# Tribal Nonpoint Source Management Plan

Red Cliff Band of Lake Superior Chippewa Environmental Department Water Resources Program

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# Overview

The Red Cliff Band of Lake Superior Chippewa is one of many bands of Ojibwe that reside around the Lake Superior region of the United States and Canada. The Red Cliff Reservation (*Gaa-miskwaabikaang*) is located along 22 miles of Lake Superior's southern shore (*Gichigami*) on Wisconsin's Bayfield Peninsula (*Gegaawekamigaang*). This area is commonly known as the "Hub of the Ojibwe."

The Red Cliff Reservation was established for the Red Cliff Band under the terms of the 1854 La Point Treaty and an amendment to the Treaty of 1863. Final allotments were published in 1896, which lists the members of the Red Cliff Band. The Red Cliff Band adopted a constitution and by-laws in 1936, meeting the United States Government's requirements for becoming a federally recognized Tribe under the Indian Reorganization Act of 1934 (IRPM, 2006).

The exterior boundary of the Red Cliff Reservation (see Map 1) spans 14,541 acres and contains approximately 804 acres of wetlands (WI Wetlands Inventory), 12 acres of inland lakes/reservoirs/ponds, and 47 miles of streams that are connected to many additional stream miles outside the boundaries. The Reservation is adjacent to the Apostle Islands archipelago, which consists of 22 islands that extend from the Bayfield Peninsula, and 10% of the Apostle Islands National Lakeshore lies within Red Cliff's borders- held by the U.S. Department of the Interior National Park Service.



Map 1 - Red Cliff Band of Lake Superior Chippewa Reservation (red) and the Apostle Islands National Lakeshore (dark green)

## NPS pollution is defined by the EPA as follows:

"Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters."

Due to its location in rural Northern Wisconsin, there is little to no impact from industrial sources on the Reservation. However, due to the rural setting, soil types, pressures for housing, and timber harvest, nonpoint source pollution prevention is a major component of watershed management. Additional problems with nonpoint source pollution management result from the large number of stakeholders involved in managing land within the Reservation and the watersheds to which it belongs.

# Introduction

The Red Cliff Tribal Nonpoint Source Pollution Management Plan will emphasize prevention to minimize future costs to restore the environment on which the Tribe depends. Prevention will rely heavily on cooperation with stakeholders in the Reservation's watersheds as well as education and outreach efforts. The management plan will emphasize technical assistance and financial incentives for land users to voluntarily implement Best Management Practices (BMPs) to prevent or mitigate impairment. This document is a companion document that follows up with the nonpoint sources of pollution identified in the Red Cliff Tribal Nonpoint Source Assessment Report, 2017.

BMPs are methods, measures, procedures, or practices used to control or reduce nonpoint source pollution. These practices can be structural or non-structural controls and/or operation or maintenance procedures applied before, during, or after nonpoint source producing activities. The Water Resource Program's monitoring efforts will be relied upon in order to quantify the Tribe's overall success in maintaining or enhancing water resources.

The Tribe's NPS Assessment Report and Management Plan will continually be evaluated and revised as more information becomes available and more partnerships are developed within the watershed. These documents will be reviewed and revised every four years to reflect current needs and priorities.

## Goals

The goal of the Nonpoint Source Pollution Management Program is to manage the water resources on and adjacent to the Reservation for nonpoint sources of pollution through the implementation of a nonpoint source management program. In addition, the goal of the Water Resources Program as stated in the 2006 Tribal Integrated Resource Management Plan (IRMP) is to "protect and improve all Tribal waters to the extent that water quality and associated habitat fully support all aquatic life at levels that allow for continued reproduction and biological functions, safe commercial and subsistence utilization, and protection of aquatic cultural resources and public health."

This goal pertains to both the ecological and traditional uses of water resources on the Reservation and the treaty-reserved resources within the Lake Superior Basin. Water quality, riparian, and watershed conditions must be managed to protect these resources so that the next generations can continue to utilize the natural resources so important to the Anishinaabe way of life. Therefore, prevention and reduction of nonpoint source pollution is a priority.

## **Objectives**

The primary objective of the management program is to protect the high quality waters of the Reservation and improve those threatened by human and land use activities. These objectives include continued monitoring of water quality to detect impairments, implementation of BMPs, and public education and involvement by various means. The coordination of the various stakeholders in the watersheds will be important to achieving these objectives on a watershed-wide basis.

## Identification of Nonpoint Source Problem Areas

The Red Cliff Reservation Nonpoint Source Assessment Report (NPS Assessment Report) provides a more detailed description of the steps taken to identify nonpoint source problem areas. Table 1 provides summary information for those waterbodies that were deemed threatened in the Assessment Report through monitoring data and local knowledge.

Data utilized in the NPS Assessment Report for the Red Cliff Reservation include: land use data, soil data, and original vegetation data from the 2006 Red Cliff Integrated Resource Management Plan and Bayfield County Website; results from the septic system inventory carried out under Wisconsin Community Action Program (WISCAP); water quality data collected by the Tribe's Water Resources Program under Clean Water Act (CWA) 106 and other programs; the United States Geological Survey (USGS) Bayfield Peninsula Groundwater study draft report; the Lake Superior Basin Regional Assessment & Report Compendium by the Wisconsin Department of Natural Resources (WDNR); the Biodiversity Conservation Strategy for Lake Superior and its Nemadji to Fish Creek Regional Unit Plan; and information from the State of the Basin Plan by the WDNR for the Lake Superior Basin.

The Red Cliff Water Resources Program has been collecting data on the basic water quality on the Reservation since the early 1990's. Previous sampling efforts focused on chemicals. Macroinvertebrate monitoring (biological monitoring) was initiated in 2009 to augment basic water quality monitoring. Additionally, best professional judgment and knowledge of the history of the Reservation plays an important role in assessing the possible impacts to water quality as well as planning for the management of nonpoint pollution sources.

Review of field and laboratory data indicates that every monitored stream flowing through the Reservation is impacted by NPS pollution. The primary pollutants in reservation streams are sediment, nitrogen, and phosphorus. Many streams are also affected by high levels of Escherichia coli (E.coli). In this rural setting, comprised of highly erodible clay and sandy soils, sources of nutrients are most likely linked to runoff and erosion from cleared lands that are used for agricultural and logging purposes. Nitrogen sources are also potentially linked to failing septic systems and/or outhouses and beaver dams, which are also the most likely sources of E.coli. The Lake Superior Biodiversity Conservation Strategy-Nemadji to Fish Creek Regional Plan states that this region of Lake Superior "is prone to erosion and sedimentation issues and is one of the largest sources of sediment to Lake Superior. Accelerated runoff and nonpoint source pollution affecting both in-channel and nearshore habitats are major threats to biodiversity." Although not currently monitored, there are many intermittent and unnamed streams within the Reservation, and it is important to recognize that these streams share the same landscape features and subsequent nonpoint source pollution threats as those streams that are currently monitored by Red Cliff.

	Table 1 – NPS Assessment Summary         Source: Red Cliff Tribal Nonpoint Source Assessment Report					
Waterbody Name & Stream Length* (On-reservation - main stem)	NPS Pollutant(s)	Use(s) Impaired	Use(s) Threatened	Potential Source	Future Potential Source Threats	Severity
Chicago Creek 1.75 miles	- Sediment - Nitrogen - Phosphorus - E.coli	- Contact; fishing, swimming, cultural uses -Aquatic life	-	- Possible outdated septic systems - Development - Roads - Historic hydromodification	- Forestry	Impacted (51%)
Frog Creek ~ 1.25 miles	- Sediment - Nitrogen - Phosphorus	-Aquatic life	- Contact; fishing, swimming, cultural uses	<ul> <li>Possible outdated septic systems</li> <li>Forestry</li> <li>Sandbar causing trapping of nutrients</li> <li>Roads</li> </ul>	- Development	Slightly Impacted (42%)
Lake Superior (Casino Marina & Beach)	-Nitrogen	-	- Contact; fishing, swimming, cultural uses -Aquatic life	- Casino turf management practices - Development - Roads/parking lot runoff - Historic hydromodification	-	Impacted (79%)
Casino Pond & Outfall #1	-Nitrogen -Phosphorus -Chloride	-	- Contact; fishing, swimming, cultural uses -Aquatic life	- Casino turf management practices - Development - Roads/parking lot runoff - Historic hydromodification	-	Impacted (69%)
Casino Pond & Outfall #2	-Nitrogen -Phosphorus	_	- Contact; fishing, swimming, cultural uses -Aquatic life	- Casino turf management practices - Development - Roads/parking lot runoff - Historic hydromodification	-	Impacted (88%)
Raspberry River ~ 2.25 miles	- Sediment - Nitrogen - Phosphorus - E.coli	- Contact; fishing, swimming, cultural uses -Aquatic life	-	- Forestry - Agriculture - Historic outhouses at the Raspberry Campground - Development - Roads - Beaver activity - Historic hydromodification	-	Impacted (81%)
Red Cliff Creek ~ 3 miles	- Sediment - Nitrogen - Phosphorus -E.coli	- Contact; fishing, swimming, cultural uses -Aquatic life	-	- Forestry - Agriculture - Possible outdated septic systems - Historic wastewater treatment pond - Development - Roads - Beaver activity - Historic hydromodification	-	Impacted (67%)

