



# Bulletin

A publication of the VIRGINIA NATIVE PLANT SOCIETY  
*Conserving wild flowers and wild places*

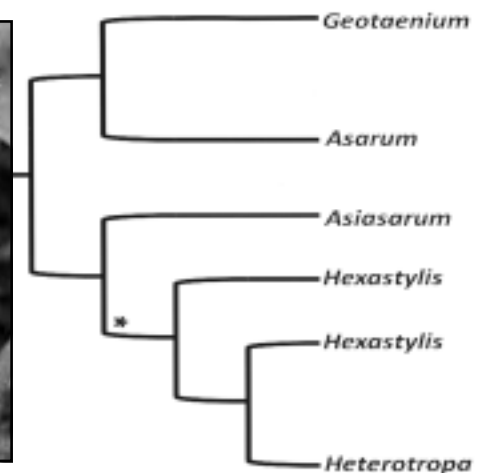
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## One lump or two: *How many wild gingers inhabit North America?*

Depending on which source one consults, the answer is either one (*Asarum*), or two (*Asarum* + *Hexastylis*). It is a classic lump-or-split situation. To mention just a few sources, Fernald (1950) and Gleason & Cronquist (1991) lump all the wild gingers into a single genus, whereas Radford et al. (1968), the Digital Atlas of the Virginia Flora (Virginia Botanical Associates 2010), and the *Flora of North America* (Whitmore & Gaddy 1997; Whitmore et al. 1997) split *Asarum* and *Hexastylis* apart. Deference to authority is a poor way to assess any scientific question, and for these wild gingers, the authorities are deeply split. To understand the case at hand, one needs to dig a little deeper.

Let's consider morphology first. There is a long tradition in botany that genera should be distinguished from each other based on qualitative differences in the plants' flowers and fruits, whereas species within a genus should be distinguished by non-floral characters or quantitative aspects of the reproductive structures, i.e., mere dimensions, not basic morphology of flowers and fruits. Oaks provide an excellent example: fruits of any oak species are readily recognized as some sort of acorn, but acorns of different species of oak come in different sizes, the ratios of cap to nut also vary, as do many aspects of the leaves and bark.

On first impression, all the wild gingers share a similar morphological aspect: all are herbaceous  
(See *Wild ginger*, page 5)



*Simplified cladogram of wild gingers, after Kelly (1998). Genera at branch tips represent narrow (split) taxonomic concepts and contain from one to several dozen species each; asterisk marks the common ancestor to Hexastylis and Heterotropa.*

## *Annual Meeting to focus on flora at Shenandoah National Park*

An Annual Meeting filled with spectacular surroundings, informative speakers and great field trips is in the final planning stages as the Piedmont Chapter prepares for VNPS members to meet at Shenandoah National Park (SNP) September 10-12. Piedmont Chapter members hope to offer a meeting not to be missed. On Friday, September 10, SNP botanist Wendy Cass, will offer an overview of the park flora and efforts to protect it. The speaker at Saturday's dinner will be a valued friend of VNPS, Gary Fleming, whose in-depth knowledge of Virginia's plant communities, including those of the park, is rivaled only by his artistic skill in photographing them. Gary is Vegetation Ecologist for the Virginia Natural Heritage Program.

(See *Annual Meeting*, page 6)

**INSERT: Check out the spring wildflower events, pages 3-4**



# From the president . . . . .

## Happy Spring! Get outside and play!

I went out a few days ago and found a single bloodroot. Two days later the woods were speckled with them. It's hard to keep up when it seems like you can almost see things growing.

Once again, the first Saturday of May has been chosen for the statewide Invasive Plant Removal Day, jointly sponsored by VNPS and Virginia Master Naturalists. I know lots of us will be pulling weeds before then, but I hope we can use this date as a day of educating people in a local setting. Concerns have been brought up about disturbing nesting birds at this time of year, so please take that into consideration when you plan, and I hope you will try to make this event a reality in your area. You can find the website at [www.virginiamasternaturalist.org/invasives/index.html](http://www.virginiamasternaturalist.org/invasives/index.html) or use a web search, and register your event.

Our winter workshop was a delight and, as a result, speaker Dot Field will lead a field trip for us to Savage Neck Dunes on the Eastern Shore this fall. Two other state field trips are also scheduled, the first in June at the Smithsonian Conservation Biology Institute in Front Royal, and the other also in the fall at the New Kent Forestry Center between Richmond and Williamsburg. The details can be found in this newsletter.

