

Appendix H
Interstate Island Habitat Restoration
Project Summary

Habitat Restoration Project Summary

Project Name: Interstate Island Avian Habitat Restoration, Minnesota and Wisconsin

SLRAOC Management Action: 2.06

History: When Interstate Island was created from dredged material in the mid-1930s it was nearly 33 acres in size. In the 1960s, part of the island was mined for sand fill. The entire population of Common Terns in the Estuary, approximately half of the Lake Superior tern population, has nested on the island since 1990. High water levels in Lake Superior have caused erosion, flooding, and scour of the island's environment for the past several years.

Project Goal: Restore and protect critical nesting habitat for Common Tern and stopover habitat for Piping Plover.

Project Outcome: Colonial waterbird nesting habitat was protected by raising the elevation of Interstate Island, ensuring that at least 5.5 acres of nesting habitat could be sustained at high water levels. In addition, gull exclusion fencing was replaced and 2,934 feet (at OHWL 602.8' IGLD85) of natural shoreline was enhanced or restored, providing habitat for migratory shorebirds. The project resulted in the beneficial reuse of 52,624 cubic yards of dredge materials excavated from the federal navigation channel.

Project Coordinates (UTM center-point): 15 T 568033 E 5177682 N

Start and End Dates: 2020-2021

Lead Agencies: Minnesota Department of Natural Resources (MNDNR) and Minnesota Land Trust (MLT)

Project Managers: Melissa Sjolund (MNDNR) and Virginia Breidenbach (MLT)

Metrics:

- 6.7 acres of colonial water bird nesting habitat restored or enhanced above high-water design elevation (605.5 feet above sea level - IGLD85)
- 8.4 acres of habitat restored or enhanced above the OHWL (602.8 feet - IGLD85)
- 2,934 feet of natural shoreline restored or enhanced at the OHWL (602.8 feet - IGLD85)
- 52,624 cubic yards of dredged materials beneficially reused

Federal/Nonfederal Cost-Share (%): 83:17

Funding: [alphabetical listing]

Funding Source	Amount
Great Lakes Coastal Program (USFWS)	\$ 200,000
Great Lakes Fish and Wildlife Restoration Act (USFWS)	\$ 145,000
Great Lakes Restoration Initiative (US EPA)	\$ 834,650
Harbor Management Trust Fund (US ACE)	\$ 1,149,290
Minnesota's Lake Superior Coastal Program (NOAA)	\$ 20,200
Minnesota's Outdoor Heritage Fund	\$ 487,000
TOTAL COST	\$ 2,836,140

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Project Partners: [alphabetical listing; for design consultants and construction contractors, note their role in parentheses following their firm names; avoid acronyms]

- JF Brennan Company (Construction contractor)
- Minnesota Department of Natural Resources
- Minnesota Land Trust (Project Management, oversight of design and construction)
- Natural Resources Research Institute, University of Minnesota, Duluth
- Roen Salvage (Dredging and construction contractor)
- SEH Engineering (Engineering and construction oversight contractor)
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Wisconsin Department of Natural Resources

Project Summary: Common Terns nesting habitat was restored at Interstate Island Wildlife Management Area in the St. Louis River Estuary. Straddling the Minnesota-Wisconsin border, the island is one of only two nesting colonies in the Lake Superior watershed. The \$2.8M project used clean sand dredged from the Duluth-Superior Harbor to elevate the island and restore habitat lost to erosion and high water, providing for long-term sustainability of the nesting habitat. Coarse sand and gravel were added to provide high-quality tern nesting substrate. In addition, 2,934 feet of natural shoreline was restored, enhancing migratory habitat for the endangered Piping Plover and other shorebirds.

Detailed Project Description: Interstate Island, a Wildlife Management Area jointly administered by the Minnesota and Wisconsin Departments of Natural Resources for nesting colonial waterbirds is an approximately 5.5-acre island within the Duluth-Superior Harbor. Interstate Island is one of the two remaining Common Tern (*Sterna hirundo*) nesting sites in the Lake Superior watershed and is the only federally-listed critical habitat for Piping Plover (*Charadrius melodus*) in Minnesota. In the 1980s, the site became of interest as habitat for Common Terns as human disturbance and site development in other nesting locations in the estuary made those places no longer viable for the species. A restoration project was conducted on Interstate Island in 1989 to clear all vegetation completely to expose sand substrate in an effort to attract Common Terns. The entire breeding population of the SLRE was subsequently attracted to the site in 1989 and 1990.

Emergency habitat protection was completed in 2015 to protect from high water levels by adding sand and gravel to elevate the core nesting area and by constructing a riprap berm. To provide long-term sustainability of the nesting habitat approximately 14,800 yd³ of additional sand was

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placed on the island in the spring of 2020. This stabilized the island and raised the elevation further. In the fall of 2020, approximately 46,000 yd³ of sand from regular navigation channel maintenance dredging and 7,000 yd³ of sand from strategic navigation dredging was used to reach final design elevations and expand the size of the island to ensure that at least 5.5 acres of area was available for colonial waterbird nesting habitat and that the habitat would be resilient to fluctuating water levels. The project also enhanced the riprap berm around the nesting area, replaced fencing designed to exclude gulls from the 30,000 ft² core tern nesting area, placed 2 feet of coarse sand with scattered gravel, cobble, and driftwood in the core tern area, and created an additional 1,320 feet of natural shoreline suitable for use by migratory shorebirds, including Piping Plover.

