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# Natural Heritage Quarterly

*Connecting people with information  
and resources to care for their land*

**Spring 2015, Volume 1**

*WELCOME! Your pride in owning and caring for your land is part of your legacy. It's also an important reason why Wisconsin is rich in beautiful scenery, special places and unique native plants and animals.*

*The overwhelming response to our Spring 2015 lottery for customized Landowner Conservation Reports reflects your interest in knowing more about your land. To help meet that need, we offer our first edition of **Natural Heritage Quarterly**. We hope this publication can connect you with information and resources to help realize your conservation goals and values. Together, we can help sustain wild Wisconsin for our children and grandchildren to enjoy.*

*— Erin Crain, Deputy Land Division Administrator*

## Spring into action against invasive plants

**A**s winter turns to spring, the first green we often see on our land is an invasive plant: garlic mustard, buckthorn or honeysuckle. All three can be relentless, spreading rapidly, crowding out native plants and providing less food for insects, and in turn birds and the other animals that rely on native plants.

Spring is the perfect time to tackle garlic mustard and to take steps to make it easier and more effective to control buckthorn and honeysuckle in the fall.

### **Garlic mustard**

While not yet as widespread in northern Wisconsin, garlic mustard is found all over the state, says Kelly Kearns, DNR invasive plant specialist.



Garlic mustard or violets? Crush the leaves for the invader's telltale garlic odor.

"If landowners don't have it yet, it's important to be vigilant and look for it every year, especially in forested areas," Kearns says. "And if you have smaller populations, you should definitely control them because you can actually get a handle on it."

If you get it early and never allow it to go to seed, "you stand a good chance of eradicating it," she says.

First year plants have dark green heart-shaped leaves with scalloped edges; the leaves of native violets may be mistaken for them, but they will not have a garlic odor when crushed. Learn how to identify older plants and see more photos at [DNR's garlic mustard web page](#).

**Read  
more  
inside**



## Did you know?

Although it looks a bit like a phlox, bird's-eye primrose, *Primula mistassinica*, is actually a member of the primrose family and more closely related to shooting stars, loosestrifes and star flowers. It's considered a state "Special Concern" plant because its populations are rare or uncommon here; look for it in rock splash pools and on stabilized dunes near the Great Lakes. It also occurs inland on moist sandstone cliffs. The bird's-eye primrose blooms early May through late June. Its flower has a unique trait called heterostyly, which prevents self-pollination. [Learn more about this rare flower.](#)



## Spring into action (continued from page 1)

Hand-pulling can work to control small populations. Pull the plants before the flowers start developing into seed pods. Uprooted plants, if left on the ground or in piles, may continue developing seeds, so remove and dispose of them by landfilling, burying or burning, Kearns says. Composting works for the stems and leaves but will only kill seeds if the pile reaches high temperatures.

"Be prepared to address the same spots for several years," Kearns says. "Mark where it was with a GPS or flagging tape so you can find the spots next year because the plants will come up again."

If you have a larger population of garlic mustard than you can pull, consider using herbicide. Use Glyphosate or 2,-4 D according to the label and apply when plants are in the early flowering stage, or earlier. Watch our video to [learn how to use a hand sprayer with herbicide to control garlic mustard](#). This UW-Extension publication contains [more detailed information on garlic mustard](#) and control methods.

"If you have a large population you are looking at a commitment of working on it for many years," Kearns says.

### **Mark honeysuckle and buckthorn for fall control**

Early spring is also a good time to be on the lookout for honeysuckle and buckthorn, Kearns says. These invasive shrubs leaf out early. Mark them with your GPS unit or flagging tape and come back in the fall to control them. Controlling these shrubs involves cutting the stems and treating them with an herbicide. Spring treatments usually aren't as effective because the sap flow pushes the herbicide out.



Mark honeysuckle plants in the early spring and get them under control in the fall.



**Conserving Wisconsin's  
Natural Heritage**  
[2014 Annual Report](#)

# Dig deeper

*Garlic mustard is well-known for the harm it does to wildflowers and other ground-layer plants that grow in forests of oak, ash, maple and other hardwood trees.*

The toll the invader can take on the trees themselves is less obvious but no less serious.