The week-long trip to Southwest Virginia is full, and a waiting list is being kept. I hope those of you who did not sign up in time or cannot go this year will check back with us next year. I expect that we will continue to offer this trip in the future.

And now, go outside and play!

Your president,  
**Sally Anderson**

### VNPS 2010 State Field Trips

\$10 donation per trip. Please register with the VNPS Office at 400 Blandy Farm Lane #2, Boyce, VA 22620, [vnpsoc@shentel.net](mailto:vnpsoc@shentel.net) or phone 540-837-1600. More details are coming on the October trips in a future issue or on the web.

**June 26 (rain date June 27), 10 a.m.-1 p.m. (register by June 14)**

**Smithsonian Conservation Biology Institute, Front Royal, VA [formerly Smithsonian Conservation Research Center]** Norm Bourg, Plant Ecologist and Ecological Research Programs Manager, will give a highlights tour of the center. We will visit a 25 ha plot that is being used to study carbon sequestration. Within this plot is a 4 ha deer enclosure where you can see the effects of limiting deer herbivory on sapling growth, native wildflowers and invasive plants. Also visit an American chestnut orchard and, if time permits, look at a pasture restoration site. Bring a picnic lunch, as we will end the trip at a high hill with great views. Bring water and a hat, and be prepared for the usual insects and ticks.

**October 1, 10:30 a.m.-3 p.m.**

Walk the boardwalk through a swamp at what was formerly the New Kent Forestry Center near Providence Forge. Trip will be led by College of William and Mary botanist Donna Ware.

**October 2, 10:30 a.m.-3 p.m.**

See a 50-foot sand dune, many plant communities, and a beach that is home to rare tiger beetles at Savage Neck Dunes Natural Area Preserve. Led by Natural Heritage botanist Dot Field.

I would like to attend the following trips:  
  
\_\_\_ \$10 Smithsonian Conservation Biology Institute  
\_\_\_ \$10 New Kent Forestry Center  
\_\_\_ \$10 Savage Neck Dunes  
\_\_\_ Total  
  
Enclose check with this information or call the office to register with credit card.

NAME \_\_\_\_\_  
VNPS CHAPTER \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
\_\_\_\_\_  
PHONE \_\_\_\_\_  
EMAIL \_\_\_\_\_

# Virginia Wildflower Celebration 2010

The 13 chapters of the Virginia Native Plant Society celebrate the rich diversity of the native flora of the commonwealth each spring. Society members will share their enthusiasm for wild plants and wild places on field trips and wildflower walks, and during garden tours, plant sales, and a variety of other programs throughout the state.

You are cordially invited to any of the activities listed below; they are all open to the public. As some events require reservations, fees or additional instructions, use the contacts provided to obtain further information. Plants propagated by members will be available at chapter plant sales.

As you travel about the state, watch for the 2010 VNPS Wildflower of the Year, wild ginger (*Asarum canadense*). It occurs throughout much of the northeastern U.S. and has been documented in all of Virginia's mountain and piedmont counties and half of the coastal plain counties. Perhaps you can add to that list of documented sites. The reward of finding wild ginger blooms goes to those who push the spreading plant leaves aside to glimpse the jug-like spring flowers.

## Wildflower Calendar of Events

**Bluebells and Bloodroot: Spring Wildflowers of the Floodplain (Fairfax County)** - Saturday April 17, 10-11:30 a.m. Identify Riverbend Park's beautiful spring ephemerals and learn their associated folklore as we walk along the banks of the Potomac River. Canceled if rain. \$5/person, 703-759-9018.

**Spring Notable Wildflowers Field Trip to Reddish Knob and Flagpole Knob, W.Va.** - Saturday April 17, 8 a.m. - 5 p.m., sponsored by James Madison University's Edith Carrier Arboretum. Departure at 8 a.m. from the Frances Plecker Education Center parking lot; return about 5 p.m. See wildflowers like lupine and bloodroot. Walk and interact with trip lecturer Dr. Conley McMullen along mountain trails. This mountain ecosystem is a northern plant paradise. \$30 per person, pre-registration required at [www.jmu.edu/arboretum/forms/wildflowers\\_fieldtrip\\_april\\_17\\_2010.doc](http://www.jmu.edu/arboretum/forms/wildflowers_fieldtrip_april_17_2010.doc)

**Buffalo Creek Field Trip (Blue Ridge Wildflower Society)** - Saturday April 17. Rich Crites will lead a group to a VNPS Registry sites. Look for bluebells, dwarf ginseng, walking fern and more. Bring a lunch. Call Crites at 540-774-4518 for details.

