

A Campus Nature Center: A Community Education Resource

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Abstract

Since 1989, the Ohio State University—Marion has offered tours and programs in nature education centered on a nine-acre reconstructed tallgrass prairie located on its campus. Working with modest funds generated by an endowment and relying largely on student workers, the Nature Center supports the campus academic program, provides an educational and research resource for its faculty and community teachers, and is a general resource to the community. It serves several thousand people annually. The experience gained on outings to the Prairie and its associated programs helps instill an appreciation for science and nature that enhances the lives of the participants and helps them make informed decisions. Moreover, many participants are area school children on class field trips. For them, this is their first concrete, inviting experience with an institution of higher learning, and such visits may be the means by which they become aware of the opportunity to eventually attend college at OSU—Marion or elsewhere.

Ohio Prairies: Valuable, Uncommon, And Endangered

A tallgrass prairie is a community of certain native perennial grasses, wildflowers, and associated animals, inhabiting a dry treeless area (Kline, 1997). During pre-settlement times, prairies covered about 20%, or 75,000 acres of Marion, Crawford, and Wyandot counties (often called the Sandusky Plains), but today less than 100 acres of prairie remain (Troutman, 1981). Not a native remnant, the Prairie at OSU—Marion is a planted prairie restoration initiated as a biology teaching resource by an OSU professor and his students in 1977 using plants and seeds from a naturally occurring prairie remnant located along a railroad track

about four miles from campus (Cusick and Troutman, 1978).

Prairies provide a vision of what our landscape was like in pre-settlement times and also support a wealth of wildlife species. Thus, they are of considerable interest and appeal to the public and environmental scientist alike. Many characteristic species such as prairie dock, false white indigo, and various coneflowers are strikingly beautiful wildflowers that thrive with minimal amounts of water and nutrients and so are increasingly being used to establish self-sustaining vegetation on disturbed sites. According to informational brochures and posters published by the Ohio Department of Natural Resources, several animal species such as the Regal Fritillary butterfly, Grasshopper Sparrow, and Thirteen-lined Ground Squirrel have become endangered or threatened in Ohio because of the loss of grasslands. The Sandusky Plains once contained numerous patches of prairie, and so it is a significant part of our natural and historic heritage. Prairie plants contributed to the formation of many Midwestern soils that form our nation's breadbasket.

Heart Of The Program: The Prairie Plant Community

The Prairie is a nine-acre area located in the approximate center of the 180-acre campus of OSU—Marion. It is bordered on three sides by agricultural land leased to a local farmer and also lies adjacent to our library and classroom building. Dominant plants include big bluestem, Indian grass, prairie dock, Ohio spiderwort, and various coneflowers. A network of mowed walking paths crosses the Prairie. A centrally located pond fringed with wetland vegetation contains abundant algae, frogs, and sunfish. Adjacent to the pond is a well with a windmill-driven pump that supplies water to the pond and provides water for our gardens. The focal point for group activities at the Prairie is the shelter house, an open-air, roofed structure enclosing picnic tables, storage closets, and a fireplace. Constructed of unfinished wood and covered on top with cedar shakes, the shelter house has a pleasing natural appearance that complements the Prairie landscape. There is no electricity or water service at the shelter house or anywhere else at the Prairie. Demonstration tours, school visits, and management tasks are also undertaken mainly by the coordinator and 2–5 paid students of various majors working as Prairie tour guides. Prairie tours for elementary school students on class field

trips are our most extensive, well-known and consistently implemented outreach activity. One favorite program is Pioneers on the Prairie, which emphasizes the tools used by early settlers. Elementary school programs typically take place in two sessions. The first session, in the classroom, introduces the guide and the concepts. The second session, about a week later, is a field trip to the Prairie. In some instances, a local teacher chooses to engage in a Natural Science Partnership, wherein an especially skilled guide makes regular repeated visits to the classroom, delivering hands-on science instruction in a variety of topics, such as weather, botany, astronomy, insect study, animal tracks, and fossils. (Presently the student partner receives only monetary payment for his or her services, but it is hoped that someday there may be a credit-earning experience for education majors.) In addition, the Prairie is used regularly as a field site by OSU—Marion biology classes for plant and animal identification and ecology. The peaceful, visually rich surroundings and the welcoming atmosphere of the shelter house have led several classes in the humanities, including art, creative writing, and history to meet there during the warmer months.

Specialized Management

The current climate of Ohio with rainfall sufficient to support tree growth and the presence of nearby woods that serve as seed sources are factors that could affect a change in vegetation from prairie to woodland. At our Prairie, the main woody invaders are early successional plants, such as blackberries, dogwood shrubs, and a variety of tree seedlings. Another serious plant threat comes from especially aggressive herbaceous plants that in establishing a foothold could spread and exclude the prairie plants. To help control the woody plants and impart a few other benefits as well, the staff of the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, burns the Prairie in the spring every few years. Most weed control, however, is labor-intensive year-round work carried out by a combination of hoeing, hand pulling, and the selective application of herbicide.