“It’s hard to believe that this little plant can impact a tree, but the roots secrete a chemical that kills the beneficial soil fungi trees use to help absorb water and nutrients,” says Kelly Kearns, DNR invasive plant specialist.

According to the journal PLOS, researchers at Harvard University, the University of Guelph, the University of Montana, Purdue University, and the UFZ Centre for Environmental Research in Germany teamed up to look at how garlic mustard can affect hardwood forests by affecting *arbuscular mycorrhizal fungi*. This soil fungus has long filaments that penetrate plant roots and form an intricate network that effectively extends the plant's root system. The fungi depend on plants for energy and plants depend on the fungi for absorbing nutrients. The researchers collected soil from forests in Ontario dominated by native hardwoods and tested seedlings' ability to form mycorrhizal relationships in soil with a history of garlic mustard invasion. Three species - sugar maple, red maple, and white ash - had significantly less fungal root colonization and grew only about one-tenth as fast in those in the infested soil. Seedlings grown in sterilized, fungi-free soil taken from invaded and pest-free locations showed similar reductions, suggesting that diminished microbial activity resulted in suppressed tree growth. Other experiments showed that adding garlic mustard extracts to soil impaired fungal colonization and seedling growth, implying that garlic mustard produces phytochemical poisons that disrupt native trees' mycorrhizal associations and stunt their growth.

Such results, the researchers suggest in PLOS, shows that by killing off native soil fungi, garlic mustard can limit the next generation of trees and alter the soil in ways that encourage the growth of other native and nonnative weedy plants.



## Keep garlic mustard out of your forest

To prevent your forest from an invasion of garlic mustard, make sure to clean soil, seeds and plant parts from your shoes and equipment before leaving a site infested with garlic mustard. Use the most effective cleaning method that is practical: brushes, brooms or other hand tools; car washes; high pressure air; steam cleaning; or portable wash stations.

Also, avoid situations that could introduce an invasive earthworm, jumping worm, that prepares the soils for garlic mustard and other invasive plants. The invasive jumping worms, which are native to Asia, have distinctive snake-like movements and have been found in a belt running from the Madison area to Milwaukee and in the Fox Valley. “To avoid introducing these worms, do not dig up plants in Madison or Milwaukee and bring them up to your property in another part of the state,” she says. More information about jumping worms will be featured in the next **Natural Heritage Quarterly**.

These workshops and other events provide opportunities to learn about restoration techniques, native plant communities, monitoring and more to help you achieve your conservation goals for your lands. *These events are all state-sponsored or DNR presenters.*

May 9, [Grosbeaks Galore, a Birds on Your Landscape Workshop](#), Two Rivers.

May 9, [Native plant sale at the UW Arboretum](#), Madison.

May 16, 2015 [Oak Opening Workshop](#) sponsored by the Oak Savanna Alliance, East Troy.

May 21-24, Door County, 13<sup>th</sup> annual [Door County Festival of Nature](#)

May 29-30, [Wildlife Inventory and Monitoring workshop](#), University of Wisconsin-Milwaukee Field Station, Saukville

June 15-20, [Vegetation of Wisconsin workshop](#), University of Wisconsin-Milwaukee Field Station, Saukville

June 15, deadline for application to the [Wisconsin Coverts Project Aug. 13-16, workshop](#), promoting woodland management for wildlife.

# 7 things to know about your land

Location, location, location – that mantra is as important for landowners managing for wildlife as for people buying a new home or looking to site their business.

Location determines what kinds of plants and animals you'll find on your land, the actions you can take to help them thrive and the challenges you're likely to face. DNR has a wealth of information on our website that can help you learn what your location means for you.

