Rare Plant Monitoring Program

2024 Annual Report

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Editor's Corner

By Jessica Ross
Program Coordinator

Sometimes, I think, it's easy to focus on how much needs to be done. Can I check one more thing off my always-growing to-do list? Can I search just a little more in this cedar swamp before the sun goes down and I get lost? But, for me, writing this report and reflecting on the year was a great reminder of how much we've already accomplished. On a personal level, I'm amazed by how much I've grown as a botanist in the last year and how many new plants I've had the pleasure of meeting in the process. I think it's important to take a moment to celebrate how far we've come. And it's equally important to celebrate that we've accomplished it by working together. As you read this report, I hope you have an opportunity to reflect on everything you've accomplished over the year, too. We couldn't do the work of conserving the state's rare plants without you.

I'm not kidding when I say that in 2024, volunteers with the Rare Plant Monitoring Program accomplished a lot! In this year's annual report, you'll hear about some of the highlights of the field season including newly discovered populations, county records and important updates. You'll read about how one volunteer became our state's expert on an often-overlooked sedge. You'll meet three more rare plant monitors doing great work across the state. And, as you might have noticed from the cover photo, we have a bit of a theme this year: milkweeds! In the report, you can learn all about Wisconsin's rare milkweeds, which also happen to be the 2025 species of the year.

I think it's important to take a moment to celebrate how far we've come. And it's equally as important to celebrate that we've accomplished it by working together.

Aside from 2025 being a year for milkweeds, what else does the coming year have in store for the RPMP? So glad you asked! We have new ways to find surveys: priority monitoring lists and an updated Rare Plant Finder, which you can read about later in the report. In-person training will also return in full force with three opportunities this spring. As always, if you have ideas for the future, please let us know.

As one of our featured volunteers, Maggy Adams, said, "It always amazes me how wonderful and enthusiastic the plant community in Wisconsin is to help each other out!"

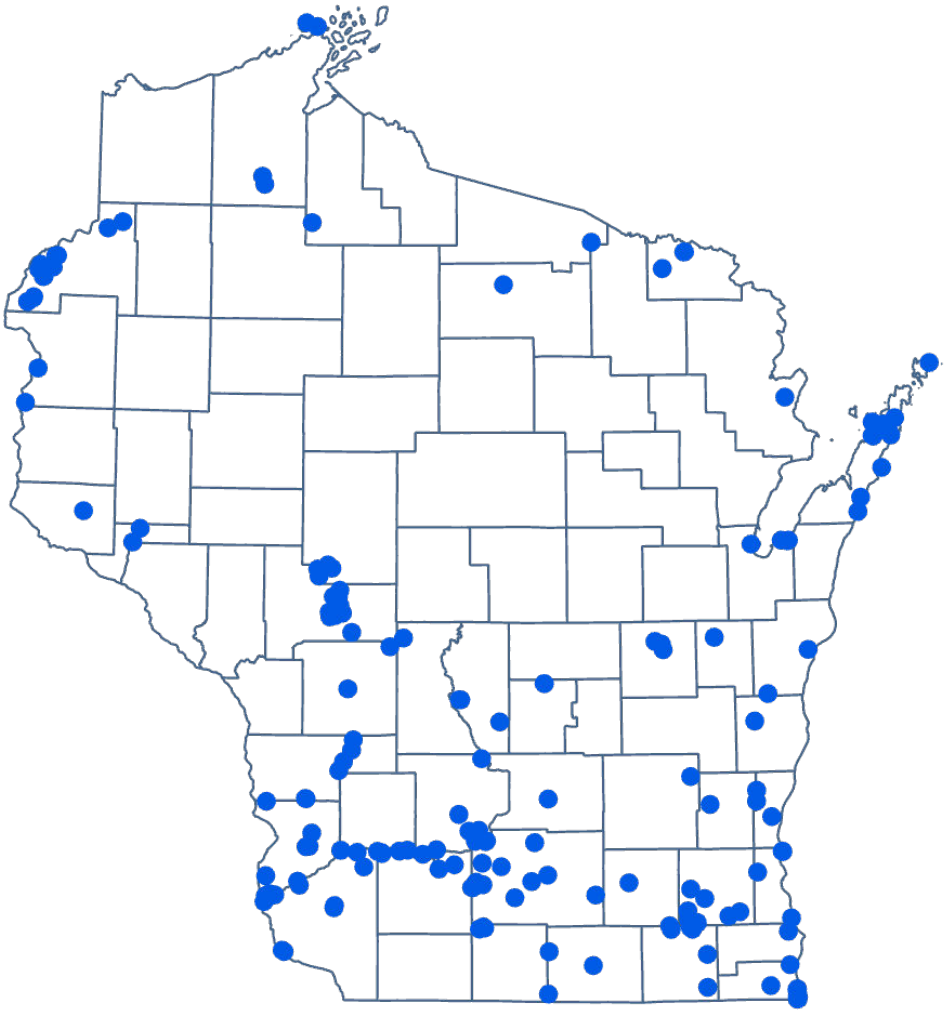
I couldn't agree more. Thank you for your inspiring work and for being part of our botanical community. I hope you take time to celebrate all your accomplishments. Enjoy the 2024 annual report!

2024 Highlights

In 2024, Kevin and I traveled all over the state for fieldwork again. Each year brings new highlights, and 2024 did not disappoint. Kevin began a new orchid conservation project with the Chicago Botanic Garden and the U.S. Forest Service. They collected seeds, roots and fungal symbionts from 10 native orchid species, a big step toward orchid reintroduction efforts.

Another highlight for Kevin was dwarf lake iris (*Iris lacustris*) surveys in late May, which brought him to one of his favorite plant communities: the alkaline rockshore. The scarlet paintbrushes (*Castilleja coccinea*) and bird's-eye primrose (*Primula mistassinica*) were in full bloom along long stretches of the undisturbed Door County coast. Dwarf lake iris surveys were also a highlight for me, as was visiting another outstanding plant community: the northern rich mesic forest. After a long winter break, nothing is quite as beautiful as spring ephemerals as far as the eye can see.

