

# Rare Plant Monitoring Program



**Rare Plant  
Monitoring  
Program**

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Cover photo:

RPMP volunteers Ben Bomkamp and Kerstyn Perrett found new populations of purple milkweed, one of Wisconsin's rarest milkweeds.

Photo Credit: Ben Bomkamp & Kerstyn Perrett

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# Thank You, Volunteers



*All of these volunteers conducted one or more plant surveys in 2020:*

**Derek Anderson**

**Jan Axelson**

**Mike Baker**

**Mary Bartkowiak**

**Beth Bartoli**

**Mary Kay Baum**

**Cindy Becker**

**Danielle Bell**

**Liz Birkhauser**

**Christine Bohn**

**Ben Bomkamp**

**Vanessa Brotskev**

**Dan Buckler**

**Tara Buehler**

**Aaron Carlson**

**Ryan Clemo**

**Dave Czoschke**

**Fred Dike**

**Paul Doxsee**

**Don Evans**

**Mary Ann Feist**

**Thomas Ganfield**

**Greg Gardner**

**Nathan Gingerich**

**Ben Grady**

**Paul Hlina**

**Eric Howe**

**Ben Johnston**

**Debbie Konkel**

**Jesse Koyen**

**Mark Lange**

**Susan Lehnhardt**

**Kristi Lund**

**Chelsey Lundeen**

**Kay McClelland**

**Jason Miller**

**Kerstyn Perrett**

**Bethney Pickhardt**

**Corey Raimond**

**Jon Rigden**

**George Riggin**

**James Riser**

**Joseph Rohrer**

**Michaela Rosenthal**

**Gwendolyn Rouse**

**John Scholze**

**Michael Sinclair**

**Jeffery Steele**

**Ann Stoda**

**Emily Stone**

**Juniper Sundance**

**Phil Sylla**

**Nancy Thomas**

**Lucas Turpin**

**Amanda Weise**

**Ellie Williams**

**Arwyn Yarwood**

**Mary Zaander**



# Editor's Corner

Photo Credit: James Riser

Early in the COVID-19 pandemic, I felt we were all getting a taste of what it feels like to be a rare plant. Suddenly the world around us had changed, bringing incredible stress and altering basic things like how we get food and interact with others. In a way, the pandemic has given me a deeper sense of connection to and compassion for native plants and animals. Although it may be easy to see this pandemic as only one symptom of the stress humans have put on the natural world, it's also an opportunity to look to the natural world for hope, for examples of how to adapt and persevere.

Purple milkweed, for example, prefers lush prairies and oak woodlands but occasionally shows up on road edges and along trails. Instead of discarding these populations as of lesser conservation value, maybe we should marvel at their ability to endure in a difficult environment.

As the months wore on, just like a rare plant persevering in a degraded roadside prairie, we've figured out ways to adapt to the conditions that have changed around us. In the end, the Rare Plant Monitoring Program's volunteers submitted roughly the same number of reports as they did before the pandemic, which I was not expecting. It's a credit to the commitment you have to plant conservation and is truly inspiring.

In this report, you'll find stories about a few highlights from the rare plant monitoring world. Volunteers found new populations of super rare orchids. They rediscovered rare plants in places not seen for decades and, in one case, in over a century. Some volunteers even traveled hundreds of miles while others found rare plants in their own city.

You'll also hear from RPMP volunteers about the benefits of iNaturalist, one of the world's most popular nature apps, beyond just rare plant observations. Michaela Rosenthal, a land steward with Milwaukee's Urban Ecology Center and an RPMP volunteer, reveals the opportunities for rare plant monitoring and conservation in urban areas.

As Michaela writes, "In urban spaces, there is a prevalence of built structures and impervious surfaces, habitat loss, noise, heat and artificial light. I am here to tell you that despite those characteristics, diverse life can and does prosper."

The stressors put on rare plants in Milwaukee and other places may make them easy to give up on, but given the circumstances of 2020, maybe they can be a source of insight and hope.



Thank you for all the work you have done for rare plant conservation in Wisconsin!

Kevin Doyle  
Rare Plant Monitoring Program Coordinator



# The 2020 Year in Review



2020 was a different kind of year. Despite the difficult circumstances of a global pandemic, plants emerged from the ground, grew leaves, flowered and set seed. In other words, the work of a rare plant monitor continued.

With the state practicing social distancing for most of the spring, online training replaced in-person training sessions in 2020. Monitors were unable to survey until mid-June, leaving many early-season bloomers unobserved. Once the DNR resumed citizen science projects, some volunteers were

understandably hesitant to travel much or were busy tackling projects around the house or garden. Others saw rare plant monitoring as well-suited for a pandemic because it lends itself to working alone and outside.

Monitors submitted 265 rare plant reports in 2020, which is a real success for a year that presented so many obstacles. This total included 58 reports of new populations and 207 reports providing status updates on known populations.

## Here are some of the highlights that brightened our year.

RPMP volunteers **Mary Bartkowiak** and **Chelsey Lundeen** set out into a white cedar swamp near Crandon to search for calypso orchid (*Calypso bulbosa*). In recent years, dozens of surveys for the state-threatened plant failed, including many just the year before near where Mary and Chelsey were headed.

But Chelsey had seen some plants in this spot in 2017 while working as a private contractor and was optimistic. At that time, she found a patch of eight orchids and another lone stem not far away.

When they returned in 2020, the two volunteers found the sterile surviving leaf of that single plant but no signs of the larger population, typical for a species once scattered across northern Wisconsin but now in decline.

It was getting late in the afternoon, so Chelsey and Mary decided to slowly head back to their car while remaining vigilant.

“As we were nearing the end of the cedar swamp, we spotted the beautiful shade of purple of this new population,” Chelsey recalls. “And then we both busted out into a happy dance!”

Adds Mary: “I heard Chelsey gasp and noticed the elusive shade of violet we’d been searching for. I can say that it was one fantastic day! Any spring day wandering in a cedar swamp in northern Wisconsin is a day well spent.”

