

# PCP's Year In Review

# 2012

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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.**

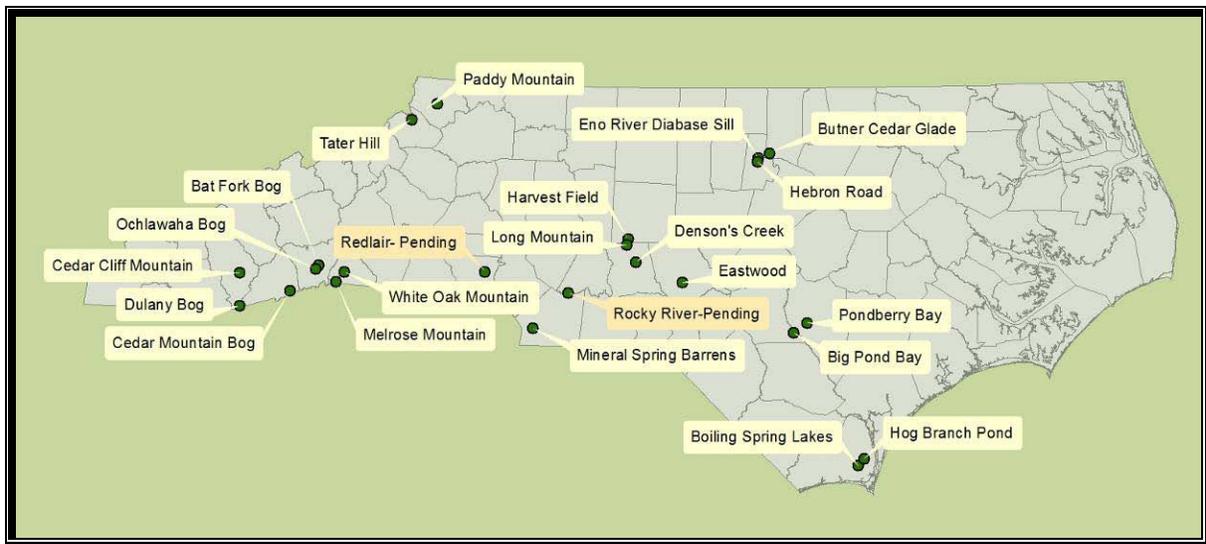
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### Preserve Establishment and Expansion

The North Carolina Plant Conservation Preserve system was expanded with the addition of a new preserve in early 2012: the **Butner Cedar Glade Plant Conservation Preserve**. Acquisition of this preserve was made possible by the generosity and support of the Town of Butner Town Council which voted to transfer the property to PCP free of charge. A necessary land survey for this property was made possible by funds raised by the Friends of Plant Conservation. This is our smallest and “spiciest” preserve—it hosts nine imperiled plant species on a mere 5.5 acres. **The Boiling Spring Lakes Plant Conservation Preserve** in Brunswick County grew by 69 acres in 2012, protecting additional habitat for Venus flytrap, Rough-Leaf Loosestrife, and other pine savanna associates.

PCP completed an agreement with the Catawba Lands Conservancy & Carolina Thread Trail that paves the way for the addition of the **Rocky River/Morgan’s Bluff Plant Conservation Preserve** in Stanly County. Upon closing (expected early 2013) this small preserve will add protection to an uncommon natural community type and several more imperiled species. Landowner agreements and funding applications were also completed this year which set the stage for the acquisition of the **Redlair Farm & Forest Preserve** (Gaston County), an approximately 730 acre site featuring diverse, mature forests and North Carolina’s largest population of the Big Leaf Magnolia (*Magnolia macrophylla*).



The PCP Preserve system includes 21 preserves, plus 2 pending acquisition, in 17 counties across the mountains, piedmont, and coastal plain totaling 13570<sup>ii</sup> acres.

### Conservation Targets

Plant Conservation Preserves are specifically designed to protect imperiled plant species in their natural habitats. Although each preserve has a focal species, in most cases multiple species are protected at a given site. As of December 2012, the Plant Conservation Program’s preserve system (including pending projects) protects 63 threatened, endangered, or vulnerable species (10 of which are federally listed species; see page 18). As mentioned above, the establishment of the **Butner Cedar Glade Preserve** expanded PCP’s protected portfolio by 9 imperiled species. This event was the most numerically significant expansion of protected plants in the Program’s history.