Each field season, we meet plants we've never seen before. For Kevin, these were three rare plants: western fescue (*Festuca occidentalis*), woodland cudweed (*Omalotheca sylvatica*) and bushy aster (*Symphyotrichum dumosum*). For me, this included hair-like sedge (*Carex capillaris*), bog bluegrass (*Poa paludigena*) and one of our species of the year, white adder's-mouth (*Malaxis monophyllos*).



After a long winter break, nothing is quite as beautiful as spring ephemerals as far as the eye can see.

This year, you, the Rare Plant Monitoring Program volunteers, also met many new plants and had many exciting highlights. Seventy-three volunteers submitted 224 observations from 41 counties. You also found 59 new rare plant populations (wow!) and observed 84 different species. That's about 25% of the species we track. Rare plant monitoring is not a competition, but in case you have a little competitive spirit, collectively, you exceeded last year's numbers in each category.

Some volunteers submitted over 20 reports; others didn't submit any but helped their fellow monitors on a survey. All these efforts are indispensable in better understanding the state of rare plants in Wisconsin. Collectively, these reports are a huge source of data for conserving rare plants, but individually, each is a story too. Here are some of your highlights from the year:

2024 By The Numbers

73 volunteers
224 observations
84 species observed
(25% of species we track)
Observations from 41 counties
59 new populations discovered


John Scholze

County Records

RPMP volunteers found a whopping five county records this year. A county record is a population that represents the first reported occurrence of the species in a county and is important for documenting a species' range and how it may be changing over time. **Maggy Adams** found three birds orchid (*Triphora trianthophora*) in Dane County, **George Riggin** found northern wild senna (*Senna hebecarpa*) in Crawford County, **Derek Anderson** found rugulose grape fern (*Sceptridium rugulosum*) in Burnett County, and **John Scholze** found two new records for Rock County: scarlet loosestrife (*Ammannia robusta*) and Engelmann's spike-rush (*Eleocharis engelmannii*). It just goes to show that there are still plenty of undiscovered populations to be found!


Derek Anderson

Seldom Seen Species

Each year, we reliably get several reports for certain rare plants. Putty root (*Aplectrum hyemale*, 14 reports) and prairie Indian-plantain (*Arnoglossum plantagineium*, 16 reports), for example, are found in parts of the state with a lot of RPMP volunteers. In the case of clustered sedge (*Carex cumulata*, 16 reports), one volunteer's efforts result in a plethora of data. For most species though, we rarely receive any reports. This year, the rarest of the rare reports include three new populations of large-flowered ground-cherry (*Leucophysalis grandiflora*) observed by **Derek Anderson**, a new population of fragrant sumac (*Rhus aromatica*) by **Max Kornetzke** and an update on Cooper's milk-vetch (*Astragalus neglectus*) by **John Boldt**.


Zach Kron

A Sight For Sore Eyes

With fewer than ten populations in the state, hairy beardtongue (*Penstemon hirsutus*) is another plant we don't get many updates on. Some populations are so small, in such degraded habitat or haven't been observed in so long that we fear the worst. A few years ago, a volunteer couldn't relocate a known population in Waukesha County and reported a highly degraded habitat. Things were not looking good, but this year, after 27 years of not being observed, **Zach Kron** found a single plant. The site recently had some invasive removal work done, and if that work continues, there might be hope for the population to rebound.


Don Evans

Have Kayak, Will Travel

Since joining the RPMP in 2017, **Don Evans** has become one of our most reliable sources of aquatic plant reports in northern Wisconsin, and this year was no different. He updated three populations of American shoreweed (*Littorella uniflora*), including a population that hadn't been observed in 13 years. There's much more to Don than aquatic surveys, though. He also completed four additional surveys for terrestrial plants, including one that required his expert paddling skills: a 28-year update on bird's-eye primrose (*Primula mistassinica*) on the Apostle Islands.


Michaela Rosenthal

Sounding The Alarm

Sometimes rare plant populations are so large that we only get estimates of their size. This year, **Michaela Rosenthal** updated one of our largest populations of yellow evening primrose (*Oenothera serrulata*) and censused the whole thing. Her update was a big improvement in data quality – now we know the exact number of plants – and shows an apparent decline in population size. Both takeaways are important and suggest we may need greater protection for this species.


Joseph Mui

Astonishing Efforts

Volunteers were busy this year, updating and finding new rare plant populations across the state. Leading the pack was **Joseph Mui**, who submitted 23 surveys and observed nine species of rare plants. Highlights include new populations of three orchids: three birds orchid (*Triphora trianthophora*), October lady's-tresses (*Spiranthes ovalis* var. *erostellata*) and Great Plains lady's-tresses (*Spiranthes magnicamporum*). **George Riggin** was also a heavy hitter with 19 reports submitted and nine species observed.


Derek Anderson

A Boon To Bulrushes

Slender bulrush (*Schoenoplectus heterochaetus*) is one of the rarer species in the state, with only two extant populations. In addition, at first glance, it looks very similar to two other very common bulrush species. This was not a problem for **Derek Anderson**, who discovered a new population this summer. Slender bulrush is much more common in Minnesota, where Derek works, so he's developed an eye for the plant. This puts him in a unique position to help us find more populations in Wisconsin.


Max Kornetzke

Hiding In Plain Sight

Forked aster (*Eurybia furcata*) is a globally rare species only found in the Upper Midwest. Wisconsin hosts over a third of the known populations of this plant, meaning we have a big responsibility to protect it. This year, **Max Kornetzke**, a land manager in Manitowoc County, discovered a new population of forked aster right near a county park trail. This shows the importance of partnering with local experts who know the land best. They might know of a rare plant hiding in plain sight!


Nancy Lizette Berlin

Negative Reports

Unfortunately, 32 surveys ended with no rare plants being found. Although not finding what you're looking for is disappointing, the results are still important for rare plant conservation. They give us a better understanding of how a species is doing in the state and can spur action to help at-risk populations. Some notable negative updates include **Anna DeMers** on brittle prickly pear (*Opuntia fragilis*), **Nancy Lizette Berlin** on lesser wintergreen (*Pyrola minor*) and **John Zydowicz** on wafer ash (*Ptelea trifoliata*).


