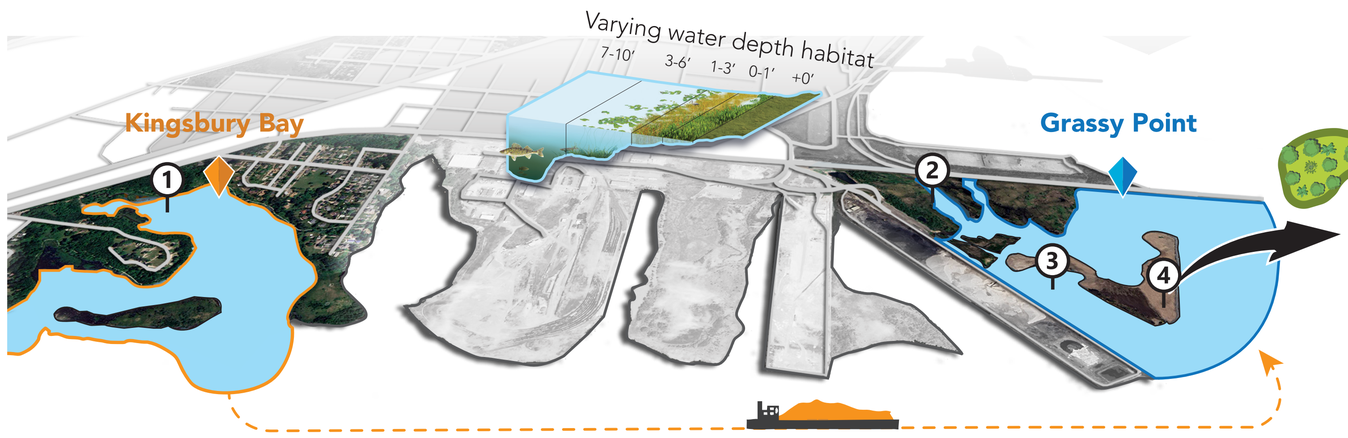
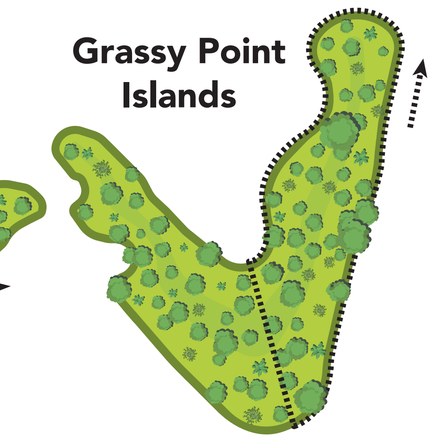
Grassy Point-Kingsbury Bay Habitat Restoration

ACEC Engineering Excellence Awards

The Grassy Point-Kingsbury Bay Habitat Restoration Project renewed over 200 acres of coastal aquatic and terrestrial habitats along the St. Louis River. Through innovative design and beneficial reuse of on-site waste material, the project improved estuary health and advanced MNDNR's Area of Concern delisting program.



Kingsbury Bay material was spread at Grassy Point to cover waste and foster healthy aquatic community growth



Island extended to protect near-shore area and support future planting of native forbs, shrubs, and trees

Removed invasive species community and dredged nuisance sediment to deepen bay

Mouth of Keene Creek dredged to remove wood waste and create wetland connections

Invasive species communities and wood waste removed to create open water and island feature

Existing island built up and extended to create a shallow, sheltered bay setting

New Habitat | Kingsbury Bay Material | Grassy Point Material | Hydrodynamic Modeling | Geotechnical Modeling

Project Location:
Duluth, MN

Firm:
Barr Engineering Co.
Minneapolis, MN

Owner:
Minnesota Department of Natural Resources

An industrial past: In the late 1800s, sawmills operated at Grassy Point, a 120-acre coastal wetland. The mills deposited over 500,000 cubic yards of wood waste into the estuary—covering 75 acres. A mile upstream at Kingsbury Bay, an 80-acre shallow cove, development along the adjacent hillside eroded streambanks, sending over 100,000 cubic yards of sediment into the bay.

A restorative future: In 2017, MNDNR hired Barr as its engineering and design consultant and subsequently retained Barr to oversee construction administration. Project goals included restoring sheltered bay habitats in support of coastal wetlands, benthic organisms, and aquatic vegetation.

A novel design: Wood waste management at Grassy Point posed the greatest challenge. Rather than transporting the waste offsite, Barr's design reused it to extend an island that protects habitat from wind and wave action. At Kingsbury Bay, dredging the organic-rich sediment and reusing it at Grassy Point helped improve habitat at both sites. These innovative reuse methods reduced disposal expense, minimized imported aggregate material, and decreased the project cost by more than $1 million.