



Because of its network of more than seven miles of trails and the guidance available from a site naturalist, the Fernald Preserve is an ideal spot for reinforcing concepts that students have learned in their classrooms.

Visitors Flock to the Remediated Fernald Preserve

More than 17 000 community members have enjoyed the Fernald site and Visitors Center since it opened to the public in 2008, and outreach activities continue to ensure that the site's relevance to the community and the U.S. government are maintained and enhanced.

By Gary Stegner and Stacey Elza

During the Cold War, the Fernald Preserve, in southwestern Ohio, was the site of the U.S. Department of Energy's uranium foundry, where uranium ore was converted into high-quality uranium products. Today, after a \$4.4 billion restoration, the site has been transformed and is completing a circular path where the land has been returned to its natural state. Land once walked by Native Americans, tilled by settling farmers, and used by the U.S. government as part of the Cold War machinery is now a tranquil haven for flora, fauna, and nature enthusiasts. Prairies, wetlands, hiking trails, wildlife habitat, and a Visitors Center that is among the most environmentally friendly buildings in the United States have replaced the former uranium foundry. More than 17 000 community members have enjoyed the site and Visitors Center since it opened to the public in 2008, and outreach activities continue to ensure that the site's relevance to the community and the U.S. government are maintained and enhanced.

Involving the Community

The Fernald Preserve proves that land once considered to be beyond reclamation can become an asset to the community. This is fitting, because it was the community that helped drive Fernald's remediation. The environmental cleanup was not triggered until 1984, when uranium contamination was discovered in drinking-water wells on properties adjacent to the site. Because of the ensuing public outcry—coupled with the easing of international tensions—the DOE decided to end uranium production at the site and begin the massive environmental cleanup. The cleanup was completed in 2006. It complied with standards that the community, regulators, the DOE, and their cleanup contractor established and that the U.S. and Ohio Environmental Protection Agencies approved. The DOE's Office of Legacy Management now manages the property.

During the remediation process, the DOE made sure to acquire the community's input on how the site should



▲ Uranium was produced at the Feed Materials Production Center from 1952 until 1989.

The Fernald Preserve continues its transformation to presettlement conditions with the passing of each season. ►

be used in the future. The public's feedback helped lead to the decision to turn the site into a natural area that included vegetative communities similar to those present in presettlement southwestern Ohio, to restore the natural stream characteristics and aquatic systems, and to create prime wildlife habitat. The public also pushed for the outreach activities that have made the site so valuable today.



Partnering with Schools

Among the Fernald Preserve's most successful outreach activities is teaching area students about ecosystems. Fernald is continually expanding its environmental curricula to meet the needs of educators in the region. Fernald's curricula comply with the educational grade-level achievement standards the Ohio Department of Education has established. During the 2009–2010 school year, nearly



A bone yard off a trail's edge allows students to observe—and smell—decomposition in action. Dead animals found onsite are used to restock this area, which is in a constant state of decay.



A volunteer from a nearby park presents a program on raptors before an evening hiking event. Partnering with local organizations with similar missions has increased visibility for the Fernald Preserve.

1000 students took advantage of the educational opportunities offered at the site. The Visitors Center has hosted home-schoolers; elementary, junior high, and high school classes; and college students. Birds, reptiles and amphibians, forest and prairie life, and groundwater are just some of the topics students can explore. The curricula also provide hands-on experience for students at all grade levels. For example, in 2010 for the third consecutive year, a senior honors seminar class from a nearby high school used the Fernald Preserve as an outdoor laboratory. The class members focused their studies on amphibian populations in mitigated wetlands. The students presented their findings to the Fernald Preserve staff at the end of the school year, and the data they gathered were cataloged and added to the site's ecological database. Feedback from students and educators has been universally positive: "This was one of my favorite field trips in ten years!" . . . "Very educational and hands-on, this will leave a long-lasting impression on my students." . . . "It was wonderful, educational, and addressed our Ohio standards perfectly!"