John Boldt

Species Of The Year

Each year, we pick a species of the year that we encourage volunteers to monitor. This year, we had two: prairie parsley (*Polytaenia nuttallii*) and white adder's-mouth (*Malaxis monophyllos*). **John Boldt** was the only intrepid volunteer who attempted surveys for both species. He updated a white adder's-mouth population in Door County and a prairie parsley record in Rock County that hadn't been observed in 40 years. **David Barnes** also found a new population of white adder's-mouth, and there were two negative surveys from **Don Evans** and **Randy Kohl**.


Jeff Steele

Hitting The Ground Running (And Paddling)

Many volunteers take a break from monitoring in the winter, but there are still plenty of surveys that can be done! **Jeff Steele** took advantage of this and completed the first survey of the year on Feb. 4. He nabbed a seven-year update on a population of maidenhair spleenwort (*Asplenium trichomanes*) which showed that the population covered a much larger area than previously known. Jeff also went on to do some interesting surveys during the growing season, including bird's-eye primrose (*Primula mistassinica*) while on a paddling trip on the Kickapoo River.


Eric Howe

Getting A Head Start

Some volunteers have already gotten a head start on the 2025 species of the year! Milkweeds were one of our most reported groups of plants in 2024 with 15 surveys submitted. This includes two 5-year updates of the state-threatened woolly milkweed (*Asclepias lanuginosa*) by **Tara Buehler** and **Chuck Linsenmeyer**, as well as updates on dwarf milkweed (*Asclepias ovalifolia*) and green milkweed (*Asclepias hirtella*). Do you think we can top that in 2025?


Joseph Mui

Going The Extra Mile

RPMP volunteers are always ready for a botanical adventure, traveling far and wide across the state. This year, some volunteers went the extra mile, literally. **Joseph Mui** travelled the furthest with nearly 240 miles between surveys. **Eric Howe** traveled an impressive 200 miles between surveys, and **John Boldt** was once again a far-flung monitor with 175 miles between surveys.


Eric Howe

Orchids Abound

Each year, orchids are, by far, the group of rare plants that monitors report most. And who can blame them; Wisconsin's orchids are amazing! This year, volunteers submitted 54 orchid reports and observed 12 different species. Lady's-tresses (*Spiranthes* species) and putty root (*Aplectrum hyemale*) were most often reported. Several orchids only had one report including an update from **Eric Howe** on Oklahoma grass-pink (*Calopogon oklahomensis*), which only exists in two places in the state.


Richard Haug

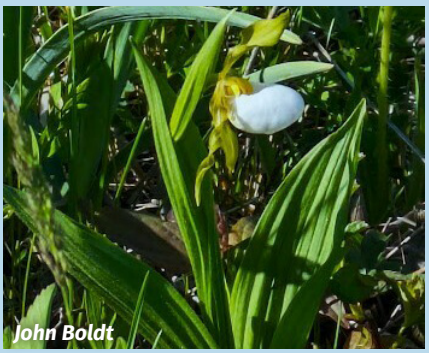
Teamwork Makes The Dream Work

Rare plant monitoring can seem like a solitary task, but several groups of volunteers worked together on surveys this year. **George Riggin** and **Ross Shrago**, with occasional help from **Sue Eisele**, teamed up on 13 surveys and observed seven species across southwest Wisconsin. **Derek Anderson** with a rotating team including **Paul Hlina**, **Richard Haug**, **Malcom MacFarlane** and several others completed 17 surveys in the northwest, with dwarf milkweed (*Asclepias ovalifolia*) as their most observed species.


Chuck Linsenmeyer

Diving Right In

In the botanical world, some plants are much more difficult to identify than others. This didn't scare **Chuck Linsenmeyer**, a new volunteer this year. He dove right into some of our challenging surveys and tested his plant identification skills with the groundsels (*Packera* species) and panic grasses (*Dichanthelium* species). At this rate, Chuck will be giving us identification tips in no time!


John Boldt

Not Giving Up Hope

Another of our rare orchids is the white lady's-slipper (*Cypripedium candidum*). **John Boldt** updated a population that hadn't been observed since 2009, including one negative survey in between. This just goes to show that negative surveys don't necessarily mean the populations are gone.

Volunteer Report

My Search For Clustered Sedge

John Scholze has been a volunteer with the RPMP since 2014. Over the years, he has become a leading expert in clustered sedge. Because of his work, we now have a much better idea of its secure status and habitat requirements. Here is John's story.

By John Scholze

When I first requested to search for clustered sedge (*Carex cumulata*), I never expected to become obsessed with it. Although the sedge family is fascinating to me with its great variety of forms, clustered sedge did not seem particularly interesting at first glance. What drew me to it originally is that it is mainly found in Jackson County, which is where I grew up.

As it turns out, clustered sedge is somewhat of a mystery. Until 2021, it had been documented at only 26 locations in Wisconsin, according to herbarium and DNR records. A variety of habitats were listed, from meadows and bogs to woods and disturbed areas. Some were found in wetlands, others in uplands. Although I didn't set out to clarify its natural habitat, that seems to be what happened because of the number of locations where I have found it.

In 2016, I wrote to Kevin Doyle about searching for clustered sedge, and he sent me a location in Jackson County along a road where he had seen them. He also said I could check out any other disturbed, bare sand areas along that road since it seems to like that habitat. I found the population that he had seen, and then, about a mile down the road, I found a new population growing right in the dry sand on the edge of the road. That was amazing to me, to find a new population on my first look! Over the next years, I rechecked those two roadside populations and found that the number of plants steadily decreased until the new population was gone, and the original location had only a few stems. During those years, I also checked along other roads, ATV trails and some locations listed on the Wisconsin State Herbarium website but was never able to locate more. My search was not going well and, as a result, by 2021, I was no longer putting much effort into it.

Then, in 2022, I was driving along a road through the Black River State Forest, where I found several rare and interesting plants before, including Virginia meadow beauty (*Rhexia virginica*). I decided to pull off on a logging road that had been used recently as a log landing, and when I got out of my vehicle, there was clustered sedge growing all along that logging road! This was a soft, wet area with sphagnum moss, not at all like the dry, sandy road where I had found my first new population in 2016. So, I decided I would look for clustered sedge on other logging roads in eastern Jackson County.

Over the next couple of weeks, I found several new clustered sedge populations on various logging roads. At each location, I took note of the other plant species in the area, which became my indicator species: if they were present, I knew I was in the right area. These included *Carex adusta*, *Carex debilis* and *Carex intumescens*, along with white pine and red maple trees. Often when I saw these species, if I kept searching, I would find a new population.