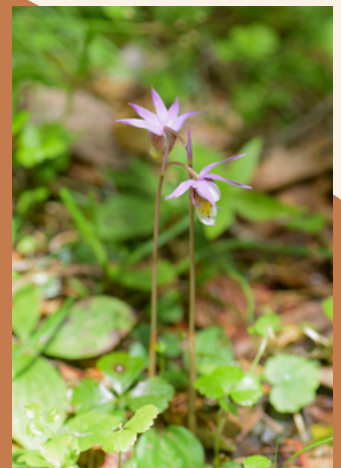


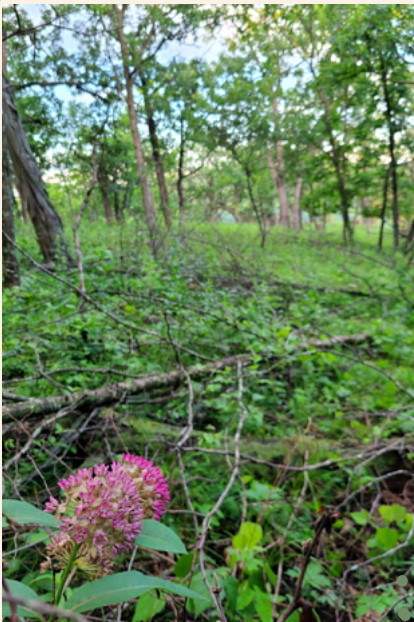
Chelsey Lundeen

## About Calypso Orchid

Probably fewer than five calypso populations remain in Wisconsin, which is why the population Chelsea and Mary found is such a bright spot. Warming temperatures, the overabundance of deer and habitat loss could all be factors of the decline, along with the species’ reproductive strategy. Pollinated by bumble bees, calypso’s very charismatic flower doesn’t have any nectar or tons of pollen. Its appearance tricks bumble bees into thinking there will be a great reward. The bees quickly figure out what’s going on, leaving a pretty small window for calypso to reproduce successfully, and pollination often fails.

On top of that, calypso is tiny and doesn’t occur in huge populations, so it probably relies on a diversity of other plants to lure bumble bees to the area. If those plants are browsed by deer or rabbits or decline for other reasons, calypso could be affected, providing one more example of how connected things are in the natural world.





Four longtime volunteers found new populations of the state-endangered purple milkweed (*Asclepias purpurascens*). Purple milkweed is found in two distinct habitats in Wisconsin: wet-mesic prairies in the southeast and oak woodlands in the west. **Eric Howe** found one of the wetland ecotypes in Kenosha County, while **Cindy Becker, Ben Bomkamp** and **Kerstyn Perrett** found new populations of the upland ecotype. Two of these new populations were on property recently bought by Ben and Kerstyn. Besides looking for rare plants, the couple spends a significant amount of time on habitat restoration projects, so it seems like this piece of land has fallen into the right hands.



**Mary Ann Feist** revisited a hairy meadow parsnip population (*Thaspium chapmanii*) in Crawford County this year. This endangered state plant is known from only three sites in Wisconsin, so getting this update is important to understanding its overall status. Mary Ann, an expert in the carrot family, was just the person to do it. Unfortunately, the population was only half as big as it was 20 years ago.

**Joe Rohrer** spent some time in Taylor County this summer looking for rare ferns. He searched for four populations and found three. These populations haven't been seen since the late 1990s, but fortunately, they were roughly the same size or even bigger as they were back then. Of course, thanks to Joe, we have much better locational information now.



Cities aren't usually hotbeds for rare plants, but **Jeff Steele, Dan Buckler** and **Michaela Rosenthal** found the exception to that rule this year. Jeff found rope dodder (*Cuscuta glomerata*) in Madison for the first time since 1915. Meanwhile, in Milwaukee, Dan relocated a wafer ash (*Ptelea trifoliata*) population not seen in 20 years. Michaela found a new population of the state threatened forked aster (*Eurybia furcata*) hiding in plain sight at a city park. It goes to show that there are always surprises to be found, even in some unlikely places.

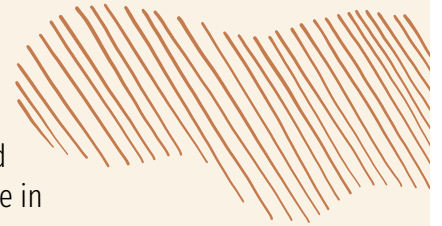
**ROPE DODDER**  
Photo Credit: Jeff Steele



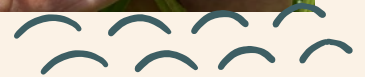
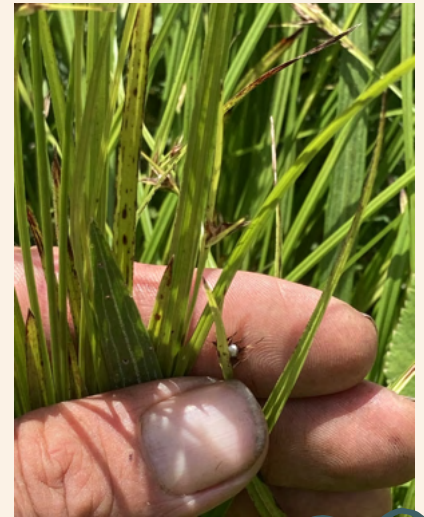
**PLAIN'S RAGWORT**

Photo Credit: Derek Anderson

**Derek Anderson** and **Debbie Konkel** saw plant monitoring as a good socially-distanced activity and teamed up to survey the rare plants of a bluff prairie in Pierce County. Six rare plants are known from the site, and Derek and Debbie relocated four along with finding a new population of plain's ragwort (*Packera plattensis*). Unfortunately, one of the plants they were unable to find was silver bladderpod (*Lesquerella ludoviciana*). This was the only known population in the state, meaning that it may now be extirpated.



**Nate Gingerich** found whip nutrush (*Scleria triglomerata*) at a state natural area in Kenosha County for the first time since 1966. Despite the frequent botanizing of this site, this graminoid had somehow been overlooked for over 50 years. Along with the comfort of knowing the plant is persisting, we now have much more detailed information on exactly where it is found, its habitat and how large the population is.



Unfortunately, there were 49 surveys this year that failed to turn up the rare target plant. **James Riser** searched unsuccessfully for two small populations of white lady's slipper (*Cypripedium candidum*), finding evidence to suggest they both have been extirpated. In total, nine orchid populations went undetected in 2020. It's troubling news that supports a trend noted anecdotally elsewhere in Wisconsin.



**Ben Grady** visited a Columbia County site that harbors one of two known populations of the state-endangered fire pink (*Silene virginica*). Only one plant has been found at the site, and it wasn't seen in 2019 or 2020. The site is very high quality and actively managed, but such a small population is so vulnerable that even minor threats can prove devastating.



While some chose to stay close to home this year, others traveled further afield. **Ryan Clemo** submitted reports from opposite ends of southern Wisconsin: Racine and Grant counties, a distance of 160 miles. **Michaela Rosenthal** covered eastern Wisconsin, checking for rare plants from Milwaukee to Door counties, a distance of 170 miles. Meanwhile, **Aaron Carlson**, who submits an amazing amount of rare plant reports each year, collected data in seven counties. The award for distance traveled goes to **Mary Ann Feist**, who conducted rare plant surveys in Crawford and Florence counties, spanning 230 miles.