**Upper James River Chapter April Wildflower Walk** - Saturday April 17, 9:30 a.m.-noon. Explore Brushy Hills, the Chessie Trail, Washington & Lee campus and more in Rockbridge County and Lexington. For more information call Peggy Dyson-Cobb at 540-464-3511.

**A Spring Morning Along the River** - Sunday April 18, 7:30 a.m.-noon. Join Leader Stephanie Mason for this early spring exploration of the Potomac River bottomland woods above Great Falls, Md. Mason leads this search for spring wildflowers, swelling buds, and early spring wildlife, including birds, butterflies, and amphibians. The natural surface trail is mostly level, but can be muddy. Audubon

members \$23; nonmembers: \$32. For information or to register call 301-652-9188 x16 or visit [www.audubonnaturalist.org/](http://www.audubonnaturalist.org/).

**Earth Day Festival in Staunton, Va. (Shenandoah Chapter plant sale)** - Sunday April 18, 9 a.m.-noon. Celebrate the 40th anniversary of Earth Day and visit the Shenandoah Chapter Plant sale booth at the Earth Day Festival in downtown Staunton across from Sunspots (near the Farmer's Market) on the wharf.

**Wildflower Walk at James Madison University's Edith Carrier Arboretum** - Sunday April 18, 2 p.m., beginning in the Pavilion, a walk presented by the VNPS Shenandoah Chapter. Visit [www.jmu.edu/arboretum/](http://www.jmu.edu/arboretum/) for directions or more information.

**Bull Run Bluebell Walk** - Sunday April 18, 2-3 p.m. A spectacular show of bluebells, spring beauties and other spring wildflowers along a 1½-mile path. Join in this more than 30-year tradition. No reservations required. Call the nature center or Bull Run Regional Park directly at 703-631-0550 for more info.

**James Madison University Edith Carrier Arboretum Native Plant Sale (Harrisonburg)** - Friday and Saturday April 23-24, 9 a.m.-3 p.m. Visit [www.jmu.edu/arboretum/](http://www.jmu.edu/arboretum/) for directions or information.

**Blue Ridge Wildflower Society Great Smoky Mountain National Park Field Trip** - Saturday and Sunday April 23-24, chapter members meet in Gatlinburg, TN on Friday at the Sugarlands Visitor Center at 6 p.m. Saturday's activities will be planned Friday evening. Lodging on your own. Trip coincides with the Great Smoky Mountain Wildflower Weekend ([www.springwildflowerpilgrimage.org](http://www.springwildflowerpilgrimage.org)). Come prepared with layers of clothing, sturdy shoes, rain gear, and snacks. For more information contact Butch Kelly at 540-384-7429 or Rich Crites at 540-774-4518.

**Riverfest in Waynesboro (Shenandoah Chapter plant sale)** - Saturday April 24, 10 a.m.-4 p.m. Shenandoah Chapter Plant sale at the Waynesboro Farmers Market in downtown Waynesboro at the South River.

**Upper James River Chapter April Wildflower Walk** - Saturday April 24, 9:30 a.m.-noon. Explore Brushy Hills, the Chessie Trail, Washington & Lee University campus and more in Rockbridge County and Lexington. For more information call Peggy Dyson-Cobb at 540-464-3511.

**Prince William Wildflower Society 24th Annual Garden Tour** - Sunday April 25, noon-5 p.m. Email [pwws.vnps@yahoo.com](mailto:pwws.vnps@yahoo.com) or call 703-368-2898 to receive a brochure with directions to the homes on tour.

**Blue Ridge Wildflower Society General Membership Meeting** - Monday April 26, 7 p.m. "Gardening for Wildlife Enhancement" by Suzie Leslie. Roanoke Church of Christ. Call Rich Crites at 540-774-4518 for more information.

**Rock Castle Gorge-Blue Ridge Parkway Field Trip (Blue Ridge Wildflower Society)** - Saturday May 1, 9 a.m.-early afternoon. Join trip leader Butch Kelly on a trip to this special place below the heights of the Blue Ridge Parkway. Look for trillium, violets, Indian paintbrush, and flame azalea. Bring a snack. Stop for late lunch at Tuggles Diner. Call Kelly at 54-384-7429 for details.

