

Field Notes

Friends of Plant Conservation newsletter

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Landscapes of Memory

Guest Contributor: Lonnie Murray

Venus Flytraps near my Grandparent's home in coastal North Carolina were the first plants that caught my interest. Like many kids, I was fascinated by the idea of carnivorous plants, but until reading an article in National Geographic, I had no idea that they lived so close to a place I visited frequently. I begged my parents repeatedly to take me to the Green Swamp to see them, but in vain. It wasn't until college that I was finally able to search on my own. By that time, I'd learned that not only were there carnivorous plants and bogs in NC, but also one county over in Augusta [Virginia]. Now I also quickly learned that botanists are really guarded about just telling you where things are, (and justifiably), so I had to do the research myself. In my case, I started in old plant journals like *Claytonia*, where people were once less careful about describing the locations of places. Reading these accounts of our landscape was like a journey back in time, and I delighted in hearing the accounts of these magical places.



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Imagine a whole "sea" of these Rose pogonias! (*Pogonia ophioglossoides*)

Several of these sites in particular really fascinated me. One was referred to as “Mountain Lake” and I realized it must have been one of the sinkhole ponds in Augusta County. Apparently when the orchids were blooming it was described as a “sea of pink”. At that point, it was fairly recent news to me that such a thing as a native orchid was even a thing, and yet here was a place covered with them. After narrowing down the location, I began to have a sinking feeling . . . and indeed, there was a sinkhole pond, right in the area described. But it was now a resort called Shenandoah Acres. To confirm, I asked one of the owners who told me that it had once been a cranberry bog, so his grandfather dredged out all the plants and soil, covered it with sand, and installed water slides and sorts of other plastic kitsch, including a brightly colored dinosaur.

Although the crime had been committed well before I was ever born, to me the heartbreak was immediate.



Swamp Pink, (*Helonias bullata*)

Nonetheless, I was not deterred. I sought out another place I knew to exist nearby called Spring Pond, which reportedly had native orchids, sundews, and even pitcherplants (introduced). In this

case, I was once again late to the scene of the crime. The forest service had scolded local botanists for breaching a beaver dam. But without the intervention of botanists, the entire site remained underwater for years, and when the waters finally subsided, there wasn't a single rose pogonia, grass pink orchid, or sundew to be found. All the hundreds of rare swamp pinks (*Helonias bullata*) that once graced the site were gone. I was dumbstruck. Twice in a row, I'd finally tracked a place down only to find it destroyed before I could get there.

Next I tracked down a place called Magnolia Swamp in Augusta county, known as one of the most diverse sites for orchids in the area, and also a location for native sundews. Natural Heritage staff described the site as a “Relict of a Relict,” a patch of coastal flora stranded in the mountains. Because this one was private property, I had to first track down the landowners and get permission to access the site. After meeting them, it was clear that while the site had been known for decades, not much had been done to educate the landowners about the treasure they possessed. In this case, a slow and steady decline had been eating away at the diversity of the site.

It was being grazed by cattle, a mixed blessing, since the cows had taken the place of fire in suppressing vegetation and keeping the wetland open. Nonetheless, once again, all key orchid species were gone, including the last confirmed site of dragon Mouth orchid in the whole state. To add insult to injury, a pond had been recently added, flooding a portion of the wetland. That said, many of the species described long ago still existed there; native flag iris, swamp rose, sweet bay magnolia, highbush blueberry, and many other beautiful species. Instead of Bald Cypress, on each raised mossy hummock there was a fragrant sweet bay magnolia, and then all around it in the water were skunk cabbage and marsh marigold. In the meadow portion, the iris was a sea of blue flowers in bloom. So at least I caught a significant glimpse of what a native fen could be, and maybe there was some hope that work could be done with the landowners to protect and restore the site.



Grass pink, (*Calopogon tuberosus*)

As I became more involved with other amateur botanists, I realized that they all had their own stories just like mine. Many of us became interested in conservation because of direct experiences with a lost place or species. It's a story you hear over and over, with merely the names and the details changed; a story that usually ends in a shopping mall, subdivision or resort.

