Sempervirens
Spring 2016 The Quarterly of the Virginia Native Plant Society

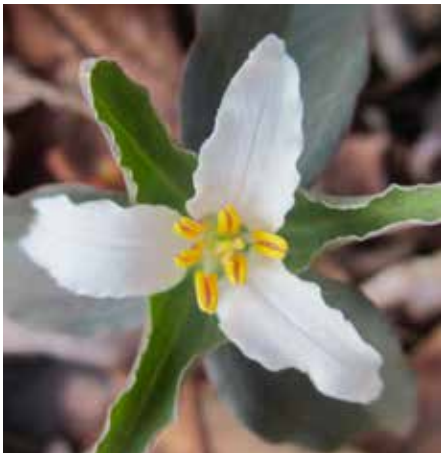
A Shenandoah Mountain National Scenic Area

Methodical Work Key for Successful Designation

At the Virginia Native Plant Society's Annual Meeting in September, several members asked, How is the Shenandoah Mountain campaign going? What's taking so long? How can we help? These questions signal that it's time for an update.

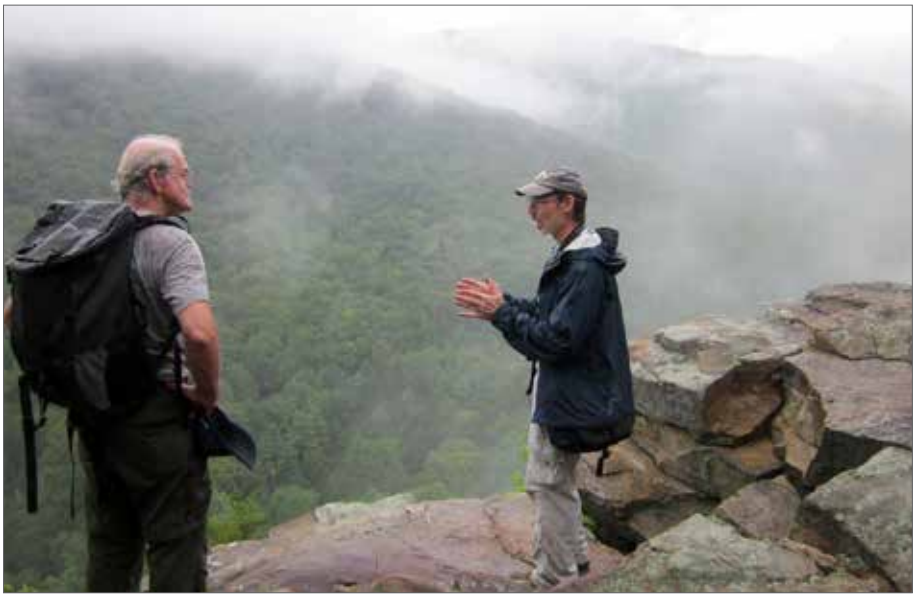
The Friends of Shenandoah Mountain's proposal calls for congressional designation of a 90,000-acre Shenandoah Mountain National Scenic Area with four embedded wilderness areas. Located west of the Shenandoah Valley in the heart of the George Washington National Forest, Shenandoah Mountain is one of Virginia's finest mountain treasures.

It all started in 2002, when the Virginia Wilderness Committee teamed up with mountain bike leaders to seek protection for some of the wildest backcountry, best outdoor recreation, and greatest biodiversity east of the Mississippi. Together we developed the Shenandoah Mountain proposal. Friends of Shenandoah Mountain, co-chaired by a wilderness advocate and a mountain bike leader, was formed to build public support. To date the proposal has been endorsed by more than 240 businesses and organizations, including VNPS. (See friendsofshenandoahmountain.org for a complete list.)



What's special about Shenandoah Mountain?

- It's a biodiversity hot spot, as identified by The Nature Conservancy.
- It provides drinking water for Harrisonburg, Staunton, and cities and towns as far downstream as Washington, D.C., and Richmond.
- It provides habitat for 250 bird species, for black bear—and for salamanders found nowhere else.
- It has tracts of old-growth forest and rare plants, like Virginia Least Trillium, *Trillium pusillum* var. *virginianum*.
- It has the headwaters of the James, Shenandoah, and Potomac rivers.
- Its cold-water streams are a regional stronghold for native brook trout.
- It has a network of 150 miles of trails, some of them constructed by the Civilian Conservation Corps.
- It has some of the darkest skies east of the Mississippi.
- It has 10 peaks above 4,000 feet in elevation, making it one of the highest areas in Virginia.



Bob Pickett, left above, former naturalist with the Potomac Appalachian Trail Club, and Tom Wieboldt, curator of vascular plants at Virginia Tech's Massey Herbarium, stand at a rock outcrop near Hone Quarry in the proposed Shenandoah Mountain National Scenic Area during a hike at the VNPS Annual Meeting. Virginia Least Trillium, left, is one of several imperiled plants found on Shenandoah Mountain.

Why is legislative protection needed?

The pressure for energy development on our public lands is not going away and constitutes the main threat to Shenandoah Mountain. The entire area is underlain by the Marcellus shale, in which are trapped large quantities of natural gas, which puts the mountain at risk for natural gas drilling and associated infrastructure. Although the 2014 George Washington National Forest management plan prohibits leasing of forest land for gas development, the next forest plan could open it up. Another energy development threat is the proposed Atlantic Coast Pipeline, a 42-inch, high-pressure, natural-gas pipeline, which could harm the area's unique habitats, contaminate drinking water, and threaten a number of rare species. National Scenic Area and Wilderness protection would prevent fracking, the construction of gas pipelines, and other destructive development.

