



# Elk Lick Echo

Winter 2009

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## Floracliff's Old Trees: Rays of hope for the Inner Bluegrass Region

By: Neil Pederson

The morning Sun was glorious on the shortest day of the year. I rushed to the windows to open the curtains and gather as much of this rare element of Nature as possible. Like the sun during the winter solstice, old-growth forests are a rare element in the Inner Bluegrass Region. So, it was a great delight when old trees were discovered at Floracliff.

Old trees are windows into historical events. The science of tree-ring analysis takes advantage of a characteristic common to all trees: no matter how bad things get - an approaching fire, tornado, drought, etc. - trees must stay in place and absorb these abuses. Though each tree is an individual, environmental events like these impact all trees in a similar fashion: events that limit a tree's ability to gain energy reduce the annual ring width. Scientists interpret patterns of ring widths within tree populations to reconstruct environmental history. To date, tree-ring scientists have successfully reconstructed drought history, Northern Hemisphere temperature, fire histories, insect outbreaks, etc. Tree-ring studies have also enriched human history. For example, scientists have dated logs from ancient structures that, in turn, triggered revisions of human history. Similarly, tree-ring evidence indicates that a severe drought likely contributed to the failure of The Lost Colony in Roanoke, NC and to the outbreak of a highly-contagious disease and subsequent crashes of the human population in ancient Mexico City. Just a few old trees in a small landscape can shed light into long-forgotten or unobserved events.

In late-summer '08, Beverly James contacted me about sampling some trees in Floracliff to gain insight into the preserve's ecological history. Having been in Floracliff previously, I was skeptical that the coring of any trees would reveal much beyond the fact that Floracliff was a young forest heavily cut within the last 100 years. While the initial trees Beverly and Althea Wiggs led me to looked promising, based on the general disturbance history of the Inner Bluegrass Region, I thought 180-200 year old trees would be the best we could do.

In mid-fall, with permission from the state nature preserves commission, twenty chinkapin oaks with external characteristics of old age were selected and cored. Field examination of the cores from the first two trees was intriguing; I hoped that these trees were 180-200 years of age. Fantastically, my field estimates were off by a factor of two: the age of the first tree is at least **372 years** while the second tree is at least **398 years!!** Final ages for these oaks reveals 13 trees pre-dating Daniel Boone & James Harrod (all having an inner ring date of 1759), 10 trees dating to 1697 or earlier, six trees dating to the early-1660s or earlier, and three trees dating to the late-1630s or earlier. The oldest tree, which we have affectionately named The One, dates to 1611 and is currently the oldest-documented tree in Kentucky; it is also the second-oldest documented chinkapin oak globally. Obviously, these results are thrilling.



This Chinkapin oak at Floracliff dates back to 1611.

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I taught a course this semester on the ecology of old-growth forests. A reoccurring theme throughout the course was, “What is an old-growth forest?” As our society progresses and understands the value of biological conservation, this question becomes pertinent. If the definition of an old-growth forest is simply a forest untouched by people of European descent, then there are no old-growth forests and little incentive to protect once, twice or thrice disturbed forests. However, if we define old-growth forests using the philosophy of Michael Pollan, who states that old-growth forests (or anything natural) will only persist because of human will, then it makes sense to allow the influence of humans into the old-growth forest definition. Making this allowance then allows for future creation and restoration of old-growth forests, a concept that the former definition makes impossible.

As the sun now sets on the shortest day of the year, I look to the future months and the additional sunlight they will bring. As this chapter of environmental investigation closes, I look forward to the future of Floracliff and discoveries of the environmental history of the Inner Bluegrass Region. Floracliff is a rare gem of the Inner Bluegrass; it can seed restoration of future old-growth forests while providing hope for the discovery of more forests with similar connections to ancient times. Floracliff will also be the lead forest in the reconstruction of regional environmental and human history. Its trees can help us answer questions such as, “What was the climate like during the settlement of Fort Boonesborough, Harrodsburg and Danville?” and “Were there any large-scale disturbances in the forests of the Inner Bluegrass region during the last 300 years?” The rare old trees of Floracliff will reveal important slivers of historical Fayette County ecology – slivers which will allow us to ponder and construct plans for a more sensible and hopeful future environment.

*Neil Pederson is an Assistant Professor in the Department of Biological Sciences at Eastern Kentucky University*



The population of snow trilliums at Floracliff was started by Mary Wharton.



The cup shape of the scarlet cup fungus serves to catch raindrops, splashing spores out.

