

A Year of Rare Treasures

2016 Annual Report



Rare Plant
Monitoring
Program

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[Bird's-eye Primrose](#), a Wisconsin special concern plant, hadn't been seen since the 1970s in Vernon County but volunteer monitor Ben Johnson found it in three locations in 2016. Photo credit: Drew Feldkirchner

Volunteers boost rare plant discoveries

By Kevin Doyle

Rare plant discoveries bloomed in 2016 in Wisconsin thanks to volunteers in the [Rare Plant Monitoring Program](#) and donations to the Endangered Resources Fund that pays program expenses.

The information volunteers collected about Wisconsin's "lost treasures" — 322 species of rare plants — will inform on-the-ground management surrounding rare plant populations statewide and clarify our understanding of how these often poorly understood plants are doing.

Growing our volunteer base

Sixty-three more people joined our growing effort and helped conduct more rare plant surveys than ever before.

Surveys were conducted in Kenosha, Bayfield, Grant and Forest counties and many places in between.

In all, we received over 50 reports on the most hard-to-find—and most vulnerable—members of our native flora. Of particular note were the new populations of rare plants (and lichens!) that volunteers found in 2016. See pages 7 and 8 for photos and information on each.

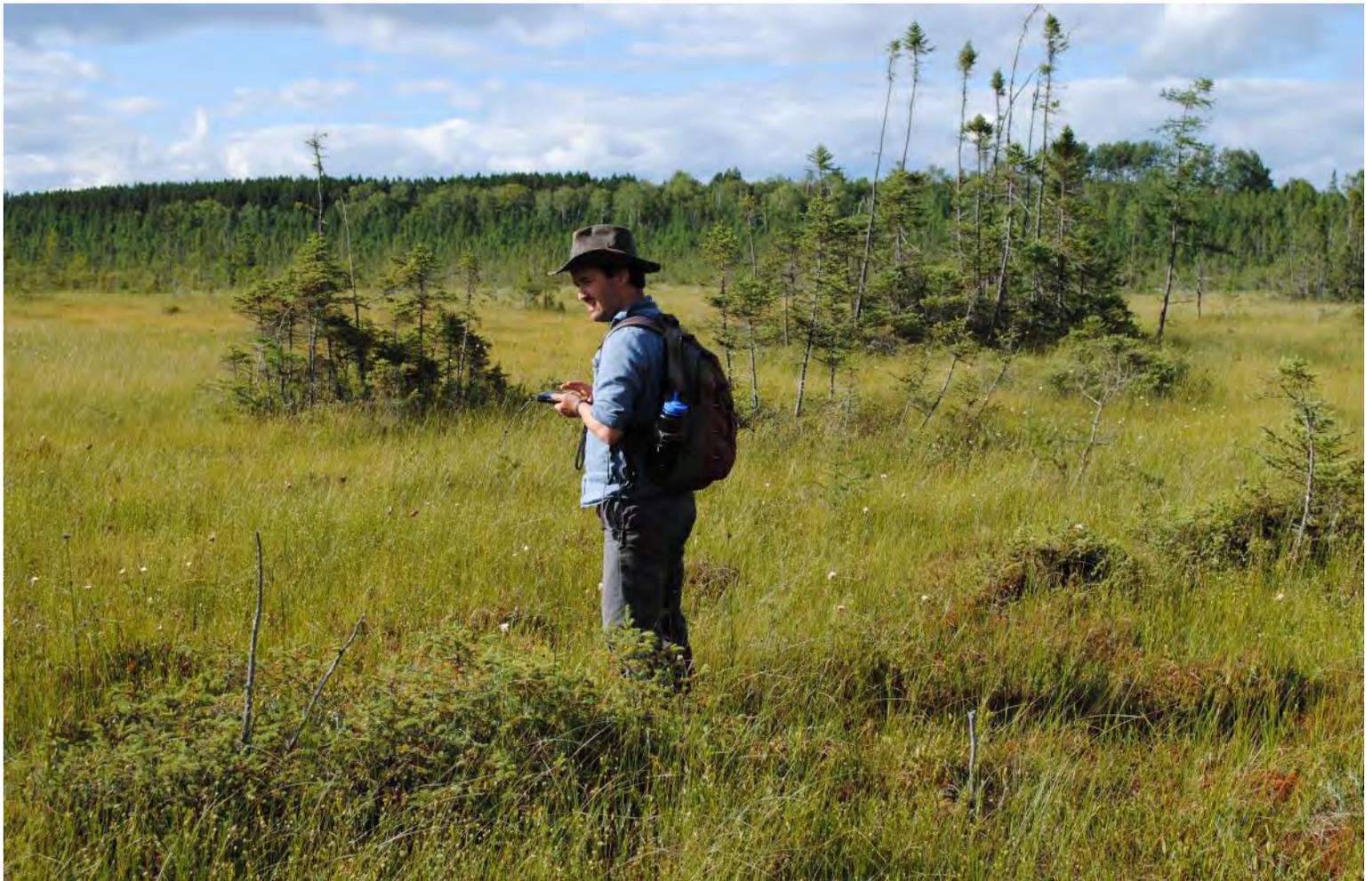
New populations of threatened plants

Mary Bartkowiak found a new population of the **rare treeflute lichen** (*Menegazzia terebrata*) while searching for the state

threatened calypso orchid (*Calypso bulbosa*) in the cedar swamps of Forest County. Vanessa Brotske found a new population of the state threatened pale green orchid (*Platanthera flava*) near Green Bay, and in western Wisconsin, Ben Johnson found a new population of the federally threatened **northern monkshood** (*Aconitum noveboracense*).

We also received important updates on rare plant populations that hadn't been seen in a long while. One example: Ben Johnson submitted data on three populations of **bird's-eye primrose** (*Primula mistassinica*) that hadn't been seen since the 1970s!

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Kevin Doyle, Rare Plant Monitoring Program coordinator, uses a GPS units to record locations of [bog rush](#) (*Juncus stygius*) in Florence County. Starting in 2016, volunteers for the Rare Plant Monitoring Program have been able to report their observations from the field through their smartphones using iNaturalist, an online reporting platform.

