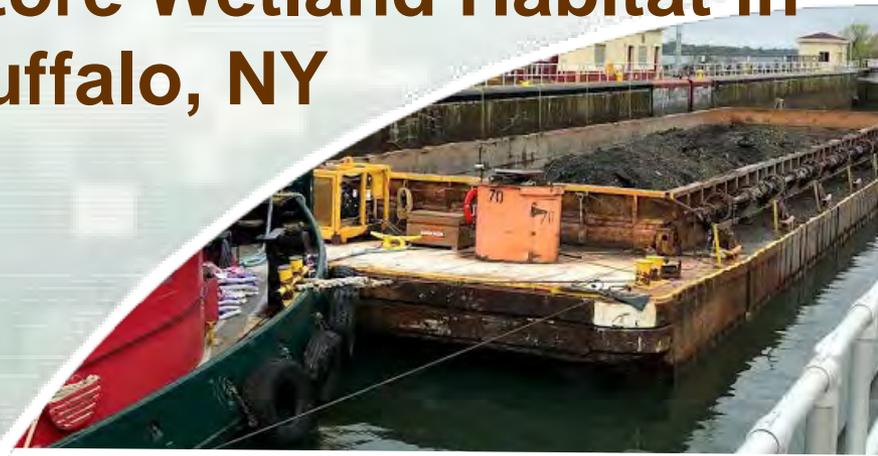


Unity Island 204 Project: Beneficial Use of Dredged Material from the Buffalo River Federal Navigation Channel to Restore Wetland Habitat in the Upper Niagara River, Buffalo, NY