### “By-catch”

In addition to officially designated imperiled species, Plant Conservation Preserves also protect numerous populations of other native plants. We sometimes refer to these other species as “by-catch” since they are not the primary conservation target at a given site. Some of these species are found almost nowhere else in the world or state, such as the Piedmont Flame Flower (*Phemeranthus piedmontanus*). In addition, using available data from the NC Natural Heritage Program, we calculate that 61 “significantly rare” plant species representing 85 distinct populations and subpopulations are extant on PCP Preserves-- this almost doubles the conservation value of these properties!



Left: Piedmont Flame Flower (*Phemeranthus piedmontanus*), a globally rare species known only from PCP preserve lands in NC. Photo credit- Herb Amyx.

Right: Epling's Hedge-nettle (*Stachys eplingii*), although globally secure, PCP currently protects the only known population of this species in North Carolina. Image from herbarium specimen at the Torrey Herbarium.

### Efficiency Analysis/How Much is Enough?

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, since our analysis began, the preserve network has been more efficient than any other land base in North Carolina at protecting imperiled species, a pattern which more than doubled this year due largely to the large number of new species protected on such a small acreage at the **Butner Cedar Glade Preserve**.

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. To meet this goal, we have determined that there are still 134 of the best imperiled plant locations (~51,000 acres) in need of protection. An additional 120 locations (~245,000 acres) are partially protected and/or lack appropriate conservation-oriented management across the state. PCP has a list of these sites available to distribute to partners in both spreadsheet and GIS shapefile formats. Send all requests to [lesley.starke@ncagr.gov](mailto:lesley.starke@ncagr.gov).

### Program Capacity

The Plant Conservation Program reached historic levels of staffing during 2012 with 6 full time staff members for much of the year. Existing staff members **Rob Evans**, **Lesley Starke**, **Nancy Stewart**, and **Jesse Phillips** were joined by **Jenna Anderson** and **Yari Johnson**. Jenna, who had previously volunteered with PCP while working with Carolina Mountain Land Conservancy during a two-day tree planting project at Ochlawaha Bog Preserve, joined our field crew from late January – September in 2012; her participation in a host of ecological restoration projects and prescribed fires was greatly appreciated. Yari was hired in July, and was almost immediately immersed in all phases of the program’s work. He brings specialized expertise in soils and hydrology to the PCP team and is busy writing management plans for PCP’s preserves. After a second full year with PCP, Jesse Phillips left in late December to pursue additional studies at NCSU; he will be sorely missed.

To further build our capacity, a new position was created and announced in February. For the first time, the NC Plant Conservation Program will have its own dedicated Administrator. We expect this new person will further expand PCP’s capacity through increased attention to budget and financial matters, as well as planning and coordination, regulatory program and compliance activities, human resource management, communications, and agency liaison responsibilities.



Left to right: Jenna Anderson, Yari Johnson, and Jesse Phillips. Photo credit- PCP Staff.

### **Volunteers Really Help!**

In addition to staff time, PCP's stewards and other volunteers logged a record total of 581.5 person hours across nine preserves in 2012. Their time and efforts included 62 workdays, stewardship site visits, and other ongoing projects. Projects included trash pick-up, extensive brush clearing and hauling, and imperiled plant monitoring. **There is more to do! If you know someone who would like to help, please contact us!**



**Top left: Preserve Steward Dale Batchelor (bottom right of photo) and volunteers remove trash from Pondberry Bay Preserve. Photo credit- John Thomas.**

**Top right: Volunteer Ruth Steel poses with yellow pitcher plants during Venus Flytrap surveys at Boiling Spring Lakes Preserve. Photo Credit- PCP Staff.**

**Bottom left: As part of a Friends of Plant Conservation/Museum of Natural Sciences workday, Pat Amyx hauls brush at Picture Creek Diabase Barrens. Photo credit- PCP Staff.**

**Bottom right: Eno River Association volunteers pick up trash at Hebron Road Preserve with PCP steward Charlie Kidder (left). Photo credit- PCP Staff.**

Of special note: PCP enjoys a very productive partnership with the **Eno River Association**. Among other things, Eno River Association has supported and expanded PCP's volunteer pool by sponsoring multiple workdays including a cleanup at the **Hebron Road Preserve** as part of Durham City's Creek Week in April when we filled an entire dump truck with trash and debris.