Photo by DNR

**George Rigg** has been monitoring rare plants at a site near his house in southern Richland County. While surveying, he's noticed that some of the prairies supporting the state-endangered hairy wild petunia (*Ruellia humilis*) and other rare plants are closing in from brush and cedar encroachment. George contacted the DNR ecologist in the area, asking if there was any chance the site could get managed. This January, three DNR staff crews spent a day clearing brush from a series of prairie openings that harbor rare plants. Notably, George also made some exciting discoveries concerning northern wild senna (*Senna hebecarpa*). He found two new populations and figured out that a population we thought was Maryland senna (*Senna marilandica*) was actually northern wild senna.



Some of the rare plant data collected by RPMP volunteers in 2020 had immediate conservation implications. **Tara Buehler** relocated a federally threatened prairie white fringed orchid (*Platanthera leucophaea*) population that hadn't been seen since 2014. The orchids are suffering from inbreeding depression, and DNR staff and other land managers have been hand pollinating them with pollen from separate sites to improve genetic diversity. After finding the orchid, Tara alerted DNR staff, who could hand pollinate it within a day.

**Jason Miller** is a graduate student at UW-Green Bay studying the population genetics and habitat requirements of the state threatened ram's head lady's slipper (*Cypripedium arietinum*). Part of his work involves collecting leaf samples from various populations. Since Jason is also an RPMP volunteer, he collects population data at each site. Jason checked in on six ram's head populations, finding three of them. The news isn't as bad as it sounds, though. One of the populations he didn't find had been misidentified because it was a malformed version of a similar-looking orchid. Jason also submitted reports on two new populations, which is big news for such a rare plant.



**OPUNTIA FRAGILIS**

Photo Credit: Ann Stroda

**Doug and Ann Stoda** continue to leverage their relationship with Fort McCoy's staff to collect important information on rare plants. The Stodas have joined fort staff on rare plant surveys, and fort biologists have shared information on unknown populations to the DNR. This year, for example, we learned that the population of state-threatened rough rattlesnake root (*Prenanthes aspera*), already known to be the healthiest in the state, is more widespread than previously thought. In total, the Stodas have submitted information on six rare plants from the fort, including brittle prickly pear (*Opuntia fragilis*).



# Rare Species Monitoring in Urban Areas

## Plants And Animals Persist As People Provide Sanctuaries

by Michaela Rosenthal, Land Steward with Urban Ecology Center and RPMP Volunteer  
Photos Provided by Urban Ecology Center

Green spaces and parks nestled within urban areas are all too often depreciated by some in the field of ecology, land restoration and management. In urban spaces, there is a prevalence of built structures and impervious surfaces, habitat loss, noise, heat and artificial light. I am here to tell you that despite those characteristics, diverse life can and does prosper.

Since 2016, I have been volunteering my time to conduct rare plant monitoring surveys in and around the city of Milwaukee. Yes, urban development has fragmented the previously large habitat areas. Yet, those severed pieces of land still contain key natural areas and features as well as plant species that offer significant benefits to fish, birds and both four-legged and two-legged animals.

This past summer, while visiting one of my favorite Milwaukee County Parks, I stopped, paused on the footpath and leaned in to identify the same patch of aster I have mindlessly passed since moving to the city in 2009. "Oh wow, this is not just any aster species. This is a rare aster species," I said to myself. It gets better. Kevin Doyle confirmed that this particular population had not been reported and recorded with the DNR in that location. This is one example of many where I have found and surveyed rare plant species thriving, even in frequently-visited city green spaces. Over the years, the more I have looked, the more I have found:

- + *Solidago caesia* (blue-stemmed goldenrod)
- + *Quercus muehlenbergii* (chinkapin oak)
- + *Ptelea trifoliata* (wafer-ash)
- + *Jeffersonia diphylla* (twinleaf)
- + *Triantha glutinosa* (false asphodel)
- + *Viburnum prunifolium* (smooth black-haw viburnum)

I have seen them all. Even in a city of nearly 600,000 people, rare plants hold their own, oftentimes growing only as far away as your eye wanders.



# People Power Restores Habitats



Urban areas are comprised of people, private and public businesses, friends groups, student organizations and academia, municipal bodies and a plethora of human bodies and minds — all able to contribute to conservation goals. In Milwaukee, partnerships between the various entities have collaborated in restoration activities of public lands and waterways. The work has not stopped there. A growing movement of naturescaping has energized residents to transform their backyards and neighborhoods into native plant and animal sanctuaries. Such efforts could one day yield interconnected lands and swaths of habitat in a space once divided.

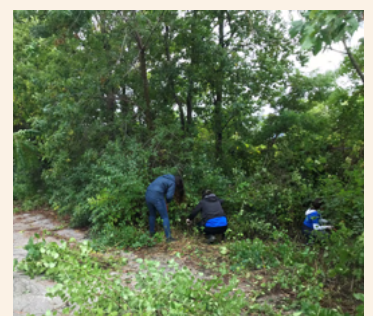
Human-created spaces can and do offer supplemental natural habitats. As one of the Land Stewards with the Urban Ecology Center, my colleagues and I work to connect people in cities to nature and each other. In doing so, we engage thousands of people, including over 2,200 volunteers and over 39,000 students, for thousands of hours annually on public land.



These volunteers help with removing invasive species, planting natives, observing wildlife and learning about the natural world. Some of our volunteers and student visitors have observed *Bombus affinis* (rusty patch bumblebee), *Stylurus notatus* (Elusive Clubtail dragonfly), *Myotis lucifugus* (little brown bat) and *Lasionycteris noctivagans* (silver-haired bat).

In 2020 a volunteer found *Languria trifasciata* (lizard beetle), the first recorded observation in Wisconsin. Noteworthy animals are living and visiting our urban areas. There is no better way to keep them around than restoring, enhancing and preserving the land and plant life, common or rare, that they rely on for survival. As the saying goes, “knowing is half the battle.” Now, knowing there is a presence of rare plants and diverse wildlife within the city with no shortage of people power, we should have all the more reason to recognize the important role urban areas play in protecting and recovering imperiled species.

Come visit Milwaukee. It is not just the home of Summerfest, breweries, Bucks and Brewers games. It is home to a variety of rare plant species just waiting to be found.