Since all the areas where I have found clustered sedge were wooded wetlands that have recently been logged, I concluded that it benefits from disturbances that open the cover and reduce the competition. When a wooded area is logged, besides opening the canopy, it appears that the logging equipment picks up the dormant achenes (seeds) on its tires or tracks and transports them to the log landings, where they take root and grow.

With that in mind, in 2023, I revisited the site I had found in 2016 and drove along the nearby logging roads. Sure enough, on the second or third time I stopped, I found a few of the sedges. As I kept going, I found multiple places where it was growing along the road.

I also realized I could use Google Earth to search for locations where logging was recently done. These areas show up clearly on satellite photos, which helped me easily find likely locations to search without having to drive a lot of back roads.

From 2022-2024, I found over 45 new populations or sub-populations of clustered sedge and confirmed several others that were previously found. In total, I have found over 13,000 individual plants. Of course, the RPMP is more than just numbers. I've appreciated learning more about this sedge and its unique properties. For example, these forest areas are harvested every 20-30 years, so evidently the seeds remain viable in the ground between harvests and explode in numbers when the competition is removed.

As a result of all these new finds, clustered sedge is currently under consideration to be taken off the list of rare plants. However, there's still a lot to learn about this sedge and it's still exciting to find new populations. So, even if it is removed from the list, my search will go on.

How To Identify Clustered Sedge

When identifying sedges, John pays close attention to habitat, the overall look of the plant, the arrangement and shape of the spikes and the shape and size of the perigynia. Some sedges have distinctive features that distinguish them from other species, and those can be helpful to know too. John uses iNaturalist to document his observations and notes the importance of posting photos of each defining feature, so others can confirm the identification of his observations.

Clustered sedge belongs to the notoriously difficult-to-identify *Ovales* section of sedges, but, according to John, clustered sedge is one of the easier ones to identify. Clustered sedge has many distinctive features, and once you get to know them, it is relatively easy to recognize. Here are some of the features John looks for:

Overall Look
The whole plant is stiff and firm, and the stems are usually upright, not wide-spreading. The spikes of many sedges are soft to the touch, but clustered sedge is very firm. The base of the clump will usually have yellowish-brown basal leaves, and the entire plant is slightly lighter green than most sedges. Also, clustered sedge seems to mature a little later than most sedges. By mid-July, many *Ovales* sedges will be turning brown, but clustered sedge will still be green.

Spikes
The perigynia are appressed (tightly packed) and curved inward, forming conical-shaped spikes. The lower spikes generally have bracts up to four inches long, although sometimes these can get broken off.

Perigynia
The perigynia generally are 2-3 mm wide by 3-4 mm long, which is wider and more rounded than many other sedges. Because they are concave, they can look like little boats. The perigynia are also usually wider above the middle, although not all display this feature.

John also has some book recommendations for aspiring sedge identifiers. His favorites are *Field Guide to Wisconsin Sedges* by Andrew Hipp and *Sedges and Rushes of Minnesota* by Welby R. Smith. Hipp's book is specific to Wisconsin and Smith's book covers most Wisconsin sedges and has the best pictures.

The Rare Plant Finder Gets an Update

The Rare Plant Finder just got a glow-up! We wanted to make finding and requesting rare plant surveys easier so you can spend more time in the field instead of at a computer. You'll notice a lot of similar features to the Rare Plant Finder you're used to, plus a few new things. Rare Plant Finder data are still obscured to centers of townships, so you'll still need to send us an email to learn the exact location of rare plant populations. Here's what's new:

Species Search

The updated Rare Plant Finder allows users to search and filter the map by either the Latin or common names of species. Have you always wanted to search for all the rare sedges in your area? Now you can just type "Carex" or "sedge" into the search bar and see all your survey options.

List Of Surveys

Like the old Rare Plant Finder, you can zoom in on the circles on the map and click them to get information about individual surveys. In the new version, there's also a dynamic list on the side that changes when you zoom in or click on a circle.

Phenology Filter

Just like the older version of the Rare Plant Finder, you can still filter surveys by the best time of year for their identification. In the new version, users can filter by month, so they can refine their searches even further.