2016 Rare Plant Monitoring Results	
Reports submitted	55
New rare plant populations found	16
Rare plant populations re-discovered	29
Populations not relocated	10
Monitors trained	63

2013-16 Rare Plant Monitoring Results	
Reports submitted	160
New rare plant populations found	25
Rare plant populations relocated	117
Monitors trained	141

More plant discoveries (cont. from page 1)

We also incorporated new data collection tools into the program this year. Many monitors took advantage of our new project on iNaturalist, an online network for citizen scientists to their share observations of the natural world. Instead of bringing paper data collection forms into the field, monitors can now quickly upload their observations from the field using their smartphone. They can also see what others are finding and help each other identify difficult species. In fact, almost half of the data submitted in 2016 was via iNaturalist, showing the promise of this tool.

The information volunteers collected is provided to property managers and added to the Natural Heritage Inventory. DNR uses the information when developing master plans for state properties and conservation strategies for species and communities and when reviewing proposed projects to ensure they avoid impacts to rare species and in conducting research.

Thank you for all the hard but critical work you've done for plant conservation!

Kevin Doyle

Coordinator
[Rare Plant Monitoring Program](#)
 DNR Natural Heritage Conservation Program



What species were found most in 2016 by volunteers?

Two rare plants were found more than any others in 2016. The state threatened [woolly milkweed](#) (*Asclepias lanuginosa*) and the state special concern [northern yellow lady's-slipper](#) (*Cypripedium parviflorum* var. *makasin*) were each reported from four different sites in 2016.

Woolly Milkweed

We've known for a while that woolly milkweed is in trouble and rarely produces viable fruit. In 2013 the DNR and Botanical Club of Wisconsin conducted surveys at a number (but not all) of woolly milkweed sites. In 2016, Rare Plant Monitoring Program monitors Joanne Kline and Keith Phelps surveyed four more sites that were not visited in 2013, including one not seen in almost 20 years.

