Summer Field Courses in the Natural Areas

During the summer of 2015, we offered four Biology field courses based at Maywoods. Throughout the courses, investigations also took place Taylor Fork and Lilley Cornett Woods. We had students and professionals throughout the state and southeast region enrolled. The courses were Wetland Design and Restoration Techniques, Field Botany, Field Ichthyology, and Ecology for Teachers. An integral part of the Wetland Design and Restoration Techniques course was helping to restore a historic wetland at Maywoods. Funding and work on the project was provided by the US Fish and Wildlife Services and the Amphibian and Reptile Conservancy through the Sheltowee Environmental Education Coalition and Tom Biebighauser. The Ecology for Teachers class was also involved in a service learning project in which they used lichen as bioindicators to monitor air quality in eastern Kentucky. This project was funded through an EKU Funded Scholarship Grant. The class took data at 4 different sites including, Maywoods and Lilley Cornett Woods. The data will be uploaded to the Hands on the Lands website.

This summer, we are offering the following courses: Wetland Design and Restoration Techniques, Field Ornithology, Ecology for Teachers, and Wetland Assessment and Monitoring. These courses again will make use of Taylor Fork, Maywoods and Lilley Cornett Woods as a living learning laboratory. Contact Stephen Richter (stephen.richter@eku.edu) for more information.

Updates: Maywoods Environmental and Education Laboratory

We welcome Jacob Klein as the new attendant at Maywoods. Jake is a former intern and Recreation and Parks Administration EKU graduate. We are excited to have him on our staff. Maywoods had another wonderful year providing programming for school groups, serving EKU classes, student organizations and community groups. The summer courses were a success and included, Field Botany, Field Ichthyology, Wetland Design and Restoration, and Ecology for Teachers. During the Wetlands class the students participated in the restoration of an historic wetland in the field below dam.

The Natural Areas and Floralcliff Nature Preserve collaborated to host a Bioblitz at Maywoods in June. Scientists and volunteers were able to identify 344 different species of plants and animals—139 species of plants, 37 were new to list; 45 species of birds, 21 fish, 4 reptiles, 4 amphibians and 131 invertebrates. In April, the Natural Areas staff and volunteers got together for a service project to remove bush honeysuckle from along the entrance to Maywoods. All the visible bush honeysuckle is gone and monitoring this invasive species will continue. New trail tag markers were installed on the Ridge trail last fall. This 4.2 mile trail is beginning to get more use.

Updates: Lilley Cornett Woods Appalachian Ecological Research Station

A variety of groups have used Lilley Cornett Woods for educational and research purposes this past year, including the Southeast Community and Technical College, Bluffton University, Radford University, and Whitesburg Elementary School. In collaboration with Regina Donour, Letcher County High School and Mitch Whitaker of the Letcher County 4H Extension Office, we provided environmental education programs for 300 students from Letcher County High School in collaboration this past October. These students participated in water quality investigations, learned about raptor rehabilitation and of course, hiked in the old growth forest. Maintenance of the grounds at LCW is important. This past spring, our manager retired his old Ford 3000 Tractor and replaced it with a new Kubota L3301 Tractor.

Long Awaited Goal Realized

In fall 2015, the Lilley Cornett Woods Research and Learning Center and Bunkhouse was completed and was opened for business. Thanks to the National Science Foundation and President Benson, these facilities will provide a venue for researchers, faculty and staff and community members to continue their investigations of the natural world in and around Lilley Cornett Woods. The Center has wet and dry laboratories and will facilitate studies for EKU faculty and other researchers that might otherwise not be possible. The dry laboratory provides teaching space for 24 students. The wet lab seats 12 and is outfitted with basic laboratory equipment. The adjacent housing, which will sleep 10, provides critically needed sleeping quarters. This has been a major obstacle for conducting research and bringing classes to this remote portion of Kentucky. Additionally, we are nearing the final stages of purchasing an adjacent property, which includes 80 acres and a home that sleeps 10–12.
Promoting Environmental Education in Our Service Region

The Center has the following 4 goals:
1. To provide environmental education training for the preserve and inservice teachers on a local and regional level.
2. To coordinate regional services with other institutions of higher learning.
3. To develop environmental programs and curriculum.
4. To conduct and evaluate research in environmental education, and assist the community in understanding environmental issues.

CEE operated with the assistance of 2 grants this year that helped the Center’s environmental education goals. They were:

- NASA College Grant and Fellowship though Northern Kentucky University: Increasing the Number of Qualified STEM Educators Through the Use of Interdisciplinary STEM Theme of the Environment $40,000. This 3 year grant employed 4 undergraduate science and elementary pre-service teachers, Abby Perry, Victoria Bristow, Athena Deaton and Jeremy Hacker to help with environmental education programming and development a math and physics modules. They also attended and presented at the Kentucky Association for Environmental Education and Kentucky Science Teachers Associations annual meeting.

