

A Look into Rarities

The attention of a traveler should be particularly turned, in the first place, to the various works of Nature, to mark the distinctions of the climates he may explore, and to offer such useful observations on the different productions as may occur. — William Bartram, *Travels*

Victoria Holderer, PNPS Board Member, Ecological Consultant

In July of 2024, I had the great opportunity to participate in a Botanical Survey in South Carolina, mapping for rare and invasive plant species in United States Forest Service lands. For two weeks, we hiked through the Sandhills of South Carolina, beneath the soaring branches of *Pinus palustris* or *Pinus taeda*, through brambles and dense stands of *Quercus laurifolia* or *Calli-carpa americana*, all the while searching for that ever distinct vegetation pattern that separates itself away from the rest (surely all botanists have experienced this phenomenon before — that moment where finally, among all the other vegetation, you catch a glimpse of that *particular* leaf or flower).

As one would expect, many of the invasive species present in South Carolina are the same species as those found in Pennsylvania, with more warm-hardy additions thrown in. Finding and mapping these populations was part of the overall land management plan, with the intention to remove them once mapped. However, the *real* bread and butter of the trip was searching for rare species, many of which are endemic to the state of South Carolina. Following this trip, I was inspired to research rare and endemic species of Pennsylvania — something I have delved into from time to time but had not sat down



Barbara's Buttons (*Marshallia pulchra*). Photo: Karen Smith

to pick apart the different species and their unique ecological needs, as well as why they face dwindling numbers. There are a variety of flora and fauna endemic to Pennsylvania, such as the Northern Long-Nose Bat, the Bog Turtle, the Mountain Chorus Frog, Hellbenders, the Checkered Perch, and the Climbing Wood Fern, to name a few. For the purposes of this article, we will focus on four plant species native to Pennsylvania that caught my eye: *Marshallia pulchra*, *Scirpus ancistrochaetus*, *Trollius laxus*, and *Symphyotrichum depauperatum*.

Marshallia pulchra, also known as **Barbara's Buttons**, is an S1 critically imperiled species in the state of Pennsylvania. Its range stretches through Pennsylvania, West Virginia, Kentucky, and Tennessee, where it is either imperiled or critically imperiled. It is found growing in palustrine riparian habitats in forested wetlands and scrub-shrub wetlands. It typically grows along rocky lake shores and streamline banks and bluffs, in full sun. Once grouped together with the genus *Marshallia grandiflora*, it is now categorized as its own *Marshallia pulchra* to distinguish its northern populations, which show genetic differences. This is an important difference to note, since the original *M. grandiflora* is now extinct. *Marshallia pulchra* is endemic to the Appalachians in PA/WV and the Cumberland Plateau for TN/KT. Its populations are spread

out and separated, some of which are currently on unprotected lands. The biggest threats to their remaining populations are changes in the normal flooding regime due to sudden bursts of water via weather or recreational uses of the land. While some populations may be on federal or state land, they are still threatened by disturbance from unaware recreationalists. Additionally, increased flooding activity could cause disturbances in their habitats by scouring riverbanks and depositing excess sand, rock, and gravel which could

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PRESIDENT'S LETTER



Dear Members,

It's been my pleasure to serve as your President the last two years, and it is now time for a new President to step in. Looking back over the past two years, I think we're close to a tipping point in establishing a strong native plant presence in the Commonwealth. Thousands of you have planted native plants, protected habitats in your hometowns, and talked with your neighbors about the power of native plants to fortify

Pennsylvania's ecological strength. We now have members in every county across the state, and we are growing. This last year we doubled the grant funding we awarded to native plant projects for educational research, demonstration gardens, and in developing environmental justice communities. And more great news, we are establishing new chapters across the state. You've called your legislators in support of House Bill 797, and you've worked for local native plant ordinances. Thank you for all your contributions to our growth.