## Breaking it down

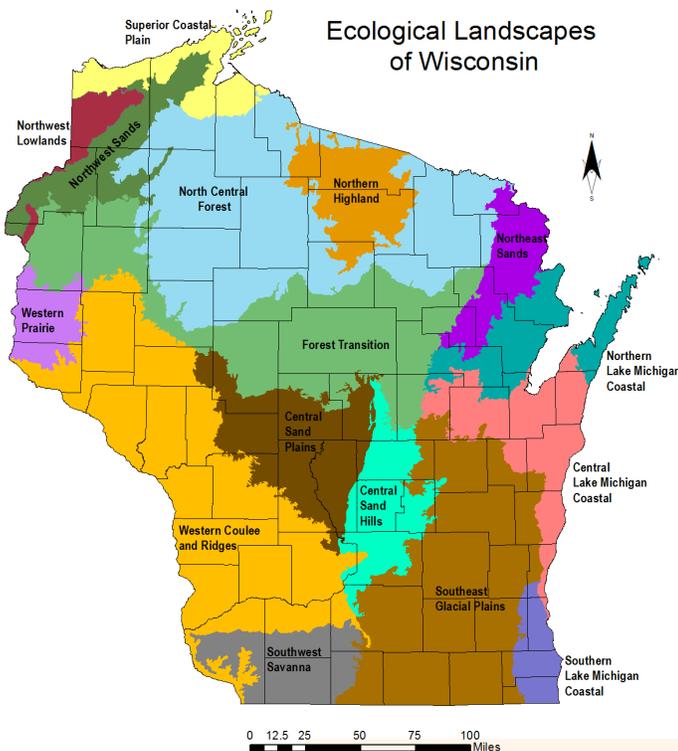
Wisconsin has 16 “ecological landscapes” distinguished by their unique assemblage of the soils, geology, water and slope and other physical, biological and environmental attributes. These large units can encompass hundreds of thousands of acres. Within each are distinct natural communities – different types of prairies, wetlands, and forests formed by soils, geology, plants, animals and other factors that evolved together.

There are 100 distinct natural communities in Wisconsin. Communities may be named for their dominant plant species, for example, pine barrens, sedge meadows and oak savannas, or a prominent environmental feature - Great Lakes Dune, Dry Cliff - or some combination of these factors. Communities range in size from less than an acre to thousands of acres. Communities are dynamic and always changing. Some change may be rapid while other change is too slow for many humans to notice during their brief lifetimes.

[Learn about the Ecological Landscape](#) that your property is part of by finding your county on the map and clicking on it.

You'll open up to tabs that you can click to explore these characteristics of the general area where your land is located:

- **Landscape at a Glance** --- summary information on size, climate, geology, bedrock, landcover and more.
- **Species** – a list of clickable links of the birds and other animals that are considered “Species of Greatest Conservation Need” in the state, region or globally. These species are rare or declining.
- **Natural community** – a list of clickable links naming the kinds of distinct assemblages of plants and animals that have evolved over time with one another and with the soils, water and other geological and environmental factors around them.
- **General opportunities** – summary information characterizing the general opportunities to preserve and restore natural communities.
- **Maps** – Clickable links to a variety of maps showing what plant surveys dating back to the mid-1800s found, public ownership, easements and ecologically significant places.
- **LTA** – Land type associations are smaller geographic units, ranging from 10,000 to 300,000 acres, that cover portions of one to a few counties. In Wisconsin they describe soil and habitat types following glacial features like individual moraines or outwash plains and are used for planning forest management and habitat restoration.



In coming issues, we'll tackle how you can use the information found on these web pages to help understand what natural community(ies) may be on your property and what opportunities exist for conservation of species.

# Sharing our stories

In coming issues, we look forward to sharing your land management stories so others can be inspired too. Send your write-ups to [lisa.gaumnitz@wisconsin.gov](mailto:lisa.gaumnitz@wisconsin.gov). We start this feature with one of our own.

## A Ponderosa of her own

Erin Crain's parents planted the seed for her career in natural resources and her passion for restoring her own property on a city lot in Milwaukee in the 1970s.