US Army Corps of Engineers, Buffalo District



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

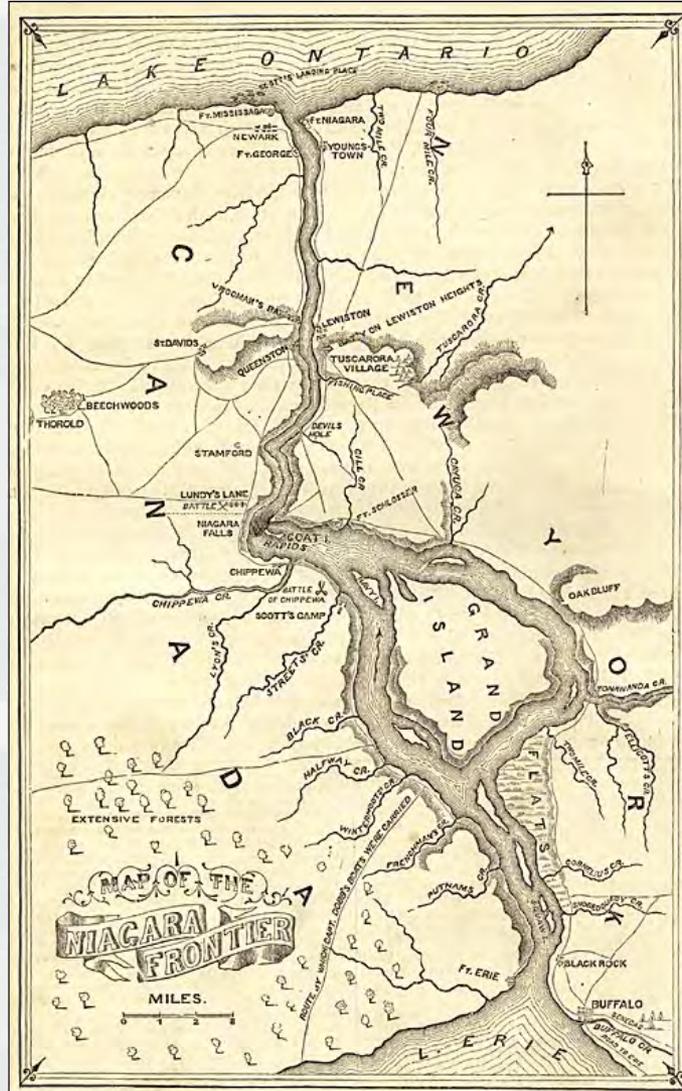


Niagara River Area of Concern

- 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



Map of the Niagara Frontier - 1812

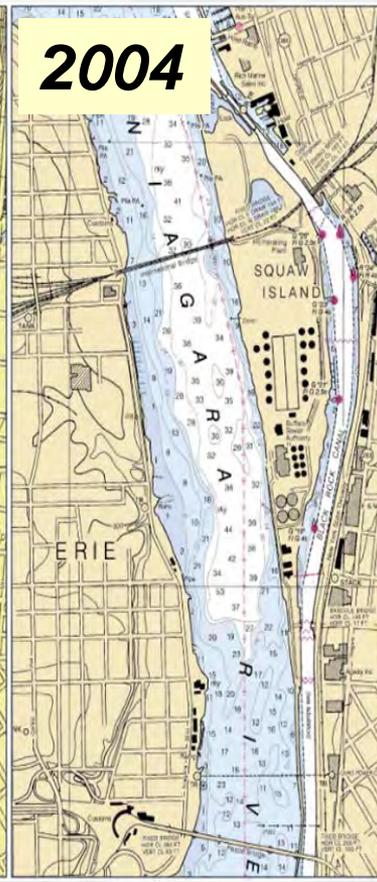
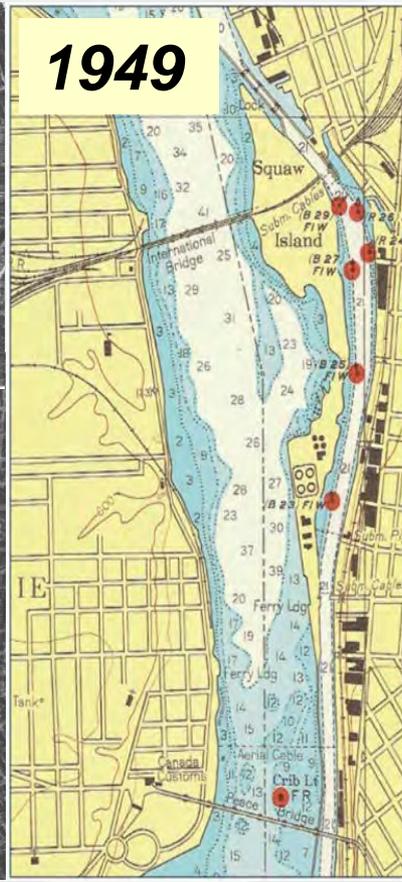


(Lossing, 1869)



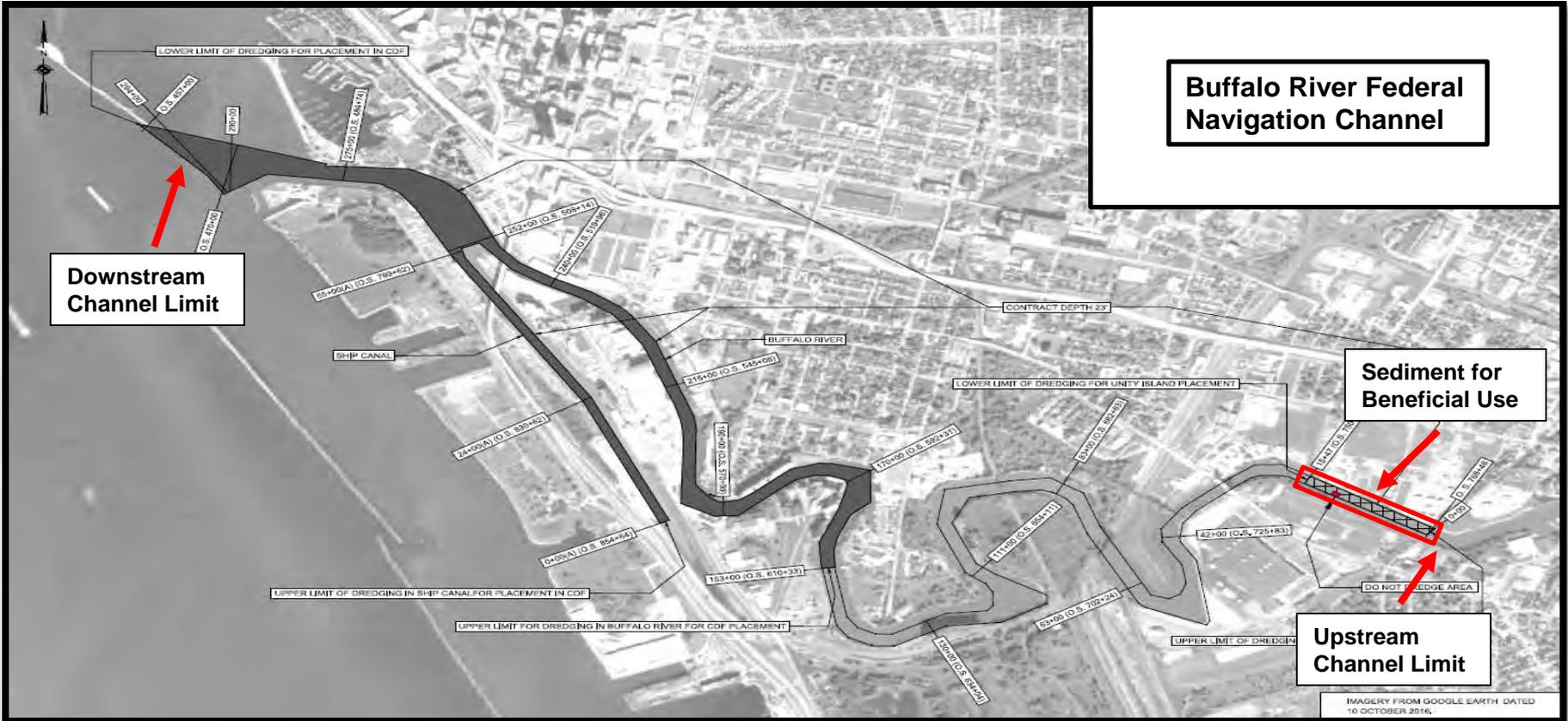
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Temporal Change to Niagara River / Unity Island



