



Read ▾

Features ▾

Use Cases ▾

Learn ▾

Pricing

Log in

Sign up

5 MINUTE READ

Braddock Bay Restoration



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

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



Lake Ontario, Greece, New York, United States

Over the past 200 years, significant portions of original Great Lakes coastal wetlands have disappeared; 123 acres of emergent wetland—shallow-water wetland with herb and grasslike vegetation—were lost in Lake Ontario’s Braddock Bay alone. The U.S. Army Corps of Engineers (USACE) Buffalo District (LRB) implemented the Braddock Bay Ecosystem Restoration Project to save and reestablish 340 acres of this large coastal wetland area. The final project plan enhances existing wetland habitats for fish and wildlife and protects these areas from erosive forces that would lead to further loss. Implementation of the Braddock Bay Ecosystem Restoration project began in 2016 with Phase I of the project, which is now complete. It included the excavation of approximately 10 acres of channels and potholes within the existing marsh; invasive plants were also removed from the area. These actions will increase vegetative diversity and improve Braddock Bay’s fish and wildlife habitats. Phase II, slated to be completed in 2018, includes the dredging of the boat channel, the construction of a barrier beach to protect the bay from future erosion damage, additional

treatment of invasive hybrid cattails and phragmites, and the creation of new emergent wetlands.

Article cover: The USACE, with the contractor, Wesson Group LLC, constructed the Braddock Bay Ecosystem Restoration Project located in Greece, NY, on the Lake Ontario shoreline. (Photo by USACE Buffalo District)

Producing Efficiencies

To improve resiliency of Braddock Bay's coastal wetlands, a barrier beach in the form of a breakwater with nature-based features was constructed. The barrier beach provides the same protections that the historical natural barrier beach provided at this location. The barrier beach was constructed using a long rubblemound breakwater to form the backbone of the beach with two rubblemound terminal groins attached. Next, a three-acre headland beach was constructed; finally, two headland rubblemound breakwaters were built. The newly constructed barrier beach has reduced interior wetland erosion and restored the natural littoral drift processes for lake sediment; it also contributed to turning some Braddock Bay areas back into low-energy systems.

Using Natural Processes

Barrier beach protection, which gradually eroded away over the course of time, was documented at Braddock Bay as far back as the 1800s. For this project, a barrier beach was constructed in the mouth of the Bay to attenuate wave energy and function as the Bay's historical sandspits once did. A network of channels and potholes were also excavated across 10 acres in the existing marsh to improve the diversity of physical conditions that would lead to a more varied vegetative community. The barrier beach will protect the existing wetlands from erosion and restore Braddock Bay to a low-energy system. Lower wave energy and reduced turbidity in the water of the Bay is expected to enhance and expand the diversity of the existing submerged aquatic vegetation community. With a more than 90 percent drop in activity since 2005, the local marina had suffered a large cut in revenue and Bay-area property values have been threatened; this restoration project should eventually lead to increased activity at the marina as well.





Monitoring of native plant species that have recolonized as a result of the project's implementation.

(Photo by USACE Buffalo District)

Broadening Benefits

Habitat diversity and augmented protection of emergent marsh habitat will lead to numerous social, environmental, and economic benefits. The prospect of engaging in much-improved wildlife-dependent recreation activities, such as hunting and birdwatching, will draw enthusiasts to the area. There has already been a documented 90 percent increase in the diversity of wetland vegetation in restored areas of the project. The restored vegetation diversity in the Bay, including its varied, emergent marsh meadows, will be an important source of spawning habitat to Lake Ontario fish species, such as the northern pike. Migrating waterfowl utilize the Bay, and black tern—an endangered species in the state of New York—previously used the area as a nesting site; it is hoped they will return.



Biologist Josh Unghire and civil engineer Mitchell Hares toured Braddock Bay in 2017 to monitor progress of the native plants that were planted by USACE.

(Photo by USACE Buffalo District)

Promoting Collaboration

The project is being conducted under the Great Lakes Restoration Initiative through a partnership between USACE, the U.S. Environmental Protection Agency, the New York Department of Environmental Conservation, and the Town of Greece.

Project planners coordinated with local, state, and federal stakeholders and consulted experts to develop the optimal restoration plan. Several public meetings were held to inform the community about restoration proposals and to solicit comments and concerns. Project planners and the community, widely recognizing the Bay as a vital resource to the area, also obtained the support of Chuck Schumer, senator from New York.



Constructed barrier beach at Braddock Bay, Greece, NY.
(Photo by USACE Buffalo District)



More articles from this publication:



MacDill Oyster Reef Shoreline Stabilization

3min pages 124-127



Conclusion

4min pages 265-268



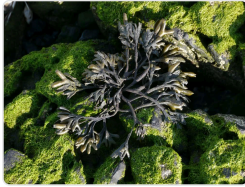
Mud Mountain Fish Passage

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

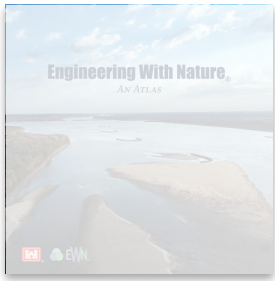


Milwaukee Harbor Breakwater Fish Habitat Demonstration Project

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](#)

[Redeem Code](#)

Issuu Platform

[Content Types](#)

[Features](#)

[Flipbook](#)

[Industries](#)