If you haven't heard yet, House Bill 797, passed in July, and is now law, mandating the planting of native vegetation in the 41,600 miles of PennDOT roadways across the state. This Act amends the State Highway Law, "in construction, improvement, maintenance and repair of State highways, providing for native vegetation along highways." Did you know that PennDOT also has programs called "Adopt and Beautify" and "Keystone Pollinator Habitat" for communities to adopt, plant, and enhance PennDOT right of ways with native plants? Check out their website for more info. In addition to HB797, there's new additional legislation in the state, including House Bill 2470 which would require state agencies to plant insecticide-free native plants in landscaping around state facilities and properties. These are huge steps in the right direction for healthier communities, for the conservation of native plants and their habitats, and robust native plant-based economies. Pennsylvania's nursery and land-

scaping industry generates \$4.1 billion for the state economy and provides for more than 63,000 jobs. Visit our website to see how you can support this and more legislation.

Nurseries across the state continue to proactively commit to signing on to our Green Seal Pledge. Please continue to reach out to your favorite local nurseries and encourage them to take the pledge to grow native plants, untreated with insecticides, and end the selling of noxious plants listed on our "dirty dozen" handout. In case you haven't heard the Chesapeake Bay Foundation has free native trees and shrubs for landowners, through 2025. Their website has more info: <https://tenmilliontrees.org>

Continue to reach out to your favorite local nurseries and encourage them to take the pledge to grow native plants, untreated with insecticides, and end the selling of noxious plants listed on our "dirty dozen" handout.

As I said earlier, I am nearing the end of my term as President. And I'm happy to say I'm leaving you in the good and capable hands of our current Vice President Cathryn Pugh, a botanist and Penn State Extension educator in forestry and wildlife, our new President. We will have a lawyer joining our board, and more state-wide representation. We are currently accepting applications for a Treasurer, technical assistants, and more active members to increase our presence across the state in outreach and education. Please send your resume and cover letter to info@panativeplantsociety.org if you are interested in joining our dynamic team.

Sincerely,

Andrea Ferich, President

Don't Forget to Renew!

Please be sure to check your membership expiration date above the mailing label. PNPS membership is a bargain, just \$15 for regular annual membership.

Join or Renew online:

www.panativeplantsociety.org/join-us

Or send your check to:

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Be sure to write membership on the memo line of your check. And thanks for your support!

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PNPS Annual Meeting 2024

Date: **Saturday, September 14**

Time: **8:00 - 3:00**

Location:

Shaver's Creek Environmental Center

3400 Discovery Rd

Petersburg, PA

Speakers

8:00 – 9:30 AM

Morning Bird Walk lead by Naturalist and Program Director at Shaver's Creek, Doug Wentzel

9:00 AM – 10:00 AM

Registration | Plant Sale opens

10:00 – 10:15 AM

Welcome and Business Meeting | PNPS President, Andrea Ferich

10:15 – 11:00 AM

Vernal Pools in the Pennsylvania Ridge and Valley | Taylor Blackman, Penn State University (40 min + 5 min questions)

11:00 – 11:15 AM

BREAK

11:15 AM – 12:00 PM

Community-based Ecological Restoration: How you can cultivate and spread native plants in your area! | Andrew Conboy, Colonial Canopy Trees (40 + 5 min questions)

12:00 – 1:00 PM

Lunch (bring your own) | Plant Sale continues

1:00 – 1:30 PM

Grant Awardees (5 mins each) x6 — (30 min)

1:30 – 3:00 PM

Plant Walk | Plant Sale continues

Shaver's Creek Environmental Center

Presentations

Vernal Pools in the Pennsylvania Ridge and Valley

Taylor Blackman | Penn State University

Description:

Vernal pools are small ephemeral wetlands that are well known to support high levels of biodiversity in an otherwise terrestrial landscape. Clusters have been mapped throughout the Pennsylvania Ridge and Valley along several different landscape positions and underlying lithologies, factors that heavily influence wetland hydroperiod and biogeochemistry, which leads to habitat diversity at the regional and local scale. This region is prime for research to identify the abiotic conditions associated with prolific populations of threatened and endangered plants, like the Northeastern Bulrush (*Scirpus ancistrochaetus*).



