

ESTUARIES & COASTAL WETLANDS OF LAKE SUPERIOR

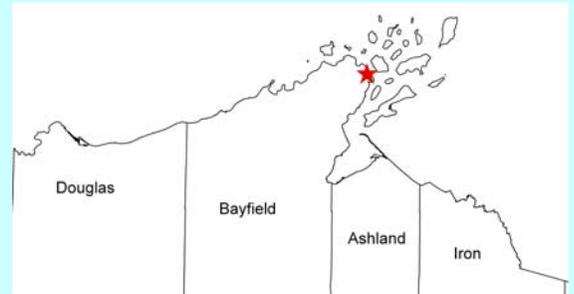
Frog Bay Estuary

Approximate Size: 40 acres*

Ownership: Private, Red Cliff Band of Lake Superior Chippewa

Year Last Surveyed by WDNR/NHI: 2012

GLCWC Classification: Open Drowned River Mouth



Site Description

Frog Creek is a cold headwater stream which empties into Lake Superior at Frog Bay. Locals report that the creek mouth was separated from Lake Superior by a sandbar in the recent past, but was blown out by flooding in 2012. Boreal Rich Fen and Submergent Marsh surround a small lagoon and the lower reaches of the creek, transitioning to Alder Thicket and forest. Clay ravines drain into Frog Bay, supporting a continuum from Northern Mesic Forest (mostly on slopes) to Boreal Forest (mostly on flatter topography and adjacent to the wetlands). Boreal Forest reaches its southernmost range limit in Wisconsin, and remnants flanking the Bayfield Peninsula represent some of the highest quality examples in the state. The forested uplands support several rare plant and bird species.

Frog Bay's Boreal Rich Fen is punctuated by tall sedge hummocks, pools, and numerous rivulets feeding into Frog Creek. These pools and rivulets are deep and clear, and harbor abundant minnows as well as diverse submergent aquatic plants such as coon's-tail (*Ceratophyllum demersum*), twoleaf watermilfoil (*Myriophyllum heterophyllum*), common duckweed (*Lemna minor*), water-arum (*Calla palustris*), and northern bladderwort (*Utricularia intermedia*). The fen also shows high floral diversity, the dominant species being woolly-fruit sedge (*Carex lasiocarpa*), tussock sedge (*C. stricta*), and sweet gale (*Myrica gale*).

The Northern Mesic Forest was logged lightly over 100 years ago. Higher quality stands are dominated by hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*), and northern white-cedar (*Thuja occidentalis*); some specimens are 27-29" in diameter. Pit and mound microtopography and abundant coarse woody debris are further indicators of older forest. Coarse woody debris provides soil nutrients as well as food and habitat for a wide range of organisms, thus increasing overall species diversity. Dominant ground layer species include blue-bead lily (*Clintonia borealis*), goldthread (*Coptis trifolia*), Canada mayflower (*Maianthemum canadense*), American

*Area includes bay, lower creek, associated wetlands, adjacent uplands.

Please see last page for Ojibwe plant names

starflower (*Trientalis borealis*), common club-moss (*Lycopodium annotinum*), and bunchberry (*Cornus canadensis*). Large, super canopy white pines (*Pinus strobus*) occur near the bay-mouth and in areas adjacent to the wetlands.

Threats

The non-native invasives crown vetch (*Coronilla varia*) and bird's foot trefoil (*Lotus corniculatus*) grow in the parking area, and a very small amount of reed canary grass (*Phalaris arundinacea*) grows at the creek mouth. Invasive plants out-compete native plants by monopolizing light, water, and nutrients, and can have negative impacts on soils, nutrient cycling, etc. Surface water run-off associated with logging on private lands in the area may result in sediment deposition in the bay, causing degradation of wetland and aquatic resources.

Additional Comments

The estuary and adjacent forest are on private land, but are surrounded by tribal land, including Frog Bay Tribal National Park. The Red Cliff Band of Lake Superior Chippewa acquired and protected the park property for nature-based recreation and traditional ceremony. The Lake Superior Binational Program identified Frog Bay as important to the integrity of the Lake Superior coastal ecosystem.

Abbreviations and Helpful References

GLCWC - Great Lakes Coastal Wetland Classification - http://glc.org/wetlands/pdf/wetlands-class_rev1.pdf

Lake Superior Binational Program - <http://www.epa.gov/glnpo/lakesuperior/>

Red Cliff Band of Lake Superior Chippewa - <http://www.redcliff-nsn.gov/>

WDNR Coastal Wetlands webpages - <http://dnr.wi.gov>, Keyword: "coastal wetlands"

WDNR/NHI - Wisconsin Department of Natural Resources, Natural Heritage Inventory Program.

<http://dnr.wi.gov> , Keyword: "natural heritage"



Large northern white-cedars are common at Frog Bay (left) as are western oak ferns (right; *Gymnocarpium dryopteris*).

Suggested Citation

A. Staffen, K. Doyle, and R. O'Connor. 2012. Site Description for Frog Bay. Wisconsin Department of Natural Resources. Madison, WI. <http://dnr.wi.gov>, Keyword: "coastal wetland frog bay"