



Native Plant News

The Newsletter of the North Carolina Native Plant Society

Volume IV, Issue 2

April/May 2006

NCNPS Spring Trip: Hickory Nut Gorge area May 19 - 21, 2006

What to bring: water, snacks, sunscreen/hat, sturdy walking shoes, insect repellent, field guides, binoculars, rain jacket, and enthusiasm! Bring your lunch for Saturday, or order one on the registration form, and we will picnic at the preserve. Bring native plants to donate at auction.

Weekend schedule:

Friday, May 19, 2006:

Arrive at Chimney Rock, NC

5:00 – 7:30 - Dinner on your own

7:30 – 9:00 – Meet & Greet hosted by Alice at Chimney Rock Inn in "Rebecca's River View Cabin" on the second floor

Saturday, May 20, 2006:

8:30 am – meet at Chimney Rock Inn

9:00 – 4:30 – Botanize along the trails at Pool Creek Falls

6:00 – 7:00 – Dinner at the Old Rock Café, Chimney Rock Park.

7:00 – 8:30 – Presentations, Discussion, and Native Plant Auction at the Old Rock Café

Sunday, May 21, 2006:

8:30 am – meet at Chimney Rock Inn

9:00 – 12:00 – Botanize at Bat Cave Preserve

Depart for home

Pool Creek Falls at World's Edge Mountain, Saturday 8:30 am

Led by James Padgett, Southern Piedmont Inventory Biologist. Worlds Edge Mountain is an ecological treasure that was recently purchased by Carolina Mountain Land Conservancy, The Nature Conservancy, and NC Dept. of Parks & Recreation in a partnership that will result in a new state park in the Hickorynut Gorge Area. The Pool Creek Falls trail is approximately 1.5 mile (each way) through diverse plant communities, ending with a stunning view of Lower Pool Creek Falls.



The Hickory Nut Gorge seen from Lake Lure. Photo from the Hickory Nut Gorge Chamber of Commerce. <http://www.thehickorynutgorge.com/>

The mountains in this area are formed from garnet-mica schist, granitic gneiss, and amphibolite, which produce a variety of rock outcrop communities, including an unusual glade-like outcrop with basic influence. The Montane Oak-Hickory Forests on amphibolite slopes are home to a recently discovered population of the endangered plant, White Irisette (*Sisyrinchium dichotomum*).

Dinner at Rock Café at Chimney Rock Park, Saturday 6:00 pm

\$12 includes: Swiss Baked Boneless Chicken Breast, Nutty Wild Rice Casserole as Vegetarian main dish or side, Steamed Vegetables, Yeast Rolls & Butter, Apple Brown Betty, Sweet and Unsweetened Iced Tea.

Presentations, Discussion & Plant Auction, Saturday evening, 7:00-8:30 pm

Sarah Martin, recipient of the Shinn Grant will present a short synopsis of her M.S. thesis research.

Ron Lance, Naturalist at Chimney Rock Park will speak about the natural history of the Chimney Rock Area. He is a native plant specialist who has more than 25 years of experience growing, studying and teaching about native plants. Ron has written numerous tree & shrub guides and keys for Southeastern plants, including Woody Plants of the Southeastern US - A Winter Guide, a college-level reference book with illustrations and keys for winter plant identification.

Plant Auction – Bring potted native plants to donate to the auction, and bring your checkbook to purchase native treasures for a good cause!

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Bat Cave Preserve, Sunday 8:30 am

Led by Nature Conservancy Staff. Bat Cave is owned by The Nature Conservancy and a private landowner and is accessible only through special arrangement. After hiking a mile up a steep trail through a mature hardwood forest, you will be rewarded with Bat Cave's natural air conditioning: a cool moist draft that constantly pours out of vents on the side of the large cave. Bat Cave is the largest known granite fissure cave in North America. The main chamber is more than 300 feet long and approximately 85 feet high.

The surrounding cove hardwood, Carolina hemlock, and chestnut oak forests harbor a number of threatened or endangered plants, such as broadleaf coreopsis and Carey's saxifrage. The preserve has an abundance of spring wildflowers, including bloodroot, toothwort, trillium, and violets.

One of the Conservancy's goals in managing this preserve is to reestablish the critically endangered Indiana bat to its former habitat. The cave itself is closed to visitation at all times and the preserve is closed from October to mid-April in an effort to allow the bats to hibernate undisturbed. Three previously undescribed invertebrates -- a spider, a millipede, and an amphipod -- also live in the cave and are specially adapted to survive without sunlight and with a limited food supply. In warm months, you may see the crevice salamander sunning on exposed rocks.

Motel Accommodations Chimney Rock Area May 19 and May 20 are limited:

Chimney Rock Inn, www.ChimneyRockInn.net, 126 Main Street, Chimney Rock, NC 1-828-625-1429, 0.2 miles east of Chimney Rock Park entrance on NC 64. 8-unit motel with 5 queens at \$59, 3 doubles at \$63, and 9 cottages ranging from \$79 to \$145 plus tax. There is a seven-day cancellation policy.

Other nearby lodging possibilities in Chimney Rock include:

- Carter Lodge 1-828-625-8844
- Evening Shade 1-828-625-4774
- Falls Country Motor Lodge 1-828-625-2771
- Village Chalets 1-828-625-9783
- Geneva Riverside 1-828-625-4121
- Lake Lure Inn 1-828-625-2525

Exploring on your own:

NPS members might want to visit Chimney Rock Park. The unusual mix of topography, rocks, soils, availability of moisture, and exposure to sunlight provide a home to more than 550 species of vascular plants, including 32 ferns and fern allies. The interesting plant life and stunning scenery are a bargain for the entry fee of \$14.00 to visit this private park. If there is enough interest among the group, guided tours may be arranged (if there is not enough interest for a guided tour, members may still visit on their own). For more information, visit www.chimneyrockpark.com

There is a lot to see and do in the area.

<http://www.chimneyrockinn.net/area.html>

<http://www.chimneyrockpark.com/visit/areainfo/links.php?LCAT=attractions>

Directions to the area:

The Chimney Rock Inn and Saturday night dinner in Chimney Rock are on Highway 64, which crosses all of NC from Nags Head on the coast to Murphy near Tennessee. Travel 64 all the way.

Another route takes I-40 to the Black Mountain area exit 64 then travels about 15 miles on a winding mountain road, NC 9, to the Bat Cave area where it meets 74A and US 64. Then proceed east on 64 about 2 miles to Chimney Rock.

Another option is going to Asheville on I-40. Take exit 53 and go east on US 74A to Bat Cave. Then continue east on US 64 to Chimney Rock.

Registration form elsewhere in newsletter.



The NC Native Plant Society is a group of people who care for and enjoy Creation and each other.

Our primary passion is wildflowers but we also enjoy the ferns, shrubs, trees, and so much more along the way. That's why in 2004 after years of deliberation we decided to change our revered 53-year old name of NC Wild Flower Preservation Society to the simpler, easier to say, and more inclusive name of NC Native Plant Society.

When we wildflower together we like to explore at a gentle pace. Going slowly gives us an opportunity to use our "wildflower-eyes" to find the small subtle blossoms, together with the exquisite sculptures of lichens and liverworts, curious critters and their evidence, beautiful rocks with their walking ferns, and dancing butterflies while listening to musical creeks and singing birds. Though some of our bodies may have chronicled 80 or more years, our spirits so often are those of the delights of a child.

While we might like to reach a view at the end of the trail, most of us prefer to savor the joys along the way. A few of us are noted to take 6 hours for a gentle quarter-mile walk to a lovely falls in an exquisite protected Paradise. We help each other over rocks and slippery spots using wrist-to-wrist and other safe, sensible practices.

Even though we would love to get closer to plants, we very much choose to stay on the path to prevent widening trails, tearing up the fragile soils, crushing nearby plants, spreading diseases and alien, invasive seeds to the soil by our shoes and socks. We try to remember to bring our binoculars to see plants that are far off the path or leaves that are high up the trees or watch the fluttering of pollinators and seed dispersers.

