



**SITE-SPECIFIC MANAGEMENT SHEET
TIER-3 RESOURCE MANAGEMENT PROPERTY**

Property Name: Moonlight Bay Bedrock Beach

Property Designation or Type: State Natural Area

SNA Designation Number: 233

Property Location: Door County

Real Estate:

Project boundary acreage: 116

Fee acres owned: 108

Dedicated acres: 106, DNR file #D89 (1992)

DNR Easement acres: None

Federal aid interest: None

Land use agreements: None

Maps:

A. Project Boundary

Property Manager: **Joe Henry, Upper Lake Michigan Ecologist**
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Prepared By (District Ecologist):

Name: Joe Henry

Title: Conservation Biologist

Date: 4/10/2017

Reviewed/Approved By: (Bureau)

Name: Drew Feldkirchner

Title: Bureau Director, Natural Heritage Conservation Date: 4/10/2017

Approved by Natural Resources Board: Date: 6/28/2017

A. Regional and Property Assessment

- 1. General Property Description (topography, soils, vegetation, water resources):** Moonlight Bay Bedrock Beach protects a 5-acre undisturbed bedrock beach, rare plant and animal communities, geological features, and adjacent boreal forest relict, all which are dependent on the dynamic influence of Lake Michigan. The primary feature is the dolomite bedrock beach, which is periodically covered and exposed, depending on Lake Michigan water levels. When exposed, several plants indicative of these calcareous and unstable shorelines colonize the beach. Ambient shorelines are present as low ledges in the forested portions of the site. The boreal forest is typical of the northeastern Door Peninsula with white cedar, white spruce, paper birch, white pine, hemlock, and balsam fir. Common understory plants are thimbleberry and mountain maple. The groundlayer is sparse, with mosses and lichens predominating.
- 2. Ecological Landscape:** The [Northern Lake Michigan Coastal Ecological Landscape](#) borders Lake Michigan and Green Bay, encompassing over 200 miles of Great Lakes coast. The shorelines and related habitats, some of them unique to the Great Lakes, are used during the spring and fall by large numbers of migratory birds. In recent years, tens of thousands of diving ducks have been recorded wintering in offshore Lake Michigan habitats. Both Lake Michigan and Green Bay are highly significant for fish.

The northern Door Peninsula and associated Grand Traverse Islands present conservation opportunities offered nowhere else in Wisconsin. Unusual physiographic features such as ridge and swale complexes, embayment lakes and freshwater estuaries are rich in rare natural communities, including beach, dune, bedrock shore, coastal fen and boreal forest. These, in turn, support one of Wisconsin's greatest concentrations of rare species, some of them endemic to Great Lakes shoreline environments.

The dolomite Niagara Escarpment is a dominant geological feature of this landscape. On the west side of the Door Peninsula the Escarpment is exposed as cliffs, ledges and talus slopes. Springs and seeps are present, and some of Wisconsin's oldest trees grow on the Escarpment. To the east, along Lake Michigan, the same bedrock forms extensive horizontal rock "beaches."

Management opportunities vary greatly in different parts of the Northern Lake Michigan Coastal Ecological Landscape because of its variability. The factors responsible for this include the past and present influence of

Lake Michigan and Green Bay, the dolomite bedrock, the composition of the glacial till and the highly variable landforms and their effects on land use.

3. **Ownership and Adjacent Land Uses:** Baileys Harbor Boreal Forest and Wetlands SNA, Lake Michigan, boreal forest, public roads, and rural residential lands.

4. **Property Management Issues, Trends and Needs:**

[Note: Some of the lands in this natural area were purchased with federal grant funds that require they be managed in perpetuity for the protection of coastal wetland ecosystems and associated rare species of plants and animals.]

Invasives: European honeysuckle, European marsh thistle, Garden valerian, Hound's tongue, *Phragmites*, Reed canary grass.

Invasives control history: An effort is made to control priority invasive species on an annual basis.

Forestry/Silviculture: No opportunities exist to use commercial timber harvest to help reach ecological goals for the property on current state owned lands.

Prescribed burning: Prescribed fire will not be used as a management practice to maintain this property.

