

# Environmental management at BRV

In addition to entrepreneurship, the Edward Lowe Foundation has a mission of environmental stewardship, reflecting Ed Lowe's great love of the land.

Big Rock Valley (BRV), which serves as the foundation's headquarters, draws its name from the large number of boulders left behind by receding glaciers from the Ice Age. The property began with a 160-acre parcel that Ed purchased in 1964; today it comprises 2,000 acres of woodland, farmland, wetland and prairie.

"Due to the variety of different habitat types that are found at BRV, it is able to fill the life requirements or 'niches' for a large number of species of plants and animals," says Jarod Reibel, conservation stewardship land manager at the foundation. "One of our main priorities is maintaining these diverse native landscapes, along with the populations of animals that use them, paying particular attention to those threatened or endangered species."

## Woodland management

The property is home to about 700 acres of woodland — the majority being northern mixed hardwoods, such as maple, beech, oak and hickory.

To show the impact of different styles of woodland management, the foundation's environmental team has developed adjoining demonstration plots. These plots range from hands-off practices to high intensity timber production, with the majority of acres managed for diversity and sustainability. Although trees that reach a diameter of about 22 to 24 inches (known as economic maturity) are typically harvested, at BRV it's common to see



*One of many spring-fed creeks at Big Rock Valley that contribute to the property's biodiversity.*

trees more than 30 inches in diameter.

"We hope to prove that sustainable forestry practices with diversity of species can be almost as profitable in the long run as managing for only high value timber varieties," says Jay Suseland, the foundation's director of grounds maintenance.

Among innovative practices, the foundation engages in old-growth management for about 100 acres of its woodland.

Unique ecosystems that are rarely seen, even in state and national forests, old-growth woodlands are basically no-harvest areas. Some thinning may be done for health or spacing reasons, but these cut trees and logs are left in the woods to decay.

A few characteristics of old-growth woods include: trees of all ages, open areas of light that occur when mature trees die or blow over, craters resulting

from the rootballs of fallen trees and lots of large, decaying logs.

These decaying logs are one of the most important components of old-growth woods. They create a sponge effect and keep the area moist, even in dry periods, as well as slowing down wind and evaporation along the surface of the soil.

## Prairies and savannas

Maintaining BRV's biodiversity calls for a number of habitat enhancement initiatives. One of these is the restoration of prairies, which were once widespread in southern Michigan until European settlers in the 1800s converted this original ecosystem to agricultural land.

"Prairie grass provides important food and cover for wildlife, including many grassland birds," points out Suseland. "And because of the

wildflowers that flourish in the ecosystem, prairies also serve as a food source for insects, which in turn, provide food for the other wildlife species using the habitat.”

With that in mind, the foundation has an aggressive program to restore native prairie vegetation. Experimental patches of prairie plants were started in 1994, and now there are 300 acres with 100 different species of grass or forbs.

Similar to prairies, savannas are another disappearing ecosystem. A mosaic of open grassland and scattered trees (ranging from 4 to 50 per acre), savannas serve as the primary habitat to many animals, including the redheaded woodpecker, a species of special concern.

The foundation’s environmental team is also developing savannas in four areas of BRV — an endeavor that requires hours of thinning out existing brush before prairie grasses can be planted.

### Prescribed burning

Prairies and savannas are among fire-dependent habitats; without regular burning they revert back to woodlands. To prevent that from happening, the foundation’s environmental team

conducts periodic prescribed burns. This reduces the buildup of dead vegetation, stimulates native grasses and flowers and retards growth of nonnative, invasive plants.

“Even in just a few years, woody and invasive species start to become present in prairies, and burning them allows us to keep these systems healthy,” says Reibel. “It’s easy to tell what prairies have been burnt recently, as they appear healthier and more robust than those that have gone several years without the disturbance of fire.”

### Habitat enhancement

Another activity aimed at biodiversity is the creation and maintenance of vernal ponds — small ponds that measure about 30 to 60 feet in diameter with depths ranging from 6 inches to 6 feet or more.

Because these wetlands are fed by intermittent water supplies, such as rain runoff and seasonal springs, they dry up and don’t support fish. Without fish to eat eggs and larva, these ponds are a safe haven for many amphibians to reproduce in.

Aspen regeneration stands are another example of habitat enhancement activities at BRV. A



*Prairie conservation strips are being tested at BRV to help improve soil quality in cropland.*

short-lived tree with a lifecycle of 30 to 50 years, aspen has a low timber value in southern Michigan (causing many foresters to either ignore it or discriminate against it), but a high value for wildlife. Because aspen won’t tolerate shade and the individual trees share a common root system, they need considerable care to reproduce. To aid in their growth, the foundation builds tall fences to enclose the stands and protect the aspen from browsing deer.

In 2001 the foundation began to develop a formal inventory of species at BRV, starting with reptiles and amphibians. In recent years, this inventory has been expanded to include plants and birds.

Today BRV is home for more than 30 varieties of amphibians and reptiles, with several species that are threatened or of special concern, such as the eastern massasauga rattlesnake and the Blanding’s turtle. The property also features more than 700 varieties of plants and 115 bird species.

“Inventories are critical from a land management standpoint because they serve as a base line or benchmark,” Reibel explains. “Without knowing what we have — or don’t have — on the property, we wouldn’t be able to truly understand our successes or failures.”

## Encouraging environmental stewardship

The Edward Lowe Foundation often hosts events for groups that share environmental objectives and ideals.

For example, The Nature Conservancy has held board meetings and strategic planning sessions at Big Rock Valley (BRV), and the Michigan Prescribed Fire Council has conducted training seminars on the property.

The foundation also makes BRV available to outside researchers for projects that will expand the knowledge base of conservation science. Among these, a group of zoo researchers began a study on massasauga rattlesnakes in 2009.

Graduate students from Michigan State University and other higher-ed institutions have conducted projects at BRV. Partnering with these researchers has enabled the foundation to learn more about habitats and species at BRV and raise our land management standards.

We also allow groups from schools and community organizations to visit the property for learning opportunities. Through all of our outreach activities, the foundation strives to inspire good environmental stewardship.

*To learn more, visit [www.edwardlowe.org](http://www.edwardlowe.org).*