



Tennessee Plant Conservation Alliance is Officially Launched

On January 19, The Tennessee Plant Conservation Alliance (TNPCA) held its first organizational meeting and voted to begin work on behalf of the state's plant species. The meeting was held at Cheekwood Gardens in Nashville and included over 25 participants, representing state and federal agencies, botanical gardens, and academic institutions from across the state. I have agreed to serve on its inaugural Steering Committee.

Plant Conservation Alliances are networks of private and public entities that agree to work together to leverage expertise and resources for the common goal of conserving a state's native plants and their habitats. PCAs are project driven and focus on preventing plant extinctions within the state. Tennessee has over 500 plant species that have been identified as being imperiled by TDEC—Division of Natural Areas, which has lead responsibility for plant conservation in the state. TNPCA will now serve as a statewide network of conservation professionals and specially trained volunteers that will actively work together to conserve and restore Tennessee's imperiled plant species and their habitats. Working with the TDEC-Division of Natural Heritage, the TNPCA steering

committee will begin prioritizing native plant species and plant communities for conservation projects this spring.

Georgia has a Plant Conservation Alliance that has been active for more than 20 years. They have been working with surrounding states to encourage the development of new alliances. A year ago, as a guest of Mincy Moffett, C'83, I attended the annual Georgia Plant Conservation Alliance meeting and visited with several of the Alliance partners including the Atlanta Botanical Garden. This past summer, Ashley Block, C'13, worked with me as a Herbarium graduate fellow to help lay the groundwork for the establishment of the Alliance. At the January TNPCA meeting, the group paid tribute to Ashley who was struck and tragically killed by an impaired driver while biking in Athens, Georgia, last fall.

The Sewanee Herbarium is currently seeking funding to establish future post-baccalaureate fellowships that will provide opportunities for Sewanee graduates to participate with the Alliance as it begins its work safeguarding Tennessee's imperiled plant species.

—Jon Evans



Ecology and Biodiversity Honors Theses

The Amelioration of Grazing and Sand Burial through Physiological Integration by a Clonal Dune Plant

My honors thesis work with Dr. Evans has examined the ability of a clonal dune plant, *Hydrocotyle bonariensis* (dune pennywort) to overcome the negative effects of grazing and sand burial through resource integration. Clonal plants reproduce vegetatively by producing copies of themselves (ramets) through the extension of underground stems called rhizomes. Ramets that remain interconnected via rhizomes have the potential to share resources and in doing so allow a clone to become physiologically integrated. Rhizomatous growth

and associated physiological integration can allow a clonal dune species to expand into areas of active sand deposition and potentially compensate for the selective removal of leaves associated with herbivory. *H. bonariensis* is extremely abundant on the barrier islands of North Carolina that have large feral horse populations. Horses consume dune plants, as well as promote sand burial through their trampling and grazing activities. Grazing and burial can be detrimental to a plant's ability to survive, decreasing photosynthetic area and plant biomass. Through two separate experiments, we showed that

(continued on p. 4)

Trails & Trilliums

APRIL 7-8-9, 2017

GUIDED HIKES • ART FOR THE PARK • NATIVE PLANT SALE • LIVE MUSIC
PROGRAMS & WORKSHOPS • WINE & WILDFLOWERS • VENDORS • FOOD

Brought to you by: *Friends of South Cumberland*
www.trailsandtrilliums.org

The 14th annual Trails & Trilliums Festival will take place April 7, 8, and 9 at the Monteagle Sunday School Assembly. This popular event is an important fundraiser for the Friends of South Cumberland State Park, supporting Tennessee's largest state park.

The annual ART for the PARK art show and sale opens at 5 p.m. Friday evening and continues throughout the day on Saturday. 2017's ART for the PARK party, benefitting Friends of the South Cumberland, is themed "This Land is Your Land," and will include a casual dinner with beer and wine bars.

On Saturday, the ART for the PARK will continue, vendors will have booths, and Overhill Gardens will have a broad variety of native plants for gardeners. Programs designed for family fun include Birds of Prey, Fairy Houses, and Natural Dye Making with native plants.

All weekend long—Friday, Saturday, and Sunday—both casual and dedicated hikers can explore the natural wonders of the South Cumberland Plateau with a series of guided hikes, led by some of the area's foremost naturalists. Check trailsandtrilliums.org to learn more.

