year long with many "regulars" and just as many migrants in spring and fall.

Jerry and Diana Vieth Neenah

Stacy Rowe, who handles orders for the Birding and Nature Trail Guides, reports that orders are coming in at a brisk pace. If you'd like a copy of one or more of the five guides, e-mail her at stacy.rowe@wisconsin.gov.

A SNAKEY ENCOUNTER

Jim, Curt, and I were splitting wood at our cabin in Richland County and found this beautiful specimen under a pile of blocks. Jim, a retired Earth Science teacher, is an old hand with snakes. We untangled it from the wood chunks and tied it up in a T-shirt for a trip to the cabin and the camera.

During the photo shoot, the snake gradually warmed up and became more active. Jim transferred it to me so he could take pictures. By this time, the snake had had about enough and made its displeasure known. The trouble was my hand was such a large morsel that it had to unhinge its jaws for the strike and then could



not let go. The bite was mostly painless, about like being rubbed with coarse sandpaper. The teeth were so short they barely penetrated my skin.

After a bit of verbal sparring (mainly by me!), Jim became concerned for the snake, released its jaws, tucked it back in the T-shirt and returned it to the wood pile. We thought at first it was a bull snake and would report the sighting, but since decided it was likely a rat snake. My three-year-old grandson, Aiden, however had another suggestion regarding Mr. Snake's identity. He studied the photo and decided it was a "silly snake" because "Papa is too big for the silly snake to eat!" he observed. The photo went to show-and-tell at day care where it was a big hit.

We share the opinion that in the 25 years since we'd had the cabin snake populations are declining. Sightings are now rare compared to 10 years ago. Our neighbor, a retired biologist, said he had seen a skirmish line of turkey poults going through his yard

when one grabbed a small garter snake. There was a general melee to allocate shares of the morsel, and there are lots of hungry turkeys and raccoons around these days. I would venture that predation as well as habitat loss play a role in the decline of snake populations. Chuck Baum

Mazomanie

DNR herpetologist Rori Paloski responds: This is a black rat snake. They are quite rare and are listed as a Species of Special Concern in Wisconsin, so you are lucky to have seen one! We passed on this information to our data mappers and added this record to our Natural Heritage Inventory (rare species) database. Thanks for this report.

UPDATES

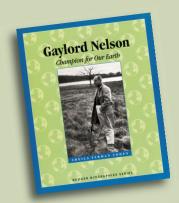


RESTORED BADGER #2 FISH CAR BACK HOME AT RAILWAY MUSEUM

After 13 months and nearly \$1 million in renovations, the centuryold railway car, once used to ship fish and fry between Wisconsin's fish hatcheries and remote streams across the state, returned in mid-December to its home at the Mid-Continent Railway Museum in North Freedom. The fish car (featured in our story "Across the trestles of

time," December 2006), was purchased by the museum in 1960 and had seen several small renovations until 2006 when a \$475,000 donation from the Janesville-based Jeffris Family Foundation, matched by museum donors and proceeds from the annual Gandy Dancer Festival, made complete restoration possible. The car was shipped to Avalon Rail, Inc. in West Allis in November 2008 where it was

transformed to original specifications. Badger #2 was shipped back home to North Freedom on December 16, 2009. Visit midcontinent.org for description and photos of the renovation from start to completion.



EARTH DAY TURNS 40

April 22, 2010 marks the 40th anniversary of Earth Day and in the past four decades this annual day of action has evolved into a week of individual, community and government events. Earth Day began when the late U.S. Sen. Gaylord Nelson from Clear Lake, Wis. created the environmental "teach-in" after watching the nation's campuses erupt with student Vietnam War protests.

"Suddenly, the idea occurred to me — why not organize a huge grassroots protest over what was happening to our environment?" Nelson recalled. He called it a gamble worth trying. It worked.

The first Earth Day on April 22, 1970 attracted about 20 million people. It led to the creation of the United States Environmental Protection Agency and spurred passage of the Clean Air, Clean Water, and Endangered Species acts. Sen. Nelson was awarded the Presidential Medal of Freedom for his role as Earth Day founder.

