The Turk's Cap

The Newsletter of the Delaware Native Plant Society

Spring 2024 Volume 27 No. 1

DNPS Mission Statement:
Founded in March 1998, we are a volunteer-based, publicly supported 501(c)(3) non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.
Discover more at https://delawarenativeplants.org











⦿Letter From Our President ⦿

⦿ Letter From Our Editor ⦿

⦿ Berry Good Summers ⦿

⦿ Reviving Delmarva Bays: Restoring Coastal Plain Seasonal Ponds with Delaware Wild Lands ⦿

⦿ Recipes ⦿

⦿ Field Trip and Other Events ⦿

⦿ Membership ⦿

President: Eric Wahl ⦿ Vice-President: Rick Mickowski ⦿ Treasurer: Eric Zuelke ⦿ Secretary: Emma Johnson

Letter From Our President

Eric Wahl

We hope everyone had an enjoyable winter and you're all preparing for spring to arrive. This issue is all about edible native plants. One of my favorites is serviceberry. Its name has quite the backstory too. It is rumored to be called serviceberry because in the Hudson Valley when spring arrives and the ground begins to thaw, the tree is one of the first to bloom and signals that the ground is once again soft enough to dig for grave sites and services for funerals can begin. Kind of morbid, but interesting nonetheless.

The berries are delicious and make great pies. Here is a recipe: for the pie filling, you will need 7 cups serviceberries, picked over to remove stems and washed, 1 cup sugar, 5 Tbsp tapioca starch, 1/4 tsp salt, a little fresh-grated nutmeg, juice and finely-grated zest from 1 fresh lemon, and 2 Tbsp butter. Mix the sugar and tapioca starch, then add in berries. Toss in salt, nutmeg and zest. Fill a pie shell and then dot the top with butter. Bake as you would any fruit filled pie. Enjoy!

DNPS is also planning future events this year including a field trip. Read on for more information and watch your emails. This year is promising a full plate, so get ready to learn about, plant, and promote native plants. Have a happy Spring!

Stay safe and let's garden together.

Eric Wahl

Connect with the DNPS on Facebook

And explore the DNPS at: https://delawarenativeplants.org/

Photographs in each volume courtesy of David G. Smith at www.delawarewildflowers.org



Pinus virginiana - Virginia pine

The male strobili release spring pollen and the female strobili develop into petite pinecones that splendidly cover the trees and persist for a long time

Letter From Our Editor

Emma Johnson

Delaware's spaces from forested areas to suburban lawns and urban street trees are a complete mix of species native to Delaware and the surrounding region growing alongside non-native plants that have seeded in or been planted with intent by the people who live here. In addition to justifying why we plant the plants that we do in the spaces that we plant them, we also have perceptions in mind of their inherent usefulness. So, what this comes down to, is if you are trying to cultivate native plants in your habitat to improve your section of the ecosystem in Delaware, when foraging or harvesting, here are some ground rules:

For native plants:

- Learn what is and isn't native to our region first! Some native plants look like non-native ones, and vice-versa!
- Don't harvest the whole plant from the roots; allow it to grow back.
- Don't take too much of the plant. Leave most of the leaves, flowers, fruits, and roots, so that the species can continue to proliferate.
- Be thankful for the plant and the ecosystem that you've got.

For non-native plants:

- You're allowed to over-harvest! To control populations of invasive plants and promote a more balanced ecosystem that favors native ones, DO rip out that garlic mustard from the roots, take as many non-native violet flowers as you like for that purple jam, and eat <u>all</u> the mulberries. Pick the wineberries for your pie AND rip out the plants afterwards, leaving the canes in the sun to dry with roots bottoms-up so that the edge habitat that became a monoculture of berry canes can have a fighting chance at being a diverse habitat once again, especially if re-planted with the intent for native species.
- And in both cases, always be aware of safety precautions pertaining to human consumption of the plants– ONLY harvest and consume a plant if you are 100% certain of its identity so that YOU are also safe.

For the most part I let the native plants do their thing, but sometimes it is nice to follow native plant recipes and make something truly special and meaningful from our local habitats with our own hands.

So, stay tuned for more recipes, and follow them mindfully and responsibly!



Acalypha rhomboidea- three-seeded mercury or copperleaf
An oft-overlooked plant that is related to subtropicals used as ornamental annuals in our zone, including other acalypha species and even poinsettias

Berry Good Summers

Pam Crowe

I was about 10 years old (x number of years ago) when my brother, two sisters and I decided to prank our good-natured mailman. We stuffed our mailbox on his rural route with the luxuriant dandelions that grew in our front yard and waited for his reaction the next day.

The joke was on us when he *thanked* us for the dandelions! His wife cooked them and they were delicious, he said. Since then I've learned that many plants not normally grown in gardens are edible, and many, unlike dandelions, are Delaware natives.

Growing up in rural northeastern Pennsylvania, my siblings and I had an early introduction to edible berries native to the Mid-Atlantic States. The fields and woods that surrounded our old farm provided perfect habitat for wild strawberries, blackberries and huckleberries (aka blueberries), all within easy walking distance from home.



Taraxacum officinale
the dandelion - a non-native
but the close-up sheds light on
underapppreciated details, just like the
mailman who saw dandelion in a different light

Strawberries, *Fragaria virginiana*, could be found in the fields and along the roadsides. On June mornings before breakfast, I would run to a nearby strawberry patch and pick handfuls of the sweet, red fruit. Then I'd run home and sprinkle them on my cereal. Oh, so delicious!

Later in the summer, the blackberries, *Rubus allegheniensis*, ripened. It took determination and fortitude to go



Rubus allegheniensis has many lookalikes. Our native is defined by long ribbed canes, 5 leaflets, and fruits with few to no hairs between their little sections called drupelets.

picking blackberries. We quickly learned not to wear short-sleeves or shorts around blackberry thickets. The thorns did not deter us—with thoughts of eating blackberry jam on Mom's homemade bread—from picking the juicy, black berries.

In late summer, the huckleberries, *Vaccinium corymbosum*, ripened. They grew on top of the hill that faced our house. The climb was worth the effort when we arrived at the hilltop bountifully blessed with huckleberries. Dad loved huckleberry pie and was always delighted to see our buckets brimming with the blue berries.

One spring, we took a stab at producing our own maple syrup. Sugar maples, *Acer saccharum*, lined the road in front of our house. Dad drilled holes in the trees and hammered in metal spouts on which we hung Mason jars for collecting the sap that dribbled out. We learned that producing a paltry amount of syrup required boiling prodigious amounts of sap—and our project soon fizzled out.



Vaccinium corymbosum - the highbush blueberry Vaccinium (blueberries) and Gaylussacia (huckleberries) are cousins in the Ericaceae that are commonly both referred to as either common name. They are also called DELICIOUS!

My experiences with edible native plants provided good eating and good memories for me. I wish the same for you!

Fragaria virginiana- strawberry, another native plant that brings fruitful joy The fruit we love is another aggregate fruit- the ovary of the flower develops into the fruit we eat, and the fruits are little single-seeded achenes (complete fruits) on its surface: the "strawberry seeds"



Reviving Delmarva Bays: Restoring Coastal Plain Seasonal Ponds with Delaware Wild Lands

Brigham Whitman, New Castle County Conservation Programs Manager at Delaware Wild Lands

Photographs provided by Brigham Whitman

Taylors Bridge in southern New Castle County perfectly characterizes Delaware's coastal flood plain: a mosaic of agricultural fields interspersed with patches of upland hardwood forest and scattered residential developments, surrounded by the waters of the Delaware Bay with fingers of marsh snaking throughout the adjacent low-lying areas. Aside from the natural beauty of the area, Taylors Bridge is also a highly biodiverse ecosystem, hosting 21% of the State's flora in just 0.36% of the state's land area. Unfortunately, this area is under threat due to the combination of the rising rate of land development and the growing impact of severe weather events and sea level rise. For these reasons, Delaware Wild Lands (DWL), the state's oldest and largest land conservation organization, recently embarked on a major project to restore and connect natural habitats across DWL's Taylors Bridge properties and protect the water quality of the Delaware River watershed. Currently, DWL is focusing on the restoration of a unique type of wetland known as coastal plain seasonal ponds (CPSP).





Left: Heavy machinery was used to excavate the CPSPs to their original size and depth.

Right: The CPSP restoration site features a series of ponds and a wet meadow area that will restore the system of wetlands that once existed here. Coarse woody debris placed around the ponds will kick start this ecosystem with the structure it needs to support many species of wildlife.

CPSPs were once a dominant feature of the natural landscape at Taylors Bridge. Also known as Delmarva Bays, CPSPs are seasonal, freshwater wetlands that are isolated from other water bodies. They follow the natural hydrological cycle of the environment, typically filling up in the spring and drawing down, sometimes completely, in the late summer. Because these natural depressional wetlands are isolated from other water bodies and occasionally dry up, they don't host populations of predatory fish. This creates unique freshwater habitat conditions that support rare wildlife and plant species. Due to the historic land conversion in this area for farming, as well as the recent rise in residential developments, many of these ponds have been lost as they've been ditched, drained, or filled in. Those that remain are threatened by further development and sea level rise.



Above: This pond sits where a corn field stood less than a year ago. Over time this site will become a freshwater wetland ecosystem, a natural community that is threatened across Delaware.

Below: American featherfoil (Hottonia inflata) is a rare aquatic plant that can be found along the edges of CPSPs. This plant has been documented in Taylors Bridge, but its current habitat is threatened by sea level rise.



One remarkable plant that is a specialist in CPSPs is American featherfoil (*Hottonia inflata*). This unique member of the primrose family is an aquatic herb that has a flowering body that floats on the surface of the water thanks to multiple hollow, inflated stems. At the base of the stems are delicate, wispy leaves that resemble feathers that stay submerged in the water. The main body of the plant is rooted to the bottom of the pond by a long, thin stem that allows the plant to rise and fall with the changing water levels. Mature seeds that drop and sink to the bottom of the pond in the spring will germinate when the pond dries out in the late summer. During the next spring when the water levels rise again, the plant will grow a stem to reach the surface of the water and produce flowers. This plant and many more will be protected through DWL's restoration of the local CPSP ecosystem.

The primary restoration work in Taylors Bridge will be coming to a close this spring. The ponds at the site have been excavated to their original size and depth, as

indicated by the hydric soils identified through historic aerial imagery and sub-surface soil investigations. Coarse woody debris (tree trunks, limbs, and stumps) have been placed around the edges of the ponds to provide necessary habitat components so pollinator insects, birds, and amphibians can utilize the ponds effectively. Soon, the former agricultural fields surrounding the ponds will be planted with 39,000 trees to provide the natural forest cover that typically surrounds CPSPs. It will take decades for these forests and wetlands to mature, but as DWL guides this ecological succession these ponds and their associated flora and fauna will restore a piece of Delaware's natural history and bring the landscape back to life.

This project is being funded by the National Fish and Wildlife Federation, the State of Delaware, and the Delmarva Sustainable Communities Grant Program. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or the National Fish and Wildlife Foundation and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or the National Fish and Wildlife Foundation or its funding sources.

Amorpha fruticosa- false indigo shrub
A colony-forming legume that makes a dense, semi-open native hedge
Andrenid bees are specialist pollinators of Amorpha



Left: Lindera benzoin
Right: Morella cerifera
Both April flowers
Keep reading to find out why they're pictured below!





Recipes

Everything is awakening- this spring I had the pleasure of drinking (yes drinking) a bit of red maple syrup at a regional maple sugaring (sap-tapping) demonstration. Around this time of year you can find spicebush flowering in our forests and waxmyrtle by the coast still holding on to the last of its fruits. Here we reintroduce two recipes- one for the taste buds and one for the "scentses."

"Spicecream" - *Lindera benzoin* ice cream (Vol. 20:2, Fall 2017 Reprint)

1 cup whole or low fat milk
2 teaspoons freshly picked chopped spicebush twigs
2 cups heavy cream
½ cup sour cream
2/3 cup sugar
2 tablespoons tapioca syrup or corn syrup

Heat milk over medium heat, stirring often until bubbling around the edges and beginning to steam. Remove from heat and add the chopped twigs. Cover and let steep for 30 minutes. Strain milk and discard twigs. Add milk to remaining ingredients and blend in food processor until smooth. Chill in fridge for 3 hours or overnight. Churn ice cream maker according to directions. Transfer to a 1 quart freezer container and put into freezer. Then enjoy!

Morella (bayberry) wax candles (Vol. 12: 4, Winter 2009 Reprint)

Bayberry wax is thicker and more brittle than typical wax and is greenish in color with a natural sweet fragrance.
Pick bayberries, removing any leaves and twigs – estimates vary, but about ½ pound of berries (8oz) produces up to 2oz of wax, roughly the size of a tea light or two. The original recipe used 4 or more pounds of berries to make 1 pound of wax.
Add berries to a pot that you don't mind getting messy, fill with water about 2 inches above the berries and bring to boil. Bubble 5-6 minutes, remove from heat until completely cool (overnight at most). The wax will separate and solidify on top.
Save the wax, discard the remainder. Break wax into chunks and melt in a metal coffee can atop a pan of water, heat slowly and stir consistently. Strain hot wax through a paper towel or cheesecloth atop a second coffee can, draped to dip in the middle and to be able to be held firmly from the outside (try a rubber band).
The original recipe used emptied walnut shells as candle molds: dip a long cotton wick into hot wax and stretch it out to dry, Cut wick into 1 ¼ inch lengths, bend 1/3 of the wick and dip in warm wax, press into the center of your candle container (walnut or other). You can also try dipping the wicks repeatedly to make small taper candles. Re-heat the rest of the wax as needed and pour the hot wax to fill each candle.

Field Trip!

Eric Zuelke, DNPS Projects Manager

Please join us on Friday, 31 May 2024 for a field trip to the Octoraro Native Plant Nursery. We will be arriving to the site at 10 AM and will have a guided tour of both the Ticklewood facility where they do seed germination, and the Octoraro facility where they do long-term growing of the plants. This will be a great educational opportunity to learn how a large-scale native plant nursery operates.

Afterwards we will go to a local restaurant for lunch for those interested.