**Project Learning Tree** - Saturday May 1, 10 a.m.-4 p.m. Project Learning Tree (PLT) is an interdisciplinary, award-winning environmental education program for adults designed by educators for educators. Participants receive PLT PreK-8 Environmental Education Activity Guide packed with 96 multidisciplinary activities. Bring a bag lunch and drink. The facilitator is environmental educator and Fairfax Master Naturalist Eliza

(Continued on page 4)

# Wildflower Calendar

beth Burke. For information call 703-228-6535. Meet at Long Branch Nature Center, 625 S. Carlin Springs Rd., Arlington, VA 22204. Free. Register at [www.arlingtonva.us/calendar/default.aspx#EventDetails\\_8933](http://www.arlingtonva.us/calendar/default.aspx#EventDetails_8933). (Select Program #: 643610-04)

**Wildflower Weekend Webster County, WV (Shenandoah Chapter)** - Saturday and Sunday May 1-2. Visit Camp Caesar in West Virginia. Contact Jay Shaner at 540-886-5763 for more information.

**Spring Woods of Chapman Forest** - Sunday, May 2, 10 a.m.-3 p.m. Leader Bob Pickett will take a group to Chapman's Landing on the Potomac River in Charles County, Md. This extraordinary and unique place with a diversity of old-growth trees has been protected since 1750. Site contains 13 species with a trunk diameter of 9 feet or more including a tulip tree and chinquapin oak over 16 feet in diameter and a 15-foot sycamore. Hike through the various habitats and ravines in search of these bemoths, enjoying their fresh spring foliage,

as well as the wildflowers that grow beneath them. Plan to cover up to 4 miles, mostly on natural surface trails, but with some off-trail hiking and some steep, but short, ascents and descents. Audubon members: \$25; nonmembers: \$35. For information or to register, call 301-652-9188 x16 or visit [www.audubonnaturalist.org/](http://www.audubonnaturalist.org/).

**Trillium Trek** - Sunday May 2, 8:30 a.m.-4 p.m. (Adults) Travel to Linden, Va. to see one of the largest (millions!) Great White Trillium displays in the world. This area is filled with (often rare) wildflowers and trees, including native orchids and a variety of wildlife to observe. On the somewhat rocky two-mile trail we'll discuss plant folklore and ethnobotany. Before we head home, we'll stop to purchase local country crafts and apple products. Dress for hiking; bring water and a bag lunch to eat on the trail. \$25 fee due upon registration. Van leaves from Lubber Run Center parking lot, 300 N. Park Dr., Arlington, VA 22203 or will pick up from Ballston Metro Station with advance request: 703-228-6535.

\$30 fee due upon registration Register at <https://registration.arlingtonva.us>. (Select Program #: 643610-09)

**Blue Ridge Wildflower Society Annual Spring Wildflower Sale** - Saturday May 8, 8 a.m.-2 p.m. Call Rich Crites (540-774-4518) or Jim Bush (540-929-4775) for more information.

**Prince William Wildflower Society 28th Annual Wildflower and Native Plant Sale** - Saturday May 8, 9 a.m.-noon. Bethel Lutheran Church grounds, 8712 Plantation Lane, Manassas.

**Arcadia Field Trip (Blue Ridge Wildflower Society)** - Saturday May 22, meet in Botetourt at 9 a.m. Rich Crites will lead a group to Arcadia and up the mountains to the Blue Ridge Parkway. The goal is to see pink and yellow lady-slippers. Call Crites at 540-774-4518 for information.

**Rhododendron Day on the Blue Ridge Parkway Field Trip (Blue Ridge Wildflower Society)** - Rudy Albert (540-774-2279) will lead a group on the chapter's annual foray to the Peaks of Otter and points north. Flame Azalea should be in full bloom.

## Wintergreen offers 27th wildflower symposium

In the early spring before the trees are full, the hillsides are warmed by the sun and the wildflowers are in full bloom. Experience this special time at Wintergreen Resort by attending the 27th annual Spring Wildflower Symposium May 14-16 at the Wintergreen Nature Foundation located in the Blue Ridge Mountains.

Instructors for the weekend include well-known botanists, authors, and artists, each prepared with a full weekend of activities and lectures that will reconnect you with nature. The weekend offers something for everyone from walks to workshops and lectures. There will also be a native plant sale of seedlings propagated by the Wintergreen Nature Foundation. Regional artists will be on hand to share their work and offer workshops.

Visit [www.twinf.org](http://www.twinf.org) for a full brochure. Reservations are required and can be made on line or by mail. Accommodations are available at Wintergreen Resort. Registration is \$120 but early bird discounts are available. Cost does not cover lodging.

