

4 MINUTE READ

Eugene Field Park Restoration Project



from **Engineering With Nature: An Atlas, Volume 1.**

by **US Army Engineer Research and Development Center**



Chicago, Illinois, United States

The Chicago River was once a wide, slowly moving marshland that supported a variety of wildlife with its lush aquatic plant communities of reeds, sedges, and rushes. Over time, the city of Chicago's development led to the relocation and the channelization of the river's north branch that runs diagonally through the sixteen-acre Eugene Field Park. The riverbed was also paved with concrete to transport water downstream more rapidly. The unintended consequences of these engineering decisions were that the river depleted the marshes, the life-giving marsh vegetation was destroyed, and the area became particularly vulnerable to flooding. In 2011, the U.S. Army Corps of Engineers (USACE) Chicago District (LRC) contracted ENCAP, Incorporated, to restore the wetlands. Completed in 2014, non-native plant and tree species were replaced with native specimens; 150-year-old, native white oaks were preserved in a natural oak savanna environment; and rock riffles were constructed across the river to stabilize upstream riverbanks and provide valuable aquatic habitat. The project earned the 2014 Conservation and Native Landscaping Award from Chicago Wilderness for outstanding efforts to address environmental

problems and restore lost function and native biodiversity in the Chicago region.

Article cover: Pickerelweed with blue flag iris at Eugene Field, 2014. (Photo by Sarah Gross, U.S. Army)

Producing Efficiencies

The park is now an ecological preserve in the heart of Chicago that residents value not only for its aesthetic appeal, but also for its role in helping to mitigate local flood effects. One way the project maximized operational efficiencies was by reusing the removed fill from the wetland to build up an adjacent ballfield out of floodplain—all while restoring the site's hydrogeomorphology. Restoration of the wetlands also included determining groundwater levels for low periods and river flooding effects for high periods. Additionally, a water control structure was engineered to allow the floodwaters to naturally drain from the wetland once flooding recedes.

Using Natural Processes

The ecologists and engineers used clues from the former ecosystem to help design restoration actions that removed ecological stressors, such as wetland fill, and allowed natural processes to restore the native wetland habitat, which will function as temporary floodwater storage. The stream's habitat was restored with the installation of riffle structures—a riffle is usually a component of a natural river's anatomy. The riffle structures reduce shear stress and stream power on the stream banks and naturalize sediment bedload transport, thus reducing potential for future streambank erosion. The planting plan of the site restored the site's native plant communities (wetland, riparian, prairie, and oak savanna), which are tolerant of flood disturbances and provide abundant food and cover for resident and migratory animals. The native plant communities are also largely self-sustaining, reducing operation and maintenance costs of the site.





Yellow coneflowers at Eugene Field, 2014.

(Photo by Sarah Gross, U.S. Army)

Broadening Benefits

The project removed 20,000 cubic yards of fill from the floodplain; a noticeable difference during small flood events has already been observed. Social benefits included a new, drier adjacent ballfield. The project also provides educational opportunities for hundreds of local schoolchildren annually: Eugene Field Park House now has an onsite Ecolab for children. Restored native plant communities provide food and shelter for both migrating and resident wildlife.



Red-winged blackbird at Eugene Field, 2014.

(Photo by Sarah Gross, U.S. Army)

Promoting Collaboration

Collaboration was implemented through phone calls, face-to-face meetings and site visits (walk-throughs) with the local sponsor and local residents during all phases of the project, such as planning, design, and construction. Some initial concerns were focused on the adjacent ballfield and the loss of the open land—which was mowed grass—where the wetland was to be restored, because these areas were used as play areas by pet dogs. Some local residents also had misconceptions that the team was destroying an ecosystem, rather than restoring one. Local non-profit environmental groups, such as the Friends of Chicago River, supported the project from the start. The project now carries whole-hearted support.



Eugene Field Ecosystem Restoration Project, 2013.

(Photo by USACE Chicago District)



More articles from this publication:



MacDill Oyster Reef Shoreline Stabilization

3min pages 124-127



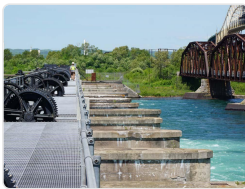
Conclusion

4min pages 265-268



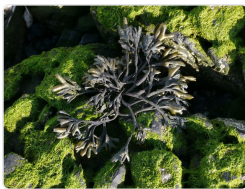
Mud Mountain Fish Passage

4min pages 260-263



Soo Locks Fish Habitat Restoration

4min pages 256-259



Rich Revetments: Enhancing Hard Substrates for Ecology

4min pages 252-255



Fowl River Private Living Shorelines

3min pages 248-251



Houtrib Dike Pilot Project

3min pages 244-247



Cleveland Harbor East Arrowhead Breakwater Demonstration Project

3min pages 240-243

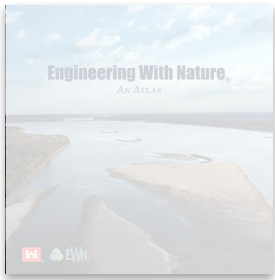


Milwaukee Harbor Breakwater Fish Habitat Demonstration Project

3min pages 236-239

Show more

This article is from:



[Engineering With Nature: An Atlas, Volume 1.](#)

by [US Army Engineer Research and Develop...](#)



Issuu Inc.

Create once,
share everywhere.

Issuu turns PDFs and other files into interactive flipbooks and engaging content for every channel.

 English 

Company

[About us](#)

[Careers](#)

[Plans & Pricing](#)

[Press](#)

[Blog](#)

[Contact](#)

Resources

[Developers](#)

[Elite Customer Program](#)

[Publisher Directory](#)

Issuu Platform

[Content Types](#)

[Features](#)

[Flipbook](#)

[Industries](#)

Redeem Code

Terms

Privacy

DMCA

Accessibility