We will have carpool transportation available from both Dover and the Planet Fitness location across from the New Castle County airport.

We will require registration so the facilities know how many people will be attending. Please contact Eric at ezuelke@juno.com by Monday, 6 May 2024 to register.

More details will be provided in a separate email closer to the date of the trip.

You can learn more about the nursery here: https://www.octoraro.com/





Symplocarpus foetidus - skunk cabbage
An up-close image of the spadix of this arum family member

Events and More



- Wilmington's Northeast Rising is mitigating the negative effects of climate change through community involvement and outreach programming and connecting organizations to help the communities that need it the most. It's a great organization and they regularly announce events, speakers, and efforts to make Wilmington and the planet a better place to live, like with this Clean Stream Champion Rain barrel program! Check them out!
- Mt. Cuba Center Wildflower Weekend April 19th-21st
- University of Delaware Botanic Gardens Plant Sale April 24th - 27th
- Ag Day April 27th
- Delaware Nature Society Programs and Events and spring Native Plant Sale May 3rd-4th
- Shad Fest May 19th
- Third Mondays Monthly 6:15-7:45PM Green Drinks Online Virtual Meeting
- Delaware Cooperative Extension & Master Gardener Workshops -Live & Zoom
- Mt. Cuba Center Classes

Discover the new Delaware Habitat Guardians
Become a Delaware Master Gardener
Become a Delaware Master Naturalist

This year the National Garden Bureau has announced the "Year of the Lily"

Learn more about our Turk's cap lily, other native lilies, and their cousins worldwide

Our Vice-President recommends
"Climate-Wise Landscaping, Practical Actions for a Sustainable Future"
A book with clear solutions to ecological problems, "and a section dedicated to the use of native plants"- *Rick Mickowski*

Membership Application

Member Benefits:

Quarterly "The Turk's Cap" Newsletter

Tips and tricks on gardening and landscaping with native plants

Annual workshop, symposium, project work days, and field trips!

⊙ Full-time Student $10 ⊙

⊙ Individual $15 ⊙

⊙ Family $18 ⊙

⊙ Contributing $50 ⊙

⊙ Business $100 ⊙

⊙ Lifetime $500 ⊙

Membership is for 12 months, afterwhich we send you a renewal notice in the mail.

MEMBER INFORMATION

Name:_____

Organization Name:_____

Full mailing address:_____

Phone number:_____

Email address:_____

Please make checks payable to:

Delaware Native Plant Society

P.O. Box 369

Dover, DE 19903

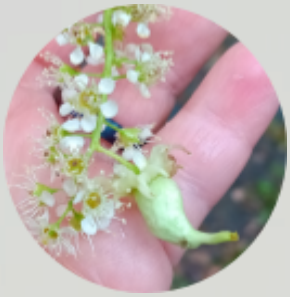
The Turk's Cap

The Newsletter of the Delaware Native Plant Society

Summer 2024 Volume 27 No. 2

DNPS Mission Statement:
Founded in March 1998, we are a volunteer-based, publicly supported 501(c)(3) non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.
Discover more at https://delawarenativeplants.org









⦿Letter From Our President ⦿

⦿ Ticklewood Field Trip ⦿

⦿ People's Plants⦿

⦿ *Heirochloe odorata* ⦿

⦿ Membership ⦿

President: Eric Wahl ⦿ Vice-President: Rick Mickowski ⦿ Treasurer: Eric Zuelke ⦿ Secretary: Emma Johnson

Letter From Our President

Eric Wahl

Dear Members,

Welcome to summer and the early heat wave. Hopefully this is not a sign for the rest of summer, but I'm afraid we should probably get used to hotter days and warmer nights earlier in the season. This is making our USDA plants zones shift. I recently spoke about our plant zones moving further north, and southern plants typically found outside of Delaware can now overwinter here. In fact, our coastal areas including Lewes and Rehoboth are now considered Zone 8a.

We can still help our situation by planting native plants as they are more resilient and acclimated to our local microclimates. Consider doing this whether you live along the coast or more inland, south of the canal or north of the canal. Planting native plants helps in every location.

Stay cool and go native!

Eric Wahl, president.

Connect with the DNPS on Facebook

And explore the DNPS at: https://delawarenativeplants.org/

Photographs in each volume courtesy of David G. Smith at www.delawarewildflowers.org

Editor's note: this year's theme is edible plants- a reminder that other organisms rely on plants too! To the benefit or detriment of the plants.
Callirhytis lays eggs in host plants white oak, swamp white oak and chestnut oak, forming cotton-ball -like galls as the injection of the eggs and chemicals by the wasp agitate the plant cells into forming the perfect home for the eggs until they hatch. This gall is one of two kinds formed by this wasp species.



Callirhytis seminator - wool-sower gall wasp

Ticklewood Field Trip

Emma Johnson

Photos courtesy of Rick Mickowski and Emma Johnson

Eric, Rick, Pam, Becky, Bob and myself had an excellent trip to Octoraro Native Plant Nursery where we received a tour from Jim MacKenzie and Rhianna Guerin, sharing how they do what they do and where all of the plants they produce eventually go. We toured their Ticklewood location, one of two current locations the nursery operates. Ticklewood is their primary propagation location where they start their seedlings. Plants are grown on to larger sizes at both this location and Octoraro's second site in Lancaster County. Jim shared the history of the nursery with us- originally, the Ticklewood location was part of J. Franklin Styers Nursery which owned a large sect of land in that area. Paul Tickle bought a portion of the land, named it Ticklewood, and grew large ball and burlap trees for large landscapes. An Amish gentleman bought out most of the land, and the remaining eight acres became Octoraro's Ticklewood site as it operates today. In 1988 Mark Gutshall of Land Studies, an environmental consulting and watershed planning company in Lititz, PA, rented the land to start plant material that he and his wife used in their company's environmental restoration projects. In the 1990's, Jim became co-owner of Octoraro. At the start, they worked mostly with herbaceous plants, but shifted production to woodies as the demand from federal restoration projects and other purchasers shifted to riparian buffers and reforestation. By 2004 Octoraro was entirely focused on woody plant production.



When asked about Jim's perspective on native plants, he replied with what I like to call a "pick your battles" sort of answer. Although his business does a stellar job of keeping to regional seed collection locations, he "can't control where these plants go," and they may end up outside of our region. "What I am most concerned about," Jim says, "is that they [big box stores] stop selling invasives." Jim believes in cutting invasive plants out of the market and accepts the compromise of stores selling non-invasive plants even if they are not from the region, and is also accepting of nativars as good "gateway" plants to inspire further connection with native plants. Delaware, Maryland and Pennsylvania have recently begun banning sales of invasive plants, but it is difficult to control what is already in the landscape unless people are made aware of the plants growing in their gardens. Octoraro Nursery focuses on producing native plants from the near eco-regions.

Jim says water quality projects drive the work, especially projects along the Chesapeake and Delaware Bay, with the Chesapeake Bay Foundation contracting out about 150,000 plants a year for restoration efforts. Octoraro sells directly to these organizations- mostly non-profits, sometimes to golf courses and other businesses in need of landscaping, but also to specialty retail nurseries like Redbud Native Plant Nursery and Edge of the Woods that sell to the average gardener for backyard gardening with native plants. In fact, compared to when Octoraro began, the consumer base has expanded dramatically of those non-profits and retailers because of the ever-rising awareness and popularity of planting native plants in our region. Jim noted "the Tallamy effect" of native plant promotion over the past thirty years or so, and the COVID effect- people who never even thought about plants before had nothing else to do but garden, and so newly interested gardeners joined the native plant party.





At the Ticklewood site, we started our tour with the seeds. The nursery employees harvest seeds using a variety of tools - we were shown acorn pickers and picker-uppers- and also partners with educational gardens, individual property owners, and a variety of organizations to obtain large amounts of seeds of many different native shrub and tree species. They buy a lot of their soil and potting material from local and regional vendors, and do their best to wash and recycle pots and trays and to compost soil when possible. We saw in their main building and other workspaces the ways that the nursery set up tasks at waist-height for maximizing ergonomic work.







We moved from seed collection to sowing: they had a "bale-buster" to open bales of ProMix soil substrate and a tray-filling machine to make the work faster. Seeds are sometimes direct-sown almost as soon as they are collected like maple (*Acer*) and

birch (*Betula*) collected in the spring, and white oak (*Quercus alba*) and its close relatives collected and sown in the fall, but often seeds are fall-collected and stored for at least three months to simulate overwintering (cold stratification). "Sycamore can persist into February," and is collected mid-winter. Seeds are put in labeled plastic bags in Tupperware bins and mixed in with perlite, a porous white mineral used in a lot of potting mixes because of its ability to hold water in the pores and between the seeds. It is light-weight and prevents fungus from growing so the seeds do not decay. In their fridges they had seeds of hickory (*Carya*), buttonbush (*Cephalanthus*), redbud (*Cercis*), dogwood (*Cornus*), and oak (*Quercus*). In their large walk-in cooler they had more, as well as a few dormant bareroot saplings. When sowing seed, they also test the viability to know how many they expect to germinate in each batch. The "float test" is pretty reliable to determine if a seed is not viable- if you put acorns in water and they float, they are less dense than the water indicating there is no actively developing embryo (developing baby plant, much like the egg white of an egg) and endosperm (nutritive tissue, like an egg yolk) inside. To get a more accurate percentage, they use the "cut test," working with such large batches they will sacrifice 25 seeds from each batch, determining what percent has active tissue and what does not, and multiplying that percentage by the total number of seeds sown to find the expected germination rate. They are working with "hundreds of pounds" of seeds, and Rhianna keeps good records of everything that they grow. Some seeds require a change of pace in their stratification method - needing to be exposed to cold then warmth then cold again, so Rhianna brings them in to her office for warmth before returning them to the cooler, keeping track of all the seeds in a database to determine when they should be taken out of the cold at last and planted. To clean soft fruits from small elderberry to pretty big pawpaw, the team uses a Dybvig seed cleaner. For tougher fruits like redbud follicles and other legume pods they use their older, seasoned seed cleaner. They work with nursery software that is able to adapt to their specific recordkeeping needs.



A centralized boiler room runs bottom heat to all of the adjacent greenhouses and hoop houses, and a well house runs irrigation, "fertigation" (irrigation with fertilizer added,) and has a compost tea unit. Jim and Rhianna reported fertilizing with compost tea has been the primary method of keeping plants healthy and helping to restore plant health after dieback and disease issues, and they are careful never to over-fertilize like a lot of greenhouse operations do. I saw some of the healthiest-looking plants with the most negligible problems that other greenhouse operations - in contrast - strongly struggle with, but that regular infrequent compost tea applications keep nicely under control. Rhianna also has a batch of aphids growing on wheatgrass in a controlled section of the greenhouse for Integrated Pest Management (IPM) purposes, cultivating the visitation of beneficial wasps to control aphids throughout the greenhouse and keep their population in check.





The boiler room runs tubes to smaller tubing that sits beneath benches and foot-tall raised beds of sand where rows of seeds are sown in the first hoop-house and outdoor seed starting areas. The beds begin with two and a half inches of pea gravel just

above the heating tubing, with basic aluminum flashing topped with a half inch of pea gravel, two layers of groundcloth fabric, and finally seven inches of sand on top- providing plenty of room for seedlings to germinate and emerge, and making it easy to lift seedlings out for transplanting with hand trowels when ready. The hoop houses are kept at a pleasant 70 degrees Fahrenheit, managed by greenhouse computer systems attached to temperature and wind gauge controls. Two types of overhead irrigation nozzles are used depending on plant size and bed width. Plants we observed growing through their greenhouses included tags for regionally-sourced native plants labeled A*cer, Amelanchier laevis, Amorpha fruticosa, Asimina triloba, Betula lenta, Carya, Celtis tenuifolia, Corylus americana, Diospyros virginiana, Hydrangea arborescens, Hydrangea quercifolia, Lindera, Magnolia macrophylla, Magnolia virginiana, Nyssa, Photinia pyrifolia, Prunus, Quercus phellos, Robinia pseudoacacia, Sambucus, Sorbus americana, Symphoricarpos,* and more. They were already popped up and filling out their root spaces in the sand beds and 50-cell trays. Given overhead mist, these seedlings thrive in what looks to be an effortless effort that is all thanks to the team's hard work.





When asked what her favorite parts of the job are, Rhianna replied she enjoys being outside in nature every day touching plants and bugs- she is a problem-solver keeping the best interests of the plants in mind. At the beginning of the process, the growers know the exact location each of their seeds come from. By the end, only special orders are kept separate and the rest are combined. Working with a database, one day they hope to keep track of provenance- the original source location of the plants- from start to finish so that, for example, customers in Delaware can say for certain that they received plants from a Delaware seed source, and customers in Pennsylvania and Maryland can each say the same. They have seed collection partnerships with institutions like Mt. Cuba Center and private seed collectors. They try to collect seed from "between the rivers"- the Susquehanna and Delaware. But to fill massive orders, sometimes the team must also take cuttings (mostly willow species). Generally, cuttings are frowned upon in the restoration sector- because duplicating the same exact genetic individuals reduces the diversity of plants in a population and increases the likelihood that they will all be susceptible to the same disease and pest pressures and issues with growing conditions. So, when a greenhouse full of shrubs is trimmed, the hundreds of tips are stuck as cuttings- duplicating each plant only once per large trimming session and making sure that no plant is singled out to be the sole source of cuttings, thus avoiding the major issues associated with monocultural crop production.





Seedlings must be well-rooted and "hardened off" off-mist for ten days before being transferred to larger sizes- they are moved as saplings to "tublings" - long tubes that help their tap roots grow well so that they can be established in pots without curved roots or being pot bound. Often, they are treated with an agent called "Bio-plex" that reduces transplant shock. Octoraro nursery does not sell tublings to customers- the plants have to be transplanted to larger sizes and sold in two, three, five, and seven-gallon sizes, and they sell a LOT of plants. An estimated 45,000 oaks per year are provided to customers, Jim says, and they sell more than just oaks. Octoraro grows between 320K to 350K sellable woody plants annually (does not include propagation plants). They even partner with educational institutions and donate plants to educational causes. The goal is to produce plants within a single calendar year from sowing to sale, though some species take longer. In the hoop houses in the larger tubling size we saw some very happy Ilex verticillata. The larger plants can be found in full sun and under shade structures outside- *Aesculus parviflora, Cladrastis kentukea, Sassafras albidum* and *Viburnum lentago* to name a few - these were absolutely thriving, and Jim says they are aiming for more diversity in native plant species they produce as the demand for variety increases.