Survey Difficulty Filter

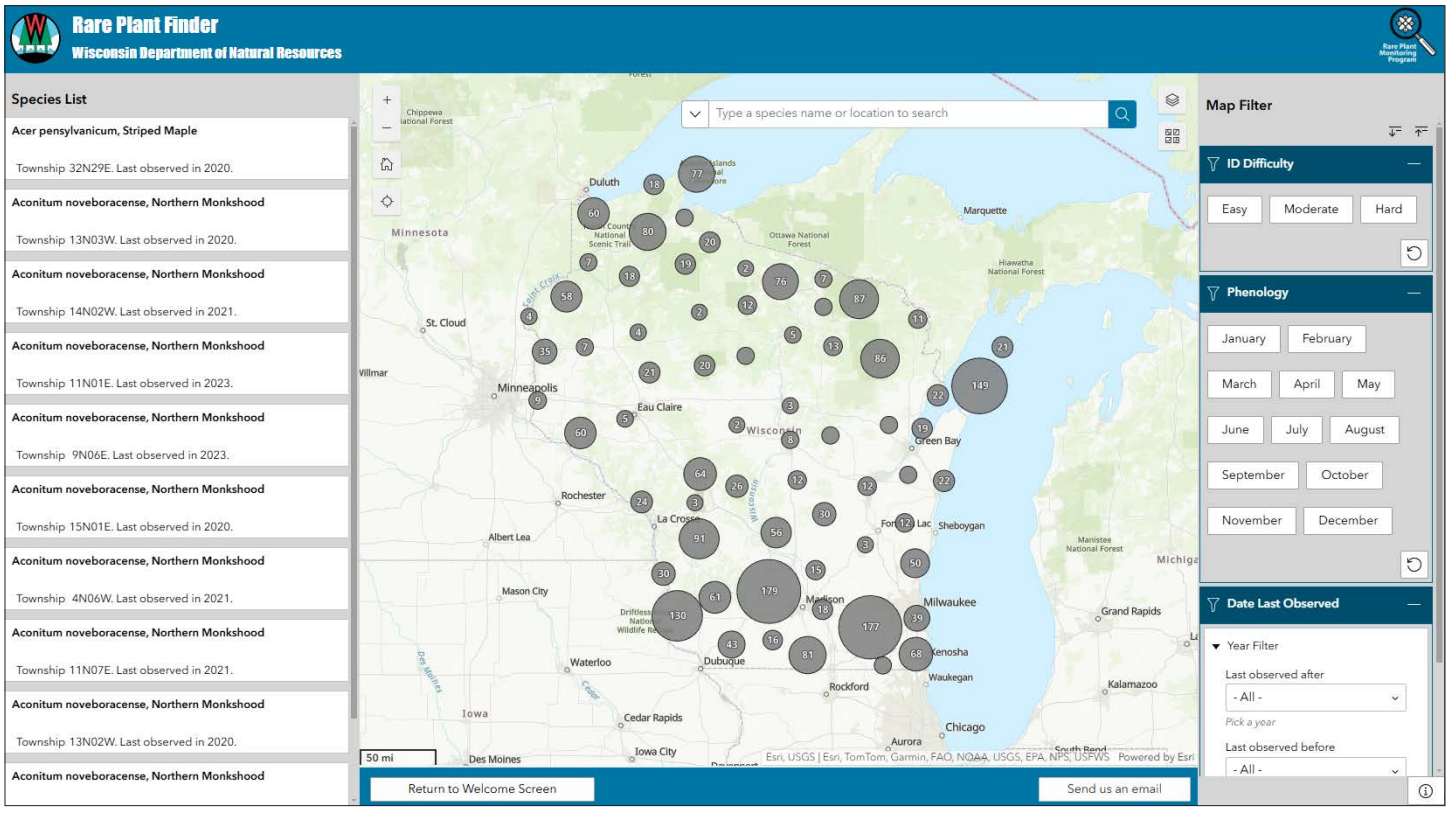
Are you just getting started on your botany journey? Are you looking for a challenge? This filter might be for you. Users can filter surveys based on how difficult the species is to identify. Don't let this filter deter you from going on a survey you're interested in. We're always happy to give identification tips and help. This is just another way to filter through the many survey options.

Access Rare Plant Finder

Visit dnrmaps.wi.gov/H5/?viewer=Rare_Plant_Finder to access the updated Rare Plant Finder.

One-Click Survey Request

Instead of writing down the township of your desired survey, remembering our email address, and sending us a message, users can now request a survey with one click. Once you've filtered the map and found a survey you're interested in, simply click the button and an email will pop up with all the information you need already filled in.



Wisconsin's Rare Milkweeds

Each year, the Rare Plant Monitoring Program picks a plant deserving special attention. Volunteers are not required to survey for the "Species of the Year" but are encouraged to do so to contribute to a statewide status update. This year, the species of the year are Wisconsin's rare milkweeds! In this article, you can learn about all things milkweed from our resident expert, Kevin Doyle. You can find a guide to Wisconsin's rare milkweeds on the website and request a survey via the Rare Plant Finder.

By Kevin Doyle

Milkweeds are herbaceous perennials named for their distinctive milky sap, which is toxic to herbivores and provides defense for the plant. They come from a small family, at least compared to mammoths like the asters, orchids or legumes. Around the world, there are 208 species of milkweed, all native to the Americas and Africa. In the US, there are 73 native milkweeds, including at least one species native to all lower 48 states. Zooming in further, Wisconsin has 13 native milkweeds plus one non-native species (showy milkweed, *Asclepias speciosa*).

Morphology

The floral structure of the milkweed makes it unique. The flowers have petals and sepals like many other plants, and in milkweeds, they are five-parted and reflexed downward. Together, the sepals and petals are called the corolla. Above the corolla emerges a corona, which may be what you think of as the milkweed flower. The corona contains five tube-like, open-topped hoods, each enclosing a claw-like horn.

The main components of pollination, however, are located on the sides of the corona. The pollen is contained in individual sacs called pollinia, which are each held at the end of a long thin arm. The arms are connected to each other, holding the pollinia like saddle bags. The two pollinia, along with their arms (translocator arms) and connection point (corpusculum), are together called a pollinarium. Between the hoods, the pollinarium surrounds a stigmatic slit, which is where the pollinia need to be deposited for pollination to be successful.

Despite the complex floral structure, milkweed identification, at least in Wisconsin, is simple. Most species can be separated by leaf characteristics like width, orientation (alternate vs. opposite vs. whorled), hairiness, etc.

Here is a quick guide to identifying our rare milkweeds:

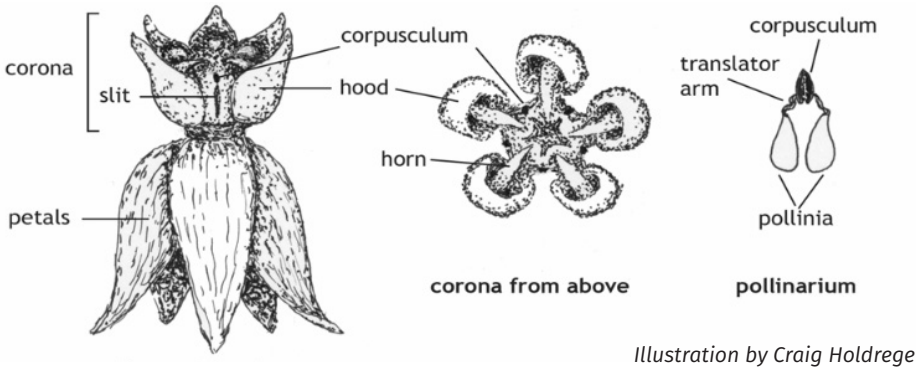


Illustration by Craig Holdrege

Milkweed By The Numbers

208 total worldwide
73 native US species
13 native Wisconsin species
1 non-native species

Green milkweed (*Asclepias hirtella*): It is one of three milkweeds in Wisconsin with alternate leaves (the others are woolly milkweed and butterfly milkweed) and the only one that is not hairy. This milkweed is often found in wetlands, whereas woolly milkweed and butterfly milkweed are limited to dry sites. The best time for identification is June through August.