Rainbow fungus juts from a tree trunk near Hidden Rocks in the proposed Shenandoah Mountain National Scenic Area.

What about other forest stakeholders?

Broad support by forest stakeholders will be essential to convincing our elected officials to introduce legislation for Shenandoah Mountain. Sparked by Mark Miller, field director of the Virginia Wilderness Committee, diverse George Washington stakeholders came together in 2010 to look for common ground and find win–win solutions that balanced preservation with management activities. The George Washington National Forest Stakeholder Collaborative, with representatives from timber, wildlife management, mountain biking, and wilderness, signed an agreement in 2011 recommending 1) protection of Shenandoah Mountain and other special places and 2) increased management actions elsewhere in the George Washington, like cutting timber, prescribed burning, stream and forest restoration, and recreational improvements. Influenced by this joint recommendation, the new 2014 George Washington management plan formally recommends a Shenandoah Mountain National Scenic Area for congressional designation, a big step forward for our campaign.

The Stakeholder Collaborative is now working closely with George Washington managers to plan a sequence of three landscape-level projects, each 80,000–100,000 acres. Each project will include a variety of management activities and lead to support for legislative protection for core wild areas nearby.

When?

This joint effort is going to take several more years to come to fruition, but proceeding carefully in collaboration with local stakeholders is essential. The George Washington stakeholders have just finished two years of planning of their first project in the Lower Cowpasture area, in Bath and Allegheny counties. They have begun their second project on northern Shenandoah Mountain. We expect the third project to be in the central Shenandoah Mountain area. Once management activities for the third project have been planned and approved, we expect stakeholder support for introduction of Shenandoah Mountain National Scenic Area legislation.

As the stakeholder process moves forward, Friends of Shenandoah Mountain will continue to build support by educating the public and seeking endorsements.

What you can do

Many thanks for all your support so far. Here's how you can help now:

- Learn more at friendsofshenandoahmountain.org, follow us on Facebook, and sign up for our e-news. When the time is right, we will ask for letters of support.
- Look at our list of endorsers and see who is missing. Ask a business you know to endorse the proposal on our website.
- Invite Friends of Shenandoah Mountain to make a presentation to a civic organization in your area.
- Support the George Washington National Forest stakeholder projects that are under way. Sign up to receive news and action alerts from the Virginia Wilderness Committee at vawilderness.org.

—Text, photos by Lynn Cameron, co-chair, Friends of Shenandoah Mountain, and board member, Virginia Wilderness Committee

Hamilton's New Book to Cover Ferns, Liverworts, Mosses (and More!) of Virginia's Coastal Plain

Helen Hamilton apparently didn't learn her lesson with *Wildflowers & Grasses of Virginia's Coastal Plain,* the excellent and beautifully illustrated guide she wrote with Gus Hall in 2013. The book flew off the shelves, and fewer than a quarter of the 2,500 copies printed remain. Anyone who knows Hamilton, a past president of the John Clayton Chapter, is not surprised. "In 2014 I gave 65 talks and sold most of the books," she says. She sells copies at her talks, and "getting it into Barnes & Noble, retail and college, helped a lot." She expects to sell out this year, and has no plans for a second printing.

But she does have a new project. She's going solo with another book, with the working title of *Native Ferns and Mosses of Virginia's Coastal Plain* (that will continue on the back cover as ... *with Liverworts, Clubmosses, & Quillworts*). "I've been thinking about ferns and mosses for a long time," says Hamilton, "and the references out there are usually way too much or too little. So basically, the book creation is selfish. I wanted to get a handle on fern and moss ID. Gus tells me the names of what we see, but it doesn't stick." Her new book will come to the aid of a lot of us who find ourselves in a similar fix with these challenging plants.

Common Broom Moss, *Dicranum scoparium,* is among the easiest mosses to identify, its leaves seemingly swept in one direction. (Photograph by Helen Hamilton)

It will be a slimmer volume this time. "So far, I count 23 ferns, maybe 12 bryophytes, and 6 lycophytes," she said. "Plus the introduction and a glossary, so 50 pages or so, with color photos." They toyed with black-and-white, she says, but "saw that color is much better for detail, even though they are all green. Basically, I like to write about plants, and certainly this book will fill a little niche." She's surely going to have another hit on her hands. ***—Bland Crowder***

Gatewood's Witch Hazel Part of Exhibit at U.S. Botanic Garden

Betty Gatewood has been smiling ear-to-ear since receiving the news that her watercolor of Witch Hazel (*Hamamelis virginiana* var. *virginiana*) would be among approximately 70 pieces of art displayed in the Flora of the National Parks exhibit at the U.S. Botanic Garden in Washington. The exhibit, which opened Feb. 18 and runs through Oct. 2, is a celebration of the National Park Service Centennial and will showcase many of the special plant species and habitats found in the 409 Park Service sites across the United States and its territories.

Witch Hazel in flower. (Illustration by Betty Gatewood)

For Betty, the outdoors and art go hand-in-hand, whether it is observing, hiking, skiing, teaching, journaling, or painting. In both the classroom and the field, she learns from and teaches about the beauty and intricacies of the natural world. She is a member of the Shenandoah Chapter.