Sand River ~ 2.1 miles	- Sediment - Nitrogen - Phosphorus	-Aquatic life	- Contact; fishing, swimming, cultural uses	- Upstream forestry and agricultural practices - Development - Roads - Beaver activity - Historic hydromodification	-	Impacted (53%)
Sucker Creek ~ 1.45 miles	- Sediment - Nitrogen - Phosphorus -E.coli	- Contact; fishing, swimming, cultural uses -Aquatic life	-	- Agriculture - Roads - Historic hydromodification	- Development - Forestry	Impacted (58%)
*On-reservation main stem stream lengths are estimated using Google Earth Pro Not Impacted: Waterbodies with less than 25% Total Nitrogen threshold exceedances from 2013-2016 Slightly Impacted: Waterbodies with less than 50% Total Nitrogen threshold exceedances from 2013-2016 Impacted: Waterbodies with greater than 50% Total Nitrogen threshold exceedances from 2013-2016						

## **Public Comment Period**

The Nonpoint Source Assessment Report and Management Plan ("the documents") were made available to the community for review and comments during a 30-day public comment period from September 25<sup>th</sup> through October 25<sup>th</sup> 2017. Paper copies were available at the Tribal Administrative Offices, Library, and Environmental Department. Electronic copies were also made available on the Tribal website, with information being provided through flyers, and an outreach article posted through the tribal weekly e-newsletter and Facebook page. Information regarding the documents was also shared during the Water Resources Program's 4<sup>th</sup> annual Watershed Symposium, followed by an evening Community Listening Session (September 26<sup>th</sup>, 2017) where they were presented and discussed with attendees.

The only comment received during the public comment period came from the Tribe's Chief Warden, noting that the documents did not identify wild rice within Frog Creek and Raspberry River. This important reference to wild rice has been added to the appropriate sections. During the Community Listening Session, the only comment received noted that the previous version of the documents did not contain a formal definition of NPS pollution. This definition has been added to the beginning of both documents.

# **Tribal Management Program Summary**

The Red Cliff Tribal Council has the overall authority to adopt the Nonpoint Assessment Report and Management Plan, approve funding applications, and approve program implementation projects. The Tribe's Water Resources Program is responsible for the development and implementation of the nonpoint source program, coordination with other Tribal entities, and federal, state and local programs and agencies. The Tribe's Water Resource Program will also work with the Red Cliff Tribal Council, Conservation Wardens, other departments within the Treaty Natural Resources (TNR) Division, and Legal Department on enforcement issues and the creation and development of additional codes within the natural resource related chapters in the Tribe's Code of Laws.

The Nonpoint Source Management Plan consists of two parts: a General Management Program and a specific Management Program Plan by NPS pollution category. The current programs for forestry, roads, and housing on the Reservation do not currently identify BMPs associated with their projects. The Water Resources Program will continually reach out to and collaborate with these departments and others as appropriate regarding the need for NPS prevention and control. Other nonpoint prevention and remediation partners may include; Bayfield County, the Town of Russell, Bureau of Indian Affairs, United States Environmental Protection Agency, Indian Health Services, Natural Resources Conservation Service, United States Fish and Wildlife Service, Apostle Islands National Lakeshore, Wisconsin Department of Natural Resources, Bayfield Regional Conservancy, private land owners, and others as deemed necessary.

# **General Management Program Plan**

## Administration

The Red Cliff Water Resources Program will be responsible for administering and coordinating the NPS Management Program. These responsibilities include; organization and management of inter-agency cooperation, program updates, community outreach, applications for and management of grant funding, and technical assistance and implementation of BMPs and other remediation projects.

## Existing Water Quality Monitoring Program

The Red Cliff Water Resources Program operates according to approved Quality Assurance Project Plans (QAPPs) under the CWA 106 program. The Water Resources Program conducts monthly surface water testing at 16 waterbody locations throughout the Reservation for basic water quality parameters during the open water season. Wetlands are not currently being monitored; however 13 wetlands sites were inventoried and assessed during the 2015 field season. Measurements of flow are taken once a month at the same sites during the open water season. Visual habitat observations are taken seasonally to document changes, and specific attention will be paid to occurrences of rain events and flooding. Biological (aquatic macroinvertebrate) monitoring is also conducted on a sub-watershed rotational annual basis at each site and a biotic index value is given to rate the quality of the aquatic environment. Site locations are shown in Map 2. There are four additional sites located at the Legendary Waters Casino Retention Pond Project sites, which were monitored during 2014 and 2015 sampling seasons to assess the success of the Water Resource Program's 2014 casino pond remediation efforts.

This program will continue and may expand to include sites indicative of nonpoint sources. Monitoring and evaluation efforts will be added, as needed, to assess the success of BMP implementation projects as on-the-ground projects are initiated through working with the Red Cliff Environmental Department and TNR Division, Red Cliff Tribal Council, Red Cliff Wardens, and the Red Cliff Legal Department in the creation and development of additional environmental enforcement codes.



Surface water quality parameters to be monitored at all sites include:

#### Field Measured Parameters

- pH
- temperature
- dissolved oxygen
- conductivity
- turbidity
- flow
- visual habitat assessment using the EPA rapid bioassessment methodology

## Laboratory Measured Parameters

- Total Phosphorus
- Total Nitrogen
- Nitrates+Nitrites
- Total Kjeldahl Nitrogen
- Ammonia
- Total Suspended Solids
- E. coli.

The Water Resources Program has also implemented several NPS-related projects on the Reservation. In 2009, through GLRI funds, a septic system inventory was conducted to assess the conditions of private septic systems of voluntary participants. Several septic systems were replaced or repaired as a result of the inventory and several more were replaced by the expansion of Red Cliff's water main and sewer service. A contained outhouse system was also installed at the Raspberry Campground. The Water Resources Program also implemented several remediation projects at the Legendary Waters Casino to reduce stormwater runoff and nutrient loadings from their two retention ponds, parking lot, and lawn areas. The program also installed dog waste disposal stations (informational stands with trash bags and a closed top trash can) at

the Casino's Buffalo Bay and Point Detour Campgrounds, as well as the Raspberry Bay Campground.

#### **Review of Past Nonpoint Source Management Activities**

This section outlines management activities that were identified in Red Cliff's 2008 Nonpoint Source Management Plan and what efforts have been conducted under each activity.

Activity 1: Inner department coordination, structure, and capacity building in the development of policy and procedures, BMP's, and stormwater management when planning, developing, and or other projects that relate to non-point source concerns.

**Results:** Throughout the existence of Red Cliff's NPS Program, staff have reviewed and provided comments and BMP recommendations on many individual projects, primarily through the Tribe's Project and Compliance (PAC) process for land use project applications. Staff have also assisted in the planning, development, and implementation of several projects outside of the program, including: a rain garden at the Early Childhood Center in 2016, resolving an erosion issue at the Legendary Waters Resort and Casino in 2017, and planning for a wetland restoration project at the Community Farm which will occur in 2018-19. The program also lead the revision and adoption (2017) of Red Cliff Code of Law (RCCL) Chapter 11- Logging, Burning, Woodcutting, and Harvesting, which incorporates clearer definitions to aid in enforcement, greater restrictions and BMPs for logging activities within the Reservation, and new restrictions on harvesting activities to protect forest resources. The program will continue to coordinate with other tribal departments under this management plan, with specific priority departments and programs identified in the *Management Program Plan by Nonpoint Source Pollution Category* Section below.