The design incorporates a conservative reference elevation of 605.5' IGLD85. This is equal to the historic Lake Superior high elevation of 604.5' IGLD85, with an additional foot incorporated to ensure island protection and resiliency to increasingly unpredictable Lake Superior water levels and storm surges. For the purpose of this project, the 605.5' IGLD85 elevation identifies the area of Interstate Island that will be considered upland in the long-term. Shoreline slopes were restored to a maximum of 10% to provide for use by both nesting and migrating shorebirds.

Annual monitoring following spring 2020 construction is being conducted to determine the restoration's effects on tern nesting productivity and migratory bird use. MNDNR will evaluate restoration effectiveness by examining pre- and post-restoration breeding success, juvenile survival, and habitat use. University of Minnesota's Natural Resources Research Institute (NRRI) maintains a long-term dataset on the island's tern colony; NRRI researchers will contribute to the analysis of restoration effectiveness and sustainability of the colony.

Post-Construction Sampling: MNDNR and partners developed a comprehensive Long-term Monitoring and Maintenance Plan (Plan) to assess and address ongoing and cumulative effects of wind scour, ice, storm surge, wave wash, woody vegetation, and invasive species that may negatively affect habitat quality. MNDNR and WDNR are responsible for jointly implementing the Plan, which focuses on maintaining suitable vegetation, infrastructure, and substrate required to provide high-quality habitat. The Plan addresses habitat maintenance via periodic substrate replacement within the footprint and elevations established by the restoration project. Future maintenance activities are anticipated to occur outside the Common Tern nesting season (March 1 to August 30).

Date Prepared: 06/15/2021

Reports:

- MNDNR. 2020. Phase III: Long-Term Monitoring and Maintenance Plan. Interstate Island Habitat Restoration. Prepared by Short Elliott Hendrickson Inc., Duluth, MN, under contract with Minnesota Land Trust.
- MNDNR. 2020. Quality Assurance Project Plan, St Louis River Area of Concern, Interstate Island WMA Avian Habitat Restoration Project. EPA Grant Number: GL00E02466. Submitted to Environmental Protection Agency, Great Lakes National Program Office, Jackson Blvd., Chicago, Illinois.
- Matteson, S. W. 1988. Wisconsin Common Tern Recovery Plan. Wisconsin Endangered Resources Report 41. Bureau of Endangered Resources. Wisconsin Department of Natural Resources. Madison WI.
- SEH. 2019. Construction Plans for Spring Interstate Island Improvements. 100% Design Plan Set.
- SEH. 2019a. Interstate Island Design Memo. SEH No. 150297 14.00.
- SEH. 2020. Construction Plans for Fall 2020 Improvements, Duluth/Superior Harbor. 100% Design Plan Set.
- USACE. 2020. St. Louis & Douglas County, Duluth – Superior MN/WI, Duluth – Superior Harbor, FY20 Maintenance Dredging. Certified Final Plan Set. U.S. Army Corps of Engineers, Detroit District, Detroit, MI.

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Attachment A. Before Photos:

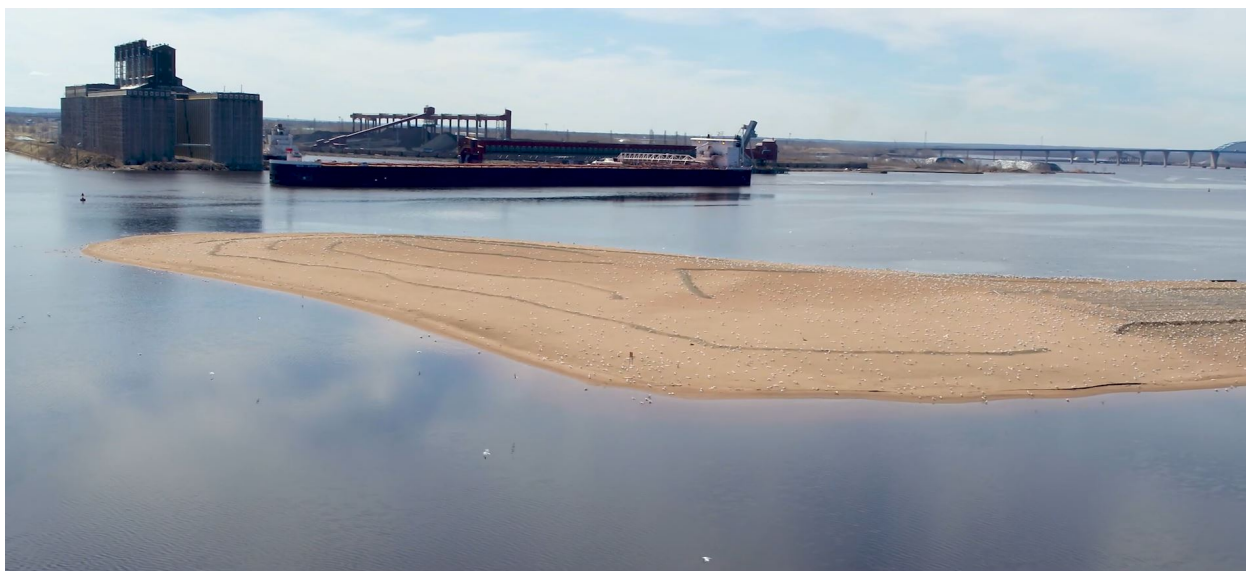


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Attachment B. After Photos:



April 2021. Photo Credit: J.F. Brennan



April 2021: Photo Credit: SEH, Inc.

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April 2021: Photo Credit: SEH, Inc



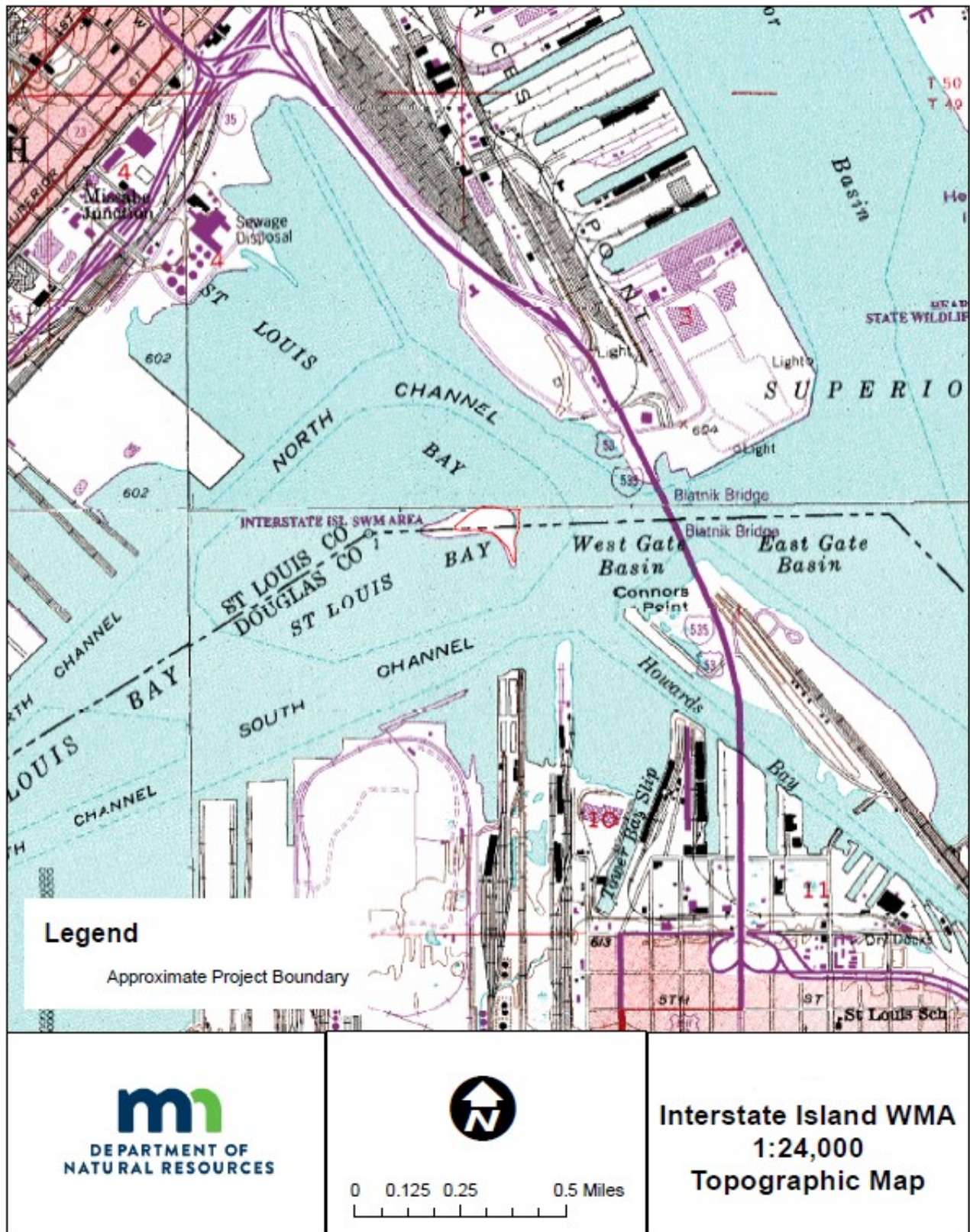
April 2021: Photo Credit: SEH, Inc

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May 2021: Photo Credit: Fred Strand

Attachment C. Project Maps:



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