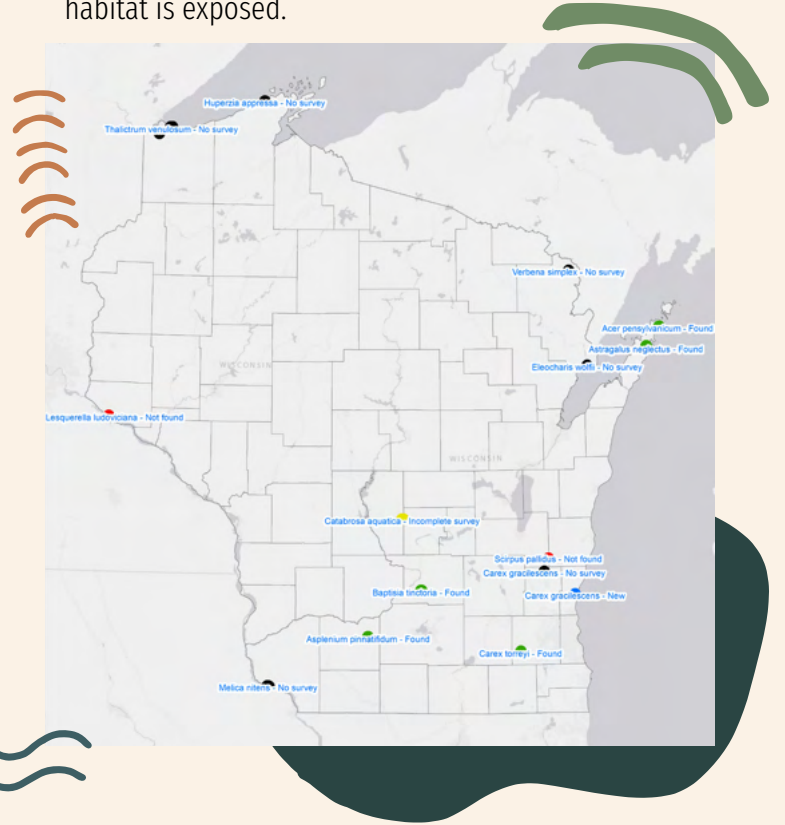
# 2020 Species Of The Year Recap

In 2020 we tried something a little different for the Species of the Year search. Instead of re-locating many populations of a single species, we asked volunteers and others to focus on a group of 15 super rare species. Each species had been seen recently in only one location, each on public land. RPMP volunteers ended up surveying six of these species, and DNR staff found another one, gathering crucial information as we reassess their conservation status.

In the next few years, the DNR will be revising the Endangered and Threatened Species List. At that time, we'll look at all 322 plants currently listed as endangered, threatened or special concern to see if their status should be upgraded or downgraded. It's unlikely any of the 15 plants we focused on in 2020 will be downgraded since they are exceedingly rare.

However, it's possible that at least one, silver bladderpod (*Lesquerella ludoviciana*), will be moved from threatened to extirpated after extensive surveys this year failed to find it. Another plant searched for but not seen in 2020, the pale bulrush (*Scirpus pallidus*), is known from at least one other site in the state, a degraded hay field in Douglas County, so it isn't completely extirpated.

The five of 15 target species found in 2020 appear to be holding their own. There is still hope for species that weren't found or surveyed for in 2020. In some cases, they may still exist on private lands or, as with mountain fir moss (*Huperzia appressa*) and brook grass (*Catabrosa aquatica*), populations may rebound when water levels recede and suitable habitat is exposed.



## Species

Species	State Status	2020 Results	Last Seen	Trend
Striped maple ( <i>Acer pensylvanicum</i> )	Special Concern	Found	2020	Stable
Lobed spleenwort ( <i>Asplenium pinnatifidum</i> )	Threatened	Found	2020	Increased
Cooper's milkvetch ( <i>Astragalus neglectus</i> )	Endangered	Found	2020	Stable
Yellow wild indigo ( <i>Baptisia tinctoria</i> )	Special Concern	Found	2020	Stable
Northwestern sticky aster ( <i>Canadanthus modestus</i> )	Special Concern	Not surveyed	2008	Unknown
Slender sedge ( <i>Carex gracilescens</i> )	Special Concern	Found	2020	Unknown
Torrey's sedge ( <i>Carex torreyi</i> )	Special Concern	Found	2020	Stable
Brook grass ( <i>Catabrosa aquatica</i> )	Endangered	Incomplete survey	2001	Unknown
Wolf's spikerush ( <i>Eleocharis wolfii</i> )	Endangered	Not surveyed	2003	Unknown
Mountain fir moss ( <i>Huperzia appressa</i> )	Special Concern	Not surveyed	1998	Unknown
Silver bladderpod ( <i>Lesquerella ludoviciana</i> )	Threatened	Not found	1977	Likely extirpated
Three-flowered melic grass ( <i>Melica nitens</i> )	Special Concern	Not surveyed	2012	Unknown
Pale bulrush ( <i>Scirpus pallidus</i> )	Special Concern	Not found	2004	Likely extirpated
Veined meadowrue ( <i>Thalictum venulosum</i> )	Special Concern	Not surveyed	1997	Unknown
Narrow-leaved vervain ( <i>Verbena simplex</i> )	Special Concern	Not surveyed	2007	Unknown



## Populations Hold Steady But Small Size A Concern

One of the most significant discoveries was Cooper's milkvetch (*Astragalus neglectus*), found by Jason Miller in Door County, where it was last seen in 2000. Jason found about 150 plants, which is roughly the same population size as 20 years ago. The legume was once scattered along the eastern edge of Wisconsin from the Illinois border to Door County's tip. It seems to have disappeared from all but the northernmost portion of that range.

Cooper's milkvetch is found on forest edges, meaning that it likely requires the kind of periodic disturbance that knocks back competition while not creating large openings. Other plants that require a particular kind of

"Goldie Locks" disturbance that's not too big or small (including several other legumes, incidentally) are also rare. The milkvetch is also at the southern edge of its range in Wisconsin, meaning the warming climate is pushing it north.



**COOPER'S MILKVETCH**  
Photo Credit: Jason Miller

Populations of striped maple (*Acer pensylvanicum*), yellow wild indigo (*Baptisia tinctoria*) and Torrey's sedge (*Carex torreyi*) were also rediscovered in 2020. They were about the same size as the last time they were seen. Although this is good news, the population of each species remains small, 65 individuals or fewer. Populations like this are vulnerable to single catastrophic events like tornados, erosion, disease outbreak or dense herbivore populations. Even management activities like mowing, trail

construction or timber harvest can pose an existential threat. We now have precise information on where exactly these plants are located and can share that information to help land managers protect them.

### STRIPED MAPLE

Photo Credit: Beth Bartoli



**YELLOW WILD INDIGO**  
Photo Credit: Aaron Carlson

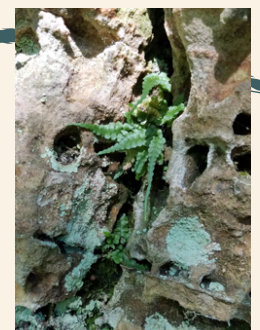
One true success story is that of lobed spleenwort (*Asplenium pinnatifidum*), known from only four sites in the state and only one on public land. In 2020, DNR Ecologist Ryan O'Connor and DNR Conservation Biologist and RPMP volunteer Ryan Clemo visited the public land site and found over 150 plants scattered across 500 meters of cliff, well more than the four seen on the last visit in 1990. Although it's unclear whether the population has grown or is just larger than we thought, knowing that the population is this big provides a certain amount of comfort.