Some populations were large (120 stems) while others were smaller and subject to frequent mowings. Though they continue to be threatened, the data from these volunteers is critical to planning the next steps in protecting this rare milkweed.

Northern yellow lady's slipper

Northern yellow lady's slipper (*Cypripedium parviflorum* var. *makasin*) was also found at four sites this summer, including in Jefferson County, where volunteer Aaron Carlson took the photograph on the cover of this publication.

Though far from our rarest orchid, this small flowered variety of yellow lady's slipper is quite uncommon globally. It's found across the state, usually in small numbers, in wet, calcareous habitats, which themselves are uncommon. Rare Plant Monitoring Program monitors Aaron Carlson, Joan Fritzler and Lynn Preston in the southeast were the ones to shed light on northern yellow lady's-slipper's status.

Three of the four populations were on State Natural Areas, and the information has been passed on to those property managers to inform future management decisions.

Cover photo: Northern yellow lady's-slipper (*Cypripedium parviflorum* var. *makasin*)

Photo credit: Aaron Carlson

More about Woolly Milkweed (*Asclepias lanuginosa*)

Status in Wisconsin

Listed as threatened in Wisconsin, this plant is found in dry, sandy or gravelly hillside prairies. Blooming occurs late May through late June. The optimal identification period for this species is late May through late June.

Distinguishing characteristics

Small size and almost prostrate habit distinguish this milkweed from others.

Monarchs and milkweed

We have all heard that monarch butterflies need milkweeds to complete their life cycles, but the opposite is not necessarily true. The complex pollination of milkweeds can only be successfully carried out by large insects like bees and wasps.

Declines in monarchs may be linked to declines in milkweeds, but declines in milkweeds are likely tied to declines in native bees and wasps across the region.

Milkweeds have a very complex pollination mechanism, a contributing factor to their rarity. Pollen is held in two pouches hanging on either side of the stigmatic slit. An unsuspecting insect seeking nectar must accidentally dislodge the pollinia as it climbs around the flower. As the insect moves on to another flower, it drags one of the two pollinia into the stigmatic slit as it again looks for nectar. Only large insects like bees, wasps and to a lesser extent butterflies are strong enough to extract and then insert the pollinia correctly.

Volunteers' work saves rare orchid

By Lisa Gaumnitz

The northernmost known population of [eastern prairie white-fringed orchid](#) (*Platanthera leucophaea*), a federally threatened species, is a little more secure these days thanks to volunteers for the Rare Plant Monitoring Program and the management work they spurred in 2016.

Volunteers trained through the DNR Rare Plant Monitoring Program sent to look for the orchid at [Oshkosh-Larsen Trail Prairies State Natural Area](#) in Winnebago County alerted DNR about the plant's status but also about a prairie in dire need of attention. DNR was able to secure a federal grant and State Natural Area crews conducted a prescribed burn to knock back the brush. Volunteers will continue brush removal at that site.

"Without the Rare Plant Monitoring Program volunteers sounding the alarm, this work would not have been done and we might have lost this population of one of Wisconsin's rarest plants," says Kevin Doyle, who coordinates the Rare Plant Monitoring Program for DNR's Natural Heritage Conservation Program.

The story began in 2014 when volunteer monitors John and Maria Scholze were dispatched to check the status of eastern prairie fringed orchid (*Platanthera leucophaea*) along thin strips of land near former rail-



Above: DNR crews conducting a prescribed burn at Oshkosh-Larsen Prairies State Natural Area. Photo credit: Tom Underwood
Right: Close up of eastern prairie white-fringed orchid. Photo credit: Thomas Meyer



The couple found a handful of orchids at two of the three sites, but also a prairie in dire need of attention to keep dogwood and sumac from overtaking it. "Unless some management is done, I don't think the orchids will survive," one of the volunteers wrote on their data collection sheet.