Community-based Ecological Restoration: How you can cultivate and spread native plants in your area!

Andrew Conboy | Colonial Canopy Trees

Description:

Ecological restoration efforts are needed now more than ever across PA. Andrew Conboy, urban forester and founder of an eco-restoration non-profit in Montgomery County, will speak about how he engages his local community in restoring native plants, removing invasives, and increasing awareness about ecological issues. This community-based approach is easily adaptable and can be applied to any municipality in PA. From growing your own native trees and plants, to organizing volunteer events, we hold more power than we may realize when it comes to stewardship of our remaining natural spaces.



Learn more and register here:

www.panativeplantsociety.org/2024-annual-meeting.html





One Person's Rewilding Journey

Jill Zdunczyk

When people ask me how I got started with native plant gardening, my answer is always the same: "Nesting birds."

Surprisingly, it always provokes the same quizzical look. I usually must explain, "You know...mom and dad birds? They make a nest, lay eggs in it, and those eggs hatch. Then you have some hungry baby birds." But most of those babies do not eat seeds or berries. They need to eat a lot of protein to grow as quickly as they do. They are growth athletes, going from hatching to flying in just over two weeks. And for that, they need lots of protein.

Songbirds such as Black-capped Chickadee parents don't order takeout from a nearby restaurant and aren't equipped to take down a chipmunk or snatch fish from a nearby creek. So, where does the protein come from?

Insects — and lots of them! In his 2020 book, *Nature's Best Hope: A New Approach to Conservation That Starts in Your Yard*, Douglas W. Tallamy says that chickadee parents feed their nestlings anywhere from 6,000 to 9,000 caterpillars during an average 16-day nesting period. Most birds prefer squishy caterpillars that are easy to shove down a tender baby bird's gullet. But feeding many insects comes at the price of hard work and energy for mom and dad. They need a steady supply of caterpillars close to their nest. That's where I had to put in the work if I wanted to see nesting birds at my home.

That was back in 2017. My yard was all turfgrass and swaths of non-natives that had

come with the house I purchased in 2014. There were towering Norway spruce, weedy Rose of Sharon, colorful hydrangeas, floppy peonies, varieties of daylilies, and double daffodils. I quickly learned, none of these would support the insects those songbirds needed to feed their nestlings.

Google became my research partner in understanding what I would need to make that happen. "What do bluebirds feed their babies?" "What do I need to have caterpillars?" "What's a host plant?" "What's a native plant?" "Native plant nurseries around Harrisburg." I bought one of my first native plants from Steve at Perennial Gardens Nursery. They specialize in native plants. At the time, they were traveling to the Pennsylvania Farm Show Complex in Harrisburg for the PA Open Air Farmer's Market on Tuesdays and Fridays. I saw that he had regulars who were incredibly knowledgeable, Master Gardeners (who isn't impressed by a Master of anything), passionate butterfly aficionados, birders. It was a natural community like nothing I had experienced. I was hooked.



Before in 2017.

I had begun researching all the native plant nurseries and sales available. I came across the exceptional Manada Conservancy Spring plant sale, then Hungry Hook Farm, all in my local area. The more I learned about the plants, the more I loved them.

But my research showed me about meadows in yards. I needed design for mine to work in my 1950s suburban neighborhood. Inspired by the Pennsylvania creeks I've been drawn to all my life, I created a design for the front of my house that mimicked a flowing stream. Plants in long meandering swathes of plants with rocks and trees and shrubs serving as islands or features in the stream of herbaceous plants. Then came the rain gardens. A rain chain and a dry creek bed in the front of the house with natives that liked wet feet some of the time, slowing down the water and absorbing it before it got to the street. The rain gutter in the back of the house was trenched to come out fifteen or so feet away from the house, creating a space where rain loving plants would flourish.

The side yards and backyard have all been planted. And within two or three years (and several bluebird houses), I had my nesting birds. The first to set up a nest was a Black-Capped Chickadee, then Eastern Bluebirds. A Carolina Wren soon followed, then Mourning Doves and Robins. And those are the ones I saw. All enjoying the feast my host plants provided in the form of caterpillars.