There, her father, an engineer at Delco and her mother, a stay-at-home mom, put into practice the principals of organic and native gardening, long-before such concepts became mainstream. With sometimes grudging, sometimes enthusiastic, help from their five kids, her parents dug up much of the lawn and replaced it with native plants and trees.

"My dad would come home from work, change his shoes and then ask "Who wants to walk around the Ponderosa?" recalls Crain, who was recently named deputy director of DNR's Land Division.

Ponderosa was the name of the 600,000-acre fictional ranch owned by the Cartwright family on the TV show *Bonanza* that ran from 1959-1973.

"We were on a quarter acre and he could stretch that walk around our city lot to half-an-hour, stopping and talking about the different plants, birds and bugs. The number of different trees and plants they crammed into their lot was amazing."

Those walks, and a few years later, her parents' purchase and preservation of land in Wood County, helped inspire her to earn a master's degree from the University of Wisconsin-Madison in restoration ecology.

"The idea of converting damaged landscapes to vibrant habitat really appealed to me and it was work that, if one was patient, would demonstrate that you were making a difference – not always so easy to see when you are sitting behind a desk."

Crain used to direct the Natural Heritage Conservation Program, which is charged with protecting rare plant and animal species and the 100 distinct natural communities identified in Wisconsin. She now spends her spare time pursuing that same



*Erin Crain and Jack Sullivan take a rest after a prairie burn on their Columbia County land.*

mission on the 20-acres she shares in Columbia County with partner Jack Sullivan.

## ***A slice of biological heaven***

"We fell in love with our property the first time we saw it and actually put an offer on it the same day. We saw the potential and I can't tell you the number of times visitors have referred to the property as a "little slice of heaven." I'm not sure I would refer to it as a biological heaven yet, but we're headed in the right direction."

The place was a long narrow strip, a total of 20 acres in Columbia County. Drive in along the road and there's a flat, sandy prairie and then there's a ridge that's wooded and it ends in a wetland and lake area with frontage on Curtis Lake. The house is built into a hill and the previous owners had lawn all around, with erosion netting holding the lawn on the ridge. Lawn was also installed down at the lake and kept a big green expanse through monthly herbicide treatments.

*(continued on page 6)*

## A Ponderosa of her own (continued from page 5)

“We ripped out the lawn and turned the first acre into prairie, planting it with native species. If you’re growing prairie, you have to be patient. It was really ugly the first year, and the second year too. But since the third year, it’s been beautiful. We’ve got lupine and purple prairie clover and ground nesting birds.”

Crain and Sullivan are turning the pine plantation along the ridge into a woodland that now attracts deer and turkey.

“By the lake, we stopped with the mowing and herbicide treatments. We let the shoreline grow up. We now have marsh marigold, red osier and dogwood and bottle gentian. It was all there – just waiting. If you stop mowing, it comes back. The insects too. We keep track of the changes in species and we now have an unbelievable diversity. So we’re real happy with it.”



Sullivan loves fishing and the couple started putting fish cribs in the lake to provide more habitat; the previous owners had removed all the stumps and downed trees along the shoreline and in the shallow water. The restored habitat has paid off in improved fishing, including for walleye. “Our neighbor started fishing in the water off our pier. He and another neighbor have since installed fish cribs in front of their places,” Crain says.

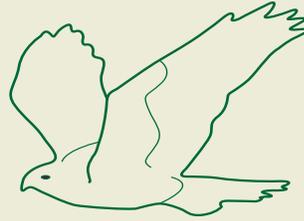
One thing we’ve learned is that the invasive species work is never done. I anticipate fighting invasives till the day they bury me. You can throw up your hands or fight. We’ve chosen to fight.”

Crain, the mother of two sons now working their way through college, finds restoration work a bit like parenthood. “It takes commitment and can be frustrating at times, but it’s hard to find anything that is more rewarding.”

She particularly enjoys the daily discoveries she makes while walking around the property, like her dad did before her. “What’s amazing and really gratifying is watching how quickly the plants and insect species return to the land, once you help it become what it was meant to be.”