At one point I learned about Poo Run Bog near Petersburg, one of the last really expansive colonies of yellow pitcherplant bogs in Virginia, where once pitcherplants extended as far as you could see. It was scraped clean of vegetation, even the soils were removed – as fill to make I-95. Now only a few tantalizing photos of the site are all that is left. I also learned about fights with the Forest Service to save the last Showy lady slipper in the state, only for the last site to be destroyed by a new forest road.



The endangered Venus Flytrap in its native habitat.

Eventually, I was able to track down more pristine sites that truly represent what a healthy mountain bog ecosystem could look like. I even was able to make the trip to see Venus Flytraps in the wild in the longleaf pine savannahs of North Carolina. But I realized that if I loved plants, I had to be involved in their conservation. I could not simply sit passively by to let more sites disappear.

I'd like to say that things have gotten better, and that I haven't borne witness to the loss of more habitats, but **the truth is that loss continues at an accelerated pace.** When I look at any landscape now, part of me wonders what it was like before. Was there a beautiful wetland full of orchids? Did Carolina parakeets or passenger pigeons nest in those trees?

I think it is our responsibility to help protect not only landscape we see, but also the landscape of memory, the places preserved in the historical accounts and the stories of our fellow botanists and naturalists. The world needs to know the scope of what we've lost, and even feel some of the loss themselves. In that way maybe we have some chance of saving what is left, or even restoring some of these places.

I can say that now, in my position as a Director for the Soil and Water Conservation District, I work with landowners to fence cattle out of wetlands and create habitat. As Chair of the Albemarle County Natural Heritage Committee, I've even helped manage to get a few special places under permanent protection. My own conservation work will always be informed by my knowledge of what I could not save. It's not much, but at least I am now part of the solution, and that's a start.

Lonnie Murray
Director, Thomas Jefferson Soil and Water Conservation District
Commissioner, Rivanna River Basin Commission
Chair, Albemarle County Natural Heritage Committee
Board of the Lewis & Clark Exploratory Center
Jefferson Chapter, VNPS
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Note: We are indebted to Mr. Murray for allowing us to reprint his article.

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From The Board

What a beautiful, and unusual Spring we have had. The rain has been plentiful, the temperatures unpredictable, the blooms in abundance.

Please join us for a Field Trip, and if you don't see one of interest to you, drop us a note and tell us what you would like to see.

We are looking for a few people who would like to be more closely involved with plant conservation. There are a number of ways to join in and we can work with you to make sure we don't infringe too much on your time. Take a look below and send a note to one of us (email addresses to the left):

Finance committee: work with the Treasurer once a year to complete a review of our books.

Program planning: Work with a board member to plan our annual meeting, field trips, or seminars.

Preserve Workdays: staff can always use a hand with land Management activities including invasives removal, trash pick up, plant monitoring, plant inventories, and boundary walks. As you have time or on a regular schedule.

Newsletter: one of the best ways to keep up with what is going on is to work on the newsletter. We have a template or you can make your own. Articles are submitted by staff, board members, Friends members or others in the plant conservation field.

Website: Our website should be updated monthly, but we have an easy platform, so it can be done quickly. There is room for creativity, or you can just follow the existing format.

Development: If you don't mind asking for money this is the place for you. We are small and want to grow, but we put no defined goals on those willing to help. This is one of the best ways to promote the conservation of our imperiled species.

Don't be shy....we're waiting for you!

Kathy

Blossom Deceit and Seed Predation



Blooms often attract us to rare plants, and though sometimes small they can be spectacular. Of interest to me at the moment are the seeds and seed capsules of *Aretusa bulbosa*, listed as Endangered. PCP was fortunate, a couple of years ago, to have 2 plants appear after at least a decade of absence. Excitement grew among staff and Friends when a seed capsule appeared, and we waited anxiously for seed to develop.