Several years later, the gardens are lush and full of purpose. I continue to learn and improve. I educate others by hosting firefly nights and through my garden's Instagram Page. When friends come over, they call it an oasis. I like to think that the wildlife who depend on it would agree.

Jill Zdunczyk is a native plant enthusiast, a Habitat Advocate (Lancaster Conservancy), a Master Watershed Steward, Vice President of the Appalachian Audubon Society, and works for the Pennsylvania DEP.



After in 2024.

A Look into Rarities

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hinder current populations and cause enough disturbance to the extent that an aggressive weed species could take root.

I would be remiss if I did not shed light on a member of the rush family which is also in a vulnerable position in the state of Pennsylvania. *Scirpus ancistrochaetus*, commonly called **Northeastern Bull Rush**, is a member of the Cyperaceae family and is listed as an endangered species as of 1991. It is listed as an S3 in Pennsylvania, which is a better ranking than the other species we are talking about, though it is still considered imperiled. In Pennsylvania's surrounding states, it is known to have populations in Maryland, Massachusetts, New Hampshire, New York, Vermont, Virginia, and West Virginia. As of 2007, there are about 113 currently existing populations in North America, seven of which are in Pennsylvania. The majority of these populations are known to occur on public land, which is subject to multiple uses and, therefore, more potential disturbances. While this species is recognized as endangered and has federal protections, it still faces many effects of human activity, ranging from agricultural runoff, logging road and fire road disturbance, development, all-terrain vehicle use, illegal collection, dredging, oil and gas development, and powerline maintenance involving mowing or herbicide use. While some disturbances may not directly destroy the population of concern, they affect their surrounding environments, creating changes in nutrient levels, openings for invasive species, or more human traffic, which causes disturbance in the site. This species is particularly sensitive to water fluctuations and nutrient changes, and it has been noted by Pennsylvania botanists that historical sites of this species have been degraded due to human activity. Alternatively, it is possible that some natural disturbance may harm these populations, such as deer browse or beaver activity, water fluctuations, naturally occurring forest fires, and habitat succession. These activities, mixed with human disturbance, create an imbalance in the system.

American Globeflower (*Trollius laxus*) is a member of the Ranunculaceae family, native to Pennsylvania, Ohio, New Jersey, New York, and Connecticut. It is a perennial forb found growing in alkaline meadows or open swamps. This species is unique as a perennial because it flowers in April–May, before

canopy trees fully leaf out. They spread by seed, which rely on wind, rain, and gravity. They grow in habitats with cold, highly alkaline groundwater seepage, and traditionally, have larger populations in fens as opposed to seepage swamps. There are 38 populations known, totaling to about 20,000 individual plants. The threats to their population are from human disturbance, such as hydrologi-



Northeastern Bull Rush. Photo: Matthew Darnell



American Globeflower. Photo: Greg Funka

cal alteration, development, deer browse, invasive species encroachment, and land development. *Trollius laxus* relies on specialized ecosystems with calcareous wetlands, which are niche habitats of very open, sedge dominated wetlands that have a slight to moderate slope. With these various disturbances, plus the pressures of naturally occurring ecological succession, there are various disturbances present to these habitats, on all fronts. In the last 30 years, this plant species has declined about 68.9%. To further understand the future of their current population,

more research is needed. Insufficient data has been collected recently, and anecdotal accounts need to be further explored to continue tracking these populations.

The last endemic and rare species of the day is **Serpentine Aster**, (*Symphotrichum depauperatum*), which is unique to serpentine barrens of the Pennsylvania–Maryland state line. There are 27 occurrences known, entirely in open, sunny areas. Traditionally, serpentine barrens were managed by prescribed burnings, an ancient process which mimics naturally occurring wildfires with a more controlled outcome. Open spaces of serpen-



Serpentine Aster.

