

Red Cliff Band of Lake Superior Chippewa Wetland Program Plan

2023-2027



Red Cliff Band of Lake Superior Chippewa Environmental Department
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Background

Gaa-Miskwaabikaang, Red Cliff Band of Lake Superior Chippewa, is a federally recognized tribal nation with 7,636 enrolled members, of which 1,785 members live within or near the reservation. The Red Cliff reservation, established through a series of treaties signed between the Lake Superior Chippewa and the U.S. government in the early to mid-1800s, consists of roughly 15,000 acres at the northern end of the Bayfield peninsula at the northernmost tip of Wisconsin and encompasses 22 miles of Lake Superior shoreline. The Red Cliff Band maintains property rights in approximately 56% of these acres (Red Cliff, 2023). Nontribal landholdings within exterior reservation boundaries include mainly federally and privately owned parcels, the largest of which is the National Park Service's Apostle Islands National Lakeshore, which manages about 1,600 acres within Red Cliff's boundaries. The Tribe has retained Treaty Rights to natural resources within ceded lands of Wisconsin, Michigan, Minnesota, and Lake Superior.

Red Cliff is heavily forested with more than 90% coverage, primarily consisting of second growth conifers, aspen, and other hardwoods. Underlying soils are mostly clay, although higher elevations within the reservation contain some overlaying deposits of sand and gravel. The entire Reservation lies within a regional watershed referred to as the "Beartrap-Nemadji" which can be further subdivided into 4 watersheds, Saxine Creek-Frontal Lake Superior, Sand River, Raspberry River-Frontal Lake Superior, and Red Cliff Creek-Frontal Lake Superior, whose downstream portions overlap with the Red Cliff Reservation before meeting Lake Superior. Divided further are seven watersheds of perennial tribal streams that are the focus of the tribe's surface water monitoring and CWA 106 and 319 programs. In total, the reservation contains approximately 1,000 acres of wetlands, 12 acres of ponds/reservoirs, and 43 miles of streams.

On the shoreline of Red Cliff, situated among sandstone cliffs, are several coastal wetland complexes where reservation streams flow into Lake Superior. The coastal estuary areas are revered for their cultural significance and are exceptionally important for fish and aquatic life habitat, migratory bird and other wildlife habitat, floodwater storage, plant communities, and shoreline protection. The two largest wetland complexes at the mouths of Sand River and Raspberry River are minimally disturbed and support diverse and rare plants, birds, and insects (Epstein et al., 2002). While less studied compared to the coastal areas, there are numerous, diverse, and widespread inland wetlands across the reservation that also provide ecological and cultural value. Tribal members use a wealth of natural products from wetlands including fish (gigoonh), blueberries (miinan), cranberries (aniibinim, mashkiigimin), wild rice (manoomin), and many traditional medicines and plants for use in ceremonies. In addition to offering habitat to plants and animals, wetlands are also of critical importance for clean water, groundwater recharge and flood protection.

Due to climate change, precipitation patterns and temperature in the region will shift causing more rain and higher temperatures. The changes are predicted to result in increased heavy rain events, flooding, runoff, and more intense summer drought (WICCI, 2021). As these changes continue, ecological services wetlands provide to store floodwater, protect shorelines, and preserve water quality will be increasingly important. While wetlands provide critical benefits to curb climate change impacts, they are also vulnerable to effects of climate change. Increased rain and subsequent run off may impact wetlands' ability to capture both water and pollution and higher temperatures and drought may result in drying of shallower wetlands. Range shift in plant communities and increase in nonnative species may result in loss of biodiversity and habitat.

Delineated wetlands listed by the Wisconsin Wetland Inventory within Red Cliff reservation boundaries and exterior tribal lands total 1,018 acres, making up about 7% of Red Cliff's land cover (Figure 1). Wetland acreage classified as Lake Superior coastal wetlands by the Great Lakes Coastal Wetland Inventory totals approximately 48% of total wetland acreage in Red Cliff (Great Lakes Coastal Wetland Consortium, 2004). Over 50% of wetland acreage in Red Cliff is forested and the remaining wetlands are predominantly classified as shrub/scrub and emergent/wet meadow (Table 1).