Some of us wear an eyepiece on a shoelace around our necks to enjoy the exquisite wonder of Creation Close-up and Personal. We may carry pretty picture books that we thumb-through or a serious, thick book full of tongue tying, befuddling words with incredible details and maps, or something in-between.

When a small group of professionals or serious students go off the trail to hone skills, help one another learn the details of identification, or use references to identify an unusual plant, we do so with care and minimize our impact. We tend to hang back at the end of our procession, sometimes doing "belly botany", along with those who capture beautiful pictures.

Most of us join because we know very little about native plants but want to learn and see more. We have found that learning one new plant an hour on trips makes us good amateur botanists in a few years.

Some of us are professional botanists who want to share our love of nature and cultivate supporters and advocates of our efforts and the plants we hold dear. We like teaching and enjoy those who like to learn.

Some of us want to extend our circle of community. We look forward to our time together and enjoy our Friday social gatherings at the beginning of our statewide weekend trips and our second Saturday in June annual picnic. We greet each other in joy and hope that we extend that same sense of welcome to every newcomer.

We invite first time trip participants to write a sentence or two about the trip experience. We have an open invitation to everyone to write their trip remembrances or offer other possibilities of their writing for our native plant newsletter and journal.

We like it when more knowledgeable folks distribute themselves in our explorations to help answer questions. We like it when our guest trip leaders hang a little back or move along the line or stay posted at a place, so we can all enjoy the stories shared.

If there is a fork in the path, we always wait at the intersection for the next small group so that they know which way to go or leave a very clear message or volunteer to act as sentry.

If we travel in caravans, we always maintain view of the car in back of us so we don't lose folks. If we make a turn, we wait near the intersection for the car behind us to make the turn and then proceed. The caravan leader usually tries to keep in eye contact with the designated "sweep car". Likewise on walks, we always try to have two people act as sweep at the end of the line.

We try to provide maps for weekend trips. If traffic is too cumbersome, we designate a place down the road where all the cars will gather once again. We do carpools for the camaraderie, cleaner air, usual limited parking, and resource conservation.

We try to leave no trace of our visits especially with leaving very little in the way of footprints.

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From the President continued

We are especially careful to stay off of granite outcroppings, which by their very nature are very fragile, minute, little-studied, ancient ecosystems creating new soil at a slower-than-a-snail's pace.

We look at plants and let them be. We have sometimes learned the hard way that picking that flower that we don't know, to take to someone to identify for us, may be a very rare plant that needs every opportunity to be pollinated and setting seed.

We have learned that we can identify plants later by writing at least ten descriptors for a plant, like: size of plant, flower and leaves; number of petals and other plant parts; color; arrangement and shape of leaves and flowers or seeds; fuzziness and other textures; fragrance; habitat wetness level, gradient, sun conditions; names of neighboring plants or trees we recognize; time of day that the flower is open; notes on where the plant is in case we need to find it again for someone to look at, especially if it is unusual and perhaps in need of protection. Taking a picture is good but usually not enough for correct identification.

We are flexible and enjoy the pleasant smiles when the surprise happens or our collective wisdom tells us our plans need to change. Sometimes we have to completely change the place of our walk especially when local weather conditions make the site too fragile or too dangerous for our visit. We particularly appreciate people who volunteer information and suggestions that help decide walks and last minute alternatives.

We sometimes make mistakes and hopefully apologize graciously for the inconveniences and disappointments that we may cause. We are grateful for the kindness and understanding those who are affected give us.

We especially appreciate the folks who prepare and lead walks and talks; research and lead plant rescues; prepare the goodies; propagate plants; tell their friends about us; prepare and contribute to our communications; make suggestions, give advice, praise us and tell us with grace how we can do better; participate in our education, stewardship, and advocacy activities; take pictures; offer their help in making us better.

But most of all we enjoy the beauty of nature together... And do what we can to assure its continuance.

Alice Zawadzki

Welcome!

New NCNPS members since the last newsletter:

Susan Ennett
Nancy Fraley
Mary Doll
Patty Fallaar
Dawn Sheppard
Irene Underwood
Michael & Lynn Gussman
Christopher Dobbins
Morgan & Susan Waugh
Ulana Stuart
Chris Liloia
Kurt & Judy Link
George & Judy Lockhart
Bridget Beck
Susan Ann Cole
Leigh Seager
Brenda Rambach
Anna Weston
Melanie Buckingham
Greg Jones & Evelyn Soto
Carol Kiefer
Linda Raub
Brenda Baldwin Scott
Annabelle Heine
Larry & Mary Lawhon



To all of you, we welcome you to one of the most congenial groups in North Carolina, and one whose members have and share a wealth of knowledge. We encourage you to jump right in by signing up for trips, volunteering to serve on committees, and sending in articles, photos or comments to the newsletter.

The best way to get to know the people and the plants is to get involved!

N.B. Occasionally I miss a name or two. If this has happened to you, please let me know and I will try to remember to make the correction in the next issue. Ed.

Looking for Speakers

In keeping with our mission of promoting enjoyment and conservation of native plants and their habitats through education, protection, and propagation, we will start a NCNPS Speaker's Bureau and post available presentations on our web site under a new Speaker's Bureau section.

The NCNPS will only provide a listing service and people/organizations who want to see a presentation will contact the presenter directly.

Anyone who has a native plant related talk, briefing, seminar, etc. that you are willing to give, we request that you send:

- 1) The Subject>Title
- 2) A brief description of the subject matter
- 3) Your name
- 4) Your contact information
- 5) Length
- 6) Equipment needed (e.g. AV)
- 7) Travel requirements/restrictions/fee

Please send your information to tom@ncwildflower.org.

NCNPS Board Nominations

The NCNPS board welcomes nominations for the officer positions on the NCNPS executive board. These positions include: president, vice president, recording secretary, corresponding secretary and treasurer. It also happens that we are going to need three at-large board members. The basic requirements for all of these positions are the same: a desire to make the NCNPS a vibrant, viable organization, a willingness to commit some time and a concern for our North Carolina native plants. Candidates will attend four board meetings which normally occur in February, May, August and November. They should also attend the Fall and Spring meetings and the June picnic.

There are also positions open on committees as designated by the by-laws:

education committee
program committee
finance committee
publications committee – chair Kathy Schlosser
membership committee
scholarship & grant committee – chair Tom Harville
history & archives committee
media relations committee
Stewardship committee
Advocacy committee

Please immediately send your nominations to the chair of the nominating committee, Alice Zawadzki at alice@ncwildflower.org or
1624 Park Drive
Raleigh, NC 27605

Annual Picnic on June 10th

NCNPS Annual Meeting and Picnic

June 10, 2006

Our annual pot luck picnic and plant auction will be held 11:00 - until at Hagen Stone Park, just south of Greensboro. We will be in shelter #2.

We have a special treat for the morning, 10:00 – 12:00. Ken Bridle, EcoLogic's principal biologist and past NCNPS President will use NCNPS member, Diane Laslie's backyard stream in Pleasant Garden to describe a stream's characteristics and if it needs restoration and do a benthic bug sampling to determine the water quality and discuss how different aquatic critters indicate different water quality and pollutant impacts. As a bonus you will get to see Diane's beautiful garden. Attendance will be limited to 25. Registration will open April 1st and will be 1st come 1st served.

To register for the stream walk, contact Diane Laslie at dale@djlservice.com

Bring a picnic lunch to share, comfortable chair if you are so inclined, and be prepared to renew old acquaintances and make new ones.

In addition to plants for the auction, bring old magazines, plant catalogs, or books to exchange.