Most recently she enjoyed being an education and interpretive park ranger at Shenandoah National Park. The park and the Appalachian Trail is where she observed and painted the fall-blooming Witch Hazel. According to Bill McLaughlin, curator of plants with the U.S. Botanic Garden, it was her depiction of the real-life plant, complete with its insect-eaten leaves, flowers, and seed capsule, that wowed the selection committee and led the group to vote unanimously to include Betty's painting in the centennial exhibit. "I do like to tell the story of the whole plant," said Betty.

Although she has enjoyed creating botanical art for years, Betty honed her skills by taking several classes with *Flora of Virginia* chief illustrator Lara Call Gastinger. "She helped me understand the life story, anatomy, and personality of the specimens we worked with. I've been producing and enjoying the journey of botanical illustration ever since."

Society members might recognize Betty's style, as she has illustrated two of our Wildflower of the Year brochures. ***—Nancy Sorrells***

From the President

'Getting Round' for Virginia's Plants—a Presidential Perk

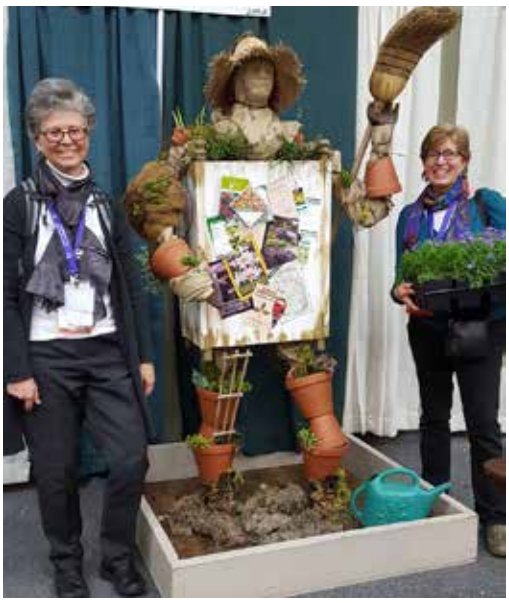
Round round get around, I get around!

With apologies to the Beach Boys, that's what I do, and I enjoy it immensely. Every day is a new adventure, and much of it is on behalf of the environment and native plants. Between meetings, lectures, presentations, field days, booth exhibits, and bird walks, my partner Harry Glasgow and I find retirement to be very busy. My Facebook friends always comment on how we're on the go.

Harry and I participate in Monday morning bird walks at Huntley Meadows Park in the Alexandria area of Fairfax County, 30 miles from our Manassas home. These are held rain or shine, and we rarely miss them, because Harry is the leader. While birds are the focus of these walks, Harry and I like to point out the connections between the habitats and the bird species. Many people are surprised that so many birds enjoy the berries of our native Poison Ivy (*Toxicodendron radicans*) growing high in the trees. Red-headed Woodpeckers visit some of the oldest trees in the park and stash the acorns of Swamp White Oak (*Quercus bicolor*) in tree trunks for later consumption. In winter, Northern Cardinals will eat the Swamp Rose (*Rosa palustris*) hips, Cedar Waxwings will consume the seeds within gum balls of Sweetgum (*Liquidambar styraciflua*) and Sycamore (*Platanus occidentalis*) seed balls, and Downy Woodpeckers will find insects to eat within Common Cattails (*Typha latifolia*) in the marsh.

In commemoration of Aldo Leopold's January birthday, I did something new and participated in a readathon of his classic *Sand County Almanac*. This was an event sponsored by the Northern Virginia Conservation Trust, in which a number of readers from different environmental organizations were invited to read passages from the book. I read a sad excerpt called "Prairie Birthday," about the demise of a tiny prairie in an old cemetery corner that was mowed down by the highway department. This reading event was held at a new development in Haymarket, where the developer (Equinox) clustered the residential component and sought to preserve much open space, with trails and interpretive signage, in a conservation easement. I was told that state vegetation ecologist Gary Fleming found Shagbark Hickory (*Carya ovata*) there, the first documentation of that species for Prince William County. On my walk around the preserve before the event, I found Cranefly Orchid (*Tipularia discolor*) leaves and many birds, including Red-headed Woodpeckers, American Coots, Ring-necked Ducks, and Common Mergansers.

Another recent outing took me to Baltimore for the Mid-Atlantic Nursery Trade Show, better known as MANTS. Caroline Haynes, Joanne Hutton, and I went there on behalf of the state and local native plant marketing campaigns to determine the availability of native plants in the trade. In a setting that is intoxicating for plant lovers, we roamed the huge convention hall, making many contacts. We found that natives are indeed available at the wholesale level, and that local nurseries should be able to stock them. If you want to plant natives in your garden, be sure to ask for them at your local nursery or garden center. And if you are working with landscapers, don't let them get away with saying natives aren't available.



Members Joanne Hutton and Caroline Haynes visit with a friendly, gardening-type fellow at the Mid-Atlantic Nursery Trade Show. (Photo by Nancy Vehrs)

One of the most rewarding meetings recently was in December, when several of us traveled to Richmond to present a VNPS check totaling $22,509.33 to the governor for the purchase of additional acreage for The Cedars Natural Area Preserve in Lee County. Your generosity made that possible. Thank you!

See you 'round!

—Your President, Nancy Vehrs

Society Members Make Their Money Work

From Your Natural Heritage Program

By Tom Smith

Virginia Native Plant Society members: you are once again putting your money to work in one of the top six biologically diverse landscapes in the United States. Well done! One of my favorite proverbs is, "If you want to go fast, go alone. If you want to go far, go together." Invasive species, plant registry, native-plant publications, field trips, the *Flora of Virginia*, land protection: VNPS and the Virginia Natural Heritage Program have traveled far since 1986.