5. **Facility/Amenity development:**

- a. **Existing:** None
- b. **Future:** None

6. **Endangered, Threatened, Special Concern Species or Habitats, and wildlife Species of Greatest Conservation Need:** 4 state endangered species, 4 state threatened species, 13 state special concern species, 1 state special concern habitat, 1 federal endangered species, and 1 federal threatened species are known to occur here and/or in the general area. For detailed EO data, see Appendix A.

7. **Conservation Opportunity Area:** Bailey's Harbor to Peninsula (14.12) and adjacent to Lake Michigan (A.02)

8. **Easements:** None

9. **Land use Agreements:** None
10. **Significant Cultural and Archaeological Features:** State Natural Areas (SNAs) may contain historic Native American or Euro-American sites. Activities with potential to disturb archaeological sites will only be undertaken after consultation with the DNR Archaeologist. Any sites with cultural or historical value will be managed in accordance with guidance and statutory requirements (see ss. 44.40 and DNR Manual Code 1810.10). More details can be found in Appendix B.
11. **Refuges and other Closed Areas:** None
12. **Primary Public Use:** Recreational uses such as hiking, fishing, cross country skiing, hunting, trapping, scientific research, wild edibles collection, , and wildlife viewing are allowed. Reference the State Natural Areas [Visitation Guidelines](#) and the property's specific [webpage](#) for more information.
13. **Biotic Inventory needs:** Currently, no plant or vertebrate inventory needs have been identified beyond normal monitoring through established SNA Site Inspection protocol.

B. **Property Purpose and Goals/Management Objectives and Prescriptions**

1. **Property Purpose and Goals**
 - a. **Purpose:** The purpose of the SNA Program is to protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations and archeological sites. Natural areas are valuable for research and educational use, the preservation of genetic and biological diversity, and for providing ecological benchmarks for determining the impact of use on managed lands. They also provide habitat for numerous rare plants and animals.
 - b. **Goal:** Manage the site as an old-growth boreal forest and bedrock beach reserve, and as an ecological reference area. Natural processes will determine the structure of the forest. Provide opportunities for research and education on the highest quality native old-growth forests and bedrock beaches.
2. **Management Objectives by Natural Community Type:**
 - a. Restore approximately 15 acres of bedrock beach, 97 acres of boreal forest.

- b. Retain or increase existing populations of Species of Greatest Conservation Need.
- c. Maintain natural transitions between different plant communities.
- d. Prevent the introduction of new invasive species, and ensure long-term limitation of the spread, reproduction and impact of existing invasive species.
- e. Monitor dwarf lake iris populations and assess habitat conditions.

3. Management Prescriptions by Natural Community Type:

- a. Contain or eradicate invasive species through the use of department approved manual, chemical, biological, and mechanical practices.
- b. Provide opportunities for research and education on the highest quality bedrock beach and boreal forest communities.
- c. Continue outreach to secure volunteer site stewards to help reach management objective and strengthen the joint public/private partnership.
- d. Conduct field trials on dwarf lake iris populations to determine specific habitat requirements (limiting factors) for vegetative and sexual reproduction.