## Field Trips

PCP staff hosted approximately one dozen field trips to PCP Preserves and other rare plant sites across the state this year. 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.



**Left:** Lisa Riegel posing with a Big Leaf Magnolia (*Magnolia macrophylla*), Redlair Farm & Forest. Photo credit- PCP Staff.  
**Right:** Botanizing at the Butner Cedar Glade Preserve Opening. Photo credit- PCP Staff.

### A partial list of collaborators and partner organizations in 2012:

Atlanta Botanical Garden, [www.atlantabotanicalgarden.org](http://www.atlantabotanicalgarden.org)  
Carolina Mountain Land Conservancy, [www.carolinamountain.org](http://www.carolinamountain.org)  
Catawba Lands Conservancy, [catawbalands.org](http://catawbalands.org)  
City of Boiling Spring Lakes, [www.cityofbsl.org](http://www.cityofbsl.org)  
Duke Forest at Duke University, [www.dukeforest.duke.edu](http://www.dukeforest.duke.edu)  
Eno River Association, [www.enoriver.org](http://www.enoriver.org)  
Friends of Mountains to Sea Trail, [www.ncmst.org](http://www.ncmst.org)  
Friends of Plant Conservation, [www.ncplantfriends.org](http://www.ncplantfriends.org)  
Girl Scouts- NC Coastal Pines at Camp Pretty Pond, [www.nccoastalpines.org](http://www.nccoastalpines.org)  
Highlands-Cashiers Land Trust, [www.hicashlt.org](http://www.hicashlt.org)  
James F. Matthews Center for Biodiversity Studies, <http://charmeck.org/MECKLENBURG/COUNTY/PARKANDREC/>  
Land Trust for Central NC, [landtrustnc.org](http://landtrustnc.org)  
Lebanon Volunteer Fire Department, [lebanonvfd.org](http://lebanonvfd.org)  
NC Botanical Garden, [ncbg.unc.edu](http://ncbg.unc.edu)  
NCDA Forest Service, [ncforestservice.gov](http://ncforestservice.gov)  
NCDA Research Station Division, [www.ncagr.gov/research](http://www.ncagr.gov/research)  
NC Museum of Natural Sciences, [naturalsciences.org](http://naturalsciences.org)  
NC Native Plant Society, [www.ncwildflower.org](http://www.ncwildflower.org)  
NC Natural Heritage Program, [www.ncnhp.org](http://www.ncnhp.org)  
NC Division of Parks and Recreation, [www.ncparks.gov](http://www.ncparks.gov)  
The Nature Conservancy, [www.nature.org](http://www.nature.org)  
UNC Asheville, [www.unca.edu](http://www.unca.edu)  
US Fish and Wildlife Service, [www.fws.gov/southeast/](http://www.fws.gov/southeast/)

### **Controlled Burning Program**

Controlled burns are one of the most important management and restoration activities needed across preserves; surprising numbers of imperiled species state-wide benefit from such fires. PCP staff determined that **approximately 65 % of the Preserve system needs active fire management**. With this in mind, all staff worked hard to make 2012 a record year in terms of number of burns and acreage completed. A total of 858 acres across 10 different preserves, in all regions of the state, were burned this year. In addition, under partnership with the NC Forest Service, and support of the Nature Conservancy the preserve system saw a record high of approximately **1,531 total burned acres in 2012**.



Lesley Starke, Jesse Phillips, Jenna Anderson taking a break along fire line. Photo credit- PCP Staff.

### **2012 Burn Highlights:**

**Blue Indigo Slopes Preserve:** owned and managed by the Eno River Association (ERA), PCP has worked with ERA for several years to restore this site for the benefit of the rare plants present. A spring burn on site, led by PCP and jointly staffed with ERA, is the 1<sup>st</sup> documented fire at this important site.



Hebron Road Preserve during PCP's second night burn. Photo credit- PCP Staff.

### **Hebron Road Plant Conservation Preserve:**

situated in Durham amidst a sea of development (the Preserve is bounded by an elementary school, industrial park, and large residential subdivision), this site may have the narrowest set of allowable weather conditions to conduct burning in the preserve system. Appropriate conditions finally presented themselves around dusk one late-March afternoon allowing staff to complete the 1<sup>st</sup> burn on record at this site.