Activity 2: Outreach to entities, agencies, and communities allowing for participation in partnership building within the watershed.

Results: The program began reaching out to community members regarding watershed use and awareness for the development of the watershed management plan in 2013 and 2014 when two community surveys were distributed. The program also reached out to a variety of local agency stakeholders via email in 2014 and again when staff turnover occurred in 2015, with a subsequent stakeholder meeting occurring in the fall of 2015 to discuss stakeholder's role in the watershed planning process. The results of the 2015 stakeholder meeting indicated that local representatives would like to see a draft watershed plan and would be willing to provide input at that time. Staff also met with a representative from the Bayfield County Forestry Department in 2017 to discuss logging concerns within reservation watersheds. In addition, program staff convened with the Superior Rivers Watershed Association (SRWA, formerly the Bad River Watershed Association) to discuss expansion of their citizen monitoring network into the upper, off-reservation reaches of two of Red Cliff's watersheds to increase the program's ability to assess upstream to downstream water quality trends. Red Cliff has also taken a seat on the SRWA Program Committee to further collaborate and assist the agency wherever possible. Staff have also begun working more closely with GLIFWC (Great Lakes Indian Fish and Wildlife Commission) staff to conduct watershed mapping and delineation through ArcGIS tools provided by the Natural Resources Conservation Service (NRCS). In 2017, GLIFWC staff provided the program with a partner opportunity with LCO Ojibwe College to map out all

culverts within Red Cliff's watersheds. The program will continue to strive to build partnerships within and outside of the Tribe under this management program, especially for the development for a Watershed Management Plan.

Activity 3: Participate in roads planning, building, culvert installation, and overall project developments within the Tribe.

**Results:** In addition to those collaborative efforts listed under the results of Activity 1 above, program staff have contributed to numerous other project developments within the Tribe. In response to a culvert blowout in 2015, staff worked with tribal Road Department and WI DOT staff to determine appropriate replacement size and roadside seed mixture to be utilized. In 2016, program staff worked in conjunction with the Tribe's Biological Technician to inventory and assesses culverts located at primary stream crossings. In 2017 when a main culvert identified as a concern during the inventory process was to be replaced, program staff worked with the Roads Department and BIA to plan a natural bottom design for the replacement structure. Other culvert related work has included assessments on an as-needed basis and commenting on minimum size requirements during PAC applications from the Roads Department. Staff have also attended Roads Department Long Range Transportation Plan development meetings and provided input on the draft plan. Outside of roads related projects, staff have also participated in NRCS project planning site visits associated with the Community Farm, eroded streambanks, and beaver dams. The program also assisted in the planning and development of a hiking trail that connects the Tribal Administration to the Community Health Center and Farm. The program will continue to participate in all appropriate projects and development efforts under this management plan, primarily those pertaining to roads, culverts, housing, and any Treaty Natural Resources Division efforts.

Activity 4: Apply for project funds through CWA 319 and/or other sources.

Results: During its first two years (2008-09), Red Cliff's NPS Program assisted in the inventory and assessment of septic systems on the Reservation and subsequently applied for FY10 GLRI funds to repair and replace 18 residential septic systems and construct a contained outhouse system at the Tribe's Raspberry Campground. The program also secured FY13 CWA 319 Competitive funds to conduct riparian buffer plantings around the Legendary Waters Resort and Casino retention ponds for the filtration of parking lot runoff. In 2016, GLRI funds were utilized to implement a large stormwater infiltration/habitat restoration project at Legendary Waters, which included the installation of native buffer strip plantings, a rain garden/bioswale, and a Great Lakes dune. A streambank stabilization project on Red Cliff Creek was applied for and awarded under the CWA 319 Competitive program in 2017, with implementation occurring in 2018-19. Although not awarded, the program also applied for a Forest Service GLRI grant under its runoff reduction program with the intent to plant 150 trees and 200 shrubs. This project plan will be reapplied for during the next funding opportunity. Efforts to apply for and utilize 319 competitive and other funding sources for project implementation will be continued under this management plan. A non-exclusive list of funding sources are listed in the Financial Assistance Section below.

Activity 5: Review and update Management Plan with new information and projects.

**Results:** The review, revision, and development of this updated NPS Management Plan occurred over 2016-2018. The Management Plan will be reviewed on an annual basis, with the next complete update occurring in 2021.

Activity 6: Monitor the effectiveness of NPS prevention practices and cooperative projects.

**Results:** Pre and post-project water quality monitoring of the program's 2014 riparian buffer plantings around the Legendary Waters retention ponds occurred in 2014 and 2015. Additional post-project effectiveness monitoring will take place into the future as appropriate.

Activity 7: Revise the Assessment Report to include new monitoring data from BMP effectiveness monitoring and other sources.

**Results:** The review, revision, and development of the updated NPS Assessment Report occurred in 2016 and 2017. Additional water quality assessments were also conducted for the development of the program's 2013-2015 Water Quality Assessment Report (WQAR) and the 2016 WQAR. The Assessment Report will be reviewed on an annual basis, with the next complete update occurring in 2021, and continued WQARs will be published on an annual basis.

Activity 8: Provide education programs as agreed upon by NPS Program participants and partners.

Results: The program has made community outreach and education a priority, as a wellinformed public is the best way to protect the Tribe's water resources. NPS pollution related newsletter articles have been/are routinely published in the TNR Division quarterly newsletter and occasionally shared in the Tribe's weekly e-newsletter. The Program hosted an annual Watershed Symposium for community members to learn and share about water resources on the Reservation in 2013, 2014, 2016, and 2017. In 2016, staff coordinated a Green Cleaning Workshop for community members to learn about the negative effects of commercial cleaning products and make their own homemade, eco-friendly products to take home. Also in 2016, the program acquired a watershed model to demonstrate impacts of NPS pollution, which has been displayed at several of the educational events listed below and also loaned out to other staff. Program staff have also regularly participated in other educational events such as; teaching during Earth Partnership Indigenous Arts and Sciences classes, assisting in the coordination of the Chippewa Federation Mining Alternatives Summit (2015 and 2016), and hosting tables at events including; Red Cliff's Community Health Fairs, TNR Open Houses, Kid's Fishing Days, ECC's Education Fairs, and ECC's Storytelling events. In 2017, as part of a GLRI-funded project, 21 interpretive signs were installed at the Legendary Waters Casino amongst several different habitat restoration/green infrastructure efforts. Also in conjunction with that same GLRI project, 500 stormwater outreach mailers with native seed packets were mailed out to all households within the Reservation. Education and outreach efforts will continue to be a top priority for the program, with continued programs such as those listed above.

Activity 9: Incorporate NPS Program priorities into Tribal program plans to be submitted to funding agencies, and participate in applications for funding through watershed partnerships.

**Results:** Program staff have worked with several departments to ensure considerations for NPS pollution and associated BMPs are incorporated into management efforts within the Tribe. Staff assisted in the development of the *Protection of Water Quality* Section of the Mino Bimaadiziiwin Farm (Red Cliff Community Farm) Plan 2017-2019, which includes a statement recognizing the importance to protect water quality during the farm's activities, and a list of minimum BMPs to be followed by farm staff. In addition, staff have participated in long-term transportation planning meetings with the Road's Department and encouraged the inclusion of BMPs in their long term plan. The program also continues to work with the Environmental Justice Specialist, who is drafting a Climate Change Adaptation Plan for the Tribe (anticipated 2018), to ensure NPS pollution considerations are taken into account when planning for climate resiliency. In 2017, the program also developed a draft BMP Menu to be utilized by all tribal departments and especially during the PAC review process for use during project planning and implementation. The program will continue to work with all appropriate departments to incorporate BMPs into their respective project planning efforts, especially the Forestry Program and Roads Department as they work to finalize management plans.

## Education

Education is a major component of nonpoint source pollution prevention, as nonpoint source pollution is also commonly known as "people pollution". A community that knows and understands the causes, effects and solutions to nonpoint source pollution is more likely to implement preventative measures voluntarily.