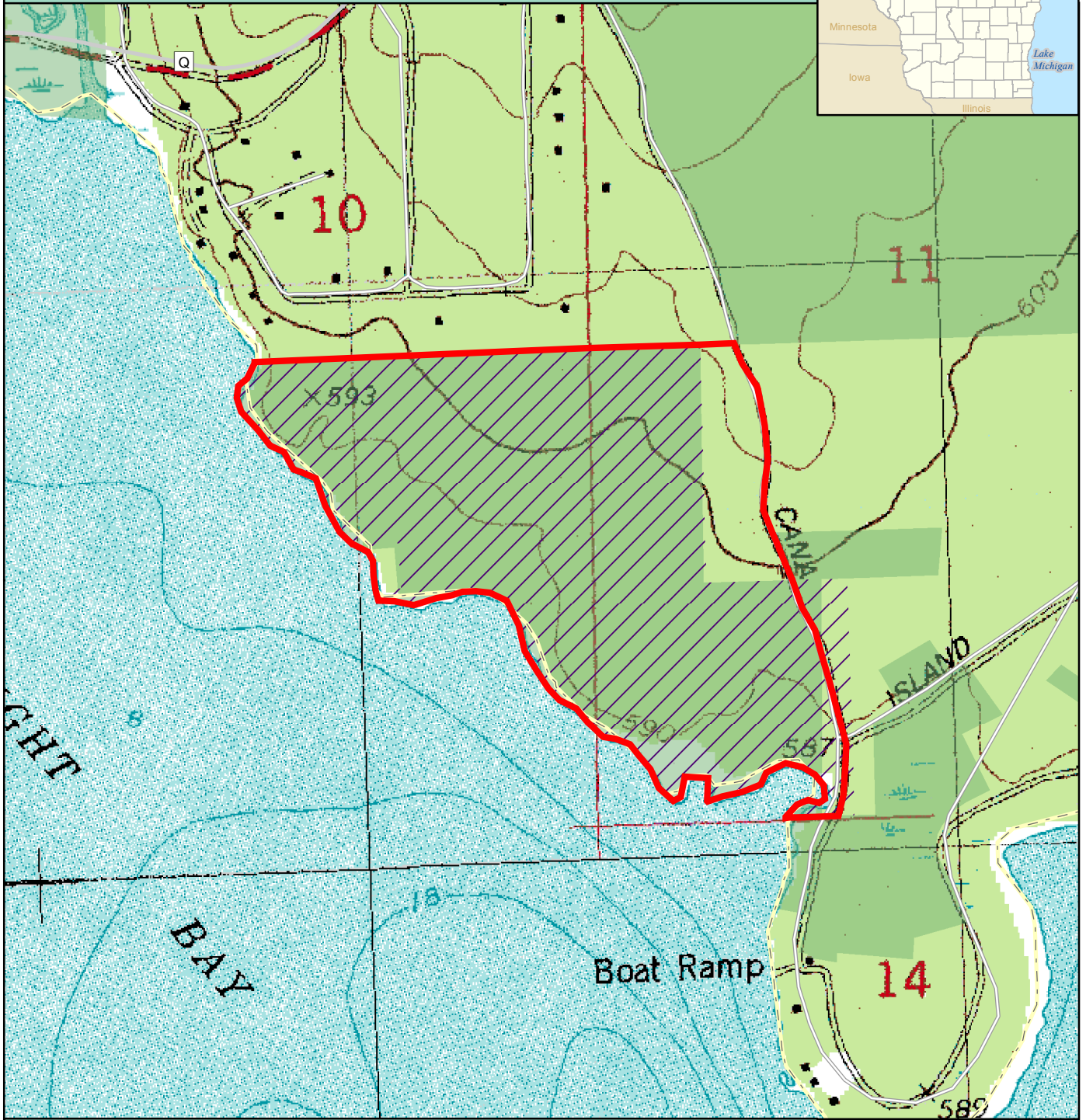
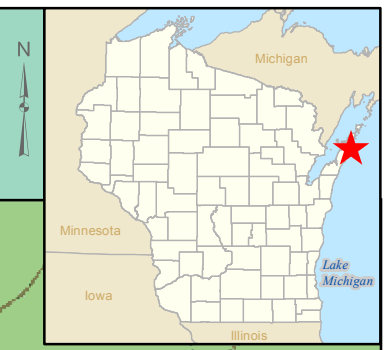
4. Special Management Issues and/or constraints:

- a. Access to suppress wildfires is allowed.
- b. Salvage of trees after a major wind event is not considered compatible with management objectives.

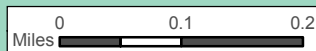
Table 1: Current Facilities or Infrastructure

Type of Facility	Total (number/length)	Management Activities	Management Issues and Constraints
Roads – public	None		
Roads – maintenance/service	None		
Roads – access easement	None		
Parking lots	None		
Boat landings	None		
Designated trails	None		
Dikes, ditches	None		
Dams	None		
Other			

Moonlight Bay Bedrock Beach State Natural Area PROJECT BOUNDARY



-  Project Boundary
-  DNR Owned
-  State Natural Area



WISCONSIN DEPARTMENT
OF NATURAL RESOURCES



Bureau of Natural
Heritage Conservation

Jul 07, 2017

SNA Tier 3 dmh

MAP A

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