**Picture Creek Diabase Barrens:** Owned and managed by the **NCD&CS Research Stations Division**, PCP has collaborated for many years on the protection and restoration of this critical rare plant site. Research Stations funded a preliminary burn on key portions of this site that have not been previously managed with fire. PCP spent a considerable amount of time conducting supporting activities including population monitoring, consulting on fireline placement, and restoration work (see more below) that support the imperiled plant species present.

**Other Burning Firsts:** The “Backbay” Unit (~800 acres), a portion of the **Boiling Spring Lakes Plant Conservation Preserve** was successfully burned for the first time with the help of a large contingent of NC Forest Service personnel and equipment, after PCP staff spent weeks establishing perimeter control lines. PCP Staff was also able to burn **Mineral Spring Barrens Preserve** and the new **Cedar Mountain Bog Preserve**- each with no previous record of successful prescribed fire.



Jesse Phillips and Lesley Starke ignite fire at Mineral Spring Barrens Preserve. Photo credit- PCP Staff.

In addition to our normal controlled burn program, PCP partnered with the Lebanon Volunteer Fire Department of Durham County to remove a dilapidated house at the **Hebron Road Preserve**. Burning this structure removed an eyesore, a safety hazard, and an unnecessary risk for prescribed fires. Best of all, the fire department benefitted from and appreciated the training opportunity. Several volunteer workdays, with help from the Eno River Association, helped prepare the house for demolition and to remove much of the remaining debris afterwards.



Lebanon Vol. Fire Dept. conducts training at the Hebron Road structure burn. Photo credit- PCP Staff.

### Species Restoration Projects

- Volunteer stewards helped PCP staff plant previously collected yellow indian grass (*Sorghastrum nutans*) seeds at **Hebron Road Preserve** in Durham.
- PCP Staff planted wiregrass seeds across thinned areas in the **Pondberry Bay Preserve** as well as into recently burned areas of **Hog Branch Ponds Preserve**.
- An arson fire damaged area of the **Pondberry Bay Preserve** was planted with 88,000 longleaf pine (*Pinus palustris*) seedlings that were purchased with money earned from salvaged loblolly pine (*Pinus taeda*) timber killed by the fire in 2011.
- PCP staff planted an additional 3,000 longleaf pine seedlings across the preserve in small units that were burned this year.
- 52 pond cypress (*Taxodium ascendens*) seedlings provided by Andy Walker of the North Carolina Botanical Garden were planted at the **Pondberry Bay Preserve** in the “Sister Bay” in May.
- At the request of PCP, volunteer Preserve Stewards Herb and Pat Amyx germinated and eventually outplanted 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, giving a substantial boost to our most critically small 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.



Left: Propagated Smooth Coneflowers before transplant. Photo credit: Herb Amyx.

Right: Smooth Coneflowers outplanted at the Eno River Diabase Barrens Preserve. Photo credit: Herb Amyx.

## **Habitat Restoration**

PCP staff have been slowly but surely enhancing habitat conditions at various Preserves. In many cases, we are reversing years of overgrowth and dense shade on formerly more open sites. Two examples are provided below:

PCP staff, with the cooperation of NCDA&CS- Research Stations, began removing small loblolly pine and sweetgum stems around the edges of rare plant populations at the **Picture Creek Diabase Barrens**. While staff completed most of the chainsaw & mechanical work, several volunteers provided labor to help remove and pile downed material for later disposal. Based on our past experiences, this technique of increasing sunlight penetration to the forest floor benefits imperiled plants such as the smooth coneflower, and facilitates longer term management with prescribed fire.

Efforts to restore habitat and hydrologic conditions at the **Cedar Mountain Bog Preserve** continued in 2012. PCP Staff spent a week in June thinning the bog area of invading mountain laurel, rhododendron, white pine, and red maple, as well as improving hydrologic conditions.



**Top:** Jenna Anderson with one of many brush piles being removed from Cedar Mountain Bog. Photo credit- PCP Staff.

**Left:** Jesse Phillips and Lesley Starke building weirs in adjacent stream to slow water loss. Photo credit- PCP Staff.

