

Connecting Undergraduate Research and Service at a University Outdoor Learning Center to the Curriculum



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Introduction

Given to Capital University in 2005, the Primmer Outdoor Learning Center was established to foster biological and related research experiences and to promote creative learning opportunities for the students, faculty, alumni, staff and friends of the university. The field site, 45 minutes from Columbus, Ohio in the Hocking Hills region of Appalachia in Logan, is a 74-acre property with 7 distinct ecosystems. As the first holder of the Primmer Distinguished Professorship, my charges are to develop courses and to design student research experiences at the Center.

The Primmer Outdoor Learning Center



Located near Logan, Ohio (SE Ohio) approximately 45 miles from the Capital University Bexley, Ohio campus.

Total land area = 74 Acres.

- Includes seven ecosystems across five major areas:
- A: Pasture and old field habitats
 - B: Pine/spruce plantation and old field habitats
 - C: Temperate deciduous forest and groundwater springs
 - D: Wetland, heron rookery, and bald eagle nest
 - E: Riparian forest and Hocking River System

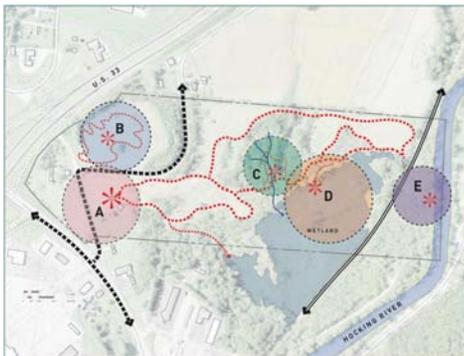


Image from Master Plan (2012) BHDP and The Edge Group

Progress During the First Year

Research:

- Student-centered research projects focused on vertebrate wildlife biology, biodiversity, and population genetic structure
- Conducted with support from internal and external small grants, an external fellowship from the National Wildlife Federation on Appalachian Forests, and from the endowment
- Students received course credit for individual study
- Disseminated at campus annual symposium and local scholarly conference in wildlife management

Teaching:

- Used as a field site for lab activities in various courses such as Biology, Chemistry, and Environmental Science
- Recently developed new activity to give students hands-on experience that can be integrated into a number of courses including Ecology, Environmental Science, and Research Methods with the goal of collecting long-term data

Plans for the Upcoming Year

Service:

- Create an avenue for our Honors students to engage in service-related capstone experiences through a partnership with local STEM K-12 schools where our students act as research fellows for their students
- Enhanced coordination to explore service opportunities with ESO, our campus Environmental Service Organization
- Work with local boy scout troops on eagle scout project to build and hang southern flying squirrel boxes

Outreach:

- Engage the local community near the Center through programs established in Appalachia region of Ohio
- Organize event at the Center with the help of our Campus Engagement office

Visibility:

- Exploring possibilities including an article in campus or local newspaper, feature story through campus media office, and student research seminar series

Long-Term Goals and Challenges

- In the future, I want to find inventive ways to integrate research and service at the Center into our curriculum, and to increase the visibility of efforts at Primmer with a website
- The biggest challenge, besides funding to cover mileage, is to find new and inventive ways to integrate research and service at Primmer into our curriculum to save on faculty time and to enrich student learning at a primarily teaching institution.

Examples of Research, Teaching, and Field Activities



Survey of reptile biodiversity across multiple habitats with support of NWF Appalachian Forest Conservation Fellowship.



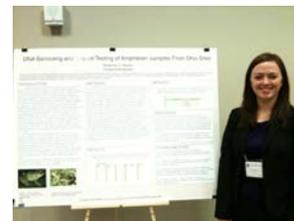
Long-term study of population dynamics of white-footed mice as part of a Research Methods course and individual study research projects.



Chemical analysis of surface water nitrates [NO₃] and phosphates [PO₄] in Environmental Science course.



New activity using point quarter method to compare forest tree composition across habitats to be integrated into an existing course.



Project on DNA barcoding and chytrid disease testing of amphibians disseminated at Ohio Fish and Wildlife Management Assoc. conference.



DNA extraction and PCR in the lab to discriminate between closely related species for individual study credit.

Acknowledgements

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