This flower gall on Prunus serotina, black cherry, attributed to Taphrina- an ascomycete fungus. Many species of Taphrina and similar fungi create galls that resemble insect galls. This somewhat resembles witch hazel cone gall that aphids create on Hamamelis, and another Taphrina gall of alder which forms floral and fruit galls called languets. Photo by Emma Johnson.



Taphrina species languet gall on Prunus serotina

People's Plants

Emma Johnson

Sue Bara was my camp counselor years ago at Flint Woods Preserve, a private tract of land that graciously let the Delaware Nature Society have summer camp somewhere around 2010, and I very much enjoyed volunteering as a Counselor-in-training. So it was to my surprise when Bill McAvoy sent a thorough and vast list of medicinal plants by Mrs. Bara in response to the prompt of edible and medicinal plants for this year's newsletter theme- and although we haven't spoken in years, it reading the words of a former counselor and teacher is like receiving a hug from an old friend. Below you will find a much-abridged version of the list, of only the uncommon and rare plants native to Delaware and the surrounding region that have been historically used to treat ailments and give sustenance to the original Algonquian people of the region, and to the settlers that displaced them. A few of these plants and their worldwide relatives are used today in herbal medicine across people and cultures. You will notice that most of these plants are only used in very small amounts or in moderation- as too much of any one thing is often much too much and compromises the safety of using a remedy.

SCIENTIFIC NAME	PART USED	Internal Method	Internal Uses	External Method	External Uses	Side Effects
Acer saccharum var. *saccharum*	Bark	Tea	Upper respiratory, gastrointestinal, genitourinary inflammation			
Achillea gracilis	Flower, Leaf	Tea, tincture	Early-stage viruses like colds or flu and gut disorders like IBS, diverticulitis, bleeding in stool, also used for nosebleeds, bleeding gums and UTIs	Topical poultice	Sprains, strains, cuts, rashes, insect bites	
Actaea racemosa	Root	Tea, tincture	Musle pain and spasms such as fibromyalgia, back pain, spastic bladder, restless leg syndrom, also for reproductive pain issues, menopausal anxiety and depression symptoms, some relief from hot flashes and effective for hormonal depression			

Adiantum pedatum	Leaf	Tea	Respiratory tract inflammation like bronchitis, irritating coughs, hoarseness			
Agrimonia gryposepala, A. parviflora, A. pubescens and A. striata	Abovegr ound parts	Tea, tincture	UTI irritation with burning, poor bladder control, urinary frequency, impaired fat digestion, irritated bile ducts - used in combination with other herbs	Topically	Inhibit herpes simplex virus and minor skin inflammations	
Alnus serrulata	Bark	Tea / mouthw ash	Acne, skin irritation, ulcers, gastritis, canker sores, mouth and throat inflammation	Topical tincture	Hemorrhoids, poison ivy rash	
Angelica atropurpurea	Dried root, Seed	Tea, tincture	Enhance digestion, treating belching, gas, nausea, intestinal spasms, arthritis, gout, gouty arthritis, stimulates menses, and inhibits bacterial and viral infections	Topically/ mouthwash	Rheumatic pains, wet compress for bruises/ gargle for inflamed throat and mouth	
Aralia racemosa	Root	Tea/tinc ture	Upper respiratory inflammation with excess mucus, arthritis, gout, pelvic stagnation, stimulate labor	Topical poultice or liniment	Topically for sprains strains bruises decubitus ulcers and cuts	
Asarum canadense and A. reflexum	Root	Tea	Dyspepsia with flatulence and cramps, minor inflammation of upper respiratory tract			
Asclepias syriaca	Root	Internall y	Asthma, dropsy, venereal disease	Topically	Treats warts	Contains toxic cardiac glycosides, only consumed in small doses
Asclepias tuberosa var. *tuberosa*	Root	Internall y	Cardiac insufficiency, respiratory conditions like bronchitis and influenza	Topically	Bruises and swellings	Contains toxic cardiac glycosides, only consumed in small doses

Baptisia tinctoria	Leaf, Root	Fresh; Tea/tincture	Heal necrotic tissue, putrid sore throat, tonsillitis	Topical wash	Bedsores, poorly healing wounds	mildly toxic, large doses cause nausea, vomiting, diarrhea, gastroenteritis
Benthamidia florida	Bark	Tea, tincture	Loss of appetite and dyspepsia, chronic diarrhea, fevers, minor fatigue, has been used as a substitute of cinchona bark for malaria	Topically/ sitz bath/ bath	Wounds, ulcers	
Betula lenta var. *lenta*	Fresh or recently dried: Bark, Leaf, Essential Oil	Tea	UTIs with pain and inflammation, muscle pain, arthritis, minor headaches, hot tea used to lower fevers	Diluted essential oil/ Chewing twigs	Diluted essential oil applied topically to relieve muscle pain, arthritis, minor headaches / twigs used as chewing stick for dental health	
Caulophyllum thalictroides	Rhizome	Tea, tincture	Ovarian and uterine pain, inflammatory arthritis (especially of small joints), testicular pain, stimulate labor			caution for patients with heart disease, contraindicated for pregnancy and lactation
Chamaelirium luteum	Root	Tea, tincture, tablet	Infertility due to minor hormone imbalance, lower back and sacral pain, dysmenorrhea, iritable bladder, menopausal mood swings, pelvic congestion, uterine prolapse, and treat BPH in men when used with other herbs			
Chelone glabra	Aboveground parts	Tea, tincture	Dyspepsia, flatulence, inability to digest fatty foods, to stimulate liver function, and traditionally used for skin problems exacerbated by fat ingestion		Aboveground parts	

Chimaphila umbellata var. *cisatlantica*	Leaf	Tea, tincture	UTIs with burning urine, benign prostatic hyperplasia, gout, gouty arthritis, skin problems, arthralgias	Topical wash/ fresh poultice	Minor skin inflammation and wounds with swelling / counter-irritant for rheumatic pains	
Chionanthus virginicus	Use fresh: Root bark	Tea, tincture	Sluggish gallbladder, jaundice, liver pain and fullness, acute pancreatitis not from alcoholism, bilious headache with pain behind eyes, red eyes, ears	Topical wash	Topical wound wash	diuretic and emetic in large doses
Collinsonia canadensis	Flower, Leaf, Root	Tea, tincture	Venous congestion with fullness in throat, larynx, prostate, gastrointestinal tract, rectum, and for irritation of vocal chords for constant speaking or singing, as well as laryngitis	Topical poultice	Bruises, small cuts, boils	
Cypripedium parviflorum var. *pubescens*	Root	Tea, tincture	Nervousness, anxiety, epilepsy, neuralgic pain, headaches			
Dioscorea villosa	Root	Tea, tincture	gall bladder spasms, gas, gastrointestinal pain or spasms, mild muscle pain relief	Topical wash	Minor skin irritation	
Drosera intermedia and D. rotundifolia	Whole Plant	Tea, tincture	Dry, explosive, ticklish coughs, whooping cough, bronchitis	Topically	Wounds, freckles, warts, corns	
Eclipta prostrata	Abovegr ound parts	Tea, tincture	Liver and gallbladder disorders, dyspepsia, intestinal worms, respiratory disorders, rheumatic conditions	Topical poultice or wash/ sitz bath or wash	Minor wounds, burns, fungal infections / vulvovaginitis	
Equisetum arvense	Sterile branche d stems	Tea, tablet/ tincture	Strengthen skin, hair, nails, teeth, bones, reduce urinary tract inflammation, respiratory tract inflammation with coughing blood			

Erigeron canadensis	Abovegr ound parts	Tea	Chronic gastrointestinal, upper respiratory, genitourinary tract inflammation	Topically	Skin inflammation, wounds, ulcers, hemorrhoids	
Eryngium aquaticum	Whole Plant	Tea, tincture	Inflammation of: bowels such as mucous colitis, diarrhea and IBS, and of bladder and urethra, and upper respiratory tract			
Euonymus atropurpureus	Root	Tea	Reduce liver congestion, enhance digestion, jaundice, gallbladder problems, sluggish bowels, atopic eczema			contraindicated for individuals on cardiac glycosides and in cases of biliary obstruction
Eupatorium perfoliatum	Flower, Leaf	Tea, tincture	Colds and flu with chills, muscle pain, achy and hot bones, chicken pox, measles, dengue fever, sluggish bowels	Topically	Was used by Native Americans as a poultice or bath for arthritis pain, healing fractures, treating snakebites	Emetic in large doses, not for use in pregnancy, may contain small amounts of hepatotoxic pyrrolizine alkaloids
Euthamia caroliniana	Abovegr ound parts	Tea, tincture	Cystitis, gastrointestinal and upper-respiratory infections, anti-inflammatory for gout and gouty arthritis	Topical wash/ mouthwash	Minor wounds/ gargle for thrush, sore throat, periodontal disease	
Eutrochium purpureum var. *purpureum*	Leaf, Root	Tea, tincture	For urinary pain or calculi, gout, gouty arthritis/ leaves are a diaphoretic for treating influenza with chills, muscle pain, headache and sweating			Not for use during pregnancy, lactation, or for young children, contains unsaturated pyrrolizine alkaloids
Galium aparine	Abovegr ound parts	Tea, tincture	Genitourinary tract inflammation, lymph swelling, skin conditions like	Topical wash	Minor skin inflammation,	

			acne, dermatitis, eczema, and for gout		poison ivy, bruises, sprains	
Gaultheria procumbens	Oil			Topically	Rheumatic and neuralgic pain	Contains salicylates absorbed quickly through skin
Geranium maculatum	Root	Tea, tincture, tablet	Gastrointestinal inflammation, gastric ulcers, stomach cancer with bleeding, diarrhea	Mouthwash / sinus rinse/ sitz bath	Topical for minor skin inflammation, burns, wounds, ulcers, gargle for mouth and throat inflammation, bleeding gums, canker sores, sinus rinse for nosebleeds, sitz bath for hemorrhoids	
Hamamelis virginiana var. *virginiana*	Bark, Leaf	Tea, tincture	Rectal, post-partum, gastrointestinal tract bleeding	Topically/ sitz bath/ bath	Sprains, strains, contusions, bruises, wounds, burns / sitz bath for hemorrhoids / bath for varicose veins, sunburn, poison ivy	
Humulus americanus	Strobiles	Tea, tincture, capsules	Nervousness, anxiety, tension, insomnia, spasmodic conditions of gastrointestinal and genitourinary tracts, stress and irritability from PMS or menopause	Topical poultice / bath	Poultice for infected wounds, boils, bruises, neuralgia, warm bath for sore muscles, insomnia, stress	
Hydrangea arborescens	Root bark	Tea, tincture	Urinary pain and burning, urinary calculi, interstitial cystitis, kidney or urethral pain, and benign prostatic hyperplasia	Topical wash/ mouthwash	Wash for wounds and ulcers/ gargle for mouth and throat inflammation	

Hydrastis canadensis	Root	Tea, tablet/tincture	Mucous membrane infections, strep, digestive tract infection/ bedsores/	Topical saline rinse/ sitz bath / insertion	Sinusitis/ episiotomy incisions, rectal fissures, cervicitis, cervical dysplasia, candidiasis, vaginosis, chlamydia	
Impatiens capensis and I. pallida	Fresh abovegr ound parts			Topical poultice	Wounds, insect stings and bites, preventative for poison ivy rash immediately after exposure	
Iris versicolor	Rhizome	Tea, tincture	Stimulates thyroid function, lymph circulation, bile secretion, bowel function, and chronic skin conditions like eczema and psoriasis	Topical poultice	Staph infections, boils, painful sores	Internally used in low doses, externally use fresh poultice
Juglans cinerea	Root bark	Tea, tincture	Stool softener, skin conditions caused by bowel stagnation like eczema, acne, impetigo	Topical wash	Skin inflammation, eczema, wounds, poultice for bruises, sprains, rheumatic pains	
Juglans nigra	Use fresh: Bark, Hulls of Fruit, Leaf	Tea, tincture		Topical wash	Fungal infections and skin conditions	
Juniperus communis var. *depressa*	Cone	Tea	Dyspepsia, upper respiratory inflammation, warming digestive stimulant	Mouthwash / topical tincture	Mouthwash for bad breath/ infusion in oil as warming massage for arthritis pain, sciatica, lumbago	irritating diuretic
Juniperus virginiana	Bark, Oils	Bark chip tea	Upper respiratory inflammation, genitourinary infection, rheumatism, dysmenorrhea, amenorrhea	Bark chip ointment/ topical ointment of oil	Minor skin inflammation, scabies, genital warts/ oil is a counter-irritant and rubefacient for	do not use during pregnancy or lactation

					neuralgic and rheumatic symptoms	
Lemna minor	Whole Plant	Internally	Upper respiratory inflammation in combination with other herbs, anti-inflammatory for rheumatic conditions	Topically	Rheumatic pain and carbuncles	
Lindera benzoin	Bark, Leaf, Root	Tea, tincture	Colds, croup, dyspepsia, arthritis	Inhaled steam/ bath	Inhaled steam for clogged sinuses, bath for arthritis pain	
Lobelia inflata	Aboveground parts, Seed oil	Tea, tincture, or vinegar extract	Spastic conditions of upper respiratory tract like bronchitis, spasmodic asthma, pleurisy, hiccoughs, whooping cough, and used for epilepsy and to reduce nicotine cravings	Topical massage oil	Whiplash, muscle spasms, torticollis	Overdose can cause nausea, vomiting, dizziness, headache, dyspnea, gastric irritation
Lycopus americanus and L. virginicus	Fresh aboveground parts	Tincture	Mild hyperthyroidism and associated symptoms of tachycardia, palpitations and anxiety, also used for heart arrhythmias during menopause and for coughing with blood			
Mitchella repens	Aboveground parts	Tea, tincture	Uterine tonic for prolapse and perimenopausal dysfunctional bleeding, prevents miscarriage during last two weeks of pregnancy to promote efficient labor	Topically	Small cuts and wounds	
Monarda fistulosa var. *fistulosa and M. punctata* var. *punctata*	Leaf, Flower	Tea, tincture	Colds, fevers, intestinal viruses, tension headaches, genitourinary tract inflammation	Topically / mouthwash	Minor skin inflammation, itching, hemorrhoids, rheumatic pains, yeast infections, sore muscles/ gargle for gingivitis, thrush, sore throats	