**Right:** Montane Purple Pitcher Plant (*Sarracenia purpurea* L. ssp. *purpurea* var. *montana*) exhibiting new growth after removal of woody competition. Photo Credit- PCP Staff.

### Controlling Invasive Species: a few examples

Canary Reed Grass (*Phalaris arundinacea*):

PCP staff are beginning to see lasting results at the **Bat Fork Bog Preserve** in Henderson Co. after three consecutive years of battling the invasive grass that dominated significant portions of the wetlands on the Preserve.

Queen Anne's Lace (*Daucus carota*) and Oxeye Daisy (*Leucanthemum vulgare*):

PCP Staff and volunteers began controlling invasive Queen Anne's lace (QAL) and oxeye daisy at the **Eno River Diabase Sill Preserve** in Durham Co. with a focus on minimizing seed set. We estimate at least 700,000 QAL seeds were removed from the Preserve by cutting and bagging seed heads that were beginning to form. Considering QAL is a biennial, we'll have at least one more attack to make next year before we can begin to assess the impact this work will have.

Chinese or Serica Lespedeza (*Lespedeza cuneata*):

PCP Staff treated the encroaching *Lespedeza* at **Harvest Field Preserve** in Randolph Co. 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 (*Helianthus schweinitzii*) that the preserve is dedicated to protect. PCP staff also treated this species at the Harrelson tract of the **Eno Diabase Sill Preserve** in Durham Co, where it is intermixed with a host of imperiled and rare species.

Multiflora rose (*Rosa multiflora*), Chinese and Japanese privet (*Ligustrum sinense* and *L. japonicum*):

Volunteer stewards and workday volunteers have lent quite a few hands to the PCP Staff at the **Hebron Road Preserve** in Durham Co. to battle these woody invasives. Regular updates provided by stewards at this preserve have also helped to gauge the response of these species to our controlled burn this year.

Waxyleaf privet (*Ligustrum quihoui*):

With the help of Will Cook and Harry LeGrand, PCP documented the existence of this lesser known invasive species in North Carolina. A well established patch was found at **the Butner Diabase Glade Preserve** in Granville Co. and preliminary mechanical control activities were conducted.

Sacred Bamboo (*Nandina domestica*):

This species is not one of the worst offenders out there, but we are finding it, especially in the Piedmont preserves. PCP Staff controlled individuals and small patches at the **Hebron Road** and **Butner Cedar Glade Preserves**.

## Research

PCP is continuing a joint study at **Boiling Spring Lakes Plant Conservation Preserve** with the assistance of Dr. Jeff Glitzenstein. We are investigating how different management techniques affect the imperiled plants that inhabit special fire-prone habitats. In particular, we are investigating the use of mulching treatments as a surrogate for fire when conditions do not allow for a fire return interval consistent with the rare plants' needs. A by-product of this research is an enhanced understanding of soil-vegetation relationships at the Preserve and the rare species found within.

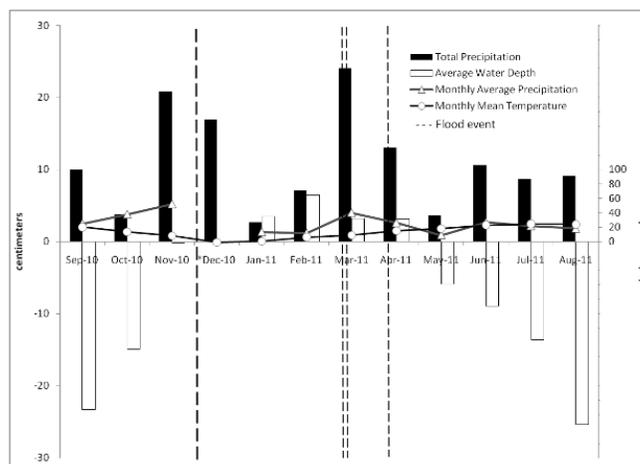


Left: Dr. Glitzenstein installing a transect in the Boiling Spring Lakes Preserve. Photo credit- PCP Staff.

Middle: Rough-leaf Loosestrife (*Lysimachia asperulifolia*), one of the species being studied at the BSL Preserve. Photo credit- PCP Staff. Right: Dr. Glitzenstein examining plants within a study plot at the BSL Preserve. Photo credit- PCP Staff.