## Fairfax takes invasive removal seriously

In Fairfax County, residents are taking the third annual Invasive Plant Day on Saturday, May 1 very seriously. Local sites are available for those interested in participating in the third annual, statewide Invasive Plant Removal Day. The activities at the state level are being coordinated by the Virginia Native Plant Society and the Virginia Master Naturalists and can be found online at [www.virginiamasternaturalist.org/invasives/](http://www.virginiamasternaturalist.org/invasives/)

In Fairfax County, the Invasive Management Area (IMA) volunteers and park authority staff will target nonnative invasive species that negatively affect the quality of our natural areas. Nonnative invasive species invade natural areas, threatening trees, devaluing wildlife habitat and lowering the quality of the resources. The park authority's all volunteer IMA program has workdays throughout the year, but on May 1, activities will take place as follows:

- Falstaff in Dranesville District (9 a.m.-noon)
- Fred Crabtree in Hunter Mill District (9 a.m.-noon)
- Huntley Meadows in Lee District (9:30 a.m.-noon)
- Mason District in Mason District (9 a.m.-noon)
- McLean Central in Dranesville District (9 a.m.-noon)
- Rocky Run in Springfield District (9 a.m.-noon)
- Royal Lake in Braddock District (7 a.m.-10 a.m.)
- White Oakes in Mt. Vernon District (8 a.m.-11 a.m.)

If you are interested in volunteering please contact Kathy Frederick at 703-324-8681 or **register online** at [www.fairfaxcounty.gov/parks/resources/IMA/whatareinvasives.htm](http://www.fairfaxcounty.gov/parks/resources/IMA/whatareinvasives.htm).

Invasive species are, generally, nonnative species that cause ecological or economic harm. They share certain characteristics, such as being able to mature quickly, generate many offspring and can tolerate a wide range of habitats. Because of the characteristics that allow a species to successfully establish in new territory, invasive species make terrible neighbors.

# Act responsibly when collecting seed from the wild

The Virginia Native Plant Society promotes conservation and protection of native plant species and their habitats. Recognizing the growing interest in incorporating native plants into the landscape, the society has created a list of nurseries that specialize in growing native plants. To the best of our knowledge, these nurseries do not collect plants from the wild, and neither should you. Instead you can grow plants from seeds that have been collected responsibly from the wild.

What does it mean to responsibly collect seeds from the wild? To answer this question, we offer the following guidelines. These guidelines will help ensure that our native plants and their habitats are not put at risk due to seed collecting.

1. Do not collect seeds from plants that are rare, threatened, endangered or on the watch list. These plants are protected by federal and state laws. Refer to the Virginia Department of Conser-

vation and Recreation Division of Natural Heritage list of rare plants.

2. All native plant seeds require special treatments and storage for successful germination. Know the requirements prior to collecting the seed. Do not collect seeds that you are unable to handle properly especially if they are difficult to germinate. There are many references available on propagating native plants.

3. Obtain permission from landowners (public and private) before collecting seeds. Please note that seed collecting is prohibited on some public lands and that special permits may be required.

4. Collect a minimum amount of seed following the guidelines outlined below:

- Collect seeds from large healthy populations of plants where collecting will not damage the population's ability to survive and prosper.
- Never collect all seeds from a single plant or from a small group of plants.

- Never collect the entire plant except for bona fide scientific research using proper safeguards, which should include never collecting the only plant.

- Know when seeds are ripe, and collect only those that are ready.

- As a general guide, the North Carolina Native Plant Society recommends one collection for every 20 to 50 plants.

- The New England Wildflower Society states that "Specifying a minimum population size for seed collection without significant population damage is difficult, but as a general rule, at least 20 herbaceous plants or 10 woody plants should be present at a site before any collection of seed is made. . . These collection numbers should be used as a guide, however, not a minimum threshold for relatively harmless collection. EXAMPLES: For species that produce only one or two capsules per plant, seed collectors must be careful. *Trillium grandiflorum* produces one seed capsule per plant. Since it is essentially impossible to collect only part of a capsule, a population of *Trillium* needs to contain at least 20 reproductively fruiting plants before collection of one capsule can occur. On the other hand, some woody plants, *Viburnum* species for example, can produce copious seed, and seed collection from a population with a few fruiting individuals may not reduce the overall vigor of a population."

