



Native Plant News

The Newsletter of the North Carolina Native Plant Society

Volume IV, Issue 4

Sept/Oct 2006

NCNPS Fall Trip

Hammocks Beach and Croatan National Forest

October 6 - 8, 2006

What to bring: LUNCH, WATER, snacks, sunscreen/hat, sturdy walking shoes, insect repellent, field guides, binoculars, rain jacket, walkie-talkies if you have them and enthusiasm! DON'T FORGET YOUR LUNCH AND WATER FOR SATURDAY AND SUNDAY.

Friday, October 6, 2006:

Arrive at Emerald Isle, NC

5:00 – 7:30 - Dinner on your own

7:30 – 9:00 – Meet & Greet at Islander Motor Inn, in and around Alice's Oceanside room near the pool.

Saturday, October 7, 2006:

8:30 am – meet at Islander Motor Inn

9:00 – 4:30 – Boat tour of salt marshes around Bear Island and Huggins Island and botanize on Bear Island

6:00 – 7:00 – Dinner on your own, Emerald Isle area

7:30 – 8:30 – Presentation and Discussion, Islander Motor Inn meeting room

Sunday, October 8, 2006

8:30 am – meet at Islander Motor Inn

9:00 – 3:00 – Botanize at long leaf pine savannas in Croatan National Forest

3:00 - Depart for home



Bear Island and Huggins Island, Saturday 8:30 am
Bring lunch and water!

Led by Sam Bland, Natural Resources Ranger, Hammocks Beach State Park and Dale Suiter, botanist, US Fish & Wildlife Service. Charge: \$10 per person for the boat tour and transportation to and from Bear Island. Because of the size of the boat, this portion of the trip will be limited to the first 28 people that sign up*.

Natural Resource Ranger Sam Bland will take us on a boat tour of the salt marshes around Bear Island and Huggins Island and then we will explore the flora of Bear Island as we stroll from the marsh side of the island to the oceanfront. Hammocks Beach State Park is located on Bear Island, an 892-acre barrier island. The island, 3.5 miles long and less than a mile wide, is bordered by the Atlantic Ocean to the south and by salt marshes, estuarine creeks and the Intracoastal Waterway to the north. Bogue Inlet lies at the northeast end of the island; Bear Inlet lies to the southwest.



Shrub thickets and maritime forests create a wilderness environment. Large dunes and sand ridges dominate the landscape. Migrating sand, carried by the wind, often buries portions of the maritime forest. Tall dunes vegetated by sea oats, American beachgrass and seaside goldenrod dominate most of the island. At the northeast end of the island is a maritime forest populated by loblolly pine, red cedar, red maple, red bay and various oaks. The northwest portion of the island is primarily marsh, dominated by cordgrass and black needle rush. Hammocks Beach is also a favored nesting place for loggerhead sea turtles. Female loggerheads come ashore at night to nest above the high tide line between mid May and late August. Hammocks Beach is also a haven for migratory shore birds that feed in tidal marshes and rest on the beach in the spring and fall.

Our tour will end at the ocean. Participants will be able to leave as soon as we finish the walk across the island, or they can stay and spend the afternoon on the beach. Ferries depart the island for the mainland every hour on the hour until 5:00 PM.

*If more than 28 people sign up, Jeannie Kraus will lead a second group that will take the 9:30 ferry to Hammocks Beach. The 2.5 mile ferry ride takes about 25 minutes and offers a glimpse of interesting wetland inhabitants, including herons and egrets. After travelling through the Intracoastal Waterway, the ferry moves through the shallow waters of Cow Channel, then docks at the pier on Bear Island where a half-mile trail travels through the dune system, across the island, to the beach.

Exploring on your own:

Between Bear Island and the Islander Motor Inn, you will pass close by the Cedar Point Tideland Trail. This easy 1.3 mile loop trail includes 6 boardwalk bridges that take you into the heart of an estuarine environment without fear of trampling fragile species or getting your feet wet! Get an up close look at a salt marsh and tidal creek, and enjoy a nice view of the mile-and-a-half-wide expanse of the White Oak River. Interpretive signs tell the story of this community and how it is constantly changing. The short loop is level and wide enough for wheelchairs. Benches along the way provide rest stops.

Directions: From N.C. 24 go north on N.C. 58 for 1.25 miles and turn left on VFW Road. The turn into Cedar Point Recreation area is 0.5 miles, on the left. Trailhead parking is 0.7 miles. Downloadable map available at: www.cs.unca.edu/nfsnc/recreation/cedar_point.pdf

Dinner on your own in the Emerald Isle area, Saturday 6:00 pm

There are at least 6 restaurants nearby; two of which are seafood restaurants. You may wish to go to the Seafood Festival at Morehead City for dinner. *Portifino's Italian* is near the Islander Motor Inn and *Jordan's Seafood* is about 2 miles away. *Bushwhacker's Seafood* at the Emerald Isle Pier opens at 5 PM. *Rucker John's* and *Cello's* are located at Emerald Plantation.

Presentations and Discussion, Saturday evening, 7:30 pm

Islander Motor Inn meetingroom. Speaker: Jeannie Kraus, NC NPS member and Curator of Science at the NC Maritime Museum. Jeannie will give a slide presentation about local wildflowers, including some things we may see on the Sunday field trip.

Croatan National Forest Longleaf Pine Savannas, Sunday 8:30 am Bring lunch and water!

Led by John Fussell, local naturalist, and Misty Franklin, botanist with the NC Natural Heritage Program.

Tour some of the renowned Longleaf Pine Savannas at the Croatan National Forest. Selection of field trip location will be partly based on which areas have been burned during the past year, to find the greatest diversity of flowering herbs and

grasses. Sites will include the nationally significant Millis Road Savannas and Pocosins and the Little Road Longleaf Pine Savannas. We can expect to see many rare and interesting plant species such as Venus flytrap (*Dionaea muscipula*), pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), rough-leaf loosestrife (*Lysimachia asperulifolia*), scale-leaf gerardia (*Agalinis aphylla*), blazing stars (*Liatris* spp.), pine-barren gentian (*Gentiana autumnalis*) and, – if we're lucky – yellow fringeless orchid (*Platanthera integra*). Expect stunning views of fruiting wiregrass in open savannas, and see the variation in longleaf pine communities, from dry sand ridges on relictual dunes to lush, wet-loamy flatwoods grading into pocosin.

Directions to Emerald Isle on the west end of Bogue Banks on NC 58 near the Bridge at Cape Carteret, near Jacksonville and Swansboro.

(AVOID MOREHEAD CITY THIS WEEKEND OF THE 20TH NC SEAFOOD FESTIVAL)

From Triangle area take US 70 toward New Bern and Morehead City but do NOT go all the way to the coast on US 70. Instead in Kinston on the US 70 bypass, take NC 58 about 40 miles toward Bogue Banks. When you get to Cape Carteret on NC 58 you will cross the bridge over the sound onto Bogue Banks.

The Islander Motor Inn is the second right after you cross the bridge.

Motel Accommodations in the Emerald Isle Area:

Islander Motor Inn, 102 Islander Drive, Emerald Isle, NC, 1-800-354-3464

We will convene each morning and meet for Saturday evening presentation here.

\$75 + tax for side rooms, \$85 + tax ocean side

Block of rooms reserved until September 15

www.islandernc.com

No continental Breakfast available at Islander Motor Inn.

Rooms include microwave and small refrigerator.