Woolly milkweed (*Asclepias lanuginosa*): A very small, hairy plant with alternate leaves and white coronas. It is limited to dry prairies and barrens. It is most likely to be confused with butterfly milkweed (*A. tuberosa*), but it is much smaller and has milky sap, whereas butterfly milkweed does not. The best time for identification is late May through late June.

Dwarf milkweed (*Asclepias ovalifolia*): This is most likely to be confused with common milkweed (*A. syriaca*), but less robust, both shorter and with narrower leaves. The fragile stature of dwarf milkweed can be hard to describe but is easy to identify in the field. The flowers of dwarf milkweed are purer white, whereas those of common milkweed tend to have at least a hint of pink. The best time for identification is throughout June.

Purple milkweed (*Asclepias purpurascens*): A tall milkweed found in a variety of habitats from wet-mesic prairies to oak woodlands. Most

Green milkweed (*Asclepias hirtella*) | Woolly milkweed (*Asclepias lanuginosa*) | Dwarf milkweed (*Asclepias ovalifolia*) | Purple milkweed (*Asclepias purpurascens*) | Prairie milkweed (*Asclepias sullivantii*)

likely to be confused with common milkweed. Distinctive for its terminal and hemispherical umbels of deep purple flowers (vs. usually axillary and spherical umbels of light pink flowers in common milkweed). Purple milkweed also has lines of hairs running down the stem, whereas common milkweed stems are evenly hairy throughout. Finally, the hairs on the midvein on the upper side of the leaf of purple milkweed are hooked, while those of common milkweed lay flat and are somewhat wavy. This requires a hand lens to see. The best time for identification is late June through late July.

Prairie milkweed (*Asclepias sullivantii*): Prairie milkweed is distinctive for its sessile leaves, meaning they have no leaf stalks. Only clasping milkweed (*A. amplexicaulis*) and Mead's milkweed (Asclepias meadii) have this same feature, but both of those species have leaves with wavy margins and are found in dry or even sandy habitats, while prairie milkweed is found in wet or mesic prairies. The best time for identification is early June through early July.

Pollination

How exactly milkweed flowers are pollinated is complicated, to say the least. Insects are lured by the reward of nectar at the base of the hoods. Those that climb up the sides of the corona to get to the hoods, could, if they step just right, unwittingly extract a pollinarium with their leg. To do this, though, the insect must be strong enough, like a bumble bee. Those not up to the task may be destined for a life shackled to the milkweed flower. Once the insect extracts the pollinarium, it hangs off its leg as the insect travels around, visiting other flowers. As it is transported, the pollinarium dries, twisting ninety degrees into the perfect position for pollination. Once the insect lands and crawls up the side of a different corona, the pollinarium in its new configuration slides into the stigmatic slit and is pulled off the insect's leg. Pollination is complete.

If the milkweeds are rare and occur in small numbers in a fragmented landscape, finding viable mates can be difficult.

One last note: some milkweeds are self-compatible, meaning that a plant can pollinate itself. However, other species are self-incompatible, which means insects carrying pollinaria must find a genetically distinct plant to fertilize to produce viable seeds. If the milkweeds are rare and occur in small numbers in a fragmented landscape, finding viable mates can be difficult.

Habitats

Wisconsin's milkweeds are mostly limited to fire-dependent habitats like prairies, savannas, barrens and oak woodlands where the canopy is either entirely absent or, at most, only partially closed. Here are more specific details about the habitat preferences of each of our rare milkweeds:

Green milkweed (*Asclepias hirtella*): Most commonly found in wetlands, including southern sedge meadows and wet-mesic to wet prairies. Less frequently found in sandy areas, though even these areas typically are seasonally wet, and other wetland plants may be present.

Woolly milkweed (*Asclepias lanuginosa*): Dry, dry-mesic and sand prairies (though not bluff prairies) as well as barrens. Surrounding vegetation is often sparse or short-statured, and exposed sand or gravel may be present.

Dwarf milkweed (*Asclepias ovalifolia*): Barrens and sand prairies, including the disturbed edges of these sites, such as roadsides.

Purple milkweed (*Asclepias purpurascens*): A broad range of habitats from wet-mesic prairies in southeast Wisconsin to oak woodlands in southwest Wisconsin.

Prairie milkweed (*Asclepias sullivantii*): Mesic and wet-mesic prairies in southeast Wisconsin.

Ecological Importance

We all know that milkweeds are the larval host for the monarch butterfly, but they also provide nectar for a variety of other butterflies, along with bees, wasps and flies. Even some hummingbirds use milkweed nectar. And it's not just their nectar that makes milkweeds important members of their natural communities. Despite their toxic sap, some insects utilize milkweed stems, leaves and roots. In fact, one researcher found 457 species of insects on common milkweed plants alone (Dailey 2015)! Vertebrates use them, too. Birds can use fibers from the stems and fruits for nest material. Milkweeds have been and continue to be used by humans for food, fiber and medicine.

Conservation

Of the 13 native milkweeds in Wisconsin, five are listed as endangered, threatened or special concern. A sixth, Mead's milkweed, is listed as federally threatened but is considered extirpated from Wisconsin. A few populations of Mead's milkweed have been reintroduced but are not tracked by the DNR.

Throughout the Upper Midwest, approximately 20-40% of milkweeds are considered vulnerable to critically imperiled (NatureServe Explorer 2025). Compared to surrounding states, Wisconsin has the highest ratio of rare milkweeds relative to the overall number of native milkweeds (38%).

Historically, the biggest threat to our rare milkweeds has been habitat loss. These plants are found in wetlands, prairies, savannas and barrens, which were largely destroyed after European settlement. Although land conversion continues to be a threat, new threats have also emerged. Today, fire suppression, invasive species spread, habitat fragmentation and pollinator decline all contribute to downward trends in milkweed. While some researchers have found the more common milkweed species are stable in natural settings, declines are more apparent around agricultural fields (Zaya et al. 2017; Boyle et al. 2019). Unfortunately, measuring trends of our rare milkweeds has not been easy. While we collect a lot of data on rare milkweeds, we are often unable to revisit enough populations of a given species to assess statewide trends. In other cases, species like woolly milkweed or prairie milkweed may respond prolifically to fire or precipitation, which leads to dramatic fluctuations in population counts and very "noisy" data. Visiting milkweed populations that haven't been seen in a while and revisiting the same population year after year will help clarify some of these trends.