Monotropa uniflora	Abovegr ound parts, Root	Tea, tincture	Pain relief, spasmodic headaches, sciatica, neuralgia, nervousness, cold and feverish states	Topical wash	Wounds, sores, warts	
Morella cerifera and M. pensylvanica	Root bark	Tea, tincture	Sinusitis, post-nasal drip, head colds, diarrhea, colitis	Topically / mouthwash / sitz bath	Bed sores, leaf infusion for fungal infections / periodontal disease, cold sores / hemorrhoids and episiotomy incisions	
Oenothera biennis	Abovegr ound parts, Flower, Root, Seed oil	Tea, tincture / seed oil	Spastic colon, IBS, bladder spasms, urinary frequency, irritative coughs with excess mucous / PMS and menopause symptoms and autoimmune diseases like MS, scleroderma, rheumatoid arthritis, eczema, allergic asthma	Ointment	Eczema, cradle cap, psoriasis	
Panax quinquefolius	Root	Tea, tincture	Increase stress resistance, reduce fatigue and depletion of adrenal system, improve endocrine, immune and nervous system function			
Phytolacca americana	Fruit, Root	Tincture	For enlarged lymph nodes, stimulate liver lymph and bowel function and for eczema	Topically	Kills scabies mites	Overdose can cause nausea, vomiting, diarrhea, headache and gastritis
Podophyllum peltatum	Use dried, purified: Root extract			Topically	Plantar and venereal warts	can irritate other tissues
Polygonatum biflorum var. *biflorum*	Rhizome	Tea, tincture	Joint, cartilage, disc injuries, also for dry coughs, dry constipation, gastritis, mild congestive heart failure	Topically	Minor skin inflammation, bruises, hemorrhoids, boils	

Prunus serotina var. *serotina*	Dried inner bark	Tea, tincture	Cough suppression, upper respiratory inflammation, gastrointestinal inflammation and spasms like hiatal hernia, hiccoughs, diarrhea, cramps			Bark must be thoroughly dried due to cyanide compounds
Pseudognaphalium obtusifolium	Flower, Leaf	Internally	Inflammation and spasms of respiratory and gastrointestinal tracts and for painful menses	Topical wash / mouthwash / sitz bath or irrigation	Wash for minor skin wounds/ gargle for inflamed mouth and throat/ sitz bath for vaginal leukorrhea and vulvovaginitis	
Quercus alba	Bark	(Tea)	Used short-term for diarrhea, dysentery, gastric bleeding	Topically/ mouthwash / sitz bath	Capillary bleeding, athlete's foot, burns, bruises, nosebleeds, open sores / periodontal disease / episiotomy incisions and hemorrhoids	
Rhus glabra and Rhus typhina	Bark, Fruit	Tea, tincture / mouthwash	Fever, gastrointestinal and genitourinary inflammation, mouth and throat mucous membrane inflammation	Mouthwash	Gargle for sore throat and mouth	
Rubus allegheniensis	Bark, Leaf, Fruit, Root	Tea, tincture / syrup	Root bark tea for acute diarrhea, minor gastrointestinal, nasal, gum bleeding, leaf tea for chronic diarrhea, ulcerative colitis / berries make a good base for a cough syrup	Topically	Root bark for bleeding of minor cuts and wounds/ mouthwash for bleeding gums	
Rubus odoratus	Leaf	Tea, tincture	As a uterine tonic during pregnancy to alleviate morning sickness, for uterine prolapse, urinary frequency, bladder prolapse, and also for diarrhea	Topical mouthwash / compress	Inflamed gums and throat / compress for skin inflammation, wounds, ulcers, hemorrhoids / eyewash for conjunctivitis	

Salix nigra	Bark	Tea, tincture, capsules	Pain, headache, fevers, muscle pain, back pain, diarrhea, UTIs, ejaculation with pain, prostatitis	Topically/ gargle	Minor skin inflammations, wounds, ulcers / gingivitis and bleeding gums	
Sambucus canadensis	Flowers, Fruit	Tea, tincture, syrup	Flowers used for children's fever, to stimulate eruption of chicken pox and measles, inhibit viral replication, and for impetigo, berries internally as tea, tincture, or syrup for colds, flu, bronchitis, also used to strengthen eyes, veins, capillaries, arteries	Topical wash/mouthwash	Flaky, itchy skin / mouthwash to inhibit inflammation and pathogens	
Sanguinaria canadensis	Root			Mouthwash / gargle / wash	Mouthwash for inflammation like gingivitis and stomatitis/ gargle for inflamed throat/ wash or compress for wounds	
Sassafras albidum	Root bark	Tea	Aid digestion, flatulence, bloating, chronic skin conditions, arthritis, blood cleanser, long history of use as a "spring tonic" by Native Americans and a beverage tea in Appalachia			Potentially carcinogenic and hepatotoxic
Scrophularia lanceolata and S. marilandica	Aboveground parts, Root	Tea, tincture	For swollen lymph nodes, cystic breast disease, hemorrhoids, and functional ovarian cysts, as well as psoriasis, staph infections, acne rosacea	Topical poultice	Mastitis, swollen testes, shingles, boils, styes, acne, local infections	
Scutellaria galericulata	Aboveground parts	Tea, tincture, capsules	Stress-induced spasms, tics, tremors, back and neck spasms, Parkinson's, mild Tourette's, TMJ, OCD, fibromyalgia, tension			

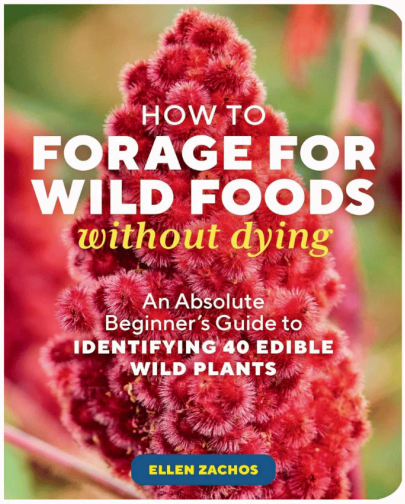
			headaches, ADHD, insomnia due to muscle tension			
Scutellaria lateriflora	Abovegr ound parts	Tea, tincture, capsule				
Solidago canadensis var. *canadensis, S. gigantea, S. juncea, and S. odora*	Abovegr ound parts	Tea, tincture	Cystitis, gastrointestinal and upper respiratory infections, anti-inflammatory for gout and gouty arthritis	Topical wash / mouthwash	Wash for minor wounds/ gargle for thrush, sore throat, periodontal disease	
Symplocarpus foetidus	Fresh roots, Seeds	Tea, tincture	In small doses for spasmodic coughs, asthma, whooping cough, muscle pain in back, neck and face	Diluted gargle/ topical poultice	Mouth and throat pain, topically for rheumatic pain	Large doses can cause nausea, vomiting, dizziness and irritation of mouth and throat
Trillium erectum var. *erectum*	Root	Tea/tinc ture	Reduce bleeding- heavy menstruation, postpartum hemorrhage, bleeding fibroids or from urinary tract stones	Topical tincture	Minor skin inflammation, wounds, ulcers, leukorrhea vaginal wash	
Tsuga canadensis	Bark, Oils	Tea/tinc ture	Gastrointestinal inflammation and minor bleeding	Mouthwash / sitz bath/inhala tion therapy/ topical poultice or liniment	Gargle for mouth and throat inflammation, wash for skin inflammation and wounds/ wash or sitz bath for leukorrhea and vulvovaginitis/volat ile oil inhaled for upper respiratory inflammation (common cold, other conditions with thick mucous)	
Ulmus rubra	Inner bark	Tea/ lozenge/ porridge	Swollen mucous membrane tissue especially of gastrointestinal tract and as a bulk laxative/ lozenges made from bark for dry irritative coughs and sore	Topical poultice	Skin conditions and burns	

			throat/ nourishing porridge for depleted patients who can't keep food down			
Vaccinium angustifolium	Fruit, Leaf		Strengthen small capillaries in eyes, varicose vein treatment, decrease allergic response, prevent UTIs and gastric ulcers / lower blood sugar levels and for acute alkaline pH cystitis			
Vaccinium macrocarpon	Fruit	Juice/capsule	UTIs and to reduce occurrence of gastric ulcers, regular consumption of cranberries used to lower LDL cholesterol and increase HDL cholesterol			
Verbena hastata	Flower, Leaf	Internally	Menstrual cramping and related reproductive anxiety, agitation, a diaphoretic for colds and flu, also for migraines, spastic bladder, nervous stomach, mild Tourette's, Bell's Palsy, and restless leg syndrome	Topical poultice	Boils, styes, bruises	
Veronicastrum virginicum	Root	Internally	Gastric upset, loss of appetite, constipation associated with liver insufficiency			
Viburnum prunifolium	Bark	Tea, tincture	Traditionally used for morning sickness and to prevent miscarriage in the first trimester along with other herbs, also used for spasmodic menstrual cramps, intercostal pain, hiccoughs, low back pain, testicular pain, spasmodic coughs			
Viola sororia var. *sororia*	Flower, Leaf	Tea, tincture	Stimulates bowel, lymph and liver function to help arthritis, skin problems, obesity, upper respiratory			

			tract inflammation, and used as soothing expectorant for dry sticky coughs			
Zanthoxylum americanum	Bark, Fruit	Tea, tincture	For poor peripheral circulation, nerve pain like Raynaud's, sciatica, peripheral neuropathy, ear pain, also for gas and bloating	Topically	Arthralgias, stiff muscles, toothaches, shingles	

The above table is provided as knowledge, not condoning self-prescription and use of these plants. For further knowledge with specific instructions, DNPS Vice President Rick Mickowski shares these other excellent resources:

"How to Forage for Wild Foods without Dying: An Absolute Beginner's Guide to Identifying 40 Edible Wild Plants" by Ellen Zachos
and other books on the art and science of foraging HERE



Exobasidium is a basidiomycete fungus found on plants of the Ericaceae. While rumored to be edible, consumption is not advised, as toxins of the leaf and stem tissue of plants in this family are not to be trifled with. Found on native azaleas (Rhododendron atlanticum, prunifolium and viscosum), and Vaccinium species (blueberries, huckleberries and cranberries - whose fruits are edible).
Photo courtesy of Nicholas Johnson



Exobasidium vaccinii - azalea gall on Rhododendron viscosum

Hierochloe odorata

William A. McAvoy

Excerpt from Noteworthy Native Plant Collections from the Delmarva Peninsula as part of the Delaware Natural Heritage Program, as published in the horticultural journal Bartonia No. 60: 23-26, 2000

Hierochloe odorata (L.) Beauv. (POACEAE)

Sussex County, Delaware: ecotone of scrub and high salt marsh on east end of Thompson Island in Rehoboth Bay, 11 May 1994, *McAvoy 544* (DNHP).

This is the first collection of this species from a native population on the Delmarva Peninsula. *Hierochloe odorata* is cultivated in herb gardens in the U.S., including Delaware (A. Tucker, pers. comm.), but its overall natural distribution in North America is Maine south to southern New Jersey, west through Pennsylvania, West Virginia and Indiana, and in the southwest to Arizona (Gleason and Cronquist 1991). It is also disjunct and rare in North Carolina where it occurs in high-elevation pastures and openings (Weakley 1996). The presence of *H. odorata* on the Delmarva Peninsula may be a result of it being dispersed here by native Americans. Native Americans consider *H. odorata* to be a sacred plant and it is used in ceremonies and carried in medicine bundles (Tantaquidgeon 1942, Moerman 1986, Duke 1986). Archeological studies on the island site where this collection was made have determined that native Americans utilized this area as early as eight to nine thousand years ago and continued up until the time of European contact (Blume 1992). Many ancient, native artifacts have been discovered here, as well as a small burial plot (Blume 1992). *H. odorata* has also been collected from west of the Chesapeake Bay in Maryland at Soldiers Delight Serpentine Barren in Baltimore County (*Farley & Monteferrante 485* BALT; Maryland Natural Heritage Program).

Editor's note: Heirochloe odorata is the titular focus of a most excellent book "Braiding Sweetgrass" by Robin Wall Kimmerer, discussing Indigenous American traditions surrounding this highly-utilized and other culturally historically significant plant species.

A gall found on oak leaves begin forming in late spring, and by fall and winter the galls have dried and have historically been ground and utilized for dyes and inks worldwide.