Nearest restaurant is Mike's Place 2 miles from motel. 252-354-5277

Bogue Inlet Motel 252-354-3406, 120 Bogue Inlet Drive, \$55 + tax sound side

Rusty Pelican Inn 252-354-3450, 8104 Emerald Drive, \$55 + tax, 2 blocks from ocean

Campgrounds nearby:

Holiday Trav-L-Park Resort for Campers 252-354-2250 \$25 per night per tent

9102 Coast Guard Road (first right after the bridge, next door to the Islander Motel)

(Atlantic Beach is about 20 miles away with many more hotels, but close to Morehead City which will be busy with the 20th Annual NC Seafood Festival)

*Registration Form: October 6 - 8, 2006
Hammocks Beach and Croatan National Forest*

Name (s) _____

Address: _____

Email: _____

Telephone: _____

Field trip registration and travel fees:

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

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

Boat trip to islands (required for Saturday field trip) \$10.00 \$ _____

Extra options:

Individual NC NPS 1-year membership: \$25.00 (\$15.00 limited income) \$ _____

For additional membership options and fee schedule visit www.ncwildflower.org.

NCNPS T-Shirt \$15.00 \$ _____

Circle Size: S, M, L, XL, XXL

Circle Color: Cranberry, Green, Pink, Tan, Yellow , Lt. Blue. Lilac

Total Enclosed: \$ _____

Registration deadline: September 25, 2006

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

Hugh Partridge, Treasurer

736 Linda Court

Cary, NC 27513

Information to be completed by new members,:

I do not want my contact information printed in the membership directory.

I am willing to receive the newsletter via email in order to conserve resources

Member Interests: (check all that apply)

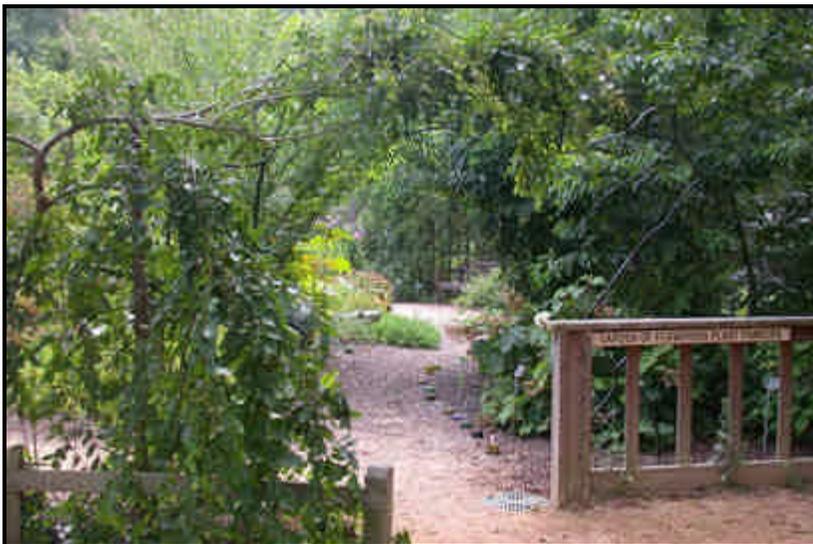
Local chapter (existing chapters in Charlotte, Triad, Triangle & NE Coastal)

Volunteer opportunities (list interests _____)

WEATHER WARNING: IN THE EVENT OF BAD WEATHER (OF THE HURRICANE VARIETY), WE WILL CALL OR EMAIL YOU. YOU CAN ALSO CHECK WITH DALE SUITER BY CALLING 919-810-6339.

Remembering Rob Gardner

May 6, 1949 August 6, 2006



Entrance to Garden of Flowering Plant Families at NCBG, designed by Rob Gardner

Rob Gardner, known to many plant enthusiasts for his work as one of the founding curators at NC Botanical Garden, passed away on August 6, 2006 in Chapel Hill. After joining NCBG in 1974, Rob became a leader in the native plant movement, constantly developing new collections at NCBG and refining propagation methods that have made it easier for the gardening public to enjoy the joys of native plants. Rob was a contributing author to the native plant propagation book *Growing and Propagating Wildflowers*, published in 1985 by UNC Press, and he wrote

dozens of articles in popular magazines such as *Fine Gardening*, *Carolina Gardener*, and *Organic Gardening*.

Rob's rich legacy can be seen throughout the NC Botanical Garden, where he developed and maintained the Carnivorous Plant Collection, the Garden of Flowering Plant Families, the Native Perennial Border, and the Piedmont Nature Trails. In addition to flowers, Rob loved to plant art throughout the garden in ways that continue to surprise and delight visitors of all ages. He also played a key role in developing the conservation programs at the Garden, including facilitating the Garden's charter membership in the Center for Plant Conservation, developing propagation protocols for many rare and endangered plants, and working with the Garden's nature preserves.

Rob touched so many lives through his passion for plants and conservation. Perhaps some of the most important contributions he made were in reminding us to have fun with gardening and challenging us to find new ways to be creative in designing gardens that highlight not just the plants, but the environment and the people who enjoy them.

In lieu of flowers, memorials may be made to the Nature Conservancy, attn: Treasurer, 4245 N. Fairfax Dr., Suite 100, Arlington VA 22203, or to the Haw River Assembly, P. O. Box 187, Bynum NC 27228.

At NCBG, Rob helped build one of the best collections of pitcher plants in the Southeast



CALLING ALL 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

VINEGAR VS. WEEDS

To The Editor,

I've learned from my brother to use a white vinegar and dish detergent spray on weeds. He keeps weeds out of his gravel drive and grass with this simple nontoxic solution. I bought a one gallon sprayer, the cheapest dish detergent from Dollar Tree and the cheapest whitevinegar I could find. Since we don't have an official formula we still don't know exactly how much detergent is needed to keep the vinegar sticking to the plants. Currently I'm trying about 12 ounces. This spray does kill what it hits so one has to be careful. Japanese Stilt Grass is brown the next day and brown spots appear in the grass the next day wherever weeds were sprayed. A delightful book, *Slug Bread & Beheaded Thistles* by Ellen Sandbeck, that has lots of nontoxic housekeeping and gardening ideas recommends vinegar sprayed or poured on weeds in sidewalk cracks on a sunny day to kill weeds.

Sue Cole
Triad Chapter member

TOUR LEADER OPPORTUNITY

The North American Rock Garden Society will host their annual meeting in Canaan Valley Resort State Park, Davis West Virginia, June 14-17, 2007.

They are looking for volunteer hike leaders who are knowledgeable native plant folk. If you are interested, please contact Mike Slater, mslater@voicenet.com.

Native Plant Symposium 2007

"Plants without Borders"

May 4-7, 2007
Presented jointly by
South Carolina Native Plant Society
North Carolina Native Plant Society
Culture & Heritage Museums, Museum of York County

Watch for details

To volunteer, contact Jean Woods
jean@ncwildflower.org

REQUEST!

I am looking for pictures and descriptions of how members have used native plants in landscaping. I will use these for displays and presentations. I can scan pictures and slides so you can send me pictures via regular mail or jpg's by email. If you send a picture by email, I want the full size/pixels of the picture. If this is a problem, you can send me a CD. I will return any pictures that you send.

I need a picture with a description, such as, "I combined native coneflowers with ..." or "I used such and such as a ground cover..." If you only have a description and no picture, send me the description. Please, only pictures with descriptions.

