

PCP's Year In Review

2013

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The North Carolina Plant Conservation Program was established by the Plant Protection and Conservation Act of the North Carolina Legislature in 1979. The Program is part of the Plant Industry Division of the North Carolina Department of Agriculture and Consumer Services.

The mission of the Plant Conservation Program is to conserve North Carolina's native plants in their natural habitats, now and for future generations.

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Preserve Establishment and Expansion

The North Carolina Plant Conservation Preserve system expanded in 2013 with the addition of two new preserves: the **Redlair Plant Conservation Preserve** in Gaston County and the **Morgan's Bluff Plant Conservation Preserve** in Stanly County. Acquisition of these properties was made possible by funding through the North Carolina Natural Heritage Trust Fund. A necessary land survey for the Redlair property was made possible by funds raised by the Friends of Plant Conservation, Inc. The **Morgan's Bluff Preserve** adds protection to 16 acres including an uncommon natural community type and three imperiled plants to PCPs portfolio of protected species. The **Redlair Preserve** protects 737 acres of diverse, mature forests including North Carolina's largest population of Big Leaf Magnolia (*Magnolia macrophylla*) as well as federally endangered Schweinitz's Sunflower (*Helianthus schweinitzii*). The **Boiling Spring Lakes Plant Conservation Preserve** in Brunswick County grew by 255 acres in 2013 with the completed acquisition of the Corbett and Young tracts, protecting additional habitat for Venus flytrap (*Dionaea muscipula*), Rough-Leaf Loosestrife (*Lysimachia asperulifolia*), Savanna Indigo-bush (*Amorpha confusa*), and other pine savanna associates.



The PCP Preserve system includes 23 preserves, in 17 counties across the mountains, Piedmont, and coastal plain totaling 13,590 ac.

The **Redlair Plant Conservation Preserve** was the first plant conservation preserve to be purchased with an endowment to support the stewardship of the property. Two committees have been created to manage and implement this fund and to guide stewardship needs on the preserve; PCP staff are among the membership of both committees. One of the goals of this endowment is to supply sufficient funding to employ a steward who could be a caretaker of the property as well as a collaborator in the area for related plant conservation efforts.

PCP has relied extensively on the Natural Heritage Trust Fund (NHTF) for preserve acquisition projects. In the summer of 2013, the NHTF was merged into the Clean Water Management Trust Fund (CWMTF) and will be our program's primary source of funding for future acquisition projects moving forward. In 2013, PCP launched a fundraising campaign for the purchase of a new preserve to protect the largest population of Northern Oconee Bells (*Shortia galacifolia* var. *galacifolia*), a plant endemic to McDowell County. Thanks to the generous contributions from 125 individuals and 10 organizations, PCP was able to secure matching funds at a rate of \$4 for every \$1 donated! PCP applied to the CWMTF for funding for this 40-acre Caraway Tract; the combined donations we received were critical matching funds needed to secure full funding from the CWMTF. We hope to

complete this purchase in the coming year. PCP owes a special thank you to the Western Carolina Botanical Club, Highlands-Cashiers Land Trust, NC Native Plant Society, Cedarwood Garden Club, French Broad River Garden Club, Wake Forest Garden Club, Piedmont Herb Society, Rutherford County Neighbors, and Equinox Environmental Consultation & Design, Inc.!

Conservation Targets: Plant Conservation Preserves are the only public lands in North Carolina established and managed specifically to protect imperiled plant species. To help accomplish PCP's mission of conserving North Carolina's native plant species *in their natural habitats*, each preserve is specifically designed with a focal species, yet in most cases multiple species are protected at a given site. As of December 2013, the Plant Conservation Program's preserve system protects 64 extant threatened, endangered, or vulnerable species (10 of which are federally protected species; see page 16).