Bringing History to Life

Students aren't the only ones who learn something when they visit the Fernald Preserve. History buffs would find the Visitors Center exhibits particularly illuminating. The exhibits depict the history of the Fernald property and fulfill the vision of Fernald's neighbors and stakeholders, who wanted Fernald's story to be told. Visitors can learn how uranium was processed at Fernald and shipped to other sites for use in reactors, see what the site looked like during its 40 years of uranium production, hear the stories of men and women who worked at the Fernald Feed Materials Production Center (as it was



When "feed" materials left Fernald, they were in the form of finished fuel cores or cylindrical billets, which were re-shaped or finished at other DOE sites.

called), and learn how the site was once a city unto itself, with its own water-distribution system, fire department, road system, and rail network. The site featured a 136-acre production area that contained more than 300 buildings, including 10 large chemical-processing and metals-production plants. During its peak production years, Fernald had 19 acres under roof, as well as 4 miles of railroad track and the equivalent of 20 miles of paved roads.

Building Responsibly

Those interested in sustainability would also have much to learn from the Visitors Center. The building was constructed inside what was once a warehouse used during the



Former production-era workers and their children and grandchildren enjoy navigating through the uranium-production process. Interactive exhibits in the Visitors Center allow visitors to more fully understand the complex issues involving the land and its many uses.



On the summer solstice, the sun rises over the site's onsite disposal facility and aligns with the axis wall that cuts through the Visitors Center. This architectural feature was a significant factor in receiving all available innovation and design points from the LEED program, making it Ohio's first platinum-level certified building.

site's environmental cleanup. The University of Cincinnati's College of Design, Architecture, Art, and Planning developed plans for the renovation of the building by DOE's prime contractor to the Office of Legacy Management, the S.M. Stoller Corporation. Because of the careful planning that went into the building's renovation, the Visitors Center became the first building in Ohio and DOE's second to receive platinum-level certification from the U.S. Green Building Council through its Leadership in Energy and Environmental Design (LEED) program, a nationally accepted benchmark for the design, construction, and operation of high-performance green buildings. The Visitors Center's environmentally friendly features include a ground-source heating and cooling system and a zero-discharge biowetland, where water, plants, microorganisms, and the environment interact to treat the building's wastewater.

Welcoming Wildlife

The Visitors Center may be the centerpiece of the Fernald Preserve, but Fernald's outreach activities are not confined to it. Visitors are also drawn to the land itself. Now that the site has been restored, it provides more than 1000 acres of unique wildlife habitat in a surrounding community dominated by agriculture and residential development.

Since the site's remediation began in 1999, Fernald has planted nearly 50 000 trees and shrubs and another 30 000 tree seedlings. Large portions of the property were seeded with prairie grass.

The depressions left from removing contamination under former production buildings were converted into wetlands and ponds. In addition, eight separate wetland areas were established. The Fernald property is now one of the largest manmade wetlands in Ohio, comprising approximately 140 acres of wetlands.

Restoration expanded the Paddys Run floodplain in three locations and enhanced natural stream habitat. Like most other streams in southwestern Ohio, Paddys Run, which forms the property's western boundary, had been significantly altered due to channeling, erosion control, and the removal of sand and gravel. In most instances, existing development prevents the restoration of natural streams' functions, but because a relatively large tract of undeveloped land was available at the Fernald site, the Paddys Run renovation could be more extensive than usual.

These extensive renovations have lured many birds to the Fernald Preserve. To date, more than 200 species of birds, including 90 nesting species, have been seen at the site. The restored prairies have attracted such locally rare nesting species as Henslow's and grasshopper sparrows, dickcissels, blue grosbeaks, and bobolinks. The wetlands and ponds attract large numbers of migratory waterfowl and shorebirds and host nesting mallards, wood ducks, blue-winged teals, and hooded mergansers.