Public outreach and education efforts will be continually implemented to promote voluntary corrective and preventative actions. These efforts will be aimed at engaging the various departments within the Tribal government, Tribal members, other allottees and their heirs, private landowners and other various stakeholders within the watersheds of the Reservation. Cooperation with other agencies in the watershed will make this program further reaching and more effective. Outreach will be conducted in a wide variety of ways, including but not limited to; community surveys, handout materials, quarterly newsletter articles, weekly email blasts, social media outlets such as Facebook, and community events such as the annual Watershed Symposium and Treaty Natural Resource Division Open House. The Water Resources Program will continually seek additional opportunities to engage local stakeholders and collaborate with other inter-governmental Tribal departments and other local agencies, including but not limited to; the Apostle Islands National Park Service (APIS NPS), Bayfield Regional Conservancy (BRC), Bayfield County, Chequamegon Bay Area Partnership (CBAP), US Fish and Wildlife Service (USFWS), the US Forest Service- Chequamegon Nicolet National Forest, and WDNR.

#### **Other Programs**

The Water Resources Program aims to coordinate BMPs within the Reservation and Tribal Divisions/Departments, and continually collaborate with other agencies within the Bayfield Peninsula. The Tribe has some programs in place that do address nonpoint source pollution prevention issues though perhaps not directly. As previously stated, the Tribe's 2006 IRMP states that the long-term goal of the Tribe is to "protect and improve all Tribal waters to the extent that water quality and associated habitat fully support all aquatic life at levels that allow

# for continued reproduction and biological functions, safe commercial and subsistence utilization, and protection of aquatic cultural resources and public health."

The IRMP contains descriptions of the major natural and cultural resources of the Reservation, threats to their existence and management steps to be taken by the Tribe. This information has been incorporated in the Nonpoint Source Management Plan, and will continue to be incorporated as both the IRMP and Management Plan evolve.

The Tribe's Forestry Program does not currently have a forestry management plan in place and relies on the IRMP's Forestry Section for BMPs. The Roads Department is currently drafting a transportation plan and the Water Resources Program will assist in ensuring that appropriate BMPs are included. The Red Cliff Housing Authority also does not currently have a set list of BMPs, although they are required to secure permits and follow any conditions given in such permits.

Table 2 – General NPS Management Program Milestones				
Activity	Year/Frequency			
Update Assessment Report and Management Plan as necessary	Ongoing/ minimum every 4 years (next due 2021)			
Submit annual reports on workplan progress to EPA	Annually			
Identify and prioritize top projects Locate and inventory locations within the Reservation in need of restoration or BMP installation. Prioritize projects based on location, associated water quality benefits, and cost.	Field season 2017 and ongoing			
Adopt Watershed Management Plan Draft and implement a Watershed Management Plan for the watersheds of the Reservation	Fall 2018			
Support and continue developing Red Cliff's CWA 319 program Submit semi-annual reports to EPA, develop program workplans biannually, research additional funding opportunities, continue developing watershed partnerships and coordinate with other programs in developing and implementing BMPs	Ongoing			
Develop policies, procedures, and Tribal codes related to NPS pollution Coordinate among departments to implement BMPs in community planning, developing, and/or other projects (roads, construction, forestry, etc.)	Ongoing			
Conduct outreach and education efforts Reach out to entities, agencies, and community members allowing for participation in partnership building and BMP implementation within Reservation watersheds	Ongoing			
Apply for and manage project funds to implement NPS prevention or remediation efforts Incorporate the priorities of this management program into work plans when applying for funding through various agencies (US Environmental Protection Agency (EPA), Bureau of Indian Affairs (BIA), State of Wisconsin, US Department of Agriculture (USDA), Indian Health Services (IHS), NRCS, etc.)	Ongoing			
Monitor the effectiveness of NPS prevention practices and cooperative projects Utilize the Water Resource Program's CWA 106 monitoring data and additional data to determine if implemented BMPs have improved water quality	Ongoing			

## General Management Plan Milestones

# Management Program Plan by Nonpoint Source Pollution Category

Different agencies across the country have developed BMP guidelines for different land use practices. A locally important guideline summarizing BMPs for the red clay plain of Lake Superior has also been developed (Schulz, 2003). Table 3 lists possible BMPs for the different NPS categories of the Reservation that have been identified by Table 1 and a summary is provided below to outline each nonpoint source category and other available resources. These resources will be studied and utilized to continue expanding Red Cliff's use of BMPs. In addition to all the below listed BMPs, outreach efforts will be conducted to educate local stakeholders on the importance of NPS pollution prevention. In this document the category of "urbanization" will be referred to as "development" which is a more accurate description of the local setting.

Table 5 – Management Measures for Nonpoint Sources of Fonution					
NPS Category	Causes/Sources	Applicable BMPs	Watersheds/Sites where BMPs are to/may be implemented		
Forestry	<ul> <li>Increases runoff volumes and rates, which can lead to contaminant elevations in streams</li> <li>Greater rates of erosion and sedimentation <ul> <li>Riparian buffer loss can contribute to streambank loss and cause higher stream temperatures</li> <li>Hydromodification when stream crossings are not properly constructed</li> <li>Loss of Ash species canopy cover due to Emerald Ash Borer (EAB) infestation may contribute to increased runoff</li> </ul> </li> </ul>	<ul> <li>Avoid and protect sensitive areas (highly erodible areas as well as culturally significant areas)</li> <li>Conduct selective harvests only</li> <li>Careful planning for logging road construction (minimize width and length, avoid streams and steep slopes)</li> <li>Avoid conducting logging activities during rainy seasons and during fish spawning seasons</li> <li>Replant logged areas by seed or with seedlings (more advanced successional species such as white pine are preferred due to their greater root strength)</li> <li>Underplant ash stands with appropriate non-ash species before EAB infestation occurs</li> </ul>	- Frog Creek - Raspberry River - Red Cliff Creek - Sand River		
Roads	- Channelized ditch runoff		- Chicago Creek		

## Table 3 – Management Measures for Nonpoint Sources of Pollution

	increases runoff volumes and rates, which can lead to contaminant elevations in streams - Hydromodification when stream crossings are not properly constructed - Impermeable surfaces reduce groundwater recharge	<ul> <li>Ensure proper installation of culverts and other stream crossings (should not disrupt or alter flow, cause erosion, or create a barrier to fish)</li> <li>Avoid and protect sensitive areas (highly erodible areas as well as culturally significant areas)</li> <li>Implement BMPs during construction such as; silt fencing, sediment basins, etc.</li> <li>Revegetate disturbed areas as soon as possible</li> <li>Install permanent runoff control measures such as; permeable pavements, rock barriers, grade stabilizing structures, hillside ditches, etc.</li> </ul>	<ul> <li>Frog Creek</li> <li>Lake Superior</li> <li>(Casino Marina &amp; Beach)</li> <li>Casino Ponds &amp; Outfalls #1 &amp; #2</li> <li>Raspberry River</li> <li>Red Cliff Creek</li> <li>Sand River</li> <li>Sucker Creek</li> </ul>
Development	<ul> <li>Increases runoff volumes and rates, which can lead to contaminant elevations in streams</li> <li>Greater rates of erosion and sedimentation</li> <li>Nutrients and pathogens can be released into the environment from septic system, sewer line, and wastewater treatment facility/lagoon malfunctions, as well as pet waste</li> <li>Impermeable surfaces reduce groundwater recharge</li> </ul>	<ul> <li>Avoid and protect sensitive areas (highly erodible areas as well as culturally significant areas)</li> <li>Implement BMPs during construction such as; silt fencing, sediment basins, etc.</li> <li>Integrate requirements for stormwater management measures in tribal permitting processes</li> <li>Install permanent runoff control measures that maximize infiltration such as; permeable pavements, filter strips, retention ponds, terraces, rock barriers, vegetative buffer zones, rainwater gardens, rain barrels etc.</li> <li>Avoid use of fertilizers - Implement regular</li> </ul>	<ul> <li>Chicago Creek <ul> <li>Frog Creek</li> </ul> </li> <li>Lake Superior (Casino Marina &amp; Beach)</li> <li>Casino Ponds &amp; Outfalls #1 &amp; #2</li> <li>Raspberry River</li> <li>Red Cliff Creek <ul> <li>Sand River</li> <li>Sucker Creek</li> </ul> </li> </ul>