Our anxiety was warranted, for no sooner did we check to see if seed was ready than it was discovered the capsule had been stolen. We can surmise theft as it was caged and getting to the seed capsule would have meant disturbance to the cage—unless deer and other herbivores have learned to put cages back in place!

We now watch again, this time with the help of neighbors in the area who share our dismay at those who steal plants and plant parts. While people are not the only danger to plants, they are the least excusable.

A. bulbosa has only very small populations in Forsyth, Avery, Henderson, and Transylvania counties in NC. Populations are widely scattered across its range in the Eastern US, and mostly Endangered or Threatened, until reaching New England, Michigan, Wisconsin, and Minnesota. In those northernmost spots, populations are currently more frequent. Many places have suffered losses from habitat destruction, but the plants are not considered imperiled in all states.

Pollinated by bumblebees, who are disappointed to find no nectar after being attracted by colorful fragrant flowers, the floral display may actually offset seed loss by an increase in pollinator visitors. Once a bumblebee learns the plants offer no reward, they stop visiting. That re-

quires young bumblebees who have not yet learned the deceptive nature of the blooms. With a reported decline not only among honeybees, but native bees as well, this could add to the pressure on survival for the plants.

An interesting study by Combs, Lambert, and Reichard (2013) suggests that “predispersal seed predation rates can vary widely in time and space, and site-specific factors play a major role in influencing the type of seed predator and, therefore, the rate of seed loss.” Insect abundance and feeding mode are other factors to consider.

Knowing the possible insect seed predators and their abundance may be one step in refining a management plan, whether it means eliminating the predator or protecting the plant in some way until the plant population reaches sufficient numbers for some seed to survive. Certainly other factors play a role in the survival of the population, habitat and hydrology changes for instance, but a small increase in numbers may not prove adequate to assure restoration success. We have a way to go before we can celebrate.

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Aretusa bulbosa
seed X 100



Aretusa bulbosa - Seed Capsule Size - 25 mm x 8 mm
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2017 Field Trip Schedule

Sign up early as group size is limited according to the site.

May – 26 MAGNOLIAS FOR MAY and ENDANGERED PLANTS DAY—A moderate afternoon walk through the gentle hills, valleys, and fields of Redlair with stops for the magnificent serving-platter size blooms of *Magnolia macrophylla*. Haywood Rankin, who grew up on this land, points out plants, historic areas, creeks, beaver engineering, and the South Fork of the Catawba River. Lots of habitat types and lots to see and enjoy. Morning talks on the state of endangered plants in North Carolina by area experts and what you can do. Lunch provided for all day participants \$10 (details TBA). Afternoon walks.

July TBA – INTERNATIONAL BOG DAY TOUR-- A visit to Bat Fork Bog (actually a fen) in Henderson County, home of *Sagittaria fasciculata*, bunched arrowhead,. Easy walks and plenty of bunched arrowhead to see, along with other bog plants. Bring bug spray if so inclined, and boots that you don't mind getting wet if the weather has been rainy. Easy walking and lots of mountain bog information along the way from some local bog experts.

August 12 (26th rain date) – ON THE TRAIL OF *Liatris helleri* at Paddy Mountain in Ashe County with Chris Ulrey and Lesley Starke. If headed to the top, this could be a strenuous trip, but we will be scouting around looking for Heller's Blazing Star...along with a lot of other blooming wildflowers. Wear your hiking boots, bring a lunch or snacks and enjoy a day out botanizing.

September 22 (Friday)– A GENTLE APPROACH TO CEDAR CLIFF in search of *Silene ovata* (Ovate Catchfly) in bloom. Though heading to the top can be a challenge, poking around on a slow ascent may help us to locate the elusive Catchfly. There will be lots of other things to see: American bittersweet, spiked crested coralroot, beard lichen and more. Sturdy boots, lunch, and plenty of resting places will make this a great trip, and if you haven't been to the top, it's a must see. Moderate to strenuous, depending on how high you want to climb.

