

# Friends of NC Plant Conservation

## Field Notes

VOLUME I, ISSUE 2  
SUMMER 2009

### FRIENDS OF NC PLANT CONSERVATION

#### Board of Directors

C. Bruce Williams,  
President

David Blevins,  
Vice President

Katherine Schlosser,  
Secretary

Kurt Schlimme,  
Treasurer

Marsh Smith,  
Resource Development

Mark Rose,  
Policy & Governance

Benson Kirkman,  
Legislative Issues

Tom Harville,  
Membership

Paul Hosier,  
Strategic Planning

Mike Kunz,  
Program Planning

Andy Wood,  
Program Planning

#### Advisors

Gene Cross, Director,  
NCDA&CS-Plant Industry Division

Rob Evans, Plant Ecologist,  
NCSA&CS-Plant  
Conservation Program

## Pondberry Follow-up



Rob Evans, NCPCP

Pondberry (*Lindera melissifolia*) is one of NC's many imperiled plants and has been a target for the Plant Conservation Program for many years. The most recent edition of the N. C. Native Plant Society newsletter reprinted an interesting historical note on the species in which Lionel Melvin recounted his discovery of Pondberry in Bladen County. Melvin's 1939 collection, at the time, represented the first confirmation of the species in NC. What have we learned about the species since Melvin's work?

In 1986, Pondberry was listed as federally endangered. At that time, the species was only recorded in North Carolina from Melvin's site in Bladen County. Although Melvin himself indicated the species present through 1953, by the 1980's the site had been heavily altered and the population's

ability to persist was in doubt. The plant has not been observed at that site since 1987 despite repeated searches by qualified individuals.

In the early 1990's, a Pondberry survey was commissioned by the Plant Conservation Program. Steve Leonard substantially expanded the range of the species by finding 2 new localities within approximately 16 miles of the Melvin record.

Several years later, Rogers McVaugh and others reconsidered an 1860 publication which attributed Pondberry to North Carolina across a fairly wide range. This report either escaped attention or may have been considered erroneous until a bona fide specimen was located in Philadelphia! Two specimens, collected by Elisha Mitchell in the 1820's, cited Orange County locations in or around Chapel Hill. This historic record has never been relocated.

Continued on page 3

## From the President...

Smokey the Bear is celebrating his 65th birthday this year. I grew up with this most recognizable symbol of the US Forestry Service and as a child even shook his hand at the county fair. But as an adult, I have learned that “Smokey’s’ advice” does not apply to all forests and all fires. Long leaf pine forests, open prairie, and mountain balds once covered many acres in North Carolina. Plants and animals in many of these areas depended upon fire to release seed, replenish nutrients to the soil, and reduce plant pest and disease outbreaks. Areas deprived of burning are often overtaken by invasive weeds (kudzu, Japanese honeysuckle, or phragmites) or native shrub species. Burning is essential for the preservation and conservation of many native herbaceous and woody species. From native wiregrass to Venus flytrap to pond pine, burning is essential to the survival of many plants and the ecosystem of our State. Smokey’s message applies to many forests but not all. Support controlled burning; it helps preserve the plant habitats and plants of North Carolina.



Remember, only you can save North Carolina’s imperiled plants and habits by prescriptive burning!



Photo of Rob Evans by David Blevins.

## NCPCP staff...

Laura Gadd

Botanist & Ginseng Coordinator

Laura Gadd was born and raised in North Carolina and had an interest in plants from an early age. She graduated with a BS at Meredith College in Biology with a minor in Spanish in 2001. For the first couple of years after college, Laura worked for an environmental consulting firm in Raleigh and began to cultivate an interest in native plants and conservation. Laura began working on her master’s degree at NCSU in 2003 studying pollination biology of the endangered species, *Echinacea laevigata*. Laura has been with the Plant Conservation Program since 2006 and issues protected plant permits, conducts rare plant monitoring, and oversees the NC Ginseng Program, among many other responsibilities.



Photo by David Blevins (taken at a Venus flytrap re-planting site)

## *Pondberry Follow-up cont.*

In 2001, the Plant Conservation Program and The Nature Conservancy (TNC) began efforts to protect the best known site for the species. In the fall of that year substantial funding was obtained by PCP from the Natural Heritage Trust Fund (NHTF). This 2,100 acre purchase, facilitated by TNC, has become one of the Program's largest Plant Conservation Preserves. In 2005, the opportunity arose to protect the state's other highly significant site. A partnership that included the Sandhills Area Land Trust, Plant Conservation Program, Ecosystem Enhancement Program, and NHTF succeeded in protecting the majority of this site, which has also been added to the Plant Conservation Preserve system.