		<ul> <li>maintenance and inspection of septic systems and sewer lines; replace malfunctioning equipment</li> <li>Practice water conservation efforts to lengthen the life of septic systems</li> <li>Encourage community members to clean up after their pets</li> </ul>	
Agriculture	<ul> <li>Increases runoff volumes and rates, which can lead to contaminant elevations in streams</li> <li>Greater rates of erosion and sedimentation <ul> <li>Nutrients, pathogens, and other contaminants can be released into the environment from fertilizers and animal waste</li> <li>Groundwater contamination can occur through seepage</li> </ul> </li> </ul>	<ul> <li>Reduce fertilizer and pesticide use (implement nutrient management plans)</li> <li>Keep livestock out of streams and maintain a vegetated buffer zone around waterbodies</li> <li>Practice no-till farming</li> <li>Harvest products at appropriate times of year to avoid major runoff from seasonal storm events</li> <li>Properly store and manage facility wastewater</li> <li>Efficiently use irrigation water</li> <li>Manage livestock grazing to avoid overgrazing (avoid sensitive areas, revegetate grazed areas)</li> </ul>	- Raspberry River - Red Cliff Creek - Sand River - Sucker Creek
Historic Hydromodifi cation	<ul> <li>Disturbs stream equilibrium         <ul> <li>Creates stream velocity changes</li> <li>Eliminates flood functions (floodplains) causing greater stormwater loads and flooding             <ul> <li>Streambed elevation alteration</li> <li>Increases erosion and</li> </ul> </li> </ul> </li> </ul>	<ul> <li>Restore sinuosity and floodplain connectivity</li> <li>Restore and protect wetlands</li> <li>Protect riparian buffer zones and revegetate those which are degraded</li> <li>Preserve natural hydrologic conditions and protect</li> </ul>	<ul> <li>Chicago Creek</li> <li>Frog Creek</li> <li>Lake Superior</li> <li>(Casino Marina &amp; Beach)</li> <li>Casino Ponds &amp; Outfalls #1 &amp; #2</li> <li>Raspberry River</li> <li>Red Cliff Creek</li> </ul>

sedimentation	sensitive areas	- Sand River
- Accelerates delivery of pollutants	- Stabilize eroding streambanks and shorelines	- Sucker Creek
- Creates barriers to aquatic wildlife (perched culverts)	- Assess and replace stream crossings (culverts) that are	
- Disrupts aquatic habitats and fish spawning areas	inadequate	

## Forestry

Forests are the primary land cover in the Reservation's watersheds and timber harvest activities are common in the region. Tribally owned forest covers about 8,000 acres of the Reservation, of which 6,200 forested acres are under Tribal Trust ownership and the rest is allotted to individuals through trust allotments (IRMP, 2006). Watersheds impacted by logging include; Frog Creek, Raspberry River, Red Cliff Creek, and Sand River. Different agencies and landowners may or may not utilize BMPs in their harvests. The Tribal Forestry & Wildlife Program relies on the IRMP section on Forest Resources as the Tribe's Forestry Management Plan. The Water Resources Program will work with the Forestry & Wildlife Program to draft and implement a Forestry Management Plan that includes adequate BMPs. The Bureau of Indian Affairs handles sales of timber while working closely with the Tribe's Forestry & Wildlife Program to select areas for timber harvest or other potential management activities such as prescribed burning and/or forest inventories. When issuing a Commercial Logging Permit, the Forestry & Wildlife Program sets permit conditions that include forestry BMPs.

Development of a forestry management plan will be encouraged. A forestry management plan based on BMPs minimizes the production of sedimentation by carefully planning harvests and road construction, defining riparian management zones, and leaving buffers on sensitive areas such as streams, lakes, wetlands, steep slopes and erodible soils. Maintaining the vegetation in these areas allows the root masses to "hold" soil in place, reducing sedimentation to a waterbody. The forest road BMPs also focus on keeping soil out of water bodies, especially by properly placing culverts and managing stormwater flow.

Other guidances applicable to forestry NPS pollution include;

- Wisconsin's Forestry Best Management Practices for Water Quality Field Manual, WDNR
- Temporary Stream and Wetland Crossing Options for Forest Management, USDA Forest Service General Technical Report NC-202 1998
- Managing Nonpoint Source Pollution from Forestry EPA841-F-96-004H
- NRCS CAP 106- Forest Management Plans, and technical service providers
- NRCS Conservation Practice Standard Codes (additional codes listed under Roads may also apply):
  - 314, Brush Management338, Prescribed Burning390, Riparian Herbaceous Cover391, Riparian Forest Buffer

560, Access Road 655, Forest Trails and Landings 666, Forest Stand Improvement

Table 4 – Schedule of Milestones for Forestry				
Activity	Year 1	Year 2	Year 3	Year 4
Work with Forestry Program during the development of their Forestry Management Plan to identify and incorporate appropriate forestry BMPs	X	Х		
Coordinate with the Forestry Program to conduct underplanting projects in ash dominated stands		Х	Х	Х
Coordinate with the Forestry Program to conduct replanting efforts on tribally logged parcels and/or repatriated Bayfield County Forestry parcels		X	X	X
Work with Forestry Program to incorporate stringent BMPs as logging permit requirements	Х	Х	Х	Х
Identify parcels within reservation boundaries that are appropriate for conservation (habitat features, presence of wetlands, riparian corridors) and seek funding sources to repatriate said lands into tribal ownership. Incorporate repatriated parcels into the "Preserved" zone of tribal zoning to ensure long term protection	X	X	X	Х
Research funding opportunities to conduct all associated projects	X	X	X	Х

## Roads

Roads constructed near streams and crossing streams can channel stormwater runoff and sediment into the stream and erode the streambanks themselves. There are approximately 12.3 miles of paved roads, 29 miles of gravel roads, and 7 miles of bare earth roads within the Reservation, impacting all local watersheds. Temporary roads are often installed in timber harvest areas. Dirt roads in rural areas and culverts under roads cause problems if they are not properly installed. The TNR Division has inventoried and assessed 16 culverts and 2 bridges on reservation streams. The most notable culvert of concern was found on Red Cliff Creek at Blueberry Road, which is scheduled for replacement in field season 2017. Minor erosion was observed at the Chicago Creek culvert at Blueberry Road and will be addressed as funding becomes available. There are many additional road-stream crossings outside of the Reservation that have not been assessed.

Red Cliff's Roads Department does not currently have a plan in place that includes road BMPs and relies on engineers to include BMPs in road designs. The Roads Department is currently drafting a transportation plan and the Water Resources Program will assist in ensuring that appropriate BMPs are included for the protection of water resources.

Several documents provide guidelines for avoiding runoff, erosion and sedimentation problems from roads. These include;

- Controlling Nonpoint Source Runoff Pollution from Roads, Highways, and Bridges, EPA-841-F-95-008a
- NRCS Conservation Practice Standard Codes (additional codes listed under Development may also apply): 342, Critical Area Planting 578, Stream Crossing
   654, Road/Trail/Landing Closure and Treatment

Table 5 – Schedule of Milestones for Roads					
Activity	Year	Year	Year	Year	
Activity	1	2	3	4	
Work with tribal Roads Department to incorporate BMPs in their	v	v			
long term transportation plan (scheduled for completion in 2020)	Λ	Λ			
Work with tribal Roads Department to acquire BMP installation		v	v		
training for relevant tribal staff		Λ	Λ		
Assist Roads Department in acquiring a street sweeper to remove			v		
sediment from roads			Λ		
Inventory, assess, and prioritize road-stream crossings for repair or				v	
replacement (5 yr rotation in Monitoring Strategy, next 2021)				Λ	
Review and provide comments and BMPs during road related PAC	V	V	V	V	
applications	А	А	А	Χ	
Assist Roads Department in planning of road-stream crossing	V	V	V	V	
projects	Λ	Λ	Λ	Λ	
Implement restoration projects downstream of remediated poor	v	v	v	v	
road-stream crossings	Å	Å	Λ	Λ	
Research funding opportunities to conduct all associated projects	Х	Х	Х	Х	

## Development

There are more Tribal members than available housing on the Reservation. As more areas of the Reservation are developed to meet the need for housing, stormwater pollution prevention and waterbody protection need to be considered. Identification of areas in need of preservation and areas most suitable for future development is also important. Current housing developments are concentrated in the southeastern portion of the Reservation, primarily in the Red Cliff Creek watershed. Three of Red Cliff's four housing developments are located in the Red Cliff Creek watershed, consisting of approximately 200 houses, with many additional houses outside of the neighborhood developments and several tribal buildings. Red Cliff's oldest housing development is located in a small, unnamed watershed at the southeastern end of the Reservation. This development consists of approximately 36 houses and 7 tribal administrative buildings. The Water Resources Program will monitor within the small stream that flows through the center of this developed area to determine and address the urban impacts, if any, on water quality in 2018. There is also a concentration of development in the Chicago Creek watershed, containing a storage facility, gas station, and several homes. Raspberry and Sand Rivers are less impacted by development, with far-spread homes being the primary development type within the watersheds.