Red Cliff Wetlands

as delineated by Wisconsin Wetland Inventory (WWI)

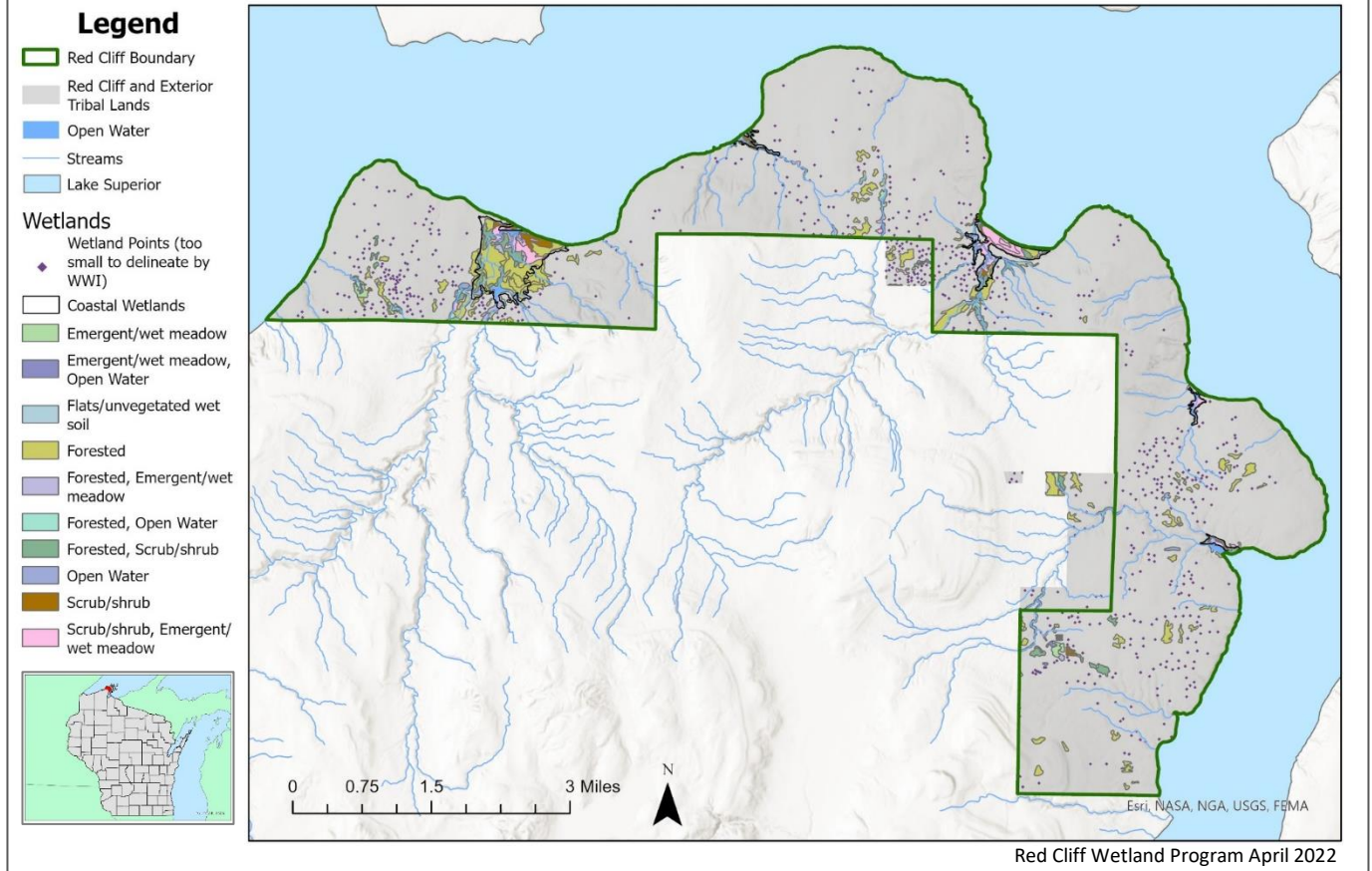


Figure 1: Red Cliff Wetlands

Table 1: Red Cliff Wetland Area by Wetland Class

Wetland Class (WWI)	Area (Acres)	Percent of Wetland Coverage
Forested: broad-leaved deciduous*	290.4	28.5%
Forested: needle-leaved evergreen*	214.7	21.1%
Forested, Scrub/shrub**	137.1	13.5%
Scrub/shrub, Emergent/wet meadow**	138.6	13.6%
Emergent/wet meadow	72.1	7.1%
Scrub/shrub	49.6	4.9%
Forested, Emergent/wet meadow**	43.4	4.3%
Forested: needle-leaved deciduous*	31.6	3.1%
Open Water	14.2	1.4%
Emergent/wet meadow, Open Water**	12.3	1.2%
Forested, Open Water**	10.1	1.0%
Flats/unvegetated wet soil	2.0	0.2%
Forested: needle-leaved*	1.9	0.2%
All Wetlands	1018.0	100%

*Forested wetland acres (not including mixed classes) totals 538.6 acres and 52.9% of wetland coverage

**Mixed wetland classes, separated by commas, indicate wetlands where small patches of different cover type (at least 30%) are interspersed in the wetland mapping unit. The taller cover class is listed first.

Previous Wetland Activities

Although Red Cliff has not had a formal wetland program in the past, a few earlier efforts have been completed to monitor and restore tribal wetlands and some protection has been extended to wetlands in Red Cliff through land acquisition and tribal codes. An overview of monitoring projects of Red Cliff wetlands is detailed in the following paragraphs.

Past dedicated monitoring of tribal wetlands by the Red Cliff Environmental Department is limited to a one-time inventory and assessment of select wetlands contracted by the Water Resources Program in 2016. Thirteen assessment areas were chosen based on primary watersheds of the Reservation. Each area was assessed using the WDNR Wetland Rapid Assessment Methodology (WRAM) including assessment of wetland function, floristic integrity, and the condition of the assessment area.

Lake Superior coastal wetlands have been the focus of assorted research over time due to the significance of these ecosystems to fish spawning, migratory bird stop over and breeding grounds, and critical habitat for rare and threatened species. Select coastal wetlands in Red Cliff have been included in several studies and inventories completed by various institutions over the years. One current large-scale study of coastal wetlands, the Great Lakes Coastal Wetland Monitoring Program, periodically monitors four wetlands within reservation boundaries for various communities including plants, invertebrates, fish, amphibians, and birds using a suite of indicators, metrics and sampling methods developed to assess Great Lakes coastal wetlands.

Program Plan

Overall Goals and Time Frame

Red Cliff started a formal wetland program was started and hired a Wetland Specialist with a Wetland Program Development Grant award in 2021. The Wetland Program is housed in the Environmental Department of The Treaty Natural Resources Division. The development of a wetland program in Red Cliff has been a sustained goal as outlined in the Red Cliff Treaty Natural Resources Comprehensive Plan (Red Cliff TNR, 2020). Establishing a wetland monitoring program, increasing knowledge of the location and condition of tribal wetlands, determining locations for wetland restoration projects, and identifying gaps in wetland protection measures are all identified as objectives to be pursued by a wetland program.