October 6 (Friday) – ON THE HUNT FOR TIGER SALAMANDERS AND *OXYPOLIS CANBYII*. Tunstall Bay/McIntosh are known to be home to Canby's Dropwort and Tiger Salamanders, along with many other plant and herp species. Alvin Braswell, Lesley Starke, and Jenny Stanley will lead the way around this site in Scotland County.

Register: Nancy.Stewart@ncagr.gov or call 919-707-3755

NCPCP Preserve Stewards

The Preserve Steward program has been revised, and the following Stewards have been assigned an access permit for one or more of the Preserves. If a workday is being held by staff or by a Steward under the direction of staff, the Steward may call for help. If you are nearby, or willing to travel a little, contact the steward for directions and details.

Access permits for any other purposes must be obtained from Lesley Starke (Lesley.Starke@ncagr.gov), and are granted for research or educational purposes in keeping with the mission of NCPCP. Anyone on a preserve will have a signed permit for the current year on display.

BAT FORK BOG, Henderson Co.:	Tom Baugh
BIG POND BAY, Cumberland Co.:	Joan Schneier
CARAWAY, McDowell Co.:	<i>Pending</i>
CEDAR MOUNTAIN BOG, Transylvania Co:	Torry Nergart
DENSON'S CREEK, Montgomery Co.:	Nancy Adamson
DURHAM PRESERVES, Durham Co.:	Jarrod Morrice
TATER HILL, Watauga County:	Matt Estep
ENO DIABASE, Durham:	Herb and Pat Amyx
HARVEST FIELD, Randolph County:	Kathy Schlosser, Mimi Westervelt
MINERAL SPRING BARRENS, Union Co:	Lisa Tompkins
PONDBERRY BAY, Sampson Co.:	Bill Scott
REDLAIR, Gaston Co.:	Haywood Rankin

If a man walks in the woods
for love of them half of
each day, he is in danger of
being regarded as a loafer.
But if he spends his days as
a speculator, shearing off
those woods and making
the earth bald before her
time, he is deemed an
industrious and
enterprising citizen.

~Henry David Thoreau



HANDY TIP FROM JENNY & LESLEY:

Okay people, last weekend Lesley sent me an article that changed my life. I read the article and it was interesting, but then I watched the video and my brain exploded. It taught me how to tie my shoes!! They haven't come undone since! It only took 33 years... For those of you who suffer from constantly untied shoelaces, read this article. Better yet, just watch the video:

<https://mobile.nytimes.com/2017/04/13/science/why-shoelaces-undone-untied.html?mwrs=Facebook&referer=http://m.facebook.com>

or Google: Do Your Shoelaces Keep Coming Undone? Engineers Explain Why

1. As seated in my city study drear,
I linger o'er my volumes, lost in dreams,
Sweet recollection now to me appear.
And I again am following woodland streams.

2. [*Osmunda claytoniana* L.]
Osmundas stout lift up their tropic fronds,

3. [*Arisaema triphyllum* (L.) Schott]
The Indian Turnip in the peat abounds,

4. [*Tiarella cordifolia* L.]
The Bishop's Cap holds out its fairy wands,
While trees above are filled with heavenly sounds.

5. White-throated Sparrow, Northern Nightingale,
With marked precision chants his matin hymn.
The Hermit Thrush, half hidden in yon vale
His wondrous flute now pipes from limb to limb;
His song expanding with the dawning day.
In silvery ripples from his breast doth flow,
And as we pause to listen by the way,
Our sluggish hearts with wakening hopes do glow.

6. [*Trillium undulatum* Willd., *Trillium erectum* L.,
Trillium cernuum L.]
Wake-robins, white, and pink-and-white, and red,
'Neath pine-trees stand, in saplings tender shade;
The painted smiles, the red throws back his head,
The white, more shy, 'neath leaves her cheek has laid;
And as we softly o'er the morass tread,
We move with care, knowing she is afraid.

7. [*Rhododendron canadense* (L.) Torr.]
The gay Rhodora 'long the margin stands,
Forerunner of the Summer's fairer Rose;
Yet coming as does to ope Spring's bands,
She brightens every wood wherein she blows.