Amphibolips quercusinanus- oak apple gall wasp

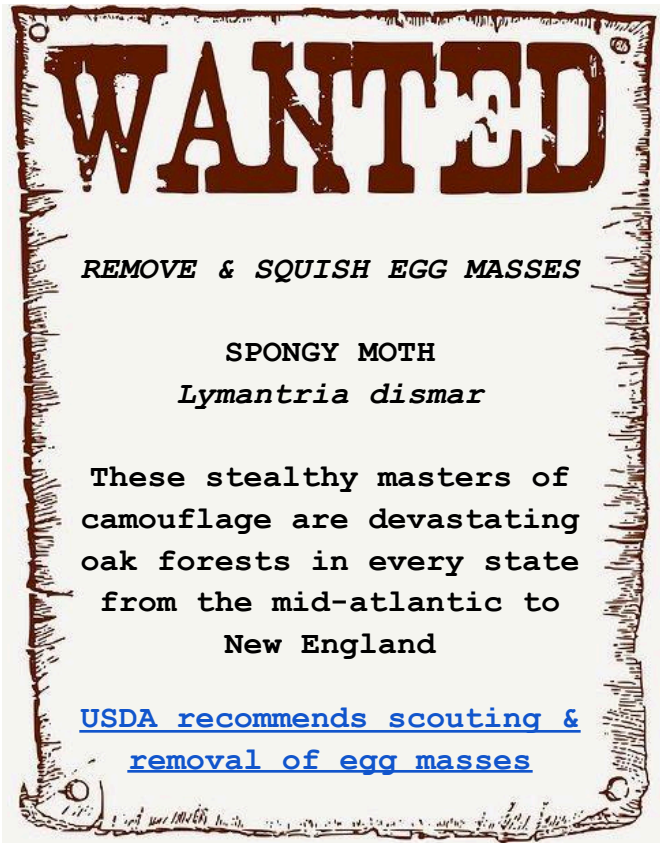
Events and More

- Wilmington's Northeast Rising is mitigating the negative effects of climate change through community involvement and outreach programming and connecting organizations to help the communities that need it the most.
- University of Delaware Botanic Gardens Summer Online Plant Sale
- Delaware Nature Society Programs and Events
- Third Mondays Monthly 6:15-7:45PM Green Drinks Online Virtual Meeting
- Delaware Cooperative Extension & Master Gardener Workshops -Live & Zoom
- Mt. Cuba Center Classes

Discover the new Delaware Habitat Guardians
Become a Delaware Master Gardener
Become a Delaware Master Naturalist

This year the National Garden Bureau has announced the "Year of the Lily"

Learn more about our Turk's cap lily, other native lilies, and their cousins worldwide



Membership Application

Member Benefits:

Quarterly "The Turk's Cap" Newsletter

Tips and tricks on gardening and landscaping with native plants

Annual workshop, symposium, project work days, and field trips!

⊙ Full-time Student $10 ⊙

⊙ Individual $15 ⊙

⊙ Family $18 ⊙

⊙ Contributing $50 ⊙

⊙ Business $100 ⊙

⊙ Lifetime $500 ⊙

Membership is for 12 months, after which we send you a renewal notice in the mail.

MEMBER INFORMATION

Name:_____

Organization Name:_____

Full mailing address:_____

Phone number:_____

Email address:_____

Please make checks payable to:

Delaware Native Plant Society

P.O. Box 369

Dover, DE 19903

The Turk's Cap

The Newsletter of the Delaware Native Plant Society

Autumn 2024 Volume 27 No. 3

DNPS Mission Statement:
Founded in March 1998, we are a volunteer-based, publicly supported 501(c)(3) non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.
Discover more at https://delawarenativeplants.org







⦿Letter From Our President ⦿

⦿ Vice President's Outreach ⦿

⦿ Project Updates ⦿

⦿ A "Malvalous" Family⦿

⦿ "Achene" Eye on Sedges ⦿

⦿Mysterious Marcescence ⦿

⦿ The Nuttiest Article ⦿

⦿ Baffling the Botanists, Membership and More! ⦿

President: Eric Wahl ⦿ Vice-President: Rick Mickowski ⦿ Treasurer: Eric Zuelke ⦿ Secretary: Emma Johnson

Letter From Our President

Eric Wahl

Dear Members,

I recently wrote about oaks in Delaware and wanted to share some of my thoughts on this majestic species.

Native oaks hold a special place in Delaware's ecosystem, history, and local culture. These majestic trees, with their sturdy trunks and sprawling canopies, not only enhance the beauty of the state but also provide ecological benefits that are crucial for biodiversity and environmental resilience. In Delaware, several species of native oaks flourish, each playing an essential role in local habitats, while fostering a unique cultural connection to the land.

Delaware is home to a variety of native oak species, the most common of which are the white oak (*Quercus alba*), Northern red oak (*Quercus rubra*), willow oak (*Quercus phellos*), and scarlet oak (*Quercus coccinea*). Each of these species is adapted to Delaware's specific climate and soil conditions, and they collectively contribute to the diversity of local woodlands.

For centuries, native oaks have held cultural importance for Delaware's inhabitants. Native American tribes like the Lenape revered oaks for their strength and longevity, and they used acorns as a food source. Oak wood was traditionally used for tools, utensils, and building materials. Oaks were even used in ceremonial contexts, representing endurance and the cycle of life.

With European settlement, oaks became essential to Delaware's colonial economy. The wood's durability made it invaluable for construction, shipbuilding, and tools. Oak trees became symbolic of resilience and strength, traits celebrated by the early settlers and reflected in community rituals and folklore. Today, these historical connections endure, with Delaware communities often holding oak trees in high regard, recognizing them as symbols of natural heritage and a link to the past.

One of the most valuable contributions of native oaks is their role in supporting local biodiversity. Oaks are keystone species, meaning they support a disproportionately large number of other species within their ecosystem. Oak trees provide food, shelter, and nesting sites for countless species, including birds, mammals, and insects. The leaves, bark, and acorns are a primary food source for many native wildlife species, including squirrels, deer, and various bird species like woodpeckers and blue jays.

By preserving and celebrating Delaware's native oaks, communities are safeguarding a natural legacy that benefits both people and wildlife. The continued presence of these

trees is a testament to Delaware's commitment to environmental stewardship and the cultural respect for nature passed down through generations. For Delawareans, native oaks are more than just trees—they're an enduring symbol of resilience, providing beauty, ecological benefits, and a vital link to the state's natural heritage.

I encourage everyone to go outside and observe our native oaks during this autumn season in all their splendor.

Eric Wahl, President.

Connect with the DNPS on Facebook

And explore the DNPS at: https://delawarenativeplants.org/

Photographs in each volume courtesy of David G. Smith at www.delawarewildflowers.org





Editor's note: this year's theme is edible plants- a reminder that other organisms rely on plants too! To the benefit or detriment of the plants. Mycosphaerella fraxinicola - ash tree leaf spot fungus Marylandbiodiversity.com discusses examples found nearby

Outreach

Rick Mickowski, Vice President

I promoted our organization at 3 events over the summer and fall. The first event was in the DNREC building at the Delaware State Fair in July. In early October, we participated in the Trees for Every Delaware Initiative (TEDI) held at the Kent Conservation District office in Dover. I was able to procure 9 native tree species to raffle off at the annual symposium held on November 16th. The tree species were sweetbay magnolia, white oak, and willow oak. In late October, I attended the Delaware Invasive Species Council (DISC) annual conference south of Delaware City.









In order top left to bottom right: TEDI event display, DISC meeting display, State Fair Display, TEDI initiative trees

Project Update

Eric Zuelke, Treasurer, Projects Manager

A Photographic update of our Dover Park Wildlife Pond Restoration Project/Pollinator Habitat

All photos taken by Eric Zuelke during the spring and summer of 2024



14 Apr 2023



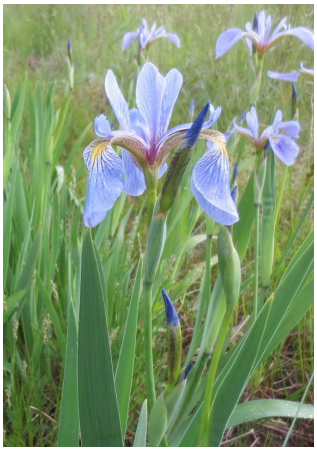
14 Apr 2024



1 Sep 2024



Sparganium eurycarpum



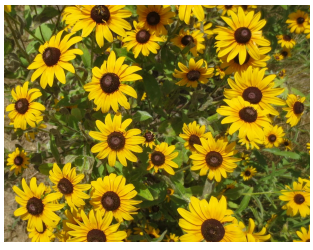
Iris versicolor



Platanus occidentalis



Erigeron annuus



Rudbeckia hirta



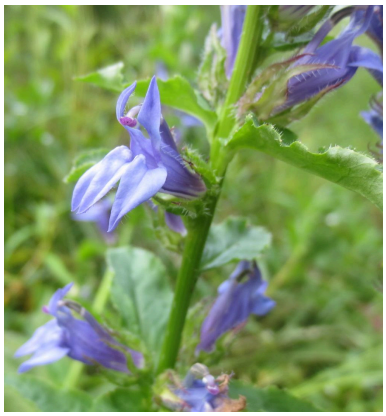
Asclepias incarnata



Dioscorea villosa



Vernonia noveborecensis



Lobelia siphilitica



Lobelia cardinalis



Helianthus angustifolius



Baptisia tinctoria



Pontederia cordata & bee



Verbena hastata



Conoclinium coelestinum



green heron

For a full history of the site, please visit the PROJECTS page of our website!

A "Malvalous" Family

Emma Johnson

This past year, pointing out to coworkers that chocolate and marsh mallows are in the same taxonomic family, one affectionately (or "confectionately") labeled them the "s'mores family."

Theobroma cacao (the source of cocoa beans that become chocolate) is definitely not native to our region, but plenty of plants in the Malvaceae are, and many of them also have delicious and herbal origins.

I could talk about other mallows- *Althaea officinalis* is the original marsh mallow, native to Africa, Asia and Europe, or its relative *Abelmoschus esculentus*, or okra, from Africa - a culinary crop now grown worldwide. I could focus on *Malva* - pretty little hot pink wildflowers on lawn edges escaped to the Americas from Europe, along with *Hibiscus trionum*- the soft brown-eyed delicate yellow "flower of an hour" - both used in herbal remedies. I could discuss the wild and weedy *Hibiscus syriacus* - rose of sharon in temperate regions, and *Hibiscus rosa-sinensis* found in tropical ones, or *Hibiscus sabdariffa*- also tropical- with deep crimson buds and calyces that are made into red jamaica ["ha-mai-ca"] tea. If you have ever had hibiscus tea, it's nearly a "guarantea" that it's jamaica. *Gossypium* is the genus for cotton- with species native do different parts of the globe, whose seeds are borne in cottony bolls (cotton balls) spun into cotton fiber then fabric, and whose genus name inspired the term for the divulging of details (gossip - that fluffy stuff that floats around from conversation to conversation). But we all know why we're here- to rein back in and learn about plants close to home. So we'll start at the sweet beginning far away and long ago, and then travel to the here and now.

Marsh mallows, for which the mallow family and the marshmallow candy are named in English, were originally made in ancient Egypt about 4,000 years ago. The confection was made of mallow sap specifically for royalty and offerings to their gods. Fast forward to 200 years ago when the French whipped mallow root sap by hand to make marshmallows, and looked for ways to make more of them more quickly- turning to gelatin rather than mallow sap, and molds made of modified cornstarch (candy.usa.com). The marshmallow we know and love today began to be mass produced a little over 100 years ago due to the change in process, but we can still trace it back to its very literal roots.

In Delaware, we have the versatile dinner plate-sized flowers of *Hibiscus moscheutos*, tall and shrubby, stabilizing soil in brackish and freshwater wetlands and now used in rain gardens and bioswales to prevent erosion just as they have in their ancestral

Delaware marshes. Nearby regions, hot-red thin-petaled *Hibiscus coccineus* grows in similar fashion, while *Hibiscus laevis, lasiocarpus, and grandiflorus* are also found overlapping the southeastern region of the United States. *Hibiscus moscheutos*, along with other related species, have mucilaginous sap that has been used historically to aid in respiratory ailment relief and relief of ailments in the digestive and urinary tracts.

And *Tilia* - i.e. *Tilia americana*, basswood/linden - used in herbal recipes (i.e. cough drops like "Riiicolaaa!") It is a genus of trees with ectomycorrhizae - fungi that form a partnership with the plant roots, an exchange that gives the fungi a home and the plant extra nutrients. For a while the genus provided its name to the Tiliaceae family, but with DNA analysis has been shown to be closer cousins to the rest of the mallows than previously thought, and has since been welcomed into the mallow family. American linden is native to a large portion of the United States. In an excerpt from the Indiana Native Plant Society's description of "American Basswood," tea made of the "inner bark was used for treating lung ailments, kidney stones, gout, heartburn, dysentery, and various stomach troubles. It was also used as a diuretic. A bark poultice was used for treating burns, skin ailments, and for opening boils. Fresh bark was used as a bandage. A tea or tincture from the leaves, flowers, or buds was used for treating nervous headaches, restlessness, high blood pressure, insomnia, respiratory ailments, asthma, epilepsy, and acid indigestion. It was also used as a diaphoretic. However, the flower tea can cause heart damage. A leaf poultice was used for broken bones and swollen areas. A root infusion was used as an anthelmintic for treating worms. The wood was made into charcoal and was consumed to treat intestinal disorders. It was also applied externally for treating edema, cellulitis, and ulcers of the lower leg. The flowers were often used as cosmetics. A flower tea in bath water was used as skin treatment, washing hair, and relaxation. The flowers also contain flavonoids (an antioxidant), volatile oils, and mucilaginous substances. The tree's sap has high sugar content. The sap was used as a beverage or was boiled down to syrup, like Maple (Genus *Acer*). The leaves contain invert sugar, which is safe for diabetics. The fruits and flowers were ground into a paste that both looks and tastes like chocolate." (Though it does not keep well). "The tiny, young leaves and the closed leaf buds were used in salads or as potherbs. The flowers and flower buds were also used for the same purposes. The leaf buds were chewed as a thirst quencher. The mucilaginous inner bark is also edible."

In other words, our own representatives of the mallow family are nothing short of marvelous - or, one could say, "malvalous."



Itea virginica with red leaf spot - Maryland cooperative extension resource indicates it is likely the result of an Anthracnose or Phyllosticta fungus

"Achene" Eye on Sedges

Emma Johnson

"Sedges have edges," the saying goes! Sedges (Cyperaceae, with triangular stems and V- or M-shaped leaves in cross-section) are flowering plants called monocots, like grasses (flat-leaved Poaceae), and rushes (round-stemmed Juncacae). These three families closely resemble one another at a glance and as such are often compared, but we have just distinguished the clearest features between them.

DNPS member Gwen Elliott requested a guide to identifying native sedges, so buckle up and grab a ruler and hand lens or magnifying glass if you can- a lot of identification features of these delicate plants are TINY! The size of these features are often measured in millimeters.

For such in-depth identification efforts, we often rely on a tool called a dichotomous (branched) key - a series of logical steps to narrow down the identity of a plant species we are observing, telling one feature apart from another.