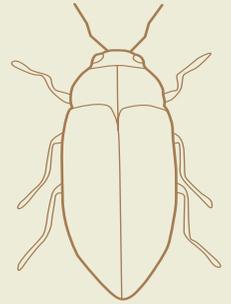
# Wild Wisconsin by the Numbers

Wisconsin is home to an incredibly diverse array of plants, animals and natural communities because it’s located at the nation’s crossroads, where eastern hardwood forests meet northern evergreen forests and southern and western grasslands.

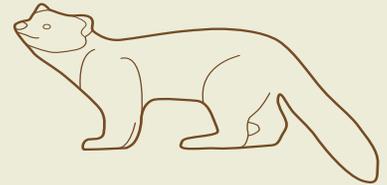


400  
species of birds

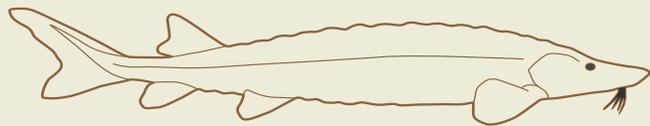
>25,000  
species of invertebrates



56  
species of reptiles and amphibians



70  
species of mammals



>160  
species of fish



~2400  
species of native plants &  
>100 natural communities

# Nature Notes and Nurture

Spring has sprung! The phenological evidence -- changes in plants and animals in response to weather, climate, and the seasons -- is all around us. Here are just a few signs and some simple steps you can take to help nurture nature this spring.

Listen near wet areas for the high-pitched "peep" of the **spring peeper**, the hoarse quacking of the wood frog, or the mating calls of any of Wisconsin's 12 species of frogs. Despite huge habitat losses, all but one species -- the endangered Blanchard's cricket frog -- have managed to persist in relatively good numbers. Help all frogs by keeping natural shoreline and shallow water plants intact or restoring them.



Andrew Badje

The **greater prairie chicken**, a state threatened species, puts on its dance moves and makes its distinctive call to attract a potential mate. Groups of birds have been found in Adams, Portage, Wood, and Marathon counties, with individual birds sighted in Clark and Taylor counties. Help them by avoiding their grassland habitats during breeding season from

early March through mid-September. Keep livestock, farm machinery, moving vehicles, and fires away, and pesticides too as they may reduce insects available for chicks.

The wildflower parade unfurls in prairies, wood-



Lesia Kardesh

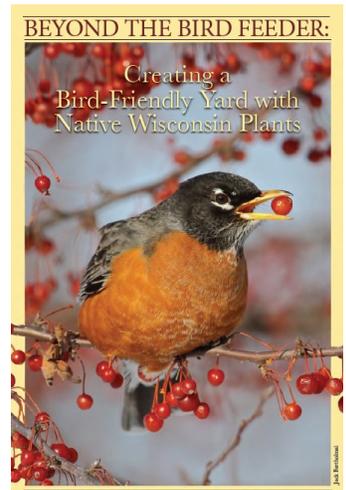
lands and wetlands. Look for Hepatica in forests, yellow lady's slipper in moist woodlands from the north to south, and prairie lily, one of our few orange wildflowers, in habitats ranging from stabilized dunes to dry bluff prairies. Marsh marigolds bring an early splash of color to wetland areas.

Migratory birds are starting to return to Wisconsin. Look for white-throated sparrow, Eastern towhee, rose-breasted grosbeak and gray catbird. Enjoy the show, and help these tired and hungry travelers by delaying your spring clean-up just a bit. Let birds glean seeds, scratch in leaf litter under shrubs and pick insects from your garden beds. Put up your nest boxes to give them a place to nest and assure they have the food they need as spring unfolds by avoiding using pesticides or herbicides that can kill insects and worms.

## Free booklet on creating a bird-friendly property with native plants

Free to the first 100 respondents who contact us, DNR will provide [\*Beyond the BirdFeeder: Creating a Bird-Friendly Yard with Native Wisconsin Plants\*](#), a 14-page booklet created by Mariette Nowak, author of *Birdscaping in the Midwest*, for The Wisconsin Society for Ornithology.