Establishing Plant Conservation Preserves has been a tremendously positive step toward the recovery of this imperiled species in NC. However, significant management challenges remain. For example, both sites were degraded by past land-uses prior to acquisition. Restoring these sites to their natural community structure and composition to benefit Pondberry is the primary goal. The problems faced by Program staff are how to implement restoration and how to do so without compromising the Pondberry in the process.

Would you like to find out more about what PCP is doing on behalf of the Pondberry and/or would you like to help? If so, contact Friends of Plant Conservation at [www.ncplantfriends.org](http://www.ncplantfriends.org)

*The rest of this issue of Field Notes is devoted to the history of pondberry in North Carolina. Ed.*

## *Lindera rediscovered, 1984*

"After years of searching by botanists, Natural Heritage botanist Julie Moore, accompanied by the program's summer interns, rediscovered Southern spicebush (*Lindera melissaefolia*) in Bladen County. County forest ranger Frank Sholar led Moore to the vicinity of the site where the spicebush was last seen 20 years ago. Lionel Melvin, well-known native plant nurseryman, originally discovered the population. The site has changed in two decades, but Moore found about 50 stems of the rhizomatous, colonial plant. The species' few populations are widely scattered in the Southeastern United States, and it is proposed for federal listing as endangered. North Carolina is the most eastern reach of its range and recognized it as a state endangered plant. The *Lindera melissaefolia* is known in North Carolina from only one other very small population in Cumberland County."

*Reported in the N. C. Wildflower Preservation Society newsletter, Spring, 1984 (N. C. Native Plant Society). Reprinted from a N.C. Natural Heritage Program newsletter.*

## *Lindera melissifolia, a continuing story*

You may recall from the last newsletter that a visit and workday was planned for Pondberry Bay, a site for *Lindera melissifolia*. Spending as much time with my nose in books as in the outdoors, I happened across this nugget from the archives of the N. C. Native Plant Society. The article is dated May, 1954. Enjoy. KS

### A Report on *Lindera melissaefolium* Found in Bladen County, North Carolina

By Lionel Melvin (May, 1954)

It was in June or July of 1933 or 1934 on a Sunday afternoon walk with friends that I happened upon a plant that I had never seen before. Although I had collected herbarium specimens in nearby areas, and I knew most of the woody vegetation of Bladen County, North Carolina, I did not know this shrub; however, I suspected its relationship to *Sassafras*.

On the margin of a pond that was dry at this season, I found one lone clump 20 or 30 inches in height, bearing fruit, with handsome light green foliage. I took a rooted sprout of it for the purpose of having it identified by the botany department of the University of North Carolina; nevertheless, I forgot about it and left it "heeled in" in a damp spot at the end of a water trough never returning to get it. It was not until the Fall or Winter of 1938 that I gave this plant any further thought, and it came about having dinner one evening in the home of the late Dr. W. C. Coker. After we were settled in his living room, the conversation turned to plants and he inquired of my observations of those in the coastal regions. Upon my mention and description of this forgotten plant found four or five years earlier, Dr. Coker surmised that I had found *Lindera melissaefolium* [*Lindera melissifolia*] which the botany department of the University had searched for in vain over a period of many years. He asked me to bring living specimens of it when I returned to the University after the Christmas holidays, which I promised to do if I could find the location again.

The leaves were gone and the large pines around the

pond had been cut away changing the entire appearance of the locality, but I finally found the clump and brought back three living specimens which were planted in the Coker Arboretum for observation. They turned out to be *Lindera melissaefolium* as Dr. Coker suspected. I returned to the location again on the 2nd day of July, 1939, and collected some very good leaf and fruit specimens

of *Litsea aestivalis* (L.) Fern. which I had seen growing there when I first found the *Lindera* but did not at that time consider of any importance or interest. In the Winter following, I visited for the fourth time this location for the purpose of securing plants of both *Lindera* and *Litsea* for propagation purposes and was alarmed to learn that the *Lindera* had suffered from frost. The upper and more tender portions of the plants were dead. The cutting away of the timber left the plants unprotected. My efforts of propagating were interrupted by World War II. When I returned from service, not a living specimen of those I had transplanted could be found.