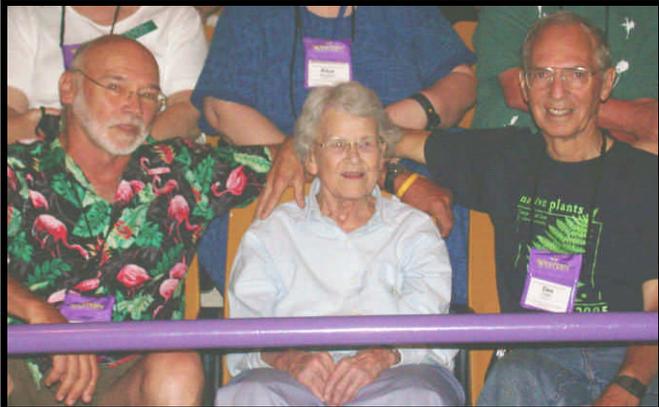
I will compile this and we will put it on the web. I will use some of the pictures on displays for the NC NPS or in PowerPoint presentations. I will credit each contributor. Thanks! Show off your gardens!

Jean Woods
14424 Harbor Estate Road
Charlotte, NC 28278
704-588-8313
jean@ncwildflower.org

VISIT YOUR NCNPS WEBSITE FOR UPDATES

WWW.NCWILDFLOWER.ORG

Photos from Cullowhee 2006



Ken Moore, left, and Dan Patillo, right sit with Maxilla Evans as she received the Tom Dodd Jr. Plantsman of the Year Award at the 2006 Cullowhee Conference.



The NCNPS delegation at Cullowhee 2006. Missing from the photo are George and Judy Lockhart. Are there others that we missed?

Plan Now
for
Cullowhee 2007
July 18 – 21

*Triad Chapter
(Greensboro/Winston-Salem/High Point
and surrounding areas)*

Schedule

- Sunday, September 17th New River Park Trail
8:00 – 4:00
- Monday, October 16th The Source and Function of
7:00 – 8:30 Fragrance
Kernersville library
- Sunday, November 9th Lake MacIntosh Trail
9:00 – 12:00
- Monday, November 13th Plant Study TBA
7:00 – 8:30
Kernersville library

The Chapter is considering changes to meeting dates, so check with Kathy to confirm. Call or email for directions (336-855-8022)

kathys@ncwildflower.org

*Piedmont Chapter (Charlotte and
surrounding area)*

October 7, 2006 9:30 AM Natural History of the Piedmont Prairies and tour led by Parks and Rec of Mecklenburg County. Learn about the piedmont prairies and see the Schweintz's sunflower and possibly Georgia Aster, both federally endangered plants. We will meet at the Nature Center at Latta Plantation.

There will be a fee of \$1.50 per person.

Email Jean if you are interested in going.

Jean@ncwildflower.org

Margaret Reid Chapter (Raleigh, Durham, Chapel Hill and surrounding areas)

I would like to extend a special thanks to Dale Batchelor for giving a talk on native plants to a newly formed garden club on August 17. Dale offers garden design services through her company Garden Goddesses (<http://www.gardengoddessesllc.com/>). She is also a volunteer Habitat Steward with the National Wildlife Federation and as part of that mission she encourage gardeners to usenatives because of their benefit to wildlife.

It would be wonderful if all our members who have developed a native plant talkwould consider adding add their names to the new Speaker's Bureau on the NCNPS web site.

Upcoming Events

Sunday, September 17: Joint event with the B. W. Wells Association. The Margaret Reid Chapter has been invited for lunch and an afternoon of activities at the B.W. Wells Park (Rock Cliff Farm) on Falls Lake. These activities will include nature walks, a tour of B. W. Wells' at studio, canoe rides, and remembrances of Maud and B. W. Wells. Falls Lake park ranger, Brian Bockhahn, will be leading some of the tours. Known as North Carolina's first plant ecologist, B. W. Wells believed that man should live in harmony with nature and was an inspiration to Margaret Reid who created a garden of wild plants at her home in Raleigh and is our chapter's namesake. A member of the B.W. Wells Association has kindly donated the lunch which will be from 1 – 2:00 pm. Please notify me if you plan to attend, as we will need a head count for lunch.

Directions:

From Raleigh and Cary: Take Creedmore Road (NC50) north to NC98 in Wake Forest. Go east (right) about 5 miles to Stony Hill Road and take a left. Go 2 miles to big intersection with Stony Hills Baptist Church and go left on Bud Morris Road. Go 2 short blocks and go left on Bent Road. Follow that road to the end to reach the Park. Address: 2201 Bent Road, Wake Forest, 27587.

From Chapel Hill and Durham: Traveling east on I40 toward Raleigh, turn north on I540 (the outer loop). Travel north on I-540. Exit at NC 50 and go north. Follow remaining directions above.

Sunday, October 1: Visit to Cure Nursery in Pittsboro. NCNPS members Jennifer and Bill Cure will show us the many native woody plants they grow primarily for stream restoration projects. The Cure's will answer questions

about the plants including their cultivation and identification. Meet at 1:00 pm at the Reid Garden, Raleigh or at the nursery around 1:45 – 2:00 pm.

Directions

From Raleigh and Cary: Take NC64 west toward Pittsboro. After Lake Jordan, but before you cross the Haw River, take a right at a light onto Mount Gilead Church Road (Citgo and Boat storage on the corner. Road sign not obvious.) Go left on Sugar Lake Road. Keep going (pass a Redbud sign) and fork right on Buteo Road. The Cure Nursery is on the right at the end. You will see deer fencing surrounding the nursery.

From Chapel Hill and Durham: Take 15-501 to Pittsboro. Go east on NC64. Turn left on Mt Gilead Church Road (Citgo and Boat storage on the corner. Road sign not obvious.) Go left on Sugar Lake Road. Keep going (pass a Redbud sign) and fork right on Buteo Road. The Cure Nursery is on the right at the end. You will see deer fencing surrounding the nursery.

Margaret Partridge
Margaret Reid (Triangle) Chapter Chair
919-467-2727

Margaret@ncwildflower.org

*Check NCNPS website for updates on
chapter activities:
www.ncwildflower.org*

NCNPS Native Plant Garden at the NC State Fair

The NCNPS has agreed to create and maintain a native plant garden within the Flower Show area at the State Fairgrounds. Unlike the competition gardens and most other exhibits, we plan to plant in the ground and make this a permanent display of North Carolina native plants. At the present time the *Native Plant Garden* will be on view only during the ten days of the State Fair in October, but as there are plans to use the Flower Show area for wedding and parties, our garden will eventually be seen at other times of the year too. The area we have to work with is approximately 24 by 50 feet and has a pond at one end. The Flower Show displays are primarily aimed at gardeners and we would like to acquaint them with an aesthetic that is both beautiful and ecologically sound: one that includes available natives that work well in the garden, that treasures and nurtures the common natives that might be already present in people's yards, and that discourages the use of invasive exotics. Each year we can vary the display by using different herbaceous plants or even photographs to emphasize a different native plant topic.

We are in need of volunteers who can provide the labor to plant the garden and remake the water feature. Margaret and Hugh Partridge, Tom Harville, and Stefan Bloodworth have already spent a combined total of about 12 hours assessing the site, draining and cleaning the pond, and removing weeds. We will be sending out email notices of workdays soon.