Call For Native Plant Pictures

Please take a look at the "Plants" section of our web site <http://www.ncwildflower.org/plants/plants.htm> The goal for this section is to have pictures of NC native plants from all four seasons and any distinguishing feature(s). We would like this to become a visual reference for anyone trying to ID a native plant. We would like to have the botanical name, a common name and accompanying comments about when & where the pic was taken. We will allow anyone to use these pics if they credit the NCNPS

A small number of pics can be emailed to tom@ncwildflower.org but if you have a large number, it would be best to send a CD to:

Tom Harville
104 Birklands Drive
Cary, NC 27511

Triad Chapter (*Greensboro, Winston-Salem area*)

Spring Schedule

April 1, 2006	Earth Day at KC Edwards Library; David McAdoo, Shelley Rutkin, Judy Steirand 12:00 – 4:00
April 2, 2006	Plant Rescue in Cary, NC This is take the place of a Triad Chapter hike 8:00 AM – 12:00 Noon
April 13, 2006 Society	Butterfly Gardening A program of the Audubon KC Edwards Library Time: 7:00 pm
April 17, 2006	Buzz Pollination, Kathy Schlosser Tentative: at Mark Rose's home. 6:30 PM
Early May site	In the planning stage: an early May trip, possibly to a Mt. Airy to search for a small whorled pogonia population OR a trip to the Boone area.
May 11, 2006	Native Orchids, Mark Rose Audubon Program at KC Edwards Library Time: 7:00 pm
May 19-21, 2006	NCNPS Trip to Hickory Nut Gorge Area
June 10, 2006 Stone	NCNPS Annual Meeting, Picnic, Plant Auction, Hagan Park 9:00 Tour of Diane Laslie's creek with Ken Bridle 11:00 Picnic
Contact:	Kathy Schlosser 336-855-8022 kathys@ncwildflower.org

All NCNPS members are welcome to attend any NCNPS Chapter meeting, regardless of your home chapter. Just call ahead or email the contact person to let them know you plan to attend.



David McAdoo created this Interactive Display of NC Wildflowers of the Year for the Earth Day Event.



Chapter member Lynda Waldrep introduces member Sheilah Lombardo, who gave a presentation on Non-native Invasives.



Part of the crowd of 47 at one of the Triad Chapter winter meetings

Piedmont Chapter (Charlotte area)

Spring Schedule

There is no charge for the following programs unless otherwise noted. Contact Jean at jean1442@aol.com or 704-236-9670.

April 8, 11:00 – 4:00 PM - Help Needed. NC Native Plant Society will have a table at the annual spring festival in Shamrock Park, located in Charlotte near the Plaza,. Email Jean if you can help hand out literature and talk with people.

April 9, 2:00- 4:00 PM – Catawba Wildflower Glenn, northwest Mecklenburg . A Catawba Lands Conservancy hike lead by Jean Woods. This is a rich natural heritage site and well worth seeing. To register for the hike, call 704-342-3330 x 210. You must register for this hike and they do fill up, so don't miss out!

May 7 2:00 – 5:00 PM - "Landscaping with Native Plants Workshop" Class taught by Mary Stauble, a master gardener and instructor for the Master Composter Program. Class will be at the Catawba Lands Conservancy office on Morehead and a tour of Mary Stauble's garden will follow the class. Email Jean to register.

Course will cover: What are Native Plants? Why use them? Ways of using native plants in Landscaping (Formal, naturalistic, restoration), Invasive exotics, Converting turf to a natural area, Plant Selection, Where to buy, Sources for native plants, and much more.

May 13 NC NPS Hike – Jean and Joe will lead a hike on the Appalachian Trail from Max Patch to Lemon Gap on Saturday, May 13. We will meet in Asheville at 8:30 AM and drive to the trail head. The hike is about 6.5 miles and you will see thousands of Trillium and many other native plants. Email Jean for more details.

May 20 Michaux Picnic to benefit the Catawba Lands Conservancy, Join Charlie Williams (a NC NPS member) as he dons his period costume to assume the persona of French botanist and explorer Andre Michaux. He'll whisk you away to the late 18th century when Michaux discovered the majestic bigleaf magnolia. Enjoy a French country picnic on Redlair Farm and Forest in Gaston County and a hike to see the bigleaf magnolia led by Haywood Rankin, Charlie Williams, and Jean Woods. \$65 per person. To buy a ticket, call the conservancy 704-342-3330.



May 28 Wildflower Walk in Rutherford County

led by David Campbell, a new member, who lives in Hickory and is an educator and a professional botanist. We will visit one or two sites. One site is private property, the other is protected by a land conservancy. Rocks in the area are mafic in their affinities, so there are many interesting things to see: *Cirsium carolinianum*, *Frangula caroliniana*, *Onosmodium virginianum*, *Pellaea atropurpurea*, *Ptelea trifoliata*, *Lonicera flava*, White Irisette ,and others. Who knows what else we might find? This walk is limited to 8 people due to the sensitive nature of the habitat. Details on time and meeting places will be TBD.

Jean Woods
Jean@ncwildflower.org
704-236-9670



Cirsium carolinianum (Walt.)
Fern. & Schub. - soft thistle
www.usda.plants.gov

All NCNPS members are welcome to attend any NCNPS Chapter meeting, regardless of your home chapter. Just call ahead or email the contact person to let them know you plan to attend.

Northeast Coast Chapter

Our newest chapter, the Northeast Coast Chapter, sent a copy of their latest announcement.

The Northeast Coast Chapter will hold its first meeting on April 19 from 6:30pm to 8:00pm at the Kill Devil Hills library.

Everyone is welcome to stop in for snacks & coffee, learn more about the NC Native Plant Society, and share ideas for chapter activities and field trips.

The chapter is already at work – they will have a display table at the Dare Master Gardener Spring Coastal Gardening Festival on May 20, and also at the 2006 NC Master Gardener State Conference in Kill Devil Hills next October.

They have had some great suggestions from prospective members for chapter field trips and activities:

1. Sid Shearin, superintendent at Pettigrew State Park, is willing to lead a field trip. This could include Sid's famous Big Tree hike, a tour of carnivorous plant populations at the park, or even a paddling expedition on the Scuppernong!
2. Ellen Colodney, owner of Coastal Plain Conservation Nursery in Edenton, has offered to host a nursery tour and talk about propagating native plants from collected seed. Ellen also suggests a "road trip" to Rt. 94 from Columbia to Mattamuskeet, which features an amazing inventory of roadside flora, including pitcher plants and many native flowering shrubs.
3. Susie Ahlfeld, USFWS Interpretative Specialist, hopes that Native Plant Society members might be interested in helping with the native plant garden at the Pea Island visitors' center.
4. Mary Helen Goodloe-Murphy would like the Native Plant Society to help the Outer Banks Scenic Byway Committee select native species for their tree-planting program.

For more information, contact:

Kathy Mitchell
NC Aquarium on Roanoke Island
(252)473-3494, ext 264
kathym@ncwildflower.org
Susan Ruiz-Evans
NC Cooperative Extension-Dare County Center
(252)473-4290
susan@ncwildflower.org

Flora Ann Bynum 1924 2006

Flora Ann Lee Bynum, 81, of Winston-Salem died Friday, March 17, 2006, at the Wake Forest University Medical Center of Winston-Salem. Born Nov. 8, 1924, in Guilford County to William and Hattie Clark Lee, Mrs. Bynum was a homemaker and an active member of Centenary United Methodist Church. She graduated with honors from Meredith College, where she received the Silver Shield Award and later the Distinguished Alumnae Award. Following graduation, she worked for the Winston-Salem Chamber of Commerce. Mrs. Bynum was well-known across the country for her work in the restoration of historic landscapes. She served as the chairman of the Old Salem Landscape Restoration Committee for 30 years and as a member of the Old Salem Board of Trustees. Mrs. Bynum was one of the founding members of the biennial Conference on Restoring Southern Gardens and Landscapes. She helped found the Southern Garden History Society to promote research and restoration and served as secretary-treasurer for over 20 years. In her honor the Flora Ann Bynum Award for Exemplary Service was created. She received many awards, including the Minnette C. Duffy Landscape Preservation Award and the Frederic Marshall Society Distinguished Service Award. She received the Archie K. Davis Award for serving as treasurer of the Wachovia Historical Society for 20 years and for her horticultural research which was instrumental in the restoration of Old Salem's landscape.