### **Flora Focus: Snow Trillium- *Trillium nivale***

**By: Ciara Lockstadt**

One of the first wildflowers to be seen on an early spring hike is snow trillium . This wildflower is named “snow trillium” because it blooms while there is still snow on the ground in March. Snow trillium’s flowers last up to a month, while its leaves can last until August. Snow trillium usually spreads through rhizomous roots and there can be as many as eight flower-bearing stems on one rhizome. Be careful not to trample the leaves after the flower has withered because they provide nourishment to the rhizome through the rest of the year. Since it blooms early in the spring, snow trillium does not usually rely on insects for pollination. However, it can be pollinated by Andrenid bees, queen bumblebees, and other species that are out in the early spring.

Trilliums have three leaves, petals, and sepals. Snow trillium has three snow-white petals and six bright yellow stamens. It is commonly found in mesic upland forests on steep, shaded north-facing slopes. It usually occurs near streams and on soil with limestone or chert parent materials. Snow trillium is an indicator of high quality upland woods.

Snow trillium is listed by the Kentucky State Nature Preserves Commission as a rare plant. There are two other known populations of snow trillium in Kentucky. One interesting fact about Floracliff’s population of snow trillium is that it is not native to the preserve! It was one of many species admired by Dr. Mary Wharton. Thus, she decided to plant it in her preserve, where it continues to prosper today.

### **Fungus Focus: Scarlet Cup- *Sarcoscypha coccinea***

**By: Althea Wiggs**

A discomycete (disc-shaped fungus) harbinger of spring, these bright red outcrops are sights to behold in the still brown of late winter as we ease forward into green and warmer weather. They can be found in leaf litter around fallen tree branches and moist mossy areas. With a brilliant red hymenium, and thin whitish exterior, they sprout up as fungal gems, forming a sometimes perfect cup or saucer shape. Spores are formed on the inner surface of their 1-5 cm wide and .5-2 cm high fruiting body. The cup shape serves to catch raindrops, splashing spores out, with a curvature that also enables wind currents to disperse the spores in a way that is different from most other mushrooms. There is certainly something winsome about these fairy-like scarlet cups.

# Schedule of Events

All events require advance registration. Cost is \$4 per person or \$10.00 per family unless otherwise noted. Most programs last 3-4 hours. Call 859-351-7770 to register or for more information.

## Interpretive Hikes

### **Saturday, January 17th @ 10:00 a.m.: Winter tree Identification**

Warm up on this hike to Elk Lick Creek. Preserve Manager Beverly James will discuss how to identify trees by looking at their bark, buds, and leaf scars.

### **Saturday, February 21st @ 1:00 p.m.: Geo-scavenger hunt**

If you are a fan of geocaching and own a GPS, this hike is for you. It will be a great way to learn more about the preserve and provide fun for the entire family.

### **Saturday, March 7th @ 1:00 p.m.: Mushrooms for beginners**

Beverly James will lead this hike to search for spring mushrooms and discuss their basic identifying characteristics.

### **Saturday, March 21st @ 10:00 a.m.: Signs of Spring**

Join us on this hike to Elk Lick Creek for a chance to see the first wildflowers of spring. It should a great time to catch trout lilies and bloodroot in bloom.

### **Saturday, March 28th @ 10:00 a.m.: Pollinators w/ Blake Newton**

Join Blake Newton, UK Extension Specialist for 4H and Youth Entomology, for a program about pollinators and their relationships with the spring wildflowers.

### **Wednesday, April 1st @ 10:00 a.m.: Mid-week wildflower hike**

This hike will provide an opportunity to catch the spring wildflowers for those with some free time during the week.

### **Saturday, April 4th @ 1:00 p.m.: Medicinal Wildflowers w/ Ciara Lockstadt**

Experience the spring wildflowers of the Inner Bluegrass during this hike. The hike is focused on the historical and present day medicinal and useful traits of plants.

## Volunteer Days - free!

**January 3rd @ 10:00 a.m.**

**February 7th @ 10:00 a.m.**

**March 7th @ 10:00 a.m.**

Volunteer activities usually involve removing exotic plants from the preserve. This is part of an ongoing effort to protect our native species and we rely on the help of volunteers. Other activities may involve trail work or general maintenance. Please call ahead to register and receive more information. Tools and snacks will be provided.

**THE MARY E.  
WHARTON NATURE  
SANCTUARY AT  
FLORA CLIFF**

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*Address correction requested*