Saturday night, participants gather for Wine and Wildflowers to

discuss their weekend adventures and to honor the 2017 Trails and Trilliums Award winner, the Southeastern Climbers Coalition, for their work in helping the Friends protect the new Denny Cove area of South Cumberland State Park. State Naturalist Randy Hedgepath will conclude the evening's program with Appalachian Storytelling.

Admission to the Assembly grounds is free; a pass that includes ALL hikes and daytime programs is \$20; admission to Friday night's ART for the PARK is \$40; admission to Saturday night's Wine & Wildflowers is \$15 (all prices per person). An "all-access" pass is available for \$75 per person. Visit trailsandtrilliums.org for more details.



Calendar, continued from page 3

Garlic Mustard Pull

**April 25 (Tuesday of Earth Week), 2–5 p.m.,
Office of Environmental Stewardship and
Sustainability-sponsored activity**

Join in the annual campaign to control this invasive exotic plant that is threatening to take over some sensitive areas of our forest. It is easy to pull (even good to eat when young and tender!). No equipment is necessary but work gloves would be a good idea. Meet at Morgan's Steep. Come when you can and work as little or as long as you wish.

Piney Point

Sat., April 29, 1 p.m., Yolande Gottfried

The community of plants that grows on the sandstone outcrops along the trail to Piney Point, including the rare elf orpine, is a special one. This moderate one-to-two hour walk begins at the tennis courts at St. Andrew's-Sewanee School (beyond the football field).

Nature Journaling

The Herbarium sponsors a nature journaling group that meets Thursdays, 9–11 a.m. led by Mary Priestley. All are welcome. Email Mary for more information.

All times are CDT.

Wear appropriate shoes on all of these walks. Risks involved in hiking include physical exertion, rough terrain, forces of nature, and other hazards not present in everyday life. Picking flowers and digging plants are prohibited in all of the above-mentioned natural areas.

For more information on these or other Sewanee Herbarium events, please call Yolande Gottfried at the Herbarium (931.598.3346) or by email at ygottfri@sewanee.edu. A map of meeting place locations is available at sewanee.edu/media/offices/herbarium/sewanee_herbarium_maps.pdf.

Friends of the Sewanee Herbarium

The Friends of the Sewanee Herbarium support the work of the Herbarium: education, research, and conservation. A \$10 annual contribution would be very much appreciated. The date of your most recent contribution is printed on your address label.

Name and address (if different from that on the mailing label on the back):

Amount enclosed: \$10 Other: \$ _____

Please mail checks (made payable to The University of the South) to:

Attn: Gift Records
The University of the South
735 University Avenue
Sewanee, TN 37383



Others who might like to receive *The Sewanee Plant Press*: _____



Spring 2017 Calendar of Events

Collins Gulf West Hike

Sat., March 18, 9 a.m., Mary Priestley

This section of the South Cumberland State Park rivals our own Shakerag Hollow for diversity and abundance of spring wildflowers. Wear sturdy footwear, pack water and lunch, and bring cameras! Meet at the Collins West trailhead in Gruetli-Laager. Six miles, moderate to strenuous with 600-foot elevation change. For directions to the Collins West trailhead, call the South Cumberland State Park Visitors' Center (931.924.2980).

Shakerag Hollow

This is Sewanee's "Mecca" for wildflower lovers. Go once—or several times to watch the spring come through.

- Sun., March 19, April 2, 1 p.m., Mary Priestley
- Sat., April 15, 1 p.m., Yolande Gottfried
- Sat., April 22, 1 p.m., Jon Evans—Celebrate Earth Day with a walk among the abundant and diverse spring wildflowers of this partly old-growth forest area.

For all walks, meet at the Green's View parking lot (past the golf course). Two miles, moderate to strenuous, with one fairly challenging incline.

Roark's Cove

Sat., April 1, 1 p.m., Yolande Gottfried

A private property at the base of the plateau is being made available for a wildflower walk to see some species not seen on the upper plateau, such as Virginia bluebells (*Mertensia virginica*) and possibly some early shooting star (*Dodecatheon meadia*), as well as trilliums and much more. Meet at the Sewanee tennis courts' parking lot (on Green's View Road behind the Sewanee Inn) to carpool or caravan to the location of this easy to moderate walk.