### TORREY'S SEDGE

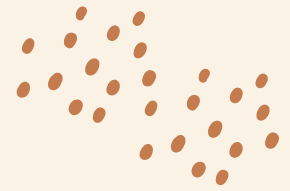
Photo Credit: Aaron Carlson

One interesting development is a new slender sedge (*Carex gracilescens*) population reported by a We Energies employee in 2020. A single clump of the super rare sedge was found in a mesic forest on private land in Ozaukee County. Although none of the known slender sedge populations were found last year, it's good to know the species still occurs in Wisconsin and that the site is getting attention, including invasive species control.



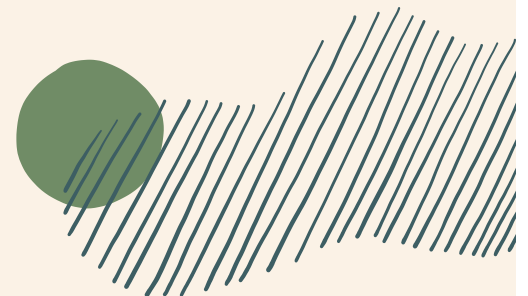
# 2021 Species Of The Year

## Search Shifts From Rarest To Relatively Common



Last year we targeted 15 of the rarest plants in Wisconsin for our Species of the Year search. This year we'll focus on the opposite end of the rarity spectrum: 12 species on the rare plant list that are relatively common. Visiting the lone population of a rare species can help us determine if the species should be removed from the State Endangered and Threatened Species List, or "delisted" because it is no longer present in the state. Searching for relatively common species, on the other hand, may provide enough evidence to downgrade a species from endangered to threatened or delist it entirely if it's stable enough to persist without extra conservation attention.

Different from previous years, I encourage **RPMP volunteers to search for and report new populations of these species.** Since these plants are known from many locations, there are likely many populations yet to be reported. For example, putty root orchid (*Aplectrum hyemale*) is known from 65 locations in Wisconsin, but new populations are found each year. Many more populations of putty root are waiting to be discovered in the appropriate habitat – southern mesic and dry-mesic forests.



## Tips For Searching For New Rare Plant Populations

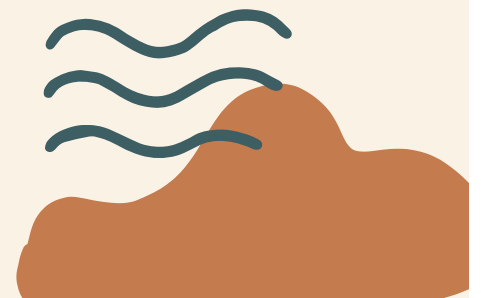
How do you search for a new population of a rare plant? First, you need to know where to look. The suitable habitat and the geographical location each plant is found in are listed in the table below. The trick is to identify sites in those regions where the habitat occurs.

Some of these will be pretty easy. Seaside crowfoot, for example, is found along salted and mowed roadside ditches in the southeast and far northwest Wisconsin. Others, like Braun's holly fern, which is located in the rocky ravines in the Penokee Range, will be more difficult. For species found in a habitat that isn't very common on the landscape, an excellent place to start might be state natural areas.

SNAs represent the best examples of the natural communities of Wisconsin and harbor a disproportionate number of rare species. You can find a list and description of each of the almost 700 SNAs by searching "state natural areas" from the DNR homepage.

Properties owned or managed by your local land trust are also good places to search for new rare plant populations. These sites may have been purchased recently and not had the thorough inventory older public lands have had.

Lastly, many volunteers know of private land with high-quality examples of natural communities and may support rare plants. Some of the species we are interested in, such as putty root orchid, white camas, dwarf milkweed, sweet colts-foot and seaside crowfoot can even hang on in degraded habitats, so private land that hasn't been managed in a while may still be suitable.

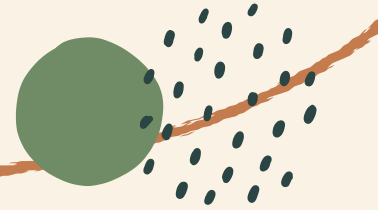


## Finding More Pieces To The Puzzle

Of course, many searches for new populations of rare plants will turn up nothing. These species are rare, after all, which by definition means most sites do not have them.

Finding new populations of rare plants is daunting but exciting. Successes are rare, but each one represents a major advance in our understanding of the plants we're trying to protect. For the 12 Species

of the Year in 2021, the picture is starting to suggest they are more secure than first thought. It would still be nice to get a few more puzzle pieces. We invite you to read the write ups below and help us complete the puzzle by searching for one or more of these species this summer.



**Species Name:** *Anticlea elegans*

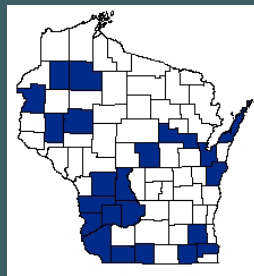
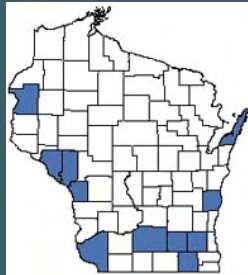
**Common Name:** White camas

**State Status:** Special concern

**Known Populations:** 45

**Habitat:** Calcareous prairies, cliffs, and wetlands

**Best ID Time:** Late May through late July



**Species Name:** *Aplectrum hyemale*

**Common Name:** Putty root orchid

**State Status:** Special concern

**Known Populations:** 65

**Habitat:** Southern mesic and dry-mesic forest

**Best ID Time:** Autumn to early spring

**Species Name:** *Asclepias ovalifolia*

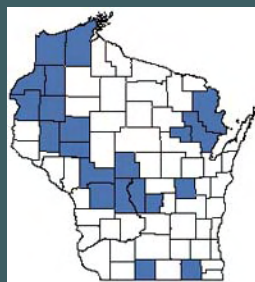
**Common Name:** Dwarf milkweed

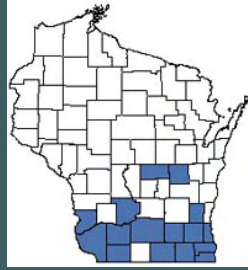
**State Status:** Threatened

**Known Populations:** 97

**Habitat:** Barrens

**Best ID Time:** June





**Species Name:** *Asclepias purpurascens*

**Common Name:** Purple milkweed

**State Status:** Endangered

**Known Populations:** 100

**Habitat:** Wet-mesic prairies in southeast WI and oak woodlands in western Wisconsin

**Best ID Time:** Late June through July

**Species Name:** *Diarrhena obovata*

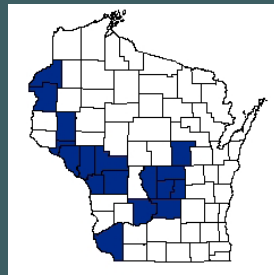
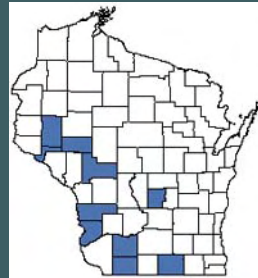
**Common Name:** Ovate beak grass