8. [*Caltha palustris* L.]
Marsh-marigold expands her golden globe,
By fairer flowers not at all made shy;
Her brighter hue with splendor doth enrobe
These shadowy spots, by trees shut from the sky.

9. [*Polystichum acrostichoides* (Michx.) Schott]
The Christmas-Fern new fronds has now unrolled,
Far tenderer than the leaves of last year's
These soon will cheer the forest elsewhere cold,
When neighbors die too weak to stand the strain:

10. [*Dryopteris intermedia* (Willd.) Gray]
But one besides her stands by every wrought
To thrive. The Wood Ferns o'er the ripples fling
Fair fronds, by many of fairer maiden sought;
Resisting cold for months, they fade ere Spring.

11. The Winter Wren, coy minstrel dressed in brown,
From Hemlock twig now flits to that of Spruce,
From Spruce to Fir, where now he settles down;
His effervescing song most wild and loose,
His rhythmic cadence, and his sweet sad notes,
His fluent strain, that rich metallic sound,
While sylvan plaintiveness through each strain floats,
Within our hearts responsive throbs have found.

12. [*Equisetum sylvaticum* L., *Equisetum arvense* L., (2 specimens)]
The Horsetail, striate stemmed, with curious joints,
Has, quick as Cadmus' army pierced the ground;
Each fairy branch in new direction points,
As guiding men to secrets yet unfound.

13. [*Trientalis borealis* Raf.]
The Trientalis, Chickweed Wintergreen,
From yonder mossy knoll reflects the sky.

14. [*Polygala paucifolia* Willd.]
Gay Fringed Polygalas those stars have seen,
So stretching out their wings attempt to fly.
So stretching out their wings attempt to fly.

15. The Flicker on yon Aspen old and dry
Now boisterous laughs and chuckles full of life,
Now whets his beak on knotty branch close by,
And pausing waits the coming of his wife;
He wisely tries the surface half decayed
And finding spot of firmer texture there,
Upon it now his whetted beak is laid;
Resounding drum-beats fill the enchanted air;
Again he laughs and once more beats his drum
Then utters still another louder shout,
Still wondering that his spouse is not yet come;
At last it seems his patience can't hold out,
With sudden dive he plunges into flight
Exposing golden pinions decked with red.
We stand enraptured by this gorgeous sight
Scarce conscious that our Sorcerer has fled.

16. [*Eriophorum spissum* Fern.]
The Hare's-tail spreads the bog with ermine fleece,

17. [*Coptis groenlandica* (Oeder) Fern.]
The Gold-thread's metal fibres pierce the loam,
Her glossy leaves above robe every crease,

18. [*Viburnum cassinoides* L.]
While Withe-rod heaps the margin high with foam.

19. [*Andromeda glaucophylla* Link, *Chamaedaphne calyculata*
(L.) Moench, *Ledum groenlandicum* Oeder]
Andromeda, Cassandra, and Wild Tea
Aristocratic circles here have made;

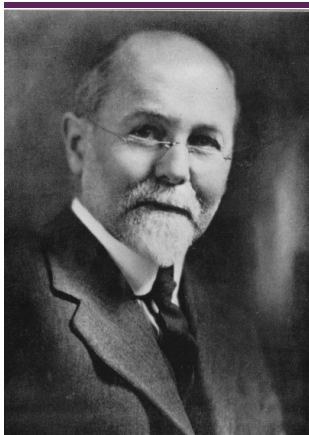
20. [*Kalmia polifolia* Wang.]
Pale Laurel, scarce so noble as these three,
With tottering step has lingered in their shade.

21. [*Arethusa bulbosa* L. (6 specimens)]
Shy Arethusa becks me cross the stream,
And as I near approach my Grecian maid,
A book dropped to the floor disturbs my dream,
And thoughts of Nymphs and Naiads quickly fade.

22. As when one wanders thoughtful through the wood,
New inspirations come from every sod,*
So after this 'tis easier to be good;
My heart o'erflows, for I have been with God.