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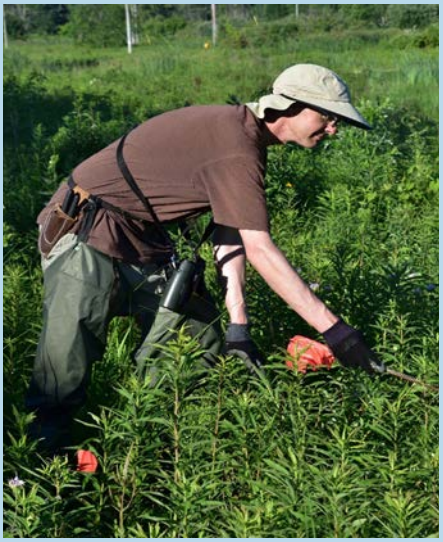
United States Fish and Wildlife Service

Meet Your Rare Plant Monitors

Meet three of our most active rare plant monitors. These folks are amazing volunteers and interesting to get to know.

Maggy Adams has been a rare plant monitor since 2021. She focuses most of her surveys in Dane County and has quickly become a leader on the rare plants of the Blue Mounds area. We're always inspired by her enthusiasm and positive attitude.

Joseph Mui started volunteering in 2022 as a beginner in rare plant monitoring. This year, he was our top contributor and is greatly expanding our understanding of Driftless area rare plants. He's also an excellent photographer, as you can see from the cover of last year's annual report.



Eric Howe has been a rare plant monitor since 2017 but has been involved in plant conservation efforts for much longer. He volunteers at Chiwaukee Prairie State Natural Area and monitors rare plant populations all over the state.

What's your favorite rare plant?

Maggy: It's hard to pick one! I think my *favorite* is whatever I'm looking for that day. If I had to pick a favorite from what I surveyed this year, I would go with prairie fame-flower.

Eric: It's hard to pick just one. However, one that comes to mind is hazel dodder. Its ability to persist unseen (or in low numbers) for years and reappear in abundance following a prescribed burn makes one admire its tenacity.

Joseph: That's a tough question. Definitely anything in the orchid family; ram's head lady slipper might be the favorite. The calypso orchid is worth mentioning as well, although I have yet to see it.

What's your background in plant conservation, and what inspired you to become a rare plant monitor?

Maggy: In college, I started on an elementary education path and randomly took a botany summer field ID course for additional science credits, and I just fell in love with it. That singular class led me to changing paths and I ended up dual majoring in Botany and Biological Aspects of Conservation. I'm currently back in the environmental field now, but my career and family life have gone in multiple directions over the last decade. The Rare Plant Monitoring Program has really been such a great way for me to do what I love, even if in a volunteer capacity and give purpose to an activity I would be doing anyway: exploring and hiking new areas and learning about plants along the way!

Eric: 30 years ago, I began volunteering at a State Natural Area as a novice. From month to month, season to season, fellow volunteers would share new plant identifications. Like pieces of a puzzle, the connections across the landscape came together. I began to do more research on my own, reading plant guides and articles. There's always something new to learn! Before I joined the RPMP as a volunteer land steward at a couple of natural areas, I found it interesting to follow the response of various rare species to land management. Before the Wisconsin Rare Plant Monitoring Program began, I started monitoring around 2007 with the Plants of Concern program.

Joseph: I had a very slow introduction to the world of botany. Some

years ago, living adjacent to the Nicolet National Forest, I became enamored by the vast swaths of minimally developed public land through various forms of outdoor recreation such as trout fishing, bird watching, photography and general wanderlust. Then, one day, I stumbled into arguably the most beautiful landscape I've ever seen in my life: a small 3-acre pond ringed by over 50 feet of floating bog mat. Throughout 2018 I would revisit that pond several times. A few times, I brought a friend who identified wintergreen, snowberry, cranberry and pitcher plants. A couple of years later, in June 2020, I discovered another small bog pond, this one dotted with two incredible pink flowers. After taking pictures and doing some research, I identified them as tuberous grass-pink and snake-mouth orchids. I remember being so awestruck by the beauty of those flowers and their habitat. I had no idea Wisconsin had orchids. That was the moment that lit a fire in me to find more orchids. I discovered that many species of orchids were quite rare in the state. The next year, 2021, I read a DNR article about a volunteer who discovered a new population of one of the rarest orchids in the state, Calypso orchid. It was then that I heard about the Rare Plant Monitoring Program. As soon as I could, I became a member and started requesting surveys. Since then, I've done several surveys, gained so much knowledge, seen incredible wilderness, and traveled all around the Midwest in search of rare plants. All thanks to that small bog pond and this volunteer program!

What has been your most memorable survey?

Maggy: I really love the Blue Mounds area. Since I live in Dane County, it isn't a far drive and is a frequent hiking and survey area for our family. My most memorable survey, though, was two years ago when I first surveyed a population of azure bluets. I took my kids with me that day (which I don't always do) and was about ready to call it a day and head out when my oldest daughter yelled, "Mom, are these the tiny purple-blue flowers you were looking for?" It made my day to see her involved in something I loved, and she was the hero of that search!

Eric: I've been volunteering at Chiwaukee Prairie State Natural Area for nearly three decades, and it's astonishing how many new things we find (not only plants).

Joseph: Surveying a population of pale green orchid with my best friend Matthew Shruck, for sure. There had only been two other surveys done for this population, the most recent from Kevin Doyle reporting 32 individuals on an incomplete survey. We were shocked to end up counting over 700 plants across a much larger area than expected.

What's something you wish you had known when you started monitoring rare plants or that you think would help new folks just getting started?

Maggy: No survey is a failure even if you don't find your target species, misidentify something or any other variety of "error." Every survey or hike, even those where I wasn't intentionally doing a survey, has ended with me learning something new--be that the properties of the site, something about the species composition or how the site changes seasonally and over time. And the times when I get something wrong or need help with an ID, it always amazes me how wonderful and enthusiastic the botanical community in Wisconsin is to help each other out!

Eric: I obtained an inexpensive clip-on macro lens for a phone in the last few years. That's opened a new world of intricate details to save, refer to, and share with others.

