

DEER GROVE EAST: Restoring an Historic Forest Preserve

In the Cook County Forest Preserves, Deer Grove East, located in suburban Palatine, stands out for one simple reason: its spectacularly varied landscape. A hike carries you through prairie, oak savanna, woodland, and wetlands. And those wetlands—numbering more than 20—are amazing. They attract birds, improve water quality, control erosion, mitigate flooding, store carbon, and support a wealth of plant and animal life.

Historically, wetlands were considered nothing more than swamps to be gotten rid of. During the nineteenth and early twentieth centuries, farmers in the Chicago area routinely installed drainage tiles to siphon off water to create fertile agricultural land.

BY CHRISTOPHER JOHNSON

But with the emergence of the field of ecology, scientists began to learn just how important wetlands are for many reasons, including biological diversity and flood control. Over the past three decades, ecologists and volunteers have worked together to reclaim wetlands throughout the Chicago area.

Deer Grove East is one of the most successful of those restoration efforts. It's also been an enormous challenge, not least because of the complex political and economic processes that were involved. In fact, the restoration might not have happened at all except for a seemingly unrelated development—the construction of new runways at O'Hare Airport.

Cycle back a few years to 2004. That was when the City of Chicago finalized the O'Hare Modernization Project (OMP) to reconfigure the airport by building new runways. The planned expansion, though, had a problem—the destruction of approximately 100 acres of federally protected wetlands.

Under federal and state law, these wetlands had to be replaced, or mitigated. Linda Masters is a Restoration Specialist for Openlands, an environmental organization founded in 1963 to protect and restore the natural and open spaces in northeastern Illinois. Masters explains,

“For every one acre that was lost, two acres had to be restored.”

The OMP paid \$26.4 million to identify and restore wetlands in the Chicago area. The cost of restoring Deer Grove East has been \$4.5 million, and an additional \$885,000 has been spent on stewardship. The government agency responsible for overseeing the wetland mitigation projects has been the U.S. Army Corps of Engineers. Masters explains, “Openlands had done some work with the Army Corps before, so we applied for that project, and we got it. We had an agreement with the City of Chicago, which funded it.”

Openlands received more than 30 proposals for wetland mitigation projects, and after careful consideration, it decided on five, including one at Midewin National Tallgrass Prairie, two in Will County, and two in Cook County, including Deer Grove East. Each project had to restore at least 25 acres of wetland.

Deer Grove East had been environmentally degraded by farming, grazing, fire suppression, and the installation of the agricultural drainage tiles, which interfered with the hydrology—the natural flow of water. According to Masters, “We were very interested in Deer Grove East because Deer Grove West was the very first preserve that was acquired by the Forest Preserve District of Cook County [in 1916]. We were attracted to that site; it was just a great project.”

At first, Openlands wasn't confident that they could identify 25 acres for wetland restoration. The Forest Preserve is very busy, with an asphalt trail making a circuit around the preserve. Openlands had to design the restoration so that people could still use the asphalt trail and other recreational facilities during restoration. To help solve the problem, they broadened the scope of the project and approached it holistically as restoration of the entire landscape, including prairie, oak savanna, and woodlands.

Since 2009, more than twenty wetlands have been restored at Deer Grove East in Palatine. Unique signs created by Openlands guide visitors through the Preserve. Photos courtesy of David Bart (Stantec) and Openlands





Hiking trails at Deer Grove East carry visitors past wetlands and through woodlands, prairies, and oak savannas.

To manage the project, Openlands selected Stantec, a corporation based in Edmonton, Canada. Aaron Feggstad, a Senior Ecologist for the company, explains, “We have about 3,000 employees who specialize in environmental sciences. Ecosystem restoration is a core focus area.”

Starting in 2006, Openlands and Stantec conducted a detailed planning process. Masters says, “One of the key challenges was that this is a very popular preserve. People use the walking trails and the pavilions. It was our challenge to do this restoration in full view of the public while they used the site.” Openlands and Stantec also had to be sure that restoring the wetland would not lead to flooding in the residential neighborhoods surrounding the Preserve.