Efficiency Analysis/Priorities Moving Forward

PCP tracks the protection status of imperiled plants across conservation ownership including federal, state, and land trust-held properties. Although PCP manages far fewer acres than agencies such as the US Forest Service, National Park Service, NC Wildlife Resources Commission, or NC State Parks, the NC Plant Conservation Preserve System protects more imperiled plant species per acre than any of these agencies in North Carolina. By this measure of efficiency, the Plant Conservation Preserve Network has been more efficient than any other land base in North Carolina at protecting imperiled species. PCP's conservation goal is to ensure protection of the two best populations of each imperiled species within each of the state's 22 ecoregions in which they naturally occur. PCP has a list of priority sites available to distribute to partners in both spreadsheet and GIS shapefile formats. Send all requests to lesley.starke@ncagr.gov.

Permits

In North Carolina, a protected plant permit is required to remove from the wild, to propagate or offer for sale/donation/gift, or to plant or reintroduce protected plants or plant parts into any non-garden environment. Exempt activities include: purchase of protected plants from nurseries or dealers with necessary permits, activities allowed under existing state laws and regulations, collection or removal from one's own land, or propagation or sale covered by a current certificate of origin (See 02 NCAC 38F.0407 for more information). PCP staff share all project details as well as copies of permits with partners at the NC Natural Heritage Program and US Fish and Wildlife Service for their protected plant records. Most permits require a final report be sent to PCP. We maintain a copy of all findings and reports in an effort to collate available knowledge on the protected plants of North Carolina and their habitats.

North Carolina Protected Plant Permits						
	Scientific Collection	Rescue Reintroduction	Preserve Access	Propagate and Sell	Home Garden	Public Exhibit
2006	7	2	0	6	1	0
2007	16	5	5	13	2	0
2008	19	2	7	17	3	0
2009	12	5	8	8	0	1
2010	4	2	7	0	1	0
2011	18	1	12	0	0	0
2012	21	3	3	21	0	1
2013	8	3	3	10	0	3

Program Capacity

For the first time, the NC Plant Conservation Program now has its own dedicated Administrator. **David Welch** joined the PCP Staff as the new Administrator in February 2013. This new position expands PCP's capacity through increased attention to budget and financial matters, as well as planning and coordinating the regulatory program and compliance activities, human resource management, communications, and agency liaison responsibilities.

Existing staff members **Rob Evans**, **Lesley Starke**, **Nancy Stewart**, and **Yari Johnson** were joined by field technician **David Tart** from February to October. David's participation in restoration projects and prescribed fires was helpful this year. In August, Yari Johnson took a teaching position with the University of Wisconsin-Platteville. He will be missed at PCP but we look forward to ongoing and future collaborations. In December, PCP hired two field technicians: **Kira Santulli** and **Phillip Inman**; both bring a combined experience and expertise of decades' worth of land management practices including but not limited to prescribed burning and forest management.



Top left to right: David Welch, Yari Johnson. Bottom left to right: Kira Santulli, David Tart. Not pictured, Phillip Inman.

Volunteers Really Help!

In addition to staff time, PCP's stewards logged over 330 person hours across seven preserves in 2013. Their time and efforts included 42 stewardship site visits and time spent on augmentation projects. PCP held several workdays across the plant conservation preserves in 2013; projects included trash pick-up and extensive brush clearing and hauling. **There is more to do! If you know someone who would like to help, please contact us!**



Left: Duke University students at a volunteer workday at the Eno Diabase Sill Plant Conservation Preserve.

Right: Whole Foods employees at a volunteer workday at the Eno Diabase Sill Plant Conservation Preserve.

Of special note: PCP enjoys a very productive partnership with the **Eno River Association** in Durham County. As preserve neighbors, we have been able to collaborate on projects and share resources to meet our common goals to protect the rare plants in the Eno River Diabase Sill area. Among other things, Eno River Association has supported and expanded PCP's volunteer pool by sponsoring multiple workdays.

Field Trips

PCP staff hosted six guided field trips in 2013 at **Cedar Mountain Bog, Eno Diabase Sill, Hog Branch Ponds, Hebron Road, Mineral Spring Barrens, Redlair Preserves** as well as several partnership sites. All field trips are open to the public. Each trip provided participants the opportunity to observe rare plants, while also learning more about land management and ecological stewardship. Participants included special guests, volunteer stewards, and co-hosts from some of our partner organizations.