tine barrens are typically maintained best by this practice. Knowing that Serpentine Aster dwells best in such open, slightly disturbed sites, one could potentially surmise that they too benefit from this natural form of disturbance, and that it might even be necessary to maintain its populations. Fortunately, some of these areas are protected in the state of Pennsylvania and are actively managed with prescribed burns, such as the protected private lands at the Goat Hill Nature Conservancy. The status of the current populations in Mary-

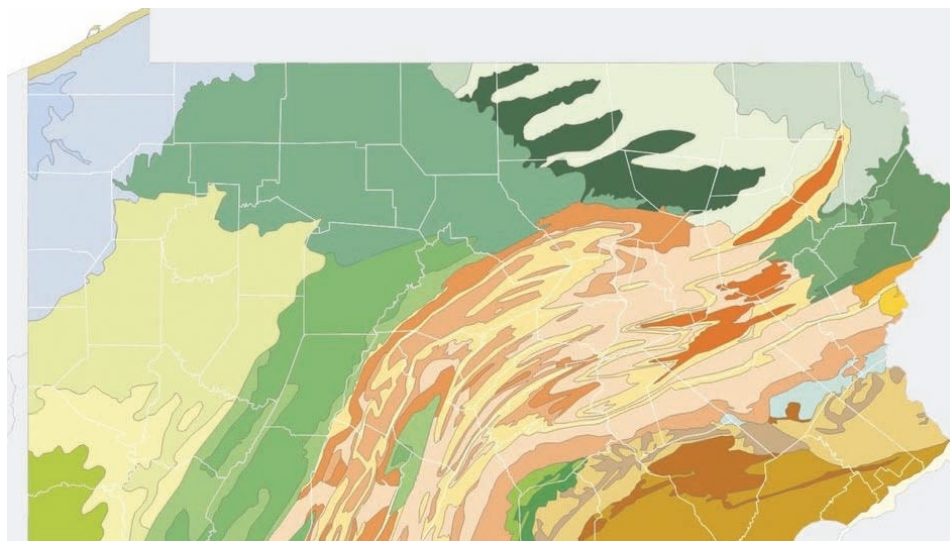
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Rarities

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land is unknown. Primarily, this species is most threatened by housing development, garbage dumping, widening of roads, and recreational activities.

Now, reading all of this, you might be wondering how we can help protect these wonderful and unique species. I know I am! Of course, in whatever way we can, it is important to put in the effort to prevent the spread of invasive species. If this is on your own property, that is fantastic, but if you want to branch even further, looking into volunteering opportunities at your local parks can also have a great impact. We always want to be mindful whenever we are stepping into natural areas, parks, and protected lands. This includes staying on trail, washing your shoes or vehicle when traveling from an area that has known invasive species issues or plant fungus or diseases that could spread, and — always — *Leave no trace*. Stay vigilant for illegal foraging, and report any activity that you notice to your local park officials. Educate



Pennsylvania ecoregions

your loved ones on the importance of these habitats, even if they are not interested in participating, because it is interesting and important stuff! Lastly, land development is everywhere, but we can make a difference in how that development happens. Getting involved with your local planning commission or building and zoning board can have a great impact on the land development trajectory in your area, where you can help advocate for

the preservation of native plant populations or suggest environmental mitigations to plant more trees (*especially* native trees), depending on the amount of disturbance. As always, your participation with the Pennsylvania Native Plant Society supports the common goal of preserving and increasing native plant use in our landscape, for which we thank you.