Today, April 22 means something different to everyone. Be a part of this history and a part of Earth Day.

Want to inspire another generation to take on the green mission? Pick up a copy of *Gaylord Nelson*: *Champion for Our Earth*, a new book in the Wisconsin Historical Society Press' Badger Biographies series penned by Sheila Terman Cohen. The 109-page book especially appeals to young readers age 7-12 but offers lessons for all age groups. Cost is \$12.95.

Yellow root of the woodlands

Many years later I recalled my childhood connection with goldenseal while controlling garlic mustard with colleagues at a state natural area in Green County. In 2005, we discovered a small population of goldenseal on the site where it was previously undocumented.

Goldenseal can be found in much of the Northeast including 27 states and Ontario. In most of its range, goldenseal grows best in rich, mesic hardwood forests. In Wisconsin, goldenseal is found in the southern part of the state in a U-shaped distribution from Monroe County to Manitowoc County where it grows in southern upland forests that are dominated by red and white oaks, shagbark hickory, basswood and slippery elm. The ground layer in these forests may include jack-in-the-pulpit, large-flowered bellwort, interrupted fern, lady fern and hog peanut. Goldenseal is an erect perennial herb in the buttercup family with hairy stems, vellow rhizome-like roots and white flowers that bloom in May. The fruit is a small cluster of red berries that ripens in mid-July. It grows to heights of six to 20 inches and has wide-toothed leaves with five lobes.

Goldenseal is valued for medicinal purposes and has an interesting history. Many Native American tribes used it as a medicine and a coloring agent. According to Prof. Benjamin Smith Barton in his "Collections for an Essay Toward a Materia Medica of the United States" (1798), the Cherokee nation used it to treat cancer. In the 1800s, goldenseal was a popular treatment option for doctors who believed herbal remedies could help alleviate cancer and control swelling. Today, goldenseal is among the top-selling medicinal herbs in the United States. Herbalists consider it an antiseptic, anti-catarrhal and an anti-inflammatory that is used to treat a variety of ailments from gastritis to liver disease.

While there are many health benefits from using goldenseal, its conservation status is not as positive a story. Range-wide, goldenseal is in serious decline due to overharvesting, habitat destruction, forest fragmentation, land clearing and the spread of invasive species such as garlic mustard. Goldenseal is listed as endangered in six states, threatened in three states, and is of special concern in three states, including Wisconsin. Due to its steady

decline and increasing scarcity, goldenseal was recently listed as a Species of Special Concern by the Convention on International Trade



Convention Goldenseal produces single red on Internative fruits per leaf in July that look a bit like raspberries.

in Endangered Species. Commercial sale of cultivated goldenseal is more prevalent in Appalachia than Wisconsin, however commercial supplies are not sufficiently developed to take pressure off of the harvest of the wild roots.

So what's the future for goldenseal in Wisconsin? It might be found less frequently as impacts of global climate change become more pronounced across the landscape. While climate change brings uncertain consequences, there are steps we can take now to help secure goldenseal's place in Wisconsin. To start, land management practices in southern forests can be compatible with preserving and expanding goldenseal populations. Also report new sightings of this plant and, if the plant is harvested, do it conservatively. Scatter seeds from harvested plants to replant them. Never completely harvest entire patches of goldenseal and leave smaller patches untouched so they can spread. Be aware that harvesting goldenseal on state properties like wildlife or fisheries areas may require a permit from the property manager. We heartily recommend appreciating goldenseal for its simple beauty as an uncommon spring ephemeral and let that be your prize, choosing to see rather than sell the "yellow roots."

Joe Henry is DNR's endangered resources ecologist for northeastern Wisconsin based in Green Bay.

Natasha Kassulke



Thoughts of spring may soon turn our attention south — to our waistlines. Just as you consider shedding a few pounds before swimsuit season, pets that have been more sedentary during winter or chowed down on table scraps during the holidays may need some tummy trimming, too.

According to Petcenter. com about 40 percent of cats are considered obese and 25 to 40 percent of dogs are overweight. Obesity in pets also



leads to diabetes, circulatory problems, pancreatic disorders, liver disease and more. Consult your veterinarian before putting your pet on any weight loss program. Certain medical conditions also can cause obesity and need to be ruled out. The vet can also help you establish a program so your pet loses weight in a gradual, natural manner.