This Wetland Program Plan outlines goals, objectives, and actions to be taken by the Red Cliff Wetland Program over the next 5 years. The plan reflects the Core Element Framework consistent with the US EPA's *Core Elements of an Effective State and Tribal Wetlands Program* (USEPA, 2008). This plan includes wetland program development activities related to the following core elements:

- Monitoring and Assessment
- Regulation
- Voluntary Restoration and Protection

Core Element 1: Monitoring and Assessment

In 2022 the Wetland Specialist developed a monitoring and assessment strategy consistent with *Elements of a State Water Monitoring and Assessment Program for Wetlands* (Red Cliff Wetland Program, 2022). The strategy documents the monitoring program's long-term goals, data uses, and current monitoring objectives. Since minimal data of tribal wetlands have been collected, immediate monitoring objectives focus on collecting data to establish baseline condition and extent. As the

monitoring program is in early stages of development, data needs and objectives will continue to be identified with further understanding of wetlands and the monitoring strategy will be refined accordingly.

Currently, the Wetland Program relies on the Wisconsin and National Wetland Inventories to determine wetland location and extent. The inventories are not without limitations as the data are primarily sourced from aerial photos, which may miss wetlands especially those covered by forest canopy and may omit smaller wetlands. Delineating a tribal wetland inventory that is higher resolution than the state and national inventories is one goal of the monitoring strategy. With a limited land base and projected increase in residential, commercial, and agricultural land demand, an updated inventory with improved accuracy will uphold protections to wetlands in Red Cliff (Red Cliff Planning, 2023). In addition to determining wetland acreage and location in Red Cliff, monitoring data will be incorporated into a tribal wetland inventory.

The Wetland Specialist drafted a quality assurance project plan (QAPP) in 2022 for collecting data on baseline condition of tribal wetlands including vegetation, water, soil, and anthropogenic stressors. The first monitoring season will be completed in 2023 following approval of the QAPP. Additional sites for continued monitoring and a long-term monitoring schedule based on watershed and community type will be determined following the 2023 season.

Monitoring and assessment actions outlined in Table 2 focus on implementing a sustainable monitoring program consistent with the wetlands monitoring strategy and refining data needs and objectives with further understanding of wetlands in Red Cliff.

Table 2: Monitoring and Assessment Objectives

Monitoring and Assessment					
Objective 1: Refine monitoring and assessment strategy					
<i>Action (a): Continue to Identify Data Needs and Objectives</i>					
	2023	2024	2025	2026	2027
Review monitoring strategy and adjust as new data needs and objectives are identified	As needed				
Research and consider how to incorporate monitoring for climate change impacts on tribal wetlands		X	X		
Objective 2: Implement a sustainable monitoring program consistent with the wetlands monitoring strategy					
<i>Action (b): Ensure the scientific validity of monitoring and laboratory activities</i>					
	2023	2024	2025	2026	2027
Conduct pilot monitoring project	X				
Annually recertify Quality Assurance Project Plan (update content as needed)	X	X	X	X	X
<i>Action (c): Monitor wetland resources as specified in strategy.</i>					
	2023	2024	2025	2026	2027
Identify additional wetlands to be monitored and develop a schedule for monitoring wetland resources	X				
Monitor wetlands as specified in strategy and schedule	X	X	X	X	X
<i>Action (d): Develop capacity to track changes in wetland condition and extent overtime</i>					
Create and test a database for tracking monitoring data	X				
Seek and apply for funding for long-term monitoring	Ongoing				
<i>Action (e): Improve wetland inventory</i>					
	2023	2024	2025	2026	2027
Update wetland inventory using LiDAR data to improve accuracy of wetland location and extent	X				
Incorporate monitoring data into wetland inventory	X	X	X	X	X

Core Element 2: Regulatory Program

Existing regulatory protection to wetlands on Red Cliff Tribal lands, in addition to USACE regulations, are encompassed in three Red Cliff Codes including the Logging, Burning, Woodcutting, and Harvesting Code, the Pollution and Environmental Protection Code, and the Zoning Code (Red Cliff Code of Laws Chapters 11, 12 and 37). A review will be conducted by the Wetland Specialist for revisions to existing codes to clarify and strengthen wetland protections. Revisions will include determining what the tribe defines as a wetland as there is not presently a legal definition in the Red Cliff Code of Laws. In addition to the current codes, consideration will also be given to codifying wetland protection through a standalone ordinance.

