



The Corps

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Environment

Innovative
underwater
camera system
captures
unique view of
Alaska's murky
7 depths

7

Environmental Operating Principle #7

Employ an open, transparent process that respects views of individuals and groups interested in Corps activities.



(Photo courtesy of USACE, Buffalo District)

The Braddock Bay Restoration project incorporates a barrier beach with an innovative breakwater design that can be deepened, if necessary, to enhance water circulation.

Restoration project exemplifies collaborative, transparent process

By Holly Kuzmitski
Engineer Research and Development Center

When considered from every angle, the Engineering With Nature® Braddock Bay Restoration project is a model for successful interagency collaboration and transparency.

Completed in September 2018, the U.S. Army Corps of Engineers, Buffalo District project included a natural and nature-based feature: a constructed barrier beach with a breakwater.

“The created barrier beach affords the same protections that the natural barrier beach used to provide when it existed: reduced interior wetland erosion and enhanced natural littoral drift processes for lake sediment,” said Tony Friona, Engineering Research and Development Center liaison to the Great Lakes.

Friona is also the USACE Focus Area 1-Toxic Substances and Areas of Concern lead for three USACE districts and ERDC, and coordinates all budgeting, interagency coordination and project development and execution.

“The construction team conducted

conference calls, webinars and public meetings to keep the process transparent. Input from the community, stakeholders and other federal agencies was taken very seriously—we answered questions and incorporated concerns into the project’s design and implementation,” Friona said.

In one example, U.S. Fish and Wildlife Service personnel had a concern that the bay would become so nutrient rich that the subsequent decomposing plant life would deplete the fishes’ oxygen supply.

“To address this concern, the breakwater design was modified to feature a natural gap between the existing shore and the feature, a ‘relief valve’ that allows more circulation,” said Joshua Unghire, an ecologist with the Buffalo District. “If, during monitoring, we see changes in water quality resulting from water trapped in the bay, that gap can be easily deepened.”

The planning centered on stakeholder involvement. The New York State Department of Environmental Conservation; the Town of Greece, New York; Monroe County, New York; the U.S. Environmental Protection Agency; and

a local technical expert from the State University of New York at Brockport; the National Audubon Society and others at the public, state and municipal levels all gave input at the bi-monthly meetings.

“We worked through the Corps’ planning process with them and created a transparency that also nurtured project support from the stakeholders,” Unghire said. “We started using each other as sounding boards for ideas.”

“The project’s funding and authority came from the Great Lakes Restoration Initiative, which is in itself a collaborative body,” Friona said. “Managed by the U.S. Environmental Protection Agency, GLRI is a unique program: an interagency partnership of 14 different organizations—an experiment in efficient government.

“We all develop five-year action plans that address five different focus areas; areas of concern (AOC) are one of the highest priorities,” Friona added. “Great Lakes AOC’s have been identified by the International Joint Commission as having significant environmental degradation.”

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According to Friona, the GLRI was formed to remove beneficial use impairments, or the changes that affect the chemical, physical or biological integrity of the Great Lakes system, so the AOCs could eventually be delisted. The Braddock Bay Restoration project was part of a locally driven, state-led process to remove beneficial use impairments.

“The barrier beach design incorporates the fundamental concepts of the EWN® approach. It solves the problem of shoreline erosion and habitat loss with a structure that provides ecosystem benefits and services in the form of exceptional shorebird habitat and littoral drift maintenance,” he said.

Friona adds that even when the project

is completed, under GLRI, his team will continue working with stakeholders.

“First, there is a warranty period. We want to make sure the planned communities are working well and that we hand off the best project possible to the long-term owner. We want to make sure there are no unintended consequences,” he said. “Then there is an adaptive management process, where, if necessary, we can adjust project elements, like the breakwater gap, according to what works best.”

“This is also a project that delivers so many benefits,” said Dr. Jeff King, deputy national lead for the EWN initiative. “Restoring the natural littoral drift processes for lake sediment will likely lead to less maintenance dredging of the

bay, which will obviously create economic benefits.”

“We used input from the many agencies and individuals to help inform construction of the beach, which has proven to be a tremendous habitat for shorebirds, at no extra cost to the Corps,” Unghire said. “Twenty-six different shorebird species have been observed using the natural and nature-based feature, including two endangered species: the piping plover and the red knot.”

“The project is an excellent example of how incorporating the viewpoints and concerns of multiple parties can lead to a well-designed project with multidimensional benefits,” he said.

Two of goals of the Braddock Bay Restoration, an Engineering With Nature® project, were to reduce coastal wetland loss and improve habitat diversity. (Photo by USACE Buffalo District)