Recreational land use such as for ATV or snowmobile trails should also be considered. Wetlands are primary natural areas to filter runoff and hold water during storm events. These areas, in addition to culturally significant areas, must be protected from development. The Red Cliff Housing Authority does not currently have a set list of BMPs, although they are required to secure permits and follow any conditions given in such permits.

Documents available to provide development NPS pollution guidance include;

- Red Cliff Code of Law Chapter 12
- Protecting Water Quality from Urban Runoff, EPA-841-F-03-003
- EPA Tribal Green Building Toolkit, EPA-909-R-15-003

- Protecting Natural Wetlands, EPA-843-B-96-001
- NRCS Conservation Practice Standard Codes: 327, Conservation Cover 562, Recreation Area Improvement 350, Sediment Basin 566, Recreation Land Grading and 355, Groundwater Testing Shaping 570, Stormwater Runoff Control 359, Waste Treatment Lagoon 360, Waste Facility Closure 575, Trails and Walkways 367, Roofs and Covers 587, Structure for Water Control 600, Terrace 393, Filter Strip 410, Grade Stabilizing Structure 601, Vegetative Barrier 606, Subsurface Drain 423, Hillside Ditch 609, Surface Roughening 460, Land Clearing 555, Rock Barrier 612, Tree/Shrub Establishment 558, Roof Runoff Structure 638. Water and Sediment Control 561, Heavy Use Area Protection Basin

Table 6 – Schedule of Milestones for Development				
Activity	Year 1	Year 2	Year 3	Year 4
Install pet waste station at Frog Bay Tribal National Park trailhead	Х			
Implement check dams up-gradient from beach erosion area at Legendary Waters	X			
Work with the GIS Manager to identify and map areas for preservation and areas best suited for development within the Reservation	X	Х		
Install a rain garden at Legendary Waters	Х	Х		
Conduct urban forest planting projects	X	Х	X	
Install floating wetland islands in the Legendary Waters retention ponds			Х	
Monitor, assess, and implement BMPs in most developed areas of the Reservation		Х	X	Х
Review and provide comments and BMPs during development PAC applications	X	Х	X	Х
Distribute native plants and seeds throughout the community to reduce runoff from developed areas	X	Х	X	Х
Conduct education and outreach efforts related to development	X	Х	X	Х
Research funding opportunities to conduct all associated projects	X	X	X	X

## Agriculture

Although agricultural land use is relatively minimal in this area, a few agricultural areas are known within several of the Reservation's watersheds and are suspected contributors of NPS pollution to those waterbodies. Agricultural areas primarily consist of pastureland and are located in the headwaters of Raspberry River, Red Cliff Creek, Sand River, and Sucker Creek. The Tribe's only active agricultural property includes a 40 acre parcel in the headwaters of a small stream known as Clayton Creek, which is not currently monitored by the Water Resources

Program. Management of the Red Cliff Farm was assumed by the TNR Division in 2016 and a three year farm plan that includes BMPs was drafted and adopted in 2017. The Lake Superior Biodiversity Conservation Strategy states that the Nemadji to Fish Creek regional unit of the Lake Superior Basin, in which the watersheds of the Reservation fall, "contains more agricultural land than most other regions [in the basin]."

Documents available to provide agricultural NPS pollution guidance include;

- Managing Nonpoint Source Pollution from Agriculture, EPA-841-F-96-004F
- NRCS Conservation Practice Standard Codes:
  - 332, Contour Buffer Strips
  - 511, Forage Harvest Management
  - 548, Grazing Land Mechanical Treatment
  - 590, Nutrient Management

Table 7 – Schedule of Milestones for Agriculture						
Activity	Year 1	Year 2	Year 3	Year 4		
Monitor and assess NPS impacts associated with Red Cliff's Community Farm	X	Х				
Assist in the planning and implementation of a wetland restoration project at the Community Farm	X	Х				
Assist in the planning of livestock managed grazing areas and installation of livestock exclusion fencing		Х	Х			
Install a floating wetland island in the pond located at the Community Farm			Х			
Monitor and assess the effectiveness of implemented BMPs				Х		
Research funding opportunities to conduct all associated projects	X	X	Х	X		

## **Hydromodification**

Hydromodification includes channelization, channel modification, dams and streambank and shoreline erosion. Many land uses can contribute to the negative impacts to streams known as hydromodification, and historic land cover changes have greatly influenced reservation streams. Many portions of each of Red Cliff's streams have deeply cut channels and eroded banks due to historic clear cutting across the local landscape. Additionally, beaver dams are known to occur on Raspberry River, Red Cliff Creek, and Sand River. Channel modification activities can alter instream water temperatures and sediment characteristics, as well as the rates and paths of sediment erosion, transport, and deposition. A frequent result of hydromodification is a diminished suitability of instream and riparian habitat for fish and wildlife. Specific hydromodification actions may be implemented to repair stream channel damages, shoreline erosion, or to retain stormwater.

Guidance available to prevent improper hydromodification and assist in implementation projects includes;

- Red Cliff Code of Law Chapter 12

- Streambank and Shoreline Protection Management for Hydromodification EPA 840-B-92-002
- Management Measure for Physical and Chemical Characteristics of Surface Waters II. Channelization and Channel Modification Management Measures, EPA
- NRCS Conservation Practice Standard Codes: 326, Clearing and Snagging
  - 378, Pond
    395, Stream Habitat Improvement and Management
    399, Fishpond Management
    412, Grassed Waterway
    521 a-d, Pond Sealing or Lining
    580, Streambank and Shoreline
    Protection

582, Open Channel
584, Channel Bed Stabilization
646, Shallow Water Development
and Management
656, Constructed Wetland
657, Wetland Restoration
658, Wetland Creation
659, Wetland Enhancement

Table 8 – Schedule of Milestones for Historic Hydromodification				
Activity	Year 1	Year 2	Year 3	Year 4
Inventory, assess, and prioritize road-stream crossings for repair or replacement (5 yr rotation in Monitoring Strategy, next 2021)				Х
Locate and map locations of greatest hydromodification concern (eroded streambanks, potentially restorable wetlands, etc.)			Х	Х
Assist Roads Department in planning of road-stream crossing projects	Х	Х	Х	Х
Implement restoration projects downstream of remediated poor road-stream crossings	X	Х	Х	Х
Research funding opportunities to conduct all associated projects	X	Х	Х	Х

## **Climate Change Considerations**

Over the past 50 years, every indicator available from satellites in space to weather balloons in the atmosphere, from thermometers in our hands to observations made with our eyes, confirms that earth's climate is changing at an alarming rate. Temperatures at earth's surface, in the atmosphere and the oceans have all increased over the last few decades. Each passing decade has set a new precedent for the hottest on record (EPA, 2014). Climate models indicate that warming temperatures will likely alter atmospheric circulation and increase evaporation and water vapor, which will result in a variety of weather pattern changes; increases in precipitation, more intense precipitation events, and prolonged droughts. These effects could, in turn, cause a variety of problems for water resources on the Red Cliff Reservation. Some examples for consideration are given by the *EPA Handbook for Developing and Managing Tribal Nonpoint Source Pollution Programs*:

- Changes in the location, timing, form, and amount of precipitation could result in

- Reduced rainfall [less groundwater recharge]
- More frequent wildfires (land areas where wildfires have occurred are more vulnerable to erosion)

- More frequent, more intense storm events and flooding [more erosion, more culvert blowouts]

- Hydrologic changes
  - Shrinkage of the drainage network
  - Earlier peak runoff and lower summer flows
- Chemical and physical changes in oceans and coastal regions, including
  - Rising sea [lake] levels
  - Increasing erosion rate
  - Displacement of coastal wetlands
  - Inundation of coastal wetlands

- Increases in water temperature, resulting in

- Higher levels of pathogens, nutrients, ammonia, and other pollutants
- Increased algal blooms and invasive species
- Loss of aquatic species whose survival is temperature dependent
- Change in the abundance and distribution of coastal species
- Increased rate of evapotranspiration

- Increased evaporation from soils, leaving soils less able to support plant life and less able to absorb runoff

- Protected wetlands and other waterbodies may lose their relevance for species of concern

It is important to consider future threats as well as current sources of nonpoint source pollution when managing the water resources at Red Cliff. Climate change resiliency will be incorporated into all Water Resources Program planning efforts. Some methods to minimize the effects of climate change that may be taken by Red Cliff include:

- When assessing and prescribing watershed management efforts, project what future needs may be (influences of temperature changes, changes in precipitation patterns, species range shifts, etc.)