Since your Natural Heritage Program purchased the 50-acre Barton Tract in May 1997, establishing The Cedars Natural Area Preserve, we have added 20 tracts and 1,747 acres supporting 35 state and globally rare natural communities and plant and animal species. The winter issue of *Sempervirens* has a great summary of the area. Our friends at The Nature Conservancy have been critically important to the partnership success in The Cedars. On Dec. 17 Nancy Vehrs, Sally Anderson, Sue Dingwell, and Harry Glasgow presented a check for $22,509.33 to Governor McAuliffe and Secretary of Natural Resources Molly Ward. Your donations are targeted to the purchase of an additional 90 acres of prime Cedars habitat. We are not done. At a Cedars conservation partners meeting in March 2015, the experts concluded that some 8,000 additional acres in easement and fee-simple acquisition were needed to reach the aquatic, karst, and terrestrial conservation goals for The Cedars.

The previous December, the Board of Conservation and Recreation endorsed a Natural Heritage budget rebenchmark of $2,931,000 and 26 full-time employees. Thanks to VNPS support, a $500,000 increase was approved in 2015. On Dec. 17 Governor McAuliffe released his proposed budget for the coming two years, and he did include last year's $500,000, not a given, as part of the program's new base. This leaves the program with a rebenchmark balance at $2.4 million and 24 staff to help address the greatly expanded scope and depth of responsibilities. The governor also included new support for the Virginia Land Conservation Foundation at $16 million a year, of which $2.4 million would be targeted to Natural Area Preserves. This is the largest annual amount ever for the Virginia Land Conservation Foundation.

Climate change, habitat loss, and invasive species are on us every day. We want to go far, we must go far. Going together with VNPS is fundamental to success. Thank you. ❖

Tom Smith is director of the Virginia Natural Heritage Program and is now Acting DCR Operations Deputy Director. Jason Bulluck is serving as Acting Natural Heritage Director in the interim. Learn more about our Natural Area Preserves at www.dcr.virginia.gov/natural_heritage/index.shtml.

A contingent from VNPS traveled to Richmond in December to present Gov. Terry McAuliffe and the Department of Conservation and Recreation's Division of Natural Heritage with an early Christmas present—a check for $22,509.33 to be used in the purchase of a new tract to be added to The Cedars Natural Area Preserve, in Lee County. Pictured are, from left: Jason Bulluck and Tom Smith with the Natural Heritage Program; Society president Nancy Vehrs; Governor McAuliffe; Harry Glasgow; DCR Director Clyde Cristman; VNPS First Vice President Sally Anderson; and Society Webmaster Suzanne Dingwell. (Photo courtesy of the Virginia Governor's Office)

SEED DISPERSAL
A Tale of Two Species

By W. John Hayden
Botany Chair

Orchids have minute, dustlike seeds. In this respect, *Goodyera pubescens* (Downy Rattlesnake Plantain), the 2016 VNPS Wildflower of the Year, is a typical orchid. Like all other orchids, *Goodyera* seeds contain little more than a few embryonic cells enclosed in a thin seed coat. There are two advantages to small seed size in orchids: minute seeds can be produced in prodigious quantities, and they can disperse over great distances by wind.

In contrast, consider species of *Hexastylis* (heartleaf). Though by no means huge, at just a few mm in size, its seeds are much larger than dust. Further, each heartleaf seed bears an aril, a ridge of fleshy cells along one side. Dispersal in *Hexastylis* occurs with the assistance of ants, which, attracted to the fleshy aril, actively forage for its seeds and carry them off some distance before consuming the aril and leaving the remainder of the seed to its destiny. Distances traveled with ant assistance are not great. Studies indicate that effective rates of dispersal from parent plants in ant-dispersed species are frequently less than one meter per year. Of course, sporadic rare events may disperse heartleaf seeds across distances much greater than that provided by assistance from ants.

In terms of dispersal strategy, therefore, *Goodyera* and *Hexastylis* are pretty much at opposite ends of the spectrum. Otherwise, however, their ecological characteristics are quite similar. Both are small, evergreen, perennial plants that live among the leaf litter of deciduous forests; each has tough, leathery leaves, and each produces only a few new leaves per plant each year. It should not be surprising that both species are frequently found together.

In undisturbed forests, over long periods of time, differences in average distance of seed dispersal may not make much difference in terms of plant distribution. Sure, for a given year's seed output, an orchid will easily outdistance a heartleaf. But over the course of centuries, or millennia, the small yearly increments of heartleaf dispersal add up. One can imagine that, given time, each should be able to colonize the full extent of undisturbed forest habitats that suit their requirements.

But eastern North America is no longer the forest primeval. Very little virgin forest remains. Most of our forests are secondary, patchy bits of habitat, at various stages of regeneration since the preceding forest was destroyed. If clear-cutting temporarily renders the former forest floor uninhabitable for plants like *Goodyera* and *Hexastylis,* seed dispersal ability should have a measurable impact on the distribution and abundance of these plants in our present-day patchy secondary forests. One might predict that wind-borne orchid seeds should access suitable habitat in regenerating secondary forest much more quickly than ant-dependent heartleaf. Two researchers recently set out to test this very prediction (Sorrells and Warren 2011).