Stefan Bloodworth, Curator of the Bloomquist Native Garden at Duke University, has kindly agreed to design the planting of the garden and the remake of the water feature and is providing much of the woody plant material. We will focus on a wildlife planting this year and include plants such as our native viburnums, shrub dogwoods and hawthorns.

We also will need volunteers who would be willing to answer questions and man our display during the Fair October 13 – 22. Although we are not required to man the garden, we feel that Fair goers would learn much more if there were NCNPS members available to answer questions and explain the use of native plants. Fair volunteers will be allowed to park within the Fair grounds and will receive a complimentary ticket to the Fair. Maybe you and your family, or friends, are planning to go already? You could bring them to the Fair, volunteer for a couple of hours, and then join them later!

Also, if you have a native plant talk or demonstration that you could present during the Fair, especially one that is aimed at gardening, there are \$50 stipends available.

Please call Margaret Partridge (467-2727) if you are interested in helping or giving a presentation.

"Before" Photos of the Site:





K. Schlosser

Attracted first by the delicate chartreuse foliage on the vine clambering up through the tall shrubs in the parking lot of a shop on a busy thoroughfare, I stepped out of the car for a closer look. To my delight, this was a flowering vine with small, greenish-yellow flowers that looked like miniature passionflower blooms. Indeed, they are. This is the *Passiflora lutea* which along with *P. incarnata* are the only two *Passifloras* native to North America out of the more than 500 species worldwide.

P. lutea flowers are only one-half to three-quarters of an inch across, often growing two in the axils, and have all the characteristics of its' gaudier and coarser cousin *P. incarnata*. *P. lutea* climbs with the aid of its aerial roots, which are tightly wound tendrils that grab hold with a fierce tenacity. Unlike *P. incarnata*, the fruits of the yellow passionflower are quite small, turning from green to a purple black, at which time they are quickly consumed by birds. Besides the attractive chartreuse color, the leaves of *P. lutea* are smaller and less deeply lobed than *P. incarnata*. Young leaves sometimes have a silvery mottling.

The fragrant flowers of yellow passionflower, as is true with



most passionflowers, are uniquely constructed to maximize the chances for pollination. P. Coin¹ of Durham snapped this photo in 2004 of a Mason wasp consuming nectar from the flower. While he is busy, pollen from the anthers, at the ends of filaments arching out from the top of the column called an androgynophore²,

coats the back of the wasp. The stigmas, at the end of the styles also arching out and above the sepals and petals from the androgynophore, are perfectly positioned to receive pollen, from the same flower or others that the wasp has visited. There are reports of other short-tongued bees³ and wasps visiting *P. lutea*, the most efficient of which are those whose size assures good pollen collection and delivery.

Butterflies, especially the Gulf Fritillary, are common visitors as well, but for a different reason. *P. lutea* is a host plant for the butterfly, which lays its eggs on the back of the leaves. Triad Chapter member, and butterfly expert, Dennis Burnette is watching the plants for additional butterfly visitors.

Though some sources report *P. lutea* as rare, it is found all across the Mid Atlantic and southeastern states. In North Carolina, it is reported in 42 counties⁴, from the coast to the far western tip of the state (those counties shaded in green have reported occurrences of *P. lutea*). It may be uncommon in some areas, but more likely the plant is simply overlooked. A cutting recently brought to the Triad Chapter's Plant Study group elicited a fair amount of excitement among members who had not seen it before. It blooms and sets seed in the hottest part of the summer. By early fall, the leaves turn yellow and drop, the vine dying to the ground for the winter.

Propagation can be accomplished from stem cuttings (as long as the stem is solid rather than hollow, as sometimes happens with older passifloras of some species), root division or seeds. The purple juice of the fruits of *P. lutea*, which stains as surely as pokeberries, keeps the seeds viable and may play a role in leaching out abscisic acid, a hormone that induces dormancy. Seed that is allowed to dry may be difficult to



germinate, so is better kept with a little moist sand or peat in the refrigerator until you are ready to sow. Soaking the seeds for 24 to 48 hours to leach out the abscisic acid may also hasten germination.

Finally, as is the custom when discussing passionflower, a word about the name is in order. In the 17th century Giacomo Bosio, a churchman and historian working in Rome, interpreted passiflora drawings sent by Spanish priests in South America⁵. The early Italian name for the species was *fior della passione* for the fancied resemblance of the flower parts to elements of the crucifixion of Jesus.

In other cultures there is no such association—in Japan, passiflora species are known as “clock plants.”⁶ Linnæus classified the plants in 1745, thus yellow passionflower is properly called *Passiflora lutea* L.

Passiflora lutea is an attractive plant to train up a trellis or through shrubs. They do well in most well-drained soils, lots of light, and moderate moisture. If you grow them in your garden, keep them where you can watch them for their dainty flowers, light fragrance, and for the bees, birds, and butterflies they will attract.

Katherine Schlosser

ⁱP. Coin, BugGuide <http://bugguide.net/node/view/5453> .

ⁱⁱA support formed by the fusion of filaments and styles. In the passionflower, these parts separate again at the top of the column. Radford, Ahles, Bell. *Manual of Vascular Flora of the Carolinas*. (UNC Press, Chapel Hill. 1968) P. 734.

ⁱⁱⁱBees: *Anthemurgis passiflorae*, *Lasioglossum pruinosus*, *Lasioglossum versatus*, *Colletes latitarsis*. Wasps: *Anacrabus ocellatus*, *Eumenes fraterna*. From *Insect Visitors of Illinois Wildflowers*,

http://www.shout.net/~jhilty/plants/cream_passion.htm

^{iv}Map from Plants Database, www.usda.plants.gov.

^vFelter, M.D., Harvey and John U. Lloyd, *King's American Dispensary*. 1898. Accessed from Henriette's Herbal Homepage, <http://www.henriettesherbal.com>

^{vi}Passiflora Online, History. <http://www.passionflow.co.uk>

Answers to the ginger question in the last newsletter:

1. *Hexastylis arifolia*
2. *H. virginica*
3. *Asarum canadense*.



When walking through the woods in search of a particular plant, we usually have our heads down. That means we miss a lot at eye-level and above. This little fellow was on a slender branch above a swampy area. Know his name?



This one you do see with your head bent. While walking through a patch of skunk cabbage, I saw 20 or more of these. They stand about 6–7 inches tall and the opening is 1 1/2 to 2 inches wide. Who lives here?

Send a gift membership to the North Carolina Native Plant Society

....celebrate a birthday
...remember an anniversary
...honor someone special

Mail \$25.00 to Hugh Partridge, Treasurer, 736 Linda Court, Cary, NC 27513. *Be sure to include the recipient's name, address, phone, and email.*

We will send a card announcing your gift, and send you an acknowledgment.

Answers on page 20 (16 for print version).

This plant looks similar only different," said one member (who knows who they are) as we hiked up the trail to the Worlds' Edge. Actually it was a more profound statement than he perhaps realized, as the sites we visited in the Hickorynut Gorge were similar to many mountain areas only with remarkable differences.

Geology is what makes it unique. The trip information stated that these mountains are composed of garnet mica schist, exfoliated granite, granitic gneiss, and amphibolites that produce rock outcrops. Amphibolites are a metamorphic rock consisting of hornblende (minerals of granite and other igneous rocks) and feldspars with little or no quartz. Small flakes of black and white give it a salt-and-pepper appearance.

This landscape on the edge of the piedmont features fissure caves, bluffs and cliffs, slopes, coves, rivers and waterfalls ranging from 1000 to 3000 feet in elevation. This gorge differs from other escarpment gorges of the Blue Ridge in its abundance of calcium, magnesium and iron producing more basic soils.