## Hydrologic Studies

Numerous Preserves feature unusual wetland types for which little data are available related to “normal” wetland functioning. Further, many Preserves also have a history of altered hydrology which complicates the management of rare plants. PCP Staff have preliminary studies underway to analyze hydrologic conditions at **Bat Fork Bog, Cedar Mountain Bog, and the Ponderberry Bay Preserves**. PCP has also issued research permits for additional study of wetland conditions at two of our Preserves.



The figure above is an example of hydro period data compiled by PCP from the Bat Fork Bog Preserve.

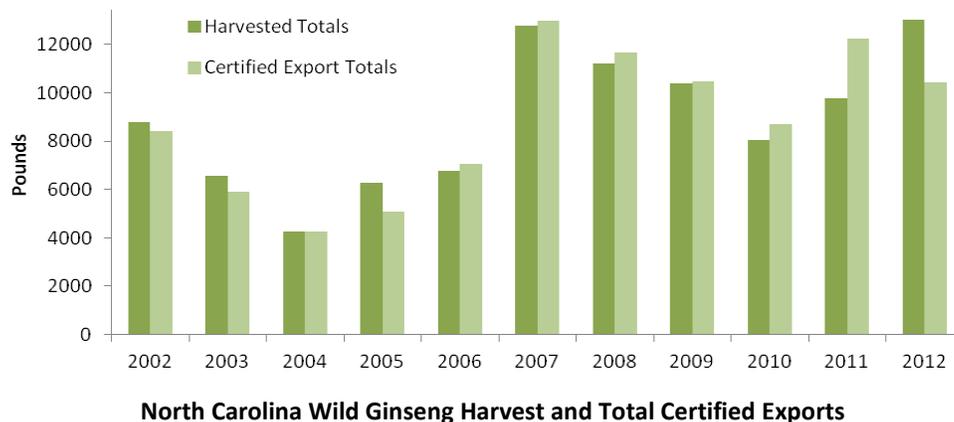
## Permits

In North Carolina, a protected plant permit is required to collect or 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 pertinent permits to partners at the NC Natural Heritage Program and US Fish and Wildlife Service for their protected plant records. Many 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.

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

## Ginseng

PCP also regulates the sale of American ginseng (*Panax quinquefolius*) by issuing licenses to NC dealers and tracking all exports out of the state. PCP Staff works directly with licensed dealers to obtain as much data as possible regarding the locations and totals of harvested ginseng in an attempt to indirectly monitor the health of the state's population. All exported ginseng must be certified by NCDA&CS and reported to PCP. Exported ginseng includes both wild harvested and cultivated roots. 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).



### **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.



Thick-pod White Wild Indigo (*Baptisia alba*) – Threatened (Left)

This stem appeared in flower on the **Mineral Springs Barrens Preserve** after a spring burn conducted by PCP; last observed in 1999. Photo credit- PCP Staff.

Sandhills Milkvetch (*Astragalus michauxii*) – Vulnerable (Right)

The status of this species at the **Pondberry Bay Preserve** was verified and updated during a field trip jointly conducted with Natural Heritage Program, NC Botanical Garden, and Friends of Plant Conservation. Approximately 13 flowering stems were noted including the specimen shown here. Photo credit- PCP Staff.



American Bittersweet (*Celastrus scandens*) —  
Endangered (Right)

Observed at **Cedar Cliff Mountain Plant Conservation Preserve** in 2012 during a Friends of Plant Conservation Field Trip. Until this sighting, this population was last observed in 1951 and thought to be lost. PCP staff counted approximately 10 stems, roughly half of which were fruiting. Photo credit- PCP Staff.



Bent Avens (*Geum geniculatum*) —  
Vulnerable (Left)

A second, previously undocumented, subpopulation of this species was located in 2012 at **the Tater Hill Plant Conservation Preserve**. Photo credit- PCP Staff.

Georgia Aster (*Symphyotrichum georgianum*) —  
Threatened (Right)

First reported on the Mineral Springs Barrens Preserve in 1990, the plants have not been seen in many years. In 2012, Georgia Asters were located on all three parcels of the preserve in areas burned by PCP. Photo credit- PCP Staff.