In 1949 or 1950 my aunt, Mrs. R. F. Whittle, of R.F.D. #5, Fayetteville, N.C. became interested in the propagation of *Lindera*, and we succeeded in relocating it, but we collected very sparingly in finding the plants in such plight: there were less of them and they looked sickly. They were dwarfish and the tops were killed back almost to the ground. Since my aunt's attempt at propagation failed, I became more concerned and wrote Dr. H. R. Totten of the botany department of the University of North



*Lindera melissifolia*, southern spicebush. Photo: USDA Plants Database.

## *Lindera continued...*

Carolina about the condition of the plants in the arboretum.

Dr. Totten replied saying that the last of the plants that I had brought up in January of 1939 had died in about 1948, and that Dr. A. E. Radford, curator of the herbarium, with a class of students had already made an effort to relocate Litsea and Lindera without success. He would like very much to make contact with Lindera again and would meet me in Bladen Easter day, April 5, 1953, and have me take him to the location. Plants were fewer but healthier on this visit. The preceding winters had not been quite so severe as others.

I returned again last summer to see whether or not the Lindera had suffered from the drought and found them holding up fairly well, although many of the plants of Litsea had died. On this trip, I found another clump of Lindera on the opposite end of the pond with plants ranging in height from 10 to 20 inches.

My last visit was this past winter and I found the Lindera again sugaring from winter-kill.

This season's efforts by Mrs. Whittle in Bladen County, Mrs. H. R. Totten in Chapel Hill, N. C. and myself in Guilford County promise to be successful. It seems that a loose, loamy, moist and acid soil is needed to assure its growth. Fertilizers used in azalea culture are satisfactory. We are not certain that we can produce fertile seed, but it is reproducing by stolons. No other location of this rare plant is known in North Carolina, and efforts to find it elsewhere, so far, have failed.

*This article, re-typed as it appeared, was printed in the May 1954 issue of the North Carolina Wild Flower Preservation Society news sheet. It was noted that it was presented by Mr. Melvin at the Spring 1954 meeting of the North Carolina Academy of Science.*



*Lindera melissafolia*. Photo by Joe Ditto, Center for Plant Conservation, [http://www.centerforplantconservation.org/ASP/CPC\\_ViewProfile.asp?CPCNum=2573](http://www.centerforplantconservation.org/ASP/CPC_ViewProfile.asp?CPCNum=2573)



*Litsea aestivalis*. Wunderlin, R. P., and B. F. Hansen. 2008. Atlas of Florida Vascular Plants (<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

## *Chance Discovery of Blight in **Lindera melissaefolium**<sup>1</sup>*

*Ed.: The following article is re-printed as originally published, though plant names have since changed. The article is printed courtesy of the N. C. Native Plant Society.*

Lionel Melvin

Since my return in the early 1950's with Dr. Totten and his brother-in-law, Spicer Williams, to the location of the **Lindera melissaefolium** in Bladen County which I had discovered in the early 1930's, \*I had unsuccessfully tried to grow it in cultivation until about two years ago, when the first of my two plants the blight that always had terminated my efforts to keep alive this temperamental species. In desperation I lifted these two last specimens, removed with a water hose the soil from the roots and dusted the diseased tops and the roots with Ortho Rose Dust. Soon new sprouts appeared. The foliage was mottled with a chlorosis, but in time after heavy watering, the new leaves lost their chlorotic look. I had to repeat this same treatment this spring and I got increased suckers from one of the clumps.

So far as I know, there are only two clumps left of the original colony of this rare plant that I was fortunate in discovering after 99 years of its having been lost to our ken. One is still alive on one of those little islands in the channel of water near the office of Brookgreen Gardens in South Carolina; the other is in Mrs. J. Norman Henry's garden at Gladwyn, Pennsylvania. My two clumps that I now have are from a second colony that I found on the west side of the same pond as was found the first. It is gratifying to learn of another location found on the north end of this pond as reported in the Spring 1984 North Carolina WildFlower newsletter, for the second location that I found seems to have been destroyed when a fire lane was plowed through the colony. Benson Kirkman

informed me that the larger brush had been removed from this last colony. This may have been a mistake, since it encourages weedy plants to take its place and this spice plant is definitely an understory plant.

As for the report that a small population exists in Cumberland County, I believe this is the **Benzoin reticulatum** that C.L. Boynton found in a swamp near Hope Mills which was mistaken for **Lindera melissaefolium** by Palmer and Steyermark. Dr. Totten and I examined the specimens now deposited in the U. S. National Herbarium and found them to be of a pubescent form of *L. benzoin* (see my report on Rare North Carolina Plants – Journal of Elisha Mitchell Science Society, Vo. 70, No. 2, Dec. 1954.)