The large group of participants was divided to visit each site each day. My group went to The Nature Conservancy's Bat Cave Preserve on Saturday. Clint Calhoun with The Nature Conservancy shared his local knowledge of the site. Once we crossed the footbridge over the Broad River we entered into another world. The mile hike began in a mature cove hardwood forest and became a steeper climb through rocky outcrops up to the caves. The multi-chambered Little Bat Cave and Big Bat Cave with a mile of passage form the largest fissure cave in the U.S. Fissure caves form by cracking rocks, whereas talus caves form when rocks fall on other rocks. There are five species of bats here including the reestablished Indiana bat. The eastern pipistrel stays in the cave in warm weather while other species go into the trees.

The reward for our climb was feeling the refreshing, cool air by the cave blowholes. The grotto alumroot (*Heuchera parviflora*) requires very little rainfall to grow under dry rock ledges. Bleeding heart (*Dicentra eximia*) blooms nearly all year due to warmth by the cave. Those knowledgeable about amphibians pointed out a crevice salamander sunning on the rocks, handsome with red markings on its back. Several mountain dusky salamanders were found under rocks along the path. The slimy salamander is endemic here in rock crevices.

The cove hardwood, hemlock and chestnut oak forests harbor threatened or endangered plants such as the largest population of broadleaf coreopsis (*Coreopsis latifolia*) and Carey's

saxifrage (*Saxifraga careyana*). An abundance of spring wildflowers grow beneath a canopy of Canada and Carolina hemlock, basswood, tulip poplar, beech and oaks with umbrellas (*Magnolia fraseri*) and cucumber trees (*M. acuminata*). Noteworthy was hairy mock orange (*Philadelphus hirsutus*), rare on calcareous rocks and green violet (*Hybanthus concolor*) that grows only on basic soils. Here are some additional plants from my notes.

Shrubs, small trees and vines:

Sweet shrub (*Calycanthus floridus*), wild yam (*Dioscorea villosa*), silverbell (*Halesia carolina*), smooth hydrangea (*Hydrangea arborescens*), spicebush (*Lindera benzoin*), mock orange (*Philadelphus inodorus*), rosebay (*Rhododendron maximum*), wineberry (*Rubus phoenicolasius*), bladdernut (*Staphylea trifolia*), maple-leaved viburnum (*Viburnum acerifolium*)



Clintonia umbellata. From USDA

Lilies, irises, orchids:

Speckled wood lily (*Clintonia umbellulata*), yellow mandarin (*Disporum lanuginosum*), dwarf crested iris (*Iris cristata*), showy orchid (*Orchis spectabilis*), Solomon's seal (*Polygonatum biflorum*, *P. pubescens*), Solomon's plume, false Solomon's seal (*Smilacina racemosa*), Catesby's trillium (*Trillium catesbaei*), sweet Betsy (*T. cuneatum*), southern nodding trillium (*T. rugellii*)

Other wild flowers:

Baneberry, doll's eyes (*Actaea pachypoda*), columbine (*Aquilegia canadensis*), rock cress (*Arabis laevigata*), wild ginger (*Asarum canadense*), false goatsbeard (*Astilbe biternata*), Indian plantain (*Arnoglossum muhlenbergii=Cacalia*), blue cohosh (*Caulophyllum thalictroides*), black cohosh (*Actaea racemosa*), collinsonia (*Collinsonia canadensis*), Robin's plantain (*Erigeron strigosus*), galax (*Galax aphylla*), liverleaf (*Hepatica acutiloba*), rock alumroot (*Heuchera villosa*), purple bluet (*Houstonia purpurea*), waterleaf (*Hydrophyllum canadense*), jewel weed (*Impatiens pallida*, *I. capensis*), Indian pipes (*Monotropsis odorata*), anise root, sweet cicely (*Osmorhiza claytonii*), ginseng (*Panax quinquefolium*), bloodroot (*Sanguinaria canadensis*), Canada violet (*Viola canadensis*), sweet white violet (*V. blanda*)

Ferns:

Maidenhair (*Adiantum pedatum*), walking (*Asplenium rhizophyllum*), mountain spleenwort (*A. montanum*), southern lady (*Athyrium asplenoides*), silver glade (*A. thelypteroides*=*Deparia acrostichoides*), fragile (*Cystopteris fragilis*), hay scented (*Dennstaedtia punctilobula*), marginal wood (*Dropteris marginalis*), rock cap (*Polypodium virginianum*)

In the afternoon, some members toured Chimney Rock Park. The society visited there about 10 years ago. A point of reference is my photo on my refrigerator by Hickorynut Falls with my husband, Brian, and son, Forrest, who was about 5 at the time. Instead I chose to walk the River Walk Trail, an innovative way for people to enjoy Broad River for a leisurely stroll with paths to shops and restaurants.

After dinner at the Old Rock Café, Ron Lance, naturalist at Chimney Rock Park, spoke about the amazing variety of native plants in their unique habitats. The plant auction was a roaring success for scholarship fundraising as well as new treasures for our gardens.



Celtis tenuifolia from USDA

On Sunday my group hiked up to Lower Pool Creek Falls along Wolf Creek at Worlds Edge Mountain. Parcels owned by Carolina Mountain Land Conservancy, The Nature Conservancy and N.C. Dept. of Parks & Recreation will comprise the future Hickorynut Gorge State Park. Worlds' Edge drops dramatically 2200 feet to the piedmont. This montane oak hickory forest is home to the endangered white irisette (*Sisyrinchium dichotomum*) with feathery nodes

andse. dichotomous branching, pointed out by James Padgett, the Southern Piedmont Inventory Biologist. Bear, deer and squirrels were traditionally hunted here, and it was logged in the 1950s and 60s.

The trail climbed through a canopy of Virginia, shortleaf, white and loblolly pines, tulip popular, sycamore, sourwood, red maple, umbrella tree, cherry birch, black gum, buckeye, basswood, white and green ash, red and white oaks, and mulberry. The rare Georgia hackberry (*Celtis*

tenuifolia) was pointed out growing on rock outcrops. Noteworthy was the ashy hydrangea (*Hydrangea cinerea*) that prefers calcareous rocks. Leaf undersides are pubescent, unlike the smooth hydrangea (*H. arborescens*). While Carolina hemlock prefers dry, rocky habitats, Canada hemlock grows in moist coves. Besides the distinction with Canada's needles being flat in one plane, it also has a piney scent, whereas Carolina's has a limey scent. Unfortunately the hemlock adelgid, introduced from China in the 1920s, affects both species. If hemlock disappears as a dominant the entire ecosystem will change, like the fall of the American chestnut. A few small chestnuts here give us hope they will someday return to their former grandeur.

We enjoyed our lunch below the cool spray of the falls where dwarf dandelion (*Krigia montana*) was growing in rock crevices. The amazing flowers of wild ginger (*Hexastylis shuttleworthii*) won "oohs and aahs" from everyone. The limestone goldenrod (*Solidago sphacelata*) grows here, an uncommon species growing on calcareous rock outcrops. Rock cress (*Arabis laevigatus*) and rock alumroot (*Heuchera villosa*) are fairly common on the outcrops. Invasives here, such as multiflora rose, mimosa, princess tree, were removed from Bat Cave. Bittersweet (*Celastrus orbiculatus*) with its lovely red berries is invasive yet prized by wreath and basket makers. The visit enticed us to come back to experience the other waterfalls when it becomes a state park.

