UNITY ISLAND 204 PROJECT: BENEFICIAL USE OF DREDGED MATERIAL TO RESTORE WETLAND HABITAT IN THE UPPER NIAGARA RIVER, BUFFALO, NY

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RESTORATION GOALS

- Restore riverine wetland habitat within the Upper Niagara River
- Beneficially use dredge material for habitat restoration
- Increase hydrologic connectivity between the main-stem Niagara River and the aquatic habitats of Unity Island
- Contribute to the delisting of the Niagara River Area of Concern
Niagara River is listed as one of the 43 Areas of Concern across the Great Lakes

Since the mid 1800’s, shoreline habitats in the vicinity of Buffalo have been adversely impacted by commercial and industrial development

Thousands of acres of wetlands have been lost along the Lake Erie / Niagara River shoreline

Coastal/riverine wetland habitat most in need of restoration to remove the Fish and Wildlife Habitat Loss Beneficial Use Impairment
TEMPORAL CHANGE - NIAGARA RIVER / UNITY ISLAND

1812  1927  1949  2004  2016
AQUATIC HABITAT CONDITIONS AT UNITY ISLAND
PROJECT BACKGROUND

- Section 204 of the Water Resources Development Act of 1992 established a program for ecosystem restoration beneficially using dredged material.

- 2000 - 2012: USACE/USEPA Environmental Dredging removed all contaminated sediment from the Buffalo River.

- 2012 & 2016: sediment in the upper Buffalo River Federal Navigation Channel tested and determined to be clean and suitable for wetland creation at the Unity Island North Pond.

- 2016: City of Buffalo was awarded a grant from the New York Power Authority’s Habitat Enhancement and Restoration Fund.

Diagram:

- Unity Island North Pond Placement Site
- Black Rock Channel and Lock
- 4.25 mi from mouth of Buffalo River
- Buffalo River Navigation Channel
- 3.5 mi from mouth of Buffalo River
- CDF Placement Site
HABITAT LAYOUT – HEMI-MARSH
CONSTRUCTION STARTED MAY 7TH, 2018
GRADING OF DREDGED MATERIAL
WEIR CONNECTING THE NIAGARA RIVER

STONE TO BE REUSED FOR THE REEF
WETLAND PLANTING AND ESTABLISHMENT

26 June 2018

10 August 2018

6 September 2018

26 October 2018
PLANTING PLAN

Adaptive Management Framework

• Year 1 (2018)
  • Plant 25% of the site with suitable species for the various elevation zones
  • Test a variety of herbivore control strategies
  • Monitor growth and survivorship over first year

• Years 2 (2019) & 3 (2020)
  • Plant / Replant the remainder of the site using information from previous years
  • Optimize herbivore control strategies
ACKNOWLEDGMENTS