Flora Ann was a long and valued member of the NC Wildflower Preservation Society, now the NC Native Plant Society. She served on the Board of Directors, contributing much to the Society in her quiet, unassuming way.

She was preceded in death by her husband of 52 years, Zachary Taylor Bynum Jr. She is survived by her son, Zachary Bynum, her three daughters, Larkin B. of Beaverdam, Va., Lee B. Schwall of Winston-Salem and Loren B. Williams Peachtree City, Ga. She is also survived by 12 grandchildren, by her sisters: Virginia L. McKay and Doris L. Tyson; and her brother, William D. Lee ; and many nieces and nephews.

Flora Ann's knowledge, enthusiasm, and welcoming spirit will be missed.



On Stipules

A.J. Bullard, DDS

To expand on the information on stipules, which appeared in the last newsletter under the Margaret Reid Chapter, of which I am a member:



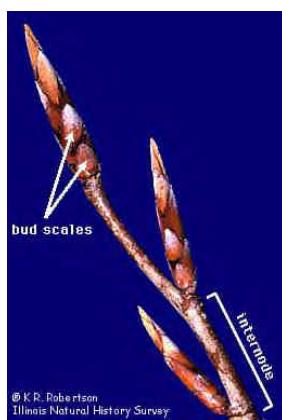
Botanical Society of America
(photo by John Curtis Neils Lensten)

Salix lucida stem, leaf margin and stipules with resin glands.
www.botany.org/PlantImages/

Stipules are of leaf tissue origin and may be modified to assume several functions or in some plants may never exist. On plants which form stipules, the stipules are located on either side of the petiole base (or petiole scar) but these twin appendages (or their subsequent scars) are not always the same size, as illustrated in the Elm family—Ulmaceae, where one is often longer than the other. Some are tiny, while others extend completely around the bud as in Magnolia. With crossvine, the paired stipules look exactly like small leaves and may persist for months.

Some families never form stipules, such as Dogwood. With other families, the stipules quickly fall off as the leaves unfold. On some plants it is believed that stipules protect the developing buds during their earlier stages.

Sometimes there is a thin line between a stipule and a bud scale—both are of leaf tissue. Debate exists as to whether sycamore or fig bud coverings are modified stipules or bud scales. Similarly, the strap-like projects that extend from the bud bases to well beyond the bud tips in Overcup and Nuttall's Oaks are called wither stipular appendages or extended bud scales and are good identification tools.



© K.R. Robertson
Illinois Natural History Survey
<http://www.life.uiuc.edu/plantbio/digitalflowers/Vegetative/29.htm>

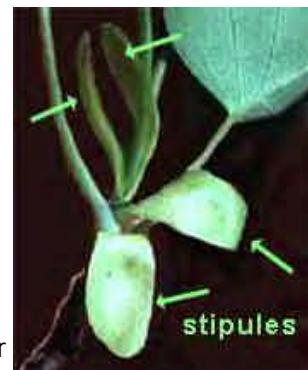
Stipules vary in color from the large bold green of sycamore, through the various dull browns to the tiny black triangular ones in some of the holly species.

When stipules fall off, stipular scars of various sizes occur.

In the Smilax family, the stipules are modified into tendrils to assist climbing, while in locusts, stipules form twin stipular spines at most nodes presumably for protection against animal browsing.

In the Magnolia family, stipules form bud coverings which may be valvate, as in Tulip poplar, or cap like.

Sycamore has large leafy stipules which persist well into the summer.



Yellow Poplar's large stipules. These will all fall off, leaving scars. Stipules protect leaves and stems when they are very small, not yet unfolded.
[From www.backyardnature.net](http://www.backyardnature.net)

Most members of the Polygonaceae family—dock, sorrel, and smartweed—have sheath-like coverings at each node called ochrea and, again, are modified stipules protecting the nodes of these plants.

With some compound leafed plants, the stems (petiolules) of the leaflets have paired *stipeles* (leaflet stipules), but these usually are not modified into anything.

If you learn these stipule characteristics, plant I.D. will become much easier.

A.J. Bullard, DDS
Mt. Olive, NC

Silent Invaders

Mary Morrison

Did you know that what you plant in your yard today could be in your National Forest tomorrow? It is estimated that about 10 percent of introduced plants will escape from yards and lawns and that about 10 percent of those escaped plants will become invasive. Non-native, exotic plants are quietly displacing native plants found in parks, forests, and other wildlands. This silent invasion of America's wildlands has accelerated in the last few years due to increased international trade and importation of exotic plants.

Why should you be concerned? These exotic pest plants are so invasive that they create monocultures that cover extensive areas, which in turn reduce diversity and wildlife habitat. This monoculture reduces the variety of plants available as food sources for wildlife. If the invasive plant fails to produce seed due to things such as drought, late frost, etc, then a food source is eliminated for many animals leading to higher than average death rates.

Native wildlife have adapted to native plants. These introduced, pest plants may create a void in nesting habitat, by eliminating native shrubs, grasses, and trees that wildlife have used in the past. Some animals have specialized in feeding on or using certain plants.

How did we get in this mess? Some invasive pest plants were introduced intentionally, before we realized what would happen. Kudzu, also known as the Plant that Ate the South, was brought from China and introduced for erosion control. Many European settlers brought plants from their homeland to ease homesickness. Many people admire the fragrant, creamy blossoms of honeysuckle, but this foreigner came from Japan and has displaced the native Coral Honeysuckle with its red blossom. Some of these plants, such as Autumn Olive, were planted as wildlife food sources, but are now having a negative impact on native wildlife food sources.

Seeds of some plants were accidental travelers brought over in dirt used as packing or ballast in ships. When the dirt was dumped, seeds were also released. It is believed that fire ants were also introduced this way as well as some soil pathogens that have wreaked havoc on native plants.

How do these exotic, invasive plants move from your yard to America's wildlands? They travel many different routes. Mowing equipment can accidentally spread plant material along roadsides. Birds and other wildlife eat seeds that spread from their droppings. Some seeds of these pest plants are wind-blown. Domestic animals can spread the seed too. Many wilderness areas now require that pack horses be fed "certified weed-free" hay and grain.

Control of these exotic pest plants usually requires the use of herbicides, a long-term commitment, and outright determination. The invasive plant may continue to reappear. Seeds of *Serecia lespedeza* or Scotchbroom will persist in the soil for 20 years or more. These plants may be brought back in by wildlife or equipment moving from one location to another.

One of the greatest challenges facing public land managers are property lines. The invasive plants must be treated on both sides of the property line for control measures to be effective. Sometimes multiple landowners must get involved. Currently, scientists are researching biological controls, such insects, but they are reluctant to introduce more exotic species for fear of creating a worse situation.

Who's responsible? Ultimately, we all are. Few laws exist to control movement of these exotic pest plants and many are imported or grown and sold in the United States.

Unknowingly, you may plant an invasive, exotic plant in your yard. However, by making informed choices, you can make a difference in the future of America's parks, forests, and wildlands.

Where you can go for more information. There are various organizations that can help you learn which native plants to use and which non-native, invasive plants are being sold. Native plant societies in North and South Carolina can provide information on native plants to use your yard. These organizations sponsor workshops, meetings, and plant rescues. See www.scnps.org or www.ncwildflower.org to learn more.

The Southeast Exotic Pest Plant Council website is an important source of information. See www.se-eppc.org. Other websites with information on a variety of exotic, invasive plants and animals are www.invasive.org, www.fs.fed.us/invasivespecies, and www.invasivespecies.org.