Joseph: Don't be intimidated. Find a plant or a group of plants that interest you and start there. With little botanical experience and not even a basic understanding of plant anatomy, I was very intimidated at first. My first surveys were total flops. Everyone learns differently, too. I had a hard time doing research beforehand; I've found that I learn much better by going out and observing things, documenting them, and then going home and doing research on those specific plants. Because of that, surveying rare plants and collecting reliable data was extremely difficult for me at first. After some practice, I feel much more capable, and with more field experience, doing prior research has become easier too.

What are you looking forward to doing next?

Maggy: I just can't wait to get back out in the field in the spring! I love returning to sites I have already surveyed to see how things look, and I'm hoping to add a few additional prairie or oak savanna species into my mix next year!

Eric: Even areas I've visited many times reveal new rare plant populations every so often, so it's always fun just to get outside and explore. I look forward to working with fellow volunteers, with habitat management as well as the volunteer monitors to track existing and new rare plant populations.

Joseph: I recently moved from northeastern WI, where I've spent my whole life thus far, to the southwestern corner of the Driftless region. Although I dearly miss the conifer swamps and peatlands of the north, I am extremely excited to continue getting my feet wet in Driftless botany. With many southern orchids seeming to expand their ranges, I hope to focus on searching for new populations that may be popping up.

2024 Field Notes

Jeff Steele

Giant pinedrops (*Pterospora andromedea*) is a bit of an unusual plant. It's a mycoheterotroph, meaning instead of using photosynthesis, it parasitizes fungi for energy. It's also in the same family as cranberries. This summer, **Jeff Steele** updated a population in Door County that hadn't been surveyed in eight years.

Lindsey Dalton

This year, **Lindsey Dalton** had the last observation of the season with a November update on a putty root (*Aplectrum hyemale*) population. This was just the end of her great year of orchid surveys, during which she documented four different rare species.

Alexandra Taylor

Sometimes, the best way to find rare plants is to stumble upon them. This was the case with **Alexandra Taylor**, who discovered a new population of northern yellow lady's-slipper (*Cypripedium parviflorum* var. makasin) while hiking along a path in Washington County.

Diane Perschbacher

We love to get reports of active management at the sites volunteers visit. **Diane Perschbacher** revisited two small populations of hairy valerian (*Valeriana edulis*). Both sites had recently been burned, and Diane documented a new plant in the population.

Ben Redding

Ben Redding might be our top observer of Kentucky coffee-tree (*Gymnocladus dioicus*). This season he revisited a population in Dodge County. This county doesn't have many documented rare plant populations, so it's a great update.

Barbara Delaney

A rare plant we don't often see updates on is silky prairie-clover (*Dalea villosa*), as it is restricted to the far western edge of the state. This year, **Bridget Olson** updated a population that hadn't been observed in nine years. When it was first seen in 2015, the population was only one plant, but we now know it contains well over 100 plants!

Zach Kron

A few of our rare plant species are Midwest endemics, meaning they are exclusively found in the Midwest, and we have a particular responsibility to protect them. One of these is kitten-tails (*Synthyris bullii*). **Zach Kron**, in addition to many other reports this year, revisited a population for a 15-year update.

Heidi Hankley

Some volunteers choose to survey different populations each year, and some prefer to revisit the same plants. **Heidi Hankley** revisited a population of prairie bush clover (*Lespedeza leptostachya*) for the fourth year and found that the plants were all robust and flowering.

Colin Goyette

Spring can be a great time to go out on a survey while there's less vegetation to hide your target species. This spring, **Colin Goyette** and **Fie Thao** submitted several reports of great waterleaf (*Hydrophyllum appendiculatum*), **Maggy Adams** and **Margaret Gibbs-Zautke** both submitted reports of twinleaf (*Jeffersonia diphylla*), and **Alexandra Taylor** submitted reports of snow trillium (*Trillium nivale*).

Derek Anderson

Prairie fame-flower (*Phemeranthus rugospermus*) is a small, special concern plant found mostly in the western part of the state. Its bright pink flowers open for only part of the day, making it easier to spot if you come at the right time, but vegetative plants can be a bit trickier. **Derek Anderson** revisited a population of this plant that he last observed 11 years ago. Several other volunteers went on fame-flower surveys, including negative reports from **Mara Lince** and **Gwendolyn Rouse**.

Eric Howe

Eric Howe is another volunteer who likes to revisit populations at a particular site. This year, **Mark Lange** joined him to update some of our largest populations of prairie Indian plantain (*Arnoglossum plantagineum*). Eric also updated populations of pale false foxglove (*Agalinis skinneriana*) and sticky false asphodel (*Triantha glutinosa*) at the same site this season.

Vanessa Brotske

Dwarf lake iris (*Iris lacustris*) is one of six federally threatened species in Wisconsin. This year, three volunteers updated records on this plant including **Vanessa Brotske**, **Anna DeMers** and **Rita Wasielewski**. Vanessa also documented three different species of bees pollinating iris plants on her survey.

Shannon Roznoski

Kathleen Garness is another dedicated volunteer who monitors the same site each year. This year, she revisited a population of wild hyacinth (*Camassia scilloides*) for the fourth year in a row!

Ryan Clemo

Hairy wild petunia (*Ruellia humilis*) is widely available in the nursery trade. However, only 11 known wild populations exist in Wisconsin. **Lynn Preston** visited one of these and found plants much more abundant than in previous years.

Ross Shrago

Sedges are not often highly sought-after by our volunteers, so there's always a lot of opportunity for these surveys. **Ross Shrago**, **George Riggin** and **Susan Eisele** took advantage of the opportunity and updated a population of Carey's sedge (*Carex careyana*). They found it hiding under lots of wood nettle.

Donation Reminder for the Endangered Resources Fund

We're so grateful for your generosity with your time and expertise. In addition to our volunteers and partners, our work is supported through the Endangered Resources Fund. Each donation is matched dollar for dollar by the state, and there are three ways to give:

- **Tax Check-off Donations: When filing your state income taxes, look for "Endangered resources" in the "Donations" section of the tax form.**
- **Endangered Resources License Plates: A $25 annual donation through your vehicle registration gives you the choice of a wolf or eagle license plate.**
- **Donate Online: We accept VISA, Master Card, American Express, Discover and eCheck.**

Learn more at https://dnr.wisconsin.gov/topic/EndangeredResources/endangeredresourcesfund.