

Environmental management at BRV

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

"Because of its different landscapes and ecosystems, BRV has a wide variety of animals, plants and insects," says Mike McCuistion, vice president of physical resources at the foundation. "Nurturing the diverse native populations found here is one of our main priorities — with particular attention given to threatened and 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 trees more than 30 inches in diameter.

"We hope to prove that sustainable



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

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 grounds maintenance manager.

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 probably one of the most important components of old-growth woods," explains McCuistion. "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 150 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 currently 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.

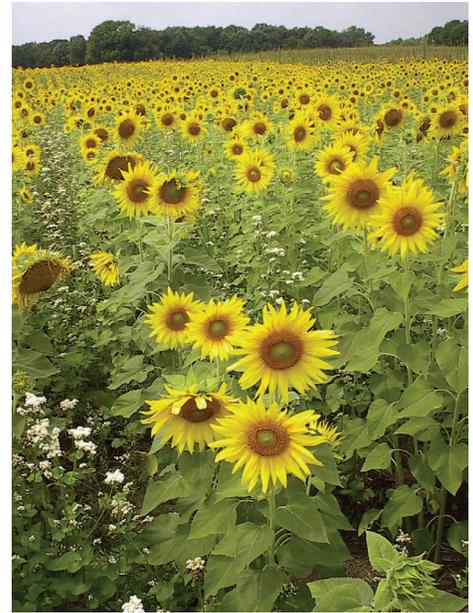
“We’ve achieved some excellent results,” says McCuiston. “If you saw two patches next to each other, it would be easy to tell which one had been burned because of the increased growth and stand vigor.”

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 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



Sunflower food plot at Big Rock Valley.

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.

Collecting this information is crucial for habitat management, McCuiston says. “Certain species have specific ecosystem needs,” he explains. “This is especially true for listed species, which often have diminished in numbers because of habitat loss or degradation. Being aware of the species population on the property helps us respond to their habitat needs and make decisions that support a healthy ecosystem.”

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 a number of 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.

Other outreach activities include allowing school and community groups to visit the property for learning opportunities.

“Through our environmental practices and activities, the foundation strives to inspire good environmental stewardship,” says Mike McCuiston, vice president of physical resources.

To learn more about the Edward Lowe Foundation, visit www.edwardlowe.org or call 800-232-5693.