## **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 2012 census and/or population monitoring work was conducted on the following species:

- Bunched Arrowhead (*Sagittaria fasciculata*)- Ochlawaha Bog and Bat Fork Bog Preserves, Henderson Co.
- Mountain Sweet Pitcher Plant (*Sarracenia jonesii*)- Cedar Mountain Bog Preserve, Transylvania Co.
- Pondberry (*Lindera melissifolia*)- Big Pond Bay Preserve, Cumberland Co.
- Prairie Blue Wild Indigo (*Baptisia australis* var. *aberrans*)-Eno Diabase Sill Preserve, Durham Co. and Picture Creek Diabase Barrens, Granville Co.
- Rough-leaf Loosestrife (*Lysimachia asperulifolia*)- Boiling Spring Lakes and Hog Branch Preserves, Brunswick Co.
- Sandhills Milkvetch (*Astragalus michauxii*)- Pondberry Bay Preserve, Sampson Co.
- Schweinitz's Sunflower (*Helianthus schweinitzii*)-Harvest Field Preserve, Randolph Co.; Denson's Creek Preserve, Montgomery Co.; Mineral Springs Barrens Preserve, Union Co.; and Redlair Farm and Forest, Gaston Co.
- Smooth Coneflower (*Echinacea laevigata*)- Eno Diabase Sill Preserve and Hebron Road Preserve, Durham Co.; Knap of Reeds and Northside in Granville Co.
- Venus Flytrap (*Dionaea muscipula*)-Boiling Spring Lakes Preserve, Brunswick Co.
- White Irisette (*Sisyrinchium dichotomum*)- White Oak Mountain Preserve, Jackson Co.



**Left: Lesley Starke and Kathy Schlosser count *H. schweinitzii* at Harvest Field. Photo credit- Dennis Burnette  
Right: Lesley Starke counts and records GPS coordinates of Venus Flytraps in a study plot. Photo credit- PCP Staff.**

**Imperiled Species Currently Documented on North Carolina Plant Conservation Preserves**

New species in 2012 are shown in red; federally listed species are marked with \*\*. PCP staff is working toward verifying/updating each of these records.

Acmispon helleri	Lilium canadense spp. editorum	Symphotrichum laeve var.
Agalinis virgata	Lilium grayi	concinnum
Amorpha georgiana var. confusa	Lilium philadelphicum var.	<b>Trichostema brachiatum</b>
<b>Anemone berlandieri (pending)</b>	philadelphicum	<b>Trifolium reflexum (historical only)</b>
Arethusa bulbosa (historical only)	Lilium pyrophilum	
Asclepias pedicellata	Lindera melissifolia**	
Astragalus michauxii	Lithospermum canescens	
Baptisia alba	Litsea aestivalis	<sup>i</sup> Imperiled means endangered, threatened, or vulnerable
Baptisia australis var. aberrans	Ludwigia suffruticosa	
Berberis canadensis	Lysimachia asperulifolia**	<sup>ii</sup> In 2011 we reported owning 13,322 acres; however this was incorrect. The total at the end of 2011 was 12,828 acres.
<b>Boechera missouriensis (pending)</b>	Lysimachia fraseri	
Carex trisperma	<b>Magnolia macrophylla-pending</b>	
<b>Celastrus scandens</b>	Micranthes pensylvanica	
Chelone cuthbertii	Packera schweinitziana	
Cirsium lecontei	<b>Panicum flexile</b>	
<b>Cyperus granitophilus</b>	<b>Pellaea wrightiana-pending</b>	
Dalibarda repens	Platanthera grandiflora	
Delphinium exaltatum	Polygala hookeri	
Dichantherium aciculare ssp. neuranthum	<b>Portulaca smallii</b>	
Dionaea muscipula	Rhexia aristosa	
Echinacea laevigata**	Rhynchospora harperi	
Eleocharis elongata	Rhynchospora pleiantha	
Geum geniculatum	<b>Ruellia humilis</b>	
Helianthus schweinitzii**	Ruellia purshiana	
Helonias bullata**	Sagittaria fasciculata**	
Houstonia montana**	Sarracenia jonesii**	
Ilex collina	Scutellaria leonardii	
<b>Isoetes piedmontana</b>	Silene ovata	
Lachnocaulon minus	Sisyrinchium dichotomum**	
Liatis helleri**	<b>Symphotrichum depauperatum</b>	
	Symphotrichum georgianum	