14th Annual Trails & Trilliums Festival

Friday–Sunday, April 7–9

**Monteagle Sunday School Assembly
Monteagle, Tennessee**

A description of this event is included elsewhere in this issue of *The Sewanee Plant Press*. Herbarium staff and volunteers will assist with hikes on the Monteagle Assembly Stagecoach Road (North Nature Trail) Sat., April 8, 9–11:30 a.m. and 1–3:30 p.m. See the Trails & Trilliums website, www.trailsandtrilliums.org/hiking.html, for details about these and other hikes. Numbers are limited and pre-registration is encouraged.

King's Farm

Sunday, April 9, 1 p.m., Jon Evans

Dr. Jon Evans (Biology) will lead a walking tour of the King Farm site on the Domain. This remote tract of forest on the Domain was once the site of Sewanee's first homestead, the location of a major stagecoach hotel, a large working farm and finally a pine plantation before reverting back to native forest. Meet at the Bishop's Common (on the Sewanee campus) and vans will shuttle participants out to the site. Tour will last about two hours. The event is free. Max. number of participants is 30. If you would like to attend, please sign up by sending an email to mgf@sewanee.edu.

67th Annual Spring Wildflower Pilgrimage

**Great Smoky Mountains National Park
April 11–15**

Mary Priestley will lead nature journaling workshops on Wednesday as part of the Pilgrimage program of events. Please see www.springwildflowerpilgrimage.org for more information. Registration online is recommended.

THE SEWANEE PLANT PRESS

The Sewanee Herbarium
Dr. Jon Evans, Director
Department of Biology
The University of the South
735 University Avenue
Sewanee, TN 37383

WEBSITE

sewanee.edu/offices/herbarium

EDITOR

Mary Priestley
marypriestley@bellsouth.net

CONTRIBUTOR

Jon Evans
jevans@sewanee.edu
Shelby Meckstroth
meckssh0@sewanee.edu
Katie Kull
kullka0@sewanee.edu
trailsandtrilliums.org

CALENDAR

Yolande Gottfried
ygottfri@sewanee.edu

COMPOSITOR

Tammy Elliott

Drawings, by Mary Priestley, are of wild geranium, hydrocotyle, hepatica, Southern red trillium, and bloodroot.

HERBARIUM PUBLICATIONS

Fiery Gizzard: Voices from the Wilderness
and *What If Trees Could Walk?*

HERBARIUM BLOG

sewaneeherbarium.wordpress.com

(continued on p. 3)

SEWANEE

THE UNIVERSITY OF THE SOUTH

Sewanee Herbarium
Department of Biology
735 University Avenue
Sewanee, TN 37383-1000

ADDRESS SERVICE REQUESTED



Honors Theses, continued from page 1

resource integration within clones allows *H. bonariensis* to successfully expand into areas of high herbivory and high levels of sand deposition. Our research suggests that rhizomatous growth and physiological integration are traits that provide a clear adaptive advantage to plant species growing in heterogeneous environments such as coastal dunes.

—*Shelby Meckstroth, C'17*

Changes in Biomass Accumulation over Forty Years in Two Nutrient-limited, Upland Temperate Forests

The focus of my research has been the assessment of living aboveground biomass in long-term forest census plots located in Franklin State Forest (FSF) and Fall Creek Falls State Park (FCF).

I have been involved with this project in Dr. Evans's lab for nearly two years now, spanning field data collection in 2015, data entry and analysis, presentation of preliminary findings at the Botanical Society of America's Botany 2016 conference in Savannah, Georgia, and now in the preparation of my ecology & biodiversity honors thesis. The origins of this dataset, however, reach back to George Ramseur and other members of the 1970s Tennessee Valley Authority study designed to assess ecological impacts of emissions from the Widows Creek coal burning plant. Plots in FSF and FCF represent the range of Cumberland Plateau upland forest habitat and have been sampled variously over the 40 years since the study's initiation. What this dataset represents is a complete census over several hectares of all trees with a diameter of ≥ 3 cm in the late 1970s and the mid-2010s, giving us an incredible

opportunity to observe what is happening in plateau forests. Using national-scale biomass equations, I have been able to calculate aboveground living biomass in FSF and FCF based on the diameters of trees surveyed. I found that while the forests had similar biomass estimates in the 1970s, they have since diverged, with FSF increasing significantly more than FCF. Biomass estimates for FSF are also higher than expected when compared to other studies of broadleaf, temperate forests growing on sandy soils. Factors such as forest age, compositional shift through succession, and increased atmospheric CO₂ can affect biomass aggradation in eastern forests, and may account for the disparity between FSF and FCF.

—*Katie A. Kull, C'17*