**State Status:** Endangered

**Known Populations:** 17

**Habitat:** Floodplain forest, southern mesic forest

**Best ID Time:** Early August through early October



**Species Name:** *Opuntia fragilis*

**Common Name:** Brittle prickly pear

**State Status:** Threatened

**Known Populations:** 48

**Habitat:** Barrens, sand prairies

**Best ID Time:** Year-round

**Species Name:** *Petasites sagittatus*

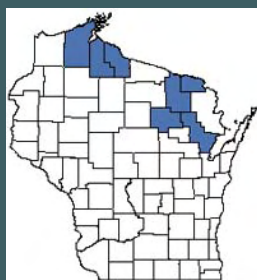
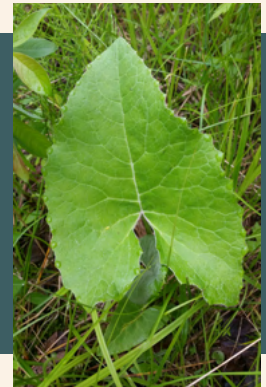
**Common Name:** Sweet colts-foot

**State Status:** Threatened

**Known Populations:** 36

**Habitat:** Northern sedge meadow, alder thicket, boreal forest

**Best ID Time:** Late May through late August



**Species Name:** *Polystichum braunii*

**Common Name:** Braun's holly fern

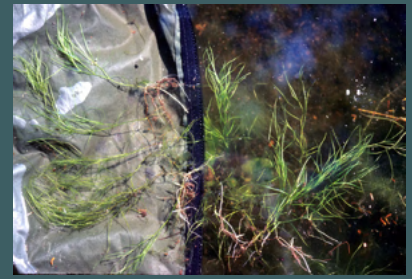
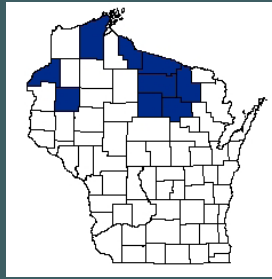
**State Status:** Threatened

**Known Populations:** 49

**Habitat:** Cliffs and ravine bottoms within northern mesic and boreal forests

**Best ID Time:** July through October

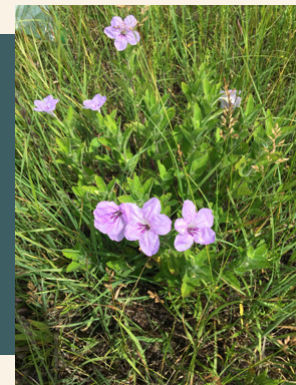
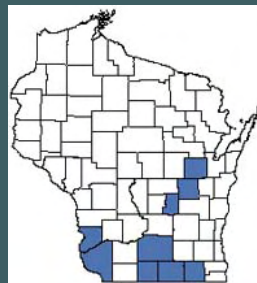
**Species Name:** *Potamogeton confervoides*  
**Common Name:** Algae-leaved pondweed  
**State Status:** Threatened  
**Known Populations:** 22  
**Habitat:** Acidic lake  
**Best ID Time:** August



**Species Name:** *Ranunculus cymbalaria*  
**Common Name:** Seaside crowfoot  
**State Status:** Threatened  
**Known Populations:** 36  
**Habitat:** Sandy or muddy shores and marshes, ditches and harbors, and salted roadsides  
**Best ID Time:** June through August



**Species Name:** *Ruellia humilis*  
**Common Name:** Hairy wild petunia  
**State Status:** Endangered  
**Known Populations:** 23  
**Habitat:** Dry prairies  
**Best ID Time:** late May through early October



**Species Name:** *Solidago caesia*  
**Common Name:** Bluestem goldenrod  
**State Status:** Endangered  
**Known Populations:** 37  
**Habitat:** Southern mesic and dry-mesic forest  
**Best ID Time:** early August through late September





# iNaturalist: Tips And Tricks



## Social Network Grows On Its Users

We've all heard the problems with social media websites. They're addictive and manipulative and provide an outlet for bullying and disinformation. But they can also provide a space for collecting and sharing knowledge in a productive way. One example of social networks at their best is iNaturalist, started in 2008 by the California Academy of Sciences and the National Geographic Society to collect observations of all aspects of the living natural world.

iNaturalist allows people to report the plants and animals they see and get help from other users identifying the species.

The Rare Plant Monitoring Program has been using iNaturalist since 2016, and since then, over half the total rare plant reports submitted by volunteers have come on the social media site.

But iNaturalist is bigger than just the RPMP project. I asked RPMP volunteers Corey Raimond, Jeff Steele, and Aaron Carlson, some of our heaviest iNaturalist users, a little bit about what draws them to the platform, how they use it and what makes a good post.



Jeff Steele

**Wisconsin Rare Plant Monitoring Program**

**ADD OBSERVATIONS**

**Stats**

Totals	Most Observations	Most Species	Most Observed Species
<b>458</b> Observations »	<b>aaroncarlson</b> 76 observations	<b>aaroncarlson</b> 38 species	<b>Killentals</b> 36 observations
<b>127</b> Species »	<b>benandkerstyn</b> 30 observations	<b>benandkerstyn</b> 30 species	<b>Putty Root</b> 24 observations
<b>51</b> People »	<b>dicarterku</b> 38 observations	<b>dicarterku</b> 25 species	<b>Mountain Dothicas</b> 20 observations
	<b>davez2</b> 29 observations	<b>davez2</b> 24 species	<b>Small White Lady's-Slipper</b> 12 observations
	<b>thesnappy</b> 24 observations	<b>thesnappy</b> 19 species	<b>Tall Green Milkweed</b> 12 observations

Map Satellite Superior National Forest 105 members

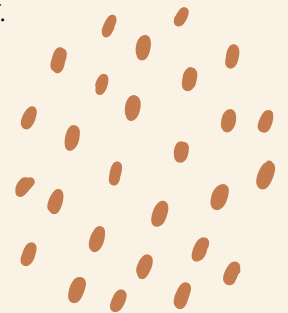
## Quite A Hive Mind

As with any social network platform, “iNat” brings together the full spectrum of users from novices to experts. Access to this level of expertise is one of its most appealing features. “iNat instantly connects you to people who are specialists in nearly any taxonomic group,” Corey says. “Some of these people are incredible and can teach [identification tips] that are often not mentioned in keys.”

iNat also uses artificial intelligence to help with identification. When a user uploads a photo of an organism, iNat offers some suggestions based on how similar the image looks to others in their database of over 60 million observations. “Because

the suggestive species technology is fairly accurate, it’s a wonderful learning tool. Those with essentially no botany experience can quickly become acquainted with regional plant assemblages,” says Jeff.