Jesse Sorrells and Robert Warren conducted their study in the Bent Creek Experimental Forest located within the Pisgah National Forest in North Carolina. They measured abundance of *Goodyera pubescens* and *Hexastylis arifolia* (Arrowleaf Heartleaf) in a series of forest plots that had been clear-cut at various times since 1925. As predicted, the researchers found a robust correspondence between heartleaf abundance and average age of nearby trees—the older the forest,

Goodyera pubescens seedpods. (Photos by W. John Hayden)

Goodyera pubescens, Downy Rattlesnake Plantain, is the Society's 2016 Wildflower of the Year.

the more likely that heartleaf would be found. In their study, no heartleaf was found in any forest younger than 34 years, but it was always found in plots with trees 60 years old or older. In contrast, Downy Rattlesnake Plantain was found in young and old forests alike—abundance was not tightly linked to the age of the forest stand.

Though Sorrells and Warren focused on *Goodyera pubescens* and *Hexastylis arifolia*, their results can be viewed more broadly. The good news is that species with efficient long-distance dispersal should be able to colonize patchy secondary forests with relative ease. But the bad news is that there are a great number of plants, like heartleaf, with ant-dispersed seeds. In the eastern deciduous forests of North America, depending on forest type and location, an estimated 30 to 70 percent of herbaceous forest plants depend on this relatively slow mode of dispersal.

The tale told by these two species is a cautionary one. Forest trees may well regenerate and cover the scars of clear-cutting in just a few decades. But in ecological terms a forest is the trees plus everything living on, among, and below the trees. And when forests are destroyed by clear-cutting, full recovery of the whole community may well lag behind tree regeneration. Rapid dispersers, like Downy Rattlesnake Plantain, may be able to keep up with frequent harvest cycles of hardwood forests. But slowly dispersed plants, exemplified by the ant-dispersed heartleaf, are likely to have difficulty tracking through time and space the patchy bits of forest habitat that we have carved from the once vast eastern deciduous forest. Downy Rattlesnake Plantain and Arrowleaf Heartleaf may be broadly similar species but their seeds are different, and therein lies the tale.

Work Cited

Sorrells, J., and R.T. Warren II. 2011. Ant-dispersed herb colonization lags behind forest re-establishment. *Journal of the Torrey Botanical Society* 138: 77–84.

Flora Fund Drive Surpasses Goal

A resounding "Thank you!" to you, members of the Virginia Native Plant Society, for once again knocking it out of the park for the Flora of Virginia Project. The friends of the Flora Project surpassed our goal of $30,000 in our fall funding appeal, and the lion's share of those donors are VNPS members.

With only two weeks to go in the funding drive we notified our friends of a very good development. We were awarded a challenge grant by Richmond's Mary Morton Parsons Foundation, which also supported the print *Flora of Virginia*. They'll match donations to the Project until December or until they have matched $40,000 in gifts. This was definitely a motivator in the second half of the drive, and about one-third of the donations we received will be matched by that grant.

To receive our electronic newsletter, *Florascope,* sign up on our website, floraofvirginia.org, or our Facebook page. ***—Bland Crowder, executive director, Flora of Virginia Project***

VIRGINIA NATIVE PLANT SOCIETY

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Original material in *Sempervirens* may be reprinted if credit is given to the Virginia Native Plant Society, to *Sempervirens,* and to the author of the material, if named. Readers are invited to send letters, news items, and queries for consideration. E-mail items to Nancy Sorrells at lotswife@comcast.net.

Next submission deadline: March 15, 2016

Southern Bluets
A Springtime Newcomer to Virginia's Flora

Virginia now has a ninth species of *Houstonia*. Donna Ware first encountered the Southern Bluet, *H. micrantha,* in James City County in the spring of 2012. Ware, former research associate professor of biology at the College of William and Mary and retired curator of the herbarium at the college, thinks *micrantha* is a recent introduction. She has since collected it in several spots around the state, sending specimens to the Massey Herbarium at Virginia Tech as vouchers for eventual inclusion the Digital Atlas of the Virginia Flora. The history and range of the species in Virginia is now one of her research interests.

Ware is active with the Williamsburg Botanical Garden in Freedom Park. In mid-March 2011, before she began work in the garden, she took a path through a field and was "enthralled by the landscape that had that bruised purple look it has when [*Houstonia*] *pusilla's* in all its glory. I grew up with *pusilla* in the Ozarks [of Missouri], and it's just a wonderful thing to see it in the spring."

So when she returned a few weeks later, she was surprised to see the familiar blue Tiny Bluets almost all replaced by white ones. "The landscape was just like a snowdrift, solid white," Ware recalls. "When I looked closely, there were scattered *pusillas* still blooming, but they had mostly passed from flowering. I knew that mutant white *pusillas* had been recorded, and that was my first thought, but there shouldn't be that raging difference in peaking time."

Ware began her research with Alan S. Weakley's *Flora of the Southern and Mid-Atlantic States* and proceeded to Edward E. Terrell's 1996 revision of the genus *Houstonia*, which strengthened her hypothesis that this was *H. micrantha*.

"Compared with *pusilla*," Ware says, "this one reliably has calyx lobes that are more or less the same length as the corolla tube, so they really hide the tube." In *pusilla* the calyx lobes have a broad range of lengths in relation to the tube, per Terrell only one-fifth as long as to slightly longer than the corolla tube. "In general, I have noticed that shorter version, the one-fifth to one-quarter category," Ware says, "but that's in a real small sample size. I wish that there were a more clear-cut difference, but interspecies variation is like that sometimes."

Since the discovery, Ware has found *H. micrantha* in several spots around Williamsburg, as well as at Richard Bland College, in Petersburg.