With this information in hand, DNR secured funding from the U.S. Fish and Wildlife Service to improve the habitat surrounding the orchid populations. A group of local volunteers, including RPMP volunteer Tom Underwood, helped clear brush in February 2016 from three sections of prairie where orchids had been found in the past. That spring, DNR burned multiple sections of the prairie, knocking back more brush and removing

thatch that has built up over the years. "This is a great example of how volunteers and the information they collect can make a big difference for Wisconsin's more than 300 species of rare plants," says Doyle.

DNR's Rare Plant Monitoring Program is funded in large part through donations to the Endangered Resources Fund. People may donate to that fund through their Wisconsin income tax form. [Or donate anytime online or by check by mail.](#)



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at tax time and
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Donate via your state income tax form or directly online.
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Aaron Carlson lives in southeast but botanizes all over the state. Here he poses with a showy lady's-slipper population in Vilas County.



[Rope dodder](#) (*Cuscuta glomerata*) is one of the 10 plant records Aaron Carlson submitted in 2016. Photo credit: Aaron Carlson

Volunteer submits 10 rare plant records

Our volunteers do important work and we very much appreciate their effort, including the record-setting efforts of Aaron Carlson. He submitted 10 rare plant records, a huge boon to our knowledge of rare plants.

A quick glance of Aaron's iNaturalist profile shows that his interests range far outside the plant kingdom. He has reported over 4,000 observations of over 1,200 species, including birds, mammals, plants, fungi, and beetles. He has been submitting data on rare plants and animals for years but only recently took the Rare Plant Monitoring Program training.

As is true with many citizen scientists, Aaron would be spending his time exploring Wisconsin's natural areas, looking for new species to record and capture on camera regardless of our program, but together we can help each other meet our goals.

Thanks for all your hard work, Aaron!

The rare plants Aaron Carlson found in 2016, the counties where he found them, and why these records are special.

1. *Cuscuta glomerata* – Jefferson County
A newly discovered population and also the first population known from Jefferson County of this parasitic plant, which wraps tightly around its host.
2. *Cypripedium candidum* – Jefferson County
First found in 1932 by Wisconsin orchid expert Albert Fuller, this population has been visited numerous times over the years. Aaron's data allows us to continue long term assessments of this state threatened orchid.
- 3,4,5. *Cypripedium parviflorum* – Jefferson County
Aaron found three populations in the Lake Mills area. One was a newly discovered population; the other two were updates to a population last reported in 1920! We now have a much better sense of that population's size, location, and potential threats.

6. *Valeriana edulis* – Jefferson County
This newly listed rare plant was last reported from the site in 1936 when a UW botany class visited the area and made voucher specimens now stored at the Wisconsin State Herbarium.

7. *Epilobium strictum* – Green Lake County
A new population and only the second population known from Green Lake County.

8. *Spiranthes magnicamporum* – Jefferson County
This newly listed rare orchid has been known from the area since John Curtis found it in the mid 1930s. However, Aaron discovered it growing more than two miles away.

9. *Asclepias sullivantii* – Waukesha County
Though this is a well-known, oft-visited population, Aaron's data continues the long term monitoring and allows us to keep close tabs on this state threatened milkweed.

10. *Napaea dioica* – Jefferson County
A new population and county record for the only Midwestern endemic genus.



Photo credit: Drew Feldkirchner

2017 Species of the Year

White lady's-slipper (*Cypripedium candidum*)

Each year the Rare Plant Monitoring Program will pick a plant species that we believe deserves special attention. The goal for the [“species of the year”](#) is to survey all known populations in a single growing season. Rarely are we able to gather comprehensive information on a single species like this, which makes assessing the statewide population of the species difficult.

These comprehensive surveys will allow volunteers to build a search image of the target species and get a better sense for what habitat the species is found in. Monitors are not required to survey for the species of the year.; the idea is mainly to give a little bit of structure to the program and allow participants to become more familiar with one species.

White lady's-slipper (*Cypripedium candidum*) is one of the 48 species of orchid found in Wisconsin (47 native, 1 non-native) and one of the earliest blooming.