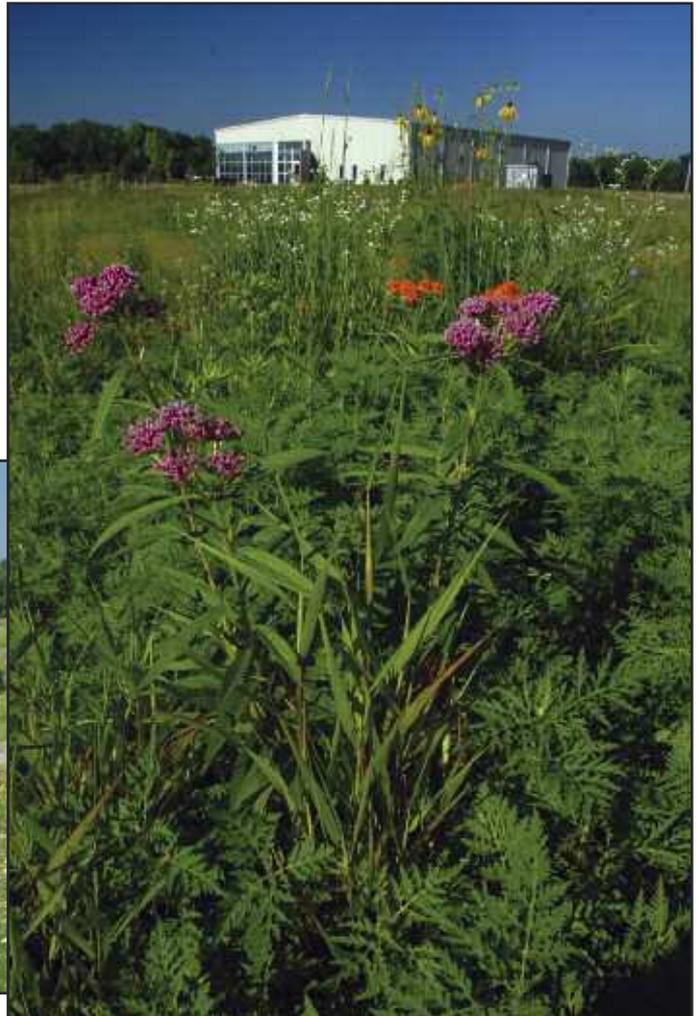
Such abundant wildlife makes the site a prime destination for nature enthusiasts. Birdwatchers armed with binoculars hike the network of trails on their own or participate in the routine bird counts. Gardening enthusiasts examine the historically accurate grasses and plants, which were identified in an 1819 land survey of the area. Children in particular en-

The Fernald Preserve Visitors Center was completed in August 2008 and was the first building in Ohio, the second in the DOE complex, and one of less than 100 worldwide to receive platinum-level certification through the U.S. Green Building Council's LEED program.





Planting templates for the Fernald site were established using a variety of literature, including an 1819 land survey. Input from technical experts, current flora databases, and surveys of existing natural habitats in the Fernald Preserve area also helped to identify plants and grasses that are native to the region. This information formed the foundation for ecological restoration designs.



joy the Bone Yard, where the remains of deer, raccoons, squirrels, and other animals native to the area have been put on display and left open to the elements—and accessible to predators. And visitors of all stripes stop to observe the scenery from any of several viewing platforms.



The site's ecological restoration is transforming the Fernald Preserve into a haven for wildlife. Fernald has become a destination for area bird-watchers. To date, more than 200 species of birds, ranging from waterfowl and shorebirds to wild turkeys and songbirds, have been observed at the site.

Community Asset

The DOE established the Office of Legacy Management to provide a long-term, sustainable solution to the legacy of the Cold War. The Office of Legacy Management is responsible for managing activities at sites where DOE's mission and active environmental cleanup has been completed. The Fernald Preserve is an example of DOE's commitment to ensure the future protection of human health and the environment while adding relevance and context to a complex story. "Through community involvement and the dedication of thousands of workers," said Jane Powell, Fernald site manager, Office of Legacy Management, "guests can enjoy the Fernald Preserve's new undertaking as a site that promotes nature and reflection." ■

Gary Stegner works in Community Relations and Stacey Elza works in Publications Services, both for S.M. Stoller Corp. The Fernald Preserve is open daily from 7:00 a.m. to dusk, and the Visitors Center is open Wednesday through Saturday from 9 a.m. to 5 p.m. Additional information on the Fernald Preserve is available at www.LM.doe.gov/Fernald or by contacting the Fernald Preserve by e-mail at Fernald@LM.doe.gov.