- Choose activities that protect or restore the resiliency of ecosystems and watersheds.

- Protect and maintain floodplain areas

- When selecting and designing BMPs, consider potential increased water flows. Consider headwater wetland protection and restoration as a means to increase water storage.

- Retain and expand forests as much as possible, selecting species that are projected to perform better under climate change conditions.

- Work with other tribal divisions and departments to consider climate change resiliency in their projects, permitting, and code development.

- Minimize increases in water temperature through shading and groundwater recharge by protecting and restoring riparian and wetland areas. These efforts will also ensure that sensitive aquatic species have access to seasonal habitat.

- Disconnect impervious cover and road discharge from streams to soften discharge peaks during storm events.

Use and promote the use of green infrastructure technologies (permeable pavement, rain gardens, filter strips, etc.) for groundwater recharge and to reduce and slow the flow of runoff.Reduce additional carbon emissions from carbon storage sources by limiting disturbance of soil

and wetlands and forest clearing.

# **Existing Authorities and Programs**

This section identifies and describes any Tribal or Federal laws or programs that address nonpoint source pollution and activities associated with those programs.

## **Federal Law**

The Clean Water Act is the United States' most comprehensive water law. The Act is based the goal of restoring and maintaining the chemical, physical and biological integrity of the nation's waters, including rivers, streams, lakes, wetlands and estuaries.

The Clean Water Act is organized by Sections pertaining to specific categories. Several of these sections apply directly or indirectly to nonpoint source pollution management. Tribes are able to participate in many of the programs available to states by completing eligibility applications entitled "Treatment in a Similar Manner as a State" (TAS). Red Cliff has acquired TAS for the CWA 319 program as of 2009.

## Section 303

Under Clean Water Act Section 303, States are required to establish water quality standards that define goals and pollution limits for all waters within their jurisdiction. These standards must include three major actions; designation of beneficial uses, establishment of water quality criteria, and development and implementation of antidegradation policies and procedures. Regional EPA offices may accept and approve tribal water quality standards according to procedures set forth in Section 518. Red Cliff's Water Resources Program is currently working to establish water quality standards.

## Section 319

Section 319 established a national program to control nonpoint sources of pollution. This section contains three main strategies for addressing polluted runoff; requiring states and eligible tribes to prepare assessments of their NPS pollution problems, requiring states and eligible tribes to develop management programs to address the problems identified in their assessments, and create a grant program that allows EPA to fund state programs for NPS assessment and control.

## Section 401

In order to ensure that federal activities will not violate a government's water quality standards, the Clean Water Act gives downstream states, eligible Tribes, some interstate agencies, and EPA the authority to veto or place conditions on activities requiring a federal permit that may result in discharges. This authority is known as "water quality certification".

## Section 402

Under the Clean Water Act, all point source discharges of pollution require a permit. The primary point source control program is the National Pollutant Discharge Elimination System (NPDES). A point source is defined as "any discernible, confined, and discrete conveyance" of pollutants to a water body (EPA, Section 502). The recognition that many municipal stormwater pollution control systems involve stormwater "pipes" has led to the development of regulations and programs to control many forms of stormwater runoff under NPDES permits.

## Section 404

Under Section 404, activities involving a discharge of dredged or fill material into waters of the United States require a permit from the U.S. Army Corps of Engineers. The 404 permit process requires applicants to demonstrate that they have followed certain steps in a particular order, known as "sequencing": avoiding impact, minimizing impact, mitigating impact.

## **Tribal Law**

The Red Cliff Tribe has a Constitution and By-Laws and Codes established. Relevant Codes include Chapter 11- Logging, Burning Woodcutting, Chapter 12- Pollution and Environmental Protection, Chapter 34- Sewage Disposal, and Chapter 37- Land Use. These chapters include restrictions protecting the Reservation from activities leading to degradation or pollution of the physical and social environment. As the Code reads now the Red Cliff Wardens and Red Cliff Environmental Department have authority to access and investigate possible code violations within the Red Cliff Reservation's exterior boundaries. (See Attachment, Certification of Authority for Red Cliff). [TNR Division and the various departments and programs within the division are] responsible for the oversight and management of the natural resources within the boundary of, and in the ceded territory of the Red Cliff Band (IRMP, 2006-2016).

## **Financial Assistance**

The major objective of the grants provided under the Clean Water Act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. The Tribal Portal website provides a central location for federal sources of both technical and financial assistance available to Tribes for environmental management:

(http://www.epa.gov/tribalportal/grantsandfunding/index.htm).

Currently, the Red Cliff Tribe receives funding through several programs supporting protection of water resources, including CWA 106, CWA 319, General Assistance Program (GAP), Great Lakes Restoration Initiative (GLRI) and BIA Water Management Funding. Red Cliff actively seeks additional water-related funding opportunities through agencies such as NRCS, Forest Service, Fish and Wildlife Service, and others as they are available.

## EPA CWA Section 106, Region 5

Section 106 of the Clean Water Act provides financial assistance for the prevention, reduction and elimination of water pollution. Funds from Section 106 can be used to support projects and monitoring for the protection of water quality. The Red Cliff Water Resources Program has utilized Section 106 funds to gather baseline water quality data and initiate biological data collection.

## EPA CWA Section 319, Region 5

Section 319 of the Clean Water Act provides financial assistance to support technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of implementing management practices that address nonpoint source pollution.

## Water Management Funding, Bureau of Indian Affairs - Midwest Region

The BIA supports water-related activities on Indian Reservations through its Water Resources Management Planning and Predevelopment Program. This program provides funding for a wide variety of water resource projects, which can include assessment of surface and/or groundwater resources on tribal land. The Red Cliff Water Resources Program currently receives BIA Water Management funds for a water quantification study and stormwater monitoring, which involves the deployment of stream temperature and flow data loggers.

## Great Lakes Restoration Initiative

The Great Lakes Restoration Initiative began in 2010 with the goal to protect and restore the Great Lakes watershed. The program provides funding for projects as defined by the actions in the Great Lakes Action Plan II. Red Cliff has utilized a wide variety of GLRI funding opportunities for capacity, research, monitoring, land acquisition, and restoration projects.

## **Education and Technical Assistance**

These agencies have personnel involved with technical guidance and outreach on NPS pollution prevention. Contact will be made with staff from the following agencies and others as the Tribe continues to develop watershed partnerships:

## **USEPA**

The USEPA has developed a series of best management practices guidebooks for nonpoint source pollution categories (roads, urban, hydromodification, etc.) that can be applied on the Reservation as part of the NPS Management Plan.

## NRCS

The NRCS has technical manuals and staff that are available to assist the Tribe with various projects.

## **WDNR**

The WDNR has regulatory authority for stormwater pollution prevention in several land use activities, and guidance documents available for landowners engaged in those activities.

## **Bayfield County Land and Water Conservation Department**

The Bayfield Land and Water Conservation Department provides technical and financial assistance to landowners for installation of conservation practices that reduce sediments and nutrients in waterways while improving habitat.

## **Bayfield Regional Conservancy**

The Bayfield Regional Conservancy is a non-profit land trust operating in Bayfield, Ashland, Douglas and Sawyer Counties in Wisconsin. The Conservancy works with private landowners, agencies and local governments to fund protection of natural areas and landscapes in northwestern Wisconsin.