In addition, they were going to be cutting down trees. In the 1960s and 1970s, the Cook County Forest Preserve District had planted numerous trees in areas not suited ecologically to woodlands. Openlands felt that it was crucial to prepare people in the community for the cutting of trees and other changes at the Preserve. “Before we even got started,” Masters says, “we had several open houses, where we put up maps of our plans to describe the project to people.”

The key to reviving the wetlands was to restore the hydrology. Feggstad says, “The process was, number one, to figure out where wetlands had been located. You get more credits for restoring areas that were once wetlands versus enhancing existing wetlands.”

Stantec did a test by disabling some of the tiles so that they could see how the wetlands responded. “It seemed like it would work,” Masters recalls.

However, the ecologists managing the project had to be careful that disabling the drain tiles would not lead to flooding of the trails or the surrounding neighborhoods. “What we ended up coming up with was pretty innovative,” Feggstad says. “We had to develop valving systems and systems of berms and additional drainage to capture excess drainage that could then be routed underneath the path.”

Once the planning phase was completed in 2009, actual restoration work started in the spring of 2010. As water filled the basins and returned areas to wetland, the next step was to restore the natural plant species that characterize wetlands in the Chicago area. Non-native species like canary grass, cattails, and purple loosestrife had invaded the Preserve.

To determine the kinds of plants that were native, the ecologists used reference wetlands that had similar soils, landscapes, and hy-

drology to Deer Grove East. They ended up installing an astounding 84,000 plant plugs and using hundreds of pounds of native seed.

Volunteers played a major role in this work. The Deer Grove Natural Area Volunteers had existed for many years, but volunteers working on the restoration formed a new group—Friends of Deer Grove East. Mark Krivchenia, the Steward at Deer Grove East, says, “It was a great collaboration. I think the volunteers felt very much a part of the process.”

Stephen Packard, one of the pioneers of ecological restoration in the Chicago Area, helped to train volunteers. Krivchenia explains, “Early on, we played the role of supplementing what the contractors were doing. We would be feet on the ground, looking for invasive weeds and working on the edges of the restoration area. We were going all over the place locally to capture seeds—rare seeds that they couldn’t purchase because they just didn’t exist.” He adds that the wet-

lands “came back beautifully.”

One huge benefit has been to restore biodiversity. According to Masters, “We now have 500 different native plants out there. Some of them came back on their own. We did a lot of planting. We probably spent a million dollars in planting and feeding plants.”

The restored vegetation, in turn, supports greater diversity of animal life. “By restoring that base,” Masters emphasizes, “you attract that much more wildlife. And I think people find it much more interesting to look at.”

Along the way, Stantec conducted annual bird surveys. “What we found overall was pretty amazing,” Feggstad says. “By 2012, we had a pair of sandhill cranes start nesting. By the end of 2015, which was the last monitoring year, we had 25 bird species of greatest conservation need. Species like Henslow’s sparrow, bobolinks, and red-headed woodpeckers have returned to the Forest Preserve.”

The wetlands also absorb rainwater that might otherwise run off into the surrounding neighborhoods and flood basements. Feggstad explains, “Between the wetland work, the drain tile work, the hydrological restoration, the conversion of the Eurasian plant community to prairie, and the removal of buckthorn, the hydrological benefit was something like 20 million gallons a year less discharge off the site.”

Visitors to Deer Grove East today greatly appreciate the aesthetic improvement. According to Masters, “Most of the comments I got were pretty positive. About a year into the process, people said, ‘I was so scared at first, but now I just love it!’” What’s more, the project came in under budget, freeing up resources to fund restoration work at Deer Grove West.

Mark Krivchenia emphasizes the positive outcomes of the volunteer experience. People learn skills such as identifying plants. They also make new friends and develop a sense of community. He says, “People are addressing that great sorrow we all have as conservationists about what we’ve done to the planet. Instead of taking a hike in the wilderness, you’re actually working to heal some of the damage that humans have caused.”

After a few years, Friends of Deer Grove East merged with Deer Grove Natural Area Volunteers. Some volunteers focus on Deer Grove East, while others focus on Deer Grove West. Folks who are interested in volunteering can go to the Cook County Forest Preserves web site (<https://fpdcc.com/volunteer/ecological-stewardship-workdays/>) and volunteer for workdays. You can also visit the Deer Grove Natural Area Volunteers page on Facebook or contact the group directly at deergrovenav@gmail.com. □