The accuracy of iNat suggestions depend on location (better for observations in the U.S. than elsewhere) and organism (better for commonly observed species). “For most flowering plants, overall, it works well. I would say 90-95% of the time.” Corey says. And when the AI suggestions are off? “Luckily, iNaturalist is full of diligent identifiers willing to recommend an appropriate identification,” says Jeff.

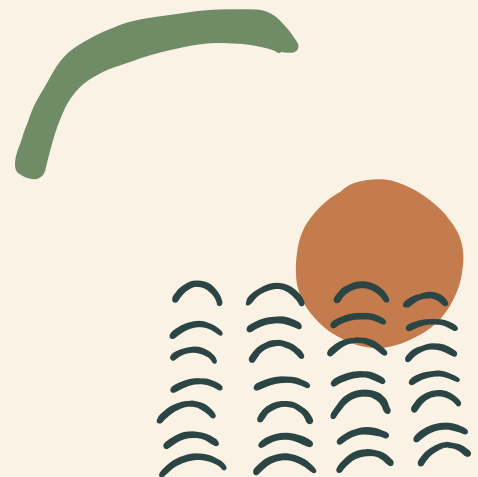


## Tips For A Good Post

iNat’s usefulness is only as good as the data submitted so it’s important to know what makes a good observation. If the observation has a photo, a date, GPS coordinates, and the community agrees on its identity, it is deemed “research grade” and becomes much more useful and reliable for larger scientific or conservation purposes. All RPMP observations used by the DNR are research grade.

All our iNat gurus agree a good observation starts with a good photo. Blurry photos are difficult to identify and may sit untouched by other community members. “For me, a post with multiple images from different angles is the best,” Corey says. Jeff agrees, adding that macro photos work well to identify small hairs or glands that may distinguish one species from another. “It is also important to note the ecosystem your observation is in and what other species are nearby.”

Corey and Jeff carry their DSLR cameras with them in the field while Aaron prefers to travel light. “I use a phone exclusively now – less cumbersome than carrying a digital camera. And the photo quality on smart phones is so good.” While observations can be uploaded directly from the field, there is a tradeoff. “I still upload everything at home,” Aaron says. “I would rather spend the time doing that at home than in the field.”



## “Life Lists” And Other Features To Try

While the data are the heart of iNaturalist, there are other features users might find interesting. Aaron has added hundreds of projects to iNat based on specific properties or ecological regions, collating all the plants and animals observed at those locations. You can keep your own lists to organize the plants and/or animals you’ve found. “Life lists” are popular as are lists of favorite observations. Journals allow users to capture information that may not fit into a traditional observation, like the phenology of a single plant population throughout the growing season.

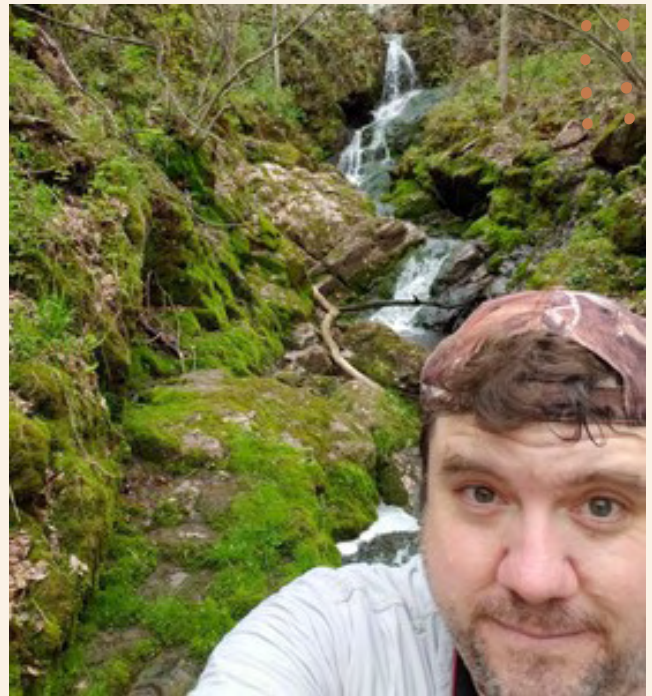
While iNat clearly improves our understanding of the location and status of so many plants and animals, users don’t have to be scientists to benefit. “Putting the research benefits aside, I really enjoy sifting through my own observations,” says Jeff. “iNaturalist has neatly organized them into a sort of filterable photo album.”



## Good Vibes

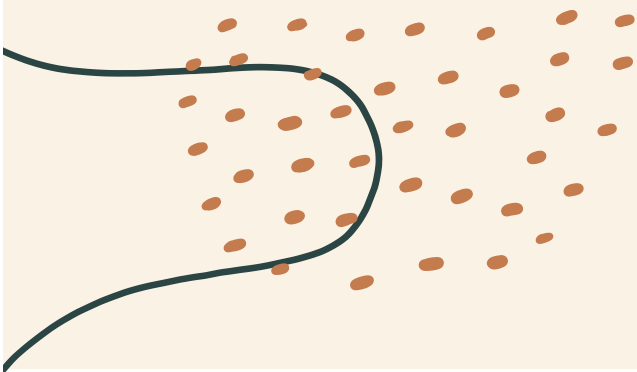
One of the most important ways iNaturalist differs from other social media platforms is the way users treat one another. “There seems to be more of a friendly and professional vibe,” says Corey. “I have completely stopped identifying things on Facebook because of the number of rude comments and arguments when you try to politely correct someone on their ID.”

This atmosphere creates a more productive resource. People are more likely to share observations or suggest identifications if they don’t fear being humiliated or dread engaging with aggressive community members. “iNaturalist is full of plant geeks just waiting to share their passion!” says Jeff. Corey, Jeff, and Aaron all agree the welcoming atmosphere of “iNat” makes it accessible to users of all skill levels. It also ends up making better



Aaron Carlson

botanists, birders, and all-around naturalists. “I’ve learned so many features of ID that are not mentioned in any keys,” Corey says. “My favorite thing is actually when someone who is experienced disagrees with what I think for the ID. It makes me think more about the species and if I could be missing something.”



# RPMP Volunteer Makes A Big Save

Amanda Weise was dispatched to search the Coulee Experimental Forest in La Crosse County in summer 2020 for a rare fern last seen at the site in 2006.

Instead, the Rare Plant Monitoring Program volunteer found an aggressive, invasive grass topping the list of species state resource officials had dreaded would arrive in Wisconsin.