5. Use caution when collecting seed to ensure that no damage occurs to surrounding flora, fauna or habitat.

6. Collect discreetly so as not to encourage others to collect who may do so indiscriminately. Teach others about proper and careful seed collecting.

7. Above all, always use common sense. The goal is to collect seeds such that the viability of the population is not compromised.

*Kim Strader, VNPS Horticulture Chair*

## • Wild ginger

(Continued from page 1)

perennials with shallow rhizomes bearing kidney- to heart-shaped leaves and jug-like flowers borne essentially at soil level. Further, all the flowers are dominated by three sepals enclosing 12 stamens and an ovary composed of six subunits (carpels). Overall similarity of reproductive features could argue for lumping all into a single genus, *Asarum*. But if one looks a little closer, the sepals of *Asarum* are mostly separate from each other above the ovary, where they are clearly fused and tubular in *Hexastylis*, the anthers of *Asarum* have terminal appendages that are absent in *Hexastylis*, and the ovary of *Asarum* is inferior whereas ovaries in *Hexastylis* are superior or at most one-third inferior. So, with a closer examination of reproductive structures, a case based on morphology could be made for splitting *Hexastylis*. Do the similarities outweigh the differences? Are the similarities somehow more important, and the differences mere details? Or vice versa? These questions have no obvious single answer; morphology could be used to justify either splitting these genera apart or lumping them as one. Natural diversity does not come sorted and labeled; the patterns that nature gives us don't always fit simple, preconceived notions of what should constitute a distinct genus. Nevertheless, at some point a decision needs to be made, and it looks like morphology is not going to decide this case.

Over the last two decades or so, plant systematists have made great strides in deciphering the details of relationships among plants. Two revolutions have brought this about: 1) the adoption of cladistic methods for reconstructing evolutionary relationships (phylogeny) and 2) the inclusion of molecular characters (DNA or gene-sequence information) in cladistic analyses. Lawrence Kelly has published two cladistic analyses of wild gingers, one based entirely on morphological data

(See *Ginger confusion*, page 8)

# Student learns about invasives in Bay

**Editor's Note:** As a member of the Virginia Outdoor Writers Association, I recently attended that group's annual meeting at which we awarded prizes to high school and college students in an outdoor essay contest that VOWA sponsored. Taking home first place in the high school category was a young lady named Grace Perkins, a senior at Lancaster High School on the Northern Neck in White Stone. Her article on the dangers of the invasive water plant, *Phragmites australis*, fits in nicely with VNPS efforts to eradicate invasive plants. --VNPS Bulletin Editor Nancy Sorrells.

*Phragmites australis*. I could hardly pronounce it, and I knew I did not want to spend my summer vacation studying it. However, the Chesapeake Bay Governor's School for Marine and Environmental Science requires a two-year investigative project. Having learned to curse *P. australis*' very existence in class, I decided a relevant yet simple study would be a comparison of the effects of this invasive nonnative marsh grass with those of a native grass *Spartina cynosuroides* on the fish population of a Chesapeake Bay salt marsh.

My first mistake was believing this would be a leisurely undertaking. Field studies are intense, especially those dealing with tides. The second mistake was choosing a site 40 minutes from my house. The tide cycles must be Mother Nature's practical joke. To cast my seine nets at low tide, I rose before sunrise and reached the marsh by daybreak. Then, I returned home and, six hours later, drove back to the marsh to pull in the nets. While my classmates woke up at noon, loaded the toaster with Pop-Tarts, and logged onto Facebook, I was in my maroon pickup truck, dressed in old t-shirts, shorts, and water shoes (the ugliest article of clothing ever invented) on my way to wade in cold, brackish water. Despite weeks of sinking up to my knees in the darkest, slimiest mud imaginable, slapping at mosquitoes, and watching out for spiders and cottonmouths, I repeatedly reeled in empty nets in the *P. aus-*

*tralis* marsh. It was disheartening, but I redesigned my method of capture and began using cylindrical fish traps.