Some rules: Plants don't play by the rules. Some sedge-family members may have round or flat features and appear more grasslike. Every description includes the subtext "usually" - always observe more than one of the same type of structure on a plant or in a group because the first sample you see may be the exception!

Learn some "roots": root words, that is. Luckily, to help us along, species names often provide clues– *Carex festucacea* leaves and habit resemble fescue grass, *C. sparganioides* flower heads are reminiscent of *Sparganium* (bur-reed), *C. debilis* is delicate, bent-over ('debil" in Spanish means weak), and *C. pensylvanica* grows in the Pennsylvania region.

Learn some history:
Carex is a massive genus of sedges in the Cyperaceae family of *Cyperus papyrus*, the original source of papyrus paper (once again, referencing the wetlands of Egypt in this volume). Most *Carex* are much smaller in stature than papyrus, but they have many historical medicinal properties used across the world for nearly every type of ailment imaginable (described in "The treasure trove of the genus *Carex*: A phytochemical and pharmacological review." Gajbhiye, Kumar, Sen Sarma, Singh, 2024.) There are too many species across the world to summarize and too many medicinal uses to describe - in Delaware alone you may recall from the Summer 2023 "Turk's Cap" that there are 137 species of Carex native to the state. In comparison, most other genera have between two and 10 species listed as native to Delaware on the Flora of Delaware online database. *Carex* is an elaborate instance- so much so that the genus is divided into whole sections. As more information is learned about the interrelationships between *Carex* species, the 70 or so sections seem to fluctuate

(www.efloras.org.) There are other sedges in the family including genera *Bolboschoenus, Bulbostylis, Cladium, Cyperus, Dulichium, Eleocharis, Eriophorum, Fimbristylis, Fuirena, Rhynchospora* (a focus you may recall from a recent "The Turk's Cap" article titled "Sedge Talk with Bill McAvoy" by Sam Hoadley), *Schoenoplectus, Scirpus, Scleria* and *Trichophorum*. Bill shared a compiled list of the Cyperaceae of Delaware with me- the majority on the list flower April through June- a good time to start looking for their identification characteristics in their flowers and as their seeds begin to form.

Learn some terms:

- **Achene- a single-seeded fruit whose features and coverings are used as a primary identification characteristic of sedges**
- **Perigynium- a sac-like bract or "scale" enclosing the female flower parts that develop into the achene**
- **Inflorescence-** the flower head, made up of spikes **(flowers),** in turn made up of **spikelets** (the smallest component of a sedge flower)- different numbers of spikelets and whether they are on stalks- short, long, or not at all, in a dense or loose fashion, can distinguish between species
- The presence or absence, number and positioning of female (pistillate/gynecandrous) and male (staminate/androgenous) flower parts are also ID characteristics. Of all of the life on planet earth, the majority of species have multiple combinations of types of reproductive organs. Bisexual flowers and bisexual plants are common. A species may commonly have a flower with, for example, six female parts and fourteen male parts as the norm, and called a "perfect" or complete flower in botanical terms when all functioning female and male structures are present in the same flower.
- The presence or absence of texture on any of the above features is another (smoothness can be a lack of hair, bumps, or teeth, so there are plenty of specific words for these features).
- **Subtending**- a set of structures just below another type of structure, much like a shirt collar below one's head. Often referring to bracts below the sac surrounding the single-seeded fruit.
- Note the way bracts or other structures extend the top of parts of the flower can either make the flower look more longitudinal (vertical) or horizontal (lateral).
- **Terminal** means the tippy top, and **axillary** means not at the very top, in the axils or side-junctions where two other plant parts form an angle.
- Also note that flower parts and leaves may be "ranked," stacked like ladder rungs- **distichous** means alternating in a two-ranked fashion, and **spiral** in groups of 3.
- **Adaxial** - upper side (usually of a leaf blade)
- **Abaxial**- under side (usually of a leaf blade, think "b" stands for "below")

- **Septate-nodulose**- having prominent cross-veins across a leaf or stem (divided by septa) creating a nodular pattern (a string of bulgy or bulbous-like structures), think of a pea-pod shape with multiple peas, but if there were a strong line drawn across the thinner part of the pod between each pea
- **Culm**- a hollow or pithy stalk or stem sedges, rushes and grasses
- **Ligule**- a tongue or strap-shaped membrane on top of a leaf at the junction of the leaf blade and leaf sheath in some sedges and many grasses

Abridged Sedge Key based on the Flora of Delaware

If you find a plant on land or partly submerged in water but rooted below (amphibious, able to withstand draining and flooding conditions,) with green leaves (producing chlorophyll), fibrous roots or rhizomes, and inconspicuous flowers with no fancy petals or sepals (an undifferentiated perianth) with parts in multiples of (2 or) 3, producing single-seeded fruits called achenes, and grass-like leaves pointed in cross-section with triangular (or round) stems that when broken open have a spongy pith inside, you can confidently navigate through the "Flora of Delaware's" Key of Genera to key C4 and M to find a particular genus in the Cyperaceae.

Keying the Genera of the Cyperaceae Family (p. 175-236)

Follow the "either-or" choices at each level (a1 or b1 for instance) to find your genus!

Choice 1:

If the achene has a perigynium sac, you're looking at a *Carex*!



This spike of Carex intumescens, bladder sedge, (the species name meaning "swollen") is a great example showing puffy perigynia sacs, each enclosing an achene.

Many species will turn brown at maturity, but some, like this one, stays green.

Choice 2:
If the achene does NOT have a perigynium sac and is comparatively naked, you are looking at a different genus of sedges.
1A. With 2-ranked overlapping scales and spikelets single or grouped
a1. *Dulichium* have axillary flowers with bristles below the achene
a2. Terminal flowers with basal leaves are either with perianth bristles in *Schoenus* or without in *Cyperus*
1B. With scales spirally overlapping, spikelets usually single
b1. *Scleria* has hard "bony"-textured white achenes, separate female (single) & male (multiple) spikelets (the **hypogynium** is a perianthlike structures of bony scales subtending the ovary in this genus and a few others in the family)
b2. Achenes brown, black, tan with bisexual spikelets (male & female flowers within same one) leads to a few options:
2A. Style base persists as differentiated **tubercle** (a small swelling or projection at that location on the plant)
c1. Leaves bladeless sheaths, usually 1 terminal spikelet per stem - *Eleocharis*
c2. Or leaves well-developed blades, subtending bracts, spikelets few to many:
d1. *Bulbostylis* has hairlike leaves and no perianth bristles
d2. *Rhynchospora* has perianth bristles, spikelets 1 to 2 flowered, leaves any width
2B. Style base not differentiated tubercle
a1. Achene not subtended by modified perianth
b1. 1 to 3 involucral bracts on lateral-appearing flowers- *Cyperus* with achenes ½ mm long, about 2-3 times longer than wide, bumpy lengthwise, *Schoenoplectiella* with achenes 1-1 ½ mm long, 1-1.5 times longer than wide, textured widthwise
b2. Two to several involucral bracts, spreading, flower appears terminal
c1. *Bulbostylis* plants under 2ft tall; leaves 3-15 cm long, up to 1 mm wide
c2. Plants moderate to robust, 2ft+ tall, leaves 30-150cm long, 1.5-15mm wide
d1. *Cladium* if 1 to 2 flowers spikelet, or if more flowers per spikelet with leaves under 5mm wide
d2. *Fimbristylis* or leaves above 5mm wide with a smooth style is *Scirpus*
a2. Achene subtended by modified perianth of bristles, 3-stalked paddlelike scales, or 1-2 broad-based scales (in addition to spikelet scales)
b1. Stalked paddlelike scales/broad-based scales
c1. Achene lacking perianth, subtended by scales, plants about 1-10 inches tall - *Cyperus*
c2. Achene subtended by perianth of 3-stalked paddlelike scales, plants about 8-28 inches tall - *Fuirena*
b2. Achene subtended by bristles
d1. Bristles 10 to many, 5x longer or more than the achene, white to tawny color, straight - *Eriophorum*
d2. Bristles 1-6 usually less than 4x as long as the achene, straight or conspicuously

twisted

e1. Lacking involucral bracts, in DE in upland sites- *Trichophorum*

e2. Involucral bracts present, in wet lowland sites or rock outcrops in DE

f1. Main bract erect, inflorescence often appears lateral

g1. rough achenes on annual plants- *Schoenoplectiella*

g2. smooth achenes on perennial plants- *Schoenoplectus*

f2. Main involucral bracts 2-8, spreading , foliaceous, flower appears terminal

h1. spikelets 10-40mm long, 6-12mm across, 3-50 per culm- *Bolboschoenus*

h2. spikelets much smaller with more than 50 per culm- *Scirpus*

There is a lot of information to get started!
So the Carex compendium is TO BE CONTINUED!



Scirpus georgianus, a bulrush with flower heads showing distinct triangular and pyramidal patterns common in the sedge family and noticeably no perigynia!



Agalinis - false foxglove - a genus with six species native to Delaware, a member of the Orobanchaceae - hemi-parasites that partly make nutrients like most plants do from the sun and soil, and partly tap into the roots of other plants, siphoning nutrients away. This plant I found by Lums Pond was being munched on by what looks to be an invasive Spodoptera ornithogalli armyworm caterpillar.

Mysterious Marcescense

Pam Crowe

Marcescence (mar-SES-sense) noun: when a tree clings to its dry leaves through winter

Marcescent (mar-SES-ent) adjective: means withering but not falling off

Deciduous trees, almost all,
Shed their leaves in the fall,
Leafing them completely bare,
But, honestly, they don't care,
While other trees, like beech and oak,
Care to keep a winter cloak
Wrapped around their trunks till spring,
When marcescent leaves on limbs un-cling.
Man has yet to figure out:
What is marcescence all about?
Is it meant to deter deer
When tasty, tender buds appear?
Or in the spring when leaves fall down
And decompose into the ground,
Will the nutrients released
Provide the tree a springtime feast?
Can we attribute commonsense
To trees that practice marcescence?



After turning fall-red, this white oak will practice marcescence, holding onto tan leaves for the next several months.

The Nuttiest Article

Emma Johnson

Fall is when we notice. Squirrels drop acorns from oaks, walnuts and hickories bounce precariously off our roofs. We notice the borer-holes, the "owl faces," the piles of moist dust excavated from shells - snacks feeding our backyard.
Sometimes when things are so close to home, we take them for granted and forget how much we rely upon them.

Pecans are a hickory. They are *Carya illinoiensis* - a hickory not too far away from our own. This North American native plant has become popular everywhere and is known for the infamous pecan pie, candied pecans, and when not coated in sugar and butter are a very healthy snack. Our hickories - *Carya cordiformis* (bitternut), *glabra* (pignut), *ovalis* (red), *ovata* (shagbark), *pallida* (sand), *tomentosa* (mockernut) all have edible nuts, historically eaten by the Algonquian people, and also serving as a food source for wildlife including "wood duck, quail, turkey," and serve as a host plant for underwing moth caterpillars. The wide trunks and species-dependent "shaggy" bark can provide shelter and roosting sites for bats and other wildlife. Nowadays we have optimized the food source, with the biggest tastiest hickory used in the most widespread fashion. However, hickories are a valuable part of established forests in our region because they provide so many delicious ecosystem services.

Acorns are from oaks. *Quercus* trees produce fruits with bitter tannins. (Not "Biff Tannen, Marty"- that is a "Back to the Future" reference.) Tannins are also present in the other nut trees in this article- tannins can be soaked and boiled out and away so that the acorns can be pulverized into fine flour and mixed with other ingredients to make pancakes. Pancakes, as we all know, are complemented by maple syrup from *Acer* trees.

Walnuts are from *Juglans* trees. *Juglans nigra*, the American black walnut, is on the list of the top walnut trees grown for walnut seeds. How many recipes - often delicious desserts- can you recall that involve walnuts? Walnut husks have been used to produce inks and dyes, and also have medicinal, cultural and modern practical uses from our native walnut tree as well as its global cousin species.

Hazelnuts or filberts are from *Corylus* shrubs. With frilly involucres protecting each nut and a flavor beloved by squirrels, bears, birds, and people, these distinctive fruits can be used just like their European counterparts- in desserts, candies oils, nut butters, roasted, toasted, ground into flour. Nutella is a popular product made of hazelnut, and I recall growing up with Piroulines - a hazelnut chocolate-filled biscuit.
You know, to tie it all back together, I think all these delicious sugary chocolate-covered nuts would taste very good with ... marshmallows.

Baffling the botanists

The baffle raffle is back





A small colony
Of petite tree
Pinnate leaves
Deep purple flowers
Clustered pods
A legume relative
Hosts the grey hairstreak (shares hosting with mallows above), hoary edge skipper, southern dogface butterfly, silver-spotted skipper
Pollen supports bees and other pollinators
Roots in wet soil, sandy or heavy
Holds soil in place, wet or dry

Am I:

A. Amorpha fruticosa

B. Baptisia tinctoria

C. Senna hebecarpa

D. Thermopsis villosa

Send your guesses to plantearthfire@gmail.com!

Photos by Emma Johnson

Events and More

- Wilmington's Northeast Rising is mitigating the negative effects of climate change through community involvement and outreach programming and connecting organizations to help the communities that need it the most.
- Delaware Nature Society Programs and Events
- Third Mondays Monthly 6:15-7:45PM Green Drinks Online Virtual Meeting
- Delaware Cooperative Extension & Master Gardener Workshops -Live & Zoom
- New Directions in the American Landscape courses through December

Discover the new Delaware Habitat Guardians
Become a Delaware Master Gardener
Become a Delaware Master Naturalist

This year the National Garden Bureau has announced the "Year of the Lily"

Learn more about our Turk's cap lily, other native lilies, and their cousins worldwide



Membership Application

Member Benefits:

Quarterly "The Turk's Cap" Newsletter

Tips and tricks on gardening and landscaping with native plants

Annual workshop, symposium, project work days, and field trips!

- Full-time Student $10
- Individual $15
- Family $18
- Contributing $50
- Business $100
- Lifetime $500

Membership is for 12 months, after which we send you a renewal notice in the mail.