Partnerships/Collaborations

The PCP staff regularly reaches out to the public with special presentations and by filling information requests. This year presentations included the following audiences: NCDA & CS field specialists, International Grassland Scientists, Village Nature Series (Cashiers, NC), Cullowhee Native Plant Conference, NC Botanical Gardens, North Carolina Museum of Natural Sciences, Roseboro-Salemburg Community Members, Biltmore Garden Club, Highlands Native Plant Symposium, Uwharrie Garden Club, and Friends of Plant Conservation.

2013 Highlights Include:

- A Memorandum of Understanding with the NC Wildlife Resources Commission to cooperate more fully on enforcement activities throughout the state- with a particular focus on plants under poaching pressure such as Venus flytrap (*Dionaea muscipula*). The MOU will be finalized in 2014.
- New management partnerships with NCDOT and NC Forest Service BRIDGE Crew resulted in significant benefits to Durham and Transylvania County Preserves. Both groups provided equipment and labor not typically available to PCP.
- A partnership with Friends of Mountains to Sea Trail and City of Durham resulting in the Mountains to Sea Trail section completion across **Eno Diabase Sill Preserve**, a “missing link” location for the statewide hiking trail.

A partial list of collaborators and partner organizations in 2013:

Atlanta Botanical Garden, www.atlantabotanicalgarden.org

Carolina Mountain Land Conservancy, www.carolinamountain.org

Catawba Lands Conservancy, catawbalands.org

City of Boiling Spring Lakes, www.cityofbsl.org

Duke Forest at Duke University, www.dukeforest.duke.edu

Eno River Association, www.enoriver.org

Friends of Mountains to Sea Trail, www.ncmst.org

Friends of Plant Conservation, www.ncplantfriends.org

Girl Scouts- NC Coastal Pines at Camp Pretty Pond, www.nccoastalpines.org

Highlands-Cashiers Land Trust, www.hicashlt.org

James F. Matthews Center for Biodiversity Studies, <http://charmeck.org/MECKLENBURG/COUNTY/PARKANDREC/>

Land Trust for Central NC, landtrustnc.org

NC Botanical Garden, ncbg.unc.edu

NCDA Forest Service, ncforestservice.gov

NCDA Research Station Division, www.ncagr.gov/research

NC Museum of Natural Sciences, naturalsciences.org

NC Native Plant Society, www.ncwildflower.org

NC Natural Heritage Program, www.ncnhp.org

NC Division of Parks and Recreation, www.ncparks.gov

NC Wildlife Resources Commission, www.ncwildlife.org

The Nature Conservancy, www.nature.org

UNC Asheville, www.unca.edu

US Army Corps of Engineers

US Fish and Wildlife Service, www.fws.gov/southeast/

Young Offenders Forest Conservation Program (BRIDGE), http://ncforestservice.gov/fire_control/bridge.htm

Controlled Burning Program

Controlled burns are one of the most important management and restoration activities needed across the PCP preserves and for rare plants in general; surprising numbers of imperiled species state-wide benefit from such fires. PCP Staff burned a total 521 acres this year in nine burns on PCP Preserves. Through a partnership with the NC Forest Service, we had an additional 754 acres burned for a **total of 1,275 burned acres in 2013**. Although these burns were very beneficial, this total was far below our annual need and represents a marked decrease in total burning capacity compared to previous years. PCP Staff also burned other imperiled plant habitat for and with partners. PCP staff burned the Eno River Association's Blue Indigo Slopes Nature Preserve and assisted with controlled burns conducted by the US Army Corps of Engineers and North Carolina Botanical Garden.



A burnt juvenile longleaf pine as the smoke clears after a prescribed fire at the Pondberry Bay Preserve. Photo credit- PCP Staff.



Resprouting Pondberry after 2012 prescribed fire that burned through >10cm of organic duff and Loblolly pine roots. Pictured is a charred root that had been growing in the built up organic material. Photo credit- PCP Staff.