After revising, my project yielded statistically significant results. I compared three variables between the *P. australis* and the *S. cynosuroides* marshes: fish abundance, fish species diversity, and plant density. The first variable, fish abundance, proved to be the most significantly different; 358 fish were caught overall in the native *S. cynosuroides* marsh, while only 133 fish were caught in the invasive *P. australis* marsh. Running a paired t-test between the numbers of fish caught yielded a highly significant p-value of 0.008. Unfortunately, the other two variables did not prove to be significantly different. The species of fish caught in each marsh (marsh killifish, mummichogs, sheepshead minnows, and striped killifish) produced almost identical Shannon-Wiener Diversity Indexes; both were approximately 1.10. Thirdly, *P. australis* was found to be denser, but the data was not significantly so. An interesting trend in the data, however, showed that, on average, fish caught in the *P. australis* marsh were larger. I speculated this was because only hardier, older fish can survive in a possibly harsher environment for which they have not evolved. Invasive species, like *P. australis*, have the potential to destroy a well-established marsh. It is necessary to check their growth, as marshes are one of the first indicators of problems that can jeopardize a pro-

ductive and healthy Chesapeake Bay.

This summer, I learned firsthand how *P. australis* can devastate a marsh. As important, however, I experienced the Chesapeake Bay in a new way. Although I have grown up in a small, rural area where many of my classmates' families depend on the menhaden and oyster industries, I only knew the Bay through tubing and jet skiing. For 10 years, I have lived a short distance from the waterfront, but until this summer, I had never experienced its natural rhythms and beauty. I can now say I have watched the pinks and oranges of the rising sun paint the sky over Rockhole Creek. I have cast a net in cool water up to my ankles and caught marsh killifish and fiddler crabs. A blue heron has shared the mornings with me, and at the time, we seemed like the only living things in the world. I have driven with the windows down, the salty air blowing my hair around and big band music from the only available radio station turned all the way up. I felt infinite, like I was a part of something larger than myself.

This project taught me that science is not always the neat, controlled labs conducted in school. It can involve hard, even smelly, work. Experiments may require revision or redesign, and they do not always produce the expected results. These unlooked-for findings can lead to new ideas and experiences. Sometimes, unexpected results become the most important lessons of all.

## • Annual Meeting

(Continued from page 1)

Field trips on Saturday and Sunday will cover a range of places and offer a varied focus, from energetic hikes to a relaxed workshop on nature photography. The growing list of field trip leaders includes Doug Coleman, Ton Dierauf, Jay Stipes, Marion Lobstein, and Richard Stromberg as well as park staff biologists. Piedmont planners hope for a program that will give attendees a memorable few days, experiencing the park's diversity of flora and cultural history, but also learning about strategies for combatting emerging problems such as deer damage and threats to rare plants at rock outcroppings. Perhaps equally meaningful, Annual Meeting 2010 will give members from around the Commonwealth a chance to renew friendships and find kindred souls.

Details and a registration form will be part of the summer issue of the *Bulletin*.



# Wild Virginia: Working to preserve Virginia forests

**Editor's Note:** Recently VNPS became Wild Virginia's newest partner in its initiative to eradicate invasive nonnative plants. Here, Wild Virginia conservation director David Hannah tells us a little bit about his organization.

Wild Virginia is a grassroots, non-profit organization dedicated to preserving wild forest ecosystems in Virginia's national forests—remote and inaccessible mountaintops, large expanses of undisturbed forest, plant and animal populations, and intact natural communities. Since our beginnings in 1995, we have fought to keep these natural features a reality.

At the heart of our work is the desire to enhance the ecological integrity and biological diversity of our national forests and ensure they are maintained for future generations. The Shenandoah Mountain area of the George Washington National Forest (GWNF) is a special place and a focus of our work. It contains many headwater and wild trout streams, a healthy black bear population, and a diversity of natural communities and rare species (including the Cowknob salamander (*Plethodon punctatus*) and least trillium, *Trillium pusillum* var. *monticulum*).

Wild Virginia works for sound management of the GWNF in various

ways. Our 2008 report, *The State of Our Water*, describes the tremendous importance of the GWNF as a source of public drinking water. More than 22 communities in western Virginia obtain drinking water from the GWNF. The watersheds providing this water cover roughly 44 percent of the GWNF land in Virginia. As a result of the report, the Virginia Native Plant Society (VNPS) and 39 other organizations (including 16 localities) adopted resolutions calling for stronger protection of water quality in the national forest.

Among other ecological issues, Wild Virginia is concerned about the impact of nonnative invasive plants in the GWNF. The Shenandoah Chapter of VNPS has documented invasive plants in the forest with roadside surveys. Despite the heavy presence of invasive nonnatives, none of the forest's six wilderness areas have been surveyed or inventoried for them. In collaboration with the U.S. Forest Service, we will conduct an inventory of invasive nonnatives in Ramsey's Draft Wilderness Area during the 2010 growing season. After completing the inventory, we will work with GWNF personnel to identify the most problematic species and prioritize

them for control beginning in 2011.