Chinese privet. From Nonnative Invasive Plants of Southern Forests by James H. Miller. See http://www.invasive.org/eastern/srs/CP_EP.html

The SC Division of the Society of American Foresters has teamed up with various partners, such as SC Department of Natural Resources, SC Forestry Commission, SC Soil & Water Conservation Society, Quail Unlimited, and the National Wild Turkey Federation to provide a workshop for land managers.

This workshop is scheduled for June 7-9, 2006. The field trip in Union, SC on June 7 will focus on how to incorporate native warm season grasses for erosion control, wildlife habitat, and forage. The lectures on June 8 and 9 at the Baxter Hood Center in Rock Hill, SC will focus on the unique problems that land managers face with invasive species. Contact Mary Morrison at 864-427-9858 for more information.

Authors: David M. Lodge, Susan L. Williams, Hugh MacIsaac, Keith Hayes, Brian Leung, Sarah Reichard, Richard N. Mack, Peter B. Moyle, Maggie Smith, David A. Andow, James T. Carlton, and Anthony McMichael.

Abstract. The Ecological Society of America has evaluated current U.S. national policies and practices on biological invasions in light of current scientific knowledge. Invasions by harmful non-native species are increasing in number and area affected, and the damages to ecosystems, economic activity, and human welfare are accumulating. Without improved strategies based on recent scientific advances and increased investments to counter invasions, harm from invasive species is likely to accelerate. Federal leadership, with the cooperation of state and local governments, is required to increase the effectiveness of prevention of invasions, detect and respond quickly to new potentially harmful invasions, control and slow the spread of existing invasions, and provide a national center to ensure that these efforts are coordinated and cost effective.

Specifically, the Ecological Society of America recommends that the federal government, in cooperation with state and local governments, take the following six actions:

- (1) Use new information and practices to better manage commercial and other pathways to reduce the transport and release of potentially harmful species.
- (2) Adopt new, more quantitative procedures for risk analysis and apply them to every species proposed for importation into the country.
- (3) Use new, more cost effective diagnostic technologies to increase active surveillance and sharing of information about invasive species so that responses to new invasions can be more rapid and effective.
- (4) Create new legal authority and provide emergency funding to support rapid responses to emerging invasions.
- (5) Provide funding and incentives for cost effective programs to slow the spread of existing invasive species in order to protect still uninvaded ecosystems, social and industrial infrastructure, and human welfare.
- (6) Establish a National Center for Invasive Species Management (under the existing National Invasive Species Council) to coordinate and lead improvements in federal, state, and international policies on invasive species.

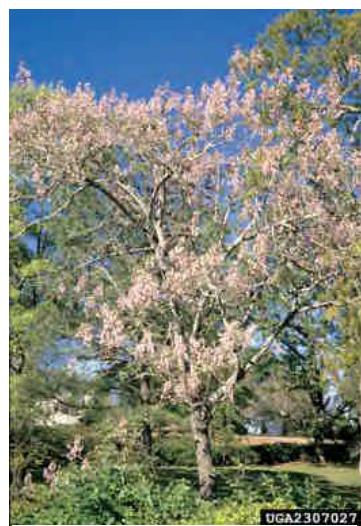
Recent scientific and technical advances provide a sound basis for more cost effective national responses to invasive species. Greater investments in improved technology and management practices would be more than repaid by reduced damages from current and future invasive species. The Ecological Society of America is committed to assist all levels of government to develop a coordinated response to the threat of invasive species and to provide scientific advice to improve all aspects of invasive species management.

Executive Summary The spread of nonindigenous (non-native) species introduced into the U.S. is a significant and growing national problem, costing taxpayers hundreds of billions of dollars in environmental degradation, lost agricultural productivity, increased health problems, and expensive

prevention and eradication efforts. Some nonindigenous species are introduced intentionally and are highly valued by humans, e.g., agriculture, aquaculture, and ornamental species. Many other species are introduced as by-products of human activity, especially through the increasing global transportation of humans and commercial goods. A subset of introduced species spread widely, become abundant, and cause harm. The definition of "harm" is a function of human values, which often differ in different regions, and may change temporally.

Nevertheless, harm is often unambiguous, and the species from elsewhere that causes harm are referred to as invasive nonindigenous species. They are the focus of policy and management concern because of their serious and complex contributions to diseases of plants, animals, and humans; reductions in native species; changes in ecosystem function; and financial losses. Well known examples of invasive nonindigenous species include the vine kudzu (*Pueraria lobata*) in the southeastern U.S., cheat grass (*Bromus tectorum*) in the western U.S., and zebra mussel (*Dreissena polymorpha*) in the central U.S.

More recent arrivals with large net negative impacts on the environment, agriculture, forestry, industry, and human health include West Nile virus, the seaweed *Caulerpa taxifolia*, Asian longhorn beetle (*Anoplophora glabrapennis*), emerald ash borer beetle (*Agrilus planipennis*), sudden oak death (*Phytophthora ramorum*), monkeypox virus, and the SARS virus. Without management, the populations of these species grow and spread such that damages accelerate over time. In contrast to many other forms of pollution, such widespread invasions become irreversible because the technology often does not exist to selectively eradicate species. Relative to the economic and ecological costs of other forms of environmental pollution, the costs of nonindigenous species are therefore of particular concern because they are likely to be borne over very long time frames. Despite the great diversity of invasive species and their impacts, an identified group of pathways transport species, and a common set of biological processes—introduction, establishment, spread, and impact—operate in all invasions (Figure 1). Policy and management solutions become clearer when these common pathways and processes are recognized. Nevertheless the possible management responses diminish as any invasion progresses. Prevention is possible only before a species arrives or at the point of entry. Thereafter, a narrow window of opportunity for eradication exists before some species spread so widely that it is impossible or infeasible to locate and kill all populations. Once a species is too



Princesstree, Paulownia
Paulownia tomentosa (Thunb.) Sieb. &
Zucc. ex Steud. From Nonnative
Invasive Plants of Southern Forests by
James H. Miller. See http://www.invasive.org/eastern/srs/CP_EP.html

widespread for eradication, only three management options remain: controlling populations in selected locations; active mitigation of impacts; or simply bearing the cost of the changes caused by the invader. U.S. policy, often by default, has largely adopted the last option, i.e., acceptance of often irreversible environmental and economic damage.

The only study to attempt a nationwide estimate of the economic costs to the U.S. of nonindigenous species concluded that annual costs exceed \$120 billion (Pimentel et al. 2005), which we regard as an underestimate because the majority of invasive species were not included in the study. Even this underestimate equates to costs of \$1,100 per U.S. household per year, costs that will continue to grow unless prevention and management of invasive species improves. Yet, the U.S. has allowed invasions to continue and damages to increase. A more cost-effective approach would include greater investments in prevention and other active management steps, including early detection, eradication and control. Recent scientific advances in our understanding of biological invasions make it clear that more effective options exist for these threats. Here, on behalf of the Ecological Society of America, we make six recommendations for government action that, if implemented, would substantially reduce the current and future damages to the U.S. from invasive species. We include proposals for cost-effective government actions that will address these problems with the understanding that other measures are important to complement governmental responses. Key challenges that require urgent government action include prevention, detection, eradication, and control of harmful non-native species, and the coordination of these efforts at the federal, state, and international levels. Table 1 summarizes the major recommendations, data and techniques for implementation, and proposed lead organizations.

Prevention Recommendation 1. Use a combination of existing and new technologies, education strategies, industry codes of conduct, and government oversight to prevent introductions from pathways that already are well known to be major sources of nonindigenous species, and to monitor other pathways into the United States to better assess the degree of risk they pose.

Recommendation 2. Screen live organisms proposed for importation into the U.S. for environmental, economic, and human health risk before a decision is made to allow entry. Risk analysis tools should be repeatable, transparent, supported by current scientific findings, and applied to all pathways, across all agency jurisdictions.