Shrubs and small trees:

Sweet shrub (*Calycanthus floridus*), chinquapin (*Castanea pumila*) alternate-leaved dogwood (*Cornus alternifolia*), persimmon (*Diospyros virginiana*), strawberry bush (*Euonymus americanus*), silverbell (*Halesia carolina*), witch hazel (*Hamamelis virginiana*), St. John's wort (*Hypericum hypericoides*), St. Andrew's cross (*H. stragulum*) mountain doghobble (*Leucothoe fontenesiana* = *axillaris* var. *editorium*), spicebush (*Lindera benzoin*), mountain laurel (*Kalmia latifolia*), mock orange (*Philadelphus inodorous*), rosebay (*Rhododendron maximum*), pink rhododendron (*R. minus*), sassafras (*Sassafras albidum*), dryland blueberry (*Vaccinium pallidum*=*vacillans*), maple-leaved viburnum (*Viburnum acerifolium*), possum haw (*V. cassinoides*)

Vines:

Hog peanut (*Amphicarpa bracteata*), wild yam (*Dioscorea villosa*), passion flower (*Passiflora lutea*), poison oak

Hickorynut Gorge report continued...

(*Toxicodendron pubescens*), Biltmore carrionflower (*Smilax biltmoreana*) on the watch list, common greenbrier (*Smilax rotundifolia*), bristly greenbrier (*Smilax tamnoides*) with zig-zag stems, muscadine (*Vitis rotundifolia*)

lilies, orchids and irises:

Pink lady's slipper (*Cypripedium acaule*), rattlesnake plantain (*Goodyera repens*), yellow star grass (*Hypoxis hirsuta*), dwarf crested iris (*Iris cristata*), false lily of the valley (*Maianthemum canadense*), Indian cucumber root (*Medeola virginiana*), showy orchid (*Orchis spectabilis*), blue-eyed grass (*Sisyrinchium mucronatum*), Solomon's



Monarda clinopodia From USDA Plants Database.

seal (*Polygonatum pubescens*), Catesby's trillium (*Trillium catesbaei*), sweet Betsy (*T. cuneatum*), southern nodding trillium (*T. rugelii*)

Other wild flowers:

Agrimony (*Agrimonia rostrelata*), angelica (*Angelica venenosa*) very poisonous, pale Indian plantain (*Arnoglossum atriplicifolium*=*Cacalia*), heart-leaved aster (*Aster divaricatus*), black cohosh (*Actea racemosa*), collinsonia (*Collinsonia canadensis*),

broadleaf coreopsis (*Coreopsis latifolia*), elephant's foot (*Elephantopus tomentosus*), galax (*Galax aphylla*), bed-straw (*Galium* sp.), spreading sunflower (*Helianthus divaricatus*), purple bluet (*Houstonia purpurea*), Jack in the pulpit (*Arisaema triphyllum*), Joe pye weed (*Eupatroidium fistulosum*), whorled loosestrife (*Lysimachia quadifolia*), partridge berry (*Mitchella repens*), basil bergamot (*Monarda clinopodia*), jumpseed (*Polygonum virginianum*=*Tovaravirginiana*), cinquefoil (*Potentilla canadensis*), rattlesnake root, gall of the earth (*Prenanthes serpentaria*), Robin's plantain (*Erigeron strigosus*), snakeroot (*Sanicula* sp.), Venus looking glass (*Specularia perfoliata*) with "window shade" seed pods, tall meadowrue (*Thalictrum revolutum*), foamflower (*Tiarella cordifolia*), sweet white violet (*Viola blanda*), halberd-leaf violet (*V. hastata*), wood violet (*V. palmata*), round-leaf yellow violet (*V. rotundifolia*), yellow root (*Xanthorhiza simplicissima*)

Ferns and fern allies:

Running cedar (*Diphasiastrum digitatum*=*Lycopodium flabelliforme*), cut-leaf grape (*Botrychium dissectum*), hay scented (*Dennstaedtia punctilobula*), royal and cinnamon (*Osmunda regalis* var. *spectabilis*, *O. cinnamomea*), broad

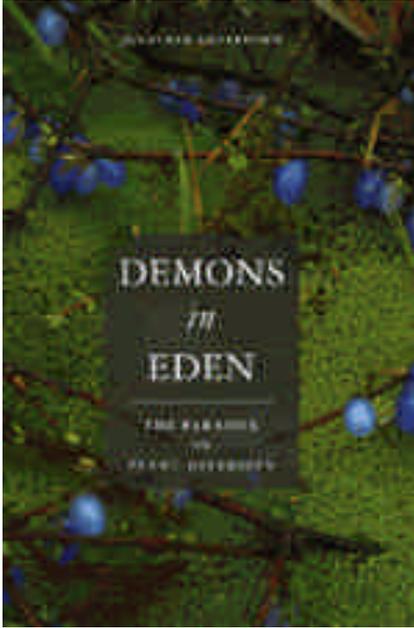
beech (*Phegopteris hexagonoptera*=*Thelypteris*), Christmas (*Polystichum acrostichoides*), New York (*Dryopteris noveboracensis*)

Those who delight themselves with birds weren't disappointed as it was the height of mating season. Singing warblers included hooded, prothonotary, blackthroated green, black and white, worm eating and pine. It was quite a treat to see a black and white warbler nest and hatchling on the ground by the trail. We also enjoyed a scarlet tanager (bright red against the greenery), yellow-shafted flicker, pileated and downy woodpeckers, phoebe, ovenbird, cardinal, red eyed and solitary vireos (blue-headed), robin, wood thrush, yellow-billed cuckoo, goldfinch, cedar waxwing, kingfisher, and bluebirds.

Luann Bridle told us to look for butterflies visiting flowers or "puddling" along the dirt road at Worlds' Edge: spring azures, spicebush and eastern tiger swallowtails, silver-spotted and fiery skippers, and juvenal's dusky wing. Other critters seen by the group included a brown water snake, black rat snake, green frog, crayfish and many types of mushrooms.

A lasting memory is Alice Zawadzki's cabin that served for socializing and breakfast gatherings to nearby participants like Charlotte Patterson and myself. Her porch had a wonderful, soothing view of the river and Chimney Rock beyond. I can still picture Emily Allen in her favorite spot in the rocking chair! One morning we were treated to the sight of a female wood duck with seven babies trying to cross the swift flowing river. One little straggler had a difficult time keeping up and was almost left behind. We all cheered when he made it across. And here's a cheer to the organizers of a marvelous weekend!

Jeannie Kraus



Silvertown, Jonathan
Demons in Eden: The Paradox of Plant Diversity.

192 p., 8 color plates.
5-1/2 x 8-1/2 2005
Cloth \$25.00 0226-75771-4 Fall 2005
University of Chicago Press

impassioned exploration of modern plant ecology that unlocks evolutionary mysteries of the natural world.

Submitted by: Misty Franklin (NCNPS Board member and Triangle Chapter member)

Excerpt available at:
<http://www.press.uchicago.edu/cgi-bin/hfs.cgi/00/159405.ctl>

At the heart of evolution lies a bewildering paradox. Natural selection favors above all the individual that leaves the most offspring—a superorganism of sorts that Jonathan Silvertown here calls the "Darwinian demon." But if such a demon existed, this highly successful organism would populate the entire world with its own kind, beating out other species and eventually extinguishing biodiversity as we know it. Why then, if evolution favors this demon, is the world filled with so many different life forms? What keeps this Darwinian demon in check? If humankind is now the greatest threat to biodiversity on the planet, have we become the Darwinian demon?