Fire in the Bay

In November of 2012 PCP Staff put the first recorded fire into the Pondberry bay which the Preserve is named for. This clay-based Carolina Bay has not held water in years, despite historical observations of surface water. In 2013 we set out to assess the results of this burn and we're pleased to report that our goals were met: **Loblolly pine (*Pinus taeda*) mortality was great, Pondberry (*Lindera melissifolia*) and Pondcypress (*Taxodium ascendens*) survival was also very high**. This burn also removed the substantial root mat which overlaid the bay and was previously experimentally cut and burned – resulting in greater water retention at the soil surface. This burn was conducted in a very dry period which allowed the organic duff layer which included this root mat to be consumed, almost 100% in places. We established monitoring plots to track the medium to long term results of this and future management on the Pondberry population.

Species Augmentation

At the request of PCP, volunteer Preserve Stewards Herb and Pat Amyx collected, germinated, and eventually reintroduced Smooth Coneflowers (*Echinacea laevigata*) at several locations on the **Eno River Diabase Sill Plant Conservation Preserve**; special attention was given to matching seedlings with their parent subpopulations, providing a substantial boost to our three smallest subpopulations of this federally endangered species. Herb and Pat Amyx also planted multiple seedlings of Prairie Dock (*Silphium terebinthinaceum*) and Cutleaf Coneflower (*Rudbeckia laciniata*) at the **Hebron Road Preserve**, and have collected additional species to continue and expand this work in the upcoming year.

PCP's volunteer stewards contributed **over 150 hours** in 2013 to the continuation of our Smooth Coneflower augmentation project at the **Eno Diabase Sill** and **Hebron Road Preserves**. Together, we were able to dramatically increase the number of Smooth Coneflowers at our three smallest subpopulations: the Penny and Williams tracts of the **Eno Diabase Sill Preserve** and the **Hebron Road Preserve** population. In contrast to the large subpopulation at the Harrelson tract, these other subpopulations were very small before our management efforts began. In as few as five years, PCP's management activities have greatly increased the Smooth Coneflower flowering and total population size at these small sites (see the before and after table below), but they were each still in relatively low numbers warranting the boost from this ongoing augmentation project.

Smooth Coneflower monitoring and augmentation summary:

<u>Site Name</u>	<u>Before</u>	<u>After (2013)</u>
Eno Diabase-Williams tract	1 of 5 plants flowering (2007)	17 flowering + 74 seedlings planted
Eno Diabase-Penny tract	3 of 14 plants flowering (2009)	14 flowering + 29 seedlings planted
Hebron Rd.	6 flowering (2004)	38 flowering + 29 seedlings planted



Left: Propagated Smooth Coneflowers rosette after reintroduction to Eno Diabase Sill Preserve. Photo credit: Herb Amyx. Right: Smooth Coneflowers at Hebron Road Preserve. The taller flowering stem in the foreground was originally planted as a seed in 2006; however this was the first year these plants have flowered, due in a large part to PCP active management at the site, in particular tree thinning and controlled burning! Photo credit: PCP Staff.

Habitat Restoration

Many of the sites under management by PCP have become dense and overgrown after decades of fire suppression prior to our efforts to reintroduce prescribed fire. Some of these sites cannot be restored with fire alone. In these cases, mechanical means of brush clearing and removal are used to re-open the habitat for the benefit of species such as Smooth Coneflower (*Echinacea laevigata*) and associates, Schweinitz's Sunflower (*Helianthus schweinitzii*), and Mountain Sweet Pitcher Plant (*Sarracenia jonesii*) to name a few.

PCP Staff and volunteers cut and cleared extensive woody biomass, primarily loblolly pines and hardwood saplings, at the **Hebron Road** and **Eno Diabase Sill Preserves**, as well as an important partnership site known as the Blue Indigo Slope Nature Preserve (owned by the Eno River Association), right around the corner. At the **Eno Diabase Sill Preserve**, home to the largest locally occurring subpopulation of Smooth Coneflower, several volunteer workdays were initiated to remove extensive piles of loblolly pines felled by PCP staff from the interior of the site to maintain optimal light conditions for the prairie species. PCP procured the service of two large NCDOT dump trucks and removed seven truck loads of cut and downed materials.