The Southern Bluet ranges from East Texas, Louisiana, Arkansas, and Mississippi to southeast Oklahoma and southwest Tennessee, and to one county in Alabama and two in Georgia.

"These localities in Oklahoma and Tennessee are at about the same latitude as Williamsburg," Ware said. "I wanted to wait a few seasons to see that it was really hanging in there, but now I'm fairly convinced that it's entrenched." ***—Bland Crowder***

Houstonia micrantha (Shinners) Terrell; Southern Bluets. **D:** Annual. Stems 1–11 cm, erect or spreading, slender, simple or branched from base or nodes, glabrous. Basal leaves few or lacking; lower and median cauline leaves petiolate, upper leaves short-petiolate or sessile, 2–20 (including petiole) × 0.5–5.5 mm, narrowly elliptic to ovate, or lower ones spatulate, glabrous or ciliolate, rounded, obtuse, or acute at apex; stipules to 2.5 × 3 mm, usually triangular-lanceolate, rounded or truncate, entire or toothed at margin, with 0–few glands. Flowers solitary, homostylous; pedicels 2–2.5 mm, slender or filiform, erect, sometimes nodding in bud; sepals 1.2–3.0 × 0.5–1.5 mm, slightly longer to slightly shorter than corolla tube, ovate or lanceolate, glabrous, with acute or obtuse apex; corollas white with yellow center, short-salverform; tubes 0.8–2.5 mm, with lobes 0.8–3.0 × 0.7–2.0 mm, ovate, spreading at 45–90° to corolla tube, glabrous. Capsules 3–5(–5.7) mm wide, subglobose or slightly compressed. Seeds subglobose or slightly compressed, with a circular depression. **P:** Feb–Apr **H:** Dunes, sandy soils, granitic flatrocks, disturbed areas. *—Description (unofficial) in the style of the* Flora of Virginia, *adapted from Terrell, E.E. 1996. Revision of* Houstonia *(Rubiaceae-Hedyotideae).* Systematic Botany Monographs *48: 1–118. Photograph by Eric Hunt, Arkansas Native Plant Society.*

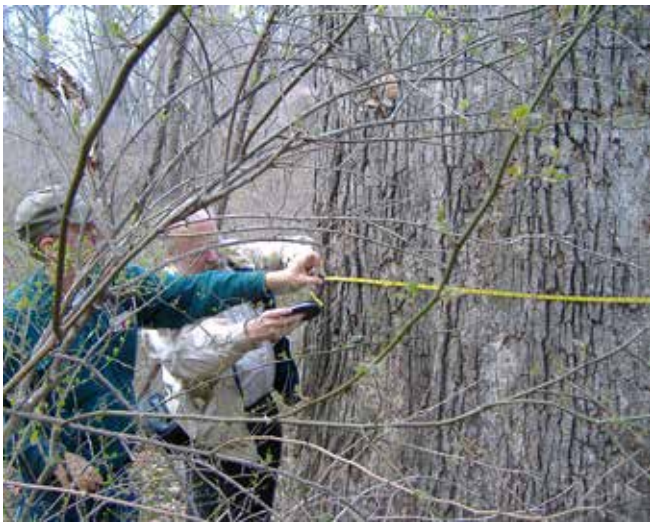
September 9–11, 2016

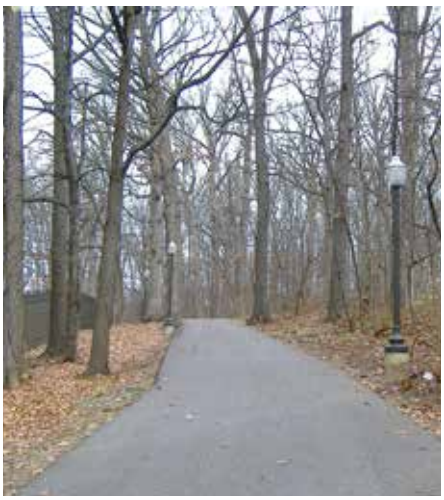
Annual Meeting to Offer 3 Visits to Old-Growth Forest in Tech's Stadium Woods

Planning for the Virginia Native Plant Society's 2016 Annual Meeting is well under way—thanks to the generous and cooperative people who agreed early to help. The New River Chapter hosts want to keep things simple and efficient so that participants will be able to relax and enjoy their time in Blacksburg. One way we are doing this is by having the schedule the same for Friday and Saturday evenings. Another way is by having all trips start at the same time (with maybe one or two exceptions). For Sunday morning, we are trying to keep all trips close to Blacksburg and to have all of them end between 11 a.m. and noon so you are not delayed in starting home.

On Saturday, we will offer five all-day field trips, including one to a Natural Area Preserve in Roanoke County and one to a Nature Conservancy property in Montgomery County. Our half-day trips will include guided walks on which we will view lichens, gardens, parks, and trees.

A focus of the meeting will be Stadium Woods, the Virginia Tech property with a stand of very old oak trees (mainly white oaks) that is under threat because it is next to the football stadium and other sports venues that are seeking to expand. More than 50 trees in this forest of just more than 11 acres are believed to be 250–450 years old. On one side of the woods is a paved path, heavily used by people walking or biking from town property to campus. The woods itself is used for such activities as dog walking, nature outings, educational programs, partying, and training for the Corps of Cadets (a rappelling tower is located there).