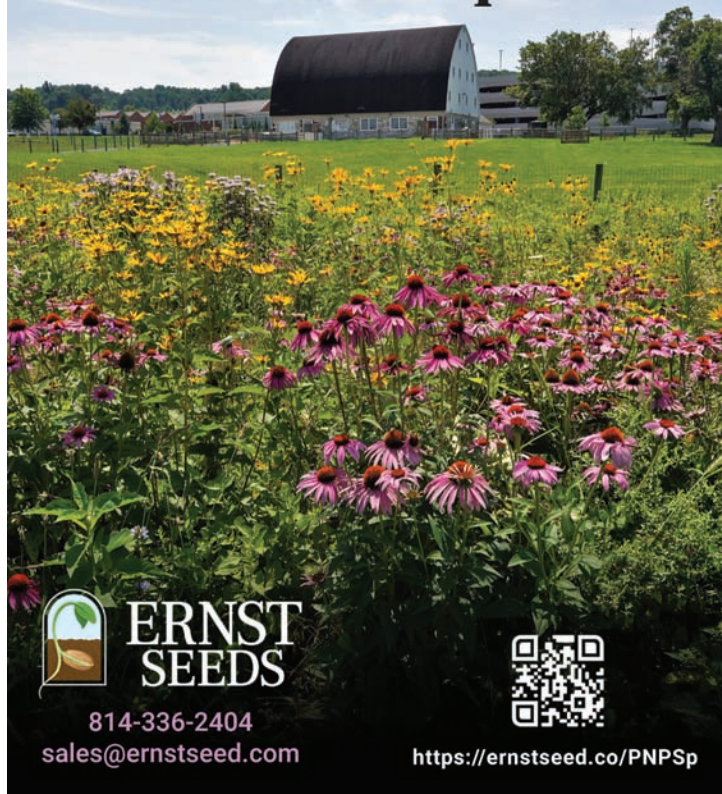
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Grant Winners 2024:

Your Membership Dollars at Work!

Jaci Braund

The Pennsylvania Native Plant Society (PNPS) has conducted an annual grant cycle for several years to encourage Pennsylvanians to get native plants out in their landscapes and local communities. Each year we receive dozens of incredible projects from across the Commonwealth and with the help of our loyal members, we have been able to increase the total grant awards over the years. Since 2020, our budget for the annual grant awards has gone from \$1,000 to \$8,000, which has helped us to go from funding two projects in 2020 to 11 projects in 2024. In addition, the types of projects have evolved over the years. Our general grant is awarded to applicants that wish to install native plants in a public setting, such as a local park or school. In 2023 we introduced Student Projects and invited students of all ages, from

scout troops through college aged to apply. The student projects could include both traditional native plant installs or native plant themed research. In 2024, we invited projects from Justice 40 areas www.whitehouse.gov/-environmentaljustice/justice40/ and we did not limit these projects to just public areas; applicants could apply to install native plants on their properties.

PNPS has funded a total of 21 grants since 2020. Some recent grant winners include Carpenter Green Park in Philadelphia (2024) which received \$730 to update an urban oasis with native plants, turning a "rain pit" into a rain garden. Chris Perrone of the University of Pittsburgh (2023) received \$500 for his project titled "Determining the Effects of a Changing Climate on Phenology of a Dioecious Species: *Lindera benzoin*." PNPS also awarded \$500 to the Coburn Park Welcome Sign Native Planting (2022) which aimed to provide an example of an

ornamental native planting.

The PNPS Grants Committee has already begun planning for our 2025 cycle. We are planning to open the grants early this year to hopefully help winners better prepare for the spring planting season. Please keep an eye out in January 2025 for an announcement about our grants. The PNPS Board greatly appreciates our members who directly help to fund these amazing projects and we look forward to continuing this for many years.

Tips for a Successful Grant Application:

- Plan for specific growing conditions in the project area
- Include a letter of permission from the landowner
- Research approximate costs of plugs, seeds, or any other equipment you may need and include a budget
- Species lists may only include Pennsylvania native plants and plan to include at least 50% straight species (i.e. limit cultivars)
- Research which species may be best for the project's ecoregion

Retention Basin Renovation

We hope to improve the water retention area of our school property by improving plant life. This would be done by removing invasive plants within the area and adding native plants which would be beneficial to the ecosystem as we form a rain garden. We also will be making sure that the plants are suitable for the wet environment of the retention area, which could reduce runoff. Additionally, we plan on adding native flowers to improve the aesthetics of the area. This project would take place in the spring with the help of our environmental club members. We would also take the responsibility of maintaining the plants throughout the year, including the summers. We plan to shrub these areas with Mountain Mint, Buttonbush, Red Osier Dogwood, and Black Elderberry.



Students from Boyertown High School working on their 2023 PNPS Grant Project.



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