<sup>1</sup> *WildFlower, Newsletter of the North Carolina Wild Flower Preservation Society, Fall 1984, pg 9-10).*

## Notes on Some Rare North Carolina Plants<sup>1</sup>

By Lionel Melvin  
Pleasant Garden, North Carolina (Dec. 1954)

This paper is a record of some rarer plants that I have collected in this state. My identifications have been checked by Dr. H. R. Totten or by Dr. A. E. Radford of the University of North Carolina, and collections placed in the Herbarium of the University at Chapel Hill.

*Lindera melissaefolium* (Walt.) Blume (= Benzoin melissaefolium (Walt.) Nees). Bladen Co., near White Oak. July 2, 1939. The habitat is like that described by Thomas Walter, who discovered the plant. It is growing on the margin of a pond subject to drying up in seasons, but where the roots are at times submerged. There is no evidence that the plants are reseeding themselves, although they bear fruits. Reproduction is by stolons, a characteristic not common in the more abundant plant, *L. benzoin*.

I believe that this Bladen County location is the only one known to exist in North Carolina. The New York Botanical Garden has, besides a duplicate of my 1939 collection, a very old collection received from the Princeton University Herbarium marked "Chapel Hill. Professor Mitchell"; and an old collection from the Torrey Herbarium marked "North Carolina. Schweinitz." I have also examined from the U. S. National Herbarium the following C.L. Boynton collections from swamps near Hope Mills, Cumberland Co., N.C.: *Benzoin reticulatum* No. 967154 (Biltmore Herb No. 8000), No. 1435574 (Biltmore Herb No. 8000), and No. 1435575 (Biltmore Herb No. 8903); these collections are not *Lindera melissaefolium*, but belong to the pubescent form or variety of *Lindera benzoin* to which Palmer and Steyermark have given the varietal name of *pubescens*. Of this variety they say (Annals Mo. Bot. Gard. 22: 545. 1935): "The occurrence of this undescribed pubescent variety has been the cause of considerable confusion and has been responsible for the wide range given in manuals to *Benzoin melissaefolium* (Walt.) Nees which has been credited to Missouri, but which appears to be a rare species confined to coastal plain and piedmont regions of the southeastern states." I find that the pubescent form or variety of *Lindera benzoin* is not uncommon, and from the amount of winterkill of *L. melissaefolium* in the Bladen County plants in the coastal plain I doubt its existence farther north or even in the Piedmont of

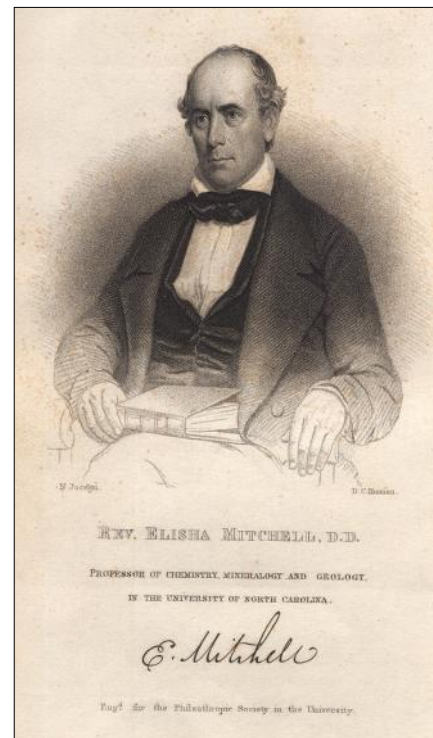
North Carolina; and I think that the notation "Chapel Hill" on the Mitchell plant meant only that it was sent by Professor Mitchell who was teaching at Chapel Hill over a hundred years ago.

*Litsea aestivalis* (L.) Fern.—July 2, 1939, in the same location as *Lindera melissaefolium*. This is the only North Carolina collection in the Herbarium of the University of N. C., though there are other collections from South Carolina and from Florida. In the New York Botanical Garden there are specimens from North Carolina as follows: Loomis, 1834; Wilmington (no date); Beyrich (113), Carolina, in nemoribus arenosis, 1836. Fernald (Rhodora 47: 140-142, 1945) says: "So far as we know *Litsea aestivalis* has not been found in Virginia since Pursh collected it in Southampton County." Bladen County, N.C. is probably the most northern known location of *Litsea* at present. - - -

<sup>1</sup> Presented before the Botany Section of the 51st Annual Meeting of the N. C. Academy of Science at Greenville, May 7-8, 1954.

Ed.: This is an excerpt from the article referenced by Melvin in his 1984 article (page 6).