Email your mailing address to [lisa.gaumnitz@wisconsin.gov](mailto:lisa.gaumnitz@wisconsin.gov) and we'll get that right in the mail to the first 100 respondents.



## Donate and join the community of caretakers

From bats to orchids to ovenbirds, Natural Heritage Conservation staff work with you to conserve the wild Wisconsin you love. Tax-deductible contributions like yours provide up to 40 percent of funds we use to protect Wisconsin's rare wildlife and natural areas. [\*Make your contribution online today!\*](#)



Dave Cordray

# What's on the menu on your land?



For many of us, spring means planting time. Doug Tallamy, author of “Bringing Nature Home” and professor and chair of the Entomology and Wildlife Ecology Department at University of Delaware, makes a pitch for planting native species or preserving them as a way to support the animals we love and love to have around our property.



Too often, Tallamy says, we choose ornamental species that beautify our property but provide poor sustenance for insects, birds, and the rest of the wildlife that depend on them.

He notes that almost all North American birds other than seabirds — 96 percent — feed their young with insects. And insects are produced by the plants on our land, with native plants far out-producing nonnatives when it comes to insects. A patch of violets will feed fritillary caterpillars, an endangered species in Wisconsin. A patch of phlox can support eight species of butterflies. The buttonbush shrub, which has little white flowers, feeds 18 species of butterflies and moths. Oaks provide more types of bird food than any other tree by providing high numbers of caterpillars, and the acorns, as Tallamy writes, fill the bellies of deer, raccoons, turkeys, mice, black bear, squirrels and even wood ducks.

Even planting a single native plant or several is a way to get started, Tallamy notes. “Increasing the percentage of natives in suburbia is a grassroots solution to the extinction crisis. Our success is up to each one of us individually. We can each make a measurable difference almost immediately by planting a native nearby. As gardeners and stewards of our land, we have never been so empowered, and the ecological stakes have never been so high.”

## Resources to help you put more food on the table for birds and other wildlife

### May 5 live online chat set to discuss your native plant questions

Get your questions about native plants answered online by our plant experts on May 5 from noon to 1 p.m.

To join, search the DNR website, [dnr.wi.gov](http://dnr.wi.gov), for keyword "[chat](#)" to submit questions and view responses from DNR experts. Or view the transcript of the chat session at the same link at your convenience.

### Get Started

People and places you can contact for help and guidance on your native plant projects.

- [Native Plant Nurseries](#)
- [Restoration Consultants](#)



### Attend a workshop aimed at helping landowners birdscape their yard

May 9, [Grosbeaks Galore](#), a Birds on Your Landscape Workshop, Two Rivers. A hands-on opportunity to learn how to plant and maintain native trees to attract birds, to address potential bird hazards, and to learn more about the importance of stopover sites. Learn from experts and gain access to resources you can put to work on your land.



# Back by popular demand:

## Fall lottery set for customized land reports

Due to the overwhelming response to the lottery for a free, customized Landowner Conservation Report, DNR's Natural Heritage Conservation program is offering another chance to win a free report this fall. Landowners who registered for the spring 2015 lottery will receive an email notice this fall when the lottery officially opens, so be sure to check your inbox and the DNR website for another chance to win!

### Point system in place to boost your chances

You have a better chance to win this fall, thanks to a new preference system. All landowners who registered for the spring 2015 lottery but did not win will receive "preference points" in the fall. So even though you didn't win this time around, you will have better odds of winning if you sign up again this fall.

## By the numbers:

### 2015 spring landowner lottery

**760** The number of landowners registered, (over twice as many applicants as 2014)

**98.6** The percentage of counties that were represented

(Marinette and Vernon counties ranked #1 and #2 for lottery entries)

**86** The average size in acres of the lottery entrants' properties

### Top goals entrants gave for their land were:

General land information (59%)  
Invasive species control (50%)

Game species management (50%)  
Ecological restoration (41%)

Rare species management (39%)

Other (13%) mainly wildlife and water issues (streams, wetlands, shorelines)

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