MEMBER INFORMATION

Name:_____

Organization Name:_____

Full mailing address:_____

Phone number:_____

Email address:_____

Please make checks payable to:

Delaware Native Plant Society

P.O. Box 369

Dover, DE 19903

The Turk's Cap

The Newsletter of the Delaware Native Plant Society

Winter 2024-2025 Volume 27 No. 4

DNPS Mission Statement:
Founded in March 1998, we are a volunteer-based, publicly supported 501(c)(3) non-profit organization dedicated to the conservation of native plants and their natural habitats through education, science, advocacy, and land stewardship.
Discover more at https://delawarenativeplants.org



Letter From Our President ⦿

⦿ Membership ⦿



Fall Symposium and Current Projects Recap ⦿

⦿ Baffling the Botanists ⦿



“Achene” Eye on Sedges- Carex Continued ⦿

⦿ Spring Floral & Garden Design Workshop ⦿



Working for Biodiversity in Delaware ⦿

⦿ Need a New License Plate? ⦿

⦿ Events and More ⦿

President: Eric Wahl ⦿ Vice-President: Rick Mickowski ⦿ Treasurer: Eric Zuelke ⦿ Secretary: Emma Johnson

Letter From Our President

Eric Wahl

Hello native plant lovers and enthusiasts, and happy "Imbolc" - the midway point between winter solstice and spring equinox. It's a time for planning for growth, renewal, and celebrating the return of the sun breaking winter's darkness.

As we look forward to spring, we are planning for our spring workshop March 15th. It is sure to be a fun and inspirational event. More info inside our newsletter. It's been a while since we had a hands-on workshop. We are excited to say the least!

Our fall symposium was a great success. Our speaker, Leah, was amazing and very informative. A summary can be found in the following pages.

In addition, check out some incredible images from a few of our projects and gardens captured during winter's slumber. There is beauty in every time of the year. However, we are looking forward to spring and the cycle of rebirth that comes with it.

Thanks to all our members and supporters, and keep promoting native plants!

Eric Wahl, President

Connect with the DNPS on Facebook

And explore the DNPS at: https://delawarenativeplants.org/

Circle photographs p. 2 Alnus serrulata, p. 10 Corydalis flavula courtesy of David G. Smith at www.delawarewildflowers.org
Circle photographs p. 15 Anemone americana, p. 19 Erythronium americanum courtesy of Nicholas Johnson



Membership Application

Member Benefits:

Quarterly "The Turk's Cap" Newsletter

Tips and tricks on gardening and landscaping with native plants

Annual workshop, symposium, project work days, and field trips!

- ⊙ Full-time Student $10 ⊙
- ⊙ Individual $15 ⊙
- ⊙ Family $18 ⊙
- ⊙ Contributing $50 ⊙
- ⊙ Business $100 ⊙
- ⊙ Lifetime $500 ⊙

Membership is for 12 months, after which we send you a renewal notice.

MEMBER INFORMATION

Name:_____

Organization Name:_____

Full mailing address:_____

Phone number:_____

Email address:_____

Please make checks payable to:

Delaware Native Plant Society

P.O. Box 369

Dover, DE 19903

Fall Symposium and Current Projects

Recap by Emma Johnson

Photos by Rick Mickowski

The Keynote Speaker:

This fall symposium, we invited Leah Brooks as our guest speaker, communicating the importance of "keystone species" within an ecosystem. It was a pleasant and effective talk, styled as a conversation with the listener and gave just the right background knowledge to gear towards adults at every level of know-how on native plants and ecosystems. The biggest takeaway that Leah stressed was when selecting plants for a native garden focus, choose native "keystone" species as they tend to support the greatest number of native animal species, insects included. Then fill in with a smaller amount of non-keystone species.

Leah introducing native plants:



The slide from Leah's presentation below shows the keystone genera that serve the greatest number of non-plant species:

Keystone Genera for our Ecoregion

Woody

1) oak (*Quercus*)=463
2) plum (*Prunus*) =347
3) willow (*Salix*) =292
4) birch (*Betula*)=285
5) maple (*Acer*)=256
6) poplar (*Populus*)=240
7) apple (*Malus*)=233
8) blueberry (*Vaccinium*)=230
9) hickory (*Carya*)=224
10) elm (*Ulmus*)=174
11) alder (*Alnus*)=164
12) pine (*Pinus*)=146



Herbaceous

1) Goldenrod (*Solidago*)=106
2) American aster (*Symphyotrichum*)=90

Native *Malus* and *Prunus* were a surprise to me! Which of these species surprised you? Which are you familiar with in your own yards and hiking experiences? Additionally, Leah discussed "nativars" and the reasons some are not as ecologically beneficial as others, and noted specific plant species that are excellent choices for a regionally native garden, and even replacements for staple non-native landscape plants. I have to say, my favorite was *Viburnum prunifolium*'s dashing deep pinkish- red fall color as a substitute for burning bush! Leah welcomes sharing her PowerPoint and literature with anyone who asks, as well as native plants from her yard. If you missed her, I highly recommend seeking out one of her talks.

Symposium Summary:

Rick Mickowski, Eric Zuelke, and Bob Meadows provided the plants for this year's raffle. Thank you for gathering these plants together, and Bob, thank you for growing and sharing your pawpaws!

I gave a talk diving deeper than the pollen-pollinator interactions, looking up-close at how pollen works, and very up-close at the unique shapes of pollen grains under the microscope, seeing native plants in an entirely new and very tiny dimension.



Eric Zuelke gave the members in attendance a rundown on the history and status of our current pollinator habitats and restoration projects. Since then, we have more and winterier updates!



A Rare Look at the Snowier Side of Some DNPS Project sites

Bombay Hook, Dover Park, and Prime Hook Photos by Eric Zuelke, UD Lewes Photo by Jo-Anne Wazlowski.

Bombay Hook Wildlife Area Reforestation Site (13 Jan 2025):



This was a grassy old-field habitat when we began this rewilding project on 23 Oct 2020. It hasn't changed much except for the addition of a bunch of tree tubes protecting little baby trees. Nature is taking her own sweet time at this site.

Dover Park Wildlife Pond & Pollinator Habitat (6 Jan 2025, it was actively snowing when this photo was taken):



This was a diamond in the rough when we began allowing nature to show her true colors at this site on 14 Apr 2023.

Prime Hook Wildlife Area Reforestation Site (12 Jan 2025):



This was a mowed grassy field when we began growing a forest on it on 1 Oct 2000.

University of Delaware College of Earth, Ocean & Environment, Lewes Campus Pollinator Habitat (11 Jan 2025):



This was a sparsely vegetated plot of dirt when we began feeding pollinators on 9 Nov 2019.

Blackbird Creek Reserve Reforestation Site Planting Day

On 6 Dec 2024, Eric Zuelke, Emma Brown, Edna Stetzar and Samantha Stetzar gathered for a planting day at the Blackbird Creek Reforestation Site, digging holes to planting trees and shrubs, and with only one casualty! Pictured from left to right: Bright green leaves of *Corylus americana*, Eric, Edna, and Samantha.



And an extra special mention to Rachael Phillos, DNERR Manager, for working with Octoraro Nursery to purchase all these plants for us. We are very lucky, and incredibly appreciative to have such a great partner in DNERR to help us realize our visions for this site.



In Memoriam: Eric's trusty DNPS project shovel (purchased in approximately 2005).

In reality: Eric's repairing the shovel to honor our reduce, reuse, and recycle convictions! Like a phoenix emerging from flame, the shovel will dig again!

Blackbird Creek Photos by Emma Brown

And a request "granted":

And last but not least, some excellent news! Thanks to Eric Zuelke, the DNPS was awarded a "Plant Grant" from Bowman's Hill Wildflower Preserve! This April, we will be receiving nursery grown plugs to install at our Dover Park Wildlife Pond site!

We have requested (10 of each species, 100 total):
Aquilegia canadensis - eastern columbine
Asclepias incarnata- swamp milkweed
Asclepias tuberosa- butterfly-weed
Chelone glabra- turtlehead
Conoclinium coelestinum- blue mistflower
Helenium autumnale - common sneezeweed
Lobelia cardinalis- cardinal-flower
Lobelia siphilitica- great blue lobelia
Symphyotrichum novae-angliae- New England aster
Vernonia noveboracensis- New York ironweed

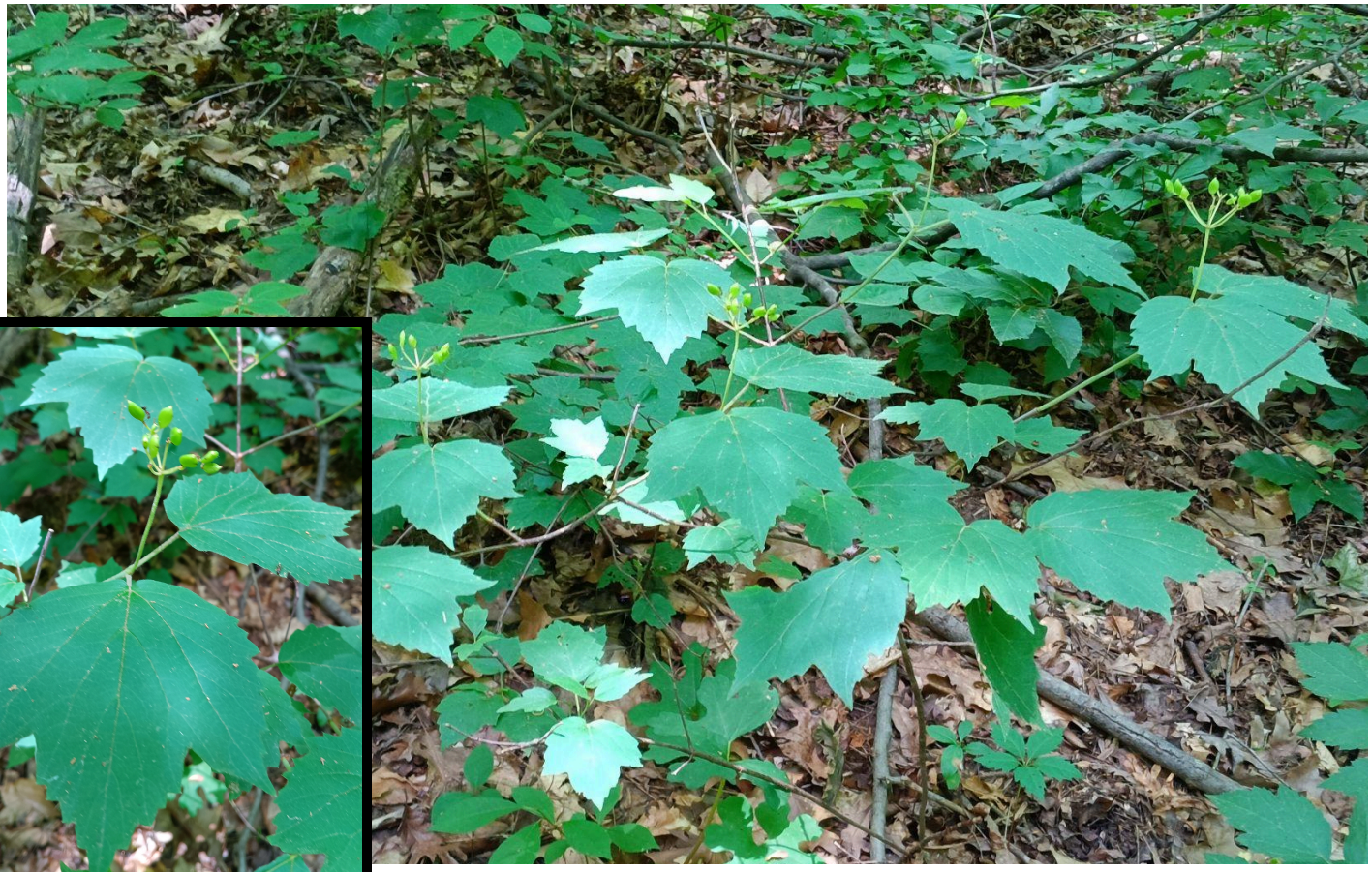
And we are very excited about it!



Baffling the Botanists

At the suggestion of DNPS member Flavia Rutkosky, let's "flip the script"!

Meet *Viburnum acerifolium.* Maple leaf Viburnum. It's mid-season at Rittenhouse park in Newark Delaware, late June or early July 2024.



Instead of guessing what the plant is, you already know the answer!
So, send in a fact or a story about this lovely plant that we can share in the next newsletter. Your name will be credited and also entered in the regular baffle raffle for prizes.

Send your responses to plantearthfire@gmail.com!

Photos by Emma Johnson

"Achene" Eye On Sedges- Carex Compendium Part 2

Emma Johnson

When last we talked, we had just gotten from the overarching Cyperaceae sedge family all the way down to *Carex*- the massive genus for sedges. This will be the main focus from here on out.

Before we dive back in, a quick shout-out to the genus *Eleocharis* which we learned last time! *Eleocharis dulcis* is a non-native cousin of our native *Eleocharis*, and is praiseworthy for its use as water chestnuts - a familiar food to most of us in stir-fried dishes, not closely related at all to the chestnut tree, but bringing the sedge family out of the background, out of plant blindness and into our active awareness.

Now on to *Carex*. First we'll break the *Carex* genus into more manageable groups called "sections" based on shared characteristics in order to get down to the species level. Some of these groups are only represented by one species native to Delaware. This guide focuses on our native *Carex* in particular, but be aware that there are non-native sedges present in Delaware, such as *Carex arenaria, kobomugi, spicata,* and *muricata*.

In discussing the nuances of sedges with Bill McAvoy, he recommends using the flowers and fruit as essential identification characteristics to distinguish between the species. He provided us with a resource that includes phenology of sedges found in Delaware. Phenology refers to the flowering period. The timing itself can help to distinguish between the species as well! He also shared a variety of resources, which I have summarized and modified here to focus on sedges native to Delaware.

Remember, perigynia are sac-like "scales" enclosing the female flower of sedges, which develop into the achene, or single-seeded fruit. You may need to break out the autumn issue to review some terms that were previously introduced.