- Florida Department of Environmental Protection, Watershed Service Learning Experiences for Middle School: $5,000. In April 2015, 240 sixth and seventh grade students from two different middle schools, Lincoln County Middle School in Stanford and Model Laboratory School in Richmond, KY completed two field trips with a service learning experience at Maywoods. These experiences took place over three different days. The service learning experience included, three different experiences tied directly to the fall field experiences: 1) mitigating ATV damaged sites, 2) building a settling pond in an outflow creek and 3) developing posters on non-point source pollution to distribute in the community.

The following grants are funded for 2015-16. Kentucky Environmental Education Council:
- Land Legacy and Learning 4: $1,148. These funds are helping to support the inclusion of environmental education in the instruction of preservice teachers within the state. In addition, this funding will be used to develop a strategy for approaching the Kentucky Professional Standards Board to include environmental education as a part of a preservice teacher training program.

KAEE and KUPEE: Addressing Climate Change Statewide Through Concerted Community-based Initiatives. $6,469 Solicit, select and support community projects that utilize evidence-based strategies to increase public knowledge of climate change. Community grants will be distributed around the state and supported by the Center for Environmental Education (CEE) at the local postsecondary institution.

Updates: Taylor Fork Ecological Area

Taylor Fork Ecological Area continues to be used for research, class field trips, outreach, and recreation. There were over a thousand visitors whom took close to 500 excursion through TFEA during the past year. In May, Natural Areas co-hosted a two-day birding workshop in partnership with Floraciff Nature Preserve. In the fall, students in a Wildlife Management course developed a draft Management Plan for the site. Thanks to Facility Services and Lilley Cornett Woods, Taylor Fork acquired a riding mower, a tractor and a bush hog, as well as barn space to keep them in.

Natural Areas Research Highlights

Student Grant in Aid Program

The EKU Division of Natural Areas is pleased to announce the availability of funding for students (both EKU and non-EKU), up to $500 plus free lodging if needed, to conduct research at one or more of EKU’s natural areas as part of the study: Maywoods Environmental and Educational Laboratory, Lilley Cornett Woods Appalachian Ecological Research Station, and Taylor Fork Ecological Area. The deadline to apply is 23 March 2016. Guidelines for proposals and more information can be found at: http://naturalareas.eku.edu/student-grant-aid-program. To date, we have funded twelve research projects!

Projects funded during the 2015–16 academic year

Chelsea Perkins, undergraduate student Biological Sciences, “Fine-scale monitoring of running buffalo clover (Trifolium stoloniferum) restoration populations at Taylor Fork Ecological Area,” Mentor: Dr. Jennifer Koslow.

Lauren Childress, graduate student Biological Sciences, “Comparison of the application of two herbicides as a management strategy for running buffalo clover (Trifolium stoloniferum),” Mentor: Dr. Jennifer Koslow.

Lameca Hussain, undergraduate student Biological Sciences, “Amphibian community of man-made vernal pools on the ridge tops of Maywoods Environmental and Educational Laboratory,” Mentor: Dr. Stephen Richter.

Dustin Brewer, graduate student Biological Sciences, “Biological, contexts, and possible functions of Blue Jay vocalizations,” Mentor: Dr. Gary Ritchison.

Ongoing Research Projects

Lilley Cornett Woods Appalachian Ecological Research Station

Fine-scale factors influencing terrestrial amphibian diversity in a low-elevation old-growth forest in central Appalachia, Alex Baecher & Dr. Stephen Richter

Population ecology of Wehrle’s salamanders, Jake Hutton & Dr. Stephen Richter

Maywoods Environmental and Educational Laboratory

Vascular Flora and Plant Communities of Maywoods Environmental and Educational Laboratory, Dr. Ralph Thompson, Kentucky College Herbarium

Amphibian communities of ridge-top wetlands at Maywoods Environmental and Educational Laboratory, Lameca Hussain & Dr. Stephen Richter

Differences in tree regeneration between recently logged and undisturbed forest plots at Maywoods Environmental and Educational Laboratory, Joseph Galisiz, Dr. Brad Ruhfel, & Dr. Stephen Richter

Taylor Fork Ecological Area

Vascular flora of Taylor Fork Ecological Area, Thomas McFadden & Dr. Brad Ruhfel

Persistence and Variability of Snag Resources at Taylor Fork Ecological Area, Caitlin Davis & Dr. Luke Dodd

Development of a point-count approach to monitor bat diversity using an acoustic system at Taylor Fork Ecological Area, Victor Holbrook & Dr. Luke Dodd

Monitoring small mammal and bird communities, Dr. David Brown & WLD 328 class

Winter Ecology of Eastern Towhees, Megan Martin

Identification and condition survey of ash trees, Katelyn Welch

Fine-scale monitoring of Running Buffalo Clover restoration populations of TFEA, Chelsea Perkins & Dr. Jennifer Koslow

Running Buffalo Clover restoration strategies, Drs. David Brown & Jennifer Koslow, Alex Baecher & Dr. Stephen Richter

Restoration of Giant Cane in the Bluegrass Ecosystem, Dr. Julian Campbell & William Overbeck

Below are publications resulting from research conducted using Lilley Cornett Woods as a study area for regional research, 2014–15 present. To date, 44 publications have resulted from research at LCW.