Wild Virginia also sponsors monthly hikes to some of the beautiful spots our mountains have to offer. The outings are free and open to anyone who is interested and physically fit enough to enjoy them. Visit [www.wildvirginia.org](http://www.wildvirginia.org) to read descriptions of upcoming hikes and see pictures of past ones.

Virginia's national forests are truly natural treasures, full of many diverse gems. With wild trout streams, challenging trails, caves, wildflowers and shrubs in full bloom, wilderness areas, incredible views, bird migrations and more, there is something for everyone.

A very concrete way to help is to participate in the public process of revising the Forest Plan for the GWNF. The plan is critically important, as it will dictate how the forest is to be managed for the next 10 to 15 years. We encourage everyone to get involved by attending public meetings and submitting comments to the U.S. Forest Service about how the GWNF should be managed.

To learn more about Wild Virginia, contact Hannah at P.O. Box 1065, Charlottesville, VA, 22902, 434-971-1553, [dhannah@wildvirginia.org](mailto:dhannah@wildvirginia.org) or visit [www.wildvirginia.org](http://www.wildvirginia.org).

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Blandy Experimental Farm  
400 Blandy Farm Lane, Unit 2  
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(540) 837-1600

[vnpsoc@shentel.net](mailto:vnpsoc@shentel.net)

[www.vnps.org](http://www.vnps.org)

Sally Anderson, President  
Nancy Sorrells, Editor

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# • *Ginger confusion*

(Continued from page 5)

(Kelly 1997), the other incorporating both morphology and DNA-based characters (Kelly 1998). In both studies, the species always placed in *Asarum* and those sometimes split as *Hexastylis* occupy distinctly different branches of the phylogenetic tree generated by his data (figure on page 1). Nevertheless, despite the clear split between the two, Kelly prefers to lump *Hexastylis* with *Asarum* rather than maintain them as distinct. Why, one might ask?

The problem is that the plants from the southeastern U.S. that traditionally have been called *Hexastylis* are not the only plants that occupy the branch opposite *Asarum* on Kelly's cladograms. At the base of that branch is a Chinese species sometimes classified in the genus *Asiasarum*, then there are two successive branches that contain our southeastern U.S. species of *Hexastylis*, and then another large branch containing Asian plants sometimes classified as *Heterotropa*. So, the question of whether to lump or split *Asarum* and *Hexastylis* is not the whole story here; rather it is just one aspect of how best to classify all the wild gingers of the world. In other words, the existence of

species in China impacts how we apply names to plants in North America! Further, the powerful toolkit that cladistic analysis provides comes with some rather stringent rules about how taxonomic groups can be defined. In cladistics, the foremost rule for defining taxonomic groups is that they must be monophyletic, i.e., all members of the group must have a common ancestor *and* the group must include *all* descendants of that common ancestor. And this is the essence of the problem with *Hexastylis*. As modeled by Kelly's cladograms, the species that have been traditionally distinguished by some as the genus *Hexastylis* do not constitute a group that includes all descendants of their common ancestor. Specifically, all the species classified as *Heterotropa* share a common ancestor with *Hexastylis* but are not included in *Hexastylis* as that genus has been defined. Hence, from global and cladistic perspectives, maintaining *Hexastylis* as traditionally defined for a handful of species in the southeast U.S. is untenable. It looks like the lumpers win: all wild gingers should be classified as species of *Asarum*.

Ah . . . but is that the final word? The lumpers should not be overly

smug. One could argue that the big split in the phylogenetic tree, *Asarum* (plus another small genus called *Geotaenium*) on the left side of and *Asiasarum-Hexastylis-Heterotropa* on the right side, defines two genera. A quick perusal of the dates on which the genus names of the right-hand branch were first published suggests that *Hexastylis* would have priority if all three were grouped together. So, it looks like it may be possible to maintain the *Hexastylis* split from *Asarum*, but *only* if proponents of that option would be willing to lump *Hexastylis* with these Asian entities which, of course, would alter the traditional concept of *Hexastylis*.

It is human nature to prefer a single, simple, straightforward answer to a question. Whether wild gingers constitute one or two genera seems like a simple, straightforward question, but it looks like nature is giving us two subtly nuanced solutions. Does this sort of conundrum leave you with a splitting headache? Perhaps a nice soothing cup of ginger tea would be just the thing . . . one lump or two?

W. John Hayden, VNPS Botany Chair