Most New Castle County occurrences are in the Piedmont region, and Kent and Sussex are in the Coastal Plain. Rare coastal plain occurrences are found in New Castle County. **In general, Delaware sedges generally flower May-June, are primarily found in wet sites or sites prone to flooding, and most of the species are uncommon or rare, in isolated populations. As a result, in the list below, only exceptions will be listed: only common plants, plants that grow in upland/less-wet sites, and flowering times outside of the May-June range will be specified.** You will see "C." as shorthand for "*Carex*."

Find a sedge in the flowering to fruiting stage to observe its characteristics.

- Achene triangular in cross-section (3 styles)
    - Perigynia not obviously toothed, styles separate from achene (jointed)
        - Perigynia with rounded base
            - Single-spiked inflorescence
                - Phyllostachyae- both flower April-May; C. *jamesii*, and *willdenowii* is upland
                - Polytrichoidae - *C. leptalea variety harperi* & *var. leptalea* which has a more prominent staminate spike and is found in piedmont rather than coastal plain
            - Multiple spikes per culm
                - Clump-forming rooting habit
                    - Terminal spike male only
                        - Careyanae- all flower April-May, **common** throughout DE: *C. abscondita, digitalis var. digitalis, laxiculmis*
                        - Griseae- flowers April-May: *C. amphibola, conoidea, glaucoidea, grisea, oligocarpa, planispicata* - most in piedmont
                    - Terminal spike female or multiple sexes present
                        - Porocystis- all **common** except *bushii*: *C. bushii, caroliniana, hirsutella, virescens*, and upland species *complanata* and *swanii*
                        - Hymenochlaenae- *C. davisii, gracillima, oblita* and **common** plants *debilis* and *prasina*, the last of which flowers April-May
                - Spreads by rhizomes, not in clumps
                    - Base of plant red
                        - Anomalae: *C. scabrata* - NCC piedmont only
                        - Atratae: *C. buxbaumii*- NCC coastal plain only
                        - Paniceae- *tetanica var. canbyi*- NCC piedmont
        - Perigynia with tapered base
            - Hairy perigynia
                - Acrocystis: *C. albicans var. albicans, emmonsii, floridana, nigromarginata, pensylvanica, tonsa, umbellata*, all **common** except *communis, lucorum, reznicekii* all flower March-April, most found throughout DE
                - Hirtifoliae: *C. hirtifolia*, flowers April-May in NCC woodlands and meadows
            - Perigynia smooth, not hairy
                - Laxiflorae - flowers April-May: *C. gracilescens, kraliana, striatula, styloflexa*, and more upland plants *blanda* and

laxiflora, which happen to be the most **common** along with styloflexa. *C. kraliana*'s northernmost reach is in DE

- Perigynia obviously toothed, styles not easily pulled off achene
  - Clump-forming rooting habit
    - Lupulinae: *C. gigantea, intumescens var. intumescens, lupulina, lupuliformis* all spread across DE, the first three are most **common**, *C. louisianica* blooms June-August and is limited to Sussex county
    - Squarrosae- *C. frankii, squarrosa, typhina*, the first two are **common**
    - Vesicariae: *C. bullata var. bullata & var. greenei, comosa, lurida, vesicaria* - v*ar. bullata, comosa,* and *lurida* are **common**
  - Spreads by rhizomes, not in clumps
    - Carex: *C. trichocarpa* - piedmont, hairy fruit
    - Paludosae- *C. lacustris, pellita, vestita*, only *striata var. brevis* is **common**
  - Perigynia teeth slender, distinctly bent backward 180 degrees and pressed closely against the perigynia- **Collinsiae:** *C. collinsii* - primarily Sussex County Coastal Plain, Atlantic white cedar swamps only
- Achene flat in cross-section (2 styles)
  - Simple inflorescence
    - Female flowers only
      - Ovales: *C. alata, albolutescens, festucacea, hormathodes, longii, molesta, normalis, scoparia, silicea, straminea, tribuloides*, all **common** except *hormathodes*, *molesta* which is also the only more upland species, *silicea*, and *straminea*
      - Deweyanae- *C. bromoides* subspecies *bromoides*
      - Stellulatae: all flower April-May: *C. atlantica, exilis, howei, seorsa*. All but *exilis* are **common**, with *exilis* restricted to Atlantic white cedar swamps like *C. collinsii*
    - Male or multiple sexes present
      - Phaestoglochin: *C. aggregata, cephalophora, mesochorea, muehlenbergii* var. *enervis* & *var. muehlenbergii*, *radiata, retroflexa, rosea, sparganioides* - most in this group are upland, with *aggregata, cephalophora, radiata, rosea* being most **common**; the latter two along with *sparganioides* flower in April-May
      - Phacocystis: *C. crinita* var. *brevicrinis* & var. *crinita*, *emoryi, gynandra, mitchelliana, stricta, torta* - only the *crinitas* & *stricta* are **common**

    - Compound inflorescence
        - Multiflorae: *C. vulpinoidea,* and *annectens* which flowers June-August, both in similar habitats throughout DE
        - Vulpinae: *C. conjuncta, laevivaginata, stipata* var. *maxima* & var. *stipata* - all **common** except *conjuncta* which is more upland than the others, only *laevivaginata* flowers April-May
        - Heleoglochin: *C. decomposita*- NCC Coastal Plain

Other choices:

- Loose-clump-forming/short-rhizomatous growth and base of plant red in DE species
    - Perigynia with rounded base, spherical perigynia with raised nerves, ten or more perigynia per spike
        - Granulares: *C. granularis*- NCC & Kent
    - Perigynia with tapering or rounded base
        - Limosae: *C. barrattii* - flowers April-May though flowers and fruit are not often present, coastal plain throughout DE
- Smooth perigynia, lateral (side) spikes sessile (no long stems attaching the spike to the main stalk), no bract sheaths, perigynia bumpy or smooth. Terminal spike often with more female flowers than male flowers. Perigynia margins with rounded edge and achenes nearly filling perigynium bodies.
    - Glareosae: coastal plain, *C. canescens* is **common**, *disjuncta* is rare; both species in DE have 4-15 spikes, 5-30 perigynia per spike each 1.7-2.5mm long. *C. canescens* culms are generally smaller than *C. disjuncta*
- Toothed perigynia, pistillate scales awned
    - Rostrales: both **common**, coastal plain, *C. folliculata* fruit resembles milkweed, leaves 8-18mm wide, *lonchocarpa* has spear-shaped fruit, leaves 4-12mm wide
- Glaucescentes - *C. joorii*- coastal plain, cypress and sphagnum swamps species reaches northern limit in DE (think Trap Pond State Park)

That was a lot! We're getting there! Wait for part 3 where we'll focus on the most **common** species. These are the plants we are all most likely to encounter, and in the next issue we'll spend more time introducing you to each of the *Carex* species we most commonly see in Delaware.



Spring Floral & Garden Design Workshop

Join us March 15th for Ikebana!

Ikebana is a beautiful floral design technique that pays attention to using plants within their season, forms as well as flowers, and utilizes a minimalist approach for maximum elegance. It is a sculptural art form with plant material as the medium, and it gives you the opportunity to showcase your gardens!

Here's how this will work:

- We will teach you about floral arranging with late winter and early spring plant material in the ikebana style
- (Recommended) Mindfully harvest native plants (branches, grasses) from your garden to share with the class. Refer to the list below for guidance!
- (Optional) Send in a picture of your garden in advance. We'll add it to a slideshow to share during class, and each person will take a few minutes to share how you designed your garden and your favorite native plants to grow!
- (Recommended) Bring in your pruning shears
- (Optional) Bring in a vessel - vase, bowl, or other container to hold and complement the arrangement
    - Vessels will also be available for purchase (most will be $1 to $10) 100% of sales will support buying more plants for our rewilding project sites.

Members and non-members welcome. Pre-registration required.
Sign up by emailing plantearthfire@gmail.com!
Join us at 10AM Saturday March 15th at St. Jones' Reserve
818 Kitts Hummock Rd, Dover, DE 19901



These three images are not in the Ikebana style



they are simply meant to whet your appetite!



Further Ikebana Guidelines

In early spring, stems will still have winter color and bark patterns, buds will just be starting to open, and branches will show true character of the plants' natural forms. To extend vase life, these plants are recommended for arrangements at this time of year:

For cascading catkins and speckled stems:
Sweet birch, alder, hazelnut, musclewood

For colorful stems:
Maples, blueberry, sweetspire, red or yellow-twig dogwood, some marsh mallows

For stems with cones and cone-like structures:
Alder again, pines, magnolia

For pleasant scent:
Waxmyrtle, spicebush, sassafras, mountain mint heads and stems, bee balm

For vines:
Trumpet vine, coral honeysuckle, whiteleaf greenbriar

For thorns:
Hawthorn, honey locust

For zig-zag branches or spur shoots:
Redbud, black gum

For current, new, and aged fruits and flowers:
Spicebush, witch hazel, silver and red maple, honey locust, redbuds, sweet gum, winterberry holly, viburnum, waxmyrtle, marsh mallow pods, dogbane and milkweed pods, oak branches with acorns

For evergreen leaves:
Inkberry holly, American holly, Christmas fern

For unique touches:
Chasmanthium sea oats, little and big bluestem, rushes or sedges, sensitive fern spore fronds (tapped to empty the spores)

For branches and vines that are not already dry, harvest day-of or the day before so that they are still pliable to use in specific arranging techniques.

Working for Biodiversity in Delaware

Sheila Smith



Photo by Sheila Smith

If you have walked the Hall Trail through Phillips Park in Newark you may have noticed signs that say Habitat Restoration - Invasive Plant Removal. Large dense patches of English ivy have been growing in and around the small woodland in the park and along B St. Dense blankets of English ivy covered the ground and many trees. Four years ago small groups of volunteers, including UD students, began slowly cutting the ivy out of trees and pulling it from the ground. Other plants being removed included honeysuckle, periwinkle and multiflora rose just to name a few. As the invasive plants have been removed native trees and shrubs have been planted. In places where the invasives are removed, the seeds of native trees, grasses, and wildflowers, already present in the soil, have begun to sprout, and repopulate themselves.

This work in Phillips Park began in March of 2020 but the pace was picked up when the Newark Department of Parks and Recreation joined forces with The Delaware Master Naturalists. The Delaware Master Naturalists, or DMN, have been increasing the ranks of volunteers who want to help tackle the many aspects of the management of natural areas all around the state. Along with the City of Newark, organizations from Delaware Nature Society to The Delaware Botanical Gardens are teaming up with the DMN volunteers, by becoming Local Operating Partners or LOPs. DMN volunteers have planted trees for Delaware Wildlands, monitored bluebird boxes for Winterthur Gardens and conducted a plant inventory for a preserve in Lewes DE.
The goal of these efforts is to restore plant and animal biodiversity around the state. Be on the lookout for changes in your area and find out how you can get

involved. Information about the Delaware Master Naturalist program and a list of LOPs throughout the state can be found HERE at their website. In many cases you don't have to be a Master Naturalist to volunteer.



Photo featuring Nicholas Johnson and the Master Naturalists

Photo by Emma Johnson

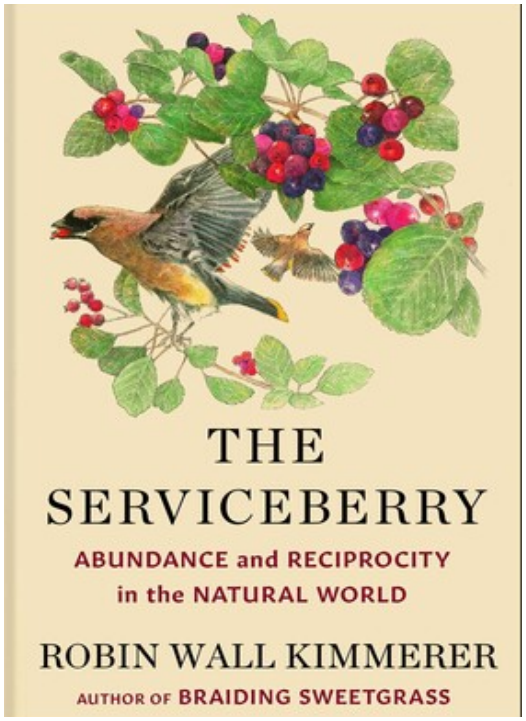


Need a new license plate?



Consider this award-winning design to help support pollinators!

The design received the 2021 "Best Plate Award" from the Automobile License Plate Collectors Association and is still available on the DMV website under "Special Plate Sales." Choose the Background Type called "Pollinator" from the dropdown menu to get yours today!



"The Serviceberry: Abundance and Reciprocity in the Natural World"

A NEW book by Dr. Robin Wall Kimmerer, author of "Braiding Sweetgrass" and "Gathering Moss." A quick, beautiful, grateful, hopeful, realistic, productive, modern read with current reflections on current events. A reminder that native plants are different and the same wherever you may be, and that for our ecological responsibility, even the smallest efforts are immediately rewarded.

Events and More

- DNPS March 15th Ikebana Workshop
- American Horticultural Society- use the nationwide Garden Network and check out their programming!
- Delaware Nature Society Programs and Events
- Third Mondays Monthly 6:15-7:45PM Green Drinks Online Virtual Meeting
- Delaware Cooperative Extension & Master Gardener Workshops -Live & Zoom
- Mt. Cuba Center's upcoming classes
- Listen in to the Native Plants, Healthy Planet podcast, produced by Pinelands Nursery in nearby New Jersey:
    - Meet Izel Native Plants
- New Directions in the American Landscape courses through December
- Northeast Rising in Wilmington is looking out for people and plants, mitigating the negative effects of climate change through community involvement and outreach programming and connecting organizations to help the communities that need it the most.

Discover the new Delaware Habitat Guardians
Become a Delaware Master Gardener
Become a Delaware Master Naturalist

"Max and the Milkweed" by Auggie Grand



The DNPS has been in direct contact with this author. A great new kid's book to guide young gardeners in the adventure of planting and growing milkweed to attract monarchs! A good gift for family, or an addition to classroom or camp teaching curricula!

Learn more HERE

Corrections to Autumn 2024: Vol. 27 No. 3
P. 6 - V. *noveboracensis*
P. 7 - "to" different parts of the globe
P. 9 - "Some rules: plants"