Along with changes to Red Cliff Codes, the Wetland Program will offer support to existing ordinances through continued input on project applications and ensuring the Red Cliff zoning map reflects any updates to the wetland inventory.

Actions for the regulatory core element centered on strengthening and supporting tribal codes protecting wetlands are outlined in Table 3.

Table 3: Regulatory Objectives

Regulatory Program					
Objective 1: Strengthen and support regulatory protection to tribal wetlands through Red Cliff Code of Laws					
<i>Action (a): Provide clear and comprehensive jurisdictional coverage of aquatic resources.</i>					
	2023	2024	2025	2026	2027
Establish what the Tribe defines as a wetland	X				
<i>Action (b): Clearly identify a comprehensive scope of activities to be regulated</i>					
	2023	2024	2025	2026	2027
Review and revise current tribal codes pertaining to wetland protection	X	X			
Research additional regulatory approaches to wetland protection, such as a stand-alone wetland ordinance			X		
If determined beneficial, draft and seek approval for a stand-alone wetland ordinance				X	
<i>Action (c): Uphold wetland protections in Red Cliff Code of Laws</i>					
	2023	2024	2025	2026	2027
Continue to offer input on project applications	As requested				
Develop procedures with the Red Cliff Zoning Department to ensure the zoning map reflects any updates to the wetland inventory	X	X			
Identify clear responsibilities and procedures to uphold any newly established wetland protection in tribal code				X	

Core Element 3: Voluntary Restoration and Protection

The objective for of the voluntary protection and restoration element of this plan is to define restoration and protection goals and opportunities throughout tribal land. Though select wetland restoration and enhancement projects have been undertaken by the Treaty Natural Resources Division in the past, reservation-wide goals and priorities for restoration and protection have not been established. Goals for restoration and protection will be defined in coordination with other tribal natural resources programs and appropriate tribal departments.

Past assessment has indicated many wetlands in Red Cliff, notably the coastal wetlands, are of high quality and functional value, although regular monitoring of wetlands has not been consistently implemented throughout Red Cliff. Understanding more about the location, condition, and ecological and cultural values of wetlands across Red Cliff is essential for prioritizing protection and restoration efforts. Along with baseline monitoring and improved tribal wetland inventory goals outlined in the monitoring and assessment core element, enhancing the wetland inventory and identifying potential locations for restoration through GIS analysis will assist in the prioritization process.

Actions for defining goals and improving wetland information to facilitate a prioritization of restoration sites and identification of protection sites are outlined in Table 4.

Table 4: Voluntary Restoration and Protection Objectives

Voluntary Restoration and Protection					
Objective 1: Clearly and consistently define restoration and protection goals and opportunities throughout tribal land					
<i>Action (a) Establish restoration, protection, and enhancement goals</i>					
	2023	2024	2025	2026	2027
Coordinate with other tribal departments to outline restoration, protection, and enhancement goals		X			
<i>Action (b): Collect, improve, and enhance wetland information</i>					
	2023	2024	2025	2026	2027
Enhance updated wetland inventory for initial determination of wetland function		X	X		
Determine where rare, vulnerable, and culturally important wetlands exist in Red Cliff	X	X			
Collect information on the ways wetlands contribute to wellbeing, cultural practices, and ecosystem benefits in Red Cliff	X	X			
<i>Action (c): Prioritize wetlands to protect, enhance or restore</i>					
	2023	2024	2025	2026	2027
Prioritize locations for protection, enhancement and restoration based on watershed planning and established goals			X		
Conduct site visits to evaluate prioritized site potential and feasibility for restoration, protection, or enhancement			X	X	

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