The plant, Japanese stilt grass (*Microstegium vimineum*), is spreading in all states east and south of Wisconsin except for Maine. It is listed as a prohibited species in Wisconsin under Wis. Adm. Code ch. NR 40, meaning it is illegal to buy, sell or transport the plant, and control efforts are required when it's found to prevent it from gaining a foothold.

As luck would have it, Weise is one of the few people that might have recognized the plant as a problem. A botanist for the University of Minnesota Landscape Arboretum, Weise grew up in New England and was very familiar with the stilt grass.

She collected and pressed a specimen of the plant, took photos and checked EDDMaps, an invasive species tracking website. She found no verified reports yet in Wisconsin and submitted her report via the EDDMaps app on her phone.

Because the site was on a state forest and immediately adjacent to a State Natural Area, DNR quickly responded by sending staff to carefully survey all the roads, trails, and streams in the area. Weise returned to the site and gave DNR staff a quick identification lesson. The staff flagged every patch, recorded its coordinates and hand-pulled small patches.

DNR State Natural Area crew members sprayed larger patches along the road and parking area. They will return every year to re-survey and treat the area until no more plants are found.

Kelly Kearns, a DNR Invasive Plant Specialist involved in the response, wrote Weise's supervisor, describing the serendipitous discovery.

I wanted to let you know how grateful we are for Amanda Weise's involvement with our first Japanese stilt grass population. "This was model invasive plant reporting protocol – exactly what we have been trying to get folks to do for years. We are incredibly fortunate that she knows how to ID this plant, was in the location where it was spreading, was observant enough to spot it and knew how to report it. Hopefully, this will be a perfect example of early detection and rapid response."

And that rare fern? Amanda found only little fronds that were too immature to distinguish between the rarity and a more common look-alike. She'll revisit the site later this summer. Fortunately for us, she'll be keeping her eyes peeled for more than just rare plants.

Photo Credit: Anne Pearce



Volunteer Amanda Weise shows DNR staff looking for Japanese stilt grass how to tell the invasive from similar looking native species.

# Field Notes And Photos



**Ben Johnston** continues to monitor the federally threatened northern monkshood (*Aconitum noveboracense*) along the Kickapoo River. Ben would like me to note that he works for the Kickapoo Valley Reserve, so he's not always volunteering when he's checking on these rare plants. Either way, bringing together people from all corners of the conservation world, professional or amateur, is one of the Rare Plant Monitoring Program's significant benefits.

**Eric Howe** splits his time between southern Wisconsin and northern Door County. In southern Wisconsin, he reports on the rare prairie plants of Chiwaukee Prairie, while in Door County, he's checking out beach plants like beach rocket (*Cakile edentula*) and seaside spurge (*Euphorbia polygonifolia*).



SEASIDE SPURGE



BEACH ROCKET



**Paul Doxsee** found a population of the state-threatened dwarf milkweed (*Asclepias ovalifolia*) in Stevens Point in 2016 and has been monitoring it ever since. In 2020, he found plants growing in a few new locations. Unfortunately, Paul noted the habitat was overgrown and in need of management. Plants have failed to produce pods in the four years he has followed them.

**Dave Czoschke** made a trip to Door County this year to check out the spring wildflowers. While out and about, he relocated a long-spurred violet (*Viola rostrata*) population. Violets can be a little tricky to identify but this one is very distinctive, and Dave captured its unique "genie shoe" flower perfectly.



Despite its popularity amongst tourists, Devil's Lake State Park has several spots far off the beaten path. **Ryan Clemo** hiked to one of them last summer and made an interesting discovery: flat stem spikerush (*Eleocharis compressa*), a special concern plant usually limited to mesic prairies. Ryan put it under his microscope to identify the plant and found the characteristic twisted stem and two-pronged scales.

## SHORT'S ROCKCRESS



**Arwyn Yarwood** is a naturalist for Dodge County Parks and recently got involved with the Rare Plant Monitoring Program. This year she conducted extensive surveys for goldenseal (*Hydrastis canadensis*) and Short's rockcress (*Boechera dentata*) at one of her properties. It was great work, especially considering she did it right before having surgery for a broken ankle!

**Lucas Turpin** had a busy summer. He searched for nine rare plant populations, finding eight, including a new population of the state-endangered hairy wild petunia (*Ruellia humilis*). He includes maps like this with his reports to help clarify all the places he found rare plants.



**GOLDENSEAL**

**Liz Birkhauser** took a fall trip to Wildcat Mountain State Park in Vernon County and offered to do some rare plant surveys in the surrounding area. While out, she found two new populations: one of the special concern putty root orchid (*Aplectrum hyemale*) and one of the state-endangered ovate beak grass (*Diarrhena obovata*).



**OVATE BEAK GRASS**



**SPREADING WOODFERN**

Photo Credit: Ellie Williams

**Ellie Williams** and **Emily Stone** went botanizing for ferns in a natural area in Ashland County this summer. Along the way, they ran into populations of two rare ferns: spreading woodfern (*Dryopteris expansa*) and Braun's holly fern (*Polystichum braunii*). It was the first report we have received of spreading woodfern anywhere in the state since 2009.



Of course, plants don't occur in a vacuum. They are part of complex communities that include plants AND animals. **Greg Gardner** saw that firsthand when he ran into a snake slithering through a patch of goldenseal (*Hydrastis canadensis*).



Glade mallow (*Napaea dioica*) is endemic to the Midwest but, paradoxically, is not restricted to the highest quality habitats. Far from it, glade mallow often occurs along roads or trails. **Fred Dike** visited a population along a roadside near Barneveld in Iowa County, finding a few dozen plants scratching out an existence in rough conditions.



Wild licorice (*Glycyrrhiza lepidota*) is a western species that barely extends into Wisconsin. Most records are from along railroads, making it difficult to determine if they are naturally occurring or brought in on the railcars. **Corey Raimond** was skeptical about one such population along a bike trail in La Crosse but checked it anyway. To his surprise, he found an extensive population holding its own among weedy vegetation. It's unclear what the origin of this population is, but knowing that it can survive in degraded areas can help us assess its long-term viability.



**Don Evans** has taken up an interest in aquatic plants since joining the Rare Plant Monitoring Program in 2017. He's submitted reports on 12 populations of rare aquatic plants, mostly pondweeds in northern Wisconsin. It's a noble undertaking since these species are notoriously difficult to identify and lack the obvious beauty of showy wildflowers. This year he relocated a population of algae-leaved pondweed (*Potamogeton confervoides*) in Oneida County.



**Tom Ganfield** is a volunteer land steward and rare plant monitor in the Southern Unit of the Kettle Moraine State Forest. One of the plants Tom monitors is beaked spikerush (*Eleocharis rostellata*). This state-threatened plant is restricted to calcareous fens, a rare wetland relatively common in Tom's neck of the woods. Beaked spikerush is noted for its long arching stems that re-root when they touch the ground, leading botanists often to identify it with their feet before their eyes.