Early Detection, Eradication and Control Recommendation 3. Use new technology to improve active surveillance of invasive species to increase the success of rapid response and eradication efforts, in cooperation with existing web-based information networks in universities, herbaria, museums, and state agencies.

Recommendation 4. Make legal authority and emergency funding available for eradication and control to proceed rapidly once a newly established potentially invasive species is detected. Current legal mechanisms and funding for responses to agricultural pests and parasites, and to human pathogens, should be extended to all potentially invasive species in all habitats, and employed commensurate with the

threat. **Recommendation 5.** Provide on-going funding and incentives for slowing the spread of established invasive species on public and private lands, in cooperation with the states and tribal governing bodies.

Establishing a National Center for Invasive Species Management

Recommendation 6. Expand existing authority of the National Invasive Species Council (NISC), including the establishment of a National Center for Invasive Species Management under NISC, to better coordinate policies among government agencies and with other countries. Current U.S. examples of intergovernmental cooperation include the National Interagency Fire Center and the Center for Disease Control and Prevention.



Garlic Mustard
Alliaria petiolata (Bieb.) Cavara & Grande. From *Nonnative Invasive Plants of Southern Forests* by James H. Miller. See http://www.invasive.org/eastern/srs/CP_EP.html

Unless these or conceptually similar recommendations are adopted, the rate of damages to our environment, economy, and health caused by invasive species will accelerate. These damages are spread across many stakeholders, and no strong, nationwide group has emerged to encourage industries that are pathways of introduction to reduce the threat. Hence the federal government must assume greater leadership to coordinate efforts by all levels of government. We recognize that the problem is complex and interdisciplinary, includes many pathways, a tremendous diversity of organisms that are invasive, and the vulnerability of all terrestrial, marine and freshwater ecosystems. Despite this complexity, and the consequent overlapping and sometimes conflicting state, federal, and international policies involved, the six recommendations described in this paper provide sound guidance for the future. Recent scientific and interdisciplinary advances provide a strong basis for rapid implementation of these cost-effective solutions.

A copy of the full report can be found at the Ecological Society of America's website: www.esa.org. Select the article *Position Paper of the Ecological Society of America Biological Invasions: Recommendations for U.S. Policy and Management*.

Land for Tomorrow

The North Carolina Native Plant Society has joined 124 North Carolina organizations, including a broad range of land trusts/conservancies, historical associations, governmental bodies, state parks groups, wildlife and native plant groups, in a partnership called Land For Tomorrow, which is committed to:

- building awareness of why streams, farms, forests, parks, gamelands and historic places are critical to the future of North Carolina; and
- advocating for additional state funding of \$200 million per year for five years to protect places that matter to our citizens and communities.

The following is taken from the website for Land For Tomorrow:

In 1991 American Forests, the nation's oldest nonprofit citizens' conservation organization, measured tree cover in 440 towns and found that tree canopy covered more than 60% of the town in most established communities in the southeastern United States. Ten years later, they re-measured 40 of those communities and found that forest cover had decreased by an average of 21% because of sprawling development patterns.

American Forests advises that towns and cities aim for an average tree cover of at least 40% -- with a minimum of 15% tree cover in central business districts, 25% in urban residential areas and 50% in suburban residential areas – because of the important environmental benefits that trees provide. View American Forests' Urban Tree Canopy Goals.

In addition to planting and maintaining trees on streets and building lots, communities can reduce air and water pollutants by conserving natural forests within city limits. These areas can have a greater impact on air and water quality than their size might indicate because of the density of tree coverage.

A study in Boulder, Colorado, for example, found that although its natural forests along streams represent only six percent of the city's acreage, they provide 13% of the city's forest canopy cover and remove 13% of the pounds of air pollutants removed each year by trees. Trust for Public Land (TPL) found that more than 18% of all land within city boundaries of several of the largest cities in the United States – San Francisco, Washington, DC and New York – is parkland. View TPL's Excellent City Parks Report.

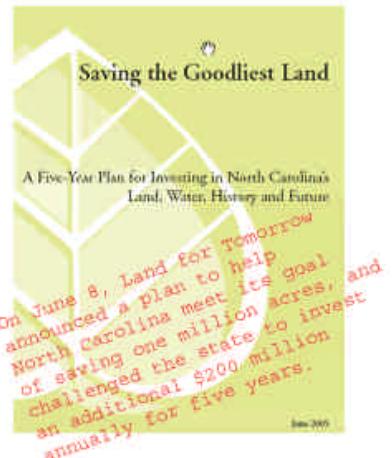
Several local governments in North Carolina are using urban reforestation and land conservation to help reduce air and water pollution. The Fayetteville area is trying a

variety of strategies including expanded land acquisition in watershed areas, planting additional trees, inventorying green space and investigating a "conservation subdivision option" to protect natural land as part of the development process.

The Centralina Council of Governments, which represents nine counties in the Charlotte area, encourages planning and projects to protect trees for air quality and other environmental benefits.

For all these reasons, Land for Tomorrow designated urban forests as one of nine types of "places that matter" in North Carolina. Land for Tomorrow is recommending that the NC Parks and Recreation Trust Fund receive an \$35 million per year and the NC Clean Water Management Trust Fund receive an additional \$39.5 million per year so they can make additional grants to help North Carolina's communities protect urban forests and other places that matter.

We encourage the NC General Assembly to make this possible by putting a bond referendum on the ballot in November 2006 for \$200 million per year for five years for water quality protection, land conservation, historic preservation and sustainable job creation.



Download a copy of *Saving the Goodliest Land: A Five Year Plan for Investing in North Carolina's Land, Water, History and Future* ([PDF document](#)).

<http://landfortomorrow.org/>

The NCNPS Speaks Out

The following letter was mailed to our representative on March 29, 2006:

The North Carolina Native Plant Society opposes the North Shore Road through the Great Smoky Mountains National Park.

We understand the need to discharge and satisfy any obligations on the part of the United States that presently exist as the result of the Memorandum of Agreement of October 8, 1943, between the U.S. DOI; TVA; Swain County, North Carolina; and the state of North Carolina. But it is also evident that our natural resources are disappearing and we must not allow projects to proceed that have this much impact with so little benefit. The Draft Environmental Impact Statement shows numerous negative impacts to vegetation, terrestrial wildlife, wetlands, aquatic life, air quality and archeological and historical resources. The National Park Service has acknowledged that the highway would serve no transportation need. The Commissioners of Swain County have opted for the cash settlement in lieu of any further construction.

We ask that you stop any construction on this project and support the monetary settlement to Swain County.

Respectfully,
Alice Zawadzki
President

Preserving Nature's Gems

For many tourists and other travelers, the Piedmont is merely drive-through country – the place they rush past en route to somewhere else. It's the lull in the landscape between mountains and ocean. Visitors like its rolling farmland, or what's left of it. They enjoy its lakes. They may even rave about its golf courses. But they aren't aware of the hidden treasures.

A story in Sunday's Post described one such geographic gem – Bald Mountain, which rises above Tuckertown Reservoir in southwest Davidson County. It's not that many miles distant from a busy interstate and the populous shores of High Rock Lake. But surrounded by pristine

forests, looking down on the placid waters of Tuckertown, the mountain and adjacent areas are an oasis of tranquility in our rapidly urbanizing region.

But how long will it stay that way?

That's a question of critical concern to Davidson County officials and others. The Bald Mountain area is part of 13,000 acres owned by Alcoa Power Generating along the Yadkin River and the string of lakes where it operates hydroelectric dams. Alcoa is currently preparing its federal relicensing application to continue operating the dams. Like residents of High Rock Lake and other stakeholders in the area, Davidson officials are participating in the application process. They see this as an opportunity to further protect and enhance natural areas that provide important environmental buffers for the Yadkin River and Alcoa's chain of lakes, as well as offering recreational opportunities.