The Expanding Prairie: Restoration Ecology Research

In accordance with statements of purpose and intention recorded by earlier administrators of the Prairie Nature Center and OSU-Marion, interested members of our campus and community advocate and hope to acquire administrative consent to gradually increase the size of the Prairie to 20–25 acres. This larger Prairie will increase its value as an educational resource in the following ways:

1. Expansion may attract grassland birds that the present Prairie currently lacks.
2. Expansion will add microhabitats for plants and small animals, thereby increasing diversity and better illustrating ecological principles of competition, symbiosis, and habitat-specificity.
3. By minimizing the relative amount of disturbed “edge,” enlargement will decrease the invasion of weeds and thereby make management easier.
4. Expansion will allow burning on rotational cycles, thereby providing a refuge from fire for important insects, spiders, and their kin.
5. The inspiring, peaceful, and inviting open landscape of the site presently results not only from the Prairie but also from the extensive adjacent agricultural fields which in all likelihood will someday be developed. A larger Prairie is necessary to retain the open peaceful quality of the area that visitors find so inspiring.

The expansion is currently ongoing in small increments of 1/2 to 1 acre per year with using hand-planting of greenhouse-grown seedlings, and broadcast seeds collected from several locations on and off-site.

The Prairie is the site of student and faculty research in improving methods to restore and enhance the diversity of reconstructed prairies. This work includes a comparison of the effectiveness of three site preparation techniques prior to planting an uncommon goldenrod species into a disturbed portion of the Prairie as well as the use of reverse fertilization to deliberately impoverish soil and thereby potentially favor prairie vegetation over weedy old field species. The Prairie is also a focal study site for the Ohio Spider Survey. As an on-campus research site, the Prairie is also used as a teaching laboratory and helps our faculty biologists meet the multiple and often conflicting demands of their

positions. Moreover, as the Prairie is used for undergraduate and graduate-level research projects, it serves as a link with the main campus.

Difficulties Inherent In Operating A Nature Center At A Regional Campus

The student coordinator, in association with the director, is responsible for most operations of the Center: scheduling tours, designing publications, budgeting, training, program development, overseeing conservation activities, compiling statistics, purchasing and maintaining equipment and supplies, site management and planning, drafting proposals, publicizing programs, and assigning tasks to be performed by the other workers. Such activities require an appreciable range of skills not frequently possessed by lower-division undergraduates. Moreover, it requires more time than the 20 hours per week allotted for student workers. As our programs grow, it may be necessary to move from a student worker to a full-time staff member as coordinator. Similarly, leading Prairie tours and presenting science lessons in classrooms require levels of scientific knowledge, interest in and commitment to a challenging task, and amounts of free time possessed by very few beginning college students. Consequently, staffing is often in a state of crisis. Hopefully, opportunities to work as Prairie tour guides will become more appealing to our elementary education majors who could gain valuable experience and familiarity with their potential future employers and audience, the local schools.

Presently the Prairie is largely undeveloped except for the open-air shelter house. This structure is appropriate for a nature center and a welcome contrast to land-use trends that are eliminating natural areas. However, the comfort and educational needs of visitors might be better served by a small, carefully sited one-room laboratory classroom, with attached restroom, to serve as the site of presentations and hands-on activities for up to 25 students. Looking out over the Prairie, this facility would contain semipermanent displays on prairie history and ecology, graphic projection capability, and tables for group laboratory activities. Each Prairie visit could therefore include, in addition to the field hike, an illustrated introductory presentation and some follow-up detailed individual study such as microscopic identification of plankton, or flower dissection.

Summary

A campus nature center is an effective way for a regional campus to serve the community. It highlights a unique aspect of local natural history, brings school children and their teachers to campus, and makes the campus a more beautiful, inviting place. Furthermore, as a laboratory, classroom, and research site, it supports faculty endeavors as well as providing an avenue for collaboration with colleagues on the parent campus. A nature center, however, requires tremendous amounts of time and specialized knowledge which are difficult to sustain using lower-level undergraduates as the primary workers. Properly investing in staff and facilities and highlighting the benefits of the tour-guiding experience to education majors may overcome the difficulties and allow the nature center to thrive.

References

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Biography

Robert (Bob) Klips is an assistant professor of evolution, ecology, and organismal biology at The Ohio State University—Marion, where he also directs the Marion Campus Prairie Nature Center. He welcomes visitors to this unique natural area and would appreciate hearing from anyone with advice on securing funding, attracting dedicated student workers, and strengthening institutional and community support for the Prairie. Klips can be reached by e-mail at klips.1@osu.edu.