Melvin, Lionel, 'Some Notes of Rare North Carolina Plants,' *Journal of the Elisha Mitchell Society*, Vol. 70, Pt. 2, pp. 312-314. UNC University Library Digital Collections, *Journal of the Elisha Mitchell Scientific Society*. <http://www.lib.unc.edu/dc/jncas/> (accessed May 20, 2009).



# Pondberry Management Notes

Management notes from January 25, 2007

**Tucker 1983. Status report on *Lindera melissifolia* (Walt.) Blume. Provided under contract to USFWS, Atlanta, Georgia. 41pp.**

Tucker states that at the White Oak site (Bladen Co) plants are shade tolerant, possibly shade dependent, and experienced severe fire damage.

The White Oak site had “an abundance of charred wood fragments on the surface indicating a heavy fire in the past” (p. 16).

Habitat management: “Observations suggest that the species tolerates fairly heavy fire and survives (although not vigorously)” (p. 32.)

Pondberry usually grows in “shaded habitats” with “relatively little herbaceous vegetation” associated with it (p. 14).

***It should be noted that the White Oak population is currently ranked HISTORIC. NHP data states that no plants were located in 1998 (Leblond & Sorrie 1998), nor in 1994 or 1995 (Leonard 1995). Could fire have killed this population?***

***Propagation and Seed Ecology of the Federally Endangered Shrub *Lindera melissifolia* (Pondberry)***  
<http://www.gnps.org/KathyAleric.pdf>

p. 5 “A dense canopy and litter accumulation may prevent seeds from receiving the light needed for germination. In the Southeastern Coastal Plain, fire may have played a role historically by providing suitable microsites for germination by removing leaf litter and decreasing the abundance of competing hardwoods.”

***Laura’s telephone conversation with Jeff Glitzenstein 1/29/07***

Based on Jeff’s experience with Pondberry in the Francis Marion NF, his comments were that:

- Fire ecology is evident and without fire, it can get out competed (particularly with *Lyonia lucida*)
- Its habitat is along the margins of depressional wetlands-where fire is not very frequent
- Too much fire will cause decline & replacement with herbaceous plants
- Population on Conifer Rd & halfway Creek Road was burned on a regular basis (every 1-2 years) and it looks as though the pondberry has declined
- However, over a period of 30-40 yrs with no fire, Honey Hill population in Francis Marion went from 65-70 plants to just a few
- At Pondberry Bay: Clearing trees (loblolly within the bay) should be the first step.
- Kay Kirkman looked at light relationships in the greenhouse, and it generally prefers intermediate light levels

Monitoring:

- At Francis Marion, they had a lot fewer stems to measure than we do
- They used stainless steel tags and tagged every stem, measured height, root collar diameter, distribution of stems, diameter of stems
- Doug Raynor made guestimates of vigor
- Suggestions for our sampling methods: do sub-sampling within each clump

Jeff said he’d be able to meet us at the site to give his expert evaluation of the pondberry there in March, 07.



## Friends of Plant Conservation Calendar

June 29, 2009 Friends assisting with harvest and planting of Venus flytrap seed. 10-15 volunteers are needed and will leave the Raleigh Farmer's Market at 8:00 a.m. Contact Laura Gadd ( [Laura.Gadd@ncagr.gov](mailto:Laura.Gadd@ncagr.gov)) for additional details or to secure your spot on this important team.

July 14, 2009 Friends Board Meeting  
Agronomic Building, Raleigh

Nov. 4, 2009 Annual Meeting of Members  
Cecil Frost and Rob Sutter  
"Thirty Years of Plant Conservation"  
Details to be announced

### NC Plant Conservation Board 2009 Meeting Schedule \*

August 17, 2009, Grandfather Mountain, NC  
November 16, 2009, Winston Salem, NC

### NC Plant Conservation Scientific Committee 2009 Meeting Schedule \*

September 15, 2009, Location TBD  
December 8, 2009, Location TBD

\*If you are interested in attending any of these meetings, please notify Rob Evans at [Rob.Evans@ncagr.gov](mailto:Rob.Evans@ncagr.gov)



*Field Notes* is a quarterly publication of the Friends of the North Carolina Plant Conservation Program Foundation, Inc. The contents reflect the opinions of the Friends, and are not necessarily those of the NC Department of Agriculture.

Articles, photos, and comments are welcome and may be submitted to the Friends at:  
1060 Mail Service Center, Raleigh,  
NC 27699-1060 or via email to

[kathyschlosser@triad.rr.com](mailto:kathyschlosser@triad.rr.com)