See following page for the story of this unusual poem.

Story of a Dream — Merritt L. Fernald



M. L. Fernald

While researching *Arethusa bulbosa*, I happened across a reference to Asa Gray's list of fragrant wildflowers and from there, in some inexplicable manner, found my way to Fernald's poem.

The poem itself was "discovered" in 1985 by Leslie J. Mehrhoff, who was preparing a talk on Merritt Fernald. Her research took her to the University of Maine's library archives. While looking for a photo, she found, with assistance from the special collections librarian, specimens collected by Merritt Lyndon Fernald. Among those was "a package of heavy paper folded into a packet and tied with a coarse, flat string similar to a shoe lace. On the outside was penned in elaborate hand *A Dream of the Woods*. Upon opening the packet, we found 22 herbarium sheets, 17 with pressed plant specimens attached."

The sheets included some with both specimens and a verse from the poem, and some with just a verse. The poem was unsigned.

Poetry being out of character for the no-nonsense scientist, as Fernald was known, Mehrhoff set about attempting to determine its authenticity. That included comparing handwriting samples from various herbarium sheets prepared by Fernald, and interviews with botanists who had been students of Fernald.

While none of those who had personally known Fernald recalled any poems written by him, the handwriting samples were a match.

A review of Fernald's history also revealed that though generally thought of as a "vigorous researcher," "acute observer," and a "sharp critic of...careless work" he had a side other than as a scientist. He had great fondness for his family and for his upbringing in the countryside of Maine, where he spent many hours collecting plants and sharing them with his father, a professor at the University of Maine. By the time he entered college he had already decided he wanted to be a botanist, which he studied for

year. Following that year, he was offered a position at Gray Herbarium at Harvard, and by 1897 had also completed his education at Harvard. He served as a professor at Harvard and continued working at the Herbarium as well.

As a very young man when he left for Harvard, it took little imagination for Mehrhoff to picture him sitting alone in his room in the city, wishing he could be elsewhere. In his own words, "My earlier botanizing had always been within walking-distance of home and, having a keen interest in plants which I had been forced to follow alone, it was a wonderful new experience to be with an older and kindly companion to whom I dared speak in the peculiar language which I had previously been able to share with few others." (M.L. Fernald) Only a man who has a heart and a passion speaks with such words.

Whatever the truth, matching the signatures was enough for me and I will continue to believe this is indeed Fernald's work...until someone can show me that I am wrong.

What a pleasure to see another side of this man thought of as lacking sentimentality!

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Earth Day at Tater Hill

Imperiled species conservation is hard work and rarely glamorous. It is, however, gratifying. Dr. Matt Estep, Preserve Steward, and his team of 9 eager, brave, and hard-working volunteers spent Earth Day removing litter from a section of Tater Hill Preserve.

Their effort yielded 23 bags of old bottles and glass, 6 tires, metal, and car parts. Hard to believe that people who dump such things have so little regard for the Earth and private property. And so heartening to know that many others are willing to give their time and energy to cleaning it up.

Matt and friends worked for three hours dragging this mess out, with the end result pictured above. Our gratitude to each of them!

Spring at Tater Hill, left to right:

Uvularia grandiflora, Marybells; double flowering *Trillium grandiflorum*; *Saxifraga pensylvanica*, swamp saxifrage; *Lilium grayii*, Gray's lily





Eno River: Goldston

Jenny Stanley always finds interesting things to photograph as she works. Above is the Goldston tract post burn...Jenny says “ Look at those happy cohoshes!” And those beautifully dead saplings. Jenny was a recipient of a Jesse’s Fund gift from the last summer. Many thanks to all the contributors.



BURN AT WILLIAMS TRACT -



Poor copperhead. I heard some rustling and he was in the edge of the fire writhing around. He got himself to the line and then just sat under this *Youngia* for a good couple of hours. It looks like his back was singed. I texted Alvin a photo and he said he’s seen them survive worse. Here’s hoping!



World’s smallest *Lithospermum canescens*.



Beberis canadensis resprouting post fire.