To determine if your cat or dog is overweight, run your hands along her ribs. If they can be easily felt then she's probably not overweight. However, if you have to press hard to feel the ribs, then your four-legged friend needs a lifestyle change.

A good first step? Eliminate high calorie treats and table scraps. Substitute affection for food treats. Give a pat or throw a ball instead of handing out a hot dog.

Taking your dog or cat for daily walks and providing regular play and exercise can benefit both of you, but don't overdo it. Tailor your exercise program to your pet's current state of health. Start slow and work up to higher activity levels. If your dog suffers from arthritis or is just getting up there in years, keep the



exercise level consistent in length and intensity from one day to the next.

Nutritionally balanced diet foods are available that are less calorie dense so your pets can eat the same volume per meal while reducing the calories they ingest. Adding fiber to meals will help satiate their appetites without adding additional calories. A tablespoon or two of canned pumpkin is an easy way to increase fiber content, but add it gradually so that their bowels have a chance to adjust. Lifelong weight management for many pets, just as for humans, is an ongoing challenge.

Take time to track

Now is a great time to get the whole family outdoors to practice animal tracking. Whether you are slogging through the last traces of snow or the beginning of mud season, it's a great chance to hone your powers of observation and your dog's nose. The Department of Natural Resources publication Guidelines for Carnivore Tracking During Winter in Wisconsin can help you get going. You can find a free copy online at dnr.wi.gov/org/land/er/ mammals/volunteer/pdfs/ tracking_guidelines.pdf.

DNR researchers and trained volunteers have conducted winter track surveys of furbearing mammals since 1977. In 1979, the DNR began conducting formal wolf track surveys as part of the state wolf monitoring program, and a separate survey program to survey American marten began in 1981. The carnivore tracking program for volunteers grew out of these earlier surveys and training has been offered since 1995. Furbearers like wolves, bobcats, badger, fisher and otter grab

attention, but backyard trackers can have just as much fun on the trail of raccoons, skunks, rabbits and squirrels.

A number of good tracking guides are available. DNR staff recommendations are listed

A Field Guide to Mammal **Tracking in North America**

by James Halfpenny provides good explanations of how to take track measurements, note gait patterns, and identify species by their tracks.



The guide also provides excellent photos of animal scat that can help with identifications. You can also learn how to take plaster casts of tracks to preserve what you saw in the snow, mud or wet sand.

- Mammal Tracks & Sign by Mark Elbroch (2003) has excellent color photos and natural history information. Some terminology and measurement methods are different from those used by DNR when training volunteer trackers.
- Peterson's Field Guide to Animal Tracks by J. Murie is an old standard for most trackers and is still reliable, although not as complete a guide as Halfpenny's.
- Tracking and the Art of **Seeing: How to Read Animal** Tracks and Sign by P. Rezendes has excellent photos of animal tracks and other signs. Some information is outdated, so use in conjunction with another updated guide.
- Bird Tracks & Sign by Mark Elbroch with Eleanor Marks is a good source for identifying bird tracks and other signs you may see by feeder platforms and on the ground in winter.

Natasha Kassulke is creative products manager for Wisconsin Natural Resources magazine.

Wisconsin

Traveler

Kathryn A. Kahler



Check breakfast off the list with a farm-style breakfast in Madison on Sunday, April 25. The 14th annual Breakfast **on the Farm** is sponsored by the Association of Women in Agriculture at the UW-Madison Stock Pavilion and features stacks of hotcakes, farm-fresh eggs, savory sausage and ice cream with all the toppings. It's an educational event with something for all ages at a reasonable price. For more information contact Christa Behnke at cbehnke@wisc.edu

At Historic Point Basse on the east bank of the Wisconsin River, just south of Nekoosa, learn how maple syrup is made at **Wakely's Sugar Bush** on April 18. If the sap is running, you'll even be able to help gather sap and sample some syrup on a pancake. Event starts at 11 a.m. and costs just \$2 for adults and \$1 for children. Call (715) 886-4202 or e-mail info@historic pointbasse.com for information.