To this point, Bald Mountain has survived relatively unscathed except for the quarrying operation that provided stone to build dams many decades ago. In addition to keeping the land in its natural state, Alcoa has provided public access for hikers, hunters, rock climbers and others to enjoy. But with the virtual shutdown of Alcoa's Badin plant, many have wondered about Alcoa's future here – and the future of its beautiful and increasingly valuable properties that span five counties. Davidson County officials see the relicensing negotiations as a rare opportunity to put Bald Mountain under permanent protection by either attaining a conservation easement on more than 2,600 acres along Tuckertown, engaging in a longterm lease or perhaps even acquiring the property.

They have the enthusiastic support of tourism officials who recognize the drawing power of forests and lakes. They also have the support of the LandTrust for Central North Carolina, which is involved in relicensing discussions involving this and other sensitive sites within Alcoa's holdings. It's an effort that Rowan officials should endorse as well. Although these properties are on the other side of the county line, the benefits of preservation will extend throughout the region.

While the Piedmont may still be drive-through country for now, the area's burgeoning population and increasing crowds at popular destinations such as Lake Norman and High Rock are portents of what's to come. Our hidden gems won't be hidden much longer. They'll be discovered – providing they're still available for discovery.

Editorial from
The Salisbury Post
Tuesday, March 28, 2006

Perusing the archives ..

The following article, by Craig Moretz, appeared in the Summer 1996 issue of the NC Wild Flower Preservation Society newsletter:

A Special Little Iris for Your Garden

Perhaps one of the most charming of our native irises is *Iris cristata*. It is a true harbinger of spring boasting its wonderful bounty of flowers in its woodland haunts in early April. *Iris cristata* is a very carefree and easy to grow species in the native wildflower garden. It grows well in any fairly rich and loose garden soil. It likes some sun but benefits by light shade from the hot midday sun. It needs a well drained soil that retains moisture during droughts but never becomes water-logged. *Iris cristata* can be easily propagated via division of the rhizomatous rootstocks. This can be accomplished at almost any time of the year but it is perhaps best to divide right after flowering is finished and the first flush of growth has matured. There are several color variants other than its typical pale purple that deserve special note. An albino or white flowered form of *Iris cristata* occurs and is sometimes available from specialty nurseries. The white flowered clone that grows in my garden has somewhat smaller flowers than the typical form of *Iris cristata* although en masse they are quite spectacular just the same. Another color form that grows in my garden has a very pale blue flower with a darker blue mark just under the yellow marking on the falls. This particular plant may also be a tetraploid in that its flowers and leaves are larger than usual for the species. One other color form that deserves mention is one that I saw in the NC mountains many years ago that had very dark purple flowers. All forms of *Iris cristata* are equally elegant and desirable for cultivating in our gardens and should be given a place of stature among your other woodland wildflowers.



Photo from USDA Plants Database.
www.plants.usda.gov

This article by Harry Phillips appeared in the Spring 1980 issue of the NCWFPS newsletter:

Wildflower Seed: A Valuable Natural Resource

North Carolinians are fortunate to live in a state with such a rich native plant heritage. Consider, for a moment, the grand variety of naturally occurring plant species held in each of the many different habitats found throughout the state. What with the distinct geographical provinces of the mountains, piedmont, sandhills and coastal plains, it is no wonder that one admiring observer referred to North Carolina as a "living museum." Wildflower gardeners have the potential to fill a role of major significance with respect to the protection and active conservation of this enormous diversity of plant materials. Selective collection of wildflower seed offers a sound approach to working with our native plants and serves as a sound alternative to the more traditional and questionable practices of field collection and nursery purchase. By relieving our natural areas from the pressures of collection and commercial exploitation we can set an important precedent in the area of wildflower cultivation, not only in North Carolina, but to the general gardening community across the country. The wooded cove or colorful savannas that has rewarded the observant wildflower lover with its natural beauty can, when discretion is exercised, serve as a useful seed bank.

As concerned native plant gardeners, Wildflower Society members can make a major impact in this area via the dissemination of information gained through our experience with wildflower seed.

Preparation for seed collection can begin with the advent of the first wildflowers in early spring. Because the appearance of many plants changes considerably between the time of flowering and that of fruiting, care must be taken to accurately mark the location of a plant when in flower, thus enabling one to return to that precise spot when in fruit. Marking can be accomplished with an inconspicuous material such as a small wooden or metal stake, which can be readily removed at time of seed collection. A field notebook, in which specific location data can be recorded, is a must for the conscientious seed collector. Faithful notebook entries can eliminate all the guesswork when returning weeks or months later to the site of that favorite wildflower. In some cases, several return visits may be necessary for the collection of mature seed as local weather trends may delay the ripening of seed. For instance, seed of Fire Pink has, in different years, been harvested as early as

June and as late as August. Often it is only a period of three or four days from maturity to dispersal as evidenced in seed of both the Touch-Me-Not and Bloodroot plants. It has long been a technique of the thoughtful gardener to secure a small plastic bag around the seed capsule of the Bloodroot to catch its seed. There are, however, many wildflower species whose seed ripens over a long period of time, such as many members of the Aster family. Generally, seed of this family have been found most viable toward the first frost. When broken open, a mature seed will reveal a moist white embryo. The sensitivity developed during this process of observation and examination can prove most rewarding and enjoyable and the insights gained from this year's work will supply us with clues of what to look for next year. Provided that we are mindful to collect only as much seed as we need to work with and that we collect from populations of plants large enough to withstand some seed loss, we can insure the proliferation of the plant it is particular haunt.

Separate containers should, of course, be used for the collection of each separate species of seed and tightly sealed to avoid contamination with other seed lots. Finally, discretion should be used in selecting only healthy seed for collection. Seed capsules with obvious insect damage are better left in the field. If, however, upon returning home from a collecting trip and an insect infestation is discovered, treating with a fumigant can be effective. No-pest-strips placed among the seeds in a sealed container have proven a satisfactory antidote. This method is particularly successful against the weevil, commonly found in the seed pods of some of our native Hibiscus.

Once home with our seed bounty, we will need to concern ourselves with its processing. Removing all material save the structure in which the seeds are held is the first step. Many seeds will benefit from air-drying as illustrated with our native Columbine and Foam Flower. Seed capsules of these wildflowers, when spread out on newspaper in a well-lit, well-ventilated room, will split open within a couple of days, making seed cleaning easy.

Other seeds, such as those of the Cardinal Flower, Hibiscus, and the native Lilies can simply be shaken free from their capsules while seed of Sundrops and Moth Mullein are less easily removed and require crushing the capsules and sieving through a wire mesh to separate the seed. Still others, like Jack-in-the-Pulpit and Arrowleaf need a hand cleaning to remove the fleshy seed coat encasing the seed. A memorable example of this last cleaning method involved hand to hand combat with the Prickly Pear Cactus. Upon splitting open the pear, numerous seeds were found surrounded with a sticky, gelatinous substance which required some four separate washings (with a strong liquid detergent) and dryings to separate the seed. The deep purple seed coat of

Umbrella leaf can be readily removed following an overnight soaking in water, but beware of purple stained hands.

As soon as the cleaning process has been completed, proper seed storage should be carried out, the final step in our seed collecting odyssey. A few clues from nature will help. Basically, the condition of seed in its structure, moist or dry, determines how it is best stored. A medium of damp sphagnum moss is ideal for the stratification of moist seed. Dry seed can be stored in that condition. In both cases, seed should be stored in sealed, air-tight containers, labeled, and refrigerated until spring sowing.

Seed collectors will soon become aware of the great variety of seed types found in nature. Consider the interesting showerhead that holds seed of the American Lotus, the neatly stacked columns of seed, reminiscent of stacks of poker chips, found in chambers of a lily capsule or the pencil-thin seed of Blue Star that look like cinnamon sticks.

Seed of the native Milkweeds is moved about by a silky white parachute. Because of their color, some seed are easy to spot, such as the bright red of the Jack-in-the-Pulpit and the deep purple seed of the Umbrella leaf. Other seed is more difficult to collect due to the arrival of insects just before seed is mature as is the case with ants visiting plants or Trailing Arbutus and Wild Ginger.