## **Acronym List**

ABDI-LCD – Ashland, Bayfield, Douglas and Iron County Land and Water **Conservation Department APIS NPS**- Apostle Islands National Park Service **BIA-** Bureau of Indian Affairs **BMPs** – Best Management Practices **BRC**- Bayfield Regional Conservancy CBAP- Chequamegon Bay Area Partnership CC02 – Chicago Creek sample site #2 CC03 – Chicago Creek sample site #3 CCM01 – Chicago Creek Mouth sample site #1 CFS – Cubic Foot per Second **CFU** – Colony Forming Units **CPU01** – LW Casino Pond sample site #1 CPU02 – LW Casino Pond sample site #2 **CREP** – Conservation Reserve **Enhancement Program CWA** – Clean Water Act **EPA** – United States Environmental Protection Agency **FC01** – Frog Creek sample site #1 FCM01 – Frog Creek Mouth sample site #1 **FWS**- Fish and Wildlife Service **GLIFWC** – Great Lakes Indian Fish and Wildlife Commission **GLRI-** Great Lakes Restoration Initiative **IHS-** Indian Health Services **IRMP** – Integrated Resource Management Plan LCD – Land Conservation Department **LS01** – Lake Superior sample site #1 (LW Casino Marina & Boat Ramp)

**LS02** – Lake Superior sample site #2 (LW Casino Pond Outfall) LS03 – Lake Superior sample site #3 (LW Casino Pond Outfall) **LW**- Legendary Waters **NPDES-** National Pollutant Discharge Elimination System **NPS** – Nonpoint Source **NRCS**- Natural Resources Conservation Service **QAPP-** Quality Assurance Project Plan RCC01 - Red Cliff Creek sample site #1 RCC03 - Red Cliff Creek sample site #3 **RCCM01** - Red Cliff Creek Mouth sample site #1 **RR01** – Raspberry River sample site #1 **RR03** - Raspberry River sample site #3 **RRM01** - Raspberry River Mouth sample site #1 **SC01** – Sucker Creek sample site #1 **SC02** – Sucker Creek sample site #2 **SDWA-** Safe Drinking Water Act **SR01** – Sand River sample site #1 **SRM01** – Sand River Mouth sample site #1 TAS- Treatment in the same matter as a state **TSS-** Total Suspended Solids **USDA-** United States Department of Agriculture **USGS**- United States Geological Survey **WDNR** – Wisconsin Department of Natural Resources WISCAP – Wisconsin Community Action Program

**WQ** – Water Quality

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# **Certification of Authority**



specifically including environmental protection, sewage disposal and land use, among other subjects pertinent to our application and the requirements of CWA sec. 319 (Attachment C).

The Band's reservation is comprised of approximately 8,100 acres, located on the southwestern shore of Lake Superior near the northernmost tip of Wisconsin. The Red Cliff Reservation was established between the Lake Superior and Mississippi Chippewa Tribes and the United States by the Treaty of 1854, 10 Stats. 1109, Sept. 30, 1854. Originally, both the Red Cliff Band and the Bad River Band of Lake Superior Chippewa Indians were identified as the "LaPointe Band." The Sixth paragraph of Article 2 of that Treaty indicated the right of "that subdivision of the LaPointe Band of which Buffalo is chief" to select four sections of land on the shores of Lake Superior, which selection established the original boundaries of the Red Cliff Reservation.

#### Additional Supporting Information and Documentation

The Tribal governing body is the Red Cliff Tribal Council, established by the Band's Constitution at Art. III, sec. 1. It is comprised of nine members, and exercises a broad range of authority pursuant to Art. VI, including, among other things the power to promulgate and enforce ordinances governing the conduct of persons subject to the jurisdiction of the Tribe, and providing for the maintenance of law and order and the Administration of justice by establishing a reservation court and defining its duties and powers (Art. VI, sec. 1(p)). The Tribal Council is a centralized form of government, possessing legislative, executive and judicial authority; however, much of its judicial and executive Authority has been delegated respectively to the Red Cliff Tribal Court and the tribal administration. In the interests of brevity, I have omitted a detailed list of all of the separate expressions of constitutional authority contained in Art. VI, sec. 1(p) through (q) which are contained in Attachment B.

In accordance with its constitutional authority, the Tribe, acting through its Executive Officers and Tribal Administration operates, among other things a Police Department, Fire Department, Ambulance Service, Health Clinic, Entertainment Center, Elderly Program, Youth Program, Early Childhood Center, Reservation Roads Program, Indian Child Welfare Program, Public Works Department (both Water and Sewer), Education Department, a wide range of Family and Human Services and other programs and a Treaty/Natural Resources Division that includes a Fisheries Department, Water Resources Department, Environmental Protection Office, Conservation (Game Wardens) Department, Fish Hatchery, Solid Waste and Recycling Program, Integrated Resource Management Program and Historic Preservation Office. Clearly, the Red Cliff Band carries out "substantial governmental duties and powers" within the meaning of 40 C.F.R. sec. 233.61(b).

In addition to those set forth above, governmental functions exercised by the tribal governing body, either directly or through delegation of authority, include the exercise of general police powers affecting or relating to the health, safety and welfare of the general population within the reservation boundaries, both tribal member and non-member alike. This is based upon the Tribe's inherent sovereign authority over its membership and its inherent authority over nonmembers necessary to protect threats to the health, safety and welfare of its membership. The Tribe acknowledges that United States Supreme Court decisions have limited tribal authority over non-Indians within Indian country generally to situations where (1) the non-Indians have entered into a consensual relationship with the tribe or its members, and (2) where the non-Indian's conduct threatens or has some direct effect in the political integrity, economic security, or the health or welfare of the Tribe. See generally Montana v. United States, 450 U.S. 544, 546 (1981) (Tribes may exert authority over non-members where non-Indian conduct "threatens or has some effect on the political integrity, the economic security or the health or welfare of the Tribe."); <u>United States v. Wheeler</u>, 435 U.S. 313, 322, 98 S. Ct. 1079 (1978) (Indian Tribes possess those aspects of sovereignty not withdrawn by Treaty, statute, or by implication as necessary result of their dependent status); <u>United States v. Mazurie</u>, 410 U.S. 544, 557 (1975) (Congress may, by statute, expressly delegate federal authority to an Indian Tribe); <u>Worcester v.</u> <u>Georgia</u>, 31 U.S. (6 Pet.) 515, 557-59 (1832) (Indian Tribes possess inherent tribal sovereignty).

The Band's Constitution establishes that its jurisdiction extends:

to all the land and water areas within the territory of the Band and to dependent Indian communities in Bayfield county, as may exist, and further, for the purpose of exercising and regulating the exercise of rights to hunt, fish, trap, gather wild rice and other usual rights of occupancy, such jurisdiction shall extend to Lake Superior and to all lands and waters described in Treaties providing such rights, to which the Lake Superior Chippewa were a party, except as provided by Federal law.

Red Cliff Constitution, Art. 1, sec. 2. Specific examples of the exercise of general police power over non-Indians of note include regulations necessary to regulate water pollution as contained in RCCL Chapters 12 (Pollutions and Environmental Protection), 34 (Water and Sewer Utilities), 37 (Land Use), and other subjects implicating the health, safety and welfare of the Tribe and its members including but not limited to traffic (Chapter 14), animal control (Chapter 15), the operation of business within the reservation (Chapter 16), general restrictions on subjects like disorderly conduct and parking (Chapter 39), domestic and family violence (Chapter 41), alcoholic beverages (Chapters 39 and 44), eminent domain (Chapter 47) fireworks (Chapter 48) and flood damage reduction (Chapter 55). The subject of taxation is addressed within the RCCL Chapter 16 (Business License and Tax Law) and is limited by Red Cliff Constitution Art. VI, sec. 1(g) (authorizing taxation of members and non-members alike but restricting the ability of the Tribal Council to impose taxes upon the membership without a referendum). The subject of eminent domain is addressed at RCCL Chapter 47 (Power of Eminent Domain) and at Constitution Art. VI, sec. 1(h) (authorizing the Tribal Council to purchase lands for public purposes in condemnation proceedings).

Water pollution within the Red Cliff Reservation and in Lake Superior threatens the health and welfare of the Band and its membership. Tribal members use reservation resources for subsistence purposes and hunt, fish and gather both for subsistence and in connection with religious ceremonies. The selection of the lands that now comprise the Red Cliff Reservation was made along the shores of Lake Superior and precisely for this purpose.

The preceding paragraphs satisfy the requirement of both the CWA and the regulations contained at 40 C.F.R. sec. 233.60(a) and (b) and 40 C.F.R. sec. 233.61(a) and (b)(1) through (3) inclusive. All other information necessary for your office to determine tribal eligibility for

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4 . treatment as a State in connection with our application have been provided to you previously under separate cover. If you have any questions or there is anything else that you need please do not hesitate to contact this office. Thank you for your time and attention to this most important matter. Sincerely, Ŧ David M. Ujke Tribal Attorney Cc: Tribal Administration TNR Director File 4