Because the flowering window is fairly small, mid-May to early June, this beautiful wildflower is a great candidate for the species of the year. In order to survey as many known sites as possible, we will need as many volunteers in the field as possible while the orchids are blooming.

White lady's-slipper was listed as threatened in Wisconsin in 1979, the first year a list of endangered and threatened plants was published.

It's threatened, primarily by destruction and degradation of its wet, calcareous prairie habitat, though poaching and herbivory may play a smaller role. It's known from 73 sites in Wisconsin, mostly in the southeast quarter of the state, but at least 2 of these populations have been extirpated and 24 have not been reported in over 40 years. A time frame half that long would be enough for shrubs and invasive species to encroach or a small population to simply wink out.

Despite being considered vulnerable across much of their range, the Upper Midwest is a stronghold for white lady's-slippers. Recent surveys in Minnesota and Illinois have found it is more secure than previously thought. With the help of rare plant monitors we will gather enough information to be able to conduct a statewide status assessment of this species in the near future, adding to the conservation picture being developed by adjacent states.

Field notes & photos

Some rare finds from Rare Plant Monitoring Program volunteers

Pale false foxglove (*Agalinis skinneriana*) – This diminutive state endangered flower reaches its northern limit on a few prairies in southern Wisconsin. In 2016, Kay McClelland, a long-time monitor in southeast Wisconsin, found a couple plants growing about 50 meters from a population she has been monitoring for years. **Photo 1: Kay McClelland**



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Purple milkweed (*Asclepias purpurascens*) – The monitors who surveyed this state endangered milkweed, Juniper Sundance and Ann Nolan Smith, couldn't find it the first time but made a return trip. The second time was a charm. Once it was in flower they discovered the population was larger than previously thought. **Photo 2: Juniper Sundance**



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Clustered sedge (*Carex cumulata*) - A member of one of the most difficult to identify groups of plants in Wisconsin: the ovals sedges. That RPMP monitors John and Maria Scholze relocated a known population and found a new one speaks to their botanical skills and lack of intimidation. **Photo 3: John Scholze.**



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Muskroot (*Adoxa moschatellina*)— UW-Eau Claire professor Dr. Joseph Rohrer and former DNR biologist Debbie Konkel collected data on Wisconsin’s northernmost population of this strange little spring wildflower. They discovered the population was many times larger than thought based on ‘80s reports. **Photo 4: Debbie Konkel**

October lady’s-tresses (*Spiranthes ovalis*)— Our latest blooming rare plant. As of 2005, it was only known at one site in Grant County but numerous reports in recent years, including from monitors like Roberta Herschleb, have provided a clearer picture. The question remains: Is it spreading or has it been here all along and we haven’t noticed? **Photo 5: Roberta Herschleb**



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Forked aster (*Eurybia furcata*)— This state threatened plant is limited to scattered locations around the southern end of Lake Michigan. RPMP Monitor Laura Giese rediscovered a population along the Glacial Drumlin Trail that hadn’t been seen since the mid 1980s. **Photo 6: Laura Giese**

Pitcher’s thistle (*Cirsium pitcheri*)— This one of Wisconsin’s six federally threatened plants is found only on sand blows along Lake Michigan. Elisabeth Atwell travelled all the way to Washington Island to find this population. For this mon-ocarpic species, seedlings are a critical sign of a healthy population. In 2016, 17 of 22 plants she found were seedlings. **Photo 7: Elisabeth Atwell**



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Putty root (*Aplectrum hyemale*)— This special concern plant is found in oak and maple forests but rarely in flower. Instead it’s these green and grey striped leaves that appear in the fall and remain above ground until June that people find. Such was the case with Josh Mayer, the RPMP monitor who found a new location of putty root in Sauk County. **Photo 8: Josh Mayer**

Dwarf lake iris (*Iris lacustris*)— Dwarf lake iris is one of Wisconsin’s six federally threatened plants. RPMP monitor Melis Arik rediscovered this population in a state park on the Door Peninsula. Though only sterile plants had been reported previously, Melis found pods on 8 plants. **Photo 9: Melis Arik**

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