As mentioned earlier, some seed is ready for collection early in the growing season. April is not too early to find mature seed of Toothwort, Hepatica, Trout lily, and Shortia. In addition to the satisfaction of practicing conservation, seed collectors will no doubt gain a lasting appreciation for the diversity of wildflowers found in North Carolina and for the great variety of seed structures, shapes and colors.

Harry Phillips was in charge of seed collection for the NCWFPs.

Arisaema triphyllum spp.
triphyllum Jack-in-the-Pulpit

Britton, N.L., and A. Brown.
1913. *Illustrated flora of the northern states and Canada*. Vol. 1: 442. From USDA Plants Database.



Plant Blindness

The following article by William Aiken appeared in *Lingua Botanica* (Vol. 5, Issue 1, 2004, Wayne Owen, editor). Though a couple of years old, the article is worth reading again.

Plants fuel life on Earth by tapping the sun's energy. But if plants are the main mediators between the physical and biological worlds, why do most people tend to appreciate animals so much more than plants? That question is at the center of a new campaign whose rallying cry is "Prevent Plant Blindness." The aim of the campaign is to liberate students from the many traps that lead to a lack of appreciation for and understanding of plants, say its leaders, botanist-educators James Wandersee of Louisiana State University, in Baton Rouge, and Elizabeth Schussler of the Ruth Patrick Science Education Center, in Aiken, South Carolina. Wandersee runs LSU's 15° Laboratory (www.15degreelab.com), which takes its name from the observation that people prefer to view objects that are between 0 and 15 degrees below eye level.

In 1998, Wandersee and Schussler introduced the term plant blindness after years of discussion, literature searching, investigation, and "a fair amount of trepidation," says Wandersee. They define plant blindness broadly, including "the inability to see or notice the plants in one's own environment, leading to the inability to recognize the importance of plants in the biosphere and in human affairs." Plant blindness also comprises an "inability to appreciate the aesthetic and unique biological features" of plants and "the misguided, anthropocentric ranking of plants as inferior to animals, leading to the erroneous conclusion that they are unworthy of human consideration."

The problem is, if most people don't pay attention to plants and the fundamental role they play in maintaining life, society isn't likely to agree that plant conservation is among humanity's most crucial issues, much less support plant science research and education. All this while, by some estimates, one in eight plant species is threatened with extinction and the (plant-dependent) human population continues to climb. What causes plant blindness? Some researchers have long concluded that various social and educational biases are responsible. For example, "zoo-chauvinistic" educators at all levels tend to use animal examples to teach basic biological concepts, whether in the classroom, lab, or field.

While not discounting those biases, Wandersee and Schussler argue in an article published in *Plant Science Bulletin* that the primary contributor to plant blindness is the nature of the human visual information-processing system (www.botany.org/bsa/psb/2001/psb47-1.pdf). They cite evidence showing that humans don't see all their surroundings by just opening their eyes. Other researchers have calculated that each second, the eyes generate more than 10 million bits of data for visual processing, but the brain extracts only about 40 bits and fully processes only the 16 bits that reach our conscious attention. How, in confronting this tremendous bottleneck, does the brain decide which 16 bits of visual information to focus on?

William Aiken

Put simply, it searches for movement, conspicuous colors and patterns, objects that are known, and objects that are potential threats. Since plants are static, blend in with the background, and don't eat humans, they generally don't get visual attention.

"There is a kaleidoscopic array of visual information bombarding our retinas every waking second, and plants are so easy to ignore unless they are in bloom," Wandersee says. "Plant blindness is the human default condition." Their research and that of other biology educators has shown not only that most students prefer to study animals more than plants, but that early experience growing plants with a knowledgeable, friendly plant mentor is a good predictor of a student's later interest in plants.

To help the nation overcome plant blindness, Wandersee and Schussler have taken a self-described "activist" approach to appeal to teachers and students. They developed a classroom poster that says "Prevent Plant Blindness" as part of a national campaign to raise awareness. The 20-by-30-inch poster shows a pair of red-tinted glasses hanging over a tree-lined river valley. This symbolizes how looking through such a visual filter blinds someone to seeing the plant world. The back of the poster contains the definition and symptoms of plant blindness and 20 plant-related activities. The poster, endorsed by the Botanical Society of America, has been distributed to more than 20,000 teachers in the United States.

Wandersee and Schussler also spread their message at botanical gardens and meetings of science teachers. In 1999 they published an illustrated, 40-page children's picture book, "Lost Plant!" which tells the story of a plant mystery. They established the annual Giverny Award in 1998 for the best science picture book.

Perhaps most important, they advocate more plant mentors to give young people experience in growing plants, and they praise the role of botanical gardens in public education about the role of the plant world. "Our research has shown that having a plant mentor in one's life makes a pivotal difference in whether one notices, appreciates, seeks to understand, and cultivates plants," Wandersee says. "Without informal and formal horticultural and botanical education-such as mentors and botanical gardens provide-one is not likely to care about plants or to realize that all life depends on plants."

William Allen, for American Institute of Biological Sciences, October 2003



North Carolina Native Plant Society
Spring 2006 Trip Registration
May 19 - 21 2006

Name(s) _____

Address _____

City/State/Zip _____

Email _____ Phone _____

Registration fee: NCNPS member - \$15.00 (\$8.00 limited income) \$_____

Registration: non NCNPS member - \$25.00 \$_____

Hiker's Lunch for Saturday, your choice ham & cheese, turkey & cheese,

vegetarian sandwich with chips, fruit, dessert, and bottled water

in a souvenir canvas bag - \$8.95 \$_____

Tour on your own at Chimney Rock Park (instead of Pool Creek Falls or Bat Cave)
\$14.00 per person, indicate **Saturday** or **Sunday** preference: \$_____

Saturday night dinner \$12.00 per person \$_____

Total Enclosed: \$_____

Sunday trip to Bat Cave walk is limited to 20 people

Registration deadline: May 12, 2006

Please make checks payable to NC Native Plant Society and mail to:

Tom Harville
104 Birklands Drive
Cary, NC 27511

Last Chance Dues Reminder

There is still time to mail your dues (\$15.00 Limited Income; \$25.00 Individual; \$35.00 Family, \$50.00 Sustaining; \$1,000 Lifetime) by May 30th to:

Tom Harville
104 Birklands Drive
Cary, NC 27511

Don't miss a single issue of the newsletter, or a chance to participate in Society activities!

NATIVE PLANT NEWS

The Newsletter of the North Carolina

Native Plant Society

1402 Bearhollow Road

Greensboro, North Carolina 27410

❖ Spring Trip - Hickory Nut Gorge area - May 19-21, 2006 ❖

Annual Meeting and Picnic

Saturday, June 10, 2006

11:00 am

**Shelter #2 at Hagan Stone Park
Off 421 S. south of Greensboro**

**Bring covered dish items, plants for the auction,
old books/magazines/catalogs to share.**

**For details, contact Tom Harville or Charlotte
Patterson**



North Carolina Native Plant Society T-Shirts

100% cotton, pre-shrunk

Sizes: Small, Medium, Large, X Large, XX Large

**Colors: Pine green, White, Tan
Azalea pink, yellow, cranberry**

\$15.00 (+ \$3.00 shipping)

Send your order (make checks to NCNPS):

**Katherine Schlosser
1402 Bearhollow Rd.
Greensboro, NC 27410**

**Be sure to include color and size preference as well as
your mailing address and an email or telephone so we
can let you know if your choice is still available!**

Native Plant News

*The Newsletter of the North Carolina
Native Plant Society.*

*Send articles, announcements, interesting places
to visit to:*

**Katherine Schlosser
1402 Bearhollow Rd.
Greensboro, NC 27410**

Deadline for next issue: May 1, 2006

kathys@ncwildflower.org