At the **Hebron Road Preserve**, mechanical thinning has been very nearly completed across an approximately five acre core area in and around a target population of Smooth Coneflower. This effort complements our ongoing population augmentation efforts for the species. Newly thinned habitat resulted in increased flowering and seed production in 2013 as well as created suitable donor sites to receive 29 new seedlings grown from seeds collected on site. Additionally, the final clean up of the old home site at the **Hebron Road Preserve** was accomplished this year. PCP was also able to coordinate with the NC DOT to donate a front loader and dump truck to remove the residual foundation and structural materials from the home site that was demolished and burned by the Lebanon Volunteer Fire Department in 2012.



NCDOT donated time and equipment to the plant conservation cause. Photo credit: PCP Staff.

At the **Cedar Mountain Bog Preserve**, PCP staff members were joined by Transylvania County Forest Service employees, and the Young Offenders Forest Conservation Program (also known as B.R.I.D.G.E.) to improve habitat for the federally endangered Mountain Sweet Pitcher Plant. Extensive woody debris previously downed by staff was chipped and removed from the site. The service of a rental dump truck and driver were provided by a small grant provided by the North American Sarracenia Conservancy. Before leaving the site, BRIDGE personnel were also able to help install several sections of fireline.

PCP staff coordinated tree felling at the **Harvest Field Preserve** in August with the help of NC Forest Service. Five areas approximately 15m in diameter were scouted by PCP staff for the targeted felling of red maples and other fire-intolerant tree species to create light gaps for future Schweinitz's sunflower plantings. The current

population at the preserve is largely relegated to the roadside ditch and embankment where it is vulnerable to aberrant powerline and roadside maintenance as well as resource competition by invasive *Lespedeza*.

Controlling Invasive Species: a few examples

PCP Staff treated the encroaching *Lespedeza* at the **Harvest Field Preserve** for the second time this year. Treatment at this site is critical and complex as the *Lespedeza* is growing among a patch of federally endangered Schweinitz's sunflower that the preserve is dedicated to protect. PCP staff also treated this species at the Harrelson tract of the **Eno Diabase Sill Preserve**, where it is intermixed with a host of imperiled and rare species.

Volunteer preserve stewards and workday volunteers have lent quite a few hands to the PCP Staff at the **Hebron Road Preserve** to battle woody invasives. Regular updates provided by stewards at this preserve have helped to gauge the response of these species to our controlled burns. PCP staff treated several large infestations of Japanese stilt grass, *Microstegium vimineum*, in parts of the **Eno Diabase Preserve**, significantly reduced populations of privet (*Ligustrum sinense* and *Ligustrum japonicum*), Heavenly Bamboo (*Nandina domestica*) and stilt grass (*Microstegium vimineum*) across the preserve. In May, a group of volunteers from PCP and the Catawaba Lands Conservancy met at the new **Redlair Preserve** to control Autumn Olive (*Elaeagnus umbellata*).

Botanical Surveys & Imperiled Plant Updates

Occasionally PCP staff and or partners locate previously undocumented or poorly documented populations of imperiled species on Plant Conservation Preserves. It remains a goal of PCP's to completely inventory all preserve lands across North Carolina. Until that happens, these anecdotal observations along with organized surveys through various groups and student research will be the primary source for new and updated knowledge about the imperiled plant populations on the preserves.

Two graduate students from North Carolina State University initiated floristic surveys in the **Eno Diabase Sill** and **Pondberry Bay Preserves** in 2013. This work will be a great start to meeting our goal of having and maintaining complete botanical inventories of all the North Carolina Plant Conservation Preserves.