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- 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 has been thoroughly 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



Aquatic Habitat Conditions at Unity Island Park



Beneficial Use of Dredge Material for Wetland Creation (2018 – 2020)

- 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



Construction Started May 7th, 2018



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Final Grading of the Dredged Material



Weir connecting the mainstem Niagara River



Stone to be reused for the reef



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Wetland Planting

26 June 2018



10 August 2018



6 September 2018



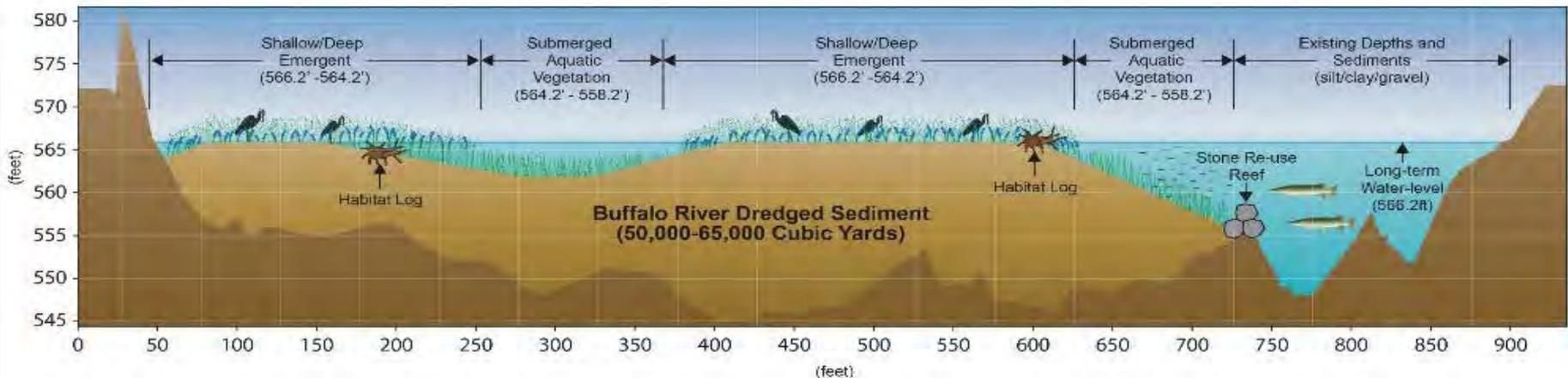
26 October 2018



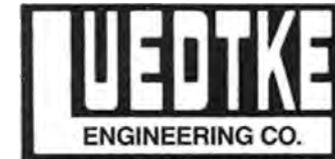
Planting Plan

Adaptive Management Framework

- Year 1
 - 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 & 3
 - Plant / Replant the remainder of the site using information from previous years
 - Optimize herbivore control strategies



Acknowledgments



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