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# Northerly Island



from **Engineering With Nature: An Atlas, Volume 2.**

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



## Chicago, Illinois, United States

Converting a private airport into a haven for wildlife. In 1909, Daniel Burnham envisioned Northerly Island as a lakefront haven for the public on the shores of Lake Michigan in downtown Chicago. The 37-hectare peninsula was constructed in 1920 but spent 57 years of its history as a concrete desert until 2003 when its stint as a private airport ended. The island had no aquatic connection to Lake Michigan and consisted mostly of turf grass, resulting in no habitat diversity and little overall ecological value. So in 2012, the U.S. Army Corps of Engineers (USACE)–Chicago District proposed transforming 16 hectares of the island into re-creations of the six habitats native to the Chicago region: lacustrine, dunal pond–lacustrine lagoon, emergent marsh, wet prairie, mesic prairie, and savanna. They moved 160,000 cubic meters of material, excavating a pond and connecting it to Lake Michigan, building up savannas, and planting a range of native vegetation—275,000 plugs, 11,800 shrubs, 400 trees, and 150 kilograms of seed. USACE completed construction in 2020; and now Northerly Island is a thriving, natural oasis for people and wildlife alike, all amid the Chicago skyline.

Article cover: Looking north over the newly restored pond and prairie with the Chicago skyline in the background. (Photo by USACE Chicago District)

## Producing Efficiencies

The team removed no materials from Northerly Island, instead reusing them across the restoration. They preserved a historical timber fish crib, discovered during the pond's excavation, as additional fish habitat and used the asphalt remains of the airport to contour the rolling hills of the oak savanna. They then topped the hills with sand and soil excavated from the pond. The tallest of the hills sits at over 10 meters above the lake, providing striking views of the downtown Chicago skyline while protecting the island from both the winds coming off Lake Michigan and the noise pollution from the city.



Native foxglove beardtongue (*Penstemon digitalis*) attracts pollinators.

(Photo by USACE Chicago District)

## Using Natural Processes



Chicago historically was rich in biodiversity, with different habitat types found in close geographic proximity. The project team aimed to replicate this by building a diverse range of habitats to meet the needs of a diverse range of species—over 300 species of birds alone nest in, migrate through, or overwinter in the Chicago region, which sits in the Mississippi Flyway. Already, the new pond and lacustrine littoral habitats provide refuge and more habitat diversity than the bottom of Lake Michigan. Furthermore, the team planted 350 native plant species, including several state-listed plants, to prevent erosion at the site.



The restored habitat is used by various bird, as evidenced by this clutch of killdeer eggs found on the island in 2017.

(Photo by USACE Chicago District)

## Broadening Benefits

Residents and visitors now use the island for biking, hiking, bird watching, and fishing; and the Chicago Parks District offers various programs at the park, including educational opportunities at the outdoor laboratory. The



numerous habitats, especially the rarer emergent marsh habitat, are thriving. In 2015, the project team discovered 20 black buffalo (*Ictiobus niger*) in the new lagoon, which is only the fourth recorded occurrence in southern Lake Michigan. One of these now resides in Chicago's Shedd Aquarium. Additionally, the lagoon is home to the statethreatened banded killifish (*Fundulus diaphanus*) and several other uncommon native lake fishes.



Dunal pond and emergent marsh habitats under construction in 2013, facing eastward toward Lake Michigan.

(Photo by USACE Chicago District)



Mesic prairie restoration immediately after planting seed in 2013, facing northwest into downtown Chicago.



(Photo by USACE Chicago District)

## Promoting Collaboration

The Chicago Park District partnered with USACE to implement the restoration piece of their Northerly Island 2010 Framework Plan under the Great Lakes Fishery and Ecosystem Restoration (GLFER) program. They worked with experts from the National Audubon Society, Field Museum, Openlands, the Forest Preserve of Cook County, and the Shedd Aquarium to design the rolling hills, dunal pond, and other habitats and to select the most suitable native plant species for each. This successful collaboration and the resulting wildlife oasis and living laboratory it will produce led the team to win the 2012 Model Project Award from the Illinois Department of Natural Resources.



Illinois's only native prickly pear (*Opuntia humifusa*) grows on a sandy hillside in the project area in 2018.

(Photo by USACE Chicago District)



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13min pages 19-29

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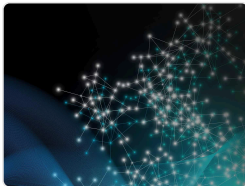
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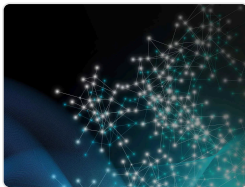
2min pages 310, 318-319

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2min pages 310, 316-317

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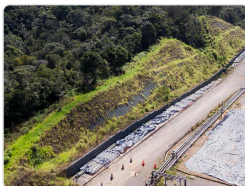
2min pages 310, 314-315

**Ecosystem Services Identification and Inventory**

2min pages 310, 312-313

**Cypress Reforestation**

4min pages 306-309

**Matarandiba Island**

3min pages 302-305

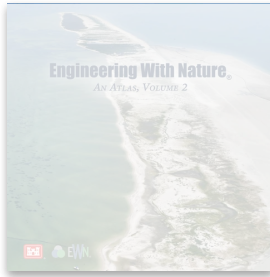
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