In Stadium Woods, measuring an oak is a two-person job. Measurers are Bill Sydor, left, and John Ford. Below, the path on the town side of Stadium Woods is popular with walkers and cyclists. (Photos by Jeff Kirwan)

You will have three chances to visit the woods and learn about this remarkable property. Your guides will be two residents who have been tireless protectors of those trees, Rebekah Paulson and Jeff Kirwan. Rebekah is a local VNPS member who has been in the fight to protect these trees from the beginning. She is executive director of Friends of Stadium Woods, a support group of people of diverse backgrounds who have pursued all available avenues to help protect the forest. That group maintains the website savestadiumwoods.com. Rebekah has organized scores of volunteers to help remove invasive plants from the woods. Many Society members have joined residents, students, and master naturalists on these work outings.

Jeff Kirwan coined the name Stadium Woods for this unique grove of trees. Now retired from the Virginia Tech faculty, he used Stadium Woods as a classroom for his students for many years, as do other professors. Jeff is still on the front lines advocating for saving this special property. Besides educating people about the woods' importance, he, too, has spent many hours there eradicating invasives. ***—Mary Rhoades, New River Chapter President***

Globally rare Virginia Sneezeweed is one of the rarities seen at Maple Flats Ponds. (Photo by Sue Dingwell)

Maple Flats

Showcasing Unique Sinkhole Pond Habitats

By Sue Dingwell, VNPS Webmaster, and Nancy Sorrells, *Sempervirens* editor

In September, Sue Dingwell visited the Maple Flat Ponds as part of a field trip at the VNPS Annual Meeting. Last spring, Nancy Sorrells participated in a night hike along the ponds. Each season offered an exceptional experience.

No matter the time of year, a visit to Maple Flats, in eastern Augusta County, provides an interesting look at the unique habitats that have developed here over eons. These sinkhole ponds that sidle up against the western slopes of the Blue Ridge offer an opportunity to see an incredible array of rare flora and fauna.

Fall days

A prediction of an 80-percent chance of thunderstorms warranted not even a moment's hesitation for the fortunate group of people headed to Maple Flats with Gary Fleming and Fred Huber on Sept. 14 as part of our Annual Meeting last year. Water was, after all, an integral part of the day's focus, Maple Flats being a unique series of seven sinkhole ponds. So in for a penny, in for a pound, participants grabbed rain gear and headed to the meeting point on Coal Road in the George Washington National Forest.

Gary, a vegetation ecologist with the Virginia Department of Conservation and Recreation's Division of Natural Heritage, and Fred, a botanist at George Washington and Jefferson National Forests, gave the slightly soggy group an overview of the ecological and cultural histories of the area before we set out. Native Americans used the land for hunting, which included periodic burning to increase forage. Colonists who lived here cut trees for many purposes, including the production of charcoal.

The ponds of Maple Flats were formed by alluvial deposits overlying limestone and dolomite that collapsed over time. Now the ponds are situated in the overburden, the carbonate rock layer lying 30–150 meters below the ponds. Soil here is infertile and heavy with clays; both soil and water are acidic and contain high levels of naturally occurring metals. These conditions combine to inhibit nutrient uptake. Doesn't sound like a place that could produce beautiful plants, does it?

But the Maple Flats Ponds, each with a slightly different set of physical characteristics, are home to unique and thriving sets of plants that have adapted to these stressful conditions. Three endemic and 20 G1-listed plants live in the ponds, and many more exist along the shorelines.

Impatient would-be botanists on the field trip had to be content with staring longingly at Oak Pond while waiting for the rain to let up. The *Quercus palustris/Panicum rigidulum–Panicum verrucosum–Eleocharis acicularis* community surrounding it is endemic to Virginia and was given a rarity rank of G1G2 by NatureServe in 2005. Those oaks gave us good shelter until the rain subsided; then the rush was on to get closer to two of the rare flowering plants, Valley Doll's-daisy (*Boltonia montana*) and Virginia Sneezeweed (*Helenium virginicum*).

The white *Boltonia* here was once thought to be the more common *B. asteroides*, until observations by Gary, Chris Ludwig (chief biologist with Natural Heritage), and Tom Wieboldt (curator of vascular plants at Virginia Tech's Massey Herbarium) led to other conclusions. Alerted to the possibility that it was a distinct species, Johnny Townsend, staff botanist with Heritage, conducted herbarium research that justified a molecular study, eventually leading to the confirmation of a new species: *Boltonia montana*.

Fluctuation in the pond level gives rise to dramatic fluctuations in the flowering time for this plant. The *B. montana* seeds and its rosettes, which occur as offsets and from adventitious roots, have adapted to development underwater and persist at that stage for long periods if water levels remain high during the growing season. They can't mature in that condition,

but it is possible to see various stages of growth at the same time on the sloping shoreline.

Boltonia montana is found in only one other area, northwestern New Jersey, making it a disjunct species. Specimens have been collected twice in Dauphin County along the Susquehanna River, but the species has not been seen there since 1865, a reminder of the importance of conserving native plants and their habitats.

Occurring with *B. montana* at Oak Pond, sneezeweed was just coming to the end of its blooming period. No one sneezed. Apparently earlier settlers concocted a snuff from the dried flowers, resulting in the common name. This plant is also listed, as G3 and S2.

Oak Pond is one of the most important in the group for amphibian reproduction. The field trippers all got to see both the White-spotted Slimy Salamander and the eft of the Red-spotted Newt.