Species Monitoring

Understanding the current status and trends of the populations we protect is very important. To that end, we have been collecting annual census data on several species across the state. In 2013 census and/or population monitoring work was conducted on the following species:

-Ongoing Projects-

- Rough-leaf Loosestrife - **Boiling Spring Lakes** and **Hog Branch Preserves**, Brunswick Co.
- Venus Flytrap -**Boiling Spring Lakes Preserve** and TNC's Green Swamp Preserve, Brunswick Co.
- Bunched arrowhead - **Bat Fork Bog** and **Ochalwaha Bog Preserves**, Henderson Co.
- Schweinitz's Sunflowers – **Harvest Field, Denson's Creek, Mineral Springs Barrens, and Redlair Preserves** in Randolph, Montgomery, Union, and Gaston Counties respectively.
- Smooth Coneflowers for the seventh year across seven sites in Durham and Granville Counties.



Bunched arrowhead at Bat Fork Bog Preserve where we observed a record 194 flowering plants across three patches. Photo credit- PCP Staff.



Lesley Starke with super tall Schweinitz's Sunflower at Harvest Field Preserve. Photo credit- Kathy Schlosser



Lesley Starke counting Smooth Coneflowers at Picture Creek Barrens. We documented over 43,000 flowering stems - the highest ever recorded! Photo credit- PCP Staff.



PCP Staff censused flowering Venus Flytraps for the fifth year Flowering Venus Flytrap at Boiling Spring Lakes and Green Swamp (TNC) Preserves. Photo credit- PCP staff

-Species Status Update Projects-

- Prairie Wild Blue Indigo (*Baptisia australis* var. *aberrans*)- PCP Staff visited all fourteen sites, plus one previously unknown site. Our findings suggest that this species is benefitting greatly from protection and management activities; however, unprotected populations have decreased since their last observations.
- Northern Oconee Bells (*Shortia galacifolia* var. *brevistyla*)- PCP Staff visited nine of eleven sites, including one new site that PCP staff discovered and one rediscovered site previously thought to be extirpated. One of the two unvisited sites is thought to be extirpated.



Baptisia australis var. *aberrans* Photo credit- Dan Wall



Shortia galacifolia var. *brevistyla* Photo credit- Tiffany Penland

- Hoary Puccoon (*Lithospermum canescens*)- PCP Staff visited all eleven sites, plus one new site that PCP staff discovered. Overall findings are that protected populations are increasing rapidly. Of special note- we located three previously undocumented populations; one of which is the second largest in the state!



David Tart flagging Hoary Puccoon plants at Eno Diabase Preserve for detailed distribution mapping. Photo credit- PCP Staff.

Ginseng

PCP regulates the sale of American ginseng (*Panax quinquefolius*) in North Carolina by issuing licenses to dealers and tracking all exports out of the state. PCP Staff work directly with licensed dealers to obtain as much data as possible regarding the locations and weights of all wild harvested ginseng in an attempt to indirectly monitor the health of the state's population. Records are also processed for wild-simulated and other cultivated ginseng exports. Before being exported, all ginseng, both wild and cultivated, must be certified by NCDA&CS and reported to PCP. PCP requires that all dealers keep track of the weights and county of origin for every ginseng purchase. With these data we are able to tally the total pounds of wild ginseng roots that are harvested per county and with that, estimate the total number of plants that are harvested per year. This information is helpful for determining the health of the population, in particular, the size of the plants being harvested and number of roots per pound and what that suggests about the availability of larger mature ginseng plants. In 2013, NCDA&CS issued a total of 38 ginseng dealer licenses from which we received a total of 10,000+ purchases by dealers from harvesters/diggers, and 250 Export Certification entries, typically representing many ginseng purchases amalgamated for export. PCP has noted that harvest and export rates in the past six years have greatly increased over the previous five years. A five year high in 2002 was approximately equal to the lowest rate of the past six years (2010).

PCP Staff also participated in the 27th annual Ginseng Marking Blitz in the Great Smoky Mountains National Park, a collaborative effort between NC Department of Agriculture & Consumer Services and the Park. Removal of plants is illegal in the US National Parks without a permit; permits are only issued to research professionals who may be using the plants for educational purposes. Each year thousands of wild American ginseng plants are marked with a permanent dye so that if the plants are poached and attempted to be sold for export, they might be identified as illegally poached from the park.