Further north in Park Falls, bring your appetite to **Northern Wisconsin Maid Sugarbush Open House**, April 17-18

at W8052 Maple Ridge Road. Owners John and Rosemary Slack will tap 200 acres of maple trees to produce over 2,000 gallons of Wisconsin's syrupy delight. Visit the "Sugar Cabin" in Park Falls and enjoy coffee and doughnuts with warm maple syrup, then drive to the sugarbush on Highway F for a hay wagon tour of the production process, finished off with a free-will donation pancake and sausage breakfast. Call (715) 762-4796 or e-mail slacknwm@pctcnet. net for information.

Switch gears and chug on down to Brooklyn for the 13th annual Depot Days, April 25-26 beginning at 10 a.m. each day. This heritage festival celebrates the role the railroad played in the community's development with activities for young and old, indoors and out. You'll find model layouts galore, railroad rides on the C&NW rail line, and a new GPS-based "geocaching on the rails" event. Make Mom happy and pick up birding checklists and maps to three local birding hot spots where you're sure to see and hear migratory birds like Sandhill cranes. Call (608) 455-1503, e-mail info@depotdays.info, or visit depotdays.info/ for more information.

Leading up to Mother's Day, what better way to celebrate than with flowers? Herald the beginning of spring in downtown Sister Bay on May 8 for **Blossom Festival**. The event features a traditional raising of the maypole, Norwegian dancers, and children's parade and a bonfire at sunset at Waterfront Park. Call (920) 854-2812 or visit sisterbay tourism.com for details. Also that day, in historic downtown Columbus, celebrate the

Focus your binocs on a Wilson's phalarope at the Horicon Marsh Bird Festival.

blooming of the community's famous redbuds and the **Red-bud Festival**. Savor your first brat of the season at the Lion's Club brat stand, dicker for deals at the citywide garage sales and pay homage to the city's newly crowned Prince and Princess. Call (920) 623-3699 for more information.

Show Mom a bouquet without having to search for a vase. Take her and your camera on the Mother's Day Wildflower **Hike**, May 9 from 2 to 4 p.m., at the Richard Bong State Recreation Area, 26313 Burlington Road, in Kansasville. Call (262) 878-5600 for details. The trail may be rough and wet, so listen to Mom and wear your galoshes! If you don't dillydally, you may have time to catch some of the festivities at the Horicon Marsh Bird Festival. This four-day event (May 7-10) during the peak of spring migration includes guided bird hikes, bird banding demonstrations, pontoon boat birding adventures, birding for kids, the Big Sit, night sounds bus tour, twilight birding by boat and more. Reservations are required for some events so be sure to check out horiconmarshbird festival.com/birdfestival events.cfm for details.





Wisconsin, naturally

INTERSTATE LOWLAND FOREST STATE NATURAL AREA

Notable: The natural area features a mature southern wet forest community on what is periodically an island in the St. Croix River. Dur-



ing periods of high river levels, an old channel on the area's north side fills with water and isolates the site. The canopy is composed of large silver maples with scattered black and green ash, hackberry and ironwood. Canopy openings resulting from Dutch elm disease are now filled with a dense growth of ostrich fern and nettles. The topography is irregular, with many linear levees and wet depressions created by periodic flooding. The rare Assiniboine sedge (Carex assiniboinensis) occurs here. Many birds nest in the forest, including eastern wood pewee, brown creeper, red-eyed vireo, indigo bunting and blue-gray gnatcatcher, along with two state-threatened species — redshouldered hawk and cerulean warbler.

How to get there:

Within Interstate State Park. From the junction of Highway 8 and Highway 35 in St. Croix Falls, go south on 35 a quarter-mile to tl entrance. Park maj available at the vis Follow the park ro



a quarter-mile to the park entrance. Park maps are available at the visitor center. Follow the park road to the Camp Interstate picnic shelter parking lot. Take the Quarry and Point cross-country ski trails southwest into the natural area. See dnr.wi.gov/org/land/er/sna/index.asp?SNA=165 for maps and more information.