Demons in Eden considers these questions using the latest scientific discoveries from the plant world. Readers join Silvertown as he explores the astonishing diversity of plant life in regions as spectacular as the verdant climes of Japan, the lush grounds of the Royal Botanical Gardens at Kew, the shallow wetlands and teeming freshwaters of Florida, the tropical rainforests of southeast Mexico, and the Canary Islands archipelago, whose evolutionary novelties—and exotic plant life—have earned it the sobriquet "the Galapagos of botany." Along the way, Silvertown looks closely at the evolution of plant diversity in these locales and explains why such variety persists in light of ecological patterns and evolutionary processes. In novel and useful ways, he also investigates the current state of plant diversity on the planet to show the ever challenging threats posed by invasive species and humans.

Bringing the secret life of plants into more colorful and vivid focus than ever before, *Demons in Eden* is an empathic and

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Long-leaf pine pollen cone. Photo taken at *Pixidantha brevifolia* site in Pender County.

The North Carolina State University College of Agriculture and Life Sciences (CALS) and the NCSU Libraries have formed a partnership to plan and create an exhibit and permanent archive of materials related to the Big Savannah and the B. W. Wells Savannah in Pender County, North Carolina. The exhibit, anticipated to open in early 2007, will showcase the opening of a new, museum-quality exhibit gallery being created as part of a major renovation to D. H. Hill Library. The exhibit will emphasize the beauty and significance of B. W. Wells' own photographs, along with contemporary images of the magnificent variety of plants at the Savannah. It will also tell Wells' story and recognize his ongoing legacy. As Exhibits Librarian in the Special Collections Research Center (SCRC) of the Library, I am tasked with developing the content for display in the exhibition gallery.

As I am sure you are familiar, Dr. Wells was extremely active in the early years of the North Carolina Wildflower Preservation Society. In the SCRC collections we have many society newsletters from 1951-1972. I am quite impressed with the work your group was doing at that time, and the role that Dr. Wells played in the society. Often times Dr. Wells spoke to the society about the flora of North Carolina, and the importance of saving it. Especially poignant was his lecture reprinted in the October 1967 newsletter where he talks about his initial discovery of the Big Savannah of Pender County and laments its eventual loss.

While these newsletters are wonderful artifacts to display in their own right, I was wondering if you know of anyone in your society who may have photographs of Dr. Wells speaking to the society or giving one of his famous outdoor lectures. Other documents or artifacts related to Dr. Wells

would also be of interest.

Thank you in advance for any assistance you may be able to provide.

Kevin Schlesier

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Kevin P. Schlesier

Exhibits and Outreach Librarian

Special Collections Research Center North Carolina State University Libraries 2205 Hillsborough Street Campus Box 7111 Raleigh, NC 276957111

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LAND FOR TOMORROW

At the end of the short session, the General Assembly ratified a bill to convene the Land and Water Conservation Study Commission. The commission, appointed by the Governor, Senate President Pro Tempore, and the Speaker of the State House, will examine the best mode of financing the Land for Tomorrow program.

The Commission will hold three public meetings across the state as 2007 approaches. Land for Tomorrow will publicize those meetings dates and times when they are established.

The Commission will report on their findings to the General Assembly by February 1, 2007. The bill has been sent to the Governor for approval.

Sign up for electronic updates at:

<http://landfortomorrow.org/>

How can you tell which exotic plants pose the most serious threats to native species and ecosystems? NatureServe, a non-profit conservation organization that provides scientific information across the US, has developed an "Invasive Species Assessment Protocol" to aid in assessing impacts of nonnative plants found in North America. Impacts are rated according to their effects on native plants, animals, and natural communities. After NatureServe ranks the invasiveness of an exotic species, an Impact Rank, or "IRank", is assigned. These Invasive Ranks can be found on the NatureServe Explorer website at: www.natureserve.org/explorer. NatureServe Scientists hope that these objective and transparent assessments will build consensus and encourage action.

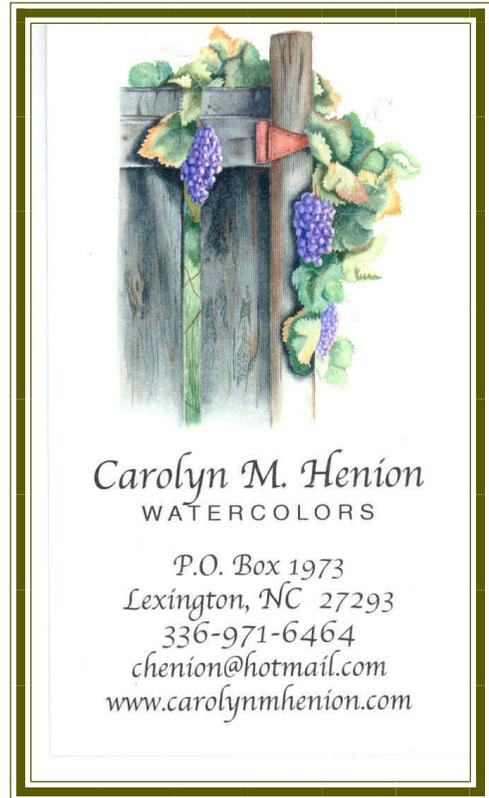
The website now includes these "IRanks" for 452 invasive plant species (among the roughly 3,500 such plants recorded for the United States). Additional assessments will be available in the fall. Individual "IRanks" (high, medium, low, or insignificant) are listed with reports about each species.

You can determine which nonnative plants in your area have been ranked "High" impact, or which are still "Unknown". You can read the entire assessment for any species and there is a link for providing feedback that will help improve the information and refine the IRanks in the future.

To get all the plants that are nonnative and occur outside of cultivation in North Carolina, you can choose North Carolina on the Location tab and choose the "exotics only" radio button. That search criteria works off the NC Natural Heritage program's assessment of whether a plant is exotic in NC. If the origin/nativity has not yet been assessed, is lumped with the natives. If you run the search and find omissions, please contact me at misty.franklin@ncmail.net.

Just for fun, I recently looked up the record for English Ivy (*Hedera helix*), a species that has heavily invaded natural areas around my home in Chapel Hill. I found it has an IRank of "High/Medium". Here is a sample of some of the information provided about this species, which also includes references to scientific articles:

"*Hedera helix* is shown to negatively effect forest biodiversity, especially in the Pacific Northwest. It is also a popular landscaping plant. There is no guaranteed method



for either keeping *H. helix* out of natural areas or removing it once it has established. As a ground cover, the dense growth and abundant leaves form a thick canopy just above the ground that prevents sunlight from reaching herbs and seedlings. Vines that climb up trees, up to 30m, slowly kill the tree from the base upwards by enveloping branches and twigs, blocking sunlight, causing branch and eventual tree death (Thomas 1980; Swearingen and Diedrich 2000; Weber 2003). The added weight of vines also makes trees susceptible to blowing over during storms. Can form dense populations that prevent native plant (both understory and tree) establishment, threatening longterm persistence of forests (Bossard et al. 2000; Weber 2003). May replace species used by native wildlife (Bossard et al. 2000)."

Misty Franklin

Chimney Rock Park in danger of private development .