Left: Wild American ginseng plant being marked with permanent dye. Photo credit: PCP Staff.

Right: NCDA&CS Plant Protection Division Ginseng Marking Blitz Team for 2013. Photo credit: PCP Staff.

Imperiled Plant Species Currently Documented on North Carolina Plant Conservation Preserves

New species in 2013 are shown in red; federally listed species are in bold. PCP staff is working toward verifying/updating each of these records.

<i>Acmispon helleri</i>	<i>Lysimachia asperulifolia</i>	named at the time. PCP Staff believe it will be included in future updates of the protected plant list.
<i>Agalinis virgata</i>	<i>Lysimachia fraseri</i>	
<i>Amorpha georgiana</i> var. <i>confusa</i>	<i>Magnolia macrophylla</i>	<i>Stachys eplingii</i> -Although globally secure, PCP protects the only known population of this species in North Carolina.
<i>Anemone berlandieri</i>	<i>Micranthes pensylvanica</i>	
<i>Arethusa bulbosa</i> (historical only)	<i>Packera schweinitziana</i>	
<i>Asclepias pedicellata</i>	<i>Panicum flexile</i>	
<i>Astragalus michauxii</i>	<i>Pellaea wrightiana</i>	
<i>Baptisia alba</i>	<i>Platanthera grandiflora</i>	
<i>Baptisia australis</i> var. <i>aberrans</i>	<i>Polygala hookeri</i>	
<i>Berberis canadensis</i>	<i>Portulaca smallii</i>	
<i>Boechera missouriensis</i>	<i>Rhexia aristosa</i>	
<i>Carex trisperma</i>	<i>Rhynchospora harperi</i>	
<i>Celastrus scandens</i>	<i>Rhynchospora pleiantha</i>	
<i>Chelone cuthbertii</i>	<i>Ruellia humilis</i>	
<i>Cirsium lecontei</i>	<i>Ruellia purshiana</i>	
<i>Coeloglossum viride</i> var. <i>virescens</i>	<i>Sagittaria fasciculata</i>	
<i>Cyperus granitophilus</i>	<i>Sarracenia jonesii</i>	
<i>Dalibarda repens</i>	<i>Scutellaria leonardii</i>	
<i>Delphinium exaltatum</i>	<i>Shortia galacifolia</i> var.	
<i>Dichantheium aciculare</i> ssp. <i>neuranthum</i>	<i>galacifolia</i> - pending	
<i>Dionaea muscipula</i>	<i>Silene ovata</i>	
<i>Echinacea laevigata</i>	<i>Sisyrinchium dichotomum</i>	
<i>Eleocharis elongata</i>	<i>Symphyotrichum</i>	
<i>Geum geniculatum</i>	<i>depauperatum</i>	
<i>Helianthus schweinitzii</i>	<i>Symphyotrichum georgianum</i>	
<i>Helonias bullata</i>	<i>Symphyotrichum laeve</i> var. <i>concinnum</i>	
<i>Houstonia montana</i>	<i>Trichostema brachiatum</i>	
<i>Ilex collina</i>	<i>Trifolium reflexum</i> (historical only)	
<i>Isoetes piedmontana</i>		
<i>Liatris helleri</i>		
<i>Lilium canadense</i> spp. <i>editorum</i>	Other species of special note:	
<i>Lilium grayi</i>	<i>Phemeranthus piedmontantous</i>	
<i>Lilium philadelphicum</i> var. <i>philadelphicum</i>	-This species is not a North Carolina Protected Plant Species; however, it was not included in the most recent threat assessment because it was not	
<i>Lilium pyrophilum</i>		
<i>Lindera melissifolia</i>		
<i>Lithospermum canescens</i>		
<i>Litsea aestivalis</i>		
<i>Ludwigia suffruticosa</i>		