And alas we must end this account with the first pond! Spring Pond, where we saw blooming Golden Club (*Orontium aquaticum*), along with interesting specimens of moth fungi, chain fern moth borers, and galls; infrequently filled Willow Pond, with its dry-site generalists and prairie plants; and Twin, Split Level, and Cold ponds, each with its singular delights, will have to wait for another article. It was a grand trip!

Spring nights

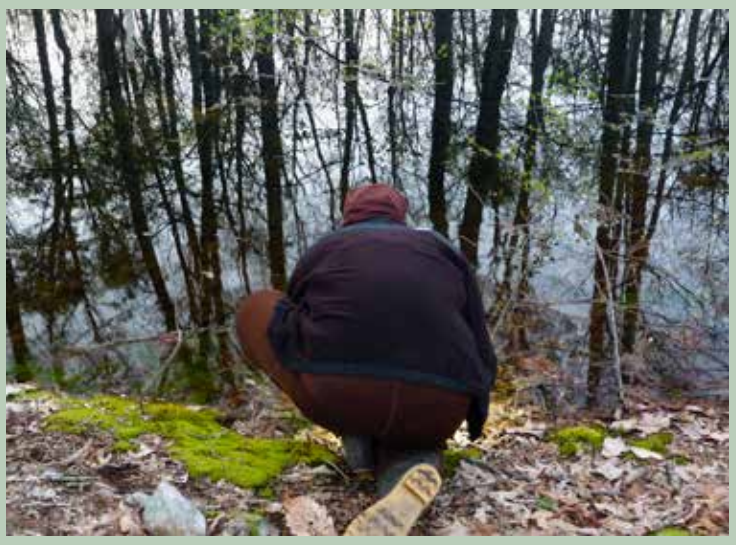
It was late April and an early-evening chill was in the air as our hiking group gathered at the Maple Flats trailhead just off Coal Road. Our goal was to hike past several sinkhole ponds and wind up on the banks of Spring Pond in total darkness. We were there for the night life, specifically the frogs and birds. As we passed several smaller ponds, we noticed the vegetation just leafing out, but for the most part the stark, gray limbs and trunks of deciduous trees were reflected in the dark, tannic waters of the ponds to create a mosaic of blacks and grays.

Eastern Mennonite University professor and conservation photographer Steven Johnson came fully equipped for night photography in the ponds. Outfitted in waders and a light on his head he appeared a little like some swamp creature as he waded into the ponds, a moving shadow barely discernable in the dusk except for the small circle of light.

Upon reaching Spring Pond we settled in to listen. Soon the chorus of Spring Peepers, Pickerel Frogs, Green Frogs, and Bullfrogs dominated the airwaves. It was fun picking out the different calls from the deep *rumm-rumm* of the Bullfrog to the snoring sound of the Pickerel. Although we could hear the males of all the species competing for affection, we were told that the female frogs could hear only the frequencies of their own species.

Then suddenly we heard a warning slap from a beaver that was skimming by and checking us out. Definitely not a frog!

After about 20 minutes of frog music, we switched to owls. Tape recordings of a Barred Owl drew in a few jealous responders on either side of us before they went off into the night to take care of business. Finally we headed the mile or so back to the parking area in full darkness, having gained a new appreciation for a forest that never sleeps and a habitat dominated by the wet and dampness of sinkhole ponds. ❖



Steven Johnson kneels on the banks of a sinkhole pond in Maple Flats to photograph life in the dark waters. (Photo by Nancy Sorrells)

Want to visit Maple Flats Ponds?

Maple Flats Ponds are in the George Washington National Forest in southeastern Augusta County. The site is about 45 miles from Harrisonburg, 25 miles from Staunton, and 12 miles from Waynesboro. From I-64 take Exit 96 (Waynesboro/Lyndhurst exit), which takes you to South Delphine Avenue. Take South Delphine south, toward Lyndhurst and Sherando; it turns into Mt. Torrey Road. About 8 miles out, turn right on Coal Road (a USDA Forest Service road). Go about 2 miles to a semicircular parking area on the right marked with big boulders.

First Lady McAuliffe Will Put Virginia Native Plants Front and Center at Garden Week Event

Virginia's native plants will be center stage Friday, April 29, at the Governor's Mansion in Richmond. The home of Governor and Mrs. Terry McAuliffe and their family will be among those open to the public for Historic Garden Week. And while the public is there, First Lady Dorothy McAuliffe wanted them to have the chance to learn more about natives and why they're important.

VNPS Treasurer Cathy Mayes and Webmaster Sue Dingwell, as well as representatives of several other Virginia groups that support native plants, will be able to meet and greet attendees. Other participants are the Virginia Natural Heritage Program, organizing the event, the Flora of Virginia Project, and the Virginia Native Plant Marketing Partnership. A display and reference center will be set up on the north side of the mansion, near the front entrance.

The Governor's Mansion, Richmond, is the longest occupied governor's mansion in the United States. (Photo by Leonard Woody - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=16889585)

The mansion has been continuously occupied since its completion in 1813. Renowned landscape architect Charles Gillette installed a garden on its south side in 1954. It was restored, as a project of the Garden Club of Virginia, in 1999 by William D. Rieley, the Garden Club's landscape architect since 1998. Rieley used Gillette's original plans as well as photographs to chart the restoration. Historic Garden Week, of course, is the Garden Club's premier event and supports its program of restoring historic gardens.

It's exciting that the first lady is giving attention to our native plants. If you'll be in Richmond April 29, stop by the Governor's Mansion. For tour and ticket information, see vagardenweek.org. *—Bland Crowder*

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