In mid-July the Morse family put Chimney Rock Park on the market for \$55 million. Environmentalists, conservationists, botanists, developers, and local landowners were all surprised at the For Sale signs. As you can imagine, interest in the land is high among developers from near and far. Tom Harville and Dale Suiter put together a letter from the NCNPS urging our state to purchase the land to include in the new nearby Hickorynut Gorge State Park. The contents of the letter follow. NCNPS members might want to consider sending a similar letter of their own. Ed.

Governor Michael F. Easley
Office of the Governor
20301 Mail Service Center
Raleigh, NC 276990301

Dear Governor Easley:

The North Carolina Native Plant Society is a group of native plant enthusiasts devoted to promoting the enjoyment and conservation of native plants and their habitats through education, protection, and propagation since 1951. We have learned that Chimney Rock Park in Rutherford County is currently for sale by the Morse family, and we are writing to urge you to do everything you can to help protect Chimney Rock Park. Making this land part of the new Hickorynut Gorge State Park would ensure the protection of this unique natural area, conserve habitat for native plants and animals, and make it available for the enjoyment of North Carolinians for years to come.

According to the NC Natural Heritage Program Rutherford County Inventory, Chimney Rock Park is one of the most significant natural heritage sites in the State. Natural Heritage Program records indicate that the park contains at least 16 rare plant species including the federally endangered White Irisette (*Sisyrinchium dichotomum*) and Rock Gnome Lichen (*Gymnoderma lineare*) and five rare animal species including the state endangered peregrine falcon (*Falco peregrinus*) and green salamander (*Aneides aeneus*).

We love the Chimney Rock area so much that we visited it during our annual spring field trip in 2006. It would be a horrible mistake to lose Chimney Rock Park to private developers who may not have the best interests of the unique natural communities and rare species in mind.

We appreciate the State's commitment to land conservation through programs such as the Million Acres Initiative, One North Carolina Naturally, the Land for Tomorrow coalition, and the Natural Heritage Trust Fund, and we encourage you and the staff of North Carolina State Parks to continue to work toward protecting Chimney Rock Park as one of North Carolina's unique natural treasures.

Sincerely,

Tom Harville
President

cc: Bill Ross, Secretary, N.C. Department of Environment and Natural Resources, 1601 MSC, Raleigh, NC 27699-1601
Lewis Ledford, Director, N.C. Division of Parks and Recreation, 1615 MSC, Raleigh, NC 27699-1615
Lisa Riegel, Executive Director, N.C. Natural Heritage Trust Fund, 1601 MSC, Raleigh, NC 27699-1601

News on genetically modified plants

A new report on gene flow from experimental GM field trials in the US to sexually compatible wild plants, has just been released by the Center for Food Safety in Washington, DC. The report's author is Doug Gurian-Sherman, CFS's Senior Scientist, who was formerly with the U.S. Environmental Protection Agency, where he was responsible for assessing human health and environmental risks from transgenic plants and microorganisms, and for developing biotechnology policy.

His report concludes that given the large number of field trials, some of which are on a massive scale and many of which contain genes that may spread in wild relatives, permanent escape of largely untested experimental genes is virtually inevitable given USDA's current leaky confinement requirements and inadequate safety testing.

Here's the press statement from CFS- www.centerforfoodsafety.org - that accompanies Gurian-Sherman's report.

Contaminating the wild?
Press Summary

Before genetically engineered (GE) crops are marketed, developers conduct field trials of these experimental GE varieties for several years. Field trials include all outdoor cultivation of experimental GE crops, and thousands have been planted across the country since the mid-1980's.

Because research on these crops is incomplete, their risks are often largely unknown. But a new report, "Contaminating the Wild?," from the Center for Food Safety shows that despite unknown risks, U.S. Department of Agriculture (USDA) regulations cannot be relied upon to keep experimental genes from escaping from field trial crops into related wild plants. This process, called "gene flow," occurs when pollen from experimental crops fertilize wild species related to crops such as wheat, grapes or carrots.

Experimental genes that make their way into crop wild relatives may become a permanent part of the landscape because, unlike most crops, these wild plant species can grow without cultivation by farmers.

Anyone who has seen fields of Queen Anne's lace (a wild relative of carrots) can understand how prolific these wild relatives can be. And once they escape from crops, some of these genes could spread through the environment, where they may harm animals and plants.

As noted in a recent critical report by the USDA Inspector

General (IG), for the vast majority of field trials issued as "notifications," gene confinement measures are rarely reviewed by USDA prior to planting.

"Contaminating the Wild?" also shows that risk assessments are not generally performed, and where risks are examined, the process is usually superficial.

USDA has assured the public that the risks from experimental genes are insignificant because they are confined to the field trial site. But the many cases of contamination from GE crops seriously challenge this assertion. Most startling was gene flow from a field trial of transgenic herbicide-tolerant creeping bentgrass that exceeded the 900 ft USDA-accepted separation from wild relatives by at least 13 miles.

"Contaminating the Wild?" asks whether gene flow could similarly occur from some of the thousands of previous field trials, and by extension, whether gene flow may happen in the future. The report considers these questions through a detailed examination of the scientific literature and data from previous field trials, and concludes that untested genes from field trials of crops with wild relatives may breach their confinement and spread in the environment.

THE REPORT FINDS THAT:

*There have been at least 1710 field trials of 20 types of crops in states where one or more wild relatives grow. These have included 170 for creeping bentgrass, 332 for wheat and 107 for rice, among other crops that have serious weeds as wild relatives.

*The USDA/APHIS confinement standards cannot ensure that permanent gene flow will be prevented. Review of the scientific literature and USDA Environmental Assessments shows that gene flow can occur beyond the confinement distances accepted by USDA.

*Many field trials contain genes that may provide an advantage to wild relatives, and can thereby spread through the wild population, even if initial gene flow occurs at low levels. For example, there have been about 600 field trials for biotic and abiotic stress resistance genes, identified by the National Academy of Sciences as having properties that may facilitate spreading through wild relatives.

*As with the escaped creeping bentgrass example, many

field trials are large, often hundreds or thousands of acres, facilitating gene flow. These large trials produce much more pollen than small trials, and can cause more gene flow at longer distances. There have been 290 field trials of 50 or more acres for crops with wild relatives.

*The vast majority of field trials, currently about 95%, are conducted under simplified notifications that require no Environmental Assessment. These notifications require only that any problems noticed during the field trials are reported to APHIS. But as widely recognized, without specific testing for environmental harm, most problems may not be detected.

The risks from gene flow in the future may be even more troubling as multiple genes, genes with less predictable consequences, and more powerful genes (for example designed to kill more types of pests), and new types of plants such as engineered forest trees, are developed.

USDA is currently revising its regulations of GE crops. This is an opportunity to strengthen the regulation of field trials to prevent gene flow or harm if gene flow occurs. The report therefore makes several recommendations for strengthening confinement requirements and improving risk assessment. Given the large number of field trials, many of which contain genes that may spread in wild relatives, and current leaky confinement requirements, permanent escape of largely untested experimental genes is virtually inevitable unless USDA substantially improves its confinement and safety testing requirements.

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Contact Katherine Schlosser for details.
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Deadline for next issue: Nov. 15, 2006

kathys@ncwildflower.org

Answers to In the Garden and Woods:

1. *Hyla versicolor*, gray tree frog. This little fellow was about an inch and a half long.
2. These are crayfish chimneys, made from mudballs.